UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 001-38683

GUARDANT HEALTH, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**45-4139254**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

505 Penobscot Dr.
Redwood City, California 94063
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code: (855) 698-8887

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.00001	**GH**	**The Nasdaq Global Select Market**

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-accelerated Filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant, as of the last business day of the registrant's most recently completed second fiscal quarter was approximately $12.1 billion (based on the closing price of the registrant's common stock on the Nasdaq Global Select Market on June 30, 2021 of $124.19 per share).

As of February 18, 2022, the registrant had 101,865,838 shares of common stock, $0.00001 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement relating to its annual meeting of stockholders to be held in 2022, or the 2022 Annual Meeting, to be filed with the Securities and Exchange Commission, or the SEC, within 120 days after the end of the fiscal year to which this Annual Report on Form 10-K relates, are incorporated herein by reference where indicated. Except with respect to information specifically incorporated by reference in this Annual Report on Form 10-K, such proxy statement is not deemed to be filed as part hereof.

GUARDANT HEALTH, INC.
FORM 10-K

For the Fiscal Year Ended December 31, 2021

TABLE OF CONTENTS

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, including the sections titled "Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements regarding future events and our future results that are based on our current expectations, estimates, forecasts and projections about our business, our results of operations, the industry in which we operate and the beliefs and assumptions of our management. Words such as "believe," "may," "will," "estimate," "continue," "anticipate," "would," "could," "should," "intend" and "expect," variations of these words, and similar expressions are intended to identify forward-looking statements. These forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. Factors that might cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A,"Risk Factors," of this Annual Report on Form 10-K and elsewhere herein, and in other reports we file with the U.S. Securities and Exchange Commission, or the SEC. While forward-looking statements are based on the reasonable expectations of our management at the time that they are made, you should not rely on them. We undertake no obligation to revise or update publicly any forward-looking statements for any reason, whether as a result of new information, future events or otherwise, except as may be required by law.

Each of the terms the "Company," "we," "our," "us" and similar terms used herein refer collectively to Guardant Health, Inc., a Delaware corporation, and its consolidated subsidiaries, unless otherwise stated.

PART I

Item 1. Business

Overview

We are a leading precision oncology company focused on helping conquer cancer globally through use of our proprietary tests, vast data sets and advanced analytics. Today our proprietary tests are helping to realize the full potential of precision oncology by providing patients and their doctors critical insights that can inform decisions at all stages of the disease, from screening, to monitoring cancer recurrence, to treatment decisions. We believe that the key to conquering cancer is unprecedented access to its molecular information throughout all stages of the disease, which we intend to enable by our tests. By looking at the unique dimensions of cancer found in blood, including genomic alterations, methylation, and fragmentomics, we are unlocking insights that can increasingly help patients across all stages of cancer, including at its earliest, when it's most treatable. To help identify cancer at the earliest stages, we are developing Guardant SHIELD, a blood test for cancer screening in average-risk adults without symptoms, that detects very early signs of cancer by interrogating genomic alterations, methylation, and fragmentomic signals from a simple blood draw. In pursuit of our goal to manage cancer across all stages of the disease, we provide our Guardant360, Guardant360 LDT, Guardant360 CDx and GuardantOMNI liquid biopsy-based tests for advanced stage cancer. Our Guardant360 CDx test was the first comprehensive liquid biopsy test approved by the U.S. Food and Drug Administration, or the FDA, to provide tumor mutation profiling with solid tumors and to be used as a companion diagnostic in connection with non-small cell lung cancer, or NSCLC. In February 2021, we launched our Guardant Reveal liquid biopsy-based tests for residual and recurring cancer to first address the need in Stage II-III colorectal cancer. In June 2021, we launched Guardant360 TissueNext, our first tissue-based test which will be used to identify patients with advanced cancer who may benefit from biomarker-informed treatment, and Guardant360 Response which will be used to measure early indications to patients' response to treatment up to eight weeks earlier than response evaluation criteria in solid tumors. We have also developed our GuardantINFORM platform to further accelerate precision oncology drug development by biopharmaceutical companies by offering them an in-silico research platform to unlock further insights into tumor evolution and treatment resistance across various biomarker-driven cancers.

Therapy selection in advanced stage cancer patients - We are pioneering the clinical comprehensive biopsy market with our tests. Our Guardant360 test is a molecular diagnostic test measuring 74 cancer-related genes, our Guardant360 CDx was the first comprehensive liquid biopsy test approved by the FDA, measuring 55 cancer-related genes, and our GuardantOMNI test has a broader 500-gene panel, all of which analyze circulating tumor DNA in blood. Per American Cancer Society: 2021 Cancer Facts & Figures, there is an estimated 1.9 million new cancer cases diagnosed and 600,000 cancer deaths in the United States. Our Guardant360 test has been used over 250,000 times by clinicians to help inform which therapy may be effective for advanced stage cancer patients with solid tumors. Our tests are used by biopharmaceutical companies for a range of applications, including identifying target patient populations to accelerate translational science research and clinical study enrollment, companion diagnostic development, and post-approval commercialization. The increasing diversity of targeted therapies and associated molecular biomarkers has given rise to comprehensive genomic profiling, particularly in tumor types where multiple genomic targets can be found and treated effectively. For example, NSCLC, like other tumors, has multiple effective treatment options targeting different genomic mutations. There are nine targetable genes in NSCLC, which are comprised of alterations across all four genomic variant classes (SNVs, indels, CNVs, and fusions), as well as TMB. Five of these targets are on-label approved biomarkers for FDA-approved therapies. The NCCN treatment guidelines recommended testing for all of the genomic mutations or alterations across different cancer types, which demonstrates the requirement for broader genomic profiling.

Neoadjuvant and adjuvant treatment selection in early-stage cancer patients and surveillance in cancer survivors - We have launched the Guardant Reveal test as a laboratory developed test, or LDT, to detect minimal residual disease which we believe can help identify recurrence earlier than traditional modalities in cancer survivors and potentially identify early-stage cancer patients who may benefit from adjuvant treatment. Our Guardant Reveal test leverages data and learnings from our tests and is designed to enable clinicians to detect minimal residual disease and to detect cancer recurrence at a stage when intervention may have a higher chance of success. For early-stage solid tumors, neoadjuvant and adjuvant treatment may be given as a first step in care to shrink the tumor or adjuvantly as a secondary treatment after the primary treatment to reduce the risk of recurrence. However, not all early-stage cancer patients may benefit from neoadjuvant and adjuvant treatment. For instance, based on data published in 2007 from a randomized study of adjuvant chemotherapy versus observation in patients with colorectal cancer, the use of adjuvant treatment showed significant benefit for a subgroup of the patients who meet certain clinical criteria, but only marginal benefit for the patients who do not meet these criteria. We believe our Guardant Reveal test may also help biopharmaceutical companies identify new drug development opportunities. In return, these relationships could help us establish clinical utility for our tests and create new testing opportunities related to emerging therapies.

Early detection of cancer in asymptomatic individuals eligible for cancer screening - We are developing the Guardant SHIELD assay to support cancer screening in asymptomatic individuals including who are eligible for colorectal cancer screening based on the 2016 U.S. Preventive Services Task Force, or USPSTF, guidelines for colorectal cancer screening. Per American Cancer Society: Colorectal Cancer Facts & Figures 2020-2022, it is estimated that only 66% of adults at 50 years and older are screened despite compelling evidence that routine cancer screening can reduce colorectal cancer mortality, the second leading cause of cancer death. Therefore, we believe there is a significant unmet need for non-invasive modalities such as our Guardant SHIELD assay that, if successfully developed, we believe could increase compliance with the USPSTF guidelines. We are also pursuing further development of our Guardant SHIELD assay to support screening for additional cancer types in asymptomatic individuals recommended by the USPSTF and cancer types without a reference standard for screening. To clinically validate the performance of our multi-cancer screening device in detecting lung cancer, we enrolled the first patient in a nearly 10,000-patient prospective, registrational study, which we refer to as the SHIELD study, to detect lung cancer in high-risk individuals ages 50-80 and the study is anticipated to run in approximately 100 centers in the United States and Europe. We believe that developing a blood test for early detection of cancer requires a vast amount of molecular and clinical data across all stages of the disease in order to better understand the biology and clinical relevance of tumor-specific biomarkers in blood. While we believe the benefits of early detection on clinical outcomes are widely known, early detection may also benefit biopharmaceutical companies by identifying a much larger at-risk population who may benefit from early therapeutic intervention or from preventative medicines.

Guardant Health Oncology Platform - Our Guardant Health Oncology Platform is designed to leverage our capabilities in technology, clinical development, regulatory and reimbursement to drive commercial adoption, accelerate drug development, improve patient clinical outcomes and lower healthcare costs. We believe our Guardant Health Oncology Platform has developed strengths across five critical layers, each of which facilitates success in the adjacent layers, and together the five layers form a barrier to entry and provide us a competitive advantage and a platform we can efficiently leverage across multiple products. The five layers of our Guardant Health Oncology Platform are as follows:

Technology - Our proprietary Guardant Health digital sequencing technology combines cutting edge capabilities from multiple disciplines including biochemistry, next-generation sequencing, signal processing, bioinformatics, machine learning and process engineering to enable what we believe to be the world's market leading comprehensive test with a typical turnaround time of less than seven days after we receive the sample and enable our high performing tests intended for different market segments. Furthermore, our machine learning capability enables performance improvement as we incorporate additional data.

Clinical utility - We believe that success in the clinical utility layer requires both independent investments in clinical research and strategic relationships with market-leading biopharmaceutical companies. We have invested heavily in clinical studies, including more than 60 clinical outcomes studies demonstrating that overall biomarker detection rates of our non-invasive blood testing were in line with standard of care tissue testing. Our clinical research collaborations have resulted in more than 200 peer-reviewed publications. We also have relationships with over 60 biopharmaceutical customers that have provided rigorous clinical validation of our technology and early insights into test opportunities for emerging therapeutics.

Regulatory approval - We believe our Guardant360 test was the first comprehensive liquid biopsy approved by the New York State Department of Health, or NYSDOH. In addition, based on our review of publicly available records, we believe our facility was the first comprehensive liquid biopsy laboratory to be certified pursuant to the Clinical Laboratory Improvement Amendments of 1988, or CLIA, accredited by the College of American Pathologists, or CAP, and NYSDOH-permitted. Our Guardant360 CDx test was the first comprehensive liquid biopsy test approved by the FDA, to provide tumor mutation profiling with solid tumors and to be used as a companion diagnostic in connection with NSCLC, patients who may benefit from treatment with osimertinib (EGFR exon 19 deletions, exon 20 T790M or exon 21 L858R mutations), amivantamab-vmjw (EGFR exon 20 insertion mutations), and sotorasib (KRAS G12C mutations), which have been developed by our biopharmaceutical customers AstraZeneca, Janssen Biotech and Amgen, respectively.

Payer coverage and reimbursement - We believe that the analytical and clinical data that we have generated in our efforts to establish clinical utility, combined with the support we have developed with key opinion leaders, or KOLs, in the oncology space have led to positive coverage decisions by a number of commercial payers. Our guardant360 test is currently covered by various commercial and governmental payers, including Medicare.

With respect to Medicare, in July 2018, Palmetto GBA, or Palmetto, the Medicare Administrative Contractor, or MAC, responsible for administering Medicare's Molecular Diagnostic Services Program, or MolDx, issued a local coverage determination, or LCD, for our Guardant360 test with respect to NSCLC patients who meet certain clinical criteria, and in May 2020, Noridian Healthcare Solutions, or Noridian, the MAC responsible for adjudicating claims in California, where our laboratory is located, and a participant in MolDx, issued a coverage article and confirmed limited Medicare coverage for our Guardant360 test for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin who meet the criteria of Medicare's National Coverage Determination for Next Generation Sequencing (90.2) first established in March 2018, or the NGS NCD. Following FDA approval of our Guardant360 CDx test, a new Z-Code Identifier was issued in August 2020. In January 2021, a proprietary laboratory analyses, or PLA code was issued for our Guardant360 CDx with an effective date in April 2021. Additionally, based on this new PLA code, we applied to the Centers for Medicare and Medicaid Services or CMS for our Guardant360 CDx test to become an advanced diagnostic laboratory test, or ADLT. In March 2021, CMS approved ADLT status to the Guardant360 CDx test, based on which Medicare paid us at the lowest available commercial rate per test, from April 1, 2021, to December 31, 2021. After this period, Medicare would reimburse Guardant360 CDx services at the median rate of claims paid by commercial payers. We are in the process of negotiating reimbursement for our Guardant Reveal, Guardant Response and Guardant360 TissueNext tests from commercial and governmental payers.

Commercial adoption - Success in each of the layers above is important for commercial adoption of our tests by clinicians and biopharmaceutical companies. Additionally, for clinicians, endorsement by KOLs, utilization by academic centers and inclusion in national treatment guidelines are important, especially for adoption in the local community setting where 80% of cancer treatment occurs. We believe that our relationships with key stakeholders across the oncology space, clinical data we believe to support use of Guardant360 test ahead of tissue-based testing, as well as the inclusion of liquid biopsy as a potential alternative under certain circumstances to tissue biopsy in NCCN guidelines, have helped facilitate the use of our tests by 11,000 oncologists, who have collectively ordered our Guardant360 test over 250,000 times, and over 100 biopharmaceutical companies. We sold 87,600 tests to clinical customers in the year ended December 31, 2021, an increase from 63,254 and 49,926 in the years ended December 31, 2020 and 2019, respectively. We sold 18,600 tests to biopharmaceutical customers in the year ended December 31, 2021, compared to 15,983 and 20,643 in the years ended December 31, 2020 and 2019, respectively.

Our strategy

Our objective is to be the leading provider of precision oncology and screening products for cancer management across all stages of the disease and drive commercial adoption of our products. To achieve this, we intend to:

- **Increase awareness of our products by:**
  - building awareness of liquid biopsy and pioneering a blood-first paradigm for genotyping cancer patients;
  - educating biopharmaceutical companies, KOLs and advocacy groups;
  - advocating for inclusion of our tests in treatment guidelines; and
  - expanding access to our products globally through direct investment and by leveraging our global network of partners.
- **Expand clinical utility and increase reimbursement for our products by:**
  - working with private and public payers to establish coverage and reimbursement for our tests;
  - investing in clinical evidence directly and through relationships with academia and biopharmaceutical companies to establish expanded indications for use;
  - demonstrating improved clinical utility and health economics from use of our tests to patients, physicians and payers; and
  - pursuing FDA and other regulatory approval internationally of our tests to facilitate reimbursement and global market access.
- **Strengthen our relationships with customers by:**
  - demonstrating the utility of our products in connection with standard of care treatments thereby encouraging clinical adoption;
  - developing and seeking approval of our products as companion diagnostics for targeted therapies and immuno-oncology therapies; and
  - providing earlier insights into emerging clinically relevant biomarkers.
- **Leverage our Guardant Health Oncology Platform to expand our product portfolio by:**
  - using our commercial engine as a force multiplier of returns on research and development investment to generate data and analytical insights to enable development of new products;
  - taking a disciplined and systematic approach to product and market development, by starting with therapy selection and then expanding sequentially towards early cancer detection;
  - utilizing our data, sample biobank and insights into biology of circulating tumor-related biomarkers in blood to develop our new products;
  - building on our regulatory and commercial infrastructure to accelerate new product launches and drive commercial efficiencies; and
  - using our strategic relationships, including our partnerships with European cancer centers and research organizations, to drive global commercialization of our products.

Our products and development program

We have launched various products and programs, and we believe our product portfolio, once completed, will address the full continuum of cancer care and has utility in both the clinical and biopharmaceutical markets.

Therapy Selection

Guardant360 CDx Test

We believe our Guardant360 CDx test is the market leading comprehensive liquid biopsy test, based on the number of tests ordered. Guardant360 CDx test is a 55 gene test, approved by the FDA to provide tumor mutation profiling to be used by qualified health professionals in accordance with professional guidelines in oncology for cancer patients with any solid malignant neoplasm, and as a companion diagnostic to identify NSCLC patients who may benefit from certain targeted therapies, currently including TAGRISSO® (osimertinib), RYBREVANT™ (amivantamab-vjmw) and LUMAKRAS™ (sotorasib), which supports treatment selection for advanced stage cancer patients with solid tumors. Additional gene content and immune-oncology biomarkers (e.g. MSI) are reported in a professional services compendium to the FDA approved CDx report. Results are typically delivered within seven days following receipt of sample and delivered by a clinical report.

Guardant360 LDT Test

The number of personalized therapy options for advanced cancer patients continues to grow, giving patients who may have cycled through standard of care therapies additional options. Focused on addressing patient care throughout the diagnostic journey, we launched an updated and expanded version of our LDT in 2020 to support new guideline-recommended biomarkers, including our industry leading plasma-based tumor mutational burden or TMB, MSI-High, expanded homologous recombination repair or HRR gene set, and full coverage of neurotrophic receptor tyrosine kinase or *NTRK* fusions. The Guardant360 LDT ensures progressing patients are given the opportunity to be eligible for these new treatment options, without the need to obtain archival tissue or subject the patient to another invasive biopsy. Results are typically delivered, ten days following receipt of sample and delivered by a clinical report.

Guardant360 Response Test

In June 2021, we launched Guardant360 Response test as an LDT, which is the first blood-only liquid biopsy that enables doctors to view molecular response, or changes in circulating tumor DNA (ctDNA) levels, from a simple blood draw to potentially gain early insight regarding patient response to treatment. For doctors, knowing early and confidently if a patient's treatment is working is critical in deciding whether to continue, stop, or explore other options. Studies across cancers and therapies show the Guardant360 Response test predicted treatment response 8 weeks earlier than current standard-of-care radiological and imaging scans.

Guardant360 TissueNext Test

To complement our liquid biopsy-based products, we launched Guardant360 TissueNext as an LDT in June 2021, our first tissue-based test which is designed to identify patients with advanced cancer who may benefit from biomarker-informed treatment. Tissue genotyping is currently widely available to physicians and patients. We believe many tissue genotyping products currently available to physicians and patients have experienced long delays in getting results to physicians and high failure rates because of the inability to obtain enough tissue or high-quality DNA for analysis. Such delay or inability to produce results from tissue genotyping can adversely affect providing the right treatment to patients at the right time. We therefore believe our Guardant360 TissueNext, together with our liquid biopsy-based products, have the potential to help address the challenges with tissue genotyping products currently in the market.

Guardant360 clinical report

A typical Guardant360 CDx and Guardant360 clinical report contains somatic mutations, immuno-oncology markers detected in patient blood samples, associated treatment options and available clinical studies in the vicinity of the patient's location. Additionally, the report depicts a proprietary visual representation that shows the evolution of somatic mutations in longitudinal blood samples.

Clinical studies and publications

The goal of our clinical development with our tests is to support its use for comprehensive genomic profiling across multiple tumor types, including as a preferred alternative to tissue testing to inform first line treatment right after diagnosis and at time of disease progression. We publish peer-reviewed studies in order to influence treatment guidelines, to educate clinicians and other oncology stakeholders about the value proposition of our test and to set the stage for reimbursement with private and public payers. We have over 60 approved, completed or active clinical outcomes studies, more than 200 peer-reviewed publications and more than 400 scientific abstracts. We are proactively pursuing studies to support the use of our tests as a preferred alternative to tissue testing to inform first

line treatment right after diagnosis, with the goal to provide evidence that our tests detects genomic alterations at a similar rate compared to standard of care tissue testing in the United States, Europe and Asia. Such a strategy is predicated on the tests' ability to offer accurate, reliable and fast guideline-directed comprehensive genotyping for all adult solid tumors without exposing patients to invasive biopsy procedures' risks, delays or chance of failure.

Minimum Residual Disease

Guardant Reveal Test

In the management of early-stage cancer, current tools do not identify all high risk patients who will benefit from adjuvant therapy or detect recurrence early enough when it is most curable. We plan to address this need, first in Stage II-III colorectal cancer, with our Guardant Reveal test launched as an LDT in February 2021 for residual disease and recurrence monitoring. We believe the Guardant Reveal test has the potential to enable oncologists to improve the care of early-stage cancer patients by correctly identifying more high-risk patients than clinicopathologic review alone and by detecting recurrent disease months earlier than current standard of care methods like imaging carcinoembryonic antigen tests. We believe the Guardant Reveal test can improve turnaround by simultaneously interrogating both genomic and epigenomic signals from a single blood draw without the need for tissue. Similar to our data development effort for our Guardant360 tests, we are investing very heavily in establishing clinical utility for the use of Guardant Reveal in adjuvant treatment settings.

Biopharmaceutical Customers

GuardantOMNI Test

Our GuardantOMNI test is built on Guardant Health Digital Sequencing Technology and learnings from our Guardant360 test. The GuardantOMNI test, launched in 2017, has a significantly larger genomic panel footprint than the Guardant360 test and has achieved comparable analytical performance in clinical studies, including for translational science applications in collaboration with several biopharmaceutical companies, including AstraZeneca, Bristol-Myers Squibb, Merck MSD, Merck KGaA of Darmstadt, Germany and Pfizer. It covers 500 genes, including genes associated with homologous recombination repair deficiency and biomarkers for immuno-oncology applications, such as tumor mutational burden and microsatellite instability.

In order to preserve performance characteristics of our Guardant360 test across a broader gene panel, we implemented additional enhancements to the assay efficiency and bioinformatics analysis to improve the sensitivity of our GuardantOMNI test. These enhancements are critical in the context of using the GuardantOMNI test in the retrospective testing of clinical study samples for translational science applications in collaboration with biopharmaceutical customers, as those samples are often available with only a limited volume of plasma.

Validation data indicates that the GuardantOMNI test exceeds the Guardant360 test's sensitivity for detecting clinically actionable biomarkers. At the same time, broader panel-wide performance of small variants is roughly similar to that of Guardant360 test. The broad genomic footprint of our GuardantOMNI test enables accurate measurement of tumor mutational burden. The GuardantOMNI test received breakthrough device designation from the FDA in December 2018.

GuardantConnect

Because metastatic cancer patients often exhaust standard of care treatment options as the disease progresses and guidelines recommend clinical studies for advanced cancer patients, clinical study matching is an acute need in oncology. At the same time, biopharmaceutical companies need to fill clinical studies that require screening hundreds of thousands of patients. Despite these needs, clinical study enrollment in oncology has severely lagged, with only 3-6% of cancer patients enrolling in clinical studies. GuardantConnect is our integrated software-based solution designed for our clinical and biopharmaceutical customers, seeking to connect patients tested with the Guardant360 assay with actionable alterations with potentially relevant clinical studies.

GuardantINFORM

In 2020 we launched GuardantINFORM, our real-world evidence platform featuring an extensive clinical-genomic liquid biopsy dataset of advanced cancer patients. The GuardantINFORM platform is intended to help accelerate research and development of the next generation of cancer therapeutics by offering biopharma partners an *in silico*

resource that combines de-identified longitudinal clinical information and genomic data collected from the Guardant360 liquid biopsy test. This robust dataset offers real-world insights into anti-cancer therapy use and associated outcomes, and molecular drivers of treatment response and resistance for over 60 advanced cancers including non-small cell lung, breast, colon, and prostate. Applications for the GuardantINFORM platform include targeted drug development, clinical study optimization and post-marketing studies.

Screening

Guardant SHIELD

We believe that there is a critical need to develop products to expand precision oncology to earlier stage cancer settings. Such products would enable clinicians to precisely detect, monitor and select the appropriate intervention at the right times in the disease's evolution, key to significantly improving patient clinical outcomes. In order to systematically address this need, we are developing Guardant SHIELD for asymptomatic individuals eligible for cancer screening in line with the USPSTF guidelines and in cancers where screening can reduce mortality. Our research and development results to date indicate that somatic signatures alone may be insufficient for detection of early-stage cancers with high sensitivity. For this reason, we have incorporated epigenomic signatures to enhance the performance of our Guardant SHIELD assay in these settings.

Early cancer detection is challenging, especially with respect to clinical sensitivity. There is a minimal amount of ctDNA in patients with low-disease burden. Additionally, naturally occurring genomic aberrations in blood as well as signals from non-cancer related diseases can add biological noise obfuscating detection of circulating tumor-related biomarkers. We believe we have the unique capability to overcome these challenges by leveraging our:

- *Vast data sets and deep insights:* We have targeted deep sequencing data in combination with low coverage sequencing of whole genome from tens of thousands of cancer patients. This data has enabled discovery of novel epigenomic variations across multiple cancer types. We believe augmenting genomic with epigenomic signatures can enhance the clinical sensitivity and specificity of our tests significantly. Moreover, we developed a database of biological noise sources such as clonal hematopoiesis of indeterminate potential, which enables us to further enhance the sensitivity and specificity of our tests.

- *Extensive blood biobank:* We have a biobank of tens of thousands of cancer samples that we use for discovery and, more importantly, biomarker verification and validation. For example, we are analyzing these samples with whole genome sequencing to identify and confirm tumor associated signatures. Also, we have been collecting additional samples through multiple on-going research collaborations.

Commercialization

U.S. clinical commercial efforts

We sell our tests to clinical customers in the United States through our targeted sales organization. Our clinician-focused sales organization in the United States is engaged in sales efforts and promotional activities primarily targeting oncologists and cancer centers. Our sales representatives typically have extensive backgrounds in laboratory testing, therapeutics and oncology. We have supplemented the team with clinical oncology specialists with extensive medical affairs experience for molecular information support in the field.

Our clinical commercial efforts are focused on driving adoption with academic research institutions and with community oncology practices, including through leading physician networks. As we continue to grow our sales organization, we are also expanding our reach to include large community practices, community oncology networks, integrated delivery/ payer-owned systems and government medical facilities that are looking for a reliable partner for comprehensive molecular information testing.

International clinical commercial efforts

We currently offer our tests in countries outside the United States primarily through direct contacts with insurers and hospitals and through distributor relationships.

Currently, all customer samples are shipped globally to our laboratory in Redwood City, California. We are conducting studies in various jurisdictions and have started efforts to secure reimbursement in several countries. As these studies progress and we near commercial opportunities there, we are seeking to establish in-country laboratories and direct sales organizations. Specifically, we have already demonstrated the ability to deploy our technology to partner laboratories such as cancer centers, for the development of test assays based on our technology platform. We believe that this capability will be important in accelerating adoption of our platform and the performance of our testing in certain countries.

Together with SoftBank, we formed a joint venture, Guardant Health AMEA, Inc., which we refer to as the Joint Venture, to accelerate commercialization of our products in Asia, the Middle East, and Africa. There are estimated to be over 400,000 deaths annually in Japan with a significant portion relating to lung and gastric cancers. We are involved in several nationwide clinical programs that help establish clinical utility of our Guardant360 test in the Japanese population with the first patient tested in late 2018. In 2021, an affiliate of the Joint Venture submitted an application to the Ministry of Health, Labour and Welfare, or the MHLW, for regulatory approval of Guardant360 CDx in Japan. In December 2021, the MHLW granted regulatory approval of Guardant360 CDx in patients with advanced solid cancers. In November 2021, we exercised our call right contained in the joint venture agreement with SoftBank to purchase all of the shares held by SoftBank and its affiliates in consideration for the payment of the aggregate purchase price to be determined based on an independent third-party valuation. The aggregate purchase price will be no less than an amount that yields a 20% internal rate of return on the $41.0 million of capital invested by SoftBank in May 2018 as stipulated in the joint venture agreement. SoftBank and us have initiated a process to determine the independent valuation of the Joint Venture, which includes the appointment of independent appraisers by both SoftBank and us. We expect to complete this transaction before the end of the second quarter of 2022.

In preparation for wider commercialization in the European Union, or the EU, we obtained a CE mark for our Guardant360 CDx test performed in Redwood City and also achieved ISO15189 accreditation. In 2020, we signed the first public private partnership agreement with Vall D'Hebron Institute of Oncology, one of Europe's leading cancer research institutions. In 2021, we signed an agreement with The Royal Marsden NHS Foundation Trust, a premier cancer center within the United Kingdom for patient care, research and teaching of all types of cancer. We expect these partnerships will lead to the establishment of our testing services at the partner laboratories, using Guardant Health Digital Sequencing Technology, as well as generation of clinical and economic evidence to support commissioning in other areas of Europe.

Biopharmaceutical commercial efforts

Our business development team is focused on enterprise selling to biopharmaceutical companies in the United States and internationally. Our strategy with each biopharmaceutical customer is to demonstrate the value proposition of the Guardant Health Oncology Platform and expand its utilization across the organization from early-stage research through clinical development to commercialization. Given the broad and differentiated utility of our platform, we believe we can support our biopharmaceutical customers across many applications, including:

- discovery of new targets and mechanisms of acquired resistance;
- retrospective sample analysis to rapidly identify biomarkers associated with response and lack of response;
- prospective screening and referral services to accelerate clinical study enrollment; and
- companion diagnostic development to support the approval and commercialization of therapeutics.

We also expect to be able to capture other commercial opportunities from our genomic data, which can be used in combination with clinical outcomes or claims data for multiple applications, including novel target identification.

Payer coverage and reimbursement

Commercial payers

Payment from commercial payers can vary depending on whether we have entered into a contract with the payers as a "participating provider" or do not have a contract and are considered a "non-participating provider". Payers often reimburse non-participating providers, if at all, at a lower amount than participating providers. When we contract with a payer to serve as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained. Becoming a participating provider can result in higher reimbursement amounts for covered uses of our tests and, potentially, no reimbursement for non-covered uses identified under the payer's policies or the contract. As a result,

the potential for more favorable reimbursement associated with becoming a participating provider may be offset by a potential loss of reimbursement for non-covered uses of our tests.

We have provided testing services to patients covered by commercial payers with many cancer types and indications, most of the time as a non-participating provider through 2021. We received reimbursement for tests across the spectrum of these patients, though for amounts that on average were significantly lower than for participating providers. Because we are not contracted with these payers, they determine the amount that they are willing to reimburse us for any of our tests and they can prospectively and retrospectively adjust the amount of reimbursement.

Our tests are currently covered by various commercial payers and our reimbursement is directly impacted by their policies. We have experienced situations where commercial payers proactively reduced the amounts they were willing to reimburse for our tests, and where commercial payers have determined that the amounts previously paid were too high and sought to recover those perceived excess payments by deducting such amounts from payments owed to us.

In addition to our existing contracted payers, various laboratory benefit managers and evidence review organizations working with commercial payers have endorsed coverage of our Guardant360 test.

We are actively engaged to expand coverage among existing contracted payers and to achieve coverage with the remaining key commercial payers, laboratory benefit managers and evidence review organizations. This includes addressing variable coverage requirements and evidence required, and the need for enhanced guideline support.

As we broaden our coverage amongst contracted payers to include additional tests of ours, we may begin to experience increases in average revenue per test performed; however, we cannot make any assurances that we will be successful in broadening our coverage on a timely basis or at all. Similarly, as we have experienced with our existing contracted payers, we cannot assure that the addition of new contracted payers will increase our average selling price or revenue.

Government payers

Medicare coverage is limited to items and services that are within the scope of a Medicare benefit category that are reasonable and necessary for the diagnosis or treatment of an illness or injury. National coverage determinations are made through an evidence-based process by the CMS, with opportunities for public participation. Medicare's NGS NCD provides coverage for molecular diagnostic tests such as our Guardant360 CDx test, if, among other criteria, such tests are offered within their FDA-approved companion diagnostic labeling.

In March 2020, we began to receive reimbursement from Medicare for claims submitted with respect to Guardant360 clinical tests performed for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin other than NSCLC. In May 2020, Noridian issued a coverage article and confirmed limited Medicare coverage for our Guardant360 test for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin who meet the criteria of Medicare's National Coverage Determination for Next Generation Sequencing established in March 2018. Under Medicare, payment for laboratory tests like ours is generally made under the Clinical Laboratory Fee Schedule, or CLFS, with payment amounts assigned to specific procedure billing codes. In April 2014, Congress passed the Protecting Access to Medicare Act of 2014, or PAMA, which included substantial changes to the way in which clinical laboratory services are paid under Medicare. On June 23, 2016, CMS published the final rule implementing the reporting and rate-setting requirements under PAMA. Under PAMA, laboratories that receive the majority of their Medicare revenue from payments made under the CLFS were required to report to CMS, beginning in 2017 and every three years thereafter (or annually for "advanced diagnostic laboratory tests"), commercial payer payment rates and volumes for each test they perform. CMS uses this data to calculate a weighted median payment rate for each test, which is used to establish revised Medicare CLFS reimbursement rates for the test. As we have begun billing Medicare for our tests, we are subject to reporting requirements under PAMA and the Medicare rate for our tests will be calculated in the future based on our private payer rates. For tests furnished on or after January 1, 2018, Medicare payments for clinical diagnostic laboratory tests are based upon these reported commercial payer rates. On December 10, 2021, Congress passed the Protecting Medicare and American Farmers from Sequester Cuts Act, which delays the next data reporting period by one year and prevents any reduction in payment amounts from commercial payer rate implementation in 2022.

Current Procedural Terminology, or CPT, coding plays a significant role in how our Guardant360 test is reimbursed both from commercial and governmental payers. In addition, Z-Code Identifiers are used by certain payers,

including under Medicare's MolDx, to supplement CPT codes for molecular diagnostics tests such as our Guardant360 test. Changes to the codes used to report the Guardant360 test to payers may result in significant changes in its reimbursement. Following the FDA approval of our Guardant360 CDx test, a new Z-Code Identifier was issued in August 2020. In January 2021, a proprietary laboratory analyses, or PLA code was issued for our Guardant360 CDx with an effective date in April 2021. Additionally, based on this new PLA code, we applied to the CMS for our Guardant360 CDx test to become an advanced diagnostic laboratory test, or ADLT. In March 2021, CMS approved ADLT status to the Guardant360 CDx test, based on which Medicare paid us at the lowest available commercial rate per test, from April 1, 2021 to December 31, 2021. After this period, Medicare would reimburse Guardant360 CDx services at the median rate of claims paid by commercial payers. We are in the process of negotiating reimbursement for our Guardant Reveal, Guardant Response and Guardant360 TissueNext tests from commercial and governmental payers. Additionally, if coding changes were to occur, payments for certain uses of our tests could be reduced, put on hold, or eliminated.

State Medicaid programs make individual coverage decisions for diagnostic tests and have taken steps to control the cost, utilization and delivery of healthcare services. We believe that additional state and federal health care reform measures may be adopted in the future, any of which could have a material adverse effect on the clinical laboratory industry and our ability to successfully commercialize our tests. Any of these or other changes could substantially impact our revenues and increase costs. We cannot predict how future healthcare policy changes, if any, will affect our business and financial success.

Other Considerations

Where we are not reimbursed in full or at all, we may elect to appeal the insurer's underpayment or denial of payment or seek payment from the patient. However, insurer appeal and patient collection efforts take a substantial amount of time and resources and are often unsuccessful. We cannot guarantee future success of, or any payments from, appeals of reimbursement denials by payers. Historic success and payments are not indicative of future success of and payments from such appeals.

Due to the inherent variability and unpredictability of the reimbursement landscape, including related to the amount that payers reimburse us for any of our tests, we estimate the amount of revenue to be recognized at the time a test is provided and record revenue adjustments if and when the cash subsequently received for a test differs from the revenue recorded for the test. Due to this variability and unpredictability, previously recorded revenue adjustments are not indicative of future revenue adjustments from actual cash collections, which may fluctuate significantly. This variability and unpredictability could increase the risk of future revenue reversal and result in our failing to meet any previously publicly stated guidance we may provide.

Operations

We perform our tests in our clinical laboratory located in Redwood City, California. Our laboratory is CAP-accredited, CLIA-certified, NYSDOH-permitted and also licensed in California, Florida, Maryland, Pennsylvania and Rhode Island. In February 2022, we received CAP accreditation for our laboratory in Japan where we will commence processing samples following receipt of PMDA approval for our Guardant360 tests.

The proprietary validated methods utilize robust semi-automated workflows designed for high throughput sample testing. This methodology allows for rapid scaling of testing volume without impacting performance metrics. Our testing process includes sample collection, laboratory processing, analysis and reporting. All major processing steps utilize quality control to ensure consistent and reproducible results.

Guardant Health Digital Sequencing Technology

Guardant Health Digital Sequencing Technology combines state-of-the-art technology from multiple disciplines and is enabled by robust, high-efficiency biochemistry at the front-end, next-generation sequencing and a machine learning augmented bioinformatics pipeline. The technology, through machine learning, has accrued performance improvements by incorporating learnings generated from the data collected from additional samples.

Supply chain

We utilize industry leading vendors for our supply chain. Most reagents and materials are sourced from a limited number of vendors and would require qualification to transition to a different vendor. To mitigate risk, we employ a multi-month, multi-lot safety stock strategy to ensure an uninterrupted supply of reagent and material to our laboratory. In the event that a latent defect is identified, the lot of material in use is expected to be timely

quarantined and changed for a new lot that has been previously qualified and released for use. The experience with our vendors has provided us confidence in their ability to produce consistent and quality instrumentation, reagents and materials.

In September 2014, we entered into a supply agreement with Illumina, Inc., or Illumina, for Illumina to provide products and services that can be used for certain research and clinical activities, including certain sequencers, reagents, and other consumables for use with the Illumina sequencers, as well as service contracts for the maintenance and repair of the sequencers. The initial term of the supply agreement, as amended, continues until January 2033, and automatically renews for additional one-year terms thereafter unless either we or Illumina terminate the supply agreement for the other's uncured material breach, bankruptcy or insolvency-related events, or in the event a regulatory authority notifies such party that continued performance under the supply agreement would violate applicable laws or regulations. We may also terminate the supply agreement for convenience upon 90 days' prior written notice.

Competition

Growing understanding of the importance of biomarkers linked with therapy selection and response is leading to more companies offering services in genomic profiling. The promise of liquid biopsy testing is also leading to more companies attempting to enter the space and compete with us. Our main competition is from diagnostic companies with products and services to profile genes in cancers based on either single-marker or comprehensive genomic profile testing, based on next-generation sequencing in either blood or tissue.

Our competitors within the liquid biopsy space include Foundation Medicine, Inc., which was acquired by Roche Holdings, Inc. in 2018, Roche Molecular Systems, Inc., Thermo Fisher Scientific, Inc., Illumina, Inc., Qiagen N.V., Invitae Corporation, and Sysmex Inostics. In addition, GRAIL, Inc., Natera, Inc., Exact Sciences Corp., and Freenome Holdings, Inc. among others, are our competitors in minimal residual disease testing and early screening testing.

Competitors within the broader genomics profiling space based on tissue include laboratory companies such as Bio-Reference Laboratories, Inc., Laboratory Corporation of America and Quest Diagnostics, Inc., as well as companies such as Foundation Medicine, Inc., Caris Life Science, Myriad Genetics, Inc., Tempus Labs, Inc., and NeoGenomics Laboratories, Inc., that sell molecular diagnostic tests for cancer to physicians and have or may develop tests that compete with our tests. In addition, we are aware that certain of our customers are also developing their own tests and may decide to enter our market or otherwise stop using our tests.

In addition to developing kits, certain diagnostic companies also provide next-generation sequencing platforms that could be used for liquid biopsy testing. These include Illumina, Inc., Thermo Fisher Scientific Inc., and other companies developing next-generation sequencing platforms that are sold directly to biopharmaceutical companies, clinical laboratories and research centers. While many of the applications for these platforms are focused on research and development applications, each of these companies has launched and could continue to commercialize products focused on the clinical oncology market. These tests could include FDA-approved diagnostic kits, which can be sold to the clients who have purchased their platforms.

Furthermore, many companies are developing information technology-based tools to support the integration of next-generation sequencing testing into the clinical setting. These companies may also use their own tests or others to develop an integrated system which could limit our access to certain networks.

The promise of liquid biopsy is also leading to more companies attempting to enter the space and compete with us. Over the last year, that has included new and accelerated development programs by a number of potential competitors, and increasing levels of merger and acquisition activity by both existing and new competitors.

We believe key competitive factors affecting our success are the price and performance of our products, evidence of clinical differentiation, support by KOLs, commercial competitiveness, turnaround time and scope and quality of payer contracts. Our Guardant Health Oncology Platform has developed strengths across five layers, which we believe form a barrier to entry and a competitive advantage. However, we cannot assure that we will continue to compete effectively on each of those layers and our competitive landscape may change over the next few years as a result of new competitors entering through investment and acquisition activity.

Intellectual property

Protection of our intellectual property is fundamental to the long-term success of our business. We seek to ensure that investments made into the development of our technology are protected by relying on a combination of patents, trademarks, copyrights, trade secrets (such as know-how), license agreements, confidentiality agreements and procedures, non-disclosure agreements, invention disclosure and assignment agreements and other contractual rights and obligations.

Our patent strategy is focused on seeking coverage for our core technology, our digital sequencing platform, and specific follow-on applications and implementations for detecting and monitoring cancer or other diseases by determining genetic variations in patient samples. In addition, we file for patent protection in connection with our on-going research and development activities, particularly those related to early-stage cancer detection, including those based on pattern recognition based on analyzing our extensive patient blood sample database, among others.

Our patent portfolio includes owned and licensed patents and patent applications, generally falling into three broad categories:

- issued patents and patent applications relating to our digital sequencing platform, including claims directed to methods for sequencing cell-free DNA, identifying CNVs, SNVs, indels and fusions in cell-free DNA and techniques for enriching nucleic acid samples;
- issued patents and patent applications relating to detecting and monitoring cancer and other diseases by determining genetic variations in biological samples; and
- issued patents and patent applications relating to early-stage cancer detection.

Issued U.S. patents and their international counterparts currently in our patent portfolio that relate to various aspects of our technology and products are expected to expire between 2026 and 2039.

We also bolster our proprietary technology by acquiring or in-licensing technologies developed by third parties. While we developed our digital sequencing platform internally, we believe the technologies we in-licensed from third parties, which mostly relate to improvements to next-generation sequencing technologies, are potentially valuable and of possible strategic importance to us or our competitors. Under some of our in-license agreements, we are obligated to pay low single-digit percentage running royalties on net sales of the product or service where the licensed technology is used in, subject to minimum annual royalties or fees for certain of the in-license agreements.

Our customers and partners recognize us as being a leader in the liquid biopsy field. Thus, just as patent and trade secret protection is essential to protecting our technology, we believe that it is equally as important for us to protect our brand and identity. We have filed for trademark protection in our name, logo and products globally, in the United States, Australia, South America, Europe and Asia.

We intend to pursue additional intellectual property protection to the extent we believe it would advance our business objectives. Despite our efforts to protect our intellectual property rights, however, we may not be successful and our intellectual property rights may be invalidated, circumvented or challenged and found unenforceable. In addition, laws of various foreign countries where our products are or expected to be sold may not protect our intellectual property rights to the same extent as laws in the United States.

We also rely on trade secrets, including know-how, to protect our unpatented technology and other proprietary information, and to maintain and strengthen our competitive position. We have determined that certain technologies, such as aspects of our sample preparation methods and some bioinformatic analysis techniques, are better kept as trade secrets. To mitigate the chance of trade secret misappropriation, it is our policy to enter into nondisclosure and confidentiality agreements with parties who have access to our trade secrets, such as our employees, collaborators, outside scientific collaborators, consultants, advisors and other third parties. We also enter into invention disclosure and assignment agreements with our employees and consultants that obligate them to assign to us any inventions they have developed while working for us.

Government regulations

Federal and state laboratory licensing requirements

Under CLIA, a laboratory is any facility that performs laboratory testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease, or the impairment of or assessment of health. CLIA requires that a laboratory hold a certificate applicable to the type of laboratory examinations it performs and that it complies with, among other things, standards covering operations, personnel, facilities administration, quality systems and proficiency testing, which are intended to ensure, among other things, that clinical laboratory testing services are accurate, reliable and timely.

To renew our CLIA certificate, we are subject to survey and inspection every two years to assess compliance with program standards. Because we are a CAP accredited laboratory, CMS does not perform this survey and inspection and relies on our CAP survey and inspection. We also may be subject to additional unannounced inspections. Laboratories performing high complexity testing are required to meet more stringent requirements than laboratories performing less complex tests. In addition, a laboratory that is certified as "high complexity" under CLIA may develop, manufacture, validate and use proprietary tests referred to as LDTs. CLIA requires analytical validation including accuracy, precision, specificity, sensitivity and establishment of a reference range for any LDT used in clinical testing. The regulatory and compliance standards applicable to any testing we perform may change over time and any such changes could have a material effect on our business.

CLIA provides that a state may adopt laboratory regulations that are more stringent than those under federal law, and a number of states have implemented their own more stringent laboratory regulatory requirements. For example, state laws may require that nonresident laboratories, or out-of-state laboratories, maintain an in-state laboratory license to perform tests on samples from patients who reside in that state. As a condition of state licensure, these state laws may require that laboratory personnel meet certain qualifications, specify certain quality control procedures or facility requirements or prescribe record maintenance requirements. Because our laboratory is located in the State of California, we are required to and do maintain a California state laboratory license. We maintain a current license with NYSDOH for our laboratory. In addition, our laboratory is licensed in a few states where nonresident laboratories are required to obtain state laboratory licenses under certain circumstances, including Florida, Maryland, Pennsylvania and Rhode Island. Other states may currently have or adopt similar licensure requirements in the future, which may require us to modify, delay or stop its operations in those states.

Failure to comply with CLIA certification and state clinical laboratory licensure requirements may result in a range of enforcement actions, including certificate or license suspension, limitation, or revocation, directed plan of action, onsite monitoring, civil monetary penalties, criminal sanctions, and revocation of the laboratory's approval to receive Medicare and Medicaid payment for its services, as well as significant adverse publicity.

CLIA and state laws and regulations, operating together, sometimes limit the ability of laboratories to offer consumer-initiated testing (also known as "direct access testing"). CLIA certified laboratories are permitted to perform testing only upon the order of an "authorized person," defined as an individual authorized under state law to order tests or receive test results, or both. Many states do not permit persons other than licensed healthcare providers to order tests. We currently do not offer direct access testing and our CLIA tests may only be ordered by authorized healthcare providers.

Regulatory framework for medical devices in the United States

Pursuant to its authority under the Federal Food, Drug and Cosmetic Act, or the FDCA, the FDA has jurisdiction over medical devices, which are defined to include, among other things, in vitro diagnostic devices, or IVDs. The FDA regulates, among other things, the research, design, development, pre-clinical and clinical testing, manufacturing, safety, effectiveness, packaging, labeling, storage, recordkeeping, pre-market clearance or approval, adverse event reporting, marketing, advertising and promotion activities, sales, distribution and import and export of medical devices to ensure that medical devices distributed domestically are safe and effective for their intended uses and otherwise meet the requirements of the FDCA. Unless an exemption applies, each new or significantly modified medical device we seek to commercially distribute in the United States will require either a premarket notification to the FDA requesting permission for commercial distribution under Section 510(k) of the FDCA, also referred to as a 510(k) clearance, or approval from the FDA of a premarket approval application, or PMA. Both the 510(k) clearance and PMA processes can be resource intensive, expensive, and lengthy, and require payment of significant user fees.

Device classification

Under the FDCA, medical devices are classified into one of three classes-Class I, Class II or Class III-depending on the degree of risk associated with each medical device and the extent of control needed to provide reasonable assurances with respect to safety and effectiveness.

Class I includes devices with the lowest risk to the patient and are those for which safety and effectiveness can be reasonably assured by adherence to a set of FDA regulations, referred to as the General Controls for Medical Devices, which require compliance with the applicable portions of the FDA's quality system regulation, or QSR, facility registration and product listing, reporting of adverse events and malfunctions, and appropriate, truthful and non-misleading labeling and promotional materials. Some Class I devices also require premarket clearance by the FDA through the 510(k) premarket notification process described below. Most Class I products are exempt from the premarket notification requirements.

Class II devices are those that are subject to the General Controls, as well as special controls as deemed necessary by the FDA to ensure the safety and effectiveness of the device. These special controls can include performance standards, patient registries, FDA guidance documents and post-market surveillance. Most Class II devices are subject to premarket review and clearance by the FDA. Premarket review and clearance by the FDA for Class II devices is accomplished through the 510(k) premarket notification process.

Class III devices include devices deemed by the FDA to pose the greatest risk such as life-supporting or life-sustaining devices, or implantable devices, in addition to those deemed novel and not substantially equivalent following the 510(k) process. The safety and effectiveness of Class III devices cannot be reasonably assured solely by the General Controls and special controls described above. Therefore, these devices are subject to the PMA process, which is generally more costly and time-consuming than the 510(k) process. As part of the PMA process, the applicant must submit data and information demonstrating reasonable assurance of the safety and effectiveness of the device for its intended use to the FDA's satisfaction. Accordingly, a PMA typically includes, but is not limited to, extensive technical information regarding device design and development, pre-clinical and clinical study data, manufacturing information, labeling and financial disclosure information for the clinical investigators in device studies. A PMA must also provide valid scientific evidence that demonstrates to the FDA's satisfaction a reasonable assurance of the safety and effectiveness of the device for its intended use.

The 510(k) clearance process

Under the 510(k) clearance process, the manufacturer must submit to the FDA a premarket notification, demonstrating that the device is "substantially equivalent" to a legally marketed predicate device. A predicate device is a legally marketed device that is not subject to a PMA, i.e., a device that was legally marketed prior to May 28, 1976 (pre-amendments device) and for which a PMA is not required, a device that has been reclassified from Class III to Class II or I, or a device that was previously found substantially equivalent through the 510(k) process. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics and not raise different questions of safety or effectiveness than the predicate device. Clinical data is sometimes required to support substantial equivalence.

After a 510(k) premarket notification is submitted, the FDA determines whether to accept it for substantive review. If it lacks necessary information for substantive review, the FDA will refuse to accept the 510(k) notification. If it is accepted for filing, the FDA begins a substantive review. By statute, the FDA is required to complete its review of a 510(k) notification within 90 days of receiving the 510(k) notification. As a practical matter, clearance often takes longer, and clearance is never assured. Although many 510(k) premarket notifications are cleared without clinical data, the FDA may require further information, including clinical data, to make a determination regarding substantial equivalence, which may significantly prolong the review process. If the FDA agrees that the device is substantially equivalent, it will grant clearance to commercially market the device.

If the FDA determines that the device is not "substantially equivalent" to a predicate device, or if the device is automatically classified into Class III, the device sponsor must then fulfill the much more rigorous pre-marketing requirements of the PMA approval process, or seek reclassification of the device through the *de novo* process. The *de novo* classification process is an alternate pathway to classify medical devices that are automatically classified into Class III but which are low to moderate risk. A manufacturer can submit a petition for direct *de novo* review if the manufacturer is unable to identify an appropriate predicate device and the new device or new use of the device

presents a moderate or low risk. *De novo* classification may also be available after receipt of a "not substantially equivalent" letter following submission of a 510(k) to FDA.

After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a new or major change in its intended use, will require a new 510(k) clearance or, depending on the modification, could require a PMA or *de novo* request. The FDA requires each manufacturer to determine whether the proposed change requires a new submission in the first instance, but the FDA can review any such decision and disagree with a manufacturer's determination. Many minor modifications are accomplished by a letter-to-file in which the manufacture documents the change in an internal letter-to-file. The letter-to-file is in lieu of submitting a new 510(k) to obtain clearance for such change. The FDA can always review these letters to file in an inspection. If the FDA disagrees with a manufacturer's determination regarding whether a new premarket submission is required for the modification of an existing 510(k)-cleared device, the FDA can require the manufacturer to cease marketing and/or recall the modified device until 510(k) clearance or approval of a PMA is obtained or a *de novo* request is granted. In addition, in these circumstances, the FDA can impose significant regulatory fines or penalties for failure to submit the requisite application(s).

In addition, over the last several years, the FDA has proposed reforms to its 510(k) clearance process, and such proposals could include increased requirements for clinical data and a longer review period, or could make it more difficult for manufacturers to utilize the 510(k) clearance process for their products. For example, in November 2018, FDA officials announced steps that the FDA intended to take to modernize the premarket notification pathway under Section 510(k) of the FDCA. Among other things, the FDA announced that it planned to develop proposals to drive manufacturers utilizing the 510(k) pathway toward the use of newer predicates. These proposals included plans to potentially sunset certain older devices that were used as predicates under the 510(k) clearance pathway, and to potentially publish a list of devices that have been cleared on the basis of demonstrated substantial equivalence to predicate devices that are more than 10 years old. These proposals have not yet been finalized or adopted, and the FDA may work with Congress to implement such proposals through legislation.

In September 2019, the FDA issued revised final guidance describing an optional "safety and performance based" premarket review pathway for manufacturers of "certain, well-understood device types" to demonstrate substantial equivalence under the 510(k) clearance pathway by showing that such device meets objective safety and performance criteria established by the FDA, thereby obviating the need for manufacturers to compare the safety and performance of their medical devices to specific predicate devices in the clearance process. The FDA has developed and maintain a list device types appropriate for the "safety and performance based" pathway and continues to develop product-specific guidance documents that identify the performance criteria for each such device type, as well as recommended testing methods, where feasible.

The PMA process

We currently market our Guardant360 CDx test pursuant to an approved PMA. The PMA process is more demanding than the 510(k) premarket notification process. In a PMA, the manufacturer must demonstrate that the device is safe and effective, and the PMA must be supported by extensive data, including data from preclinical studies and human clinical studies. The PMA must also contain a full description of the device and its components, a full description of the methods, facilities, and controls used for manufacturing, and proposed labeling. Following receipt of a PMA, the FDA conducts an administrative review to determine whether the application is sufficiently complete to permit a substantive review. If it is not, the agency will refuse to file the PMA. If it is, the FDA will accept the application for filing and begin the review. The FDA has 180 days to review a filed PMA, although the review of an application more often occurs over a significantly longer period of time. During this review period, the FDA may request additional information or clarification of information already provided and may issue a major deficiency letter to the applicant, requesting the applicant's response to deficiencies communicated by the FDA.

Before approving or denying a PMA, an FDA advisory committee may review the PMA at a public meeting and provide the FDA with the committee's recommendation on whether the FDA should approve the submission, approve it with specific conditions, or not approve it. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Prior to approval of a PMA, the FDA may conduct inspections of the clinical study data and clinical study sites, as well as inspections of the manufacturing facility and processes. Overall, the FDA review of a PMA generally takes between one and three years but may take significantly longer.

If the FDA evaluation of a PMA is favorable, the FDA will issue either an approval order, or an approvable letter, the latter of which usually contains a number of conditions that must be met in order to secure final approval of the

PMA. When and if those conditions have been fulfilled to the satisfaction of the FDA, the agency will issue a PMA approval letter authorizing commercial marketing of the device, subject to the conditions of approval and the limitations established in the approval letter. If the FDA's evaluation of a PMA or manufacturing facilities is not favorable, the FDA will deny approval of the PMA or issue a not approvable letter. The FDA may also determine that additional tests or clinical studies are necessary, in which case the PMA approval may be delayed for several months or years while the studies are conducted and data is submitted in an amendment to the PMA, or the PMA is withdrawn and resubmitted when the data are available. The PMA process can be expensive, uncertain and lengthy and a number of devices for which the FDA approval has been sought by other companies have never been approved for marketing.

In approving a PMA, as a condition of approval, the FDA may require some form of post-approval study or post-market surveillance, whereby the applicant conducts a follow-up study or follows certain patient groups for a number of years and makes periodic reports to the FDA on the clinical status of those patients when necessary to protect the public health or to provide additional or longer term safety and effectiveness data for the device. The FDA may also approve a PMA with other post-approval conditions intended to ensure the safety and effectiveness of the device, such as restrictions on labeling, promotion, sale, distribution and use. New PMAs or PMA supplements may also be required for modifications to approved diagnostic tests, including modifications to manufacturing processes, device labeling and device design, based on the findings of post-approval studies. Failure to comply with the conditions of approval can result in material adverse enforcement action, including withdrawal of the approval.

Certain changes to an approved device, such as changes in manufacturing facilities, methods, or quality control procedures, or changes in the design performance specifications, which could affect the safety or effectiveness of the device, require submission of a PMA supplement. PMA supplements often require submission of the same type of information as a PMA, except that the supplement is limited to information needed to support any changes from the device covered by the original PMA and may not require as extensive clinical data or the convening of an advisory panel. Certain other changes to an approved device require the submission of a new PMA, such as when the design change causes a different intended use, mode of operation, and technical basis of operation, or when the design change is so significant that a new generation of the device will be developed, and the data that were submitted with the original PMA are not applicable for the change in demonstrating a reasonable assurance of safety and effectiveness.

The IDE process

Clinical studies are almost always required to support a PMA or a *de novo* request, and are sometimes required to support 510(k) submissions. All clinical investigations of devices to determine safety and effectiveness must be conducted in accordance with the FDA's investigational device exemption, or IDE, regulations which govern investigational device labeling, prohibit promotion of the investigational device, and specify an array of recordkeeping, reporting and monitoring responsibilities of study sponsors and study investigators. If the device presents a "significant risk" to human health, as defined by the FDA, the FDA requires the device sponsor to submit an IDE application to the FDA, which must become effective prior to commencing human clinical studies. If the device under evaluation does not present a significant risk to human health, then the device sponsor is not required to submit an IDE application to the FDA before initiating human clinical studies, but must still comply with abbreviated IDE requirements when conducting such studies. A significant risk device is one that presents a potential for serious risk to the health, safety or welfare of a patient and either is implanted, used in supporting or sustaining human life, substantially important in diagnosing, curing, mitigating or treating disease or otherwise preventing impairment of human health, or otherwise presents a potential for serious risk to a subject. An IDE application must be supported by appropriate data, such as animal and laboratory test results, showing that it is safe to test the device in humans and that the testing protocol is scientifically sound. The IDE will automatically become effective 30 days after receipt by the FDA unless the FDA notifies the company that the investigation may not begin. If the FDA determines that there are deficiencies or other concerns with an IDE for which it requires modification, the FDA may permit a clinical study to proceed under a conditional approval.

Regardless of the degree of risk presented by the medical device, clinical studies must be approved by, and conducted under the oversight of, an Institutional Review Board, or IRB, for each clinical site. The IRB is responsible for the initial and continuing review of the IDE, and may pose additional requirements for the conduct of the study. If an IDE application is approved by the FDA and one or more IRBs, human clinical studies may begin at a specific number of investigational sites with a specific number of patients, as approved by the FDA. If the device presents a non-significant risk to the patient, a sponsor may begin the clinical study after obtaining approval for the study by one or more IRBs without separate approval from the FDA, but must still follow abbreviated IDE

requirements, such as monitoring the investigation, ensuring that the investigators obtain informed consent, and labeling and record-keeping requirements. Acceptance of an IDE application for review does not guarantee that the FDA will allow the IDE to become effective and, if it does become effective, the FDA may or may not determine that the data derived from the studies support the safety and effectiveness of the device or warrant the continuation of clinical studies. An IDE supplement must be submitted to, and approved by, the FDA before a sponsor or investigator may make a change to the investigational plan that may affect its scientific soundness, study plan or the rights, safety or welfare of human subjects.

During a study, the sponsor is required to comply with the applicable FDA requirements, including, for example, study monitoring, selecting clinical investigators and providing them with the investigational plan, ensuring IRB review, adverse event reporting, record keeping and prohibitions on the promotion of investigational devices or on making safety or effectiveness claims for them. The clinical investigators in the clinical study are also subject to FDA's regulations and must obtain patient informed consent, rigorously follow the investigational plan and study protocol, control the disposition of the investigational device, and comply with all reporting and recordkeeping requirements. Additionally, after a study begins, the sponsor, the FDA or the IRB could suspend or terminate a clinical study at any time for various reasons, including a belief that the risks to study subjects outweigh the anticipated benefits.

Expedited development and review programs

Following passage of the 21st Century Cures Act, the FDA implemented the Breakthrough Devices Program, which is a voluntary program offered to manufacturers of certain medical devices and device-led combination products that may provide for more effective treatment or diagnosis of life-threatening or irreversibly debilitating diseases or conditions. The goal of the program is to provide patients and health care providers with more timely access to qualifying devices by expediting their development, assessment and review, while preserving the statutory standards for PMA approval, 510(k) clearance and *de novo* classification. The program is available to medical devices that meet certain eligibility criteria, including that the device provides more effective treatment or diagnosis of life-threatening or irreversibly debilitating diseases or conditions, and that the device meets one of the following criteria: (i) the device represents a breakthrough technology, (ii) no approved or cleared alternatives exist, (iii) the device offers significant advantages over existing approved or cleared alternatives, or (iv) the availability of the device is in the best interest of patients. Breakthrough Device designation provides certain benefits to device developers, including more interactive and timely communications with FDA staff, use of postmarket data collection, when scientifically appropriate, to facilitate expedited and efficient development and review of the device, opportunities for efficient and flexible clinical study design, and prioritized review of premarket submissions.

FDA regulation of laboratory developed tests

Although the FDA has statutory authority to assure that medical devices, including IVDs, are safe and effective for their intended uses, the FDA has generally exercised its enforcement discretion and not enforced applicable regulations with respect to in vitro diagnostics that are designed, manufactured, and used within a single laboratory for use only in that laboratory. We believe certain of our diagnostic testing products qualify as LDTs subject to the FDA's enforcement discretion.

Legislative and administrative proposals to clarify or amend FDA's oversight of LDTs have been introduced in recent years and we expect that new legislative and administrative proposals regarding the regulation of LDTs will continue to be introduced from time to time. It is possible that legislation could be enacted into law or regulations or guidance could be issued by the FDA which may result in new or increased regulatory requirements for us to continue to offer our LDTs or to develop and introduce new tests as LDTs. For example, in recent years, FDA has stated its intention to modify its enforcement discretion policy with respect to LDTs. Specifically, on July 31, 2014, the FDA notified Congress of its intent to modify, in a risk-based manner, its policy of enforcement discretion with respect to LDTs. On October 3, 2014, the FDA issued two draft guidance documents titled "Framework for Regulatory Oversight of Laboratory Developed Tests (LDTs)," or the Framework Guidance, and "FDA Notification and Medical Device Reporting for Laboratory Developed Tests (LDTs)," or the Reporting Guidance. The Framework Guidance stated that FDA intends to modify its policy of enforcement discretion with respect to LDTs in a risk-based manner consistent with the classification of medical devices generally in Classes I through III. The Reporting Guidance would have further enabled FDA to collect information regarding the LDTs currently being offered for clinical use through a notification process, as well as to enforce its regulations for reporting safety issues and collecting information on any known or suspected adverse events related to the use of an LDT.

On November 18, 2016, the FDA announced that it would not finalize either guidance document to allow for further public discussion on an appropriate oversight approach to LDTs and to give Congressional authorizing committees the opportunity to develop a legislative solution, and the FDA issued a discussion paper on possible approaches to LDT regulation in January 2017. The FDA could ultimately modify its current approach to LDTs in a way that would subject LDTs to additional regulatory requirements. Moreover, legislative measures could likewise result in a change to the approach to FDA's regulation over LDTs, including a requirement for premarket review of LDTs, among other things.

Research use only or investigational use only devices

Some of our products are currently available for research use only, or RUO, or for investigational use only, or IUO, depending on the proposed application. An RUO device is an IVD that is in the laboratory research phase of development. RUO devices must bear prominent labeling stating: "For Research Use Only. Not for use in diagnostic procedures." An IUO device is an IVD that in the product testing phase of development. An IUO device must bear prominent labeling stating: "For Investigational Use Only. The performance characteristics of this product have not been established." Neither RUO or IUO devices may be used in clinical practice, and such devices cannot be advertised or promoted for clinical or diagnostic purposes. Devices that are intended for RUO or IUO and are properly labeled as RUO or IUO are exempt from compliance with the FDA requirements discussed above, including the approval or clearance and QSR requirements. A device labeled RUO or IUO but intended to be used diagnostically may be viewed by the FDA as adulterated and misbranded under the FDCA and is subject to FDA enforcement activities. The FDA may consider the totality of the circumstances surrounding distribution and use of an RUO or IUO device, including how the device is marketed, when determining its intended use.

FDA Regulation of Companion Diagnostics

If safe and effective use of drug or biologic depends on an *in vitro* diagnostic, then the FDA may require approval or clearance of that diagnostic, known as a companion diagnostic, at the same time that the FDA approves the therapeutic product. In August 2014, the FDA issued final guidance clarifying the requirements that will apply to approval of therapeutic products and in vitro companion diagnostics. According to the guidance, if the FDA determines that a companion diagnostic device is essential to the safe and effective use of a novel therapeutic product for that indication, the FDA may will not approve the drug or new indication if the companion diagnostic device is not also approved or cleared for that indication. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population.

Our Guardant 360 CDx test has been approved by the FDA for use as a companion diagnostic to identify NSCLC patients who may respond to certain therapies marketed by our biopharmaceutical customers.

Pervasive and continuing FDA regulation

After a device enters commercial distribution, numerous regulatory requirements continue to apply. These include:

- establishment registration and device listing with the FDA;
- the FDA's QSR, which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, production, control, supplier/contractor selection, complaint handling, documentation and other quality assurance procedures during all aspects of the manufacturing process;
- labeling regulations, unique device identification requirements and FDA prohibitions against the promotion of products for uncleared, unapproved or off-label uses;
- advertising and promotion requirements;
- restrictions on sale, distribution or use of a device;
- PMA annual reporting requirements;
- PMA approval of product modifications, or the potential for new 510(k) clearances for certain modifications to 510(k)-cleared devices;
- medical device reporting regulations, which require that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur;

- medical device correction and removal reporting regulations, which require that manufacturers report to the FDA field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FDCA that may present a risk to health;
- recall requirements, including a mandatory recall if there is a reasonable probability that the device would cause serious adverse health consequences or death;
- an order of repair, replacement or refund;
- device tracking requirements; and
- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and effectiveness data for the device.

The FDA has broad post-market and regulatory enforcement powers. Medical device manufacturers are subject to unannounced inspections by the FDA and other state, local and foreign regulatory authorities to assess compliance with the QSR and other applicable regulations, and these inspections may include the manufacturing facilities of any suppliers. Failure to comply with applicable regulatory requirements can result in enforcement action by the FDA, which may include sanctions such as: warning letters, fines, injunctions, consent decrees and civil penalties; unanticipated expenditures, repair, replacement, refunds, recall or seizure of our products; operating restrictions, partial suspension or total shutdown of production; the FDA's refusal of our requests for 510(k) clearance or premarket approval of new products, new intended uses or modifications to existing products; the FDA's refusal to issue certificates to foreign governments needed to export products for sale in other countries; and withdrawing 510(k) clearance or premarket approvals that have already been granted and criminal prosecution.

Foreign regulation of medical devices

Medical devices (including in vitro diagnostic medical devices) are subject to extensive regulation, such as premarket review, marketing authorization or certification, by similar agencies or notified bodies in other countries. Regulatory requirements and approval or certification processes are not harmonized and vary from one country to another. International regulators and notified bodies are independent and not bound by the findings of the FDA.

Regulation of Medical Devices in the EU

The EU has adopted specific directives and regulations regulating the design, manufacture, clinical investigations, conformity assessment, labeling and adverse event reporting for medical devices (including in vitro diagnostic medical devices).

In the EU, there is currently no premarket government review of medical devices (including in vitro diagnostic medical devices). However, the EU requires that all in vitro diagnostic medical devices placed on the market in the EU must meet the essential requirements of the EU In Vitro Diagnostic Medical Devices Directive (Directive 98/79/EC), or IVDD, including the requirement that an in vitro diagnostic medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the performances intended by the manufacturer and be designed, manufactured, and packaged in a suitable manner. The European Commission has adopted various standards applicable to medical devices. There are also harmonized standards relating to design and manufacture. While not mandatory, compliance with these standards is viewed as the easiest way to satisfy the essential requirements as a practical matter as it creates a rebuttable presumption that the device satisfies that essential requirement.

Compliance with the essential requirements of the IVDD is a prerequisite for European conformity marking, or CE mark, without which in vitro diagnostic medical devices cannot be marketed or sold in the EU. To demonstrate compliance with the essential requirements laid down in Annex I to the IVDD, medical device manufacturers must undergo a conformity assessment procedure, which varies according to the type of medical device and its (risk) classification. As a general rule, demonstration of conformity of in vitro diagnostic medical devices and their manufacturers with the essential requirements must be based, among other things, on the evaluation of clinical data supporting the safety and performance of the products during normal conditions of use. Specifically, a manufacturer must demonstrate that the device achieves its intended performance during normal conditions of use, that the known and foreseeable risks, and any adverse events, are minimized and acceptable when weighed against the benefits of its intended performance, and that any claims made about the performance and safety of the device are supported by suitable evidence. Except for (general) in vitro diagnostic medical devices (i.e., all in vitro diagnostic medical devices other than those covered by Annex II to the IVDD and in vitro diagnostic medical devices for self-testing),

where the manufacturer can self-declare the conformity of its products with the essential requirements, a conformity assessment procedure requires the intervention of a notified body. Notified bodies are independent organizations designated by EU member states to assess the conformity of devices before being placed on the market. A notified body would typically audit and examine a product's technical dossiers and the manufacturers' quality system (notified body must presume that quality systems which implement the relevant harmonized standards – which is ISO 13485:2016 for Quality Management Systems – conform to these requirements). If satisfied that the relevant product conforms to the relevant essential requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity. The manufacturer may then apply the CE mark to the device, which allows the device to be placed on the market throughout the EU. We have obtained CE mark for our Guardant360 CDx test and the non-CDx blood collection kit.

Throughout the term of the certificate of conformity, the manufacturer will be subject to periodic surveillance audits to verify continued compliance with the applicable requirements. In particular, there will be a new audit by the notified body before it will renew the relevant certificate(s).

All manufacturers placing in vitro diagnostic medical devices on the market in the EU must comply with the EU medical device vigilance system. Under this system, incidents must be reported to the relevant authorities of the EU member states, and manufacturers are required to take Field Safety Corrective Actions, or FSCAs, to reduce a risk of death or serious deterioration in the state of health associated with the use of an in vitro diagnostic medical device that is already placed on the market. An incident is defined as any malfunction or deterioration in the characteristics and/or performance of a device, as well as any inadequacy in the labeling or the instructions for use which, directly or indirectly, might lead to or might have led to the death of a patient or user or of other persons or to a serious deterioration in their state of health. An FSCA may include the recall, modification, exchange, destruction or retrofitting of the device. FSCAs must be communicated by the manufacturer or its legal representative to its customers and/or to the end users of the device through field safety notices.

The advertising and promotion of in vitro diagnostic medical devices is subject to some general principles set forth by EU directives. According to the IVDD, only devices that are CE marked may be marketed and advertised in the EU in accordance with their intended purpose. Directive 2006/114/EC concerning misleading and comparative advertising and Directive 2005/29/EC on unfair commercial practices, while not specific to the advertising of medical devices, also apply to the advertising thereof and contain general rules, for example requiring that advertisements are evidenced, balanced and not misleading. Specific requirements are defined at national level. EU member states laws related to the advertising and promotion of medical devices (including in vitro diagnostic medical devices), which vary between jurisdictions, may limit or restrict the advertising and promotion of products to the general public and may impose limitations on promotional activities with healthcare professionals.

Many EU member states have adopted specific anti-gift statutes that further limit commercial practices for medical devices (including in vitro diagnostic medical devices), in particular vis-à-vis healthcare professionals and organizations. Additionally, there has been a recent trend of increased regulation of payments and transfers of value provided to healthcare professionals or entities and many EU member states have adopted national "Sunshine Acts" which impose reporting and transparency requirements (often on an annual basis), similar to the requirements in the United States, on medical device manufacturers. Certain countries also mandate implementation of commercial compliance programs.

In the EU, regulatory authorities have the power to carry out announced and, if necessary, unannounced inspections of companies, as well as suppliers and/or sub-contractors and, where necessary, the facilities of professional users. Failure to comply with regulatory requirements (as applicable) could require time and resources to respond to the regulatory authorities' observations and to implement corrective and preventive actions, as appropriate. Regulatory authorities have broad compliance and enforcement powers and if such issues cannot be resolved to their satisfaction can take a variety of actions, including untitled or warning letters, fines, consent decrees, injunctions, or civil or criminal penalties.

The EU regulatory landscape concerning medical devices is evolving. On April 5, 2017 Regulation (EU) 2017/746 of the European Parliament and of the Council on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU, or IVDR, was adopted to establish a modernized and more robust EU legislative framework, with the aim of ensuring better protection of public health and patient safety. Unlike the IVDD, the IVDR is directly applicable in all EU member states without the need for member states to implement into national law. This aims at reducing the risk of discrepancies in interpretation across the different European markets. On October 14, 2021, the European Commission proposed a "progressive" roll-out of the IVDR to prevent

disruption in the supply of in vitro diagnostic medical devices. Consequently, if the European Parliament and Council adopt the proposed regulation, the IVDR will fully apply on May 26, 2022 but there will be a tiered system extending the grace period for many devices (depending on their risk classification) before they have to be fully compliant with the regulation.

The IVDR will become applicable five years after publication on May 26, 2022. Once applicable, the IVDR will among other things:

- strengthen the rules on placing devices on the market and reinforce surveillance once they are available;
- establish explicit provisions on manufacturers' responsibilities for the follow-up of the quality, performance and safety of devices placed on the market;
- establish explicit provisions on importers' and distributors' obligations and responsibilities;
- impose an obligation to identify a responsible person who is ultimately responsible for all aspects of compliance with the requirements of the new regulation;
- improve the traceability of medical devices throughout the supply chain to the end-user or patient through the introduction of a unique identification number, to increase the ability of manufacturers and regulatory authorities to trace specific devices through the supply chain and to facilitate the prompt and efficient recall of medical devices that have been found to present a safety risk;
- set up a central database (Eudamed) to provide patients, healthcare professionals and the public with comprehensive information on products available in the EU; and
- strengthen rules for the assessment of certain high-risk devices that may have to undergo an additional check by experts before they are placed on the market.

Regulation of Companion Diagnostics

In the EU, in vitro diagnostic medical devices are regulated by the IVDD which regulates the placing on the market, the CE marking, the essential requirements, the conformity assessment procedures, the registration obligations for manufactures and devices as well as the vigilance procedure. In vitro diagnostic medical devices must comply with the requirements provided for in the IVDD, and with further requirements implemented at national level (as the case may be).

The regulation of companion diagnostics will be subject to further requirements once the IVDR will become applicable on May 26, 2022. The IVDR introduces a new classification system for companion diagnostics which are now specifically defined as diagnostic tests that support the safe and effective use of a specific medicinal product, by identifying patients that are suitable or unsuitable for treatment. Companion diagnostics will have to undergo a conformity assessment by a notified body. Before it can issue a CE certificate, the notified body must seek a scientific opinion from the European Medicines Agency, or EMA, on the suitability of the companion diagnostic to the medicinal product concerned if the medicinal product falls exclusively within the scope of the centralized procedure for the authorization of medicines, or the medicinal product is already authorized through the centralized procedure, or a marketing authorization application for the medicinal product has been submitted through the centralized procedure. For other substances, the notified body can seek the opinion from a national competent authorities or the EMA.

The aforementioned EU rules are generally applicable in the European Economic Area, or EEA, which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland.

Brexit

Since January 1, 2021, the Medicines and Healthcare Products Regulatory Agency, or MHRA, has become the sovereign regulatory authority responsible for Great Britain (i.e. England, Wales and Scotland) medical device market according to the requirements provided in the Medical Devices Regulations 2002 (SI 2002 No 618, as amended) that sought to give effect to the three pre-existing EU directives governing active implantable medical devices, general medical devices and in vitro diagnostic medical devices whereas Northern Ireland continues to be governed by EU rules according to the Northern Ireland Protocol. Following the end of the Brexit transitional period on January 1, 2021, new regulations require medical devices to be registered with the MHRA (but manufacturers were given a grace period of four to 12 months to comply with the new registration process) before being placed on Great Britain market. The MHRA only registers devices where the manufacturer or their United Kingdom, or UK, Responsible Person has a registered place of business in the UK. Manufacturers based outside the UK need to appoint a UK Responsible Person that has a registered place of business in the UK to register devices with the

MHRA in line with the grace periods. By July 1, 2023, in Great Britain, all medical devices will require a UKCA, or UK Conformity Assessed, mark but CE marks issued by EU notified bodies will remain valid until this time. Manufacturers may choose to use the UKCA mark on a voluntary basis until June 30, 2023. However, UKCA marking will not be recognized in the EU. The rules for placing medical devices on the market in Northern Ireland, which is part of the UK, differ from those in the rest of the UK. Compliance with this legislation is a prerequisite to be able to affix the UKCA mark to our products, without which they cannot be sold or marketed in Great Britain.

An MHRA public consultation was opened until end of November 2021 on the post-Brexit regulatory framework for medical devices and diagnostics. MHRA seeks to amend the UK Medical Devices Regulations 2002 (which are based on EU legislation, primarily the EU Medical Devices Directive 93/42/EEC and the IVDD), in particular to create a new access pathways to support innovation, create an innovative framework for regulating software and artificial intelligence, or AI, as medical devices, reform IVD regulation, and foster sustainability through the reuse and remanufacture of medical devices. The regime is expected to come into force in July 2023, coinciding with the end of the acceptance period for EU CE marks in Great Britain, subject to appropriate transitional arrangements. The consultation indicated that the MHRA will publish guidance in relation to the changes to the regulatory framework and may rely more heavily on guidance to add flexibility to the regime.

In addition, the Trade Deal between the UK and the EU generally provides for cooperation and exchange of information between the parties in the areas of product safety and compliance, including market surveillance, enforcement activities and measures, standardization-related activities, exchanges of officials, and coordinated product recalls. As such, processes for compliance and reporting should reflect requirements from regulatory authorities.

Under the terms of the Northern Ireland Protocol, Northern Ireland follows EU rules on medical devices and devices marketed in Northern Ireland require assessment according to the EU regulatory regime. Such assessment may be conducted by an EU notified body, in which case a CE mark is required before placing the device on the market in the EU or Northern Ireland. Alternatively, if a UK notified body conducts such assessment, a 'UKNI' mark is applied and the device may only be placed on the market in Northern Ireland and not the EU.

Other foreign regulations

In February 2021, Guardant Health Japan, an affiliate of the Joint Venture with SoftBank, submitted an application to the MHLW, for regulatory approval of Guardant360 CDx. In December 2021, the MHLW granted regulatory approval of Guardant360 CDx in patients with advanced solid cancers. The Guardant360 CDx test was also granted approval as a companion diagnostic to identify patients with microsatellite instability-high (MSI-High) solid tumors who may benefit from Keytruda® (pembrolizumab) and patients with MSI-High advanced colorectal cancer who may benefit from Opdivo® (nivolumab). The MHLW additionally granted regulatory approval of the Guardant360 CDx liquid biopsy test as a companion diagnostic for identifying patients with metastatic NSCL cancer who may benefit from treatment with LUMAKRASTM (sotorasib), a *KRAS* G12C inhibitor developed and manufactured by Amgen.

To be sold in Japan, most medical devices must undergo thorough safety examinations and demonstrate medical efficacy before they are granted approval, or "shonin." The Japanese government, through the MHLW, regulates medical devices under the Pharmaceutical Affairs Law, or PAL. Oversight for medical devices is conducted with participation by the Pharmaceutical and Medical Devices Agency, or PMDA, a quasi-government organization performing many of the review functions for the MHLW. Penalties for a company's noncompliance with PAL can be severe, including revocation or suspension of a company's business license and criminal sanctions. The MHLW and PMDA also assess the quality management systems of the manufacturer and product conformity to the requirements of the PAL. We are subject to compliance inspections by these agencies.

We will seek approvals in other countries as may be required in the future.

Federal and state fraud and abuse laws

We are subject to federal fraud and abuse laws such as the federal Anti-Kickback Statute, or AKS, the federal Eliminating Kickbacks in Recovery Act, or EKRA, the federal prohibition against physician self-referral, or Stark Law, and the federal false claims law, or the False Claims Act, or FCA. We are also subject to similar state and foreign fraud and abuse laws.

The AKS prohibits knowingly and willfully offering, paying, soliciting, or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind, in return for or to induce such person to refer an individual, or to purchase, lease, order, arrange for, or recommend purchasing, leasing or ordering, any good, facility, item or service that is reimbursable, in whole or in part, under a federal healthcare program. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the government may assert that a claim including items or services resulting from an AKS violation constitutes a false or fraudulent claim for purposes of the False Claims Act.

The EKRA prohibits knowingly and willfully soliciting or receiving any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, in return for referring a patient or patronage to a laboratory; or paying or offering any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, to induce a referral of an individual to a laboratory or in exchange for an individual using the services of that laboratory. The EKRA applies to all payers including commercial payers and government payers, and EKRA violations result in significant fines and/or up to 10 years in jail, separate and apart from existing AKS regulations.

The Stark Law and similar state laws, including California's Physician Ownership and Referral Act, generally prohibit, among other things, clinical laboratories and other entities from billing a patient or any governmental or commercial payer for any diagnostic services when the physician ordering the service, or any member of such physician's immediate family, has a direct or indirect investment interest in or compensation arrangement with us, unless the arrangement meets an exception to the prohibition.

Other federal fraud and abuse laws to which we are subject include but are not limited to the federal civil and criminal false claims laws including the FCA, which imposes liability on any person or entity that, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment to the federal government, and the federal Civil Monetary Penalties Law, which prohibits, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies. Under the FCA, private citizens can bring claims on behalf of the government through qui tam actions. We must also operate within the bounds of the fraud and abuse laws of the states in which we do business which may apply to items or services reimbursed by non-governmental third-party payers, including private insurers.

In addition, the Physician Payments Sunshine Act imposes, among other things, reporting requirements on manufacturers of certain devices, drugs and biologics for certain payments and transfers of value by them and in some cases their distributors to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other health care providers beginning in 2022, and teaching hospitals, as well as ownership and investment interests held by physicians (as defined by the statute) and their immediate family members. Manufacturers must submit reports by the 90th day of each calendar year. Because we manufacture our own LDTs solely for use by or within our own laboratory, we believe that we are currently exempt from these reporting requirements.

Efforts to ensure that our business arrangements with third parties comply with applicable laws and regulations will involve substantial costs. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion from government-funded healthcare programs, such as Medicare and Medicaid, disgorgement, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with the law and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. If any physicians or other healthcare providers or entities with whom we do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government-funded healthcare programs.

Data Privacy and Security

Under the administrative simplification provisions of the Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, the U.S. Department of Health and Human Services, or HHS, issued regulations that establish uniform standards governing the conduct of certain electronic healthcare transactions and requirements for protecting the privacy and security of protected health information, or PHI, used or disclosed by covered entities. Covered entities and their business associates are subject to HIPAA and HITECH. Because we are a health care provider that electronically transmits health care information to payers, we are a covered entity under HIPAA. Our subcontractors

that create, receive, maintain or transmit or otherwise process PHI on our behalf must also comply with HIPAA as business associates thereunder.

HIPAA and HITECH include the privacy and security rules, breach notification requirements and electronic transaction standards. The privacy rule covers the use and disclosure of PHI by covered entities and business associates. The privacy rule generally prohibits the use or disclosure of PHI except as permitted under the rule. The rule also sets forth individual patient rights, such as the right to access or amend certain records containing his or her PHI, or to request restrictions on the use or disclosure of his or her PHI. The security rule requires covered entities and business associates to safeguard the confidentiality, integrity, and availability of electronically transmitted or stored PHI by implementing administrative, physical and technical safeguards. Under HITECH's breach notification rule, a covered entity must notify individuals, the Secretary of the HHS, and in some circumstances, the media of breaches of unsecured PHI.

If they are found to be in violation of HIPAA as the result of a breach of unsecured PHI, a complaint about their privacy practices or an audit by HHS, entities may be subject to significant civil and criminal fines and penalties and/or additional reporting and oversight obligations if such entities are required to enter into a resolution agreement and corrective action plan with HHS to settle allegations of HIPAA non-compliance.

In addition, we may be subject to state data privacy, security and data breach notification laws, which may govern the collection, use, disclosure and protection of health-related and other personal information. State laws may be more stringent, broader in scope or offer greater individual rights with respect to PHI than HIPAA. California, for example, has enacted the Confidentiality of Medical Information Act, which sets forth standards in addition to HIPAA and HITECH with which all California health care providers like us must abide. Further, laws in all 50 states require businesses to provide notice to individuals whose personally identifiable information has been disclosed as a result of a data breach. The laws are not consistent, and compliance in the event of a widespread data breach is costly. States are also constantly amending existing laws, and creating new data privacy and security laws, requiring attention to frequently changing regulatory requirements. For example, the California Consumer Privacy Act, or the CCPA, went into effect January 1, 2020. The CCPA contains certain disclosure obligations for businesses that collect personal information about California residents and affords those individuals new rights relating to their personal information that may affect our ability to use personal information. The CCPA authorizes private lawsuits to recover statutory damages for certain data breaches. Although the CCPA exempts PHI regulated by HIPAA and certain data regarding clinical studies, the CCPA, to the extent applicable to our business and operations, may increase our compliance costs and potential liability with respect to other personal information we maintain about California residents. Further, the California Privacy Rights Act, or the CPRA, recently passed in California. The CPRA will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. . Similar laws have passed in Virginia and Colorado, and have been proposed in other states and at the federal level, reflecting a trend toward more stringent privacy legislation in the United States. Complying with these various state laws and regulations, which may differ from state to state, requires significant resources and may complicate our compliance efforts. Failure to comply with these laws, where applicable, can result in the imposition of significant civil and/or criminal penalties and private litigation. Privacy and security laws, regulations, and other obligations are constantly evolving, may conflict with each other to make compliance efforts more challenging, and can result in investigations, proceedings, or actions that lead to significant penalties and restrictions on data processing.

U.S. healthcare reform

In the United States, there have been a number of legislative and regulatory changes at the federal and state levels which seek to reduce healthcare costs and improve the quality of healthcare. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or the ACA, became law. The ACA substantially changed the way healthcare is financed by both commercial and government payers and contains a number of provisions expected to impact our business and operations, some of which in ways we cannot currently predict, including those governing enrollment in federal and state healthcare programs, reimbursement changes and fraud and abuse.

Since its enactment, there have been efforts to repeal all or part of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling

on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, reduced Medicare payments to providers by 2% per fiscal year, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through March 31, 2021, unless additional Congressional action is taken.

We anticipate there will continue to be proposals by legislators at both the federal and state levels, regulators and commercial payers to reduce costs while expanding individual healthcare benefits. Changes in healthcare coverage landscape could impose additional limitations on the prices we will be able to charge for our tests, the coverage of or the amounts of reimbursement available for our tests from payers, including commercial and government payers.

Employees and Human Capital

Our Employees and Commitment to Diversity, Equity and Inclusion

As of December 31, 2021, we had 1,373 full-time employees, of which approximately 1,354 are in the U.S., with the remainder in Europe and Canada. We have also engaged and may continue to engage independent contractors to assist us with our operations. None of our employees are represented by a labor union or covered by a collective bargaining agreement, except as required by local laws such as in some European countries, and we have never experienced any employment-related work stoppages. We also track voluntary and involuntary turnover rates, conduct frequent employee engagement surveys, and consider relations with our employees to be good.

As part of our mission to conquer cancer, we continue to advance our environmental, social and governance efforts, including enhancing the diversity and inclusiveness of our workplace. We believe that diversity of backgrounds and ideas inspires creativity and helps us create the innovative technologies that patients need. We appreciate one another's differences and strengths and we are proud to be an equal opportunity employer. We do not discriminate on the basis of race, religion, color, sex, gender identity, sexual orientation, age, non-disqualifying physical or mental disability, national origin, veteran status or any other basis covered by applicable law. All employment is decided on the basis of qualifications, merit, and business need. Further, we have policies in place that prohibit harassment of all kinds. We maintain an inclusive culture where all employees feel empowered to be their authentic selves. We respect and appreciate each employee's unique perspective and experiences, and value their contribution to our mission. It is important that we celebrate, encourage and support similarities and differences to drive innovation for the benefit of our employees, patients and community.

We are proud to employ a diverse workforce that, as of December 31, 2021, was 56% racially/ethnically diverse and 55% female. For leadership positions across the company, which is defined as director level and above, 34% self-identified as racially/ethnically diverse and 38% self-identified as women. In 2021, we added two women to our Board of Directors, and as of December 31, 2021, women held 57% of the independent director seats on our Board.

Culture, Compensation and Benefits

We strive to recruit, hire and retain a talented and diverse team of people who align with our values. Our employees are supported with training and development opportunities to pursue their career paths and ensure compliance with our policies. Our compensation and benefits team strive to develop and implement policies and programs that support our business goals, maintain competitiveness, promote shared fiscal responsibility among our employees, strategically align talent within our organization and reward performance, while also managing the costs of such policies and programs. In order to ensure that we are meeting our human capital objectives, we frequently utilize employee engagement surveys to understand the effectiveness of our employee development and compensation programs and where we can improve across the company. We regularly evaluate our compensation programs with an independent compensation consultant and utilize industry benchmarking in an effort to ensure they are competitive compared to similar biotechnology and biopharmaceutical companies with which we compete for talent, as well as fair and equitable across our workforce with respect to gender, race and other personal characteristics.

We are committed to rewarding, supporting, and developing the employees who make it possible to deliver on our strategy. To that end, we offer a comprehensive total rewards package that includes market-competitive fixed and/or variable pay, broad-based equity grants and bonuses, access to medical, dental, vision and life insurance benefits, disability coverage, fertility subsidies, retirement savings plans, paid time off and family leave, caregiving support, fitness, cellphone and internet reimbursements, and mental health and other wellness benefits. In recognition of the new challenges the COVID-19 pandemic brought, we took various steps to support our employees, including providing free on-site and at-home COVID-19 tests to our employees, deep cleaning our facilities, providing personal protective equipment to our laboratory and scientific employees, implementing additional safety measures advised by health authorities, restricting business travel and site visitors and implementing remote working for all non-essential laboratory related employees. In addition, we have provided unlimited sick leave for employees who were quarantined, sick or needed to provide care for their families due to COVID-19. Further, despite the impact of the COVID-19 pandemic, we have not cut salaries or hourly rates for any employees.

Available information

Our website is located at *https://guardanthealth.com*. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including their exhibits, proxy and information statements, and amendments to those reports filed or furnished pursuant to Sections 13(a), 14, and 15(d) of the Securities Exchange Act of 1934, as amended, are available through the "Investors" portion of our website free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information on our website is not part of this Annual Report on Form 10-K or any of our other securities filings unless specifically incorporated herein by reference. In addition, our filings with the SEC may be accessed through the SEC's Interactive Data Electronic Applications system at *http://www.sec.gov.* All statements made in any of our securities filings, including all forward-looking statements or information, are made as of the date of the document in which the statement is included, and we do not assume or undertake any obligation to update any of those statements or documents unless we are required to do so by law.

Item 1A. Risk Factors

Set forth below is only a summary of the principal risks associated with our business. You should consider carefully the following discussion of risks, as well as the full discussion of risks included in this Annual Report on Form 10-K.

- We have incurred significant losses since inception, we may continue to incur losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.
- We may not be able to generate sufficient revenue to achieve and maintain profitability and our current or future products may not achieve or maintain sufficient commercial market acceptance.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- New product development and commercialization involve a lengthy and complex process and we may be unable to develop or commercialize new products on a timely basis, or at all.
- Our current revenue is primarily generated from sales of our tests and we are highly dependent on them for our success.
- If our products, or our competitors' liquid or tissue biopsy-based products, do not meet the expectations of patients and our customers, our operating results, reputation and business could suffer.
- If we are unable to support demand for our current and future products, including ensuring that we have adequate capacity to meet increased demand, or we are unable to successfully manage our anticipated growth, our business could suffer.
- We rely on a limited number of suppliers or sole suppliers for some of our laboratory instruments and materials and may not be able to find replacements or promptly transition to alternative suppliers.
- If we cannot maintain our current relationships, or enter into new relationships, with biopharmaceutical companies, our revenue prospects could be reduced.
- If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue or to achieve and then sustain profitability.
- We have experienced challenges attracting and retaining qualified personnel due to competitive labor markets and may continue to do so, and may be unable to manage our future growth effectively, all of which could make it difficult to execute our business strategy.
- We conduct business in a heavily regulated industry, and changes in regulations or violations of regulations may, directly or indirectly, reduce our revenue, adversely affect our operations and financial condition, and harm our business.
- Certain of our tests are currently marketed as LDTs, and future changes in FDA enforcement discretion for LDTs could subject our product offerings to more significant regulatory requirements.
- If third-party payers, including commercial payers and government healthcare programs, do not provide coverage of, or adequate reimbursement for, our tests, our business and results of operations will be negatively affected.
- Our billing and claim processing are complex and time-consuming, and any delay in submitting claims or failure to comply with applicable billing requirements could hinder collection and have an adverse effect on our revenue.
- Issued patents covering our products could be found invalid or unenforceable if challenged, or our patent applications may never issue. If we are unable to obtain and maintain sufficient intellectual property protection for our technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be impaired.
- The price of our common stock has fluctuated substantially and may do so in the future, and you may not be able to resell shares of our common stock at or above the price at which you purchased them.
- Our indebtedness could expose us to risks that could adversely affect our business, financial condition and results of operations or result in dilution to our stockholders.
- The COVID-19 global pandemic and the worldwide attempts to contain it have adversely impacted our supply chain and other aspects of our business, as well as our results of operations, and could continue to do so.

Risk Factors

Our operations and financial results are subject to various risks and uncertainties including those described below. You should consider carefully the risks and uncertainties described below, in addition to other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely

affect our business. If any of the following risks or others not specified below materialize, our business, financial condition and results of operations could be materially and adversely affected. In that case, the trading price of our common stock could decline.

Risks related to our business and strategy

We have incurred significant losses since inception, we may continue to incur losses in the future and we may not be able to generate sufficient revenue to achieve and maintain profitability.

We have incurred significant losses since our inception. For the years ended December 31, 2021, 2020 and 2019, we incurred net losses of $384.8 million, $246.3 million and $67.9 million, respectively. As of December 31, 2021, we had an accumulated deficit of $1.0 billion. To date, we have financed our operations principally from the sale of stock or convertible securities, and revenue from precision oncology testing and our development services. We have devoted substantially all of our resources to the development and commercialization of our current products and to research and development activities related to our future products, including clinical and regulatory initiatives to obtain marketing approval and sales and marketing activities. We will need to generate substantial revenue to achieve and then sustain profitability, and even if we achieve profitability, we cannot be sure that we will remain profitable for any period of time. Our failure to achieve or maintain profitability could negatively impact the value of our common stock.

We may not be able to generate sufficient revenue to achieve and maintain profitability and our current or future products may not achieve or maintain sufficient commercial market acceptance.

We are currently not profitable. Even if we succeed in increasing adoption of our existing products and services by physicians, obtaining additional coverage decisions from commercial and government payers, maintaining and creating relationships with our existing and new biopharmaceutical partners, and developing and commercializing additional products and services, we may not be able to generate sufficient revenue to achieve or maintain profitability.

We believe our commercial success is dependent upon our ability to continue to successfully market and sell our current and future products, to continue to expand our current relationships and develop new relationships with clinicians and biopharmaceutical customers and to develop and commercialize new products based on our Guardant Health Oncology Platform. Our ability to achieve and maintain sufficient commercial market acceptance of our existing and future products will depend on a number of factors, including:

- our ability to increase awareness of our tests and the benefits of liquid biopsy;
- the rate of adoption and/or endorsement of our tests by clinicians, KOLs, advocacy groups and biopharmaceutical companies;
- the timing and scope of any approval or certification by regulatory agencies, including the FDA, or notified bodies for our tests;
- our ability to obtain positive coverage decisions for our tests from additional commercial payers and to broaden the scope of indications included in such coverage decisions;
- our ability to obtain reimbursement and expanded coverage from government payers, including Medicare;
- the impact of our investments in product innovation and commercial growth;
- negative publicity regarding ours or our competitors' products resulting from defects or errors; and
- our ability to further validate our technology through clinical research and accompanying publications.

We cannot assure that we will be successful in addressing each of these criteria or other criteria that might affect the market acceptance of our products. If we are unsuccessful in achieving and maintaining market acceptance of our products, our business and results of operations will suffer.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the level of demand for any of our products, which may vary significantly;
- the timing and cost of, and level of investment in, research, development, regulatory approval or certification and commercialization activities relating to our products, which may change from time to time;
- the volume and customer mix of our precision oncology testing;
- the start and completion of projects in which our development services are utilized;
- the introduction of new products or product enhancements by us or others in our industry;
- coverage and reimbursement policies with respect to our products and products that compete with our products;
- expenditures that we may incur to acquire, develop or commercialize additional products and technologies;
- changes in governmental regulations or in the status of our regulatory approvals or certifications or applications;
- future accounting pronouncements or changes in our accounting policies;
- developments or disruptions in the business and operations of our clinical, commercial and other partners;
- the impact of natural disasters, political and economic instability, including wars, terrorism, and political unrest, epidemics or pandemics, including the ongoing coronavirus pandemic, boycotts, curtailment of trade and other business restrictions; and
- the effects of high inflation or other general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

Additionally, it is difficult to predict the amount we are able to collect for our tests from commercial payers. We receive reimbursement for our tests from several commercial payers for whom we are not a participating provider. Because we are not contracted with these payers, they determine the amount they are willing to reimburse us for tests. We have provided testing services to patients with many cancer types and indications, most of the time as a non-participating provider through 2021. When we have received payment as a non-participating provider, the amounts, on average, were significantly lower than for participating providers. Even when these payers have paid a claim, they may elect at any time to review previously paid claims for overpayment against these claims. In the event of an overpayment determination, the payer may offset the amount they determine they overpaid against amounts they owe us on current claims. We have limited leverage to dispute these retroactive adjustments and we cannot predict when, or how often, a payer might engage in these reviews. A significant amount of these offsets by one or more payers in any given quarter could have a material effect on our results of operations and cause them to fall below expectations or guidance we may provide. Our efforts to become a participating provider of a number of commercial payers may not be successful. Even when we have obtained positive coverage decisions for our tests from commercial payers and entered into agreements with them, such agreements typically are standard form contracts and may allow payers to terminate coverage on short notice, impose significant obligations on us and create additional regulatory and compliance hurdles for us.

As part of our reimbursement operations, we appeal denials from payers, and if successful, we receive payments from these appeals. However, due to the inherent variability of the insurance landscape, we cannot guarantee future success of, or any payments from, appeals of reimbursement denials by payers. Historic success and payments are not indicative of future success of and payments from such appeals.

Due to the inherent variability and unpredictability of the reimbursement landscape, including related to the amount that payers reimburse us for any of our tests, we estimate the amount of revenue to be recognized at the time a test is

provided and record revenue adjustments if and when the cash subsequently received for a test differs from the revenue recorded for the test. Due to this variability and unpredictability, previously recorded revenue adjustments are not indicative of future revenue adjustments from actual cash collections, which may fluctuate significantly.

The cumulative effects of factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated guidance we may provide.

New product development and commercialization involve a lengthy and complex process and we may be unable to develop or commercialize new products on a timely basis, or at all.

Products that are under development have taken time and considerable resources to develop, and we may not be able to complete the development and commercialization of the such products for clinical use on a timely basis, or at all. For example, there can be no assurance that we will be able to produce commercial products for early detection of cancer. Before we can commercialize any new products, we will need to expend significant funds in order to:

- conduct substantial research and development, including validation studies and clinical studies;
- further develop and scale our laboratory processes to accommodate different products; and
- further develop and scale our infrastructure to be able to analyze increasingly large amounts of data.

Our product development process involves a high degree of risk, and product development efforts may fail for many reasons, including:

- failure of the product to perform as expected, including defects and errors;
- lack of validation data; or
- failure to demonstrate the clinical utility of the product.

Our development plan involves using data and analytical insights generated from our current products as a force multiplier of returns on research and development investment in our future products. However, if we are unable to generate additional or compatible data and insights, then we may not be able to advance our products under development as quickly, or at all, or without significant additional investment.

As we develop products, we have made and will have to make significant investments in product development, marketing and selling resources, including investing heavily in clinical studies, which could adversely affect our future cash flows.

Our current revenue is primarily generated from sales of our tests and we are highly dependent on them for our success.

Our ability to execute our growth strategy and become profitable is highly dependent on the continued adoption and use of our tests, which accounted for almost all of our revenue in the years ended December 31, 2021, 2020 and 2019. Continued adoption and use of our tests will depend on several factors, including the prices we charge for our tests, the scope of coverage and amount of reimbursement available from third-party payers for our tests, the availability of clinical data that supports the value of our tests and the inclusion of our tests in industry treatment guidelines. In addition, many biopharmaceutical companies have existing relationships with companies that develop molecular diagnostic tests, including our competitors, and may continue to use their tests instead of ours. Despite our business development efforts, it could be difficult, expensive and/or time-consuming for biopharmaceutical companies to switch diagnostic tests for their products, and our tests may not be widely accepted by biopharmaceutical companies, if at all, which could in turn hinder the growth of sales of our tests. If we are unable to achieve commercial success for our tests, our business, results of operations and financial condition would be

materially and adversely affected. We cannot assure that our tests will continue to maintain or gain market acceptance, and any failure to do so would materially harm our business and results of operations.

If our products, or our competitors' products, do not meet the expectations of patients and our customers, our operating results, reputation and business could suffer.

Our success depends on the market's confidence that we can provide reliable, high-quality precision oncology products that will improve clinical outcomes, lower healthcare costs and enable better biopharmaceutical development. We believe that patients, clinicians and biopharmaceutical companies are likely to be particularly sensitive to product defects and errors in the use of our products, including if our products fail to detect genomic alterations with high accuracy from samples or if we fail to list or inaccurately include certain treatment options and available clinical studies in our test reports, and there can be no guarantee that our products will meet their expectations. Furthermore, if our competitors' products do not perform to expectations, it may result in lower confidence in our tests as well. As a result, the failure of our products or our competitors' products to perform as expected could significantly impair our operating results and our reputation. In addition, we may be subject to legal claims arising from any defects or errors in our products.

If we are unable to support demand for our current and future products, including ensuring that we have adequate capacity to meet increased demand, or we are unable to successfully manage our anticipated growth, our business could suffer.

As our volume of test sales grows, we will need to continue to increase our workflow capacity for sample intake, customer service, billing and general process improvements, expand our internal quality assurance program and extend our platform to support comprehensive genomic analysis at a larger scale within expected turnaround times. We will need additional certified laboratory scientists and other scientific and technical personnel to process higher volumes of our precision oncology products. Portions of our process are not automated and will require additional personnel to scale. We will also need to purchase additional equipment, some of which can take several months or more to procure, setup and validate, and increase our software and computing capacity to meet increased demand. There is no assurance that any of these increases in scale, expansion of personnel, equipment, software and computing capacities or process enhancements will be successfully implemented, if at all, or that we will have adequate space in our laboratory facility or be able to secure additional facility space to accommodate such required expansion.

As we commercialize additional products, we will need to incorporate new equipment, implement new technology systems and laboratory processes, and hire new personnel with different qualifications. Failure to manage this growth or transition could result in turnaround time delays, higher product costs, declining product quality, deteriorating customer service and slower responses to competitive challenges. A failure in any one of these areas could make it difficult for us to meet market expectations for our products and could damage our reputation and the prospects for our business.

If we cannot maintain our current relationships, or enter into new relationships, with biopharmaceutical companies, our revenue prospects could be reduced.

Biopharmaceutical customers collaborate with us for analysis of whole blood or plasma samples for multiple applications primarily to support clinical trials, including patient identification, companion diagnostics and retrospective testing. In the years ended December 31, 2021, 2020 and 2019, revenue from our top five biopharmaceutical customers, including their affiliated entities, accounted for 18%, 27% and 38% of our total revenue, respectively. The revenue attributable to our biopharmaceutical customers may also fluctuate in the future, which could have an adverse effect on our financial condition and results of operations. In addition, the termination of these relationships could result in a temporary or permanent loss of revenue. Adverse speculation about our existing or potential relationships with biopharmaceutical companies may be a catalyst for adverse speculation about us, our products and our technology, which can adversely affect our reputation and business.

Our future success depends in part on our ability to maintain relationships and to enter into new relationships with biopharmaceutical customers, including offering our platform to such customers for companion diagnostic development, novel target discovery and validation as well as clinical study enrollment, and growing into other business opportunities. This can be difficult due to many factors, including the type of biomarker support required and our ability to deliver it and our biopharmaceutical customers' satisfaction with our products or services, internal and external constraints placed on these organizations and other factors that may be beyond our control. Furthermore, our biopharmaceutical customers may decide to decrease or discontinue their use of our current products and tests, or our future products due to changes in their research and product development plans, failures in their clinical studies, financial constraints, or utilization of internal testing resources or tests performed by other parties, or other circumstances outside of our control. Continued usage of our tests by particular biopharmaceutical customers may also depend on whether the partner obtains positive data in its clinical studies, is able to successfully obtain regulatory approval and subsequently commercializes a therapy for which we have partnered with them to develop a companion diagnostic, or other administrative factors that are outside our control. Some of our biopharmaceutical customers have contracted with us to provide testing for large numbers of samples, which could strain our testing capacity and restrict our ability to perform tests for other customers. Furthermore, biopharmaceutical companies may decline to do business with us or decrease or discontinue their use of our tests due to their broad strategic collaboration with any of our competitors. In addition to reducing our revenue, the loss of one or more of these relationships may reduce our exposure to research and clinical studies that facilitate the collection and incorporation of new information into our platform and tests. We engage in conversations with biopharmaceutical companies regarding potential commercial opportunities on an ongoing basis. There is no assurance that any of these conversations will result in a commercial agreement, that the resulting relationship will be successful, or that clinical studies conducted as part of the engagement will produce successful outcomes. If we cannot maintain our current relationships, or enter into new relationships, with biopharmaceutical companies, our product development could be delayed and revenue and results of operations could be adversely affected.

Our payer concentration may materially adversely affect our financial condition and results of operations.

We receive a substantial portion of our revenue from a limited number of third-party commercial payers, most of which have not contracted with us to be a participating provider. If one or more of these payers were to significantly reduce, or cease to pay, the amount such payer reimburses us for tests we perform, or if such payer does not reach or maintain favorable coverage and reimbursement decisions for our tests, it could have a material adverse effect on our business, financial condition and results of operations. We have experienced situations where commercial payers proactively reduced the amounts they were willing to reimburse for our tests, and in other situations, commercial payers have determined that the amounts they previously paid were too high and have sought to recover those perceived excess payments by deducting such amounts from payments otherwise being made. If commercial payers were to decide not to include us as a participating provider, cease paying us altogether, drastically reduce the amount they were willing to pay us or attempt to recover any amounts they had already paid, it could cause significant fluctuations in our quarterly results and could harm our business and results of operations.

In September 2018, we began to receive reimbursement from Medicare for claims submitted with respect to Guardant360 clinical tests performed for NSCLC patients. In March 2020, we began to receive reimbursement from Medicare for claims submitted with respect to Guardant360 clinical tests performed for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin other than NSCLC. Revenue from clinical tests for patients covered by Medicare represented approximately 45%, 42% and 29% of our precision oncology revenue from clinical customers for the years ended December 31, 2021, 2020 and 2019, respectively. Revenue attributable to Medicare accounted for more than 10% of our total revenue in each of the years ended December 31, 2021, 2020 and 2019. In addition, pursuant to CMS regulations, we cannot bill Medicare directly for tests provided for Medicare beneficiaries in some situations. CMS adopted an exception to its laboratory date of service regulation, and if certain conditions are met, molecular testing laboratories such as us can rely on that exception to bill Medicare directly, instead of seeking payment from the hospital. If this exception is repealed or curtailed by CMS, or its laboratory date of service regulation is otherwise changed to adversely impact our ability to bill Medicare directly, our revenue could be materially reduced.

If we fail to obtain or maintain coverage and adequate reimbursement from third-party payers, we may be unable to increase our testing volume and revenue as expected. Retrospective reimbursement adjustments, such as deductions from further payments and clawbacks, can also negatively impact our revenue and cause our financial results to fluctuate. In addition, as part of our reimbursement operations, we appeal denials from payers, and if successful, we receive payments from these appeals. However, due to the inherent variability of the insurance landscape, we cannot guarantee future success of, or any payments from, appeals of reimbursement denials by payers. Historic success and payments are not indicative of future success of and payments from such appeals.

If we cannot compete successfully with our competitors, we may be unable to increase or sustain our revenue or to achieve and then sustain profitability.

Growing understanding of the importance of biomarkers linked with therapy selection and response is leading to more companies offering services in genomic profiling. The promise of biopsy testing is also leading to more companies attempting to enter the space and compete with us. Over the last year, that has included new and accelerated development programs by a number of potential competitors, and increasing levels of merger and acquisition activity by both existing and new competitors. Currently, our main competition is from diagnostic companies with products and services to profile genes in cancers based on either single-marker or comprehensive genomic profile testing, based on next-generation sequencing in either blood or tissue. This may change over the next few years as a result of new competitors entering through investment and acquisition activity.

Our competitors within the liquid biopsy space include Foundation Medicine, Inc., which was acquired by Roche Holdings, Inc. in July 2018, Roche Molecular Systems, Inc., Thermo Fisher Scientific Inc., Illumina, Inc., Qiagen N.V. Invitae Corporation, and Sysmex Inostics. In addition, GRAIL, Inc., Natera Inc., Exact Sciences Corp., and Freenome Holdings, Inc. among others, are developing and/or commercializing tests that are competitive with our Guardant SHIELD for early cancer detection.

Competitors within the broader genomics profiling space based on tissue include laboratory companies such as Bio-Reference Laboratories, Inc., Laboratory Corporation of America and Quest Diagnostics, Inc., as well as companies such as Foundation Medicine, Inc., Caris Life Sciences, Inc., Myriad Genetics, Inc., Tempus Labs, Inc., and NeoGenomics Laboratories, Inc., that sell molecular diagnostic tests for cancer to physicians and have or may develop tests which compete with our tests. In addition, we are aware that certain of our customers are also developing their own tests and may decide to enter our market or otherwise stop using our tests.

Some of our competitors and potential competitors may have longer operating histories; larger customer bases; greater brand recognition and market penetration; substantially greater financial, technological and research and development resources and selling and marketing capabilities; and more experience dealing with third-party payers. As a result, they may be able to respond more quickly to changes in customer requirements, devote greater resources to the development, promotion and sale of their tests than we do or sell their tests at prices designed to win significant levels of market share. We may not be able to compete effectively against these organizations. Increased competition and cost-saving initiatives on the part of governmental entities and other third-party payers are likely to result in pricing pressures, which could harm our sales, profitability or ability to gain market share. In addition, competitors may be acquired by, receive investments from or enter into other commercial relationships with larger, well-established and well-financed companies. Certain of our competitors may be able to secure key inputs from vendors on more favorable terms, devote greater resources to marketing and promotional campaigns, adopt more aggressive pricing policies and devote substantially more resources to product development than we can. In addition, companies or governments that control access to genetic testing through umbrella contracts or regional preferences could promote our competitors or prevent us from performing certain services. If we are unable to compete successfully against current and future competitors, we may be unable to increase market acceptance and sales of our tests, which could prevent us from increasing our revenue or achieving profitability and could cause our stock price to decline.

In addition to developing kits, certain diagnostic companies also provide next-generation sequencing platforms that could be used for liquid biopsy testing. These include Illumina, Inc., Thermo Fisher Scientific Inc. and other companies developing next-generation sequencing platforms that are sold directly to biopharmaceutical companies, clinical laboratories and research centers. While many of the applications for these platforms are focused on research and development applications, each of these companies has launched and will continue to commercialize products and services focused on the clinical oncology market. These tests could include FDA-approved diagnostic kits, which can be sold to the clients who have purchased their platforms.

Furthermore, many companies are developing information technology-based tools to support the integration of next-generation sequencing testing into the clinical setting. These companies may also use their own tests or others to develop an integrated system which could limit access for us to certain networks.

The sizes of the markets for our current and future products have not been established with precision, and may be smaller than we estimate.

Our estimates of the annual total addressable markets for our current products and products under development are based on a number of internal and third-party estimates, including, without limitation, the number of patients with late-stage, solid tumor cancer, the number of individuals who are at a higher risk for developing cancer, and the assumed prices at which we can sell tests for markets that have not been established. While we believe our assumptions and the data underlying our estimates are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. As a result, our estimates of the annual total addressable market for our current or future products may prove to be incorrect. If the actual number of patients who would benefit from our products, the price at which we can sell our products, or the annual total addressable market for our products is smaller than we have estimated, it may impair our sales growth and have an adverse impact on our business.

The precision oncology industry is subject to rapid change, which could make our Guardant Health Oncology Platform, our current products and any future products we may develop, obsolete.

Our industry is characterized by rapid changes, including technological and scientific breakthroughs, frequent new product introductions and enhancements and evolving industry standards, all of which could make our current and future products obsolete. Our future success will depend on our ability to keep pace with the evolving needs of our customers on a timely and cost-effective basis and to pursue new market opportunities that develop as a result of scientific and technological advances. In recent years, there have been numerous advances in technologies relating to the diagnosis and treatment of cancer. There have also been advances in methods used to analyze very large amounts of molecular information. We must continuously enhance our Guardant Health Oncology Platform and develop new products to keep pace with evolving standards of care. If we do not update our product offerings to reflect new scientific knowledge about cancer biology, information about new cancer therapies or relevant clinical studies, our products could become obsolete and sales of our current products and any new products we may develop could decline or fail to grow as expected.

We have experienced challenges attracting and retaining qualified personnel due to competitive labor markets and may continue to do so, and may be unable to manage our future growth effectively, all of which could make it difficult to execute our business strategy.

Since our inception, we have experienced rapid growth and anticipate further growth in our business operations. Our future growth could create strain on our organizational, administrative and operational infrastructure, including laboratory operations, quality control, customer service and sales organization management. We expect to continue to increase headcount and to hire more specialized personnel as we grow our business. We will need to continue to hire, train and manage additional qualified scientists, laboratory personnel, client and account services personnel, as well as sales and marketing staff, and improve and maintain our technology to properly manage our growth.

However, we have experienced challenges attracting and retaining qualified personnel due to competitive labor markets and may continue to do so. In this competitive environment, our business could be adversely impacted by increases in labor costs triggered by regulatory actions regarding wages, scheduling and benefits, the need to attract and retain high quality employees with the requisite skill sets, and the ongoing effects of the COVID-19 pandemic. In addition, if our new hires perform poorly, if we are unsuccessful in training, managing and integrating these new employees or if we are not successful in developing and retaining our existing employees, our business may be harmed.

In addition, we may not be able to maintain the quality or expected turnaround times of our products, or satisfy customer demand as it grows, and our business may be harmed. Our ability to manage our growth properly will also require us to continue to improve our operational, financial and management controls, as well as our reporting systems and procedures. The time and resources required to implement these new systems and procedures is uncertain and could be demanding, and failure to complete this in a timely and efficient manner could adversely affect our operations.

We may not be able to successfully market, sell or distribute our products, and if we are unable to expand our sales organization to adequately address our customers' needs, our business may be adversely affected.

We may not be able to market, sell or distribute our products and tests, and other products we may develop effectively enough to support our planned growth. We currently sell to clinicians in the United States through our own sales organization and to biopharmaceutical companies through our business development team.

Each of our target markets is large, distinctive and diverse. As a result, we believe it is necessary for our sales representatives and business development managers to have established oncology-focused expertise. Competition for such employees within the precision oncology industry is intense. We may not be able to attract and retain personnel or be able to build an efficient and effective sales organization or business development team, which could negatively impact sales and market acceptance of our products and limit our revenue growth and potential profitability.

Our expected future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees. Our future financial performance and our ability to commercialize our products, to increase our sales and to compete effectively will depend, in part, on our ability to manage this potential future growth effectively, without compromising quality.

Outside the United States, we established the Joint Venture with SoftBank for sales of our products throughout Asia, the Middle East and Africa. We share a measure of control of the Joint Venture, and if its sales and marketing efforts for our products in those regions are not successful, our business would be materially and adversely affected. In other territories, such as Europe, we sell our tests primarily through distributor relationships or direct contracts with hospitals. Locating, qualifying, engaging and maintaining relationships with distribution partners and hospitals with local industry experience and knowledge will be necessary to effectively market and sell our products outside the United States. We may not be successful in finding, attracting and retaining distribution partners or local hospitals, or we may not be able to enter into such arrangements on favorable terms. Sales practices utilized by any such parties that are locally acceptable may not comply with sales practices standards required under U.S. laws that apply to us, which could create additional compliance risk. If our international sales and marketing efforts are not successful, we may not achieve market acceptance for our products outside the United States, which would materially and adversely impact our business.

We rely on a limited number of suppliers or, in some cases, sole suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or promptly transition to alternative suppliers.

We rely on a limited number of suppliers or, in some cases, sole suppliers, including Illumina Inc., or Illumina, for certain sequencers, reagents, blood tubes and other equipment, instruments and materials that we use in our laboratory operations. An interruption in our laboratory operations could occur if we encounter delays or difficulties in securing these laboratory equipment, instruments or materials, and if we cannot then obtain an acceptable substitute. Any such interruption could significantly and adversely affect our business, financial condition, results of operations and reputation. We rely on Illumina as the sole supplier of the sequencers and as the sole provider of maintenance and repair services for these sequencers. Any disruption in operations of Illumina or other sole or limited suppliers or termination or suspension of our relationships with them could materially and adversely impact our supply chain and laboratory operations of our precision oncology platform and thus our ability to conduct our business and generate revenue. These limited or sole suppliers could engage in diverse types of businesses, including selling products or providing services in competition with us, and there can be no assurance that we can continue to receive required equipment, instruments or materials from them.

We believe that there are only a limited number of other manufacturers that are capable of supplying and servicing the equipment and materials necessary for our laboratory operations, including sequencers and various associated reagents, and potentially replacing our current suppliers. The use of equipment or materials furnished by these replacement suppliers would require us to alter our laboratory operations. Transitioning to a new supplier would be time-consuming and expensive, may result in interruptions in our laboratory operations, could affect the performance specifications of our laboratory operations or could require that we revalidate our tests. There can be no assurance that we will be able to secure alternative equipment, reagents and other materials, bring such equipment, reagents and materials online, and revalidate our tests without experiencing interruptions in our workflow. In the case of an alternative supplier for Illumina, for example, there can be no assurance that replacement sequencers and various associated reagents will be available or will meet our quality control and performance requirements for our laboratory operations. If we should encounter delays or difficulties in securing, reconfiguring or integrating the

equipment and reagents we require for our products or in revalidating our products, our business, financial condition, results of operations and reputation could be materially and adversely affected.

The COVID-19 global pandemic and the worldwide attempts to contain it have adversely impacted our supply chain and other aspects of our business, as well as our results of operations, and could continue to do so.

The global outbreak of coronavirus 2019, or COVID-19, and the various attempts throughout the world to contain it, have created significant volatility, uncertainty and disruption, which has and may continue to impact the global economy, disrupt our supply chain, and create significant volatility and disruption of financial markets. In response to government directives and guidelines, health care advisories and employee and customer concerns, we have altered certain aspects of our operations. A number of our employees have had to work remotely from home and those on site have had to follow our social distance guidelines, which could impact their productivity. Travel and visits related to our business have been severely curtailed.

We have also experienced significant reduction in access to our customers, including restrictions on our ability to market and distribute our tests and to collect samples. Our partners, vendors, suppliers and customers have similarly had their operations altered or temporarily suspended. Due to impacts and measures resulting from the COVID-19 pandemic, we have experienced and could continue to experience unpredictable reductions in the demand for our tests as healthcare customers divert medical resources and priorities toward the treatment of the virus. Our biopharmaceutical customers are facing challenges in recruiting patients and in conducting clinical studies to advance their product development pipelines, for which our tests could be utilized. To the extent the COVID-19 pandemic continues to cause severe disruption, vendors of equipment and reagents for our operations could also reduce productions or even go out of business, resulting in supply constraints for us. For example, movement of supplies has been significantly curtailed worldwide, which has caused supply shortages for certain of our major suppliers. Disruptions caused by the COVID-19 pandemic have adversely affected the quantity and quality of certain sequencers, reagents, blood tubes and other similar materials that are critical to our commercial and research and development programs. We currently have a limited amount of stock of these components. Failure in the future to secure sufficient supply of critical components could materially and adversely affect our ability to manufacture or supply marketed products and product candidates or complete our ongoing research and development programs on the timelines previously established. Our ability to enroll suitable patients in clinical studies has also been negatively impacted and could continue to be adversely affected by the COVID-19 pandemic.

The full extent to which the COVID-19 pandemic and the various responses to it impacts our business, operations and financial results will depend on numerous evolving factors that we may not be able to accurately predict, including: the duration and scope of the pandemic; governmental, business and individuals' actions that have been and continue to be taken in response to the pandemic; the adverse effects on our manufacturing operations and supply chain, which may impact our ability to produce and distribute our products, as well as the ability of third parties to fulfill their obligations to us and could increase our expenses; the possibility that third parties on which we rely for certain functions and services, suppliers, distributors, logistics providers, and external business partners, may be adversely impacted by restrictions resulting from COVID-19, which could cause us to experience delays or incur additional costs; the availability, cost to access and effectiveness of COVID-19 tests, vaccines and medicines; the effect on our customers and customer demand for and ability to pay for our tests; restrictions on the ability of our employees and the employees of third parties on which we rely for certain functions and services to work and travel; disruptions related to the distribution of our tests, including impacts on logistics of shipping and receiving blood collection kits; and any stoppages, disruptions or increased costs associated with development, production and marketing of our products. During the COVID-19 pandemic, we may not be able to maintain the same level of customer outreach and service, which could negatively impact our customers' perception of us. We will continue to actively monitor the issues raised by the COVID-19 pandemic and may take further actions that alter our operations, as may be required by federal, state, local or foreign authorities, or that we determine are in the best interests of our employees, customers and stockholders. It is not clear what the potential effects any such alterations or modifications may have on our business, including the effects on our financial results.

The COVID-19 pandemic has also led to uncertainties related to our growth, forecast and trends. Our historic results such as revenues, operating margins, net income, cash flows, tests performed, and other financial and operating metrics, may not be indicative of our results for future periods. Any past increases in the number of clinical tests and/or biopharmaceutical tests performed by us may reflect the acceleration of growth that we have experienced but may not see in subsequent periods given the COVID-19 pandemic. Even if government and other restrictions are relaxed, our growth may slow or reverse, including due to a slow recovery. The COVID-19 pandemic and its future developments present uncertainties with respect to our performance, financial condition, volume of business, results of operations, and cash flows. Due to the uncertain scope and duration of the COVID-19 pandemic and uncertain timing of any recovery or normalization, we are currently unable to estimate the resulting impacts on our operations

and financial results. In addition to the impacts to our business, the global economy is likely to be significantly weakened as a result of actions taken in response to the COVID-19 pandemic. To the extent that such a weakened global economy impacts customers' ability or willingness to pay for our tests, our business and results of operation could be negatively impacted. As a result, we expect our revenue and results of operations to be adversely affected until testing, treatments and vaccines substantially eliminate the impact of the COVID-19 pandemic.

If our existing laboratory facility becomes damaged or inoperable or we are required to vacate our existing facility, our ability to perform our tests and pursue our research and development efforts may be jeopardized.

We currently derive the majority of our revenue from tests performed at a single laboratory facility located in Redwood City, California. Our facility and equipment could be harmed or rendered inoperable by natural or man-made disasters, including war, fire, earthquake, power loss, communications failure or terrorism, which may render it difficult or impossible for us to operate our Guardant Health Oncology Platform for some period of time. The inability to perform our tests or to reduce the backlog that could develop if our facility is inoperable, for even a short period of time, may result in the loss of customers or harm to our reputation, and we may be unable to regain those customers or repair our reputation. Furthermore, our facility and the equipment we use to perform our research and development work could be unavailable or costly and time-consuming to repair or replace. It would be difficult, time-consuming and expensive to rebuild our facility, to locate and qualify a new facility or enable a third party to practice our proprietary technology, particularly in light of licensure and accreditation requirements. Even if we are able to find a third party with such qualifications to perform our tests, the parties may be unable to agree on commercially reasonable terms.

We carry insurance for damage to our property and disruption of our business, but this insurance may not cover all of the risks associated with damage or disruption to our facility and business, may not provide coverage in amounts sufficient to cover our potential losses and may not continue to be available to us on acceptable terms, if at all.

We are dependent on third parties for the collection of blood samples for our tests.

We rely on third-party phlebotomy providers, including physician offices, to collect blood samples for our tests. Our current third-party phlebotomy providers may refuse to continue to collect samples for us in the future, in particular if they have agreements or arrangements with one of our competitors to collect samples for their tests, or if the phlebotomy provider is owned or controlled by a laboratory that offers tests that compete with ours. There has been a trend towards consolidation of independent phlebotomy providers. Independent phlebotomy providers, once acquired by our competitors, may terminate their relationships with us. If our patients are unable to readily access a phlebotomy provider to collect a blood sample for our tests, we may be unable to compete effectively with other laboratories that have greater access to phlebotomy providers and our business, financial condition and results of operations may be harmed.

In addition, if third-party phlebotomy providers fail to adequately and properly obtain and collect viable blood samples from patients and to properly package and ship the samples to us, our patients and their physicians may experience problems and delays in receiving test results, which could lead to dissatisfaction with our tests, therefore harming our reputation and adversely affecting our business, financial condition and results of operations. Similarly, our contracts with physician owned phlebotomy providers to collect blood could be scrutinized under federal and state healthcare laws such as the federal Anti-Kickback Statute, or AKS, and the federal law prohibiting physician self-referral, or Stark Law, to the extent these services to us are deemed to provide a financial benefit to or relieve a financial burden for a potential referral source, or are subsequently found not to be for fair market value. If our operations are found to be in violation of any of these laws and regulations, we may be subject to administrative, civil and criminal penalties, damages, fines, individual imprisonment, exclusion from participation in federal healthcare programs or from coverage of commercial payers, refunding of payments received by us, and curtailment or cessation of our operations, any of which could harm our reputation and adversely affect our business, financial condition and results of operations.

We rely on commercial courier delivery services to transport samples to our laboratory facility in a timely and cost-efficient manner and if these delivery services are disrupted, our business will be harmed.

Our business depends on our ability to deliver test results quickly and reliably to our customers. Blood samples are typically received within days from the United States and outside the United States for analysis at our Redwood City, California facility. Disruptions in delivery services to transport samples to that facility, whether due to labor disruptions, bad weather, natural disaster, terrorist acts or threats or for other reasons could adversely affect specimen integrity and our ability to process samples in a timely manner, delay our provision of test results to our

customers, and ultimately our reputation and our business. In addition, if we are unable to continue to obtain expedited delivery services to transport samples to us on commercially reasonable terms, our operating results may be adversely affected.

We are exposed to risks associated with our joint venture with SoftBank, and may not realize the advantages we expect from it.

We have a 50% ownership interest in the Joint Venture, Guardant Health AMEA, Inc., we formed with SoftBank in May 2018 to accelerate the commercialization of our products in Asia, the Middle East and Africa, with a near-term focus on Japan. However, the Joint Venture may not be successful in the timeframe we expect, or at all.

Additionally, SoftBank shares a measure of control over the operations of the Joint Venture. As a result, our investment in our joint venture involves risks that are different from the risks involved in owning facilities and operations independently. These risks include the possibility that our joint venture or SoftBank has economic or business interests or goals that are or become inconsistent with our economic or business interests or goals; is in a position to take action contrary to our instructions, requests, policies or objectives; subjects us to unexpected liabilities; takes actions that reduce our return on investment; or takes actions that harm our reputation or restrict our ability to run our business.

The joint venture agreement between us and SoftBank includes a put-call arrangement with respect to the shares of the Joint Venture held by SoftBank and its affiliates. SoftBank has a put right to cause us to purchase all shares of the Joint Venture held by SoftBank and its affiliates, and we have a call right to purchase all such shares in the event of (i) certain material disagreements relating to the Joint Venture or its business that may seriously affect the ability of the Joint Venture to perform its obligations under the joint venture agreement or may otherwise seriously impair the ability of the Joint Venture to conduct its business in an effective matter, other than one relating to the Joint Venture's business plan or to factual matters that may be capable of expert determination; (ii) the effectiveness of our initial public offering, a change in control, the seventh anniversary of the formation of the Joint Venture, or each subsequent anniversary of each of the foregoing events; or (iii) a material breach of the joint venture agreement by the other party that goes unremedied within 20 business days. In November 2021, we exercised our call right to purchase all shares of the Joint Venture held by SoftBank and its affiliates, and therefore SoftBank no longer has a put right. Because the shares of the Joint Venture are not publicly traded and listed on a nationally recognized stock exchange, the purchase price per share of the Joint Venture will be determined by a third-party valuation firm. The third-party valuation firm may evaluate a range of factors and employ assumptions that are subjective in nature, which may result in the fair value of SoftBank's interest in the Joint Venture being determined to be materially different from what has been recorded in our consolidated financial statements, including those included elsewhere in this Annual Report on Form 10-K. In accordance with the joint venture agreement, because we exercised our call right, SoftBank will choose the form of consideration we pay for SoftBank's interest in the Joint Venture, which may be in cash (including in the form of a promissory note), shares of our common stock, or a combination of cash and common stock. Our purchase of the shares from SoftBank could cause us to experience significant cash outflow, could dilute our other stockholders' holdings, and may adversely affect our financial condition and the price of our common stock.

International expansion of our business exposes us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.

We currently have limited international operations, but our business strategy incorporates potentially significant international expansion, including through the Joint Venture with SoftBank, which we formed to accelerate the commercialization of our products in Asia, the Middle East and Africa.

We plan to maintain distributor and partner relationships, to conduct physician and patient association outreach activities, to extend laboratory capabilities and to expand payer relationships, outside of the United States, both directly and through our joint venture. Doing business internationally involves a number of risks, including:

- multiple, conflicting and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, economic sanctions and embargoes, employment laws, regulatory requirements and other governmental approvals, permits and licenses;
- failure by us, our distributors, our local partners or the Joint Venture with SoftBank to obtain regulatory approvals or certifications for the use of our products in various countries;
- presence of additional third-party patents or other intellectual property rights that may be relevant to our business and may potentially block our expansion;

- complexities and difficulties in obtaining intellectual property protection and enforcing our intellectual property rights;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payer reimbursement regimes, government payers, or patient self-pay systems;
- logistics and regulations associated with shipping blood samples, including infrastructure conditions and transportation delays;
- limits in our ability to penetrate international markets if we are not able to perform our tests locally;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations, currency controls and cash repatriation restrictions;
- natural disasters, political and economic instability, including wars, terrorism, and political unrest, boycotts, curtailment of trade and other business restrictions;
- public health or similar issues, such as epidemics or pandemics, including the current outbreak of novel coronavirus (2019-nCoV), for which the World Health Organization declared a global emergency on January 30, 2020, that could cause business disruption for the Joint Venture, including the Joint Venture's offices in Japan and Singapore, and make it more difficult to sell our tests in the affected countries or regions, many of which are in the JV Territory, and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and distributors' activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, or FCPA, its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our revenue and results of operations.

We could be adversely affected by violations of the FCPA and other anti-bribery laws.

We are subject to the FCPA, which prohibits companies and their intermediaries from making payments in violation of law to non-U.S. government officials for the purpose of obtaining or retaining business or securing any other improper advantage, as a result of our international customers that may order either directly from us or through the Joint Venture with SoftBank. Our reliance on independent distributors to sell our tests internationally demands a high degree of vigilance in maintaining our policy against participation in corrupt activity, because these distributors could be deemed to be our agents and we could be held responsible for their actions. Other U.S. companies in the medical device and biopharmaceutical field have faced criminal penalties under the FCPA for allowing their agents to deviate from appropriate practices in doing business with these individuals. We are also subject to similar anti-bribery laws in the jurisdictions in which we operate, including the United Kingdom's Bribery Act of 2010, which also prohibits commercial bribery and makes it a crime for companies to fail to prevent bribery. These laws are complex and far-reaching in nature, and, as a result, we cannot assure that we would not be required in the future to alter one or more of our practices to be in compliance with these laws or any changes in these laws or the interpretation thereof. Any violations of these laws, or allegations of such violations, could disrupt our operations, involve significant management distraction, cause us to incur significant costs and expenses, including legal fees, and result in a material adverse effect on our business, prospects, financial condition and results of operations. We could also suffer severe penalties, including criminal and civil penalties, disgorgement and other remedial measures.

Risks related to our highly regulated industry

We conduct business in a heavily regulated industry, and changes in regulations or violations of regulations may, directly or indirectly, reduce our revenue, adversely affect our results of operations and financial condition, and harm our business.

The clinical laboratory testing industry is highly regulated, and there can be no assurance that the regulatory environment in which we operate will not change significantly and adversely to us in the future. Areas of the regulatory environment that may affect our ability to conduct business include, without limitation:

- federal, state and foreign laws applicable to test ordering, documentation of tests ordered, billing practices and claims payment and/or regulatory agencies enforcing those laws and regulations;

- federal, state and foreign health care fraud and abuse laws;

- federal, state and foreign laboratory anti-mark-up laws;

- coverage and reimbursement levels by Medicare, Medicaid, other governmental payers and private insurers;
- restrictions on coverage of and reimbursement for tests;
- federal, state and foreign laws governing laboratory testing, including CLIA, and state licensing laws;
- federal, state and foreign laws and enforcement policies governing the development, use and distribution of diagnostic medical devices, including laboratory developed tests, or LDTs;
- federal, state, local and foreign laws governing the handling and disposal of medical and hazardous waste;
- federal and state Occupational Safety and Health Administration rules and regulations;
- HIPAA, and similar state or foreign data privacy and security laws; and
- consumer protection laws.

In particular, the laws and regulations governing the marketing of clinical laboratory tests are complex, and there are often no sufficient regulatory or judicial interpretations of these laws and regulations. For example, some of our clinical laboratory tests are actively regulated by the FDA pursuant to the medical device provisions of the Federal Food, Drug and Cosmetic Act, or FDCA. The FDA defines a medical device to include any instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article, including a component, part or accessory, intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease, in man or other animals. Our clinical laboratory tests are in vitro diagnostic products that are considered by the FDA to be medical devices. Among other things, pursuant to the FDCA and its implementing regulations, the FDA regulates the research, design, testing, manufacturing, safety, labeling, storage, recordkeeping, premarket clearance or approval, marketing and promotion and sales and distribution of medical devices in the United States to ensure that medical devices distributed domestically are safe and effective for their intended uses. In addition, the FDA regulates the import and export of medical devices. If we do not comply with these requirements or fail to adequately comply, our business may be harmed.

Certain of our tests are currently marketed as LDTs, and future changes in FDA enforcement discretion for LDTs could subject our operations to much more significant regulatory requirements.

We market some of our tests, Guardant360, Guardant360 Response, Guardant360 Tissue Next, and Guardant Reveal, as LDTs. LDTs are in vitro diagnostic tests that are intended for clinical use and are designed, manufactured, and used within a single laboratory. Although LDTs are classified as medical devices and the FDA has statutory authority to ensure that medical devices are safe and effective for their intended uses, the FDA has historically exercised enforcement discretion and has not enforced certain applicable FDA requirements, including premarket review, with respect to LDTs. While we believe that we are in material compliance with applicable laws and regulations, we cannot assure that the FDA will agree with us. If there are changes in FDA policy, or if the FDA disagrees that we are marketing our tests as LDTs within the scope of its policy of enforcement discretion, we may become subject to extensive regulatory requirements and may be required to stop selling our existing tests or launching any other tests we may develop and to conduct additional clinical studies or take other actions prior to continuing to market our tests. This could significantly increase the costs and expenses of conducting, or otherwise harm, our business.

Legislative and administrative proposals proposing to amend the FDA's oversight of LDTs have been introduced in recent years and we expect that new legislative and administrative proposals will continue to be introduced from time to time. It is possible that legislation could be enacted into law or regulations or guidance could be issued by the FDA which may result in new or increased regulatory requirements for us to continue to offer our LDTs or to develop and introduce new tests as LDTs.

In addition, the FDA and Congress have, for over the past decade, considered a number of proposals to end the FDA's enforcement discretion policy for LDTs and subject LDTs to additional regulatory requirements.

Even if the FDA does not modify its policy of enforcement discretion, whether due to changes in FDA policy or legislative action, the FDA may disagree that we are marketing our LDTs within the scope of its policy of enforcement discretion and may impose significant regulatory requirements, including the requirement for

premarket review and subsequent marketing authorization. We may also be required to conduct clinical studies to support our currently marketed products or planned product launches. If we are required to conduct such clinical studies delays in the commencement or completion of clinical testing could significantly increase our test development costs and delay commercialization of any currently-marketed tests that we may be required to cease selling or the commercialization of any future tests that we may develop, which could harm our financial prospects.

There is no guarantee that the FDA will grant 510(k) clearance or a premarket approval of our products or that similar foreign authorities or notified bodies will grant premarket approval or certify our products and failure to obtain necessary clearances or approvals or certifications for our products would adversely affect our ability to grow our business.

Before we begin to label and market our products for use as clinical diagnostics in the United States, including as companion diagnostics, we may be required to obtain either 510(k) clearance or a premarket approval, or supplemental premarket approval, or respectively, PMA or PMA supplement, from the FDA, unless an exemption applies or FDA exercises its enforcement discretion and refrains from enforcing its medical device requirements. For example, the FDA has a policy of refraining from enforcing such requirements with respect to LDTs, which the FDA considers to be a type of *in vitro* diagnostic test that is designed, manufactured and used within a single laboratory.

The process of obtaining a PMA is a rigorous, costly, lengthy and uncertain process. In the PMA process, the FDA must determine that a proposed device is safe and effective for its intended use based, in part, on extensive data, including, but not limited to, technical, pre-clinical, clinical study, manufacturing and labeling data. In the 510(k) clearance process, the FDA must determine that a proposed device is "substantially equivalent" to a device legally on the market, known as a "predicate" device, in order to clear the proposed device for marketing. To be "substantially equivalent," the proposed device must have the same intended use as the predicate device, and either have the same technological characteristics as the predicate device or have different technological characteristics and not raise different questions of safety or effectiveness than the predicate device. Clinical data is sometimes required to support a substantial equivalence determination.

In order to sell our products in member states of the EU, our products must comply with the essential requirements of the EU In Vitro Diagnostic Medical Devices Directive (Directive 98/79/EC), or IVDD. Compliance with these requirements is a prerequisite to be able to affix the European Conformity, or CE, mark to our products, without which they cannot be sold or marketed in the EU. All medical devices placed on the market in the EU must meet the essential requirements laid down in Annex I to the IVDD including the requirement that an in vitro diagnostic medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the performances intended by the manufacturer and be designed, manufactured, and packaged in a suitable manner. To demonstrate compliance with the essential requirements we must undergo a conformity assessment procedure, which varies according to the type of medical device and its (risk) classification. As a general rule, demonstration of conformity of in vitro diagnostic medical devices and their manufacturers with the essential requirements must be based, among other things, on the evaluation of clinical data supporting the safety and performance of the products during normal conditions of use. Specifically, a manufacturer must demonstrate that the device achieves its intended performance during normal conditions of use, that the known and foreseeable risks, and any adverse events, are minimized and acceptable when weighed against the benefits of its intended performance, and that any claims made about the performance and safety of the device are supported by suitable evidence.

Except for (general) in vitro diagnostic medical devices, where the manufacturer can self-declare the conformity of its products with the essential requirements of the IVDD, a conformity assessment procedure requires the intervention of a notified body. Notified bodies are independent organizations designated by EU member states to assess the conformity of devices before being placed on the market. The Notified Body would typically audit and examine the product's technical file and the manufacturer's quality system (notified body must presume that quality systems which implement the relevant harmonized standards – which is ISO 13485:2016 for Quality Management Systems – conform to these requirements). If satisfied that the relevant product conforms to the relevant essential requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity. The manufacturer may then apply the CE mark to the device, which allows the device to be placed on the market throughout the EU.

The aforementioned EU rules are generally applicable in the European Economic Area, or EEA, which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland.

Any delay or failure to obtain necessary regulatory approvals or clearances or certifications would have a material adverse effect on our business, prospects, financial condition and results of operations.

The FDA and foreign authorities or notified bodies can delay, limit or deny clearance or approval or certification of a device for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA, similar foreign authorities or notified bodies that our products are safe or effective for their intended uses;
- the disagreement of the FDA, similar foreign authorities or notified bodies with the design, conduct or implementation of our clinical studies or the analysis or interpretation of data from our pre-clinical or clinical studies;
- serious and unexpected adverse effects experienced by participants in our clinical studies;
- the data from our pre-clinical and clinical studies may be insufficient to support clearance or approval, or certification where required;
- our inability to demonstrate that the clinical and other benefits of any of our tests outweigh the risks;
- an advisory committee, if convened by the FDA, may recommend against approval of our PMA or other application for any of our tests or may recommend that the FDA require, as a condition of approval, additional pre-clinical studies or clinical studies, limitations on approved labeling or distribution and use restrictions, or even if an advisory committee, if convened, makes a favorable recommendation, the FDA may still not approve the test; Similar requirements may apply in foreign jurisdictions;
- the FDA, similar foreign authorities or notified bodies may identify deficiencies in our marketing application, or certification application and in our manufacturing processes, facilities or analytical methods or those of our third-party contract manufacturers;
- the potential for approval or certification policies or regulations of the FDA or similar foreign authorities to change significantly in a manner rendering our clinical data or regulatory filings insufficient for the clearance or approval or certification; and
- the FDA, similar foreign authorities or notified bodies may audit our clinical study data and conclude that the data is not sufficiently reliable to support a PMA or other applications.

If we are unable to obtain clearance or approval or certification for any tests for which we plan to seek clearance or approval or certification, our business may be harmed.

Modifications to our FDA-cleared or approved products may require new 510(k) clearances or premarket approvals, or may require us to cease marketing or recall the modified products until clearances are obtained.

For any product approved pursuant to a PMA, we are required to seek supplemental approval for many types of changes to the approved product, for which we will need to determine whether a PMA supplement or other regulatory filing is needed or whether the change may be reported via the PMA Annual Report. Similarly, any modification to a 510(k)-cleared device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, design, or manufacture, requires new 510(k) clearance or, possibly, approval of a new PMA. The FDA requires us to make this determination in the first instance, but the FDA may review and may not agree with our determination. If the FDA disagrees with our determination and requires us to seek approvals or clearances for modifications to our previously approved or cleared products, for which we concluded that new approvals or clearances are unnecessary, we may be required to cease marketing or distribution of our products or to recall the modified product until we obtain the approval or clearance, and we may be subject to significant regulatory fines or penalties.

Similar requirements apply in foreign jurisdictions. For instance, in the EU, we must inform the notified body that carried out the conformity assessment of the devices that we market or sell in the EU and EEA of any planned substantial changes to our quality system or substantial changes to our in vitro diagnostic medical devices that could affect compliance with the essential requirements laid down in Annex I to IVDD or cause a substantial change to the intended use for which the device has been CE marked. The notified body will then assess the planned changes and verify whether they affect the products' ongoing conformity with the IVDD. If the assessment is favorable, the notified body will issue a new certificate of conformity or an addendum to the existing certificate attesting compliance with the essential requirements and quality system requirements laid down in the Annexes to the IVDD.

If third-party payers, including commercial payers and government healthcare programs, do not provide coverage of, or adequate reimbursement for, our tests, our business and results of operations will be negatively affected.

Our revenue and commercial success depend on achieving coverage and reimbursement for our tests from payers, including both commercial and government payers. If payers do not provide coverage of, or do not provide adequate reimbursement for our tests, we may need to seek payment from the patient, which may adversely affect demand for our tests. Coverage determinations by a payer may depend on a number of factors, including but not limited to a payer's determination that a test is appropriate, medically necessary or cost-effective. If we are unable to provide payers with sufficient evidence of the clinical utility and validity of our test, they may not provide coverage, may provide limited coverage or may terminate coverage, which will adversely affect our revenues and our financial condition. To the extent that more competitors enter our markets, the availability of coverage and the reimbursement rate for our tests may decrease as we encounter pricing pressure from our competitors.

Each payer makes its own decision as to whether to provide coverage for our tests, whether to enter into a contract with us and the reimbursement rate for a test. Negotiating with payers is time-consuming, and payers often insist on their standard form contracts. There is no guarantee that a payer will provide adequate coverage or reimbursement for our tests or that we can reach an agreement with the payer on reasonable terms without being subject to additional regulatory and compliance risks. In cases where there is no coverage, or we do not have a contracted rate for reimbursement with the payer, the patient is typically responsible for a greater share of the cost of the test, which may result in delay of revenue, increase collection costs or decrease the likelihood of collection. We maintain a financial assistance program, the Guardant Access Program, under which we assess patient financial need and offer provide discounted or no cost tests to certain patients. This may result in scrutiny by payers of our Guardant Access Program, and this could result in recoupment actions or termination of coverage of our tests.

Our claims for reimbursement may be denied and we may have to appeal such denials in order to get paid. Such appeals may not result in payment. Payers may perform audits of historically paid claims and attempt to recoup funds years after the funds were initially distributed if the payers believe the funds were paid in error or determine that our tests were medically unnecessary. If a payer's audit of our claims results in a negative finding, and we are unable to reverse the finding through appeal, any subsequent recoupment could result in a material adverse effect on our revenue. Additionally, in some cases commercial payers for whom we are not a participating provider may elect at any time to review claims previously paid and determine the amount they paid was excessive. In these situations, the payer typically notifies us of its decision and then offsets the amount it determines to be overpaid against amounts it owes us on current claims. We do not have a mechanism to dispute these retroactive adjustments, and we cannot predict when, or how often, a payer might engage in these reviews.

When we contract with a payer as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained. Becoming a participating provider can result in higher reimbursement amounts for covered uses of our test and, potentially, no reimbursement for non-covered uses identified under the payer's policies or the contract.

Although we are a participating provider with some commercial payers, certain other large, national commercial payers, including Anthem, Aetna and Humana, have issued non-coverage policies that consider tissue and liquid CGP testing, including our Guardant360 test, as experimental or investigational. If we are not successful in obtaining coverage from such payers, or if other payers issue similar non-coverage policies, our business and results of operations could be materially and adversely affected.

Medicare's National Coverage Determination, or NCD, for Next Generation Sequencing, or NGS, first established in 2018 and subsequently updated in 2020 states that NGS tests, such as our Guardant360 test, are covered by Medicare nationally, when: (1) performed in a CLIA-certified laboratory, (2) ordered by a treating physician, (3) the patient meets certain clinical and treatment criteria, including having recurrent, relapsed, refractory, metastatic, or

advanced stages III or IV cancer, (4) the test is approved or cleared by the FDA as a companion in vitro diagnostic for an FDA approved or cleared indication for use in that patient's cancer, and (5) results are provided to the treating physician for management of the patient using a report template to specify treatment options. The NGS NCD also states that each Medicare Administrative Contractor, or MAC, may provide local coverage of other next-generation sequencing tests for cancer patients only when the test is performed by a CLIA-certified laboratory, ordered by a treating physician and the patient meets the same clinical and treatment criteria required of nationally covered next-generation sequencing tests under the NGS NCD. An NGS test is not covered by Medicare when cancer patients do not have the above-noted indications for cancer under either national or local coverage criteria. In July 2018, Palmetto GBA, or Palmetto, the MAC responsible for administering Medicare's Molecular Diagnostic Services Program, or MolDx, issued a local coverage determination, or LCD, for our Guardant360 test for NSCLC patients who meet certain clinical and treatment criteria. Subsequently, in 2018, Noridian Healthcare Solutions, the MAC responsible for adjudicating claims in California, where our laboratory is located, and a participant in MolDx, finalized its LCD for our Guardant360 test. In September 2018, we began to receive reimbursement from Medicare for claims submitted with respect to Guardant360 clinical tests performed for NSCLC patients. In December 2019, replacing its prior NSCLC patient LCD, Palmetto GBA finalized its expanded LCD for our Guardant360 test that provides limited Medicare coverage for use of the Guardant360 test for qualifying patients diagnosed with solid cancers of non-central nervous system origin. In May 2019, Noridian also issued an expanded draft LCD for our Guardant360 test consistent with the expanded draft LCD issued by Palmetto in March 2019. In May 2020, Noridian issued a coverage article and confirmed limited Medicare coverage for our Guardant360 test for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin who meet the criteria of the NGS NCD. Noridian also retired the expanded draft LCD issued in May 2019 as being superseded by the coverage article. Future actions taken by Noridian or Palmetto may change Medicare coverage for our Guardant360 test. In March 2020, we began to receive reimbursement from Medicare for claims submitted, with respect to Guardant360 clinical tests performed for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin other than NSCLC.

Under Medicare, payment for laboratory tests like ours is generally made under the Clinical Laboratory Fee Schedule, or CLFS, with payment amounts assigned to specific procedure billing codes. In April 2014, Congress passed the Protecting Access to Medicare Act of 2014, or PAMA, which included substantial changes to the way in which clinical laboratory services are paid under Medicare. Under PAMA, laboratories that receive the majority of their Medicare revenue from payments made under the CLFS are generally required to report to CMS, beginning in 2017 and every three years thereafter (or annually for "advanced diagnostic laboratory tests"), private payer payment rates and volumes for each test they perform. CMS uses this data to calculate a weighted median payment rate for each test, which is used to establish revised Medicare CLFS reimbursement rates for the test. Laboratories that fail to report the required payment information may be subject to substantial civil monetary penalties. As we have begun billing Medicare for our tests, we are subject to reporting requirements under PAMA and the Medicare rate for our tests will be calculated in the future based on our private payer rates. For clinical diagnostic laboratory tests furnished on or after January 1, 2018, their Medicare CLFS reimbursement rates are established upon these reported private payer rates. On December 10, 2021, Congress passed the Protecting Medicare and American Farmers from Sequester Cuts Act, which delays by one year the next data reporting period and prevents any reduction in payment amounts from commercial payer rate implementation in 2022. If we are unable to obtain and maintain favorable reimbursement rates from commercial payers for our tests, this may adversely affect the tests' Medicare reimbursement rates. We believe that we will be required to report private payer rates for our tests every three years; but this determination may change. It is unclear what impact new Medicare pricing structures, such as those adopted under PAMA, may have on our business, financial condition, results of operations or cash flows.

Some payers have implemented, or are in the process of implementing, laboratory benefit management programs, often using third-party benefit managers to manage these programs. The stated goals of these programs are to help improve the quality of outpatient laboratory services, support evidence-based guidelines for patient care and lower costs. The impact on laboratories, such as us, of active laboratory benefit management by third parties is unclear, and we expect that it would have a negative impact on our revenue in the short term. Payers may resist reimbursement for our tests in favor of less expensive tests, require pre-authorization for our tests, or impose additional pricing pressure on and substantial administrative burden for reimbursement for our tests. We expect to continue to focus substantial resources on increasing adoption of, and coverage and reimbursement for, our current tests and any future tests we may develop. We believe it may take several years to achieve broad coverage and adequate contracted reimbursement with a majority of payers for our tests. However, we cannot predict whether, under what circumstances, or at what price levels payers will cover and reimburse our tests. If we fail to establish and maintain broad adoption of, and coverage and reimbursement for, our tests, our ability to generate revenue could be harmed and our business and prospects could suffer.

Our products may in the future be subject to product recalls. A recall of our products, either voluntarily or at the direction of the FDA or another governmental authority, or the discovery of serious safety issues with our products, could have a significant adverse impact on us.

The FDA has the authority to require the recall of commercialized products that are subject to FDA regulation in the event of material deficiencies or defects in design or manufacture. The authority to require a recall must be based on an FDA finding that there is reasonable probability that the device would cause serious, adverse health consequences or death. We may also, on our own initiative, recall a product. The FDA requires that certain classifications of recalls be reported to the FDA within ten working days after the recall is initiated. In the case of our FDA-approved tests, a government-mandated or voluntary recall by us or one of our distributors could occur as a result of an unacceptable risk to health, component failures, malfunctions, manufacturing errors, design or labeling defects or other deficiencies and issues. Recalls of any of our products could impair our ability to produce our products in a cost-effective and timely manner, which would have an adverse effect on our reputation, results of operations and financial condition. We may be subject to liability claims, may be required to bear costs or may take other actions that may have a negative impact on our future sales and our ability to generate profits. Companies are required to maintain certain records of recalls, even if they are not reportable to the FDA. We may initiate voluntary recalls involving our products in the future that we determine do not require notification to the FDA. If the FDA disagrees with our determinations, the FDA could require us to report those actions and take enforcement action for failing to report the recalls when they were conducted. Similar requirements apply in foreign jurisdictions. A future recall announcement could harm our reputation with customers and negatively affect our sales and financial condition.

If we initiate a correction or removal for one of our tests, issue a safety alert or undertake a field action or recall to reduce a risk to health imposed by the test, this could lead to increased scrutiny by the FDA and our customers regarding the quality and safety of our tests and to negative publicity, including FDA alerts, press releases or administrative or judicial actions. Furthermore, circulation of any such negative publicity could harm our reputation, be used by competitors against us in competitive situations and cause customers to delay purchase decisions or cancel orders.

Clinical development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and studies may not be predictive of future study results.

Our ongoing research and development and clinical study activities are subject to extensive regulation and review by numerous governmental authorities both in the United States and abroad; and by notified bodies in some foreign jurisdictions. Clinical testing is difficult to design and implement, can take many years, can be expensive and carries uncertain outcomes. The results of nonclinical and clinical studies of our products conducted to date, and ongoing or future studies of our current, planned or future products may not be predictive of the results of later clinical studies, and interim results of a clinical study do not necessarily predict final results. The data and results from our clinical studies does not ensure that we will achieve similar results in future clinical studies. Failure can occur at any stage of clinical testing. Clinical studies may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and nonclinical testing in addition to those we have planned before we are able to seek marketing authorizations or certifications for our products or product candidates.

We may experience delays in our clinical studies for a number of reasons, which could adversely affect the costs, timing or successful completion of such clinical studies.

Patient enrollment in clinical studies and completion of patient follow up depend on many factors, including the size of the patient population, the nature of the study protocol, the proximity of patients to clinical sites, the eligibility criteria for the clinical study, patient compliance, competing clinical studies and clinicians' and patients' perceptions as to the potential advantages of the product being studied in relation to other available products. In addition, patients participating in our clinical studies may drop out before completion of the study or experience adverse medical events unrelated to our products. Delays in patient enrollment or failure of patients to continue to participate in a clinical study may delay commencement or completion of the clinical study, cause an increase in the costs of the clinical study and delays, or result in the failure of the clinical study. In addition, the target enrollment for certain of our clinical studies, including our ECLIPSE study, is based upon our estimates that a given percentage of enrolled patients will have a specified disease or condition, and we cannot be certain that these estimates will prove correct, or that our clinical studies, even if fully enrolled, will produce data sufficient to support the submission of a PMA or other marketing application to the FDA or a comparable regulatory authority. If our clinical studies do not enroll a sufficient number of patients to support submission of a PMA or similar marketing application, or if the number of patients enrolled with the target disease or condition is lower than we estimated, we may be required to enroll additional patients in our clinical studies or conduct additional clinical studies before we are able to seek and/or

obtain marketing authorizations for our product candidates, which may result in significant additional expenses for us and could delay or prevent us from bringing our product candidates to market.

In addition, we may find it necessary to engage CROs to perform data collection and analysis and other aspects of our clinical studies, which might increase the cost and complexity of our studies. We may also depend on clinical investigators, medical institutions and contract research organizations to perform the studies, and would control only certain aspects of their activities. We would be responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties would not relieve us of our regulatory responsibilities. We and our third-party contractors are required to comply with good clinical practices, or GCPs, which are regulations and guidelines enforced by the FDA, and comparable regulations enforced by foreign regulatory authorities for products in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of study sponsors, principal investigators and study sites. If we or any third-party contractor fails to comply with applicable GCPs, the clinical data generated in clinical studies may be deemed unreliable and the FDA or comparable foreign regulatory authorities or notified bodies may require us to perform additional clinical studies before clearing, or approving our marketing applications or certifying our products. A failure to comply with these regulations may require us to repeat clinical studies, which would delay the regulatory clearance, approval or certification process.

If there are delays in testing or clearances, approvals or certifications as a result of the failure to perform by third parties, our research and development costs would increase, and we may not be able to obtain regulatory clearance, approval, or certification for our tests. In addition, we may not be able to establish or maintain relationships with these parties on favorable terms, if at all. Each of these outcomes would harm our ability to market our tests, generate revenue or to achieve sustained profitability.

Our "research use only" and "investigational use only" products could become subject to more onerous regulation by the FDA or other regulatory agencies in the future, which could increase our costs and delay our commercialization efforts, thereby materially and adversely affecting our business and results of operations.

In the United States, some of our products, including our GuardantOMNI test, are currently available for research use only, or RUO, or for investigational use only, or IUO, depending on the proposed application. We make our RUO and IUO products available to a variety of parties, including biopharmaceutical companies and research institutes. Because RUO and IUO products are not intended for use in clinical practice and cannot be advertised or promoted for clinical or diagnostic claims, they are exempt from many regulatory requirements otherwise applicable to medical devices. In particular, while the FDA regulations require that RUO products be labeled "For Research Use Only. Not for use in diagnostic procedures," and that IUO products be labeled "For Investigational Use Only. The performance characteristics of this product have not been established," such products are not subject to the FDA's pre- and post-market controls for medical devices.

A significant change in the laws governing RUO or IUO products or how they are enforced may require us to change our business model in order to maintain compliance. For instance, in November 2013 the FDA issued a guidance document entitled "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only or Investigational Use Only," or the RUO/IUO Guidance, which highlights the FDA's interpretation that distribution of RUO or IUO products with any labeling, advertising or promotion that suggests that clinical laboratories can validate the test through their own procedures and subsequently offer it for clinical diagnostic use as an LDT is in conflict with the RUO or IUO status. The RUO/IUO Guidance further articulates the FDA's position that any assistance offered in performing clinical validation or verification, or similar specialized technical support, to clinical laboratories, is in conflict with RUO or IUO status. If we engage in any activities that the FDA deems to be in conflict with the RUO or IUO status held by any of our products so labeled, we may be subject to immediate, severe and broad FDA enforcement action that would adversely affect our ability to continue operations. Accordingly, if the FDA finds that we are distributing our RUO or IUO products in a manner that is inconsistent with its RUO/IUO Guidance, we may be forced to stop distribution of our RUO/IUO tests until we are in compliance, which would reduce our revenue, increase our costs and adversely affect our business, and results of operations.

Even if we receive regulatory approval or certification of our products, we will continue to be subject to extensive regulatory oversight.

Medical devices are subject to extensive regulation by the FDA in the United States, the MHLW in Japan, the European authorities, EEA competent authorities, and comparable regulatory agencies in other territories where we

do business. If any of our products are approved by the FDA, the MHLW, or other comparable foreign regulatory agencies or certified by notified bodies in foreign jurisdictions, we will be required to timely file various reports. If these reports are not filed timely, regulators may impose sanctions and sales of our products may suffer, and we may be subject to product liability or regulatory enforcement actions, all of which could harm our business. In addition, as a condition of approving a PMA, the FDA may also require some form of post-approval study or post-market surveillance, whereby the applicant conducts a follow-up study or follows certain patient groups for a number of years and makes periodic reports to the FDA on the clinical status of those patients when necessary to protect the public health or to provide additional safety and effectiveness data for the device. The product labeling must be updated and submitted in a PMA supplement as results, including any adverse event data from the post-approval study, become available. Failure to conduct or timely complete post-approval studies in compliance with applicable regulations, update the product labeling, or comply with other post-approval requirements could result in withdrawal of approval of the PMA, which would harm our business and revenue.

The FDA and the Federal Trade Commission, or FTC, also regulate the advertising and promotion of medical devices to ensure that their promotional claims made are consistent with the applicable marketing authorizations, that there are adequate and reasonable data to substantiate the claims, and that the promotional labeling and advertising is neither false nor misleading in any respect. If the FDA or FTC determines that any of our promotional claims are false, misleading, not substantiated or not permissible, we may be subject to enforcement actions and we may be required to revise our promotional claims and make other corrections or restitutions. Similar requirements apply in foreign jurisdictions.

The FDA, state and foreign authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA, state or foreign regulatory agencies, which may include any of the following sanctions:

- adverse publicity, warning letters, untitled letters, fines, injunctions, consent decrees and civil penalties;
- repair, replacement, refunds, recalls, termination of distribution, administrative detention or seizures of our products;
- operating restrictions, partial suspension or total shutdown of production;
- customer notifications or repair, replacement or refunds;
- refusing our requests for clearances or approvals of new products, new intended uses or modifications to existing products;
- withdrawals of current clearances, approvals or certifications, resulting in prohibitions on sales of our products;
- refusal to issue certificates needed to export products for sale in other countries; and
- criminal prosecution.

Any of these sanctions could also result in higher than anticipated costs or lower than anticipated sales of our products and have a material adverse effect on our reputation, business, results of operations and financial condition.

In addition, the FDA may change its clearance and approval policies, adopt additional regulations or revise existing regulations, or take other actions which may prevent or delay approval or clearance of our current or future products under development. For example, in November 2018, FDA officials announced forthcoming steps that the FDA intends to take to modernize the premarket notification pathway under Section 510(k) of the FDCA.

Among other things, the FDA announced that it planned to develop proposals to drive manufacturers utilizing the 510(k) pathway toward the use of newer predicates. These proposals included plans to potentially sunset certain older devices that were used as predicates under the 510(k) clearance pathway, and to potentially publish a list of devices that have been cleared on the basis of demonstrated substantial equivalence to predicate devices that are more than 10 years old. These proposals have not yet been finalized or adopted, and the FDA may work with Congress to implement such proposals through legislation. Accordingly, it is unclear the extent to which any proposals, if adopted, could impose additional regulatory requirements on us that could delay our ability to obtain new 510(k) clearances, increase the costs of compliance, or restrict our ability to maintain our current clearances, or otherwise create competition that may negatively affect our business.

More recently, in September 2019, the FDA issued revised final guidance describing an optional "safety and performance based" premarket review pathway for manufacturers of "certain, well-understood device types" to demonstrate substantial equivalence under the 510(k) clearance pathway by showing that such device meets objective safety and performance criteria established by the FDA, thereby obviating the need for manufacturers to compare the safety and performance of their medical devices to specific predicate devices in the clearance process. The FDA maintains a list device types appropriate for the "safety and performance based" pathway and continues to develop product-specific guidance documents that identify the performance criteria for each such device type, as well as recommended testing methods, where feasible. The FDA may establish performance criteria for classes of devices similar to ours, and it is unclear the extent to which such performance standards, if established, could impact our ability to obtain marketing authorization or otherwise create competition that may negatively affect our business.

In addition, FDA regulations and guidance are often revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. Any new statutes, regulations or revisions or reinterpretations of existing regulations may impose additional costs or lengthen review times of any product candidates or make it more difficult to obtain marketing authorizations for, manufacture, market or distribute any product candidate we are developing. We cannot determine what effect changes in regulations, statutes, legal interpretation or policies, when and if promulgated, enacted or adopted may have on our business in the future. Such changes could, among other things, require: additional testing prior to seeking marketing authorization, changes to manufacturing methods recalls, replacement or discontinuance of our products or additional record keeping.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be promulgated that could prevent, limit or delay marketing authorization of any product candidates we develop. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may be subject to enforcement action and we may not achieve or sustain profitability.

The EU regulatory landscape concerning medical devices (including in vitro diagnostic medical devices) is evolving. On April 5, 2017 Regulation (EU) 2017/746 of the European Parliament and of the Council on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU, or the IVDR, was adopted to establish a modernized and more robust EU legislative framework, with the aim of ensuring better protection of public health and patient safety. Unlike directives, the IVDR does not need to be transposed into national law and therefore reduces the risk of discrepancies in interpretation across the different European markets.

The IVDR will become applicable five years after publication (on May 26, 2022). However, on October 14, 2021, the European Commission proposed a "progressive" roll-out of the IVDR to prevent disruption in the supply of in vitro diagnostic medical devices. Consequently, if the European Parliament and Council adopt the proposed regulation, the IVDR will fully apply on May 26, 2022 but there will be a tiered system extending the grace period for many devices (depending on their risk classification) before they have to be fully compliant with the regulation. These modifications may have an effect on the way we conduct our business in the EU and the EEA.

Changes in funding for, or disruptions caused by global health concerns impacting, the FDA and other government agencies or notified bodies could hinder their ability to hire and retain key leadership and other personnel, or otherwise prevent new medical device products from being developed, authorized or commercialized in a timely manner, which could negatively impact our business.

The ability of the FDA, foreign regulatory authorities and notified bodies to review and authorize the sale or certify new products can be affected by a variety of factors, including government budget and funding levels; its ability to hire and retain key personnel and accept the payment of user fees; statutory, regulatory, and policy changes; and other events that may otherwise affect the FDA's foreign regulatory authorities' and notified bodies' ability to perform routine functions. Average review times at the FDA have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA, other agencies and notified bodies may also slow the time necessary for new devices, including in vitro diagnostics to be reviewed and/or authorized or certified for marketing by necessary government agencies or notified bodies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Since the onset of the COVID-19 pandemic, the FDA has used a risk-based assessment system to identify the categories of regulatory activity that can occur within a given geographic area, ranging from mission critical inspections to resumption of all regulatory activities. In May 2021, FDA issued a "Resiliency Roadmap for FDA Inspectional Oversight" report, which stated that mission-critical inspections will continue to be prioritized. The report also stated that while routine surveillance inspections will continue to be conducted, the agency will prioritize higher-tiered needs. Thus, a longer interval between inspections will occur for lower-tiered inspection assignments as the agency adjusts to the impact of the COVID-19 pandemic. Other regulatory authorities may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or other regulatory authorities from conducting business as usual or conducting inspections, reviews or other regulatory activities, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

In the EU, notified bodies must be officially designated to certify products and services in accordance with the IVDR. Only a few notified bodies have been designated so far and the COVID-19 pandemic has significantly slowed down their designation process. Without IVDR designation, notified bodies may not yet start certifying devices in accordance with the new Regulation. As only a few notified bodies has been IVDR-designated they are facing a heavy workload and their review times have lengthened. This situation could impact the way we are conducting or intend to conduct our business in the EU and the EEA.

Failure to comply with federal, state and foreign laboratory licensing requirements and the applicable requirements of the FDA or any other regulatory authority, could cause us to lose the ability to perform our tests, experience disruptions to our business, or become subject to administrative or judicial sanctions.

We are subject to the Clinical Laboratory Improvement Amendments, or CLIA, a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. CLIA regulations establish specific standards with respect to personnel qualifications, facility administration, proficiency testing, quality control, quality assurance and inspections. Any testing subject to CLIA regulation must be performed in a CLIA certified laboratory. CLIA certification is also required in order for us to be eligible to bill state and federal healthcare programs, as well as commercial payers, for our tests. We have a current CLIA certificate to perform our tests at our laboratory in Redwood City, California. To maintain this certificate, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make random inspections of our laboratory from time to time.

We are also required to maintain a California clinical laboratory license to perform testing in California. California laboratory laws establish standards for day-to-day operation of our clinical laboratory in Redwood City, California, including the training and skills required of personnel and quality control. In addition, some other states require our California laboratory to be licensed in the state in order to test specimens from those states. In addition to California, our laboratory is licensed in Florida, Maryland, Pennsylvania, Rhode Island and New York. Although we have obtained licenses from states where we believe we are required to be licensed, it is possible that other states we are not aware of currently require out-of-state laboratories to obtain licensure in order to test specimens from the state, and that other states may adopt similar requirements in the future.

We may also be subject to regulations in foreign jurisdictions as we seek to expand international utilization of our tests or as such jurisdictions adopt new licensure requirements, which may require review of our tests in order to offer them or may have other limitations such as restrictions on the transport of specimens necessary for us to perform our tests that may limit our ability to make our tests available outside of the United States. Complying with licensure requirements in new jurisdictions may be expensive, time-consuming and subject us to significant and unanticipated delays.

Failure to comply with applicable clinical laboratory licensure requirements may result in a range of enforcement actions, including suspension, limitation or revocation of our CLIA certificate and/or state licenses, imposition of a directed plan of action, on-site monitoring, civil monetary penalties, criminal sanctions, inability to receive reimbursement from Medicare, Medicaid and commercial payers, as well as significant adverse publicity. Any sanction imposed under CLIA, its implementing regulations, or state or foreign laws or regulations governing clinical laboratory licensure or our failure to renew our CLIA certificate, a state or foreign license or accreditation, could have a material adverse effect on our business, financial condition and results of operations. Even if we were able to bring our laboratory back into compliance, we could incur significant expenses and potentially lose revenue in doing so.

In order to test specimens from New York, LDTs must be approved by the New York State Department of Health, or NYSDOH, on a product-by-product basis before they are offered, and our Guardant360 test has been approved by NYSDOH. We will need to seek NYSDOH approval of any future LDTs we develop and want to offer for clinical testing to New York residents, and there can be no assurance that we will be able to obtain such approval. As a result, we are subject to periodic inspection by the NYSDOH and are required to demonstrate ongoing compliance with NYSDOH regulations and standards. To the extent NYSDOH identified any non-compliance and we are unable to implement satisfactory corrective actions to remedy such non-compliance, the State of New York could withdraw approval for our tests.

The College of American Pathologists, or CAP, maintains a clinical laboratory accreditation program. While not required to operate a CLIA-certified laboratory, many private insurers require CAP accreditation as a condition to contracting with clinical laboratories to cover their tests. In addition, some countries outside the United States require CAP accreditation as a condition to permitting clinical laboratories to test samples taken from their citizens. In 2014, we obtained CAP accreditation for our Redwood City, California laboratory, and in order to maintain such accreditation, we are subject to survey for compliance with CAP standards every two years. Failure to maintain CAP accreditation could have a material adverse effect on the sales of our tests and the results of our operations.

We are subject to numerous federal and state healthcare statutes and regulations; complying with such laws pertaining to our business is an expensive and time-consuming process, and any failure to comply could result in substantial penalties and a material adverse effect to our business and results of operations.

Our operations are subject to other extensive federal, state, local and foreign laws and regulations, all of which are subject to change. These laws and regulations may include, among others:

- the AKS, which prohibits knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind (e.g. provision of free or discounted goods, services or items), in return for or to induce such person to refer an individual, or to purchase, lease, order, arrange for or recommend purchasing, leasing or ordering, any good, facility, item or service that is reimbursable, in whole or in part, under a federal healthcare program. The term ‘‘remuneration’’ has been broadly interpreted to include anything of value, such as phlebotomy kits. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration that are alleged to be intended to induce referrals, purchases or recommendations of covered items or services may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct *per se* illegal under the AKS. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all its facts and circumstances. Several courts have held that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the AKS has been violated. Moreover, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the EKRA, which prohibits knowingly and willfully soliciting or receiving any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, in return for referring a patient or patronage to a laboratory; or paying or offering any remuneration (including any kickback, bribe or rebate) directly or indirectly, overtly or covertly, in cash or in kind, to induce a referral of an individual to a laboratory or in exchange for an individual using the services of that laboratory. The EKRA applies to all payers including commercial payers and government payers;

- the Stark Law, which prohibits a physician from making a referral for certain designated health services covered by the Medicare or Medicaid program, including laboratory and pathology services, if the physician or an immediate family member of the physician has a financial relationship with the entity providing the designated health services and prohibits that entity from billing, presenting or causing to be presented a claim for the designated health services furnished pursuant to the prohibited referral, unless an exception applies;

- the federal Civil Monetary Penalties Law, which prohibits, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary’s selection of a particular provider, practitioner or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies;

- federal and state "Anti-Markup" rules, which, among other things, typically prohibit a physician or supplier billing for clinical or diagnostic tests (with certain exceptions) from marking up the price of a purchased test performed by another physician or supplier that does not "share a practice" with the billing physician or supplier;

- the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, biologicals, and kits, medical devices or supplies that require premarket approval by or notification to the FDA, and for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to CMS, information related to (i) payments and other transfers of value to physicians (as defined by statute), certain other health care professionals beginning in 2022, and teaching hospitals, and (ii) ownership and investment interests in such manufacturers held by physicians and their immediate family members. Failure to submit required information may result in significant civil monetary penalties for any payments, transfers of value or ownership or investment interests that are not timely, accurately, and completely reported in an annual submission, and may result in liability under other federal laws or regulations;

- the federal government may bring a lawsuit under the False Claims Act, or the FCA, against any party whom it believes has knowingly or recklessly presented, or caused to be presented, a false or fraudulent request for payment from the federal government, or who has made a false statement or used a false record to get a claim for payment approved. The federal government and a number of courts have taken the position that claims presented in violation of certain other statutes, including the AKS or the Stark Law, can also be considered a violation of the FCA based on the theory that a provider impliedly certifies compliance with all applicable laws, regulations, and other rules when submitting claims for reimbursement. An FCA violation may provide the basis for the imposition of administrative penalties as well as exclusion from participation in governmental healthcare programs, including Medicare and Medicaid. A number of states including California have enacted laws that are similar to the federal FCA. Private individuals can bring FCA "qui tam" actions, on behalf of the government and such individuals, commonly known as "whistleblowers," may share in amounts paid by the entity to the government in fines or settlement. When an entity is determined to have violated the FCA, the government may impose civil fines and penalties for each false claim, plus treble damages, and exclude the entity from participation in federal healthcare programs. In January 2022, we received a civil investigative demand, or CID, from the United States Attorney for the Northern District of California in connection with an investigation under the False Claims Act. The CID requests information and documents regarding billing government-funded programs for the Company's panel of genetic tests known as Guardant360. We are fully cooperating with the investigation. At this time, we are unable to predict the outcome of this investigation. See "Commitments and Contingencies – Legal Proceedings" in this Annual Report on Form 10-K for more information;

- the HIPAA fraud and abuse provisions, which created federal criminal statutes that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private insurers, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- federal and state laws related to, among other things, unlawful schemes to defraud, excessive fees for services, unlawful trade practices, insurance fraud, kickbacks, patient inducement and statutory or common law fraud restrict the provision of products, services or items for free or at reduced charge to government or non-government healthcare program beneficiaries. These laws and regulations relating to the provision of items or services for free are complex and are subject to interpretation by the courts and by government agencies;

- other federal and state fraud and abuse laws, such as state anti-kickback, self-referrals, false claims and anti-markup laws, any of which may extend to services reimbursable by any payer, including private insurers;

- state laws that prohibit other specified practices, such as billing physicians for tests that they order; providing tests at no or discounted cost to induce adoption; waiving co-insurance, co-payments, deductibles or other amounts owed by patients; billing a state healthcare program at a price that is higher than what is charged to other payers; or employing, exercising control over or splitting fees with licensed medical professionals; and

- similar foreign laws and regulations in the countries in which we operate or may operate in the future.

As a clinical laboratory, our business practices may face additional scrutiny from various government agencies such as the Department of Justice, the U.S. Department of Health and Human Services Office of Inspector General, or OIG, and CMS. Certain arrangements between clinical laboratories and referring physicians have been identified in fraud alerts issued by the OIG as implicating the AKS. The OIG has stated that it is particularly concerned about these types of arrangements because the choice of laboratory and the decision to order laboratory tests typically are made or strongly influenced by the physician, with little or no patient input. Moreover, the provision of payments or other items of value by a clinical laboratory to a referral source could be prohibited under the Stark Law unless the arrangement meets all criteria of an exception. The government has been active in enforcement of these laws against clinical laboratories.

Numerous states have enacted laws prohibiting business corporations, such as us, from practicing medicine and from employing or engaging physicians and other medical professionals (generally referred to as the prohibition against the corporate practice of medicine), which could include physician laboratory directors. These laws are designed to prevent interference in the medical decision-making process by anyone who is not a licensed medical professional. For example, California's Medical Board has indicated that determining the appropriate diagnostic tests for a particular condition and taking responsibility for the ultimate overall care of a patient, including making treatment options available to the patient, would constitute the unlicensed practice of medicine if performed by an unlicensed person. Violation of these laws may result in sanctions and civil or criminal penalties. It is possible that governmental authorities may conclude that our business practices, including our consulting and advisory board arrangements with physicians and other healthcare providers, some of whom receive stock or stock options as compensation for services provided, do not comply with current or future corporate practice of medicine or healthcare fraud and abuse statutes, regulations, agency guidance or case law.

The growth and international expansion of our business may increase the potential of violating applicable laws and regulations. The risk is further increased by the fact that many such laws and regulations have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Efforts to ensure that our internal operations and business arrangements with third parties comply with applicable laws and regulations will involve substantial costs. Any action brought against us for violation of these or other laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Any of the foregoing consequences could seriously harm our business and our financial results. To the extent our business operations are found to be in violation of any of these laws or regulations, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with the law and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and pursue our strategy. If any of the healthcare providers or other parties with whom we interact or may interact in the future, are found not to be in compliance with applicable laws and regulations, they may be subject to criminal, civil or administrative sanctions, including exclusions from participation in various healthcare programs, which could also negatively affect our business or revenue.

If the validity of an informed consent from patients regarding our test was challenged, we could be forced to stop offering our products or using our resources, our business and results of operations will be negatively affected.

We offer our tests to physicians and to biopharmaceutical companies in connection with clinical studies. We have implemented measures to ensure that data and biological samples that we receive have been collected from subjects who have provided appropriate informed consent. We also act as a sponsor of clinical studies in connection with the development of our tests, which are frequently conducted in collaboration with different parties. We seek to receive approval from an ethical review board, or institutional review board, or IRB, or other reviewing bodies for projects that meet the definition of "human subjects research," which includes review and approval of processes for subject informed consent and authorization for use of personal information or waivers thereof. We and our biopharmaceutical partners could conduct clinical studies in a number of different countries. When we are acting as a vendor in connection with a clinical study sponsored by our biopharmaceutical partners, we rely upon them to comply with the requirements to obtain the subject's informed consent and to comply with applicable laws and regulations. The collection of data and samples in many different countries results in complex legal questions regarding the adequacy of informed consent and the status of genetic material under a large number of different legal systems. Those informed consents could be challenged and prove invalid, unlawful, or otherwise inadequate for our purposes. Any such findings against us, or our biopharmaceutical partners, could force us to stop accessing or using data and samples or servicing or conducting clinical studies, which would hinder our product offerings or

development. We could also become involved in legal actions, which could consume our management and financial resources.

We may be subject to fines, penalties, licensure requirements, or legal liability, if it is determined that through our test reports we are practicing medicine without a license.

Our test reports delivered to physicians provide information regarding FDA or foreign regulatory authorities-approved therapies and clinical studies that oncologists may use in making treatment decisions for their patients. We make members of our organization available to discuss the information provided in the reports. Certain state laws prohibit the practice of medicine without a license. Our customer service representatives and medical affairs team provide support to our customers, including assistance in interpreting the test report results. A governmental authority or other parties could allege that the identification of available therapies and clinical studies in our reports and the related customer service we provide constitute the practice of medicine. A state may seek to have us discontinue the inclusion of certain aspects of our test reports or the related services we provide, or subject us to fines, penalties, or licensure requirements. Any determination that we are practicing medicine without a license may result in significant liability to us, and our business and reputation would be harmed.

Our billing and claim processing are complex and time-consuming, and any delay in submitting claims or failure to comply with applicable billing requirements could hinder collection and have an adverse effect on our revenue.

Billing for our tests is complex, time-consuming and expensive. Depending on the billing arrangement and applicable law, we bill various payers, such as Medicare, Medicaid, health plans, insurance companies and patients, all of which may have different billing requirements. Several factors make the billing process complex, including:

- differences between the list prices for our tests and the reimbursement rates of payers;
- compliance with complex federal and state regulations related to billing government healthcare programs, including Medicare and Medicaid, to the extent our tests are covered by such programs;
- differences in coverage among payers and the effect of patient co-payments or co-insurance;
- differences in information, pre-authorization and other billing requirements among payers;
- changes to codes and coding instructions governing our tests;
- incorrect or missing billing information; and
- the resources required to manage the billing and claim appeals process.

These billing complexities and the related uncertainty in obtaining payment for our tests could negatively affect our revenue and cash flow, our ability to achieve profitability and the consistency and comparability of our results of operations. In addition, if claims for our tests are not submitted to payers on a timely basis, or if we fail to comply with applicable billing requirements, it could have an adverse effect on our revenue and our business.

In addition, the coding procedure used by third-party payers to identify various procedures, including our test, during the billing process is complex, does not adapt well to our tests and may not enable coverage and adequate reimbursement rates. Third-party payers usually require us to identify the test for which we are seeking reimbursement using a Current Procedural Terminology, or the CPT code. CPT coding plays a significant role in how our Guardant360 test is reimbursed both from commercial and governmental payers. The CPT code set is maintained by the American Medical Association, or AMA. In cases where there is not a specific CPT code to describe a test, such as Guardant360 test, the test may be billed under an unlisted molecular pathology procedure code or through the use of a combination of single gene CPT codes, depending on the payer. The Protecting Access to Medicare Act, or PAMA authorized the adoption of new, temporary billing codes and unique test identifiers for FDA-cleared or approved tests as well as advanced diagnostic laboratory tests. The AMA has created a new section of CPT codes, Proprietary Laboratory Analyses codes or PLA, to facilitate implementation of this section of PAMA. In addition, CMS maintains the Healthcare Common Procedure Coding System, or HCPCS, and may assign unique level II HCPCS code to tests that are not already described by a unique CPT code. New CPT codes are issued annually and new HCPCS codes are issued as frequently as quarterly. Payers' acceptance of the new code could be delayed, and transition to the new code could result in a decrease in reimbursement for our tests, both of which could potentially reduce revenue from commercial and government payers. In addition, Z-Code Identifiers are used by certain payers, including under Medicare's Molecular Diagnostic Services Program, or MolDx, to supplement CPT

codes for molecular diagnostics tests such as our Guardant360 test. Following the FDA approval of our Guardant360 CDx test, a new Z-Code Identifier was issued in August 2020. In January 2021, a proprietary laboratory analyses, or PLA code was issued for our Guardant360 CDx with an effective date in April 2021. Additionally, based on this new PLA code, we applied to the Centers for Medicare and Medicaid Services or CMS for our Guardant360 CDx test to become an advanced diagnostic laboratory test, or ADLT. In March 2021, CMS approved ADLT status to the Guardant360 CDx test, which Medicare would then pay us at the lowest available commercial rate for the first three quarters from April 1, 2021. After the initial three quarters, Medicare would reimburse Guardant360 CDx services at the median rate of claims paid by commercial payers during this initial period. We are in the process of negotiating reimbursement for our Guardant Reveal, Guardant Response and Guardant360 TissueNext tests from commercial and governmental payers. Due to the inherent variability and unpredictability of the reimbursement landscape, including related to the amount that payers reimburse us for any of our tests, we estimate the amount of revenue to be recognized at the time a test is provided and record revenue adjustments if and when the cash subsequently received for a test differs from the revenue recorded for the test. Due to this variability and unpredictability, previously recorded revenue adjustments are not indicative of future revenue adjustments from actual cash collections, which may fluctuate significantly. Additionally, if coding changes were to occur, payments for certain uses of our tests could be reduced, put on hold, or eliminated.

Use of coding for billing our products that does not describe a specific test, requires the claim to be examined to determine what test was provided, whether the test was appropriate and medically necessary, and whether payment should be rendered, which may require a letter of medical necessity from the ordering physician. This process can result in a delay in processing the claim, a lower reimbursement amount or denial of the claim. Because billing third-party payers for our tests is an unpredictable, challenging, time-consuming and costly process, we may face long collection cycles and the risk that we may never collect at all, either of which could adversely affect our business, results of operations and financial condition, and we may have to increase collection efforts and incur additional costs.

Changes in healthcare laws, regulations and policies could increase our costs, decrease our sales and revenues and negatively impact reimbursement for our tests.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or the ACA, became law. This law substantially changed the way health care is financed by both commercial payers and government payers, and significantly impacted our industry. The ACA contains a number of provisions expected to impact existing state and federal health care programs or result in the development of new programs, including those governing enrollments in state and federal health care programs, reimbursement changes and fraud and abuse. Our business and operations could be affected by the ACA, including in ways we cannot currently predict.

Since its enactment, there have been efforts to repeal all or part of the ACA. On June 17, 2021 the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, reduced Medicare payments to providers by 2% per fiscal year, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through March 31, 2021, unless additional Congressional action is taken.

We anticipate there will continue to be proposals by legislators at both the federal and state levels and in foreign jurisdictions, regulators and commercial and government payers to reduce healthcare costs while expanding individual healthcare benefits. Certain of these changes could impose additional limitations on the prices we will be able to charge for our tests, the coverage of or the amounts of reimbursement available for our tests from commercial and government payers.

Because of the breadth of these laws and the narrowness of their exceptions and safe harbors, it is possible that our current practices are challenged under one or more of such laws. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform. Federal, state and foreign enforcement bodies have increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry.

Our collection, use and disclosure of personally identifiable information, including patient and employee information, is subject to privacy and security laws and regulations, and our failure to comply with those laws and regulations or to adequately secure the information in our possession could result in significant liability or reputational harm.

The global data protection landscape is rapidly evolving, and we are or may become subject to numerous state, federal and foreign laws, requirements and regulations governing the collection, use, disclosure, retention, and security of personal information. We collect, process, maintain, retain, evaluate, utilize and distribute large amounts of personal health and financial information and other confidential and sensitive data about our customers and others in the ordinary course of our business. Concerns about and claims challenging our practices with regard to the collection, use, retention, disclosure or security of personally identifiable information or other privacy-related matters, even if unfounded and even if we are in compliance with applicable laws, could damage our reputation and harm our business.

Numerous federal, state and foreign laws and regulations govern collection, dissemination, use and confidentiality of personally identifiable information and PHI, including HIPAA, state privacy and confidentiality laws (including state laws requiring disclosure of breaches); federal and state consumer protection and employment laws; and European and other foreign data protection laws. Implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future, and we cannot yet determine the impact future laws, regulations, standards, or perception of their requirements may have on our business. This evolution may create uncertainty in our business, affect our ability to operate in certain jurisdictions or to collect, store, transfer use and share personal information, necessitate the acceptance of more onerous obligations in our contracts, result in liability or impose additional costs on us. The cost of compliance with these laws, regulations and standards is high and is likely to increase in the future. Any failure or perceived failure by us to comply with federal, state or foreign laws or regulation, our internal policies and procedures or our contracts governing our processing of personal information could result in negative publicity, government investigations and enforcement actions, claims by third parties and damage to our reputation, any of which could have a material adverse effect on our operations, financial performance and business.

HIPAA, as amended by HITECH, establishes a set of national privacy and security standards for the protection of PHI, by health plans, certain healthcare providers that submit certain covered transactions electronically, or ‘‘covered entities,’’ and their ‘‘business associates,’’ which are persons or entities that perform certain services for, or on behalf of, a covered entity that involve creating, receiving, maintaining or transmitting PHI. We are a covered entity under HIPAA and therefore must comply with its requirements to protect the privacy and security of health information and must provide individuals with certain rights with respect to their health information. If we engage a business associate to help us carry out healthcare activities and functions, we must have a written business associate contract or other arrangement with the business associate that establishes specifically what the business associate has been engaged to do and requires the business associate to comply with certain safeguards and other requirements under HIPAA.

Entities that are found to be in violation of HIPAA as the result of a breach of unsecured PHI, a complaint about privacy practices or an audit by HHS, may be subject to significant civil, criminal and administrative fines and penalties and/or additional reporting and oversight obligations if required to enter into a resolution agreement and corrective action plan with HHS to settle allegations of HIPAA non-compliance. HIPAA also authorizes state Attorneys General to file suit on behalf of their residents. Courts may award damages, costs and attorneys’ fees related to violations of HIPAA in such cases. While HIPAA does not create a private right of action allowing individuals to sue us in civil court for violations of HIPAA, its standards have been used as the basis for duty of care in state civil suits such as those for negligence or recklessness in the misuse or breach of PHI. A person who knowingly obtains or discloses individually identifiable health information in violation of HIPAA may face additional fines and up to one-year imprisonment. The criminal penalties increase if the wrongful conduct involves false pretenses or the intent to sell, transfer, or use identifiable health information for commercial advantage, personal gain, or malicious harm. In addition, responding to government investigations regarding alleged violations of these and other laws and regulations, even if ultimately concluded with no findings of violations or no penalties imposed, can consume company resources and impact our business and, if public, harm our reputation.

Further, various states, such as California and Massachusetts, have implemented similar privacy laws and regulations, such as the California Confidentiality of Medical Information Act, that impose restrictive requirements regulating the use and disclosure of health information and other personally identifiable information. Laws in all 50 states require businesses to provide notice to individuals whose personally identifiable information has been disclosed as a result of a data breach. The laws are not consistent, and compliance in the event of a widespread data breach is costly. States are also constantly amending existing laws, and creating new data privacy and security laws, requiring attention to frequently changing regulatory requirements. For example, the CCPA went into effect on January 1, 2020, and creates certain data privacy rights for California residents. The CCPA creates individual privacy rights for California consumers and increases the privacy and security obligations of entities handling certain personal information. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Further, the CPRA, recently passed in California. The CPRA will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Similar laws have passed in Virginia and Colorado, and have been proposed in other states and at the federal level, reflecting a trend toward more stringent privacy legislation in the United States. These laws and regulations are not necessarily preempted by HIPAA, particularly if a state affords greater protection to individuals than HIPAA. Where state laws are more protective, we may have to comply with the stricter provisions. In addition to fines and penalties imposed upon violators, some of these state laws also afford private rights of action to individuals who believe their personal information has been misused. The interplay of federal and state laws may be subject to varying interpretations by courts and government agencies, creating complex compliance issues for us and our clients, and potentially exposing us to additional expense, adverse publicity and liability. Further, as regulatory focus on privacy issues continues to increase and laws and regulations concerning the protection of personal information expand and become more complex, these potential risks to our business could intensify. Changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as PHI, or personally identifiable information along with increased demands for enhanced data security infrastructure, could greatly increase our costs of providing our services, decrease demand for our services, reduce our revenue and/or subject us to additional risks.

Furthermore, the Federal Trade Commission, or the FTC, and many state Attorneys General continue to enforce federal and state consumer protection laws against companies for online collection, use, dissemination and security practices that appear to be unfair or deceptive. For example, according to the FTC, failing to take appropriate steps to keep consumers' personal information secure can constitute unfair acts or practices in or affecting commerce in violation of Section 5(a) of the Federal Trade Commission Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities.

In addition, the interpretation and application of consumer, health-related, and data protection laws, especially with respect to genetic samples and data, in the United States, the EEA, and elsewhere are often uncertain, contradictory, and in flux. We and our joint ventures operate or may operate in a number of countries outside of the United States whose laws may in some cases be more stringent than the requirements in the United States. For example, EEA member states have specific requirements relating to cross-border transfers of personal data to certain jurisdictions, including to the United States where our laboratory resides. In addition, some countries have stricter consumer notice and/or consent requirements relating to personal data collection, use or sharing, more stringent requirements relating to organizations' privacy programs and provide stronger individual rights. Moreover, international privacy and data security regulations may become more complex and have greater consequences. For instance, the General Data Protection Regulation, or GDPR, went into effect in May 2018 and imposes stringent data protection requirements for the processing of personal data of persons within the EEA. The GDPR applies to any company established in the EEA as well as to those outside the EEA if they collect and use personal data in connection with the offering of goods or services to individuals in the EEA or the monitoring of their behavior. The GDPR imposes strict data protection compliance regime including: providing detailed disclosures about how personal data is collected and processed; demonstrating that an appropriate legal basis is in place or otherwise exists to justify data processing activities; granting rights for data subjects in regard to their personal data; introducing the obligation to notify data protection regulators or supervisory authorities (and in certain cases, affected individuals) of significant data breaches; defining pseudonymized (i.e., key-coded) data; imposing limitations on retention of personal data; maintaining a record of data processing; and complying with the principal of accountability and the obligation to demonstrate compliance through policies, procedures, training and audit. The GDPR provides that EEA member states may make their own further laws and regulations limiting the processing of personal data, including genetic,

biometric or health data, which could limit our ability to use and share personal data or could cause our costs could increase, and harm our business and financial condition. Failure to comply with the requirements of GDPR and the applicable national data protection laws of the EEA member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. Failure to comply with the GDPR and other applicable privacy or data security-related laws, rules or regulations could result in material penalties imposed by regulators, affect our compliance with client contracts and have an adverse effect on our business, financial condition and results of operations.

European data protection law also imposes strict rules on the transfer of personal data out of the EU to the United States. These obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other requirements or our practices. In addition, these rules are constantly under scrutiny. For example, in July 2020, the Court of Justice of the EU, or the CJEU, limited how organizations could lawfully transfer personal data from the EEA to the United States by invalidating the Privacy Shield for purposes of international transfers and imposing further restrictions on use of the standard contractual clauses, or SCCs. The European Commission issued revised SCCs on June 4, 2021 to account for the decision of the CJEU and recommendations made by the European Data Protection Board. The revised SCCs must be used for relevant new data transfers from September 27, 2021; existing standard contractual clauses arrangements must be migrated to the revised clauses by December 27, 2022. There is some uncertainty around whether the revised clauses can be used for all types of data transfers, particularly whether they can be relied on for data transfers to non-EEA entities subject to the GDPR.

We are also subject to evolving EU privacy laws on cookies and e-marketing. In the EEA and the United Kingdom, regulators are increasingly focusing on compliance with requirements in the online behavioral advertising ecosystem, and current national laws that implement the ePrivacy Directive will be replaced by an EU regulation known as the ePrivacy Regulation which will significantly increase fines for non-compliance. In the EEA, informed consent is required for the placement of a cookie or similar technologies on a user's device and for direct electronic marketing. The GDPR also imposes conditions on obtaining valid consent, such as a prohibition on pre-checked consents and a requirement to ensure separate consents are sought for each type of cookie or similar technology. Any of these changes to EU data protection law or its interpretation could disrupt and harm our business. We rely on a mixture of safeguards to transfer personal data from our EU business to the U.S., and could be impacted by changes in law as a result of a future review of these transfer mechanisms by European regulators or current challenges to these mechanisms in the European courts.

Further, from January 1, 2021, companies have had to comply with the GDPR and also the United Kingdom GDPR, or the UK GDPR, which, together with the amended UK Data Protection Act 2018, retains the GDPR in UK national law. The UK GDPR mirrors the fines under the GDPR, i.e., fines up to the greater of €20 million (£17.5 million) or 4% of global turnover. The relationship between the United Kingdom and the EU in relation to certain aspects of data protection law remains unclear, and it is unclear how United Kingdom data protection laws and regulations will develop in the medium to longer term. The European Commission has adopted an adequacy decision in favor of the United Kingdom, enabling data transfers from EU member states to the United Kingdom without additional safeguards. However, the UK adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews/ extends that decision.

In addition to government regulation, privacy advocates and industry groups have and may in the future propose self-regulatory standards from time to time. These and other industry standards may legally or contractually apply to us, or we may elect to comply with such standards. We expect that there will continue to be new proposed laws and regulations concerning data privacy and security, and we cannot yet determine the impact such future laws, regulations and standards may have on our business. New laws, amendments to or reinterpretations of existing laws, regulations, standards and other obligations may require us to incur additional costs and restrict our business operations. Because the interpretation and application of laws, regulations, standards and other obligations relating to data privacy and security are still uncertain, it is possible that these laws, regulations, standards and other obligations may be interpreted and applied in a manner that is inconsistent with our data processing practices and policies or the features of our products. If so, in addition to the possibility of fines, lawsuits, regulatory investigations, public censure, other claims and penalties, and significant costs for remediation and damage to our reputation, we could be materially and adversely affected if legislation or regulations are expanded to require changes in our data processing practices and policies or if governing jurisdictions interpret or implement their legislation or regulations in ways that negatively impact our business, financial condition and results of operations. We may be unable to make such changes and modifications in a commercially reasonable manner, or at all. Any inability to adequately address data privacy or security-related concerns, even if unfounded, or to comply with

applicable laws, regulations, standards and other obligations relating to data privacy and security, could result in additional cost and liability to us, harm our reputation and brand, damage our relationships with consumers and harm our business, financial condition and results of operations.

We make public statements about our use and disclosure of personal information through our privacy policies, information provided on our website and press statements. Although we endeavor to comply with our public statements and documentation, we may at times fail to do so or be alleged to have failed to do so. The publication of our privacy policies and other statements that provide promises and assurances about data privacy and security can subject us to potential government or legal action if they are found to be deceptive, unfair or misrepresentative of our actual practices. Any concerns about our data privacy and security practices, even if unfounded, could damage the reputation of our business and harm our business, financial condition and results of operations.

Although we work to comply with applicable laws, regulations and standards, our contractual obligations and other legal obligations, these requirements are evolving and may be modified, interpreted and applied in an inconsistent manner from one jurisdiction to another, and may conflict with one another or other legal obligations with which we must comply. Any failure or perceived failure by us or our employees, representatives, contractors, consultants, collaborators, or other third parties to comply with such requirements or adequately address privacy and security concerns, even if unfounded, could result in additional cost and liability to us, damage our reputation, and adversely affect our business and results of operations.

Risks related to our intellectual property

If we are unable to obtain and maintain sufficient intellectual property protection for our technology, or if the scope of the intellectual property protection obtained is not sufficiently broad, our competitors could develop, manufacture and commercialize products, services or technology similar or identical to ours, and our ability to successfully develop, manufacture or commercialize our products, services or technology may be impaired.

We rely on patent protection as well as trademark, copyright, trade secret and other intellectual property rights protection and contractual restrictions to protect our proprietary technologies, all of which provide limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If we fail to obtain, maintain and/or protect our intellectual property rights, third parties may be able to compete more effectively against us. In addition, we have incurred and may continue to incur substantial litigation costs in our attempts to enforce or restrict the use of our intellectual property rights against third parties or defend ourselves against third parties claiming that we are infringing upon such third parties' intellectual property rights.

To the extent our intellectual property rights offers inadequate protection, or is found to be invalid or unenforceable, we would be exposed to a greater risk of direct competition. If our intellectual property rights do not provide adequate coverage of our products, services or technology, our competitive position could be adversely affected, as could our business.

As is the case with other biotechnology companies, our success depends in large part on our ability to obtain, maintain and protect the intellectual property we own or we have licensed from others. We apply for patents covering our products, services and technologies and uses thereof, as we deem appropriate. However, obtaining, maintaining and enforcing biotechnology patents is costly, time-consuming and complex. We may fail to apply for patents on important products, services or technologies in a timely fashion or at all, or we may fail to apply for patents in potentially relevant jurisdictions. We may not be able to file and prosecute all necessary or desirable patent applications, or maintain or enforce patents that may issue from such patent applications, at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Patent prosecution process can be time-consuming and expensive. We may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the rights to patents licensed to us by third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

We own or license numerous U.S. patents and pending U.S. patent applications, with international counterparts in certain countries. It is possible that our or our licensors' pending patent applications will not result in issued patents in a timely fashion or at all, and even if patents are granted, they may not provide a basis for intellectual property protection of commercially viable products, services or technologies, may not provide us with any competitive advantages, or may be challenged by third parties and be invalidated or found unenforceable. It is possible that others will design around our current or future patented products, services or technologies. Some of such patent rights are being challenged, including at the United States Patent and Trademark Office, or USPTO, in post-grant

proceedings, at the European Patent Office, or EPO, in opposition proceedings, and some of such patent rights may be challenged in the future. We may not be successful in defending any such challenges made against our owned or licensed patents or patent applications. Any successful third-party challenge to such patent rights could result in their unenforceability or invalidity and increased competition to our business. We have challenged and may choose to challenge the patents or patent applications of third parties. The outcome of patent disputes or other proceeding can be uncertain, and any attempt by us to enforce our patent rights against others or to challenge the patent rights of others may not be successful, or, if successful, may take substantial time and result in substantial cost, and may divert our efforts and attention from other aspects of our business.

The patent positions of life sciences companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in such companies' patents has emerged to date in the United States or elsewhere. Courts frequently render opinions in the biotechnology field that may affect the patentability of certain inventions or discoveries, including opinions that may affect the patentability of methods for analyzing or comparing DNA sequences.

In particular, the patent positions of companies engaged in the development and commercialization of genomic diagnostic tests, like our current products and tests, and our future products, are particularly uncertain. Various courts, including the U.S. Supreme Court, have rendered decisions that affect the scope of patentability of certain inventions or discoveries relating to certain diagnostic tests and related methods. These decisions state, among other things, that a patent claim that recites an abstract idea, natural phenomenon or law of nature (for example, the relationship between particular genetic variants and cancer) are not themselves patentable. Precisely what constitutes a law of nature is uncertain, and it is possible that certain aspects of genetic diagnostics tests would be considered natural laws. Accordingly, the evolving legal and administrative standards around the world, including in the United States may adversely affect our ability to obtain patents and may facilitate third-party challenges to any owned or licensed patents. The laws of some foreign jurisdictions do not protect intellectual property rights to the same extent as the laws of the United States, and we may encounter difficulties in protecting and defending such rights in foreign jurisdictions. The legal systems of many foreign jurisdictions do not favor the enforcement of patent rights and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patent rights and other intellectual property rights thereunder. Proceedings to enforce our patent rights and other intellectual property protection in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

Changes in patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or in interpretations of patent laws in the United States or other countries or regions may diminish the value of our intellectual property rights. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. We may not develop additional proprietary products, services, methods and technologies that are patentable.

Assuming that other requirements for patentability are met, prior to March 16, 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. On or after March 16, 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 16, 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO on or after March 16, 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (i) file any patent application related to our product candidates or (ii) invent any of the inventions claimed in our or our licensor's patents or patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution or post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings, to attack the validity of a patent. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a

claim invalid even though the same evidence might not be sufficient to invalidate the claim if presented in a district court action. Accordingly, third parties have used and may continue to use the USPTO proceedings to invalidate our patent claims that would not have been invalidated if first challenged by the third party in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding our or our licensors' prosecution of patent applications and enforcement or defense of issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Issued patents covering our products, services or technology could be found invalid or unenforceable if challenged.

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability. Some of our owned or licensed patent rights have been, are being or may be challenged at a future point in time in opposition, derivation, re-examination, *inter partes* review, post-grant review or interference. Any successful third-party challenge to our patent rights in this or any other proceeding could result in the unenforceability or invalidity of such patent rights, which may lead to increased competition to our business, which could harm our business. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us to license, develop, manufacture or commercialize our current or future products, services or technology.

We may not be aware of all third-party intellectual property rights potentially relating to our products, services or technology. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until approximately 18 months after filing or, in some cases, not until such patent applications issue as patents. We, or our licensors, might not have been the first to make the inventions covered by each of our or our licensors' pending patent applications and we, or our licensors, might not have been the first to file patent applications for these inventions. To determine the priority of our inventions, we have participated and may continue to participate in interference proceedings, derivation proceedings or other post-grant proceedings declared by the USPTO that could result in substantial cost to us. The outcome of such proceedings is uncertain. No assurance can be given that other patent applications will not have priority over our or our licensors' patent applications. In addition, changes to the patent laws of the United States allow for various post-grant opposition proceedings that have not been extensively tested, and their outcome is therefore uncertain. Our licensors may also license patent rights to others, and we may not be aware of such licenses before they are granted or such licenses may be subject to disputes or uncertainties that affect patent rights licensed by us or could limit our ability to enforce such patent rights. If third parties bring actions against our owned or licensed patent rights, we could experience significant costs and management distraction.

In patent litigation in the United States or abroad, defendant counterclaims alleging invalidity or unenforceability of plaintiff's patents are common. Grounds for a validity challenge for invalidity could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the patent office or made a misleading statement during prosecution. Similar claims may also be raised before patent offices in the United States or abroad, even outside the context of litigation, through mechanisms including re-examination, post-grant review and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patent rights in such a way that they no longer cover our products. The outcome of patent litigation or patent office proceedings following assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the relevant patent that protects our products, service or technology. Such a loss of patent protection could have a material adverse impact on our business.

We and some of our licensors have initiated, are currently involved in, and may in the future initiate or become involved in legal proceedings against a third party to enforce a patent covering one of our products, services or technology.

Defendants in such proceedings could counterclaim that the patents covering our products, services or technology are invalid or unenforceable and could institute legal proceedings to challenge such patents both in court and before patent offices. Any assertion of invalidity and/or unenforceability against the patents covering our products, services or technology, even if not successful, could be time-consuming and expensive to defend, damage our reputation in the marketplace and the prospects for our business, and divert our management's attention.

We rely on licenses from third parties, and if we lose these licenses then we may be subjected to future litigation. If we cannot license and maintain rights to use third-party intellectual property rights on reasonable terms, we may not be able to successfully develop, manufacture and/or commercialize our products, services or technology. Our licensed intellectual property rights may lose value or utility over time.

From time to time, we may identify third-party technology we may need, including those related to develop, manufacture or commercialize new products, services or technology. We may also need to negotiate agreements to in-license patents or other intellectual property rights from third parties before or after introducing a commercial products, service of technology, and we may not be able to obtain necessary licenses to such patents or other intellectual property rights. We are a party to various license agreements, including royalty-bearing agreements, that grant us rights to use and practice certain intellectual property of third parties, including claims included in issued patents, typically in certain specified fields of use. We may need to obtain additional licenses from others to advance our research, development, manufacture and commercialization activities. We may be unable to enter into the necessary license agreements on acceptable terms or at all, which could have a material adverse effect on our competitive position, business, financial condition, results of operations and prospects. In return for the use of a third party's intellectual property rights, we may agree to pay the licensor royalties based on sales of our products, services or technology. Royalties are a component of cost of products, services or technology and affect the margins on our products, services or technology. If we are unable to negotiate reasonable royalties or if we have to pay royalties on technology that becomes less useful for us or ceases to provide value to us, our profit margin will be reduced and we may suffer losses.

Our license agreements impose, and we expect that future license agreements will impose, various development, diligence, commercialization and other obligations on us, including obligations to making payments to our licensors upon achievement of milestones.

In spite of our efforts, our licensors have asserted and may in the future assert that we have materially breached our obligations under such license agreements and could therefore seek or threaten to terminate the license agreements. If these licenses are terminated, or if the underlying patent rights fail to provide the intended exclusivity, our ability to develop, manufacture and commercialize products, services and technology covered by these license agreements would be limited or lost, and our competitors or other third parties might have the freedom to develop, produce, manufacture, seek regulatory approval of, or to market, products, services or technology identical or similar to ours and we may be required to cease our development, manufacture and/or commercialization activities in connection with our products, services and/or technology. Our actual or potential licensors could take action with respect to our licensed intellectual property that may decrease the value of such licensed intellectual property. Any of the foregoing could have a material adverse effect on our competitive position, business, financial condition, results of operations and prospects. Moreover, disputes could arise with respect to any aspect of our license agreements, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our products or product candidates, services, technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the licensing of patent and other rights controlled by our licensors or developed under our collaborative development relationships to others;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how licensed to us or resulting from the joint creation or use of intellectual property by our licensors, us and/or our partners;
- the validity, enforceability or priority of licensed patent rights; and
- the amount of royalties and other payments we are obligated to pay under the license agreement.

If we do not prevail in such disputes, we may lose the rights under any of such license agreements, the license agreements may not be meaningful for our business and operations, and we may be subject to unnecessary or additional payment obligations.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements could be susceptible to multiple interpretations. The

resolution of any such contract interpretation disagreement could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over licensed intellectual property impair our ability to enforce licensed intellectual property against third parties or use it to defend ourselves in litigation, the value of such licensed intellectual property may be diminished.

If we fail to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop, manufacture and commercialize the affected product, product candidate, service or technology, which could have a material adverse effect on our business, financial condition, results of operations and prospects. If any of these license agreements is terminated, if the licensor fails to abide by the terms of the license agreement, if the licensor fails to enforce its intellectual property rights licensed to us against third parties that infringe upon such intellectual property rights, or if the licensed patent or other rights are found to be invalid or unenforceable, we may be unable to achieve our business goals and our results of operations and financial condition could be adversely affected. Absent the license agreements, we could infringe patents and other intellectual property rights of the licensors subject to those agreements, and if the license agreements are terminated, we may be subject to litigation by the licensor. Litigation could result in substantial costs and be a distraction to management. If we do not prevail, we may be required to pay damages, including treble damages, attorneys' fees, costs and expenses, royalties or, be enjoined from selling our products, services or technology, including our tests, which could adversely affect our ability to offer products, services or technology, our ability to continue operations and our financial condition.

Any intellectual property rights licensed by us may lose value or utility, including as a result of a change of in the industry, in our business objectives, others' technology, our dispute with the licensor, and other circumstances outside our control.

We may not be able to protect or enforce our intellectual property rights adequately throughout the world.

Filing, prosecuting and defending patents and other intellectual property rights covering our products, services and technology in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some territories outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries and regions do not protect intellectual property rights to the same extent as the laws of the United States, and we may encounter difficulties in protecting and defending such rights in foreign jurisdictions. Consequently, we may not be able to prevent third parties from practicing our inventions in all jurisdictions, or from selling, making or importing products, services or technology by practicing our intellectual property rights. Competitors may practice our intellectual property rights in jurisdictions where we have not obtained patent protection to develop, manufacture, sell or import their own products, services or technology and may also export products, services or technology that infringe upon our intellectual property rights to territories where we have patent protection that do not provide strong intellectual property or enforcement rights as strong as that in the United States. These products, services or technology may compete with our products, services or technology. Our patents or other intellectual property rights existing outside the United States may not be effective or sufficient to prevent third parties from competing with us. Similarly, intellectual property rights may be exhausted in certain situations, and others could import our products sold abroad and compete with us domestically.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many other countries and regions do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patents and other intellectual property rights in such jurisdictions. Proceedings to enforce our patent rights and other intellectual property rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded to us, if any, may not be commercially meaningful. Accordingly, our efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage.

If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business could be harmed.

In addition to pursuing patents covering our products, services and technology, we take steps to protect our intellectual property and proprietary technology by entering into agreements, including confidentiality and non-disclosure agreements with those that have access to our confidential and proprietary information including employees, independent contractors, academic institutions, corporate partners and our advisers, and invention assignment agreements with our employees and independent contractors, and when needed, our advisers. However, we cannot be certain that such agreements have been entered into with all relevant parties, and we cannot be certain that our trade secrets and other proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. For example, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Such agreements may not be enforceable or may not provide meaningful protection for our trade secrets or other proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements, and we may not be able to prevent such unauthorized use or disclosure. If we are required to assert our rights against such party, it could result in significant cost and distraction.

Monitoring unauthorized use or disclosure is difficult, and we do not know whether the steps we have taken to prevent such use or disclosure are, or will be, adequate. If we were to enforce a claim that a third party had illegally obtained and was using our trade secrets, it would be expensive and time-consuming, and the outcome would be unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets.

We also seek to preserve the integrity and confidentiality of our proprietary information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. If any of our confidential proprietary information were to be lawfully obtained or independently developed by a competitor, absent patent protection, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed trade secrets of their former employers.

We have employed or engaged and expect to employ or engage individuals who were previously employed at or associated with universities or other companies, including our competitors or potential competitors. Although we try to ensure that our employees and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that our employees or independent contractors have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers or other third parties, or to claims that we have improperly used or obtained such trade secrets. Litigation may be necessary to defend against these claims. If we lose, in addition to paying monetary damages, we may be deprived of valuable intellectual property and face increased competition. A loss of key research personnel or work product could hamper or prevent our ability to develop, manufacture and/or commercialize products, services or technology, which could materially adversely affect our business. Even if we are successful in defending against these claims, litigation could result in damage to our reputation and substantial costs and be a distraction to management and affected individuals.

We may not be able to protect and enforce our trademarks and we could infringe others' trademarks.

We have not yet registered trademarks in all of our potential markets, although we have registered Guardant Health, Guardant360 and GuardantOMNI in the United States. If we apply to register additional trademarks in the United States and other countries, our applications may not be allowed for registration in a timely fashion or at all, and our registered trademarks may not be maintained or enforced. In addition, opposition or cancellation proceedings may be filed against our trademark applications and registrations, and our trademarks may not survive such proceedings. If we do not timely register and enforce marks used in connection with our products, services or technology, we may encounter difficulty in enforcing them against third parties, and if these marks are registered by others, we could infringe such trademarks and may have to defend ourselves to continue the use of our trademarks, which may be time consuming and costly, and we may be unsuccessful.

We may be subject to claims challenging the inventorship or ownership of our owned or licensed intellectual property.

We or our licensors may be subject to claims that former employees, independent contractors, collaborators or other third parties have an interest in or right to our owned or licensed patents, trade secrets or other intellectual property. For example, we or our licensors may have inventorship disputes arise from conflicting obligations of employees, independent contractors or others who are involved in developing such intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership of our owned or licensed patents, trade secrets or other intellectual property. If we or our licensors fail in defending against any such claims, we may lose exclusive ownership of, or right to use, valuable intellectual property. Even if we are successful in defending against such claims, litigation could result in damage to our reputation and substantial costs and be a distraction to management and other employees. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

We are and may continue to be involved in litigation and other legal proceedings related to intellectual property, which could be time-intensive and costly and may adversely affect our business, operating results or financial condition.

We have been, are currently in, and may also in the future be, involved with litigation or USPTO actions with various third parties. We expect that the number of such claims may increase as the number of our products or services grows, and the level of competition in our industry segments increases. Any infringement claim, regardless of its validity, could harm our business by, among other things, resulting in time-consuming and costly litigation, diverting management's time and attention from the development of our business, or requiring the payment of monetary damages (including treble damages, attorneys' fees, costs and expenses if we are found to have willfully infringed) and ongoing royalties.

Litigation may be necessary for us to enforce our intellectual property and proprietary rights or to determine the scope, coverage and validity of the intellectual property and proprietary rights of others. We are currently engaged in lawsuits and in proceedings before the USPTO in relation to certain such patents. The outcome of such lawsuits, as well as any other litigation or proceeding, is inherently uncertain and might not be favorable to us. Further, we could encounter delays in introductions or interruptions in the development, manufacture or sale of products, services or technologies, as we develop alternative products, services or technologies. In addition, if we resort to legal proceedings to enforce our intellectual property rights or to determine the validity, scope and coverage of the intellectual property or other proprietary rights of others, the proceedings could be burdensome and expensive, even if we were to prevail. If we do not prevail in such legal proceedings, we may be required to pay damages, and we may lose significant intellectual property protection for our products, services or technologies, such that competitors could copy our products, services or technologies. Any litigation that may be necessary in the future could result in substantial costs and diversion of resources and could have a material adverse effect on our business, operating results or financial condition.

As we move into new markets and applications for our products, services or technologies, incumbent participants in such markets may assert their patents and other intellectual property or proprietary rights against us as a means of slowing our entry into such markets or as a means to extract substantial license and royalty payments from us. As our business matures and our public profile grows, we may also be subject to an increased number of allegations of patent or other intellectual property infringement, whether by our competitors or other third parties, both in the United States and throughout the world wherever we seek to manufacture, commercialize or import our products, services or technologies. Our competitors and others may have significantly larger and more mature patent portfolios than we have. In addition, while we can assert our own patents or other intellectual property rights during litigation, our own patents or other intellectual property rights may provide little or no deterrence or protection against third parties. Therefore, our commercial success may depend in part on our non-infringement of the patents or other intellectual property rights of third parties and on our success in defending ourselves in litigation.

However, our research, development, manufacture and commercialization activities are currently and may in the future be subject to claims that we infringe or otherwise violate patents or other intellectual property rights owned or controlled by third parties. There is a substantial amount of litigation and other patent challenges, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology industry, including patent infringement lawsuits, interferences, oppositions and *inter partes* review proceedings before the USPTO, and corresponding proceedings before foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing, manufacturing and/or commercializing products, services or technologies. As the precision oncology industry

expands and more patents are issued, the risk increases that our products, services or technologies may be subject to claims of infringement of the patent rights of third parties. Numerous significant intellectual property issues have been litigated, are being litigated and will likely continue to be litigated, between existing and new participants in our existing and targeted markets, and our competitors have asserted and may in the future assert that our products or services infringe their intellectual property rights as part of a business strategy to impede our successful entry into or growth in those markets, and we may enforce our owned or licensed intellectual property rights against our competitors and other parties.

Third parties have asserted and may in the future assert that we are employing their proprietary technology or trade secrets without authorization. For instance, Foundation Medicine, Inc. filed a lawsuit for patent infringement against us in May 2016, which we settled in July 2018. We are also aware of issued U.S. patents and patent applications with claims related to our products and services, and there may be other related third-party patents or patent applications of which we are not aware. By interacting with us, our licensors may learn more about our business or technology and could assert additional patent rights against us, such as patent rights that are not currently licensed to us or patent rights that may be obtained by any such licensors in the future, which may occur if such patent rights are not available for licensing or if they are not offered on acceptable or commercially reasonable terms. Because patent applications can take many years to issue and are not publicly available until a certain period of time passes from filing, there may be currently pending patent applications which may later result in issued patents that our current or future products, services or technologies may infringe. In addition, similar to what other companies in our industry have experienced, we expect our competitors and others may develop or obtain patents with our products, services or technologies in mind and claim that making, having made, using, selling, offering to sell or importing our products, services or technologies infringes these patents.

We could incur substantial costs and divert the attention of our management and technical personnel in defending against any of these claims. Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can, for example, because they have substantially greater resources.

Parties making claims against us may be able to obtain injunctive or other relief, which could block our ability to develop, manufacture, commercialize, sell and import certain products, services or technologies, and could result in the award of substantial damages against us, including treble damages, attorney's fees, costs and expenses if we are found to have willfully infringed. In the event of a successful claim of infringement against us, we may be required to pay damages and ongoing royalties, and obtain one or more licenses from third parties, or be prohibited from developing, manufacturing, commercializing, selling and importing certain products, services or technologies. We may not be able to obtain these licenses on acceptable or commercially reasonable terms, if at all, or these licenses may be non-exclusive, which could result in our competitors gaining access to the same intellectual property. In addition, we could encounter delays in product, service or technologies introductions while we attempt to develop alternative products, services or technologies to avoid infringing third-party patents or proprietary rights. Defense of any lawsuit or failure to obtain any of these licenses could prevent us from developing, manufacturing or commercializing products, services or technologies and the prohibition of developing, manufacturing or commercializing of any of our products, services or technologies could materially affect our business and our ability to gain market acceptance for our products, services or technologies.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

In addition, our agreements with some of our customers, suppliers, vendors or other entities with whom we do business require us to defend or indemnify these parties to the extent they become involved in infringement claims, including the types of claims described above. We could also voluntarily agree to defend or indemnify third parties in instances where we are not obligated to do so if we determine it would be important to our business relationships. If we are required or agree to defend or indemnify third parties in connection with any infringement claims, we could incur significant costs and expenses that could adversely affect our business, operating results or financial condition.

Obtaining and maintaining our patent protection depends on compliance with various required procedures, document submissions, fee payments and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the USPTO and various governmental patent agencies outside of the United States at several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar requirements during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or forfeiture of the patent or patent application and thus loss of patent rights in the relevant jurisdiction. Such an event would allow our competitors to enter the unprotected market and have a material adverse effect on our business.

Patent terms may be inadequate to protect our competitive position for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our products or services are obtained, once the patent life has expired, we may be open to competition. Given the amount of time required for the development, testing and regulatory review of our new products, services or technologies, patents protecting them might expire before or shortly after they are commercialized. As a result, our owned and licensed patent portfolio may not provide us with a sufficient exclusivity period to exclude others from commercializing products or services similar or identical to ours.

Risks related to our common stock and indebtedness

The price of our common stock has fluctuated substantially and may do so in the future, and you may not be able to resell shares of our common stock at or above the price at which you purchased them.

The market price of our common stock has been volatile and may fluctuate substantially in the future due to many factors, including:

- volume and customer mix for our precision oncology testing;
- the introduction of new products or product enhancements by us or others in our industry;
- disputes or other developments with respect to our or others' intellectual property rights;
- our ability to develop, obtain regulatory clearance or approval for, and market new and enhanced products on a timely basis;
- product liability claims or other litigation;
- quarterly or annual variations in our results of operations or those of others in our industry;
- media exposure of our products or of those of others in our industry;
- changes in governmental regulations or in the status of our regulatory approvals or applications;
- changes in earnings estimates or recommendations by securities analysts; and
- the effects of high inflation or other general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell their shares, could result in a decrease in the market price of our common stock.

In recent years, the stock markets generally have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors may significantly affect the market price of our common stock, regardless of our actual operating performance. In addition, in the past, class action litigation has often been instituted against companies whose securities have experienced periods of volatility in market price. Securities litigation brought against us following volatility in our stock price, regardless of the merit or ultimate results of such litigation, could result in substantial costs, which would hurt our financial condition and operating results and divert management's attention and resources from our business.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be our stockholders' sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, future debt or other agreements we may enter into may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

Our indebtedness could expose us to risks that could adversely affect our business, financial condition and results of operations.

In 2020, we sold $1,150,000,000 aggregate principal amount of 0% convertible senior notes due 2027, or the 2027 Notes. We may also incur additional indebtedness to meet future needs. Our indebtedness could have significant negative consequences for our security holders, business, results of operations and financial condition by, among other things:

- increasing our vulnerability to adverse economic and industry conditions;
- limiting our ability to obtain additional financing;
- in the event interest accrues on the 2027 Notes or additional indebtedness, requiring the dedication of a substantial portion of our cash flow from operations to service our indebtedness, which will reduce the amount of cash available for other purposes;
- limiting our flexibility to plan for, or react to, changes in our business;
- diluting the interests of our existing stockholders if we issue shares of our common stock upon conversion of the Notes or additional indebtedness; and
- placing us at a possible competitive disadvantage with competitors that are less leveraged than us or have better access to capital.

Our business may not generate sufficient funds, and we may otherwise be unable to maintain sufficient cash reserves, to pay amounts due under the 2027 Notes or any additional indebtedness that we may incur. In addition, the 2027 Notes contain, and any future indebtedness that we may incur may contain, financial and other restrictive covenants that limit our ability to operate our business, raise capital or make payments under our indebtedness. If we fail to comply with these covenants or to make payments under our indebtedness when due, then we would be in default under that indebtedness, which could, in turn, result in that indebtedness becoming immediately payable in full.

The conditional conversion features of the 2027 Notes, if triggered, may adversely affect our financial condition. Conversion of the 2027 Notes, to the extent the 2027 Notes are not redeemed or repurchased, will dilute the ownership interest of existing stockholders, and even if anticipated, may otherwise depress the price of our common stock.

In the event the conditional conversion feature of the 2027 Notes is triggered, holders of the 2027 Notes will be entitled to convert their 2027 Notes into shares of our common stock upon the occurrence of certain events. If one or more holders of the 2027 Notes elect to convert their 2027 Notes, unless we satisfy our conversion obligation by delivering only shares of our common stock, we would be required to settle all or a portion of our conversion obligation through the payment of cash, which could adversely affect our financial condition. In the event the conditional conversion feature of the 2027 Notes is triggered, the conversion of some or all of the 2027 Notes will dilute the ownership interests of our existing stockholders to the extent we deliver shares of our common stock upon such conversion. The 2027 Notes may become in the future convertible at the option of the holders of the 2027

Notes prior to August 15, 2027 under certain circumstances as provided in the indenture governing the 2027 Notes. Any sales in the public market of shares of our common stock issuable upon such conversion could adversely affect the price of our common stock. In addition, the existence of the 2027 Notes may encourage short selling by market participants because the conversion of the 2027 Notes could be used to satisfy short positions, and even anticipated conversion of the 2027 Notes into shares of our common stock could depress the price of our common stock.

The convertible note hedge may affect the value of the 2027 Notes and our common stock.

In connection with the sale of the 2027 Notes, we entered into convertible note hedge, the 2027 Note Hedge, transactions with certain financial institutions, or option counterparties. The 2027 Note Hedge transactions are expected generally to reduce the potential dilution upon any conversion of the 2027 Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted 2027 Notes.

The option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock in secondary market transactions prior to the maturity of the 2027 Notes (and are likely to do so during any observation period related to a conversion of the Notes, or following any repurchase of the 2027 Notes by us on any fundamental change repurchase date (as provided in the indenture governing the 2027 Notes) or otherwise). This activity could also cause or avoid an increase or a decrease in the market price of our common stock or the 2027 Notes, which could affect note holders' ability to convert the 2027 Notes and, to the extent the activity occurs during any observation period related to a conversion of the 2027 Notes, it could affect the amount and value of the consideration that note holders will receive upon conversion of the 2027 Notes.

The potential effect, if any, of these transactions and activities on the market price of our common stock or the 2027 Notes will depend in part on market conditions and cannot be ascertained at this time. Any of these activities could adversely affect the value of our common stock and the value of the 2027 Notes (and as a result, the value of the consideration, the amount of cash and/or the number of shares, if any, that note holders would receive upon the conversion of the 2027 Notes) and, under certain circumstances, the ability of the note holders to convert the 2027 Notes.

We do not make any representation or prediction as to the direction or magnitude of any potential effect that the transactions described above may have on the price of the 2027 Notes or our common stock. In addition, we do not make any representation that the option counterparties will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

We are subject to counterparty risk with respect to the 2027 Note Hedge transactions.

The option counterparties are financial institutions, and we will be subject to the risk that any or all of them may default under the 2027 Note Hedge transactions. Our exposure to the credit risk of the option counterparties will not be secured by any collateral. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings, with a claim equal to our exposure at that time under our transactions with that option counterparty. Our exposure will depend on many factors but, generally, an increase in our exposure will be correlated to an increase in the market price and in the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

Provisions in our corporate charter documents and under Delaware law could make a change in control of us more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, these provisions may make it more difficult for our stockholders to replace current members of our board of directors or add new members thereto. Because our board of directors is responsible for appointing the members of our management team, these

provisions could in turn affect any attempts by our stockholders to change our management team. Among others, these provisions include that:

- our board of directors has the exclusive right to expand its size and to elect directors to fill a vacancy created by the expansion of the board or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered three-year terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- our stockholders may not act by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- a special meeting of stockholders may be called only by our board of directors, its chairman, or our co-chief executive officers, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- our amended and restated certificate of incorporation prohibits cumulative voting in the election of directors, which limits the ability of minority stockholders to elect their director candidates;
- our board of directors may alter our bylaws without obtaining stockholder approval;
- approval of the holders of at least two-thirds of the shares entitled to vote at an election of directors is required to adopt, amend or repeal our bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;
- stockholders must provide advance notice and additional disclosures in order to nominate candidates for election to the board of directors or to propose matters that can be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of our company; and
- our board of directors is authorized to issue shares of preferred stock and to determine the terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. Furthermore, our amended and restated certificate of incorporation specifies that, unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving actions brought against us by stockholders; provided that, the exclusive forum provision will not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction; and provided further that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of subject matter jurisdiction, such action may be brought in another state or federal court sitting in the State of Delaware. We believe these provisions may benefit us by providing increased consistency in the application of Delaware law by Delaware courts, particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, these provisions may have the effect of discouraging lawsuits brought against us and our directors and officers by our stockholders. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Our amended and restated certificate of incorporation also provides that the federal district courts of the United States of America will be the exclusive forum for the resolution of any complaint asserting a cause of action against us or any of our directors, officers, employees or agents and arising under the Securities Act. However, a Delaware court held that such an exclusive forum provision relating to federal courts was unenforceable under Delaware law, and unless and until the Delaware court decision is reversed on appeal or otherwise abrogated, we do not intend to enforce such a provision in the event of a complaint asserting a cause of action arising under the Securities Act against us or any of our directors, officers, employees or agents.

General Risk Factors

We may acquire businesses, form joint ventures or make investments in companies or technologies that could negatively affect our operating results, distract management's attention from other business concerns, dilute our stockholders' ownership, and significantly increase our debt, costs, expenses, liabilities and risks.

We have made acquisitions of businesses, technologies and assets and may pursue additional acquisitions in the future. We also may pursue strategic alliances and additional joint ventures that leverage our Guardant Health Oncology Platform and industry experience to expand our product offerings or distribution. We have limited experience with acquisitions and forming strategic partnerships. We compete for those opportunities with others including our competitors, some of which have greater financial or operational resources than we do. We may not be able to identify suitable acquisition candidates or strategic partners, we may have inadequate access to information or insufficient time to complete due diligence, and we may not be able to complete such transactions on favorable terms, if at all. If we make any acquisitions, we may not be able to integrate these acquisitions successfully into our existing business, and we could assume unknown or contingent liabilities. Difficulties in assimilating acquired businesses include redeployment or loss of key employees and their severance, combination of teams and processes in various functional areas, reorganization or closures of facilities, relocation or disposition of excess equipment, and increased litigation, regulatory and compliance risks, any of which could be expensive and time consuming and adversely affect us. Integration of an acquired business also may disrupt our ongoing operations and require management resources that we would otherwise focus on developing our existing business. In addition, any acquisition could result in the incurrence of debt, contingent liabilities or future write-offs of intangible assets or goodwill, any of which could have a material adverse effect on our financial condition, results of operations and cash flows. We may also experience losses related to investments in other companies, which could have a material negative effect on our results of operations and financial condition. We may not realize the anticipated benefits of any acquisition, technology license, strategic alliance or joint venture.

To finance any acquisitions, joint ventures or investments, we may choose to issue shares of our common stock as consideration, which would dilute the ownership of our stockholders. Additional funds may not be available on terms that are favorable to us, or at all. If the price of our common stock is low or volatile, we may not be able to acquire other companies or fund a joint venture project using our stock as consideration.

We may need to raise additional capital to fund our existing operations, develop our platform, commercialize new products or expand our operations.

We may consider raising additional capital in the future to expand our business, to meet existing obligations, to pursue acquisitions or strategic investments, to take advantage of financing opportunities or for other reasons, including to:

- increase our sales and marketing efforts to drive market adoption of our current products and tests, and address competitive developments;
- fund development and marketing efforts of our products under development or any other future products we may develop;
- expand our technologies into other types of cancer management and detection products;
- acquire, license or invest in technologies;
- acquire or invest in complementary businesses or assets; and
- finance capital expenditures and general and administrative expenses.

Our present and future funding requirements will depend on many factors, including:

- our ability to achieve revenue growth;
- our rate of progress in establishing payer coverage and reimbursement arrangements with domestic and international commercial payers and government payers;

- the cost of expanding our laboratory operations and product offerings, including our sales and marketing efforts;
- our rate of progress in, and costs of our sales and marketing activities associated with, establishing adoption of and reimbursement for our current products, including our tests;
- our rate of progress in, and costs of our research and development activities associated with, products in research and early development;
- the effect of competing technological and market developments;
- costs related to our international expansion; and
- the potential costs of and delays in product development as a result of any existing or new regulatory oversight applicable to our products.

We may seek to sell equity or convertible securities, enter into a credit facility or another form of third-party funding, or seek other debt financing. The various ways we could raise additional capital carry potential risks. If we raise funds by issuing equity or convertible securities, dilution to our stockholders could result. Any preferred equity securities issued also could provide for rights, preferences or privileges senior to those of holders of our common stock. If we raise funds by issuing debt securities, those debt securities would have rights, preferences and privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our platform technologies or products or grant licenses on terms that are not favorable to us. These alternatives of raising additional capital may not be available to us on acceptable or commercially reasonable terms, if at all, or in amounts sufficient to meet our needs. The failure to obtain any required future financing may require us to reduce or curtail existing operations and could contribute to negative market perceptions about us or our securities.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred net losses since our inception and we may never achieve or sustain profitability. Under the Tax Cuts and Jobs Act, federal net operating loss, or NOL, carryforwards we generated in tax years through December 31, 2017 may be carried forward for 20 years and may fully offset taxable income in the year utilized, and federal NOLs we generated in tax years beginning after December 31, 2017 may be carried forward indefinitely but may only be used to offset 80% of our taxable income annually. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We have not completed a study to assess whether an ownership change for purposes of Section 382 or 383 has occurred, or whether there have been multiple ownership changes since our inception. For purposes of Section 382 or 383, we may have experienced ownership changes in the past and may experience ownership changes in the future as a result of shifts in our stock ownership (some of which shifts are outside our control). As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset such taxable income will be subject to limitations. Similar provisions of state tax law may also apply to limit our use of accumulated state tax attributes. Therefore, if we attain profitability, we may be unable to use a material portion of our NOL carryforwards and other tax attributes, which could adversely affect our future cash flows.

We expect to incur significant additional costs as a result of being a public company, which may adversely affect our business, financial condition and results of operations.

We expect to incur costs associated with corporate governance requirements that are applicable to us as a public company, including rules and regulations of the SEC, under the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, and the Securities Exchange Act of 1934, as amended, or the Exchange Act, as well as the rules of Nasdaq. These rules and regulations, including those applicable to a large accelerated filer such as us, significantly increase our accounting, legal and financial compliance costs and make some activities more time-consuming. These rules and regulations also make it more expensive for us to maintain directors' and officers' liability insurance. Accordingly, increases in costs incurred as a result of being a publicly traded company may adversely affect our business, financial condition and results of operations.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the amounts reported in our financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions. In connection with adopting and implementing a new revenue recognition standard, FASB ASC Topic 606, *Revenue from Contracts with Customers*, management has made and will continue to make judgments and assumptions based on our interpretation of the new standard. The new revenue recognition standard is principle-based and interpretation of those principles may vary from company to company based on their unique circumstances. We also adopted a new lease accounting standard, FASB ASC Topic 842, *Leases*, which involved significant judgment and assumptions, including the estimation of incremental borrowing rate used to discount our lease liabilities and the assessment of risks associated with the specific economic environment of our leased assets. It is possible that interpretation, industry practice and guidance may evolve as we work toward implementing these new accounting standards. If our assumptions change or if actual circumstances differ from our assumptions, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of analysts and investors, resulting in a decline in the market price of our common stock.

The loss of any member of our senior management team or our inability to attract and retain highly skilled scientists, clinicians, sales representatives and business development managers could adversely affect our business.

Our success depends on the skills, experience and performance of key members of our senior management team, including Helmy Eltoukhy, and AmirAli Talasaz, our Co-Chief Executive Officers. The individual and collective efforts of these employees will be important as we continue to develop our platform and additional products, and as we expand our commercial activities. The loss or incapacity of existing members of our executive management team could adversely affect our operations if we experience difficulties in hiring qualified successors. Our executive officers signed offer letters when first joining our company, but do not have employment agreements, and we cannot guarantee their retention for any period of time. We do not maintain "key person" insurance on any of our employees.

Our research and development programs and laboratory operations depend on our ability to attract and retain highly skilled scientists and technicians. We may not be able to attract or retain qualified scientists and technicians in the future due to the competition for qualified personnel among life science businesses, particularly near our headquarters in Redwood City, California. We also face competition from universities and public and private research institutions in recruiting and retaining highly qualified scientific personnel. In addition, we may have difficulties locating, recruiting or retaining qualified sales representatives and business development managers. Recruiting and retention difficulties can limit our ability to support our research and development and sales programs. All of our employees are at-will, which means that either we or the employee may terminate their employment at any time.

If we experience material weaknesses in the future or otherwise fail to maintain an effective system of internal controls in the future, we may not be able to accurately report our financial condition or results of operations which may adversely affect investor confidence in us and, as a result, the value of our common stock.

As a result of becoming a public company, we are required, under Section 404 of the Sarbanes-Oxley Act, to furnish annual reports by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment needs to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. A material weakness is a deficiency or combination of deficiencies in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of a company's annual and interim financial statements will not be detected or prevented on a timely basis.

If we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective. The effectiveness of our controls and procedures may be limited by a variety of factors, including:

- faulty human judgment and simple errors, omissions or mistakes;
- fraudulent action of an individual or collusion of two or more people;
- inappropriate management override of procedures; and

- the possibility that any enhancements to controls and procedures may still not be adequate to assure timely and accurate financial control.

Pursuant to the Sarbanes-Oxley Act and the rules and regulations promulgated by the SEC, we are required to furnish in this Annual Report on Form 10-K a report by our management regarding the effectiveness of our internal control over financial reporting. The report includes, among other things, an assessment of the effectiveness of our internal control over financial reporting as of the end of our fiscal year, including a statement as to whether or not our internal control over financial reporting is effective. This assessment must include disclosure of any material weaknesses in our internal control over financial reporting identified by management. While we believe our internal control over financial reporting is currently effective, the effectiveness of our internal controls in future periods is subject to the risk that our controls may become inadequate because of changes in conditions. Establishing, testing and maintaining an effective system of internal control over financial reporting requires significant resources and time commitments on the part of our management and our finance staff, may require additional staffing and infrastructure investments and would increase our costs of doing business.

In addition, under the federal securities laws, our auditors are required to express an opinion on the effectiveness of our internal controls. If we are unable to confirm that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion on the effectiveness of our internal controls, we could lose investor confidence in the accuracy and completeness of our financial reports, which could cause the price of our common stock to decline.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. We designed our disclosure controls and procedures to provide reasonable assurance that information we must disclose in reports we file or submit under the Exchange Act is accumulated, communicated to management, recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA, CMS and non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and cause serious harm to our reputation. We currently have a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and our code of conduct and the other precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses, or in protecting us from governmental investigations, lawsuits or other actions stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could result in the imposition of significant civil, criminal and administrative penalties, including, without limitation, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs or from coverage of commercial payers, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with the law and curtailment or restructuring of our operations, which could have a significantly adverse impact on our business. Whether or not we are successful in

defending against such actions, we could incur substantial costs and expenses, including legal fees, and divert the attention of management from the operation of our business.

If we were to be sued for product liability or professional liability, we could face substantial liabilities that exceed our resources.

The marketing, sale and use of our products could lead to the filing of product liability claims were someone to allege that our products identified inaccurate or incomplete information regarding the genomic alterations of the tumor or malignancy analyzed, reported inaccurate or incomplete information concerning the available therapies for a certain type of cancer, or otherwise failed to perform as designed. We may also be subject to professional liability for errors in, a misunderstanding of, or inappropriate reliance upon, the information we provide in the ordinary course of our business activities. A product liability or professional liability claim could result in substantial damages and be costly and time-consuming for us to defend.

We maintain product and professional liability insurance, but this insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims. Any product liability or professional liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability or professional liability lawsuit could damage our reputation or cause current clinical customers to terminate existing agreements with us and potential clinical customers to seek other partners, any of which could adversely impact our results of operations.

We depend on information technology systems, and any failure of these systems could harm our business.

We depend on information technology and telecommunications systems for significant elements of our operations, including our laboratory information management system, our computational biology system, our knowledge management system, our customer reporting and our GuardantConnect software platform. We have installed, and expect to expand, a number of enterprise software systems that affect a broad range of business processes and functional areas, including for example, systems handling human resources, financial controls and reporting, contract management, regulatory compliance and other infrastructure operations. In addition to the aforementioned business systems, we intend to extend the capabilities of both our preventative and detective security controls by augmenting the monitoring and alerting functions, the network design and the automatic countermeasure operations of our technical systems. These information technology and telecommunications systems support a variety of functions, including laboratory operations, test validation, sample tracking, quality control, customer service support, billing and reimbursement, research and development activities, scientific and medical curation and general administrative activities. In addition, our third-party provider of billing and collections services for late-stage clinical testing in the United States depends upon technology and telecommunications systems provided by its outside vendors.

Information technology and telecommunications systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of our servers are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. For example, in the past year, we identified security incidents involving an unauthorized actor obtaining access to our email system and sending phishing messages. Despite the precautionary measures we have taken in response to such incidents and to prevent other unanticipated problems that could affect our information technology and telecommunications systems, failures or significant downtime of our information technology or telecommunications systems or those used by our third-party service providers could prevent us from performing our comprehensive genomic analysis, preparing and providing reports to pathologists and oncologists, billing payers, processing reimbursement appeals, handling patient or physician inquiries, conducting research and development activities and managing the administrative aspects of our business. Any disruption or loss of information technology or telecommunications systems on which critical aspects of our operations depend could have an adverse effect on our business and our reputation, and we may be unable to regain or repair our reputation.

Despite the security and maintenance measures we and our vendors and distributors have in place to help protect against system failures, our systems, and those of our vendors and distributors, remain vulnerable to delays, disruptions, data corruption, programming and/or human errors or other similar events, such as those due to system updates, natural disasters, malicious attacks, accidents, power disruptions, telecommunications failures, acts of terrorism or war, computer viruses, physical or electronic break-ins or similar events. Such incidents may disrupt our operations, result in losses, damage our reputation, and expose us to the risks of litigation and liability (including

regulatory liability); and may have a material adverse effect on our business, results of operations and financial condition.

Cyber-based attacks, security breaches, loss of data and other disruptions in relation to our information systems and computer networks, as well as those of our third-party service providers, could compromise sensitive information related to our business, prevent us from accessing it and expose us to substantial liability, which could adversely affect our business and reputation.

Cyberattacks, security breaches, computer viruses, malware and other incidents could cause misappropriation, loss or other unauthorized disclosure of confidential data, materials or information, including those concerning our customers and employees. Increasingly complex methods have been used in cyberattacks, including ransomware, phishing, structured query language injections and distributed denial-of-service attacks. A cyberattack can also be in the form of unauthorized access or a blocking of authorized access. The risk of a security breach or disruption, particularly through cyberattacks or cyber intrusion, including by computer hackers, foreign governments and cyber terrorists, has generally increased as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. As a result of the COVID-19 pandemic, we and our third party service providers and partners may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. We may experience security breaches that may remain undetected for an extended period. We can provide no assurance that we or our vendors will be able to detect, prevent or contain the effects of such attacks or other information security risks or threats in the future. The costs of attempting to protect against the foregoing risks and the costs of responding to a cyberattack are significant. Large scale data breaches at other entities increase the challenge we and our vendors face in maintaining the security of our information technology systems and of our customers' sensitive information. Following a cyberattack, our and/or our vendors' remediation efforts may not be successful, and a cyberattack could result in interruptions, delays or cessation of service, and loss of existing or potential customers. In addition, breaches of our and/or our vendors' security measures and the unauthorized dissemination of sensitive personal information or proprietary information or confidential information about us, our customers or other third-parties, could expose our customers' private information and our customers to the risk of financial or medical identity theft, or expose us or other third parties to a risk of loss or misuse of this information, and result in investigations, regulatory enforcement actions, material fines and penalties, loss of customers, litigation or other actions which could have a material adverse effect on our business, prospects, reputation, results of operations and financial condition. In addition, if we fail to adhere to our privacy policy and other published statements or applicable laws concerning our processing, use, transmission and disclosure of protected information, or if our statements or practices are found to be deceptive or misrepresentative, we could face regulatory actions, fines and other liability.

In the ordinary course of our business, we collect and store sensitive data, including PHI, personally identifiable information, credit card and other financial information, intellectual property and proprietary business information owned or controlled by us or other parties such as customers and payers. We manage and maintain our applications and data utilizing a combination of on-site systems and cloud-based data centers. We utilize external security and infrastructure vendors to manage parts of our data centers. We also communicate sensitive data, including patient data, through phone, Internet, facsimile, multiple third-party vendors and their subcontractors or integrations with third-party electronic medical records. These applications and data encompass a wide variety of information critical to our business, including research and development information, patient data, commercial information and business and financial information. We face a number of risks related to protecting this critical information, including loss of access, inappropriate use or disclosure, unauthorized access, inappropriate modification and our being unable to adequately monitor, audit or modify our controls over such critical information. This risk extends to the third-party vendors and subcontractors we use to manage this sensitive data or otherwise process it on our behalf.

The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy, and we devote significant resources to protecting such information. Although we take reasonable measures to protect sensitive data from unauthorized access, use, modification or disclosure, no security measures can be perfect and our information technology infrastructure could be vulnerable to hackers, phishing scams, malware, viruses, security flaws, employee errors, and other malfeasance or inadvertent disruptions. Any breach or interruption of our security measures or information technology infrastructure could compromise our networks, and the information stored there could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such access, breach, or other loss of information could result in legal claims or proceedings, and liability under federal, state or foreign laws that protect the privacy of personal information, such as HIPAA or HITECH, and

regulatory penalties. Notice of breaches is required to be made to affected individuals, the Secretary of the HHS or other state, federal or foreign regulators, and for extensive breaches, notice may need to be made to the media or State Attorneys General. Such a notice could harm our reputation and our ability to compete. Although we have implemented security measures and an enterprise security program to prevent unauthorized access to patient data, such data is currently accessible through multiple channels, and there is no guarantee we can protect all data from breach. Unauthorized access, loss or dissemination could disrupt our operations (including our ability to perform our analysis, provide test results, bill payers or patients, process claims and appeals, provide customer assistance, conduct research and development, develop intellectual property, collect, process and prepare financial information, provide information about our tests and continue other patient and physician education and outreach efforts, and manage our business) and damage our reputation, any of which could adversely affect our business and financial condition. We continue to prioritize security and the development of practices and controls to protect our systems. As cyber threats evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities, and these efforts may not be successful.

We have contingency plans and insurance coverage for certain potential claims, liabilities, and costs relating to security incidents that may arise from our business or operations; however, the coverage may not be sufficient to cover all claims, liabilities, and costs arising from the incidents, including fines and penalties. It could be difficult to predict the ultimate resolution of any such incidents or to estimate the amounts or ranges of potential loss, if any, that could result therefrom. If we cannot successfully resolve a security incident or contain any potential loss, it could materially impact our ability to operate our business as well as our results of operations and financial position.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our headquarters is located in Redwood City, California, where we lease approximately 163,000 square feet of space in several buildings. These leases currently have expiration dates ranging from 2025 to 2027. Our CLIA-certified laboratory is located in these facilities, where testing for both clinical and biopharmaceutical customers is performed. We also have approximately 286,500 square feet of additional office space under two separate agreements for leases that commenced in 2021. We also maintain leased office spaces in Spring, Texas and Seattle, Washington. While we believe our existing facilities are adequate to meet our current requirements, we expect to expand our facilities as our operations grow over time. We believe we will be able to obtain such additional space on acceptable and commercially reasonable terms.

Item 3. Legal Proceedings

The information under the caption "***Commitments and Contingencies - Legal Proceedings***" in Note 10 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K, concerning certain legal proceedings in which we are involved, is hereby incorporated by reference. The resolution of any such legal proceeding is subject to inherent uncertainty and could have a material adverse effect on our financial condition, cash flows or results of operations.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market information for common stock

Our common stock is traded on the Nasdaq Global Select Market, or Nasdaq, under the symbol "GH."

Holders of record

As of February 18, 2022, there were 39 holders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividend policy

We have never declared or paid any dividends on our common stock. We currently intend to retain all available funds and any future earnings for the operation and expansion of our business. Accordingly, we do not anticipate declaring or paying dividends in the foreseeable future. The payment of any future dividends will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, including any limitations on payment of dividends, and other factors that the board may deem relevant.

Unregistered sales of equity securities

None.

Purchases of equity securities by the issuer and affiliated purchasers

None.

Securities authorized for issuance under equity compensation plans

The information required by this item with respect to our equity compensation plans is incorporated by reference to our definitive proxy statement relating to our 2022 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year to which this Annual Report on Form 10-K relates, or the 2022 Proxy Statement.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis of our financial condition and results of operations together with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and other parts of this Annual Report on Form 10-K contain forward-looking statements that involve risk and uncertainties, such as statements of our plans, objectives, beliefs, expectations and intentions. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A, "Risk Factors," of this Annual Report on Form 10-K.

The following generally compares our results of operations for the years ended December 31, 2021 and 2020. A detailed discussion comparing our results of operations for the years ended December 31, 2020 and 2019 can be found in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Annual Report on Form 10-K for the year ended December 31, 2020.

Overview

We are a leading precision oncology company focused on helping conquer cancer globally through use of our proprietary tests, vast data sets and advanced analytics. Today our proprietary tests are helping to realize the full potential of precision oncology by providing patients and their doctors critical insights that can inform decisions at all stages of the disease, from screening, to monitoring cancer recurrence, to treatment decisions. We believe that the key to conquering cancer is unprecedented access to its molecular information throughout all stages of the disease, which we intend to enable by our tests. By looking at the unique dimensions of cancer found in blood, including genomic alterations, methylation, and fragmentomics, we are unlocking insights that can increasingly help patients across all stages of cancer, including at its earliest, when it's most treatable. To help identify cancer at the earliest stages, we are developing Guardant SHIELD, a blood test for cancer screening in average-risk adults without symptoms, that detects very early signs of cancer by interrogating genomic alterations, methylation, and fragmentomic signals from a simple blood draw. In pursuit of our goal to manage cancer across all stages of the disease, we provide our Guardant360, Guardant360 LDT, Guardant360 CDx and GuardantOMNI liquid biopsy-based tests for advanced stage cancer. Our Guardant360 CDx test was the first comprehensive liquid biopsy test approved by the U.S. Food and Drug Administration, or the FDA, to provide tumor mutation profiling with solid tumors and to be used as a companion diagnostic in connection with non-small cell lung cancer, or NSCLC. In February 2021, we launched our Guardant Reveal liquid biopsy-based tests for residual and recurring cancer to first address the need in Stage II-III colorectal cancer. In June 2021, we launched Guardant360 TissueNext, our first tissue-based test which will be used to identify patients with advanced cancer who may benefit from biomarker-informed treatment, and Guardant360 Response which will be used to measure early indications to patients' response to treatment up to eight weeks earlier than response evaluation criteria in solid tumors. We have also developed our GuardantINFORM platform to further accelerate precision oncology drug development by biopharmaceutical companies by offering them an in-silico research platform to unlock further insights into tumor evolution and treatment resistance across various biomarker-driven cancers.

We perform our tests in our clinical laboratory located in Redwood City, California. Our laboratory is certified pursuant to the Clinical Laboratory Improvement Amendments of 1988, or CLIA, accredited by the College of American Pathologists, or CAP, permitted by the New York State Department of Health, or NYSDOH, and licensed in California and four other states.

We generated total revenue of $373.7 million, $286.7 million and $214.4 million for the years ended December 31, 2021, 2020 and 2019, respectively. We also incurred net losses of $384.8 million, $246.3 million and $67.9 million in the years ended December 31, 2021, 2020 and 2019, respectively. We have funded our operations to date principally from the sale of our stock, convertible senior notes, and revenue from our precision oncology testing and development services and other. In May 2019, we completed an underwritten public offering of a total of 5,175,000 shares of our common stock, through which we received net proceeds of $349.7 million after deducting underwriting discounts and commissions and offering expenses payable by us. In June 2020, we completed an underwritten public offering of a total of 4,312,500 shares of our common stock, through which we received net proceeds of $354.6 million after deducting underwriting discounts and commissions and offering expenses payable by us. In November 2020, we issued our convertible senior notes with an aggregate principal amount of $1.15

billion. As of December 31, 2021, we had cash, cash equivalents and marketable securities of approximately $1.6 billion.

Factors affecting our performance

We believe there are several important factors that have impacted and that we expect will impact our operating performance and results of operations, including:

- ***Testing volume, pricing and customer mix***. Our revenue and costs are affected by the volume of testing and mix of customers from period to period. We evaluate both the volume of tests that we perform for patients on behalf of clinicians and the number of tests we perform for biopharmaceutical companies. Our performance depends on our ability to retain and broaden adoption with existing customers, as well as attract new customers. We believe that the test volume we receive from clinicians and biopharmaceutical companies are indicators of growth in each of these customer verticals. Customer mix for our tests has the potential to significantly affect our results of operations, as the average selling price for biopharmaceutical sample testing is currently higher than our average reimbursement for clinical tests because we are not a contracted provider for, or our tests are not covered by clinical patients' insurance for, the majority of the tests that we perform for patients on behalf of clinicians. Revenue from clinical tests for patients covered by Medicare represented approximately 45%, 42% and 29% of our precision oncology revenue from clinical customers for the years ended December 31, 2021, 2020 and 2019, respectively.

- ***Payer coverage and reimbursement***. Our revenue depends on achieving broad coverage and reimbursement for our tests from third-party payers, including both commercial and government payers. Precision oncology revenue from tests for clinical customers is calculated based on our expected cash collections, using the estimated variable consideration. The variable consideration is estimated based on historical collection patterns as well as the potential for changes in future reimbursement behavior by one or more payers. Estimation of the impact of the potential for changes in reimbursement requires significant judgment and considers payers' past patterns of changes in reimbursement as well as any stated plans to implement changes. Any cash collections over the expected reimbursement period exceeding the estimated variable consideration is recorded in future periods based on actual cash received. Payment from commercial payers can vary depending on whether we have entered into a contract with the payers as a "participating provider" or do not have a contract and are considered a "non-participating provider". Payers often reimburse non-participating providers, if at all, at a lower amount than participating providers. Because we are not contracted with these payers, they determine the amount that they are willing to reimburse us for any of our tests and they can prospectively and retrospectively adjust the amount of reimbursement, adding to the complexity in estimating the variable consideration. When we contract with a payer to serve as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained. Becoming a participating provider can result in higher reimbursement amounts for covered uses of our tests and, potentially, no reimbursement for non-covered uses identified under the payer's policies or the contract. As a result, the potential for more favorable reimbursement associated with becoming a participating provider may be offset by a potential loss of reimbursement for non-covered uses of our tests. Current Procedural Terminology, or CPT, coding plays a significant role in how our tests are reimbursed both from commercial and governmental payers. In addition, Z-Code Identifiers are used by certain payers, including under Medicare's Molecular Diagnostic Services Program, or MolDx, to supplement CPT codes for our molecular diagnostics tests. Changes to the codes used to report to payers may result in significant changes in its reimbursement. If their policies were to change in the future to cover additional cancer indications, we anticipate that our total reimbursement would increase. In March 2020, we began to receive reimbursement from Medicare for claims submitted, with respect to Guardant360 clinical tests performed for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin other than NSCLC. In May 2020, Noridian issued a coverage article and confirmed limited Medicare coverage for our Guardant360 test for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin who meet the criteria of Medicare's National Coverage Determination for Next Generation Sequencing established in March 2018. Following the FDA approval of our Guardant360 CDx test, a new Z-Code Identifier was issued in August 2020. In January 2021, a proprietary laboratory analyses, or PLA code was issued for our Guardant360 CDx with an effective date in April 2021. Additionally, based on this new PLA code, we applied to the Centers for Medicare and Medicaid Services or CMS for our Guardant360 CDx test to become an advanced diagnostic laboratory test, or ADLT. In March 2021, CMS approved ADLT status to the Guardant360 CDx test, based on which Medicare paid us at the lowest available commercial rate per test, from April 1, 2021 to December 31, 2021. After this period, Medicare would reimburse Guardant360 CDx services at the median rate of claims paid by commercial payers. We are in the process of negotiating reimbursement for our Guardant Reveal, Guardant Response and Guardant360 TissueNext tests from commercial and governmental payers. Due to the inherent

variability and unpredictability of the reimbursement landscape, including related to the amount that payers reimburse us for any of our tests, we estimate the amount of revenue to be recognized at the time a test is provided and record revenue adjustments if and when the cash subsequently received for a test differs from the revenue recorded for the test. Due to this variability and unpredictability, previously recorded revenue adjustments are not indicative of future revenue adjustments from actual cash collections, which may fluctuate significantly. Additionally, if coding changes were to occur, payments for certain uses of our tests could be reduced, put on hold, or eliminated. This variability and unpredictability could increase the risk of future revenue reversal and result in our failing to meet any previously publicly stated guidance we may provide.

- ***Biopharmaceutical customers***. Our revenue also depends on our ability to attract, maintain and expand relationships with biopharmaceutical customers. As we continue to develop these relationships, we expect to support a growing number of clinical studies globally and continue to have opportunities to offer our platform to such customers for development services, including companion diagnostic development, novel target discovery and validation, as well as clinical study enrollment. For example, our tests are being developed as companion diagnostics under collaborations with biopharmaceutical companies, including AstraZeneca, Amgen, Daiichi Sankyo, Janssen Biotech and Radius Health.

- ***Research and development.*** A significant aspect of our business is our investment in research and development, including the development of new products. In particular, we have invested heavily in clinical studies as we believe these studies are critical to gaining physician adoption and driving favorable coverage decisions by payers. With respect to Guardant Reveal, in 2021, we initiated a 1,000-patient prospective, observational, multi-center study, which we refer to as the ORACLE study, designed to evaluate the performance of our Guardant Reveal liquid biopsy test to predict cancer recurrence after curative intent treatment, across 11 solid tumor types. With respect to Guardant SHIELD, we completed enrollment toward a prospective screening study, which we refer to as the ECLIPSE study, aiming to evaluate the performance of our Guardant SHIELD assay in detecting colorectal cancer in average-risk adults. In addition, in early 2022, we enrolled the first patient in a nearly 10,000-patient prospective, registrational study, which we refer to as the SHIELD study, to evaluate the performance of our next-generation Guardant SHIELD assay in detecting lung cancer in high-risk individuals ages 50-80 and the study is anticipated to run in approximately 100 centers in the United States and Europe. We have expended considerable resources, and expect to increase such expenditures over the next few years, to support our research and development programs with the goal of fueling further innovation.

- ***International expansion.*** A component of our long-term growth strategy is to expand our commercial footprint internationally, and we expect to increase our sales and marketing expense to execute on this strategy. We currently offer our tests in countries outside the United States primarily through distributor relationships, direct contracts with hospitals or partnerships with research organizations. In May 2018, we formed and capitalized a joint venture, Guardant Health AMEA, Inc., which we refer to as the Joint Venture, with SoftBank, relating to the sale, marketing and distribution of our tests generally outside the Americas and Europe. We expect to rely on the Joint Venture to accelerate commercialization of our products in Asia, the Middle East and Africa. In November 2021, we exercised our call right contained in the joint venture agreement with SoftBank to purchase all of the shares held by SoftBank and its affiliates in consideration for the payment of the aggregate purchase price to be determined based on an independent third-party valuation. The aggregate purchase price will be no less than an amount that yields a 20% internal rate of return on the $41.0 million of capital invested by SoftBank in May 2018 as stipulated in the joint venture agreement. SoftBank and us have initiated a process to determine the independent valuation of the Joint Venture, which includes the appointment of independent appraisers by both SoftBank and us. We expect to complete this transaction before the end of the second quarter of 2022.

- ***Sales and marketing expense***. Our financial results have historically, and will likely continue to, fluctuate significantly based upon the impact of our sales and marketing expense, increase in headcount, and in particular, our various marketing programs around existing and new product introductions.

- ***General and administrative expense***. Our financial results have historically, and will likely continue to, fluctuate significantly based upon the impact of our general and administrative expense, and in particular, our stock-based compensation expense. Our equity awards, including market-based and performance-based restricted stock units, are intended to retain and incentivize employees to lead us to sustained, long-term superior financial and operational performance.

- ***COVID-19 Global Pandemic***. The global outbreak of coronavirus 2019, or COVID-19, has disrupted, and we expect will continue to disrupt, our operations. To protect the health and well-being of our workforce, partners, vendors and customers, we have provided free COVID-19 testing for all of our employees, contractors and their dependents, implemented social distance and building entry policies at work, and followed California's public health orders and the guidance from the Centers for Disease Control and Prevention. The COVID-19 global pandemic has negatively affected, and we expect will continue to negatively affect, our revenue and our clinical studies. For example, our biopharmaceutical customers are facing challenges in recruiting patients and in conducting clinical studies to advance their pipelines, for which our tests could be utilized. In addition, disruptions caused by the pandemic have adversely affected the quantity and quality of certain sequencers, reagents, blood tubes and other similar materials that are critical to our commercial and research and development programs. We currently have a limited amount of stock of these components. Failure in the future to secure sufficient supply of critical components could materially and adversely affect our ability to manufacture or supply marketed products and product candidates or complete our ongoing research and development programs on the timelines previously established, which could materially and adversely affect our business and future prospects. The severity of the impact on our business will depend on a number of factors, including the duration and severity of the pandemic and the impact of any variants of the virus on us, our customers, and our suppliers. In August 2020, we launched our Guardant-19 test and received the FDA's emergency use authorization for use in the detection of the novel coronavirus. The test was being offered to our employees and to select partner organizations via our CLIA-certified clinical laboratory. Effective August 2021, we have discontinued offering the test to third parties.

While each of these areas presents significant opportunities for us, they also pose significant risks and challenges that we must address. See Part I, Item 1A, *"Risk Factors*" of this Annual Report on Form 10-K for more information.

Components of results of operations

Revenue

We derive our revenue from two sources: (i) precision oncology testing and (ii) development services and other.

Precision oncology testing. Precision oncology testing revenue is generated from sales of our tests to clinical and biopharmaceutical customers. In the United States, through December 31, 2021, we generally performed tests as an out-of-network service provider without contracts with health insurance companies. We submit claims for payment for tests performed for patients covered by U.S. private payers. We submit claims to Medicare for reimbursement for Guardant360 clinical testing performed for qualifying patients diagnosed with solid tumor cancers of non-central nervous system origin and for Guardant360 CDx clinical testing performed for qualifying patients diagnosed with solid tumor cancers who meet the criteria of Medicare's National Coverage Determination for Next Generation Sequencing established since March 2018. Revenue from clinical tests for patients covered by Medicare represented approximately 45%, 42% and 29% of our precision oncology revenue from clinical customers for the years ended December 31, 2021, 2020 and 2019, respectively.

Development services and other. Development services and other revenue primarily represents services, other than precision oncology testing, that we provide to biopharmaceutical companies and large medical institutions. We collaborate with biopharmaceutical companies in the development and clinical studies of new drugs. As part of these collaborations, we provide services related to regulatory filings to support companion diagnostic device submissions for our test panels. Under these arrangements, we generate revenue from progression of our collaboration efforts, as well as from provision of on-going support. In addition to companion diagnostic development and regulatory approval services, we also provide clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect, GuardantINFORM, and kits fulfillment related services for our biopharmaceutical customers. In addition, we derive royalty revenues from licensing our technology. Development services and other revenue can vary over time as different projects start and complete.

Costs and operating expenses

Cost of precision oncology testing. Cost of precision oncology testing generally consists of cost of materials, inventory write-downs, direct labor, including employee benefits, bonus, and stock-based compensation; equipment and infrastructure expenses associated with processing test samples, such as sample accessioning, library preparation, sequencing, quality control analyses and shipping charges to transport blood samples; freight; curation of test results for physicians; and license fees due to third parties. Infrastructure expenses include depreciation of laboratory equipment, rent costs, depreciation of leasehold improvements and information technology costs. Costs associated with performing our tests are recorded as the tests are performed regardless of whether revenue was

recognized with respect to the tests. Royalties for licensed technology are calculated as a percentage of revenues generated using the associated technology and recorded as expense at the time the related revenue is recognized. One-time royalty payments related to signing of license agreements or other milestones, such as issuance of new patents, are amortized to expense over the expected useful life of the patents. While we do not believe the technologies underlying these licenses are necessary to permit us to provide our tests, we do believe these technologies are potentially valuable and of possible strategic importance to us or our competitors.

We expect the cost of precision oncology testing to generally increase in line with the increase in the number of tests we perform, but we expect the cost per test to decrease modestly over time due to the efficiencies we may gain as test volume increases, and from automation and other cost reductions.

Cost of development services and other. Cost of development services and other primarily includes costs incurred for the performance of development services requested by our customers comprising of direct labor and material costs including any inventory write-downs. For development of new products, costs incurred before technological feasibility has been achieved are reported as research and development expenses, while costs incurred thereafter are reported as cost of revenue. Cost of development services and other will vary depending on the nature, timing and scope of customer projects.

Research and development expense. Research and development expenses consist of costs incurred to develop technology and include salaries and benefits including stock-based compensation, reagents and supplies used in research and development laboratory work, infrastructure expenses, including allocated facility occupancy and information technology costs, contract services, other outside costs and costs to develop our technology capabilities. Research and development expenses also include costs related to activities performed under contracts with biopharmaceutical companies before technological feasibility has been achieved. Research and development costs are expensed as incurred. Payments made prior to the receipt of goods or services to be used in research and development are deferred and recognized as expense in the period in which the related goods are received or services are rendered. Costs to develop our technology capabilities are recorded as research and development unless they meet the criteria to be capitalized as internal-use software costs. We expect that our research and development expenses will continue to increase in absolute dollars as we continue to innovate and develop additional products, expand our genomic and medical data management resources and conduct our ongoing and new clinical studies.

Sales and marketing expense. Our sales and marketing expenses are expensed as incurred and include costs associated with our sales organization, including our direct sales force and sales management, client services, marketing and reimbursement, medical affairs, as well as business development personnel who are focused on our biopharmaceutical customers. These expenses consist primarily of salaries, commissions, bonuses, employee benefits, travel expenses and stock-based compensation, as well as marketing, sales incentives, and educational activities and allocated overhead expenses. We expect our sales and marketing expenses to increase in absolute dollars as we expand our sales force, increase our presence within and outside of the United States, and increase our marketing activities to drive further awareness and adoption of our tests.

General and administrative expense. Our general and administrative expenses include costs for our executive, accounting and finance, information technology, legal and human resources functions. These expenses consist principally of salaries, bonuses, employee benefits, travel expenses and stock-based compensation, as well as professional services fees such as consulting, audit, tax and legal fees, and general corporate costs and allocated overhead expenses.

We expect that our general and administrative expenses will continue to increase in absolute dollars, primarily due to increased stock-based compensation expense, including resulting from the market-based restricted stock units granted to our Co-Chief Executive Officers in May 2020. These expenses, though expected to increase in absolute dollars, are expected to decrease modestly as a percentage of revenue in the long term, though they may fluctuate as a percentage of revenue from period to period due to the timing and extent of these expenses being incurred.

Interest income

Interest income consists of interest earned on our cash, cash equivalents and marketable securities.

Interest expense

Interest expense consists primarily of charges relating to amortization of debt issuance costs.

Other income (expense), net

Other income (expense), net consists of foreign currency exchange gains and losses, non-recurring payments due and received in relation to the settlement of license and patent disputes, net of credit losses, and the relief fund grant

from the Department of Health and Human Services, or HHS, under the U.S. Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act. We expect our foreign currency gains and losses to continue to fluctuate in the future due to changes in foreign currency exchange rates.

Provision for (Benefit from) income tax

Income taxes are recorded using an asset and liability approach. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Tax benefits are recognized when it is more likely than not that a tax position will be sustained during an audit. Deferred tax assets are reduced by a valuation allowance if current evidence indicates that it is considered more likely than not that these benefits will not be realized.

Our tax positions are subject to income tax audits. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the position is sustainable upon examination by the taxing authority, based on the technical merits. The tax benefit recognized is measured as the largest amount of benefit which is more likely than not to be realized upon settlement with the taxing authority. We recognize interest accrued and penalties related to unrecognized tax benefits in its tax provision. We evaluate uncertain tax positions on a regular basis. The evaluations are based on a number of factors, including changes in facts and circumstances, changes in tax law, correspondence with tax authorities during the course of the audit, and effective settlement of audit issues. The provision for (benefit from) income taxes includes the effects of any accruals that we believe are appropriate, as well as the related net interest and penalties.

Results of operations

The following tables set forth the significant components of our results of operations for the periods presented.

	Year Ended December 31,	
	2021	2020
	(in thousands)	
Revenue:		
Precision oncology testing	$ 304,312	$ 236,324
Development services and other	69,341	50,406
Total revenue	373,653	286,730
Costs and operating expenses:		
Cost of precision oncology testing[(1)]	110,396	74,769
Cost of development services and other	12,516	17,766
Research and development expense[(1)]	263,221	149,862
Sales and marketing expense[(1)]	191,881	106,513
General and administrative expense[(1)]	206,640	192,770
Total costs and operating expenses	784,654	541,680
Loss from operations	(411,001)	(254,950)
Interest income	3,930	10,171
Interest expense	(2,577)	(4,766)
Other income (expense), net	25,178	3,641
Loss before provision for income taxes	(384,470)	(245,904)
Provision for income taxes	300	379
Net loss	$ (384,770)	$ (246,283)

(1) Amounts include stock-based compensation expense as follows:

	Year Ended December 31,	
	2021	2020
	(in thousands)	
Cost of precision oncology testing	$ 3,468	$ 1,839
Research and development expense	18,907	10,024
Sales and marketing expense	15,479	9,279
General and administrative expense	113,595	122,971
Total stock-based compensation expense	$ 151,449	$ 144,113

Comparison of the Years Ended December 31, 2021 and 2020

Revenue

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Precision oncology testing	$ 304,312	$ 236,324	$ 67,988	29 %
Development services and other	69,341	50,406	18,935	38 %
Total revenue	$ 373,653	$ 286,730	$ 86,923	30 %

Total revenue was $373.7 million for the year ended December 31, 2021, compared to $286.7 million for the year ended December 31, 2020, an increase of $86.9 million, or 30%.

Precision oncology testing revenue increased to $304.3 million for the year ended December 31, 2021, from $236.3 million for the year ended December 31, 2020, an increase of $68.0 million, or 29%.

Precision oncology revenue from tests for clinical customers was $236.4 million for the year ended December 31, 2021, up 38% from $171.8 million for the year ended December 31, 2020. This increase in clinical testing revenue was driven primarily by an increase in sample volume related to our Guardant360 LDT and Guardant360 CDx tests, and an overall increase in the average selling price per Guardant360 CDx test primarily due to ADLT status being received from Medicare effective April 1, 2021. Tests for clinical customers increased to 87,600 for year ended December 31, 2021, from 63,254 for the year ended December 31, 2020.

Precision oncology revenue from tests for biopharmaceutical customers was $67.9 million for the year ended December 31, 2021, and $64.5 million for the year ended December 31, 2020, respectively. The increase in revenue was primarily due to an increase in tests, partially offset by a decrease in average selling price per test primarily due to a greater proportion of such tests being the Guardant360 tests, which have a lower average selling price than the GuardantOMNI tests. Tests for biopharmaceutical customers increased to 18,600 for the year ended December 31, 2021, from 15,983 for the year ended December 31, 2020, primarily due to an increase in the number of biopharmaceutical customers and their contracted projects.

Development services and other revenue increased to $69.3 million for the year ended December 31, 2021, from $50.4 million for the year ended December 31, 2020, an increase of $18.9 million, or 38%. This increase in development services and other revenue was primarily due to the progression of collaboration projects with biopharmaceutical customers for companion diagnostic development services, including receipt of milestone payments for regulatory approval of two of our companion diagnostic programs during the year ended December 31, 2021, and royalty revenues earned during the year ended December 31, 2021, pursuant to a settlement and license agreement entered into in December 2021.

Our revenue may be adversely impacted by the COVID-19 pandemic in future periods depending on the duration and severity of the pandemic and the impact of any variants of the virus.

Costs of Revenue and Gross Margin

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Cost of revenue	$ 122,912	$ 92,535	$ 30,377	33 %
Gross profit	$ 250,741	$ 194,195		
Gross margin	67 %	68 %		

Cost of revenue was $122.9 million for the year ended December 31, 2021, compared to $92.5 million for the year ended December 31, 2020, an increase of $30.4 million, or 33%.

Cost of precision oncology testing revenue was $110.4 million for the year ended December 31, 2021, compared to $74.8 million for the year ended December 31, 2020, an increase of $35.6 million, or 48%. This increase in cost of precision oncology testing was primarily attributable to an increase in sample volumes, resulting in a $20.3 million increase in material costs, a $12.4 million increase in production labor and overhead costs, and a $3.3 million increase in other costs, including costs related to kits, freight and curation of test results for physicians.

Cost of development services and other was $12.5 million for the year ended December 31, 2021, compared to $17.8 million for the year ended December 31, 2020, a decrease of $5.3 million, or 30%. This decrease in cost of development services and other was primarily due to a decrease in labor costs and materials, related to the progression of companion diagnostic development and regulatory approval service contracts.

Gross margin for the year ended December 31, 2021 was 67%, compared to 68% for the year ended December 31, 2020. The decrease in gross margin was primarily due to lower average selling price and higher average cost per test resulting from the varied product mix of precision oncology testing, partially offset by gross margin improvement of development services and other. The improvement of development services and other gross margin was primarily attributable to royalty revenues earned pursuant to a settlement and license agreement entered into in December 2021, and receipt of milestone payments for regulatory approval of two for our companion diagnostic programs in 2021. Our gross margin may be adversely impacted by the COVID-19 pandemic depending on how long the pandemic lasts and the severity of the situation in coming quarters.

Operating Expenses

Research and development expense

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Research and development	$ 263,221	$ 149,862	$ 113,359	76 %

Research and development expenses were $263.2 million for the year ended December 31, 2021, compared to $149.9 million for the year ended December 31, 2020, an increase of $113.4 million, or 76%. This increase in research and development expense was primarily due to an increase of $49.7 million in personnel-related costs for employees in our research and development group, including a $8.9 million increase in stock-based compensation, as we increased our headcount to support continued investment in our technology. The increase was also attributable to an increase of $32.7 million in material costs related to various programs, an increase of $21.2 million in development consulting fees, an increase of $12.3 million related to allocated facility and information technology infrastructure costs, and an increase of $4.9 million in depreciation and amortization costs, partially offset by a decrease of $8.5 million relating to in-process research and development (IPR&D) technology expensed in connection with a patent license acquisition that occurred in March 2020.

Sales and marketing expense

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Sales and marketing	$ 191,881	$ 106,513	$ 85,368	80 %

Selling and marketing expenses were $191.9 million for the year ended December 31, 2021, compared to $106.5 million for the year ended December 31, 2020, an increase of $85.4 million, or 80%. This increase was primarily due to an increase of $58.9 million in personnel-related costs, including a $6.2 million increase in stock-based compensation, associated with the expansion of our commercial organization, an increase of $12.0 million related to allocated facilities and information technology infrastructure costs, an increase of $10.6 million in professional service expenses related to marketing activities, and an increase of $3.5 million in office administrative costs.

General and administrative expense

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
General and administrative	$ 206,640	$ 192,770	$ 13,870	7 %

General and administrative expenses were $206.6 million for the year ended December 31, 2021, compared to $192.8 million for the year ended December 31, 2020, an increase of $13.9 million, or 7%. This increase was primarily due to an increase of $9.0 million in personnel-related costs, as we increased our headcount to support the

business growth, an increase of $7.4 million in professional service expenses related to outside legal, accounting, consulting and IT services, an increase of $5.3 million related to allocated facilities and information technology infrastructure costs, and an increase of $2.0 million in office administrative costs, partially offset by a decrease of $9.4 million in stock-based compensation, as tranche 1 of the market-based restricted stock units issued to our Co-Chief Executive Officers were fully vested as of January 1, 2021, and a decrease of $1.2 million related to settlement costs in connection with a patent license acquisition that occurred in March 2020.

Interest income

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Interest income	$ 3,930	$ 10,171	$ (6,241)	(61)%

Interest income was $3.9 million for the year ended December 31, 2021, compared to $10.2 million for the year ended December 31, 2020, a decrease of $6.2 million, or 61%. This decrease was primarily due to a significant decrease in interest rate as the U.S. Federal Reserve lowered the risk-free interest rate to nearly zero, offset by a significant increase in cash, cash equivalents and marketable securities related to the receipt of cash proceeds from our follow-on public offering completed in June 2020 and borrowings on our convertible senior notes issued in November 2020.

Interest expense

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Interest expense	$ (2,577)	$ (4,766)	$ 2,189	(46)%

Interest expense was $2.6 million for the year ended December 31, 2021, compared to $4.8 million for the year ended December 31, 2020, a decrease of $2.2 million, or 46%. For the year ended December 31, 2021, interest expense was primarily attributable to amortization of issuance costs, and for the year ended December 31, 2020, interest expense was primarily attributable to amortization of debt discount and debt issuance costs, related to our convertible senior notes issued in November 2020. The decrease was due to the impact of adopting ASU 2020-06 in 2021.

Other income (expense), net

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Other income (expense), net	$ 25,178	$ 3,641	$ 21,537	*

* Not meaningful

For the year ended December 31, 2021, other income (expense), net primarily included $25.0 million related to the one-time payment pursuant to a settlement and license agreement entered into in December 2021. For the year ended December 31, 2020, other income (expense), net primarily included $1.8 million received from HHS's relief fund under the CARES Act, and $1.0 million received in connection with settlement of a patent dispute.

Provision for income taxes

	Year Ended December 31,		Change	
	2021	2020	$	%
	(in thousands)			
Provision for income taxes	$ 300	$ 379	$ (79)	(21)%

Provision for income taxes was immaterial for both of the years ended December 31, 2021 and 2020.

Quarterly results of operations

The following tables set forth our unaudited quarterly consolidated statements of operations data for each of the

eight quarters in the 24-month period ended December 31, 2021. The information for each of these quarters has been prepared in accordance with generally accepted accounting principles in the United States of America and on the same basis as our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. In the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of our results of operations. This data should be read in conjunction with our audited financial statements and related notes included elsewhere in this Annual Report on Form 10-K. These quarterly operating results are not necessarily indicative of our operating results for the full year or any future period.

	Three Months Ended							
	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021	December 31, 2020	September 30, 2020	June 30, 2020	March 31, 2020
	(unaudited) (in thousands)							
Revenue:								
Precision oncology testing	$ 88,707	$ 79,272	$ 72,604	$ 63,729	$ 64,703	$ 60,384	$ 50,991	$ 60,246
Development services and other	19,401	15,507	19,497	14,936	13,613	14,185	15,344	7,264
Total revenue	108,108	94,779	92,101	78,665	78,316	74,569	66,335	67,510
Costs and operating expenses:								
Cost of precision oncology testing	32,254	29,665	24,887	23,590	22,070	16,699	17,809	18,191
Cost of development services and other	1,168	1,151	5,040	5,157	6,337	4,488	4,626	2,315
Research and development expense	73,021	70,968	63,724	55,508	40,282	36,245	36,319	37,016
Sales and marketing expense	59,599	50,228	47,716	34,338	31,288	25,095	25,015	25,115
General and administrative expense	40,274	50,055	48,376	67,935	69,505	66,294	37,186	19,785
Total costs and operating expenses	206,316	202,067	189,743	186,528	169,482	148,821	120,955	102,422
Loss from operations	(98,208)	(107,288)	(97,642)	(107,863)	(91,166)	(74,252)	(54,620)	(34,912)
Interest income	653	689	1,037	1,551	1,900	2,313	2,640	3,318
Interest expense	(643)	(644)	(644)	(646)	(4,736)	(8)	(10)	(12)
Other income (expense), net	25,898	(187)	(243)	(290)	1,220	345	2,285	(209)
Loss before provision for income taxes	(72,300)	(107,430)	(97,492)	(107,248)	(92,782)	(71,602)	(49,705)	(31,815)
Provision for (benefit from) income taxes	11	96	83	110	263	68	34	14
Net loss	(72,311)	(107,526)	(97,575)	(107,358)	(93,045)	(71,670)	(49,739)	(31,829)
Adjustment of redeemable noncontrolling interest	(18,600)	—	—	(2,300)	(700)	(6,000)	(4,900)	4,100
Net loss attributable to Guardant Health, Inc. common stockholders	$ (90,911)	$ (107,526)	$ (97,575)	$ (109,658)	$ (93,745)	$ (77,670)	$ (54,639)	$ (27,729)
Net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	$ (0.89)	$ (1.06)	$ (0.96)	$ (1.09)	$ (0.94)	$ (0.78)	$ (0.57)	$ (0.29)
Weighted-average shares used in computing net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	101,697	101,420	101,172	100,955	100,018	99,554	96,011	94,382

Liquidity and capital resources

We have incurred losses and negative cash flows from operations since our inception, and as of December 31, 2021, we had an accumulated deficit of $1.0 billion. We expect to incur additional operating losses in the near future and our operating expenses will increase as we continue to invest in clinical studies and develop new products, expand our sales organization, and increase our marketing efforts to drive market adoption of our tests. As demand for our tests are expected to continue to increase from physicians and biopharmaceutical companies, we anticipate that our capital expenditure requirements could also increase if we require additional laboratory capacity.

We have funded our operations to date principally from the sale of stock, convertible debt and through revenue from precision oncology testing and development services and other. As of December 31, 2021, we had cash and cash equivalents of $492.2 million and marketable securities of $1.1 billion. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to provide liquidity while ensuring capital preservation. Additionally, we have investments held in marketable securities consisting of United States treasury securities that can be immediately liquid.

Based on our current business plan, we believe our current cash, cash equivalents and marketable securities and anticipated cash flows from operations, will be sufficient to meet our anticipated cash requirements for more than 12 months from the date of this Annual Report on Form 10-K. We may consider raising additional capital to expand our business, to pursue strategic investments, to take advantage of financing opportunities or for other reasons. As revenue from precision oncology testing and development services and other is expected to grow long-term, we expect our accounts receivable and inventory balances to increase. Any increase in accounts receivable and inventory may not be completely offset by increases in accounts payable and accrued expenses, which could result in greater working capital requirements.

If our available cash, cash equivalents and marketable securities and anticipated cash flows from operations are insufficient to satisfy our liquidity requirements including because of lower demand for our products as a result of lower than currently expected rates of reimbursement from our customers or other risks described in this Annual Report on Form 10-K, we may seek to sell additional common or preferred equity or convertible debt securities, enter into a credit facility or another form of third-party funding or seek other debt financing. The sale of equity and convertible debt securities may result in dilution to our stockholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our platform technologies or products or grant licenses on terms that are not favorable to us. Additional capital may not be available to us on reasonable terms, or at all.

Cash flows

The following table summarizes our cash flows for the periods presented:

	Year Ended December 31,	
	2021	2020
	(in thousands)	
Net cash used in operating activities	$ (209,017)	$ (103,927)
Net cash used in investing activities	(63,155)	(617,086)
Net cash (used in) provided by financing activities	(66,824)	1,410,307

Operating activities

Cash used in operating activities during the year ended December 31, 2021 was $209.0 million, which resulted from a net loss of $384.8 million and net change in our operating assets and liabilities of $40.5 million, partially offset by non-cash charges of $216.2 million. Non-cash charges primarily consisted of $151.4 million of stock-based compensation, $24.7 million of non-cash operating lease costs, $22.3 million of depreciation and amortization, $12.8 million of amortization of premium on investment, $2.6 million of amortization of debt issuance costs, and $2.4 million of revaluation adjustments to contingent consideration. The net change in our operating assets and liabilities was primarily the result of a $44.4 million increase in accounts receivables driven by increased sales to clinical and biopharmaceutical customers, and royalty revenues earned pursuant to a settlement and license agreement entered into in December 2021, a $35.8 million increase in prepaid expenses and other current assets, primarily driven by a $25.0 million one-time payment pursuant the above-mentioned settlement and license agreement, a $8.0 million increase in inventory due to higher testing volumes, and a $4.2 million increase in other assets, partially offset by a $14.2 million payment of operating lease liabilities net of receipt of tenant improvement allowance, a $14.2 million increase in accrued compensation due to increased personnel, a $11.9 million increase in accrued expense and other liabilities, a $8.6 million increase in accounts payable, and a $2.8 million increase in deferred revenue.

Cash used in operating activities during the year ended December 31, 2020 was $103.9 million, which resulted from a net loss of $246.3 million and net change in our operating assets and liabilities of $47.7 million, partially offset by non-cash charges of $190.0 million. Non-cash charges primarily consisted of $144.1 million of stock-based compensation, $16.1 million of depreciation and amortization, $8.5 million of charge of in-process research and

development costs with no alternative future use, $7.2 million of credit loss adjustment and others, $5.6 million of non-cash operating lease costs, $4.7 million of amortization of debt discount and debt issuance costs, and $4.0 million of amortization of premium on investment. The net change in our operating assets and liabilities was primarily the result of a $19.3 million increase in other assets for security deposits relating to new leases we entered into in 2020, a $7.9 million decrease in accounts payable, a $7.5 million increase in inventory due to higher testing volumes, a $6.1 million increase in prepaid expenses and other current assets, a $6.0 million payment of operating lease liabilities net of receipt of tenant improvement allowance, a $5.5 million increase in accounts receivables driven by increased sales to biopharmaceutical customers, and a $3.7 million decrease in deferred revenue, partially offset by a $9.7 million increase in accrued compensation due to increased personnel.

Investing activities

Cash used in investing activities during the year ended December 31, 2021 was $63.2 million, which resulted primarily from purchases of marketable securities of $900.8 million, purchases of property and equipment of $75.0 million, and purchases of non-marketable equity and other related investments of $39.4 million, partially offset by proceeds from the maturities of marketable securities of $952.1 million.

Cash used in investing activities during the year ended December 31, 2020 was $617.1 million, which resulted primarily from purchases of marketable securities of $1.1 billion, purchases of property and equipment of $36.2 million, and purchase of intangible assets of $17.9 million, partially offset by proceeds from the maturities of marketable securities of $562.5 million.

Financing activities

Cash used in financing activities during the year ended December 31, 2021 was $66.8 million, which was primarily due to taxes paid related to net share settlement of restricted stock units of $83.8 million, partially offset by proceeds of $9.8 million from issuances under employee stock purchase plan, and proceeds of $8.1 million from exercise of stock options.

Cash provided by financing activities during the year ended December 31, 2020 was $1.4 billion, which was primarily due to net proceeds of $1.1 billion from borrowings on convertible senior notes, proceeds of $354.6 million from a follow-on offering of our common stock, net of underwriting discounts and commissions and offering expenses payable by us, proceeds of $9.5 million from exercise of stock options, and proceeds of $7.1 million from issuances under employee stock purchase plan, partially offset by purchases of note hedges relating to the convertible senior notes of $90.0 million, and taxes paid related to net share settlement of restricted stock units of $3.4 million.

Critical accounting policies and estimates

We have prepared our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, or GAAP. Our preparation of these consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, expenses and related disclosures at the date of the consolidated financial statements, as well as revenue and expenses recorded during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, we believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our financial statements.

Revenue recognition

We derive revenue from the provision of precision oncology testing services provided to our ordering physicians and biopharmaceutical customers, as well as from biopharmaceutical research and development services provided to our biopharmaceutical customers. Precision oncology testing services include genomic profiling and the delivery of other genomic information derived from our platform. Development services and other include companion diagnostic development, clinical study setup, monitoring and maintenance, information solutions and laboratory services, and other miscellaneous revenue streams. We currently receive payments from third-party commercial and governmental payers, certain hospitals and oncology centers and individual patients, as well as biopharmaceutical companies, research institutes and international distributors.

Effective January 1, 2019, we adopted the new revenue recognition standard, Financial Accounting Standards Board, or FASB, ASC Topic 606, Revenue from Contracts with Customers, or ASC 606. Revenues are recognized when control of services is transferred to customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services. ASC 606 provides for a five-step model that includes identifying the contract with a customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations, and recognizing revenue when, or as, an entity satisfies a performance obligation.

Precision oncology testing

We recognize revenue from the sale of our precision oncology tests for clinical customers, including certain hospitals, cancer centers, other institutions and patients, at the time results of the test are reported to physicians. Most precision oncology tests requested by clinical customers are sold without a written agreement; however, we determine an implied contract exists with our clinical customers. We identify each sale of our test to a clinical customer as a single performance obligation. With the exception of certain limited contracted arrangements with insurance carriers and other institutions where the transaction price is fixed, a stated contract price does not exist and the transaction price for each implied contract with our clinical customers represents variable consideration. We estimate the variable consideration under the portfolio approach and consider the historical reimbursement data from third-party commercial and governmental payers and patients, as well as known or anticipated reimbursement trends not reflected in the historical data. We monitor the estimated amount to be collected in the portfolio at each reporting period based on actual cash collections in order to assess whether a revision to the estimate is required. Both the estimate and any subsequent revision contain uncertainty and require the use of significant judgment in the estimation of the variable consideration and application of the constraint for such variable consideration. We analyze actual cash collections over the expected reimbursement period and compare it with the estimated variable consideration for each portfolio and any difference is recognized as an adjustment to estimated revenue after the expected reimbursement period, subject to assessment of the risk of future revenue reversal.

Revenue from sales of precision oncology tests to biopharmaceutical customers are based on a negotiated price per test or on the basis of an agreement to provide certain testing volume over a defined period. We identify our promise to transfer a series of distinct tests to biopharmaceutical customers as a single performance obligation. Precision oncology tests to biopharmaceutical customers are generally billed at a fixed price for each test performed. For agreements involving testing volume to be satisfied over a defined period, revenue is recognized over time based on the number of tests performed as the performance obligation is satisfied over time.

Results of our precision oncology services are delivered electronically, and as such there are no shipping or handling fees incurred by us or billed to customers.

Development services and other

We perform development services for our biopharmaceutical customers utilizing our precision oncology information platform. Development services typically represent a single performance obligation as we perform a significant integration service, such as analytical validation and regulatory submissions. The individual promises are not separately identifiable from other promises in the contracts and, therefore, are not distinct. However, under certain contracts, a biopharmaceutical customer may engage us for multiple distinct development services which are both capable of being distinct and separately identifiable from other promises in the contracts and, therefore, distinct performance obligations.

We collaborate with pharmaceutical companies in the development of new drugs. As part of these collaborations, we provide services related to regulatory filings to support companion diagnostic device submissions for our liquid biopsy panels. Under these collaborations, we generate revenue from achievement of milestones, as well as provision of on-going support. For development services performed, we are compensated through a combination of an upfront fee and performance-based, non-refundable regulatory and other developmental milestone payments. The transaction price of our development services contracts typically represents variable consideration. Application of the constraint for variable consideration to milestone payments is an area that requires significant judgment. We evaluate factors such as the scientific, clinical, regulatory, commercial, and other risks that must be managed to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone. In making this assessment, we consider our historical experience with similar milestones, the degree of complexity and uncertainty associated with each milestone, and whether achievement of the milestone is dependent on parties other than us. The constraint for variable consideration is applied such that it is probable a significant reversal of revenue will not occur when the uncertainty associated with the contingency is resolved. Application of the constraint for variable consideration is assessed and updated at each reporting period as a revision to the estimated transaction price.

We recognize development services and other revenue over the period in which biopharmaceutical research and development services are provided. Specifically, we recognize revenue using an input method to measure progress, utilizing costs incurred to-date relative to total expected costs as its measure of progress. We also assess the changes to the total expected cost estimates as well as any incremental fees negotiated resulting from changes to the scope of the original contract in determining the revenue recognition at each reporting period. For development of new products or services under these arrangements, costs incurred before technological feasibility is reached are included as research and development expenses in our consolidated statements of operations, while costs incurred thereafter are recorded as cost of development services and other.

We also have other miscellaneous revenue streams that are recognized in addition to development services noted above such as clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect, GuardantINFORM, and kits fulfillment related revenues. In addition, we derive sales-based royalty revenues from licensing our technologies. Revenues related to clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect, GuardantINFORM are generally recognized over time based on an input method to measure progress in the period when the associated services have been performed. Kits fulfillment related revenues are recognized when such products are delivered. Royalty revenues are recognized when actual sales incur.

Contracts with multiple performance obligations

Contracts with biopharmaceutical customers may include multiple distinct performance obligations, such as provision of precision oncology testing, biopharmaceutical research and development services, and clinical study enrollment assistance, among others. We evaluate the terms and conditions included within our contracts with biopharmaceutical customers to ensure appropriate revenue recognition, including whether services are considered distinct performance obligations that should be accounted for separately versus together. We first identify material promises, in contrast to immaterial promises or administrative tasks, under the contract and then evaluates whether these promises are both capable of being distinct and distinct within the context of the contract. In assessing whether a promised service is capable of being distinct, we consider whether the customer could benefit from the service either on its own or together with other resources that are readily available to the customer, including factors such as the research, development, and commercialization capabilities of a third party as well as the availability of the associated expertise in the general marketplace. In assessing whether a promised service is distinct within the context of the contract, we consider whether we provide a significant integration of the services, whether the services significantly modify or customize one another, or whether the services are highly interdependent or interrelated.

For contracts with multiple performance obligations, the transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. We determine standalone selling price by considering the historical selling price of these performance obligations in similar transactions as well as other factors, including, but not limited to, the price that customers in the market would be willing to pay, competitive pricing of other vendors, industry publications and current pricing practices, and expected costs of satisfying each performance obligation plus appropriate margin.

Variable interest entity

We review agreements we enter into with third party entities, pursuant to which we may have a variable interest in the entity, in order to determine if the entity is a variable interest entity, or VIE. If the entity is a VIE, we assess whether or not we are the primary beneficiary of that entity. In determining whether we are the primary beneficiary of an entity, we apply a qualitative approach that determines whether we have both (1) the power to direct the economically significant activities of the entity and (2) the obligation to absorb losses of, or the right to receive benefits from, the entity that could potentially be significant to that entity. If we determine we are the primary beneficiary of a VIE, we consolidate the statements of operations and financial condition of the VIE into our consolidated financial statements. Accounting for the consolidation is based on our determination if the VIE meets the definition of a business or and asset. Assets, liabilities and noncontrolling interests, excluding goodwill, of VIEs that are not determined to be businesses are recorded at fair value in our financial statements upon consolidation. Assets and liabilities that we have transferred to a VIE, after, or shortly before the date we became the primary beneficiary are recorded at the same amount at which the assets and liabilities would have been measured if they had not been transferred. Our determination about whether we should consolidate such VIEs is made continuously as changes to existing relationships or future transactions may result in a consolidation or deconsolidation event.

In May 2018, we and an affiliate of SoftBank formed and capitalized the Joint Venture for the sale, marketing and distribution of our tests in the JV Territory. We expect to rely on the Joint Venture to accelerate commercialization of our products in Asia, the Middle East and Africa. The Joint Venture is deemed to be a VIE and we are identified

as the primary beneficiary of the VIE. Consequently, we have consolidated the financial position, results of operations and cash flows of the Joint Venture in our financial statements and all intercompany balances have been eliminated in consolidation.

The joint venture agreement also includes a put-call arrangement with respect to the shares of the Joint Venture held by SoftBank and its affiliates. The noncontrolling interest held by SoftBank contains embedded put-call redemption features that are not solely within our control and has been classified outside of permanent equity in our consolidated balance sheets. The put-call feature embedded in the redeemable noncontrolling interest do not currently require bifurcation as it does not meet the definition of a derivative and is considered to be clearly and closely related to the redeemable noncontrolling interest. The noncontrolling interest is considered probable of becoming redeemable as SoftBank has the option to exercise its put right to sell its equity ownership in the Joint Venture to us on or after the seventh anniversary of the formation of the Joint Venture, on each subsequent anniversary of the IPO and under certain other circumstances. We elected to recognize the change in redemption value immediately as they occur as if the put-call redemption feature were exercisable at the end of the reporting period. In November 2021, we exercised our call right contained in the joint venture agreement with SoftBank to purchase all of the shares held by SoftBank and its affiliates in consideration for the payment of the aggregate purchase price to be determined based on an independent third party valuation. The aggregate purchase price will be no less than an amount that yields a 20% internal rate of return on the $41.0 million of capital invested by SoftBank in May 2018 as stipulated in the joint venture agreement. As a result of exercising the call right, the noncontrolling interest has been recorded as a current liability in our consolidated balance sheet as of December 31, 2021, and future adjustments to the noncontrolling interest liability will be recorded in net loss in our consolidated statement of operations.

Stock-based compensation

After the adoption of Accounting Standards Update 2018-07, *Compensation—Stock Compensation (Topic 718):* Improvements to Nonemployee Share-Based Payment Accounting on January 1, 2019, we measure stock-based compensation expense for stock options granted to our employees, directors, and nonemployee consultants on the date of grant based on the fair value of the awards and recognize the corresponding compensation expense of those awards over the requisite service period, which is generally the vesting period of the respective awards. Compensation expense for stock options with performance metrics is calculated based upon expected achievement of the metrics specified in the grant.

We estimate the fair value of stock options granted under the 2012 Stock Plan, the 2018 Incentive Award Plan, and under the Guardant Health AMEA, Inc.'s 2020 Equity Incentive Plan for the Joint Venture, and stock purchase rights granted under our 2018 Employee Stock Purchase Plan on the grant date using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model requires the use of assumptions regarding a number of variables that are complex, subjective and generally require significant judgment to determine. The assumptions used to calculate the fair value of our stock options were:

Fair Value of Common Stock

The fair value of our common stock is determined by the closing price, on the date of grant, of its common stock, which is traded on the Nasdaq Global Select Market. The board of directors of the Joint Venture has determined the fair value of common stock of the Joint Venture. The grant date fair value of the Joint Venture's common stock was determined using valuation methodologies which utilizes certain assumptions including probability weighting of events, volatility, time to liquidation, a risk-free interest rate and an assumption for a discount for lack of marketability. In determining the fair value of the Joint Venture's common stock, the methodologies used to estimate the enterprise value of the Joint Venture were performed using methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Expected term

Our expected term represents the period that our stock options are expected to be outstanding. After the adoption of Accounting Standards Update 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting* on January 1, 2019, the expected term of stock options issued to employees, directors and nonemployee consultants is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term), as we do not have sufficient historical data to use any other method to estimate expected term.

Expected volatility

Prior to the commencement of trading of our common stock on the Nasdaq Global Select Market on October 4, 2018 in connection with the IPO, there was no active trading market for our common stock. Due to limited historical data for the trading of our common stock, expected volatility is estimated based on the average volatility for comparable publicly traded peer group companies in the same industry plus our expected volatility for the available periods. The comparable companies are chosen based on their similar size, stage in the life cycle or area of specialty.

The Joint Venture derived the expected volatility from the average historical volatility over a period approximately equal to the expected term of comparable publicly traded companies within its peer group that were deemed to be representative of future stock price trends as the Joint Venture does not have any trading history for its common stock. The Joint Venture will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Risk-free interest rate

The risk-free interest rate is based on the U.S. treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the stock option grants.

Expected dividend yield

We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we use an expected dividend yield of zero.

Black-Scholes assumptions

The weighted-average assumptions used in our Black-Scholes option-pricing model, including the Joint Venture, were as follows for stock option granted to our employees, directors and nonemployees for the periods presented:

	Year Ended December 31,		
	2021	2020	2019
Expected term (in years)	5.49 – 6.06	5.50 – 6.10	5.50 – 6.22
Expected volatility	63.6% – 66.7%	63.6% – 73.3%	63.2% – 68.7%
Risk-free interest rate	0.3% – 1.3%	0.3% – 1.6%	1.6% – 2.7%
Expected dividend yield	—%	—%	—%

For market-based restricted stock units, we derive the requisite service period using the Monte Carlo simulation model. The estimated fair value of the market-based restricted stock units was determined using a Monte Carlo simulation model which requires the use of assumptions regarding a number of variables that are complex, subjective and generally require significant judgment to determine. Stock-based compensation expense will be recorded regardless of achieving the market conditions or not. If the related market condition is achieved earlier than its expected derived service period, the stock-based compensation expense will be recognized as a cumulative catch-up expense from the grant date to that point in time in achieving the share price goal.

The assumptions used to calculate the fair value of our market-based restricted stock units were as follows:

Fair Value of Common Stock

The fair value of our common stock is determined by the closing price, on the date of grant, of its common stock, which is traded on the Nasdaq Global Select Market.

Expected Volatility

Due to limited historical data for the trading of our common stock, expected volatility is estimated based on the average volatility for comparable publicly traded peer group companies and implied volatility of publicly traded options in the same industry plus our expected volatility for the available periods. The comparable companies are chosen based on their similar size, stage in the life cycle or area of specialty.

Expected Term

The expected term represents the derived service period for the respective tranches which has been estimated using the Monte Carlo simulation model.

Risk-Free Interest Rate

The risk-free interest rate is based on the U.S. Treasury rate, with maturities similar to the expected term of the market-based restricted stock units.

Risky Rate

The risky rate represents our cost of equity.

Expected Dividend Yield

We do not anticipate paying any dividends in the foreseeable future and, therefore, uses an expected dividend yield of zero.

Discount for Lack of Marketability

The discount for lack of marketability represents the discount applied for post vest term restrictions and has been derived using the Monte Carlo simulation model.

The following assumptions were used to calculate the stock-based compensation for market-based restricted stock units: a weighted-average expected term of 0.83 – 2.07 years; expected volatility of 65.5%; a risk-free interest rate of 0.53%; a zero dividend yield; a risky rate (cost of equity) of 16%; and a discount for post-vesting restrictions of 10.4% – 14.5%.

We recognize stock-based compensation expense net of forfeitures as they occur.

We will continue to use judgment in evaluating the assumptions related to our stock-based compensation on a prospective basis. As we continue to accumulate additional data related to our common stock, we may have refinements to our estimates, which could materially impact our future stock-based compensation expense.

Recent accounting pronouncements

See Note 2, *Summary of Significant Accounting Policies*, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for more information.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates.

Interest rate risk

We are exposed to market risk for changes in interest rates related primarily to our cash and cash equivalents, marketable securities and our indebtedness. As of December 31, 2021, we had cash and cash equivalents of $492.2 million held primarily in cash deposits and money market funds. Our marketable securities are held in U.S. government debt securities. As of December 31, 2021, we had short-term marketable securities of $440.5 million and long-term marketable securities of $698.0 million. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of the interest rates in the United States. As of December 31, 2021, a hypothetical 100 basis point increase in interest rates would have resulted in an approximate $11.8 million decline of the fair value of our available-for-sale securities and a hypothetical 100 basis point decrease in interest rates would have resulted in an approximate $6.5 million increase of the fair value of our available-for-sale securities. This estimate is based on a sensitivity model that measures market value changes when changes in interest rates occur.

Foreign currency risk

The majority of our revenue is generated in the United States. Through December 31, 2021, we have generated an insignificant amount of revenues denominated in foreign currencies. As we expand our presence in the international market, our results of operations and cash flows are expected to increasingly be subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign exchange rates. As of December 31, 2021, the effect of a hypothetical 10% change in foreign currency exchange rates would not be material to our financial condition or results of operations. To date, we have not entered into any hedging arrangements with respect to foreign currency risk. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in currency rates.

Item 8. Financial Statements and Supplementary Data

Guardant Health, Inc.

Index to Consolidated Financial Statements

As of December 31, 2021 and 2020, and

For the Years Ended December 31, 2021, 2020 and 2019

The supplementary financial information required by this Item 8 is included in Part II, Item 7 under the caption "*Quarterly Results of Operations*", which is incorporated herein by reference.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Guardant Health, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Guardant Health, Inc. (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive loss, redeemable noncontrolling interest and stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 24, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the account or disclosure to which it relates.

Precision Oncology Revenue (testing services provided to ordering physicians)

Description of the Matter	For the year ended December 31, 2021, revenue recognized from Precision Oncology was $304.3 million. As described in Note 2 to the consolidated financial statements, the Company recognizes revenue from the performance of precision oncology tests for clinical customers upon delivery of test results to the ordering physician. As most precision oncology tests requested by customers are sold based on a physician requisition form without further written terms and conditions, the Company determined an implied contract exists with its patients and estimates variable consideration to be received for these services. Management estimates variable consideration based on historical payment data from third-party payers and patients adjusted for known and forecasted changes in payment patterns and subject to a constraint such that revenue recognized is not expected to be reversed. Auditing the Company's estimate of total consideration expected to be received for the precision oncology tests is complex and requires significant judgement to evaluate management's estimate of payments to be received for the tests. This estimate is affected by assumptions on coverage of the tests for the patient and experience with collection from third-party payers.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of internal controls that address the risks of material misstatement relating to the measurement of precision oncology revenues based upon estimating variable consideration. This included testing controls relating to management's review of the significant assumptions described above and inputs used in the determination of the estimated amount that would be collected for tests performed during the period. We also tested controls over the current and historical data used by management in determining this estimate of variable consideration, subject to a constraint, including the completeness and accuracy of the data. Our audit procedures over the Company's precision oncology revenue included, among others, assessing assumptions and inputs described above, testing the completeness and accuracy of the underlying data used by the Company in its analysis, including the constraint applied. We agreed the terms and conditions of the type of test (i.e. lung, non-lung, etc.) to be performed to the requisition forms submitted by the physician. We compared the significant assumptions and inputs used by management to the Company's third-party payer collection trends and other relevant factors. This included testing inputs to the calculation by comparing historical information to source documents and evaluating the historical accuracy of management's estimates by comparing such estimates to actual results.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2015.

Redwood City, California
February 24, 2022

Guardant Health, Inc.

Consolidated Balance Sheets
(in thousands, except share and per share data)

	As of December 31,	
	2021	**2020**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 492,202	$ 832,977
Short-term marketable securities	440,546	961,903
Accounts receivable, net	97,652	53,299
Inventory	30,674	22,716
Prepaid expenses and other current assets, net	53,052	17,466
Total current assets	1,114,126	1,888,361
Long-term marketable securities	698,034	246,597
Property and equipment, net	124,461	62,782
Right-of-use assets	189,443	37,343
Intangible assets, net	14,207	16,155
Goodwill	3,290	3,290
Other assets, net	60,938	17,253
Total Assets[1]	$ 2,204,499	$ 2,271,781
LIABILITIES, REDEEMABLE NONCONTROLLING INTEREST AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 17,580	$ 7,340
Accrued compensation	42,496	28,280
Accrued expenses	45,285	22,639
Noncontrolling interest liability	78,000	—
Deferred revenue	11,326	8,550
Total current liabilities	194,687	66,809
Convertible senior notes, net	1,134,821	806,292
Long-term operating lease liabilities	226,053	41,565
Other long-term liabilities	3,933	1,520
Total Liabilities[1]	1,559,494	916,186

	As of December 31,	
	2021	2020
Commitments and contingencies (Note 10)		
Redeemable noncontrolling interest	—	57,100
Stockholders' equity:		
Preferred stock, par value of $0.00001 per share; 10,000,000 shares authorized, no shares issued and outstanding as of December 31, 2021 and 2020	—	—
Common stock, par value of $0.00001 per share; 350,000,000 shares authorized as of December 31, 2021 and 2020; 101,767,446 and 100,213,985 shares issued and outstanding as of December 31, 2021 and 2020, respectively	1	1
Additional paid-in capital	1,657,593	1,902,389
Accumulated other comprehensive (loss) income	(4,764)	2,697
Accumulated deficit	(1,007,825)	(606,592)
Total Stockholders' Equity	645,005	1,298,495
Total Liabilities, Redeemable Noncontrolling Interest and Stockholders' Equity	$ 2,204,499	$ 2,271,781

(1) As of December 31, 2021 and 2020, this balance includes $20.4 million and $35.0 million of assets, respectively, that can be used only to settle obligations of the consolidated variable interest entity, or VIE, and VIE's subsidiaries, and $4.3 million and $4.9 million of liabilities of the consolidated VIE and VIE's subsidiaries, respectively, for which their creditors do not have recourse to the general credit of the Company. See Note 3, Investment in Joint Venture.

The accompanying notes are an integral part of these consolidated financial statements.

Guardant Health, Inc.

Consolidated Statements of Operations
(in thousands, except per share data)

	Year Ended December 31,		
	2021	**2020**	**2019**
Revenue:			
Precision oncology testing	$ 304,312	$ 236,324	$ 180,462
Development services and other	69,341	50,406	33,913
Total revenue	373,653	286,730	214,375
Costs and operating expenses:			
Cost of precision oncology testing	110,396	74,769	62,255
Cost of development services and other	12,516	17,766	8,465
Research and development expense	263,221	149,862	86,292
Sales and marketing expense	191,881	106,513	78,335
General and administrative expense	206,640	192,770	61,399
Total costs and operating expenses	784,654	541,680	296,746
Loss from operations	(411,001)	(254,950)	(82,371)
Interest income	3,930	10,171	13,741
Interest expense	(2,577)	(4,766)	(1,181)
Other income	25,178	3,641	88
Loss before provision for income taxes	(384,470)	(245,904)	(69,723)
Provision for (benefit from) income taxes	300	379	(1,872)
Net loss	(384,770)	(246,283)	(67,851)
Adjustment of redeemable noncontrolling interest	(20,900)	(7,500)	(7,800)
Net loss attributable to Guardant Health, Inc. common stockholders	$ (405,670)	$ (253,783)	$ (75,651)
Net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	$ (4.00)	$ (2.60)	$ (0.84)
Weighted-average shares used in computing net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	101,314	97,504	90,597

The accompanying notes are an integral part of these consolidated financial statements.

Guardant Health, Inc.

Consolidated Statements of Comprehensive Loss
(in thousands)

	Year Ended December 31,		
	2021	2020	2019
Net loss	$ (384,770)	$ (246,283)	$ (67,851)
Other comprehensive income (loss), net of tax impact:			
Unrealized (loss) gain on available-for-sale securities	(5,769)	1,131	1,110
Foreign currency translation adjustments	(1,692)	455	84
Other comprehensive income	(7,461)	1,586	1,194
Comprehensive loss	$ (392,231)	$ (244,697)	$ (66,657)
Comprehensive loss attributable to redeemable noncontrolling interest	(20,900)	(7,500)	(7,800)
Comprehensive loss attributable to Guardant Health, Inc.	$ (413,131)	$ (252,197)	$ (74,457)

The accompanying notes are an integral part of these consolidated financial statements.

Guardant Health, Inc.
Consolidated Statements of Redeemable Noncontrolling Interest and Stockholders' Equity
(in thousands, except share data)

	Redeemable Noncontrolling Interest	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Gain (Loss)	Accumulated Deficit	Total Stockholders' Equity
		Shares	Amount				
Balance as of January 1, 2019	$ 41,800	85,832,454	$ 1	$ 764,033	$ (83)	$ (280,799)	$ 483,152
Cumulative effect adjustment for Topic 606 adoption	—	—	—	—	—	4,907	4,907
Cumulative effect adjustment for ASU 2018-07 adoption	—	—	—	1,266	—	(1,266)	—
Issuance of common stock upon follow-on offering, net of offering costs of $723	—	5,175,000	—	349,709	—	—	349,709
Issuance of common stock upon exercise of stock options	—	2,999,419	—	11,638	—	—	11,638
Vesting of restricted stock units	—	22,208	—	—	—	—	—
Vesting of common stock exercised early	—	—	—	95	—	—	95
Common stock issued under employee stock purchase plan	—	232,333	—	6,395	—	—	6,395
Stock-based compensation	—	—	—	16,954	—	—	16,954
Adjustment of redeemable noncontrolling interest	7,800	—	—	—	—	(7,800)	(7,800)
Other comprehensive gain, net of tax impact	—	—	—	—	1,194	—	1,194
Net loss	—	—	—	—	—	(67,851)	(67,851)
Balance as of December 31, 2019	49,600	94,261,414	1	1,150,090	1,111	(352,809)	798,393
Issuance of common stock upon follow-on offering, net of offering costs of $1,130	—	4,312,500	—	354,600	—	—	354,600
Equity component of convertible senior notes, net	—	—	—	330,403	—	—	330,403
Purchase of convertible senior note hedges	—	—	—	(90,045)	—	—	(90,045)
Issuance of common stock upon exercise of stock options	—	1,446,843	—	9,528	—	—	9,528
Vesting of restricted stock units	—	97,188	—	—	—	—	—
Vesting of common stock exercised early	—	—	—	52	—	—	52
Common stock issued under employee stock purchase plan	—	96,040	—	7,095	—	—	7,095
Taxes paid related to net share settlement of restricted stock units	—	—	—	(3,447)	—	—	(3,447)
Stock-based compensation	—	—	—	144,113	—	—	144,113
Adjustment of redeemable noncontrolling interest	7,500	—	—	—	—	(7,500)	(7,500)
Other comprehensive gain, net of tax impact	—	—	—	—	1,586	—	1,586
Net loss	—	—	—	—	—	(246,283)	(246,283)
Balance as of December 31, 2020	57,100	100,213,985	1	1,902,389	2,697	(606,592)	1,298,495
Cumulative effect adjustment for ASU 2020-06 adoption	—	—	—	(330,403)	—	4,437	(325,966)
Issuance of common stock upon exercise of stock options	—	693,074	—	8,112	—	—	8,112
Vesting of restricted stock units	—	750,160	—	—	—	—	—
Vesting of common stock exercised early	—	—	—	52	—	—	52
Common stock issued under employee stock purchase plan	—	110,227	—	9,753	—	—	9,753
Taxes paid related to net share settlement of restricted stock units	—	—	—	(83,759)	—	—	(83,759)
Stock-based compensation	—	—	—	151,449	—	—	151,449
Adjustment of redeemable noncontrolling interest	20,900	—	—	—	—	(20,900)	(20,900)
Reclassification of redeemable noncontrolling interest to noncontrolling interest liability	(78,000)	—	—	—	—	—	—
Other comprehensive loss, net of tax impact	—	—	—	—	(7,461)	—	(7,461)
Net loss	—	—	—	—	—	(384,770)	(384,770)
Balance as of December 31, 2021	$ —	101,767,446	$ 1	$ 1,657,593	$ (4,764)	$ (1,007,825)	$ 645,005

The accompanying notes are an integral part of these consolidated financial statements.

Guardant Health, Inc.

Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2021	2020	2019
OPERATING ACTIVITIES:			
Net loss	$ (384,770)	$ (246,283)	$ (67,851)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	22,271	16,065	11,411
Non-cash operating lease costs	24,661	5,567	4,409
Charge of in-process research and development costs with no alternative future use	—	8,500	—
Unrealized translation gains on obligation related to royalty	—	—	(147)
Re-valuation of contingent consideration	2,380	(120)	300
Non-cash stock-based compensation	151,449	144,113	16,954
Amortization of debt discount and debt issuance costs	2,564	4,729	—
Amortization of premium (discount) on marketable securities	12,849	4,016	(2,310)
Benefit from income tax differences	—	—	(1,597)
Credit loss adjustment and others	47	7,151	—
Changes in operating assets and liabilities, net of effect of acquisition:			
Accounts receivable	(44,353)	(5,463)	(7,389)
Inventory	(7,957)	(7,535)	(6,045)
Prepaid expenses and other current assets	(35,753)	(6,077)	(6,185)
Other assets	(4,182)	(19,326)	(2,852)
Accounts payable	8,638	(7,859)	4,341
Accrued compensation	14,216	9,723	5,571
Accrued expenses and other current liabilities	11,942	(1,359)	9,289
Operating lease liabilities	14,205	(6,042)	(1,172)
Deferred revenue	2,776	(3,727)	(3,861)
Net cash used in operating activities	(209,017)	(103,927)	(47,134)
INVESTING ACTIVITIES:			
Purchase of marketable securities	(900,808)	(1,125,575)	(614,290)
Maturity of marketable securities	952,110	562,548	325,333
Purchase of non-marketable equity and other related investments	(39,422)	—	—
Business acquisition, net of cash acquired	—	—	(7,328)
Purchase of property and equipment	(75,035)	(36,173)	(18,717)
Purchase of intangible assets and capitalized license obligations	—	(17,886)	(2,500)
Payment in connection with a license agreement	—	—	(68)
Net cash used in investing activities	(63,155)	(617,086)	(317,570)
FINANCING ACTIVITIES:			
Payments made on royalty obligations	—	—	(311)
Payments made on finance lease obligations	(146)	(174)	(127)
Proceeds from issuance of common stock under employee stock purchase plan	9,753	7,095	6,395
Proceeds from issuance of common stock upon exercise of stock options	8,112	9,528	11,638
Taxes paid related to net share settlement of restricted stock units	(83,759)	(3,447)	—
Proceeds from public offerings of common stock	—	355,730	350,432

	Year Ended December 31,		
	2021	2020	2019
Payment of offering costs related to public offerings of common stock	—	(1,130)	(723)
Proceeds from borrowings on convertible senior notes, net	—	1,132,750	—
Payment of offering costs related to borrowings on convertible senior notes	(784)	—	—
Purchase of convertible note hedges	—	(90,045)	—
Net cash (used in) provided by financing activities	(66,824)	1,410,307	367,304
Net effect of foreign exchange rate changes on cash, cash equivalents, and restricted cash	(1,693)	455	84
Net increase in cash, cash equivalents and restricted cash	(340,689)	689,749	2,684
Cash, cash equivalents and restricted cash – Beginning of period	832,977	143,228	140,544
Cash, cash equivalents and restricted cash – End of period	$ 492,288	$ 832,977	$ 143,228
Supplemental Disclosures of Cash Flow Information:			
Operating lease liabilities arising from obtaining right-of-use assets	$ 171,382	$ 13,123	$ 16,714
Cash paid for interest	$ —	$ —	$ 1,181
Cash paid for income taxes	$ 393	$ 331	$ 298
Supplemental Disclosures of Noncash Investing and Financing Activities:			
Purchases of property and equipment included in accounts payable and accrued expenses	$ 8,892	$ 1,986	$ 4,818
Property and equipment acquired under finance leases	$ 238	$ 47	$ —
Vesting of common stock exercised early	$ 52	$ 52	$ 95
Reclassification of redeemable noncontrolling interest to noncontrolling interest liability	$ 78,000	$ —	$ —
Initial fair value of contingent consideration at acquisition date	$ —	$ —	$ 1,065
Debt issuance costs included in accounts payable and accrued expenses	$ —	$ 784	$ —

The accompanying notes are an integral part of these consolidated financial statements.

Guardant Health, Inc.
Notes to Consolidated Financial Statements

1. Description of Business

Guardant Health, Inc., or the Company, is a leading precision oncology company focused on helping conquer cancer globally through use of its proprietary tests, vast data sets and advanced analytics. Today the Company's proprietary tests are helping to realize the full potential of precision oncology by providing patients and their doctors critical insights that can inform decisions at all stages of the disease, from screening, to monitoring cancer recurrence, to treatment decisions. The key to conquering cancer is unprecedented access to its molecular information throughout all stages of the disease, which the Company enables by its tests. By looking at the unique dimensions of cancer found in blood, including genomic alterations, methylation, and fragmentomics, the Company is unlocking insights that can increasingly help patients across all stages of cancer, including at its earliest, when it's most treatable. To help identify cancer at the earliest stages, the Company is developing Guardant SHIELD, a blood test for cancer screening in average-risk adults without symptoms, that detects very early signs of cancer by interrogating genomic alterations, methylation, and fragmentomic signals from a simple blood draw. In pursuit of its goal to manage cancer across all stages of the disease, the Company provides its Guardant360, Guardant360 LDT, Guardant 360 CDx, and GuardantOMNI liquid biopsy-based tests for advanced stage cancer. In February 2021, the Company launched its Guardant Reveal liquid biopsy-based tests for residual and recurring cancer to first address the need in Stage II-III colorectal cancer. In June 2021, the Company launched Guardant360 TissueNext, the Company's first tissue-based test which will be used to identify patients with advanced cancer who may benefit from biomarker-informed treatment, and Guardant360 Response which will be used to measure early indications to patients' response to treatment up to eight weeks earlier than response evaluation criteria in solid tumors. Using data collected from the Company's tests, the Company has also developed the GuardantINFORM platform to further accelerate precision oncology drug development by biopharmaceutical companies by offering them an in-silico research platform to further unlock insights into tumor evolution and treatment resistance across various biomarker-driven cancers.

The Company was incorporated in Delaware in December 2011 and is headquartered in Redwood City, California. In May 2018, the Company formed and capitalized Guardant Health AMEA, Inc., or the Joint Venture, in the United States with an affiliate of SoftBank Vision Fund (AIV M1) L.P., or SoftBank. Under the terms of the joint venture agreement, the Company holds a 50% ownership interest in the Joint Venture. In November 2021, the Company exercised its call right contained in the Joint Venture agreement with SoftBank to purchase all of the shares held by SoftBank and its affiliates, see Note 3. As of December 31, 2021, the Joint Venture has subsidiaries in Singapore and Japan (see Note 3, *Investment in Joint Venture*) and the Company has a subsidiary in Switzerland, which was incorporated in 2019.

2. Summary of Significant Accounting Policies

Basis of Presentation

The Company's consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America, or GAAP. The accompanying consolidated financial statements include the accounts of Guardant Health, Inc., its consolidated Joint Venture and majority owned subsidiary. Other stockholders' interests in the Joint Venture are shown in the consolidated financial statements as redeemable noncontrolling interest. All significant intercompany balances and transactions have been eliminated in consolidation.

The Company believes that its existing cash and cash equivalents and marketable securities as of December 31, 2021 will be sufficient to allow the Company to fund its current operating plan through at least a period of one year after the date the accompanying consolidated financial statements are issued. As the Company continues to incur losses, its transition to profitability is dependent upon a level of revenues adequate to support the Company's cost structure. If the Company's transition to profitability is not consistent with its current operating plan, the Company may have to seek additional capital.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the related disclosures at the date of the consolidated financial statements, as well as the reported amounts of revenues and expenses during the periods presented. The Company bases its estimates on historical experience and other market-specific or other relevant assumptions that it believes to be reasonable under the circumstances. Estimates are used in several areas including, but not limited to, estimation of variable consideration, estimation of credit losses,

standalone selling price allocation included in contracts with multiple performance obligations, goodwill and identifiable intangible assets, stock-based compensation, incremental borrowing rate for operating leases, contingencies, certain inputs into the provision for (benefit from) income taxes, including related reserves, valuation of non-marketable securities, valuation of redeemable noncontrolling interest, among others. These estimates generally involve complex issues and require judgments, involve the analysis of historical results and prediction of future trends, can require extended periods of time to resolve and are subject to change from period to period. Actual results may differ materially from management's estimates.

The extent to which the coronavirus 2019, or COVID-19 pandemic, will ultimately impact the Company's business, results of operations, financial conditions, or cash flows continues to be highly uncertain. The severity of the impact on the Company's business will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic, and the impact of any variants of the virus, the extent and severity of the impact on the Company's customers and suppliers, the continued disruption to demand for the Company's products and services, and the impact of the global business and economic environment on liquidity and the availability of capital, all of which are uncertain and cannot be predicted.

Foreign Currency

The functional currency of the subsidiaries of the consolidated Joint Venture is the local currency. The assets and liabilities of the subsidiaries are translated into U.S. dollars at exchange rates in effect at each balance sheet date, with the resulting translation adjustments recorded to a separate component of accumulated other comprehensive loss within stockholders' equity. Income and expense accounts are translated at average exchange rates during the period. Foreign currency transaction gains and losses resulting from transactions denominated in a currency other than the functional currency are recognized in the consolidated statements of operations. For the year ended December 31, 2021, 2020 and 2019, foreign currency transaction gains and losses were immaterial.

Segment Information

The Company operates as one operating and reportable segment. The Company's chief operating decision makers are its Co-Chief Executive Officers, who review financial information presented on a consolidated basis for the purposes of making operating decisions, assessing financial performance and allocating resources.

Cash and Cash Equivalents and Restricted Cash

Cash equivalents consist of highly liquid investments with original maturities at the time of purchase of three months or less. Cash equivalents include bank demand deposits and money market accounts that invest primarily in U.S. government-backed securities and treasuries. Cash equivalents are carried at cost, which approximates their fair value.

Restricted cash consists of payroll withholding related to the Company's enrollment in certain voluntary disability insurance plan. Restricted cash balance as of December 31, 2021, was $0.1 million, which was included in other assets in the accompanying consolidated balance sheets. The Company did not have any restricted cash as of December 31, 2020.

Marketable Securities

Marketable securities consist primarily of high-grade U.S. government and agency securities and corporate bonds. Marketable securities with original maturities at the time of purchase between three and twelve months from balance sheet dates are classified as short-term marketable securities and those with maturities over twelve months from balance sheet dates are classified as long-term marketable securities. The Company classifies all marketable securities as available-for-sale, which are recorded at fair value. Unrealized gains and losses are included in accumulated other comprehensive gain (loss) in stockholders' equity. Any premium or discount arising at purchase is amortized or accreted to interest income or expense.

The Company periodically evaluates its available-for-sale marketable securities for impairment. Prior to the adoption of Accounting Standards Update, or ASU, 2016-13, *Financial Instruments-Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments*, the Company assesses whether declines in fair values of its marketable securities below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss as well as the Company's ability and intent to hold the marketable security until a forecasted recovery occurs. Additionally, the Company assesses whether it has plans to sell the security or it is more likely than not that it will be required to sell any marketable securities before recovery of its amortized cost basis. Factors considered include quoted market prices, recent financial results and operating trends, implied values from any recent transactions or offers of investee

securities, credit quality of debt instrument issuers, other publicly available information that may affect the value of the marketable security, duration and severity of the decline in value, and management's strategy and intentions for holding the marketable security. Realized gains and losses and declines in value, if any, judged to be other than temporary on available-for-sale securities are reported in other income (expense), net on the consolidated statements of operations. When securities are sold, any associated unrealized gain or loss initially recorded as a separate component of stockholders' equity is reclassified out of stockholders' equity on a specific-identification basis and recorded in earnings for the period.

Starting January 1, 2020, upon adoption of ASU 2016-13, when the fair value of a marketable security is below its amortized cost, the amortized cost is reduced to its fair value if it is more likely than not that the Company is required to sell the impaired security before recovery of its amortized cost basis, or the Company has the intention to sell the security. If neither of these conditions are met, the Company determines whether the impairment is due to credit losses by comparing the present value of the expected cash flows of the security with its amortized cost basis. The amount of impairment recognized is limited to the excess of the amortized cost over the fair value of the security. An allowance for credit losses for the excess of amortized cost over the expected cash flows is recorded in other income (expense), net on the consolidated statements of operations. Impairment losses that are not credit-related are included in accumulated other comprehensive gain (loss) in stockholders' equity.

Non-Marketable Securities

The Company acquires certain equity investments in private companies to promote business and strategic objectives. The Company's investments in non-marketable equity securities do not give the Company the ability to control or exercise significant influence over the investee. The Company's non-marketable equity and other related investments totaled $39.4 million as of December 31, 2021, and are included in other assets, net on the accompanying consolidated balance sheets. The Company did not have such non-marketable equity and other related investments as of December 31, 2020. Non-marketable securities are subject to periodic impairment reviews and adjustments for observable price changes from orderly transactions. The Company's evaluation of impairment of such non-marketable securities is based on adverse changes in market conditions and the regulatory or economic environment, qualitative and quantitative analysis of the operating performance of the investee; changes in operating structure or management of the investee; additional funding requirements; and the investee's ability to remain in business. Pursuant to one of the investments in non-marketable securities purchased by the Company, and subject to the Company purchasing additional non-marketable securities from the same investee, the Company would acquire rights to purchase the investee at a pre-determined price subject to additional adjustments based on the performance of the investee, on or before December 31, 2022. As of December 31, 2021, no impairment or adjustments to carrying value of non-marketable securities have been recorded. The Company's assessment of these factors in determining whether an impairment exists could change in the future due to new developments or changes in applied assumptions.

Concentration of Risk

The Company is subject to credit risk from its portfolio of cash equivalents held at one commercial bank and investments in marketable securities. The Company limits its exposure to credit losses by investing in money market funds through a U.S. bank with high credit ratings. The Company's cash may consist of deposits held with banks that may at times exceed federally insured limits, however, its exposure to credit risk in the event of default by the financial institution is limited to the extent of amounts recorded on the consolidated balance sheets. The Company performs evaluations of the relative credit standing of these financial institutions to limit the amount of credit exposure.

The Company also invests in investment-grade debt instruments and has policy limits for the amount it can invest in any one type of security, except for securities issued or guaranteed by the U.S. government. The goals of the Company's investment policy, in order of priority, are as follows: safety and preservation of principal and diversification of risk; liquidity of investments sufficient to meet cash flow requirements; and a competitive after-tax rate of return. Under its investment policy, the Company limits amounts invested in such securities by credit rating, maturity, investment type and issuer, as a result, the Company is not exposed to any significant concentrations of credit risk from these financial instruments.

The Company is subject to credit risk from its accounts receivable. The majority of the Company's accounts receivable arises from the provision of precision oncology services and development services and other in the United States and are primarily with biopharmaceutical companies with high credit ratings. The Company has not experienced any material losses related to receivables from individual customers, or groups of customers. The Company does not require collateral. Accounts receivable are recorded at net amount.

A significant customer is a biopharmaceutical customer or a clinical testing payer that represents 10% or more of the Company's total revenue or accounts receivable balance. Revenue attributable to each significant customer, including its affiliated entities, as a percentage of the Company's total revenue, for the respective period, and accounts receivable balance attributable to each significant customers, including its affiliated entities, as a percentage of the Company's total accounts receivable balance, at the respective consolidated balance sheet date, are as follows:

	Revenue			Accounts Receivable, Net	
	Year Ended December 31,			As of December 31,	
	2021	2020	2019	2021	2020
Customer A	*	10 %	26 %	*	11 %
Customer B	29 %	25 %	14 %	13 %	13 %
Customer C	*	*	*	10 %	12 %
Customer D	*	*	*	*	11 %
Customer E	*	*	*	13 %	*

* less than 10%

The Company is also subject to credit risk from its other receivables and other assets. The Company's other receivables and other assets include payments due from a third-party in relation to the settlement of a patent dispute reached in August 2020 for $8.0 million payable over a period of 6 years. In December 2020, the Company received the first installment payment of $1.0 million, and in December 2021, the Company received the second installment payment of $1.1 million. The Company has evaluated and recorded a credit loss for the remaining $5.9 million considering the third-party's credit worthiness and lack of financial history. The following table presents the receivable and the related credit loss amounts:

	Gross Amount		Allowance for Credit Losses				Net Amount	
			Year Ended December 31, 2021					
	December 31, 2021	December 31, 2020	Beginning Balance	Charged to (Reversed from) Other Income (Expense), Net	Reclassification	Ending Balance	December 31, 2021	December 31, 2020
				(in thousand)				
Prepaid expenses and other current assets	$ —	$ —	$ —	$ 1,100	$ (1,100)	$ —	$ —	$ —
Other assets	5,900	7,000	(7,000)	—	1,100	(5,900)	—	—

Accounts Receivable, Net

Accounts receivable represent valid claims against commercial and governmental payers, biopharmaceutical companies, research institutes and international distributors, including unbilled receivables, and royalty payments due from third parties for licensing the Company's technologies. Unbilled receivables include balances due from biopharmaceutical customers related to development services and other revenues that are recognized upon the achievement of performance-based milestones but prior to the achievement of contractual billing rights. As of December 31, 2021 and 2020, the Company had unbilled receivables of $5.7 million and $1.4 million, respectively.

The Company evaluates the collectability of its accounts receivable based on historical collection trends, the financial condition of payment partners, and external market factors and provides for an allowance for potential credit losses based on management's best estimate of the amount of probable credit losses. As of December 31, 2021 and 2020, the Company had immaterial allowance for credit losses related to its accounts receivable.

Inventory

Inventories are stated at the lower of cost or net realizable value on a first-in, first-out basis. Inventory consisted entirely of supplies, which are consumed when providing tests, and therefore the Company does not maintain any finished goods inventory.

In order to assess the ultimate realization of inventories, the Company is required to make judgments as to future demand requirements compared to current or committed inventory levels. The Company periodically reviews its

inventories for excess or obsolescence and writes-down obsolete or otherwise unmarketable inventory to its estimated net realizable value. If the actual net realizable value is less than that estimated by the Company, or if it is determined that inventory utilization will further diminish based on estimates of demand, additional inventory write-downs may be required. Amounts written-down due to unmarketable inventory are recorded in cost of precision oncology testing and cost of development services and other, as appropriate.

Property and Equipment, Net

Property and equipment are recorded at cost. Depreciation is computed over estimated useful lives of the related assets using the straight-line method. Leasehold improvements are amortized using the straight-line method over the estimated useful lives of the assets or the remaining term of the lease, whichever is shorter. The Company periodically reviews the depreciable lives assigned to property and equipment placed in service and changes the estimates of useful lives, if necessary. Maintenance and repairs that do not improve or extend the lives of the respective assets are expensed as incurred.

Estimated useful lives for property and equipment are as follows:

Property and Equipment	Estimated Useful Life
Machinery and equipment	3 – 5 years
Furniture and fixtures	7 years
Computer hardware and computer software	3 years
Leasehold improvements	Lesser of estimated useful life or remaining lease term

Asset Acquisition

If an acquisition of an asset or group of assets does not meet the definition of a business, the transaction is accounted for as an asset acquisition rather than a business combination. An asset acquisition does not result in the recognition of goodwill and transaction costs are capitalized as part of the cost of the asset or group of assets acquired. Transaction costs allocated to in-process research and development technology with no future alternate use is expensed as incurred. The total consideration is allocated to the various intangible assets acquired on a relative fair value basis. Cash paid in connection of purchase of in-process research and development technology in an asset acquisition is presented within the investing section of the consolidated statement of cash flows.

Goodwill and Intangible Assets, net

Intangible assets related to in-process research and development costs, or IPR&D, acquired in a business combination are considered to be indefinite-lived until the completion or abandonment of the associated research and development efforts. If and when development is complete, the associated assets would be deemed finite-lived and would then be amortized based on their respective estimated useful lives at that point in time. Prior to completion of the research and development efforts, the assets are considered indefinite-lived. During this period, the assets will not be amortized but will be tested for impairment on an annual basis and between annual tests if we become aware of any events occurring or changes in circumstances that would indicate a reduction in the fair value of the IPR&D projects below their respective carrying amounts.

Goodwill represents the excess of the purchase price over the fair value of net identifiable assets and liabilities. Goodwill and IPR&D are not amortized but are tested for impairment at least annually during the fourth fiscal quarter, or if circumstances indicate their value may no longer be recoverable. The Company continues to operate in one segment, which is considered to be the sole reporting unit and, therefore, goodwill was tested for impairment at the enterprise level. As of December 31, 2021, there has been no impairment of goodwill or IPR&D.

Intangible assets are carried at cost, net of accumulated amortization. The Company does not have intangible assets with indefinite useful lives other than goodwill and the acquired IPR&D. Amortization is recorded on a straight-line basis over the intangible asset's useful life, which is approximately 6—12 years.

Impairment for Long-Lived Assets

The Company evaluates long-lived assets, including property and equipment, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the asset may not be fully recoverable. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. Impairment, if any, is measured as the amount by which the carrying amount of a long-lived asset exceeds its fair value.

Leases

The Company determines if an arrangement contains a lease at inception. Operating lease right-of-use, or ROU, assets and operating leases liabilities are recognized based on the present value of the future minimum lease payments over the lease term at the commencement date. ROU assets also include any initial direct costs incurred and any lease payments made at or before the lease commencement date, less lease incentives received or receivable. The Company uses its incremental borrowing rate based on the information available at the commencement date in determining the lease liabilities, as the Company's leases generally do not provide an implicit rate. Lease terms may include options to extend or terminate when the Company is reasonably certain the option will be exercised. Lease expense is recognized on a straight-line basis over the lease term. The Company also has lease arrangements with lease and non-lease components. The Company elected the practical expedient not to separate non-lease components from lease components for the Company's facility leases. The Company also elected to apply the short-term lease measurement and recognition exemption in which ROU assets and lease liabilities are not recognized for leases with terms of 12 months or less.

Convertible Senior Notes

In accounting for the issuance of the convertible senior notes, the Company separates the notes into liability and equity components. The carrying amount of the liability component is calculated by measuring the fair value of a similar liability that does not have an associated convertible feature, using a discounted cash flow model with a risk adjusted yield. The carrying amount of the equity component representing the conversion option is determined by deducting the fair value of the liability component from the par value of the notes as a whole. This difference represents a debt discount that is amortized to interest expense using the effective interest method over the term of the notes. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. In accounting for the transaction costs related to the issuance of the notes, the Company allocated the total amount incurred to the liability and equity components based on their relative fair values. Transaction costs attributable to the liability component are netted with the liability component and amortized to interest expense using the effective interest method over the term of the notes. Transaction costs attributable to the equity component are netted with the equity component of the notes in additional paid-in capital in the consolidated balance sheets. Starting January 1, 2021, upon early adoption of ASU 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity,* the carrying amount of the equity component of the cash conversion feature including the allocated debt issuance costs were reclassified from additional paid-in capital to convertible senior notes, net.

Revenue Recognition

The Company derives revenue from the provision of precision oncology testing services provided to its ordering physicians and biopharmaceutical customers, as well as from biopharmaceutical research and development services provided to its biopharmaceutical customers. Precision oncology testing services include genomic profiling and the delivery of other genomic information derived from the Company's platform. Development services and other include companion diagnostic development, clinical study setup, monitoring and maintenance, information solutions and laboratory services, and other miscellaneous revenue streams. The Company currently receives payments from third-party commercial and governmental payers, certain hospitals and oncology centers and individual patients, as well as biopharmaceutical companies, research institutes and international distributors.

Effective January 1, 2019, the Company adopted the new revenue recognition standard, FASB ASC Topic 606, *Revenue from Contracts with Customers, or ASC 606*. Revenues are recognized when control of services is transferred to customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those services. ASC 606 provides for a five-step model that includes identifying the contract with a customer, identifying the performance obligations in the contract, determining the transaction price, allocating the transaction price to the performance obligations, and recognizing revenue when, or as, an entity satisfies a performance obligation.

Precision oncology testing

The Company recognizes revenue from the sale of its precision oncology tests for clinical customers, including certain hospitals, cancer centers, other institutions and patients, at the time results of the test are reported to physicians. Most precision oncology tests requested by clinical customers are sold without a written agreement; however, the Company determines an implied contract exists with its clinical customers. The Company identifies each sale of its test to clinical customer as a single performance obligation. With the exception of certain limited contracted arrangements with insurance carriers and other institutions where the transaction price is fixed, a stated contract price does not exist and the transaction price for each implied contract with clinical customers represents

variable consideration. The Company estimates the variable consideration under the portfolio approach and considers the historical reimbursement data from third-party commercial and governmental payers and patients, as well as known or anticipated reimbursement trends not reflected in the historical data. The Company monitors the estimated amount to be collected in the portfolio at each reporting period based on actual cash collections in order to assess whether a revision to the estimate is required. Both the estimate and any subsequent revision contain uncertainty and require the use of significant judgment in the estimation of the variable consideration and application of the constraint for such variable consideration. The Company analyzes its actual cash collections over the expected reimbursement period and compares it with the estimated variable consideration for each portfolio and any difference is recognized as an adjustment to estimated revenue after the expected reimbursement period, subject to assessment of the risk of future revenue reversal. For the year ended December 31, 2021, 2020 and 2019, the Company recorded $19.3 million, $26.0 million and $16.8 million as revenue, respectively, resulting from cash collections exceeding the estimated variable consideration related to samples processed in previous years, including revenue received from successful appeals of reimbursement denials, net of recoupments.

Revenue from sales of precision oncology tests to biopharmaceutical customers are based on a negotiated price per test or on the basis of an agreement to provide certain testing volume over a defined period. The Company identifies its promise to transfer a series of distinct tests to biopharmaceutical customers as a single performance obligation. Precision oncology tests to biopharmaceutical customers are generally billed at a fixed price for each test performed. For agreements involving testing volume to be satisfied over a defined period, revenue is recognized over time based on the number of tests performed as the performance obligation is satisfied over time. Results of the Company's precision oncology services are delivered electronically, and as such there are no shipping or handling fees incurred by the Company or billed to customers.

Development services and other

The Company performs development services for its biopharmaceutical customers utilizing its precision oncology information platform. Development services typically represent a single performance obligation as the Company performs a significant integration service, such as analytical validation and regulatory submissions. The individual promises are not separately identifiable from other promises in the contracts and, therefore, are not distinct. However, under certain contracts, a biopharmaceutical customer may engage the Company for multiple distinct development services which are both capable of being distinct and separately identifiable from other promises in the contracts and, therefore, distinct performance obligations.

The Company collaborates with pharmaceutical companies in the development of new drugs. As part of these collaborations, the Company provides services related to regulatory filings to support companion diagnostic device submissions for the Company's testing panels. Under these collaborations, the Company generates revenue from achievement of milestones, as well as provision of on-going support. For development services performed, the Company is compensated through a combination of an upfront fee and performance-based, non-refundable regulatory and other developmental milestone payments. The transaction price of the Company's development services contracts typically represents variable consideration. Application of the constraint for variable consideration to milestone payments is an area that requires significant judgment. The Company evaluates factors such as the scientific, clinical, regulatory, commercial, and other risks that must be managed to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone. In making this assessment, the Company considers its historical experience with similar milestones, the degree of complexity and uncertainty associated with each milestone, and whether achievement of the milestone is dependent on parties other than the Company. The constraint for variable consideration is applied such that it is probable a significant reversal of revenue will not occur when the uncertainty associated with the contingency is resolved. Application of the constraint for variable consideration is assessed and updated at each reporting period as a revision to the estimated transaction price.

The Company recognizes development services revenue over the period in which biopharmaceutical research and development services are provided. Specifically, the Company recognizes revenue using an input method to measure progress, utilizing costs incurred to-date relative to total expected costs as its measure of progress. The Company assesses the changes to the total expected cost estimates as well as any incremental fees negotiated resulting from changes to the scope of the original contract in determining the revenue recognition at each reporting period. For development of new products or services under these arrangements, costs incurred before technological feasibility is reached are included as research and development expenses in the Company's consolidated statements of operations, while costs incurred thereafter are recorded as cost of development services and other.

The Company also has other miscellaneous revenue streams that are recognized in addition to development services noted above such as clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect, GuardantINFORM, and kits fulfillment related revenues. In addition, the Company derives sales-

based royalty revenues from licensing its technologies. Revenues related to clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect, GuardantINFORM are generally recognized over time based on an input method to measure progress in the period when the associated services have been performed. Kits fulfillment related revenues are recognized when such products are delivered. Royalty revenues are recognized when actual sales incur.

Contracts with multiple performance obligations

Contracts with biopharmaceutical customers may include multiple distinct performance obligations, such as provision of precision oncology testing, biopharmaceutical research and development services, and clinical study enrollment assistance, among others. The Company evaluates the terms and conditions included within its contracts with biopharmaceutical customers to ensure appropriate revenue recognition, including whether services are considered distinct performance obligations that should be accounted for separately versus together. The Company first identifies material promises, in contrast to immaterial promises or administrative tasks, under the contract, and then evaluates whether these promises are both capable of being distinct and distinct within the context of the contract. In assessing whether a promised service is capable of being distinct, the Company considers whether the customer could benefit from the service either on its own or together with other resources that are readily available to the customer, including factors such as the research, development, and commercialization capabilities of a third party as well as the availability of the associated expertise in the general marketplace. In assessing whether a promised service is distinct within the context of the contract, the Company considers whether it provides a significant integration of the services, whether the services significantly modify or customize one another, or whether the services are highly interdependent or interrelated.

For contracts with multiple performance obligations, the transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The Company determines standalone selling price by considering the historical selling price of these performance obligations in similar transactions as well as other factors, including, but not limited to, the price that customers in the market would be willing to pay, competitive pricing of other vendors, industry publications and current pricing practices, and expected costs of satisfying each performance obligation plus appropriate margin.

Deferred revenue

Deferred revenue, which is a contract liability, consists primarily of payments received in advance of revenue recognition from contracts with customers. For example, development services and other contracts with biopharmaceutical customers often contain upfront payments which results in the recording of deferred revenue to the extent cash is received prior to the Company's performance of the related services. Contract liabilities are relieved as the Company performs its obligations under the contract and revenue is consequently recognized. As of December 31, 2021 and 2020, the deferred revenue balance was $11.3 million and $8.6 million, respectively, which included $3.5 million and $3.0 million, respectively, related to collaboration development efforts with pharmaceutical companies to be recognized as the Company performs research and development services in the future periods. Revenue recognized in the year ended December 31, 2021 that was included in the deferred revenue balance as of December 31, 2020 was $8.3 million, of which $3.0 million represented revenue from provision of development services under the collaboration agreements with biopharmaceutical customers. Revenue recognized in the year ended December 31, 2020 that was included in the deferred revenue balance as of January 1, 2020 was $10.2 million, of which $4.8 million represented revenue from provision of development services under the collaboration agreements with biopharmaceutical customers.

Transaction price allocated to the remaining performance obligations

Transaction price allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes deferred revenue and non-cancelable amounts that will be invoiced and recognized as revenues in future periods. The Company expects to recognize substantially all of the remaining transaction price in the next 12 months.

Costs of Precision Oncology Testing

Cost of precision oncology testing generally consists of cost of materials, direct labor including bonus, benefit and stock-based compensation, equipment and infrastructure expenses associated with processing test samples (including sample accessioning, library preparation, sequencing, quality control analyses and shipping charges to transport blood samples), freight, curation of test results for physicians and license fees due to third parties. Infrastructure expenses include depreciation of laboratory equipment, rent costs, amortization of leasehold improvements and information technology costs. Costs associated with performing the Company's tests are recorded as the tests are performed regardless of whether revenue was recognized with respect to that test. Royalties for licensed technology

calculated as a percentage of revenues generated using the associated technology are recorded as expense at the time the related revenues are recognized. One-time royalty payments related to signing of license agreements or other milestones, such as issuance of new patents, are amortized to expense over the expected useful life of the applicable patent rights.

Cost of Development Services and Other

Cost of development service and other primarily includes costs incurred for the performance of development services requested by the Company's biopharmaceutical customers and other revenues included as noted above. For development of new products, costs incurred before technological feasibility has been achieved are reported as research and development expenses, while costs incurred thereafter are reported as cost of development services and other.

Research and Development Expenses

Research and development expenses are comprised of costs incurred to develop technology and include compensation and benefits, reagents and supplies used in research and development laboratory work, infrastructure expenses, including allocated facility occupancy and information technology costs, contract services and other outside costs. Research and development costs are expensed as incurred. Payments made prior to the receipt of goods or services to be used in research and development are deferred and recognized as expense in the period in which the related goods are received or services are rendered. Costs to develop the Company's technology capabilities are recorded as research and development unless they meet the criteria to be capitalized as internal-use software costs.

Advertising

The Company expenses advertising costs as incurred. The Company incurred advertising costs of $2.4 million, $1.2 million and $1.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Stock-Based Compensation

Stock-based compensation related to stock options granted to the Company's and the Joint Venture's employees, directors and nonemployees is measured at the grant date based on the fair value of the award. The fair value is recognized as expense over the requisite service period, which is generally the vesting period of the respective awards. Compensation expense for stock options with performance metrics is calculated based upon expected achievement of the metrics specified in the grant.

Starting January 1, 2019, upon adoption of ASU 2018-07, *Compensation - Stock Compensation (Topic 718), Improvements to Nonemployee Share-Based Payment Accounting*, the fair value of stock options issued to nonemployee consultants is determined as of the grant date, and compensation expense is being recognized over the period that the related services are rendered.

The Company uses the Black-Scholes option-pricing model to estimate the fair value of stock options granted under the 2012 Stock Plan, the 2018 Incentive Award Plan, and the Joint Venture's 2020 Equity Incentive Plan, and stock purchase rights granted under the 2018 Employee Stock Purchase Plan. The Black-Scholes option-pricing model requires assumptions to be made related to the expected term of an award, expected volatility, risk-free rate and expected dividend yield. The board of directors of the Joint Venture has determined the fair value of common stock of the Joint Venture. Forfeitures are accounted for as they occur.

For market-based restricted stock units, the Company derives the requisite service period using the Monte Carlo simulation model and the related compensation expense is recognized over the derived service period using an accelerated attribution model commencing on the grant date. Stock-based compensation expense will be recorded regardless of whether the market conditions are achieved or not. If the related market condition is achieved earlier than its estimated derived service period, the stock-based compensation expense will be accelerated, and a cumulative catch-up expense will be recorded during the period in which the market condition is met.

The Company measures the grant date fair value of its service-based and performance-based restricted stock units issued to employees based on the closing market price of the common stock on the date of grant. For restricted stock units with only service-based vesting conditions, compensation expense is recognized in the Company's consolidated statement of operations on a straight-line basis over the requisite service period. Compensation expense for restricted stock units with performance metrics is calculated based upon expected achievement of the metrics specified in the grant, and is recognized in the Company's consolidated statement of operations using an accelerated attribution model over the requisite service period for each separately vesting portion of the award.

Income Taxes

Income taxes are recorded using an asset and liability approach. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Tax benefits are recognized when it is more likely than not that a tax position will be sustained during an audit. Deferred tax assets are reduced by a valuation allowance if current evidence indicates that it is considered more likely than not that these benefits will not be realized.

The Company's tax positions are subject to income tax audits. The Company recognizes the tax benefit of an uncertain tax position only if it is more likely than not that the position is sustainable upon examination by the taxing authority, based on the technical merits. The tax benefit recognized is measured as the largest amount of benefit which is more likely than not to be realized upon settlement with the taxing authority. The Company recognizes interest accrued and penalties related to unrecognized tax benefits in its tax provision. The Company evaluates uncertain tax positions on a regular basis. The evaluations are based on a number of factors, including changes in facts and circumstances, changes in tax law, correspondence with tax authorities during the course of the audit, and effective settlement of audit issues. The provision for income taxes includes the effects of any accruals that the Company believes are appropriate, as well as the related net interest and penalties.

Net Loss Per Share Attributable to Common Stockholders

The Company calculates basic net loss per share attributable to common stockholders by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period. The diluted net loss per share attributable to common stockholders is computed by giving effect to all potential dilutive common stock equivalents outstanding for the period determined using the treasury stock method or the as-if converted method, as appropriate. For purposes of this calculation, stock options, restricted stock units, shares issuable pursuant to the employee stock purchase plan, shares subject to repurchase from early exercised options and contingently issuable shares under the convertible senior notes are considered common stock equivalents but have been excluded from the calculation of diluted net loss per share attributable to common stockholders as their effect is anti-dilutive.

Accounting Pronouncements Adopted

Convertible Instruments and Contracts in an Entity's Own Equity

In August 2020, the FASB issued ASU No. 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity (ASU 2020-06)*, which simplifies the accounting for certain financial instruments with characteristics of liabilities and equity, including convertible instruments and contracts in an entity's own equity. Among other changes, ASU 2020-06 removes the liability and equity separation model for convertible instruments with a cash conversion feature, and as a result, after adoption, entities will no longer separately present in equity an embedded conversion feature for such debt. Similarly, the embedded conversion feature will no longer be amortized as interest expense over the life of the instrument. Instead, entities will account for a convertible debt instrument wholly as debt unless (1) a convertible instrument contains features that require bifurcation as a derivative under ASC Topic 815, *Derivatives and Hedging,* or (2) a convertible debt instrument was issued at a substantial premium. Among other potential impacts, this change is expected to reduce reported interest expense, increase reported net income, and result in a reclassification of certain conversion feature balance sheet amounts from stockholders' equity to liabilities as it relates to the Company's convertible senior notes. Additionally, ASU 2020-06 requires the application of the if-converted method to calculate the impact of convertible instruments on diluted earnings per share. The Company early adopted ASU 2020-06 in the first quarter of fiscal 2021 using the modified retrospective approach which resulted in the re-classification of the carrying amount of the equity component of the cash conversion feature including the allocated debt issuance costs as of December 31, 2020, from additional paid-in capital to convertible senior notes, net.

3. Investment in Joint Venture

Variable Interest Entity, or VIE

In May 2018, the Company and an affiliate of SoftBank formed and capitalized the Joint Venture for the sale, marketing and distribution of the Company's tests in all areas worldwide, outside of North America, Central America, South America, the United Kingdom, all other member states of the EU as of May 9, 2017, Iceland, Norway, Switzerland and Turkey. The Company expects to rely on the Joint Venture to accelerate commercialization of its products in Asia, the Middle East and Africa.

Under the terms of the joint venture agreement, the Company paid $9.0 million for 40,000 shares of common stock, or 50% ownership interest, of the Joint Venture, and the affiliate of SoftBank contributed $41.0 million for 40,000 shares of common stock, or the other 50% ownership interest, of the Joint Venture. Neither party has the obligation to provide additional financial support to the Joint Venture. Each party holds two seats on the board of the Joint Venture and has to cast through its representatives on the board at least one vote for any board resolution of the Joint Venture to pass. The representatives of the Company on the Joint Venture's board of directors have the right to appoint and remove a chief executive officer and a legal representative for the Joint Venture, in each case, subject to the approval of the full Joint Venture board of directors. The Joint Venture's board of directors has the right to appoint and remove all other members of the Joint Venture's senior management reporting to its chief executive officer and to approve the compensation of all foregoing individuals, including the compensation of the chief executive officer and legal representative.

In June 2020, an amended and restated certificate of incorporation of the Joint Venture, as approved by the board of directors of the Joint Venture, was filed with the Secretary of State of the State of Delaware. The amended and restated certificate of incorporation, among other things, increased the number of authorized shares of common stock to 89,000,000 shares consisting of 80,000,000 shares of Class A common stock and 9,000,000 shares of Class B (non-voting) common stock; and authorized 80,000,000 shares of Series A preferred stock. Pursuant to the amended and restated certificate of incorporation, each share of common stock held by the Company and the affiliate of SoftBank was reclassified and exchanged for 1,000 shares of Series A preferred stock. As a result, each of the Company and the affiliate of SoftBank held 40,000,000 shares of Series A preferred stock. The holders of Series A preferred stock are entitled to receive dividends at the rate of $0.05 per share if and when declared by the board of directors of the Joint Venture. In June 2020, the board of directors of the Joint Venture authorized the adoption of the Joint Venture's 2020 Equity Incentive Plan pursuant to which 4,595,555 shares of Class B common stock have been reserved for issuance. As of December 31, 2021 and 2020, 602,408 and no shares of Class B common stock have been issued and outstanding, respectively, and no shares of Class A common stock have been issued and outstanding. As of December 31, 2021 and 2020, 80,000,000 shares of Series A preferred stock have been issued and outstanding.

At the inception of the arrangement and at the end of each reporting period, the Company assesses whether the Joint Venture is a VIE, and if so, who is the primary beneficiary of the VIE. As of December 31, 2021, the Company and SoftBank had equal ownership interests and equal voting rights in the Joint Venture, and the Joint Venture's board consisted of an equal number of directors representing the interest of the Company and SoftBank, respectively. As of December 31, 2021, the Joint Venture's board had the right to vote on all critical matters that most significantly impact the Joint Venture's economic performance, except that the Company had the unilateral right to make pricing decisions. As of December 31, 2021, the Company had responsibility for the Joint Venture's daily operations, while SoftBank served as a financing partner. The Company also entered into various ancillary agreements with the Joint Venture necessary to operate its business. The Joint Venture is deemed to be a VIE, and considering the power and benefits criterion, the Company and SoftBank, collectively as a related party group, has the characteristics of the primary beneficiary of the Joint Venture, as the related party group has the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and has the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE. Because the Company is most closely associated with the Joint Venture within the related party group, it has been identified as the VIE's primary beneficiary. As the primary beneficiary, the Company has consolidated the financial position, results of operations and cash flows of the Joint Venture in its financial statements and all intercompany balances have been eliminated in consolidation. The Company concluded the Joint Venture did not meet the definition of a business upon consolidation as it lacked the processes required to generate outputs. Upon consolidation no liabilities were assumed and other than cash, and any identifiable assets were related to intellectual property rights that the Company transferred to the Joint Venture shortly before it became its primary beneficiary and therefore such transfer was treated as a common control transaction.

As of December 31, 2021 and 2020, the Joint Venture had total assets of approximately $20.4 million and $35.0 million, respectively, which were primarily comprised of cash, property and equipment, right-of-use assets and security deposits. Although the Company consolidates the Joint Venture, the legal structure of the Joint Venture limits the recourse that its creditors will have over the Company's general credit or assets. Similarly, the assets held in the Joint Venture can be used only to settle obligations of the Joint Venture. As of December 31, 2021 and 2020, the Company has not provided financial or other support to the Joint Venture that was not previously contracted or required.

Put-call arrangements

The joint venture agreement includes a put-call arrangement with respect to the shares of the Joint Venture held by SoftBank and its affiliates. Under certain specified circumstances and on terms specified in the joint venture agreement, including timely written notice, SoftBank has the right to cause the Company to purchase all shares of the Joint Venture held by SoftBank and its affiliates, or the put right, and the Company has a right to purchase all such shares, or the call right.

If the Company's business model were to change such that the sale, marketing and distribution of its tests in the territory covered by the joint venture agreement was no longer economical, SoftBank would have the right to cause the Company to purchase, or the Company would have the right to purchase, all of the shares of the Joint Venture held by SoftBank and its affiliates. In this instance, the Company would be required to repurchase the shares at an aggregate purchase price of $41.0 million, the original purchase price paid by SoftBank to the Joint Venture for the shares.

Additionally, each of the Company and SoftBank may exercise its respective put-call rights for the Company to purchase all shares of the Joint Venture held by SoftBank in the event of (i) certain material disagreements relating to the Joint Venture or its business that may seriously affect the ability of the Joint Venture to perform its obligations under the joint venture agreement or may otherwise seriously impair the ability of the Joint Venture to conduct its business in an effective matter, other than one relating to the Joint Venture's business plan or to factual matters that may be capable of expert determination; (ii) the effectiveness of the Company's initial public offering, a change in control of the Company, the seventh anniversary of the formation of the Joint Venture, or each subsequent anniversary of each of the foregoing events; or (iii) a material breach of the joint venture agreement by the other party that goes unremedied within 20 business days. Unless the shares of the Joint Venture are publicly traded and listed on a nationally recognized stock exchange, the purchase price per share of the Joint Venture in these situations will be determined by a third-party valuation firm on the assumption that the sale is on an arm's-length basis on the date of the put or call notice. The third-party valuation firm may evaluate a range of factors and employ assumptions that are subjective in nature, which could result in the fair value of SoftBank's interests in the Joint Venture being determined to be materially different from what has been recorded in the Company's consolidated financial statements including those included elsewhere in this Annual Report on Form 10-K.

The Company may pay the purchase price for the shares of the Joint Venture in cash, in shares of its capital stock (which may be a non-voting security with senior preferences to all other classes of its equity or, if its common stock is publicly traded on a national exchange, its common stock), or in a combination thereof. The noncontrolling interest held by SoftBank contains embedded put-call redemption features that are not solely within the Company's control and has been classified outside of permanent equity in the consolidated balance sheets. The put-call feature embedded in the redeemable noncontrolling interest do not currently require bifurcation as it does not meet the definition of a derivative and is considered to be clearly and closely related to the redeemable noncontrolling interest. With the Company's exercising the call right, SoftBank no longer has the option to exercise its put right. The Company elected to recognize the changes in redemption value immediately as they occur as if the put-call redemption feature were exercisable at the end of the reporting period. The carrying value of the redeemable noncontrolling interest is first adjusted for the earnings or losses attributable to the redeemable noncontrolling interest based on the percentage of the economic or ownership interest retained in the consolidated VIE by the noncontrolling parties, and then adjusted to equal to its redemption amount, or the fair value of the noncontrolling interest held by SoftBank, as if the redemption were to occur at the end of the reporting date. In November 2021, the Company exercised its call right contained in the joint venture agreement with SoftBank to purchase all of the shares held by SoftBank and its affiliates in consideration for the payment of the aggregate purchase price to be determined based on an independent third-party valuation. The aggregate purchase price will be no less than an amount that yields a 20% internal rate of return on the $41.0 million of capital invested by SoftBank in May 2018 as stipulated in the joint venture agreement. The Company and SoftBank have initiated a process to determine the independent valuation of the Joint Venture, which includes the appointment of independent appraisers by both SoftBank and the Company. As of December 31, 2021, the minimum aggregate purchase price of $78.0 million has been recorded in current liabilities in the Company's consolidated balance sheet and future adjustments to the aggregate purchase price, if any, will be recorded in net loss in the Company's consolidated statement of operations. The Company expects to complete this transaction before the end of the second quarter of 2022.

4. Consolidated Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consist of the following:

	As of December 31,	
	2021	2020
	(in thousands)	
Machinery and equipment	$ 63,022	$ 40,216
Leasehold improvements	38,702	34,037
Computer hardware	16,685	10,862
Construction in progress[(1)]	55,873	7,833
Furniture and fixtures	3,683	3,043
Computer software	1,320	1,136
Property and equipment, gross	$ 179,285	$ 97,127
Less: accumulated depreciation	(54,824)	(34,345)
Property and equipment, net	$ 124,461	$ 62,782

(1) Under construction in progress, $45.8 million and $1.1 million was related to leasehold improvements, furniture and equipment for the office in Palo Alto, California, as of December 31, 2021 and 2020, respectively.

Depreciation expense related to property and equipment was $20.2 million, $14.1 million and $9.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Accrued Expenses

Accrued expenses consist of the following:

	As of December 31,	
	2021	2020
	(in thousands)	
Operating lease liabilities	$ 12,856	$ 6,632
Accrued tax liabilities	4,223	4,634
Accrued professional services	6,994	3,397
Accrued clinical studies	3,332	1,264
Accrued legal expenses	4,166	2,875
Purchases of property and equipment included in accrued expenses	5,893	1,156
Others	7,821	2,681
Total accrued expenses	$ 45,285	$ 22,639

5. Fair Value Measurements, Cash Equivalents and Marketable Securities

Financial instruments consist of cash equivalents, marketable securities, accounts receivable, net, prepaid expenses and other current assets, net, accounts payable and accrued expenses. Cash equivalents and marketable securities are stated at fair value. Prepaid expenses and other current assets, net, accounts payable and accrued expenses are stated at their carrying value, which approximates fair value due to the short time to the expected receipt or payment date.

Fair value is defined as the exchange price that would be received from sale of an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The identification of market participant assumptions provides a basis for determining what inputs are to be used for pricing each asset or liability. A financial instrument's classification within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

A fair value hierarchy has been established which gives precedence to fair value measurements calculated using observable inputs over those using unobservable inputs. This hierarchy prioritized the inputs into three broad levels as follows:

Level 1 - Quoted prices in active markets for identical assets or liabilities.

Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's financial assets and liabilities subject to fair value measurements on a recurring basis and the level of inputs used in such measurements were as follows:

	December 31, 2021			
	Fair Value	Level 1	Level 2	Level 3
	(in thousands)			
Financial Assets:				
Money market funds	$ 357,785	$ 357,785	$ —	$ —
Total cash equivalents	$ 357,785	$ 357,785	$ —	$ —
U.S. government debt securities	$ 440,546	$ —	$ 440,546	$ —
Total short-term marketable securities	$ 440,546	$ —	$ 440,546	$ —
U.S. government debt securities	$ 698,034	$ —	$ 698,034	$ —
Total long-term marketable securities	$ 698,034	$ —	$ 698,034	$ —
Total	$ 1,496,365	$ 357,785	$ 1,138,580	$ —
Financial Liabilities:				
Contingent consideration	$ 3,625	$ —	$ —	$ 3,625
Total	$ 3,625	$ —	$ —	$ 3,625

	December 31, 2020			
	Fair Value	Level 1	Level 2	Level 3
	(in thousands)			
Financial Assets:				
Money market funds	$ 620,630	$ 620,630	$ —	$ —
Total cash equivalents	$ 620,630	$ 620,630	$ —	$ —
U.S. government debt securities	961,902	—	961,902	—
Total short-term marketable securities	$ 961,902	$ —	$ 961,902	$ —
U.S. government debt securities	$ 246,597	$ —	$ 246,597	$ —
Total long-term marketable securities	$ 246,597	$ —	$ 246,597	$ —
Total	$ 1,829,129	$ 620,630	$ 1,208,499	$ —
Financial Liabilities:				
Contingent consideration	$ 1,245	$ —	$ —	$ 1,245
Total	$ 1,245	$ —	$ —	$ 1,245

The Company measures the fair value of money market funds based on quoted prices in active markets for identical securities. U.S. government debt securities are valued taking into consideration valuations obtained from third-party pricing services. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker/dealer quotes on the same or similar securities, issuer credit spreads; benchmark securities; prepayment/default projections based on historical data; and other observable inputs.

There were no transfers between Level 1, Level 2 and Level 3 during the periods presented.

Acquisition-related contingent consideration is measured at fair value on a quarterly basis and change in estimated contingent consideration to be paid are included in operating expenses in the consolidated statements of operations. The fair value of acquisition-related contingent consideration is estimated using a multiple-outcome discounted cash flow valuation technique. Contingent consideration is classified within Level 3 of the fair value hierarchy, as it is based on a probability that includes significant unobservable inputs. The significant unobservable inputs include a probability-weighted estimate of achievement of certain commercialization milestones, continued services from certain former employees and consultants, resulting contingent payments, and discount rate to present value the expected payments. A significant change in any of these input factors in isolation could have a material impact to fair value measurement. As of December 31, 2021, and 2020, contingent consideration liability of $3.6 million and $1.2 million, respectively, was recorded within other long-term liabilities on the consolidated balance sheets.

The Company considers the fair value of the noncontrolling interest liability as of December 31, 2021, and the redeemable noncontrolling interest as of December 31, 2020, to be a Level 3 measurement. As of December 31, 2021, the fair value of the noncontrolling interest liability was calculated based on an internal rate of return of 20% on the initial amount of $41 million invested by SoftBank in May 2018. As of December 31, 2020, the fair value of the redeemable noncontrolling interest was determined using a combination of the income approach and the market approach, and estimates and assumptions included future revenue growth rates, gross profit margins, EBITDA margins, future capital expenditures, weighted-average costs of capital and future market conditions, among others.

The following tables summarize the activities for the Level 3 financial instruments for the years ended December 31, 2021, 2020 and 2019:

	Contingent Consideration		
	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Fair value — beginning of period	$ 1,245	$ 1,365	$ —
Initial valuation on the date of acquisition	—	—	1,065
Increase (decrease) in fair value	2,380	(120)	300
Fair value — end of period	$ 3,625	$ 1,245	$ 1,365

	Noncontrolling Interest Liability	Redeemable Noncontrolling Interest		
	Year Ended December 31,	Year Ended December 31,		
	2021	2021	2020	2019
	(in thousands)			
Fair value — beginning of period	$ —	$ 57,100	$ 49,600	$ 41,800
Increase in fair value	—	27,244	12,934	11,659
Net loss for the period	—	(6,344)	(5,434)	(3,859)
Reclassification of redeemable noncontrolling interest to noncontrolling interest liability	78,000	(78,000)	—	—
Fair value — end of period	$ 78,000	$ —	$ 57,100	$ 49,600

The Company considers the fair value of the Convertible Notes as of December 31, 2021 to be a Level 2 measurement. The fair value of the Convertible Notes is primarily affected by the trading price of the Company's

common stock and market interest rates. As such, the carrying value of the Convertible Notes does not reflect the market rate. See Note 8, *Debt*, for additional information related to the fair value of the Convertible Notes.

Cash Equivalents and Marketable Securities

The following tables summarizes the Company's cash equivalents and marketable securities' amortized costs, gross unrealized gains, gross unrealized losses and estimated fair values by significant investment category:

	December 31, 2021			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(in thousands)			
Money market fund	$ 357,785	$ —	$ —	$ 357,785
U.S. government debt securities	1,142,172	2	(3,594)	1,138,580
Total	$ 1,499,957	$ 2	$ (3,594)	$ 1,496,365

	December 31, 2020			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(in thousands)			
Money market fund	$ 620,630	$ —	$ —	$ 620,630
U.S. government debt securities	1,206,195	2,339	(35)	1,208,499
Total	$ 1,826,825	$ 2,339	$ (35)	$ 1,829,129

There have been no material realized gains or losses on marketable securities for the periods presented. None of the Company's investments in marketable securities has been in an unrealized loss position for more than one year. The Company determined that it did have the ability and intent to hold all marketable securities that have been in a continuous loss position until maturity or recovery and the loss position was temporary due to market volatility, thus there has been no recognition of credit losses in the years ended December 31, 2021, 2020 and 2019, respectively. The maturities of the Company's long-term marketable securities range from 1.1 to 1.8 years as of December 31, 2021.

6. Patent License Acquisition

In January 2017, the Company entered into a license agreement with a biotechnology company, KeyGene N.V., or KeyGene. An arbitration was initiated between the parties in 2018. In March 2020, the Company and KeyGene entered into a settlement and patent license agreement, or the SPLA, to resolve the dispute and to acquire an extended worldwide non-exclusive license to certain patent rights with respect to KeyGene's Next Generation Sequencing technologies along with certain covenant rights and research and development technology for a one-time payment of $18.5 million, ending all future royalty obligations to KeyGene. This transaction was accounted for as an asset acquisition as the purchase did not meet the definition of a business. The total consideration, including $0.6 million of certain capitalizable transaction costs, was allocated to various components of the SPLA.

The Company allocated $9.4 million to the patent and covenant rights granted under the SPLA, which have useful lives in the range of 6-12 years. The Company allocated $8.5 million to IPR&D technology, which have no alternative future use and was included in research and development expenses for the year ended December 31, 2020. The remaining $1.2 million was allocated to the settlement of the prior dispute between the parties and was included in general and administrative expenses for the year ended December 31, 2020.

7. Intangible Assets, Net and Goodwill

The following table presents details of purchased intangible assets as of December 31, 2021 and 2020:

	December 31, 2021			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Remaining Weighted-Average Useful Life
		(in thousands)		(in years)
Intangible assets subject to amortization:				
Acquired license	$ 11,886	$ (2,473)	$ 9,413	8.8
Non-compete agreements and other covenant rights	5,100	(1,906)	3,194	3.9
Total intangible assets subject to amortization	16,986	(4,379)	12,607	
Intangible assets not subject to amortization:				
IPR&D	1,600	—	1,600	
Goodwill	3,290	—	3,290	
Total purchased intangible assets	$ 21,876	$ (4,379)	$ 17,497	

	December 31, 2020			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Remaining Weighted-Average Useful Life
		(in thousands)		(in years)
Intangible assets subject to amortization:				
Acquired license	$ 11,886	$ (1,367)	$ 10,519	9.8
Non-compete agreements and other covenant rights	5,100	(1,064)	4,036	4.9
Total intangible assets subject to amortization	16,986	(2,431)	14,555	
Intangible assets not subject to amortization:				
IPR&D	1,600	—	1,600	
Goodwill	3,290	—	3,290	
Total purchased intangible assets	$ 21,876	$ (2,431)	$ 19,445	

Amortization of finite-lived intangible assets was $1.9 million, $1.8 million and $0.7 million, for the years ended December 31, 2021, 2020 and 2019, respectively.

The following table summarizes estimated future amortization expense of finite-lived intangible assets, net:

Year Ending December 31,	(in thousands)
2022	1,947
2023	1,947
2024	1,953
2025	1,670
2026	1,212
2027 and thereafter	3,878
Total	$ 12,607

8. Debt

Convertible Senior Notes

In November 2020, the Company issued $1.15 billion principal amount of its 0% Convertible Senior Notes due 2027, or the 2027 Notes. The 2027 Notes do not bear interest, and the principal amount of the Notes will not accrete. However, special interest and additional interest may accrue on the 2027 Notes at a rate per annum not exceeding 0.50% (subject to certain exceptions) upon the occurrence of certain events such as the failure to file certain reports to the Securities and Exchange Commission, or to remove certain restrictive legends from the Notes. The Notes will mature on November 15, 2027, unless repurchased, redeemed or converted earlier.

Before August 15, 2027, holders of the 2027 Notes will have the right to convert their 2027 Notes only under the following circumstances:

- during any calendar quarter (and only during such calendar quarter) commencing after the calendar quarter ending on March 31, 2021, if the last reported sale price of the Company's common stock exceeds 130% of the conversion price for each of at least 20 trading days (whether or not consecutive) during the 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter, or the sale price condition;
- during the five consecutive business days immediately after any ten consecutive trading day period, or the measurement period, if the trading price per $1,000 principal amount of the Notes for each trading day of the measurement period is less than 98% of the product of the last reported sale price of the Company's common stock on such trading day and the conversion rate on such trading day; or
- upon the occurrence of specified corporate events

From and after August 15, 2027, holders of the 2027 Notes may convert their 2027 Notes at any time at their election until the close of business on the second scheduled trading day immediately before the maturity date.

The Company will settle conversions by paying or delivering, as applicable, cash, shares of its common stock or a combination of cash and shares of its common stock, at the Company’s election.

The initial conversion rate is 7.1523 shares of common stock per $1,000 principal amount of 2027 Notes, which represents an initial conversion price of approximately $139.82 per share of common stock. The conversion rate and conversion price will be subject to customary adjustments upon the occurrence of certain events. In addition, if certain corporate events that constitute a “Make-Whole Fundamental Change” occur, then the conversion rate will, in certain circumstances, be increased for a specified period of time.

The Company may not redeem the 2027 Notes at its option at any time before November 20, 2024. The Notes will be redeemable, in whole or in part, at the Company’s option at any time, and from time to time, on or after November 20, 2024 and on or before the 25th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the Notes to be redeemed, plus accrued and unpaid special interest and additional interest, if any, to, but excluding, the redemption date, but only if the last reported sale price per share of the Company’s common stock exceeds 130% of the conversion price on (i) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company sends the related redemption notice; and (ii) the trading day immediately before the date the Company sends such notice. In addition, calling any Note for redemption will constitute a Make-Whole Fundamental Change with respect to that Note, in which case the conversion rate applicable to the conversion of that Note will be increased in certain circumstances if it is converted after it is called for redemption.

If certain corporate events that constitute a “Fundamental Change” occur, then, subject to a limited exception for certain cash mergers, holders of Notes may require the Company to repurchase their 2027 Notes at a cash repurchase price equal to the principal amount of the 2027 Notes to be repurchased, plus accrued and unpaid special interest and additional interest, if any, to, but excluding, the fundamental change repurchase date. The definition of Fundamental Change includes certain business combination transactions involving the Company and certain de-listing events with respect to the Company’s common stock.

In accounting for the 2027 Notes, the Company separated the 2027 Notes into liability and equity components. The carrying amount of the liability component was calculated using a Black-Scholes model by measuring the fair value of a similar instrument that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the par value of the 2027 Notes as a whole. This difference represents a debt discount that is amortized as interest expense using an effective interest over the term of the 2027 Notes. Effective January 1, 2021, the Company

early adopted ASU 2020-06 which resulted in the re-classification of the equity component representing the associated convertible feature and the related debt issuance costs into long-term liabilities with a corresponding impact to retained earnings.

Since the 2027 Notes were not convertible as of December 31, 2021, the net carrying amount of the 2027 Notes was classified as a long-term liability.

The following table sets forth the components of the 2027 Notes as of December 31, 2021 and 2020:

	As of December 31,	
	2021	2020
	(in thousands)	
Liability component:		
Principal	$ 1,150,000	$ 1,150,000
Less: debt discount, net of amortization	—	(331,074)
Less: debt issuance costs, net of amortization	(15,179)	(12,634)
Net carrying amount	$ 1,134,821	$ 806,292
Equity component recorded at issuance:		
2027 Notes	$ —	$ 335,667
Less: issuance costs	—	(5,264)
Net amount recorded in equity	$ —	$ 330,403

The total estimated fair value of the 2027 Notes was $1.2 billion and $1.3 billion as of December 31, 2021 and 2020, respectively. The fair value was determined based on the closing trading price per $100 of the 2027 Notes as of the last day of trading for the period. We consider the fair value of the Notes as of December 31, 2021 to be a Level 2 measurement. The fair value of the 2027 Notes is primarily affected by the trading price of the Company's common stock and market interest rates.

The following table sets forth interest expense recognized related to the Notes for the year ended December 31, 2021 and 2020:

	For the Year Ended December 31,	
	2021	2020
	(in thousands)	
Amortization of debt discount	$ —	4,593
Amortization of debt issuance costs	2,564	136
Total interest expense recognized	$ 2,564	$ 4,729
Effective interest rate of the liability component	0.2 %	5.2 %

Note Hedges

To minimize the impact of potential economic dilution upon conversion of the 2027 Notes, the Company entered into convertible note hedge transactions, or the 2027 Note Hedges, with respect to its common stock concurrent with the issuance of the Notes. The 2027 Note Hedges cover, subject to customary adjustments, the number of shares of common stock initially underlying the Notes. The strike price of the 2027 Note Hedges will initially be approximately $182.60 per share, which represents a premium of 75% over the last reported sale price of the Company’s common stock of $104.34 per share on November 16, 2020, and is subject to certain adjustments under the terms of the 2027 Note Hedges.

The 2027 Note Hedges will expire upon maturity of the 2027 Notes. The 2027 Note Hedges are separate transactions and are not part of the terms of the 2027 Notes. Holders of the 2027 Notes will not have any rights with respect to the 2027 Note Hedges. The shares receivable related to the 2027 Note Hedges are excluded from the calculation of diluted earnings per share as they are anti-dilutive.

As these transactions meet certain accounting criteria, the 2027 Note Hedges are recorded in stockholders' equity and are not accounted for as derivatives. The Company paid an aggregate amount of $90.0 million for the 2027 Note Hedges, which has been recorded as a reduction to additional paid-in capital and will not be remeasured.

9. Leases

The Company has entered into various operating lease agreements for office space, data center, lab and warehouse use, with remaining terms ranging from 1 year to 12 years some of which include one or more options to renew. As leases approach maturity, the Company considers various factors such as market conditions and the terms of any renewal options that may exist to determine whether it will renew the lease, as such, the Company does not include renewal options in its lease terms for calculating its lease liability, as the renewal options allow it to maintain operational flexibility and the Company is not reasonably certain it will exercise these renewal options at the time of the lease commencement. In July 2020, the Company entered into two lease agreements for additional office space in Palo Alto, California, the Palo Alto Lease, and in San Diego, California, the San Diego Lease. The San Diego Lease has a term of 8 years with rent payments commencing in May 2022. The Palo Alto Lease has a term of 12 years with an option to renew the lease term for an additional ten years which has not been considered in the determination of ROU or the lease liability as the Company does not consider it reasonably certain of exercising the renewal option. Rent payments for the Palo Alto Lease will commence in June 2022. Both leases consist of fixed and variable payments and are being accounting for as operating leases. The Company took possession of these facilities in March 2021. The Company estimated the incremental borrowing rate to determine the present value of lease payments for the San Diego and Palo Alto leases using trading data of the Company's convertible debt adjusted for credit rating and market yield curves.

Operating lease expense for the year ended December 31, 2021, 2020 and 2019, was $24.7 million, $5.6 million and $4.4 million, which includes both lease and non-lease components (primarily common area maintenance charges and property taxes).

	As of December 31,	
	2021	2020
Weighted-average remaining lease term (in years)	10.0	5.5
Weighted-average discount rate	4.01 %	8.07 %

The following table summarizes the Company's future principal contractual obligations for operating lease commitments as of December 31, 2021:

Year Ending December 31,		(in thousands)
2022	$	18,840
2023		29,056
2024		31,584
2025		32,063
2026		27,753
2027 and thereafter		149,637
Total operating lease payments	$	288,933
Less: Imputed Interest		(50,024)
Total operating lease liabilities	$	238,909

Finance leases are not material to the Company's consolidated financial statements.

10. Commitments and Contingencies

License Agreements

The Company has patent license agreements with four different parties. Under these agreements, the Company has made one-time upfront and milestone payments, which it has capitalized and is amortizing to expense ratably over the useful life of the underlying patent right(s). Under some of these agreements, the Company is obligated to pay low single-digit percentage running royalties on net sales where the licensed patent right(s) are used in the product or service sold, subject to minimum annual royalties or fees in certain agreements.

Royalty expenses were included in cost of precision oncology testing on the accompanying consolidated statements of operations. The Company recognized royalty expenses of $0.7 million, $1.1 million and $4.4 million, or 0.2%, 0.4% and 2% of precision oncology testing revenue in each period, for the years ended December 31, 2021, 2020 and 2019, respectively.

Indemnification Agreements

The Company has entered into indemnification agreements with certain directors and officers that require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. To date, no such matters have arisen and the Company does not believe that the outcome of any claims under indemnification arrangements will have a material adverse effect on its financial positions, results of operations or cash flows. Accordingly, the Company has not recorded a liability related to such indemnifications as of December 31, 2021.

Legal Proceedings

In addition to commitments and obligations incurred in the ordinary course of business, from time to time the Company may be subject to a variety of claims and legal proceedings, including claims from customers and vendors, pending and potential legal actions for damages, governmental investigations and other matters. For example, the Company has received, and may in the future continue to receive letters, claims or complaints from others alleging false advertising, patent infringement, violation of employment practices and trademark infringement. The Company has also instituted, and may in the future institute, additional legal proceedings to enforce its rights and seek remedies, such as monetary damages, injunctive relief and declaratory relief. The Company cannot predict the results of any such disputes, and despite the potential outcomes, the existence thereof may have an adverse material impact on the Company because of diversion of management time and attention as well as the financial costs related to resolving such disputes.

The Company and its affiliates are parties to the legal claims and proceedings described below. The Company is vigorously defending itself against those claims and in those proceedings. Significant developments in those matters are described below. If the Company is unsuccessful in defending, or if it determines to settle, any of these matters, it may be required to pay substantial sums, be subject to injunction and/or be forced to change how it operates its business, which could have a material adverse impact on its financial position or results of operations.

Unless otherwise stated, the Company is unable to reasonably estimate the loss or a range of possible loss for the matters described below. Often, it is not reasonably possible for the Company to determine that a loss is probable for a claim, or to reasonably estimate the amount of loss or a range of loss, because of the limited information available and the potential effects of future events and decisions by third parties, such as courts and regulators, that will determine the ultimate resolution of the claim. Many of the matters described are at preliminary stages, raise novel theories of liability or seek an indeterminate amount of damages. It is not uncommon for claims to be resolved over a number of years. The Company reviews loss contingencies at least quarterly to determine whether the loss probability has changed and whether it can make a reasonable estimate of the possible loss or range of loss. When the Company determines that a loss from a claim is probable and reasonably estimable, it records a liability in the amount of its estimate for the ultimate loss. The Company also provides disclosure when it is reasonably possible that a loss may be incurred or when it is reasonably possible that the amount of a loss will exceed its recorded liability.

Patent Disputes

In November 2017, the Company filed a lawsuit against Foundation Medicine, Inc., or Foundation Medicine, in the United States District Court for the District of Delaware. The Company has alleged that Foundation Medicine has infringed four of the Company's digital sequencing technology patents. Foundation Medicine has asserted counterclaims of patent invalidity, unenforceability under the doctrine of inequitable conduct, license and non-infringement. The parties are seeking damages, injunctive relief and attorneys' fees. Discovery in the lawsuit has closed, and a number of pre-trial motions were filed in September and October 2020.

Foundation Medicine also filed six petitions for inter partes review with the PTAB, challenging the patentability of all four of the patents asserted by the Company. The PTAB denied institution of inter partes review for four of the six petitions filed by Foundation Medicine and instituted inter partes review for the remaining two petitions.

In November 2020, the Company filed a lawsuit against Foundation Medicine in the United States District Court for the District of Delaware, wherein the Company alleged that Foundation Medicine infringes seven of the Company's patents. Foundation Medicine has asserted counterclaims of patent invalidity, unenforceability under the doctrine of inequitable conduct, license, non-infringement, and that the Company has violated Section 2 of Sherman Act. In

December 2020, the Company filed a Motion for a Preliminary Injunction to prohibit Foundation Medicine from practicing two of the asserted patents.

In March 2021, the Company filed two lawsuits against Foundation Medicine GmbH in the District Court of Munich I in Germany, wherein the Company alleged that Foundation Medicine GmbH infringes two of the Company's patents.

In May 2021, the Company entered into a binding term sheet, or the Term Sheet, with Foundation Medicine, which upon execution of a definitive settlement agreement, would result in the dismissal of all pending patent litigation between the parties regarding the Company's digital sequencing technology patents, or collectively, the Patents. Under the Term Sheet, Foundation Medicine will pay the Company $25.0 million as well as certain royalties for the remaining term of the Patents, while the Company will grant Foundation Medicine a non-exclusive license to the Patents.

In December 2021, the Company entered into a Settlement and License Agreement with Foundation Medicine, the terms and conditions of which were consistent with the Term Sheet, resulting in the dismissal of all pending patent litigation worldwide between the parties.

In August 2020, the Company and Personal Genome Diagnostics, Inc. settled the patent infringement lawsuit brought by the Company. Under the terms of the confidential settlement, the lawsuit and counterclaims, as well as other challenges to the Company's patents, have been dismissed.

In August 2021, TwinStrand Biosciences, Inc., or TwinStrand Biosciences, and the University of Washington filed a patent infringement suit in the United States District Court for the District of Delaware alleging that the Company infringes U.S. Patent Nos. 10,287,631; 10,689,699; 10,752,951; and 10,760,127. The Company answered the complaint in October 2021, denying TwinStrand Biosciences' allegations and asserted counterclaims of invalidity, unenforceability due to inequitable conduct and infringement of four of the Company's patents. Discovery in the case is ongoing and trial is scheduled to commence in November 2023.

False Advertising Dispute

In May 2021, the Company also filed a lawsuit against Natera, Inc., or Natera, in the United States District Court for the Northern District of California, wherein the Company alleged that Natera is misleading healthcare providers about the performance of the Company's new oncology test, Guardant Reveal, by suggesting the test is inaccurate and/or insensitive, and inferior to Natera's Signatera assay. The Company is seeking an injunction to prevent Natera from continuing to make false and misleading statements and to require Natera to take corrective actions. Natera has asserted counterclaims of false and misleading statements, false advertising, unlawful trade practices and unfair competition. The Company moved to dismiss Natera's counterclaims, and in January 2022, the United States District Court for the Northern District of California granted in part and denied in part our motion to dismiss. Discovery is ongoing and trial is scheduled to commence in December 2022.

Civil Investigative Demand

In January 2022, the Company received a Civil Investigative Demand, or CID, from the United States Attorney for the Northern District of California in connection with an investigation under the False Claims Act. The CID requests information and documents regarding billing of government-funded programs for the Company's panel of genetic tests known as Guardant360. The Company is fully cooperating with the investigation. At this time, the Company is unable to predict the outcome of this investigation.

11. Common Stock

The Company's common stockholders are entitled to dividends if and when declared by the Company's Board of Directors, or the Board of Directors. As of December 31, 2021 and 2020, no dividends on the Company's common stock had been declared by the Board of Directors.

The Company's common stock has been reserved for the following potential future issuances:

	As of December 31,	
	2021	2020
Shares underlying outstanding stock options	2,624,974	3,101,181
Shares underlying unvested restricted stock units	1,498,553	1,118,655
Market-based restricted stock units	2,260,764	3,391,148
Performance-based restricted stock units	374,596	377,922
Shares available for issuance under the 2018 Incentive Award Plan	5,231,624	1,819,223
Shares available for issuance under the 2018 Employee Stock Purchase Plan	1,426,264	1,536,491
Total	13,416,775	11,344,620

Follow-on Offering

In May 2019, the Company completed an underwritten public offering, in which it issued and sold 5,175,000 shares of its common stock at a price of $71.00 per share. The Company received net proceeds of $349.7 million after deducting underwriting discounts and commissions and offering expenses payable by the Company.

In June 2020, the Company completed an underwritten public offering, in which it issued and sold 4,312,500 shares of its common stock at a price of $84.00 per share. The Company received net proceeds of $354.6 million after deducting underwriting discounts and commissions and offering expenses payable by the Company.

12. Stock-Based Compensation

2012 Stock Plan and 2018 Incentive Award Plan

In June 2012 and September 2018, the Company's Board of Directors adopted and its stockholders approved the Company's 2012 Stock Plan, or as amended and restated, the 2012 Plan, and the Company's 2018 Incentive Award Plan, or the 2018 Plan, respectively, under which the Company may grant cash and equity incentive awards such as stock options, restricted shares, stock units and stock appreciation rights to its employees and non-employees. Stock options granted may be either incentive stock options or nonstatutory stock options. Shares issued under the 2018 Plan may be authorized but unissued shares, or shares purchased in the open market or treasury shares. Upon effectiveness of the 2018 Plan in connection with the IPO in October 2018, the 2012 Plan was terminated and 508,847 shares reserved under the 2012 Plan were forfeited. Any outstanding awards granted under the 2012 Plan remain outstanding, subject to the terms of the 2012 Plan and applicable award agreement, and further cancellation of awards granted under the 2012 Plan are not available for grant in the future. No further grants will be made under the 2012 Plan.

Stock Option Activity

A summary of the Company's stock option activity under the 2012 Plan and the 2018 Plan and related information is as follows:

		Options Outstanding			
	Shares Available for Grant	Shares Subject to Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
					(in thousands)
Balance as of January 1, 2019	3,556,507	7,588,405	$ 4.58	8.3	$ 250,495
Granted	(324,579)	324,579	88.18		
Exercised	—	(2,999,419)	3.87		
Canceled	12,636	(418,676)	6.64		
Restricted stock units granted	(567,425)	—			
Restricted stock units canceled	49,086	—			
Balance as of December 31, 2019	2,726,225	4,494,889	10.90	7.7	306,392
2018 Plan annual increase[1]	3,689,000	—			
Granted	(127,590)	127,590	81.78		
Exercised	—	(1,446,843)	6.59		
Canceled	20,370	(74,455)	12.13		
Restricted stock units granted	(823,454)	—			
Restricted stock units canceled	103,742	—			
Market-based restricted stock units granted	(3,391,148)	—			
Performance-based restricted stock units granted	(377,922)	—			
Balance as of December 31, 2020	1,819,223	3,101,181	15.80	6.9	350,670
2018 Plan annual increase[1]	3,689,000	—			
Granted	(345,774)	345,774	119.82		
Exercised	—	(693,074)	11.19		
Canceled	65,523	(128,907)	47.51		
Restricted stock units granted	(873,916)	—			
Restricted stock units canceled	315,988	—			
Market-based restricted stock units granted	—	—			
Market-based restricted stock units canceled	558,254	—			
Performance-based restricted stock units granted	(52,917)	—			
Performance-based restricted stock units canceled	56,243	—			
Balance as of December 31, 2021	5,231,624	2,624,974	$ 29.17	6.5	$ 193,014
Vested and Exercisable as of December 31, 2021		1,973,789	$ 11.05	5.8	$ 175,783

(1) Effective as of January 1, 2020, an additional 3,689,000 shares of common stock became available for issuance under the 2018 Plan, as a result of the operation of an automatic annual increase provision therein.

Aggregate intrinsic value represents the difference between the estimated fair value of the underlying common stock and the exercise price of outstanding, in-the-money options. The total intrinsic value of the options exercised was $83.5 million, $120.0 million and $218.2 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The weighted-average grant date fair value of options granted was $70.25, $48.99 and $52.37 per share for the years ended December 31, 2021, 2020 and 2019, respectively.

Future stock-based compensation for unvested options as of December 31, 2021 was $31.7 million, which is expected to be recognized over a weighted-average period of 3.0 years.

On December 31, 2020 and 2019, the Company modified one of the performance based awards issued to a nonemployee which resulted in reversal of expense of $0.7 million and $1.0 million, respectively, due to options not vested. There was no such modification in 2021.

Restricted Stock Units

A summary of the Company's restricted stock unit activity excluding the performance-based and market-based restricted stock units under the 2012 Plan and the 2018 Plan and related information is as follows:

	Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
Balance as of January 1, 2019	—	$ —
Granted	567,425	78.61
Vested and released	(22,208)	47.78
Canceled	(49,086)	57.51
Balance as of December 31, 2019	496,131	82.08
Granted	823,454	96.39
Vested and released	(97,188)	81.43
Canceled	(103,742)	79.72
Balance as of December 31, 2020	1,118,655	92.89
Granted	873,916	123.36
Vested and released	(178,030)	92.14
Canceled	(315,988)	97.79
Balance as of December 31, 2021	1,498,553	$ 109.72

Future stock-based compensation for unvested restricted stock units as of December 31, 2021 was $142.8 million, which is expected to be recognized over a weighted-average period of 3.1 years.

Performance-based Restricted Stock Units

Since November 2020, the Compensation Committee of the Board of Directors started to approve, and the Company started to grant performance-based restricted stock units, or PSUs, under the 2018 Plan. The PSUs granted to employees consist of financial and operational metrics to be met over a performance period of 4 years and an additional service period requirement of six months after the performance metrics are met. The PSUs granted to a consultant consistent of operational metrics to be met over a performance period of 4 years. The PSUs are expected to be expensed over a period of approximately 4 years to 4.5 years subject to meeting the respective performance metrics and service requirements. As of December 31, 2021, a significant portion of these PSUs are not expected to achieve the related performance metrics, and therefore, no stock-based compensation expense was recorded for the PSUs that were not probable to vest.

A summary of the Company's performance-based restricted stock unit activity under the 2018 Plan and related information is as follows:

	Performance-based Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
Balance as of January 1, 2020	—	$ —
Granted	377,922	113.40
Balance as of December 31, 2020	377,922	113.40
Granted	52,917	135.94
Canceled	(56,243)	113.40
Balance as of December 31, 2021	374,596	$ 116.58

Stock-based compensation recorded for the PSUs for the year ended December 31, 2021 and 2020 was $1.3 million and $0.1 million, respectively. Future stock-based compensation for unvested PSUs that are probable to vest as of December 31, 2021 was $3.9 million, which is expected to be recognized over a weighted-average period of 3.1 years.

Market-based Restricted Stock Units

In May 2020, the Board of Directors approved and granted 1,695,574 market-based restricted stock units, or MSUs, under the 2018 Plan to each of the Company's Co-Chief Executive Officers, which is subject to the achievement of market-based share price goals established by the Board of Directors. The MSUs consist of three separate tranches and the vesting of each tranche is subject to the Company's common stock closing price being maintained at or above a predetermined share price goal for a period of 30 consecutive calendar days. The share price goal can be met any time during the seven-year performance period from the date of grant. Upon vesting, the MSUs must be held for a period of six to twelve months depending on the time of vesting within the seven-year performance period. The vesting of the MSUs can also be triggered upon a change in control event and achievement of a certain change in control price goal, or when there is a qualifying termination or in the event of death or disability. The following table presents additional information relating to each MSU award:

Tranche	Price Goal	Number of RSUs
Tranche 1	$120 per share	565,192
Tranche 2	$150 per share	565,191
Tranche 3	$200 per share	565,191

The grant date fair values of the MSUs were determined using a Monte Carlo valuation model for each tranche. The related stock-based compensation expense for each tranche is recognized based on an accelerated attribution method over the estimated derived service period. If the related share price goal is achieved earlier than its expected derived service period, the stock-based compensation expense will be recognized as a cumulative catch-up expense from the grant date to that point in time in achieving the share price goal. The derived service period is the median duration of the successful stock price paths to meet the price goal for each tranche as simulated in the Monte Carlo valuation model. The Monte Carlo valuation model uses assumptions such as volatility, risk-free interest rate, cost of equity and dividend estimated for the performance period of the MSU. The weighted-average grant date fair value of the

MSUs was $67.00 and the weighted-average derived service period was estimated to be in the range of 0.83 – 2.07 years.

On January 1, 2021, Tranche 1 of the MSUs became vested because it has met both service requirement and market-based performance metrics as the predetermined share price goal of $120 per share was achieved for a period of 30 consecutive calendar days. A summary of the Company's market-based restricted stock unit activity under the 2018 Plan and related information is as follows:

	Market-based Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
Balance as of January 1, 2020	—	$ —
Granted	3,391,148	67.00
Balance as of December 31, 2020	3,391,148	67.00
Vested and released	(572,130)	70.58
Canceled [1]	(558,254)	70.58
Balance as of December 31, 2021	2,260,764	$ 65.20

(1) Represented shares withheld by the Company for MSU holders' tax obligation upon release of vested MSUs.

Stock-based compensation recorded for the MSUs for the year ended December 31, 2021 and 2020 was $99.2 million and $111.9 million, respectively, and is recorded in general and administrative expenses in our consolidated statement of operations. Future stock-based compensation for unvested MSUs as of December 31, 2021 was $16.1 million, which is expected to be recognized over a weighted-average period of 0.5 years. In the event of a change in control, a qualifying termination, death, disability or the share price goal occurring earlier than the estimated derived service period, the stock-based compensation relating to these MSUs could be accelerated. Any MSUs that remain unvested at the end of the 7-year performance period will automatically be forfeited and terminated without further consideration.

AMEA 2020 Equity Incentive Plan

In August 2020, the board of directors of the Joint Venture approved its 2020 Equity Incentive Plan, or the AMEA 2020 Plan, under which the Joint Venture may grant equity incentive awards such as stock options, restricted stock, restricted stock units, stock appreciation rights and cash-based awards to its employees and non-employees. Stock options granted may be either incentive stock options or nonstatutory stock options. Incentive stock options may be granted only to employees of the Joint Venture or its affiliates. Nonstatutory stock options may be granted to employees, directors and non-employee consultants. Stock options may be granted at an exercise price of not less than the fair market value of the Joint Venture's common stock on the date of grant, determined by the board of directors of the Joint Venture. Options generally vest over 4 years and expire as determined by the board of directors of the Joint Venture, provided that the term of options may not exceed 10 years from the date of grant. For individuals holding more than 10% of the total combined voting power of all classes of stock of the Joint Venture, the exercise price of an option will not be less than 110% of the fair market value of the Joint Venture's common stock on the date of grant, and the term of the option will not exceed 5 years. A total of 4,595,555 shares of the Joint Venture's Class B common stock are initially reserved for issuance under the AMEA 2020 Plan, and the number of shares may be increased in accordance with the terms of the AMEA 2020 Plan.

A summary of the Joint Venture's stock option activity under the AMEA 2020 Plan and related information is as follows:

	Shares Available for Grant	Options Outstanding: Shares Subject to Options Outstanding	Options Outstanding: Weighted-Average Exercise Price	Options Outstanding: Weighted-Average Remaining Contractual Life (Years)	Options Outstanding: Aggregate Intrinsic Value
					(in thousands)
Balance as of January 1, 2020	—	—	$ —	0.0	$ —
Shares authorized	4,595,555	—	—		
Granted	(4,062,224)	4,062,224	0.58		
Canceled	8,889	(8,889)	—		
Balance as of December 31, 2020	542,220	4,053,335	0.58	9.6	—
Granted	(826,667)	826,667	0.58		
Exercised	—	(602,408)	0.58		
Canceled	625,375	(625,375)	0.58		
Balance as of December 31, 2021	340,928	3,652,219	$ 0.58	8.8	$ —
Vested and Exercisable as of December 31, 2021		2,148,474	$ 0.58	8.6	$ —

The weighted-average grant date fair value of options granted was $0.33 and $0.33 per share for the years ended December 31, 2021 and 2020, respectively. Future stock-based compensation for unvested options as of December 31, 2021 was $0.4 million, which is expected to be recognized over a weighted-average period of 2.5 years.

Stock-Based Compensation Expense

The following table presents the effect of employee and non-employee related stock-based compensation expense including the Joint Venture:

	Year Ended December 31, 2021	2020	2019
		(in thousands)	
Cost of precision oncology testing	$ 3,468	$ 1,839	$ 863
Research and development expense	18,907	10,024	5,907
Sales and marketing expense	15,479	9,279	4,716
General and administrative expense	113,595	122,971	5,468
Total stock-based compensation expense	$ 151,449	$ 144,113	$ 16,954

Valuation of Stock Options

Starting January 1, 2019, the Company adopted ASU 2018-07 which aligns the accounting treatment of nonemployee awards with employee awards, and the fair value of stock options issued to employees and nonemployee consultants are both determined as of the grant date.

The grant date fair value of stock options was estimated using a Black-Scholes option-pricing model with the following weighted-average assumptions including the Joint Venture:

	Year Ended December 31, 2021	2020	2019
Expected term (in years)	5.49 – 6.06	5.50 – 6.10	5.50 – 6.22
Expected volatility	63.6% – 66.7%	63.6% – 73.3%	63.2% – 68.7%
Risk-free interest rate	0.3% – 1.3%	0.3% – 1.6%	1.6% – 2.7%
Expected dividend yield	—%	—%	—%

The determination of the fair value of stock options on the date of grant using a Black-Scholes option-pricing model is affected by the estimated fair value of common stock of the Company and the Joint Venture, as well as assumptions regarding a number of variables that are complex, subjective and generally require significant judgment to determine. The valuation assumptions were determined as follows:

Fair Value of Common Stock

The fair value of the Company's common stock is determined by the closing price, on the date of grant, of its common stock, which is traded on the Nasdaq Global Select Market.

The grant date fair value of the Joint Venture's common stock has been determined by the board of directors of the Joint Venture. The grant date fair value of the Joint Venture's common stock was determined using valuation methodologies which utilize certain assumptions including probability weighting of events, volatility, time to liquidation, a risk-free interest rate and an assumption for a discount for lack of marketability. In determining the fair value of the Joint Venture's common stock, the methodologies used to estimate the enterprise value of the Joint Venture were performed using methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Expected Term

The expected term represents the period that the options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term) as the Company has concluded that its stock option exercise history does not provide a reasonable basis upon which to estimate expected term.

Expected Volatility

Prior to the commencement of trading of the Company's common stock on the Nasdaq Global Select Market on October 4, 2018 in connection with the IPO, there was no active trading market for the Company's common stock. Due to limited historical data for the trading of the Company's common stock, expected volatility is estimated based on the average volatility for comparable publicly traded peer group companies in the same industry plus the Company's expected volatility for the available periods. The comparable companies are chosen based on their similar size, stage in the life cycle or area of specialty.

The Joint Venture derived the expected volatility from the average historical volatility over a period approximately equal to the expected term of comparable publicly traded companies within its peer group that were deemed to be representative of future stock price trends as the Joint Venture does not have any trading history for its common stock. The Joint Venture will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Risk-Free Interest Rate

The risk-free interest rate is based on the U.S. Treasury rate, with maturities similar to the expected term of the stock options.

Expected Dividend Yield

The Company and the Joint Venture does not anticipate paying any dividends in the foreseeable future and, therefore, uses an expected dividend yield of zero.

Valuation of MSUs

The estimated fair value of the MSUs was determined using a Monte Carlo simulation model. The valuation assumptions used were substantially consistent with the assumption used to value stock options with the exception of the following:

Expected Volatility

Due to limited historical data for the trading of the Company's common stock, expected volatility is estimated based on the average volatility for comparable publicly traded peer group companies and implied volatility of publicly traded options in the same industry plus the Company's expected volatility for the available periods. The comparable companies are chosen based on their similar size, stage in the life cycle or area of specialty.

Expected Term

The expected term represents the derived service period for the respective tranches which has been estimated using the Monte Carlo simulation model.

Risky Rate

The risky rate represents the Company's cost of equity.

Discount for Lack of Marketability

The discount for lack of marketability represents the discount applied for post vest term restrictions and has been derived using the Monte Carlo simulation model.

The following assumptions were used to calculate the stock-based compensation for MSUs: a weighted-average expected term of 0.83 – 2.07 years; expected volatility of 65.5%; a risk-free interest rate of 0.53%; a zero dividend yield; a risky rate (cost of equity) of 16%; and a discount for post-vesting restrictions of 10.4% – 14.5%.

2018 Employee Stock Purchase Plan

In September 2018, the Company's Board of Directors adopted and its stockholders approved the 2018 Employee Stock Purchase Plan, or the ESPP. A total of 922,250 shares of common stock were initially reserved for issuance under the ESPP. Effective as of January 1, 2020, an additional 942,614 shares of common stock became available for issuance under the ESPP, as a result of the operation of an automatic annual increase provision therein.

Subject to any plan limitations, the ESPP allows eligible employees to contribute, normally through payroll deductions, up to 10% of their earnings for the purchase of the Company's common stock at a discounted price per share. The price at which common stock is purchased under the ESPP is equal to 85% of the fair market value of the Company's common stock on the first or last day of the offering period, whichever is lower. The initial offering period ran from October 2, 2018 to January 31, 2019, the second offering period ran from February 1, 2019 to July 31, 2019, and the third offering period began on August 1, 2019 and ran to November 14, 2019. For subsequent years, the ESPP provides for separate six-month offering periods beginning on May 15 and November 15 of each year.

Shares of common stock purchased under the ESPP were 110,227, 96,040 and 232,333, for the years ended December 31, 2021, 2020 and 2019, respectively. The total compensation expense related to the ESPP was $3.5 million, $3.0 million and $2.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The fair value of the stock purchase right granted under the ESPP was estimated on the first day of each offering period using the Black-Scholes option pricing model. The valuation assumptions used were substantially consistent with the assumption used to value stock options with the exception of the expected term which was based on the term of each purchase period.

The grant date fair value of the stock purchase right granted under the ESPP was estimated using a Black-Scholes option-pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2021	2020	2019
Expected term (in years)	0.50	0.50	0.29 – 0.50
Expected volatility	46.5% – 50.8%	45.7% – 73.2%	58.8% – 60.3%
Risk-free interest rate	—% – 0.1%	0.1% – 0.2%	1.6% – 2.5%
Expected dividend yield	—%	—%	—%

As of December 31, 2021, the unrecognized stock-based compensation expense related to the ESPP was $1.6 million, which is expected to be recognized over the remaining term of the offering period of 0.4 years.

13. Net Loss Per Share Attributable to Guardant Health, Inc. Common Stockholders

The following table sets forth the computation of the basic and diluted net loss per share attributable to Guardant Health, Inc. common stockholders:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands, except per share data)		
Net loss	$ (384,770)	$ (246,283)	$ (67,851)
Adjustment of redeemable noncontrolling interest	(20,900)	(7,500)	(7,800)
Net loss attributable to Guardant Health, Inc. common stockholders, basic and diluted	$ (405,670)	$ (253,783)	$ (75,651)
Net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	$ (4.00)	$ (2.60)	$ (0.84)
Weighted-average shares used in computing net loss per share attributable to Guardant Health, Inc. common stockholders, basic and diluted	101,314	97,504	90,597

Since the Company was in a loss position for all periods presented, basic net loss per share attributable to Guardant Health, Inc. common stockholders is the same as diluted net loss per share attributable to Guardant Health, Inc. common stockholders, as the inclusion of all potential shares of common stock outstanding would have been anti-dilutive. The following weighted-average common stock equivalents were excluded from the calculation of diluted net loss per share attributable to Guardant Health, Inc. common stockholders for the periods presented as they had an anti-dilutive effect:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Stock options issued and outstanding [(1)]	2,715	3,830	5,976
Restricted stock units	1,208	687	252
MSUs	2,357	2,031	—
PSUs	397	60	—
ESPP obligation	45	37	52
Common stock subject to repurchase	7	18	31
Convertible senior notes	8,225	961	—
Total	14,954	7,624	6,311

(1) Excludes stock options of 3,652,219 and 4,053,335 shares of the Joint Venture's Class B common stock granted under the AMEA 2020 Plan as of December 31, 2021 and 2020, respectively.

14. Income Taxes

The components of loss before provision for income taxes were as follows (in thousands):

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
United States	$ (384,976)	$ (246,463)	$ (69,930)
Foreign	506	559	207
Total	(384,470)	(245,904)	(69,723)

The components of the provision for income taxes are as follows:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Current:			
State	$ 4	$ 5	$ 3
Foreign	118	242	266
Total current tax expense	$ 122	$ 247	$ 269
Deferred:			
Federal	$ 108	$ 184	$ (1,652)
State	20	34	(311)
Foreign	50	(86)	(178)
Total deferred tax expense	$ 178	$ 132	$ (2,141)
Total provision for income taxes	$ 300	$ 379	$ (1,872)

Deferred income taxes reflect the tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets are as follows:

	As of December 31,	
	2021	2020
	(in thousands)	
Deferred tax assets:		
Net operating losses carryforwards	$ 232,657	$ 133,015
Property, equipment and intangible assets	13,233	14,198
Accruals and reserves	10,326	10,117
Research and development credits	33,977	19,022
Stock-based compensation	10,217	28,745
Lease liabilities	59,465	12,092
Other	948	65
Total deferred tax asset	$ 360,823	$ 217,254
Deferred tax liabilities:		
Section 481 (a) adjustment	(305)	(607)
Right-of-use asset	(47,130)	(9,383)
Unrealized gain/loss on investments	—	(571)
Debt discount	—	(81,964)
Other	(14)	—
Total deferred tax liabilities	(47,449)	(92,525)
Less: valuation allowance	(313,125)	(124,433)
Net deferred tax assets	$ 249	$ 296

The following table presents a reconciliation of the income tax expense computed at the statutory federal rate and the Company's income tax expense for the periods presented:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
Tax at the statutory federal rate	$ (80,739)	$ (51,639)	$ (14,642)
Other nondeductible items	1,399	786	887
Stock-based compensation	1,354	(13,382)	(33,042)
Research and development credits	(14,956)	(7,890)	(5,266)
Change in valuation allowance	106,227	81,395	59,049
State taxes, net of federal benefits	(14,998)	(11,119)	(8,253)
Other	2,013	2,228	(605)
Total provision for (benefit from) income taxes	$ 300	$ 379	$ (1,872)

The Company's actual tax expense differed from the statutory federal income tax expense using a tax rate of 21% for the year ended December 31, 2021, 2020 and 2019, primarily due to state and foreign income taxes, nondeductible expenses, research and development tax credits, the acquisition of Bellwether Bio, Inc., or "Bellwether Bio", and the change in valuation allowance. The benefit from income taxes for the year ended December 31, 2019 included a release of a valuation allowance of $1.6 million associated with nondeductible intangible assets recorded as a result of the acquisition of Bellwether Bio. In connection with the acquisition of Bellwether Bio, a deferred tax liability was established for the book-tax basis differences related to the non-goodwill intangible assets. The net deferred tax liability from this acquisition creates an additional source of income to offset the Company's deferred tax assets. The benefit from income taxes for the year ended December 31, 2019 also included a benefit of $0.4 million associated with the utilization of tax losses from continuing operations against other comprehensive income gains in accordance with intra-period tax allocation under ASC Topic 740.

As of December 31, 2021 and 2020, the Company had a net operating loss carryforwards of $956.9 million and $547.3 million for federal purposes, and $542.0 million and $306.7 million for state and local purposes, respectively, which may be subject to limitations as described below. If not utilized, these carryforwards will begin to expire in 2031 for federal, and 2022 for state and local purposes. Federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. Some but not all states conform to the federal treatment of net operating losses.

As of December 31, 2021 and 2020, the Company had research and development tax credit carryforwards for federal tax purposes of $21.4 million and $11.9 million, and state research and development tax credit carryforwards of $15.9 million and $9.1 million, respectively. The federal research and development tax credit carryforwards will expire at various dates beginning in the year 2032. The Company's state research and development tax credit carryforwards do not expire.

Utilization of the net operating loss, or NOL, carryforwards and credits may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code of 1986, as amended, and similar state provisions. The annual limitation may result in the expiration of NOL carryforwards and credits before utilization. Current laws impose substantial restrictions on the utilization of NOL carryforwards and credits in the event of an "ownership change" within a three-year period as defined by the Internal Revenue Code Section 382, or Section 382. If there should be an ownership change, the Company's ability to utilize its NOL carryforwards and credits could be limited. The Company has not performed a Section 382 analysis.

Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Due to the Company's history of U.S. operating losses, the Company believes that the recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not more likely than not to be realized and, accordingly, have provided a full valuation allowance against net U.S. deferred tax assets. The net change in total valuation allowance was an increase of $188.7 million, a decrease of $0.8 million and an increase of $59.0 million for the years ended December 31, 2021, 2020 and 2019, respectively.

The Company has not recorded a provision for deferred U.S. tax expense that could result from the remittance of foreign undistributed earnings since the Company intends to reinvest the earnings in its foreign subsidiaries indefinitely.

The Company has made an accounting policy election to treat Global Intangible Low-Taxed Income, or GILTI, taxes as a current period expense rather than including these amounts in the measurement of deferred taxes.

Uncertain Tax Positions

The Company records unrecognized tax benefits, where appropriate, for all uncertain income tax positions. The Company recorded unrecognized tax benefits for uncertain tax positions of $20.1 million and $11.3 million as of December 31, 2021 and 2020, respectively, of which an immaterial amount would impact the Company's effective tax rate if recognized, because the benefit would be offset by an increase in the valuation allowance.

A reconciliation of the beginning and ending balance of total unrecognized tax benefits is as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Unrecognized tax benefits - Beginning of period	$ 11,269	$ 6,543	$ 3,427
Increases related to current year's tax positions	8,223	4,666	3,116
Increases related to prior years' tax positions	608	60	—
Unrecognized tax benefits - End of period	$ 20,100	$ 11,269	$ 6,543

The Company's policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. During the years ended December 31, 2021, 2020 and 2019, the Company recognized no interest and penalties associated with unrecognized tax benefits. There are no tax positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease within twelve months of the reporting date.

Due to the net operating loss carryforwards, all years remain open for income tax examination by tax authorities in the United States, various states and foreign tax jurisdictions in which the Company files tax returns.

15. Employee Benefit Plan

The Company sponsors a 401(k) plan, and pursuant to its terms, eligible employees can elect to contribute to the 401(k) plan, subject to certain limitations, up to the lesser of the statutory maximum or 100% of eligible compensation on a pre-tax basis. For the years ended December 31, 2021, 2020 and 2019, the Company contributed $4.5 million, $2.8 million and $0.3 million, respectively, to match employee contributions as permitted by the plan. The Company pays the administrative costs for the plan.

16. Segment and Geographic Information

The Company operates as one operating segment. The Company's chief operating decision makers are its Co-Chief Executive Officers, who review financial information presented on a consolidated basis for the purposes of making operating decisions, assessing financial performance and allocating resources.

The following table sets forth the Company’s revenue by geographic areas based on the customers’ locations:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands)		
United States	$ 352,561	$ 264,657	$ 194,312
International[1]	21,092	22,073	20,063
Total revenue	$ 373,653	$ 286,730	$ 214,375

(1) No single country outside of the United States accounted for more than 10% of total revenue during each of the years ended December 31, 2021, 2020 and 2019.

As of December 31, 2021 and 2020, 98% and 94%, respectively, of the Company’s long-lived assets and right-of-use assets are located in the United States.

17. Related Party Transactions

As discussed in Note 3, ***Investment in Joint Venture***, the Company and an affiliate of SoftBank formed and capitalized the Joint Venture to accelerate commercialization of its products in Asia, the Middle East and Africa. The Company has consolidated the financial position, results of operations and cash flows of the Joint Venture in its financial statements and all intercompany balances have been eliminated in consolidation.

The Company and its subsidiaries may, in the ordinary course of business, have transactions with unaffiliated companies of which certain of the Company’s directors are directors and/or executive officers. The Company believes that such transactions are on the same terms generally offered by such other companies to other entities in comparable transactions. The Company does not consider the amounts involved in such transactions to be material in relation to its businesses, the businesses of such other companies or the interests of the directors involved.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of disclosure controls and procedures

Our management, with the participation of our co-chief executive officers, or Co-CEOs, and chief financial officer, or CFO, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or Exchange Act), as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, our Co-CEOs and CFO have concluded that as of December 31, 2021, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC, and that such required information is accumulated and communicated to our management, including our Co-CEOs and CFO, as appropriate, to allow timely decisions regarding required disclosures.

Management report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Exchange Act Rules 13a-15(f). Under the supervision and with the participation of our management, including our Co-CEOs and CFO, we conducted an assessment of the effectiveness of our internal control over financial reporting based on the framework in Internal Control Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the results of our assessment under the framework in the Internal Control—Integrated Framework (2013), our management concluded that our internal control over financial reporting was effective as of December 31, 2021.The effectiveness of our internal control over financial reporting as of December 31, 2021, has been audited by an independent registered public accounting firm, as stated in their report included in Part II, Item 8, *"Financial Statements"* of this Annual Report on Form 10-K.

Changes in internal control

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Annual Report on Form 10-K that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations Over Internal Controls

Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP.

Our internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

Management, including our Co-CEOs and CFO, do not expect that our internal controls will prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of internal controls can provide

absolute assurance that all control issues and instances of fraud, if any, have been detected. Also, any evaluation of the effectiveness of controls in future periods are subject to the risk that those internal controls may become inadequate because of changes in business conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Guardant Health, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Guardant Health, Inc.'s internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Guardant Health, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2021 and 2020 and consolidated statements of operations, comprehensive loss, redeemable noncontrolling interest and stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes and our report dated February 24, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Redwood City, California
February 24, 2022

Item 9B. Other Information.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 of Form 10-K will be included in our 2022 Proxy Statement to be filed with the SEC in connection with the solicitation of proxies for our 2022 Annual Meeting of Stockholders and is incorporated herein by reference. The 2022 Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year to which this Annual Report on Form 10-K relates.

Item 11. Executive Compensation

The information required by this Item 11 of Form 10-K will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item 12 of Form 10-K will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item 13 of Form 10-K will be included in our 2022 Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 of Form 10-K will be included in our 2022 Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Documents filed as part of this report

(1) All financial statements

See Index to Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

(2) Financial Statement Schedules

All financial statement schedules have been omitted since the required information was not applicable or was not present in amounts sufficient to require submission of the schedules, or because the information required is included in the consolidated financial statements or the accompanying notes.

(3) Exhibits required by Item 601 of Regulation S-K

The exhibits listed in the following Index to Exhibits are filed, furnished or incorporated by reference as part of this Annual Report on Form 10-K.

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed/Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation	8-K	001-38683	3.1	10/9/2018	
3.2	Amended and Restated Bylaws	8-K	001-38683	3.2	10/9/2018	
4.1	Description of Registrant's Securities Registered under Section 12 of the Exchange Act	10-K	001-38683	4.1	3/2/2020	
4.2	Indenture, dated as of November 19, 2020, between Guardant Health, Inc. and U.S. Bank National Association, as trustee	8-K	001-38683	4.1	11/20/2020	
10.1#	Amended and Restated 2012 Stock Plan	S-1	333-227206	10.3	9/6/2018	
10.1(a)#	Form of Notice of Stock Option Grant and Stock Option Agreement under the Amended and Restated 2012 Stock Plan	S-1	333-227206	10.4	9/6/2018	
10.2#	2018 Incentive Award Plan	S-8	333-227762	99.2(a)	10/10/2018	
10.2(a)#	Form of Stock Option Agreement under the 2018 Incentive Award Plan	S-1/A	333-227206	10.9(a)	9/21/2018	
10.2(b)#	Form of Restricted Stock Award Agreement under the 2018 Incentive Award Plan	S-1/A	333-227206	10.9(b)	9/21/2018	
10.2(c)#	Form of Restricted Stock Unit Award Agreement under the 2018 Incentive Award Plan	S-1/A	333-227206	10.9(c)	9/21/2018	
10.2(d)#	Forms of Performance-Based Restricted Stock Unit Award Agreement under the 2018 Incentive Award Plan	10-K	001-38683	10.3(d)	2/25/2021	
10.3#	2018 Employee Stock Purchase Plan	S-8	333-227762	99.3	10/10/2018	
10.3(a)#	First Amendment to 2018 Employee Stock Purchase Plan	10-K	001-38683	10.4(a)	3/29/2019	
10.4#	Executive Severance Plan	S-1/A	333-227206	10.13	9/21/2018	
10.4(a)#	First Amendment to Executive Severance Plan	10-K	001-38683	10.5(a)	3/29/2019	
10.5#	Non-Employee Director Compensation Program, effective as of June 12, 2020	10-Q	001-38683	10.1	8/6/2020	
10.6#	Amended and Restated Offer Letter Agreement, dated September 16, 2018, by and between Guardant Health, Inc. and Ian Clark	10-Q	001-38683	10.9	11/19/2018	
10.7#	Amended and Restated Offer Letter Agreement, dated September 16, 2018, by and between Guardant Health, Inc. and Stanley Meresman	10-Q	001-38683	10.10	11/19/2018	
10.8	Form of Indemnification Agreement between Guardant Health, Inc. and its directors and officers	S-1/A	333-227206	10.8	9/18/2018	
10.9	Lease, dated November 1, 2014, by and between the Registrant and Metropolitan Life Insurance Company	S-1	333-227206	10.2	9/6/2018	
10.10	First Amendment to Lease, dated October 17, 2017, by and between the Registrant and Metropolitan Life Insurance Company	S-1	333-227206	10.2(a)	9/6/2018	
10.11	Sublease Agreement, dated July 31, 2020, by and between Guardant Health, Inc. and 3000 Hanover, LLC	10-Q	001-38683	10.1	11/5/2020	
10.12§	Joint Venture Agreement, dated May 9, 2017, by and between the Registrant and SoftBank Vision Fund (AIV M1) L.P., as assignee from SoftBank Group Capital Limited	S-1	333-227206	10.5	9/6/2018	
10.13§	Supply Agreement, dated September 15, 2014, by and between the Registrant and Illumina, Inc.	S-1	333-227206	10.7	9/6/2018	

10.14§	Amendment to Supply Agreement, dated August 11, 2015, by and between the Registrant and Illumina, Inc.	S-1	333-227206	10.7(a)	9/6/2018	
10.15§	Amendment #2 to Supply Agreement, dated December 24, 2016, by and between the Registrant and Illumina, Inc.	S-1	333-227206	10.7(b)	9/6/2018	
10.16§	Amendment #3 to Supply Agreement, dated August 14, 2017, by and between the Registrant and Illumina, Inc.	S-1	333-227206	10.7(c)	9/6/2018	
10.17§	Amendment #4 to Supply Agreement, dated June 26, 2018, by and between the Registrant and Illumina, Inc.	S-1	333-227206	10.7(d)	9/6/2018	
10.18§	Amendment #5 to Supply Agreement, dated January 1, 2021, by and between the Registrant and Illumina, Inc.	10-K	001-38683	10.19	2/25/2021	
10.19#	Form of letter agreement relating to certain time-based equity awards held by Helmy Eltoukhy and AmirAli Talasaz	10-K	001-38683	10.19	3/29/2019	
10.20#	Form of Waiver Letter Agreement	8-K	001-38683	10.2	5/27/2020	
10.21#	Offer Letter, dated December 4, 2020, by and between Guardant Health, Inc. and Michael Bell	8-K	001-38683	10.1	12/11/2020	
10.22	Form of Capped Call Confirmation	8-K	001-38683	10.1	11/20/2020	
21.1	List of Subsidiaries					*
23.1	Consent of Independent Registered Public Accounting Firm					*
24.1	Power of Attorney (included on the signatures page of this Annual Report on Form 10-K)					*
31.1	Certification of the Co-Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
31.2	Certification of the Co-Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
31.3	Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
32.1	Certification of the Co-Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
32.2	Certification of the Co-Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
32.3	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					*
101.SCH	Inline XBRL Taxonomy Extension Schema Document					*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					*

101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	*
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101)	*

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* Filed herewith.

** Furnished herewith.

# Indicates management contract or compensatory plan.

§ Portions of this exhibit (indicated by asterisks) have been omitted pursuant to, a request for confidential treatment pursuant to Rule 24b-2 under the Securities Exchange Act of 1934, as amended, or Item 601(a)(5) of Regulation S-K.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GUARDANT HEALTH, INC.

Dated: February 24, 2022

By: /s/ Helmy Eltoukhy
Name: Helmy Eltoukhy
Title: Co-Chief Executive Officer and Chairman of the Board

By: /s/ AmirAli Talasaz
Name: AmirAli Talasaz
Title: Co-Chief Executive Officer and Director

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Helmy Eltoukhy and AmirAli Talasaz, his or her attorneys-in-fact, each with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Helmy Eltoukhy Helmy Eltoukhy	Co-Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	February 24, 2022
/s/ AmirAli Talasaz AmirAli Talasaz	Co-Chief Executive Officer and Director (Principal Executive Officer)	February 24, 2022
/s/ Michael Bell Michael Bell	Chief Financial Officer (Principal Accounting Officer and Principal Financial Officer)	February 24, 2022
/s/ Ian Clark Ian Clark	Director	February 24, 2022
/s/ Vijaya Gadde Vijaya Gadde	Director	February 24, 2022
/s/ Bahija Jallal Bahija Jallal	Director	February 24, 2022
/s/ Meghan Joyce Meghan Joyce	Director	February 24, 2022
/s/ Samir Kaul Samir Kaul	Director	February 24, 2022
/s/ Stanley Meresman Stanley Meresman	Director	February 24, 2022
/s/ Myrtle Potter Myrtle Potter	Director	February 24, 2022