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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2020

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: 001-37478

NATERA, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**01-0894487**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
201 Industrial Road, Suite 410 San Carlos, CA **(Address of Principal Executive Offices)**	**94070** **(Zip Code)**

(650) 249-9090
(Registrant's Telephone Number, Including Area Code)

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 $0.0001 per share	NTRA	The Nasdaq Stock Market LLC (Nasdaq Global Select Market)

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, 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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of August 1, 2020, the number of outstanding shares of the registrant's common stock, par value $0.0001 per share, was 79,887,822.

Natera, Inc.

FORM 10-Q FOR THE QUARTER ENDED June 30, 2020

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements. The forward-looking statements are contained principally in the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” but are also contained elsewhere in this report. Forward-looking statements include information concerning our future results of operations and financial position, strategy and plans, and our expectations for future operations. Forward-looking statements include all statements that are not historical facts and, in some cases, can be identified by terms such as "believe," "may," "will," "estimate," "continue," "anticipate," "design," "intend," "expect," "could," "plan," "potential," "predict," "seek," "should," "would" or the negative version of these words and similar expressions.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements, including those described in "Risk Factors" and elsewhere in this report. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent our beliefs and assumptions only as of the date of this report. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. You should read this report completely and with the understanding that our actual future results may be materially different from what we expect.

These forward-looking statements include, but are not limited to, statements concerning the following:

- the extent and duration of the impact of the COVID-19 pandemic on our business, results of operations, stock price, or overall financial condition;
- our expectation that, for the foreseeable future, a significant portion of our revenues will be derived from sales of Panorama and Horizon;
- our ability to increase demand for Panorama and Horizon, obtain favorable coverage and reimbursement determinations from third-party payers, and expand geographically;
- our expectation that Panorama will be adopted for broader use in average-risk pregnancies and for the screening of microdeletions and that third-party payer reimbursement will be available for these applications;
- our expectations of the reliability, accuracy, and performance of our tests, as well as expectations of the benefits of our tests to patients, providers, and payers;
- our ability to successfully develop additional revenue opportunities and expand our product offerings to include new tests;
- our efforts to successfully develop and commercialize our oncology and organ health products;
- the effect of improvements in our cost of goods sold;
- our estimates of the total addressable markets for our current and potential product offerings;
- our ability and expectations regarding obtaining, maintaining and expanding third-party payer coverage of, and reimbursement for, our tests;
- the effect of changes in the way we account for our revenue;
- our ability to successfully commercialize our products through strategic or commercial partnerships, such as our agreements with BGI Genomics Co., Ltd. and Foundation Medicine, Inc., and our ability to enter into additional partnerships in the future;
- the scope of protection we establish and maintain for, and developments or disputes concerning, our intellectual property or other proprietary rights;

- our ability to successfully compete in the markets we serve;
- our reliance on collaborators such as medical institutions, contract laboratories, laboratory partners, and other third parties;
- our ability to operate our laboratory facility and meet expected demand, and to successfully scale our operations;
- our reliance on a limited number of suppliers, including sole source suppliers, which may impact our ability to maintain a continued supply of laboratory instruments and materials and to run our tests;
- our expectations of the rate of adoption of Panorama, Horizon and of any of our other current or future tests by laboratories, clinics, clinicians, payers, and patients;
- our ability to complete clinical studies and publish compelling clinical data in peer-reviewed medical publications regarding Panorama and any of our future tests, including our SMART study and our ongoing and planned trials in oncology and transplant rejection;
- our reliance on our partners to market and offer our tests in the United States and in international markets;
- our estimates regarding our costs and risks associated with our international operations and international expansion;
- our ability to retain and recruit key personnel;
- our reliance on our direct sales efforts;
- our expectations regarding acquisitions and strategic operations;
- our expectations regarding the conversion of our outstanding 2.25% convertible senior notes due 2027 (the "Convertible Notes") in the aggregate principal amount of $287.5 million and our ability to make debt service payments under the Convertible Notes if such Convertible Notes are not converted;
- our ability to fund our working capital requirements;
- our compliance with federal, state, and foreign regulatory requirements;
- the factors that may impact our financial results; and
- anticipated trends and challenges in our business and the markets in which we operate.

Any forward-looking statement made by us in this report speaks only as of the date on which it is made. Except as required by law, we disclaim any obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

PART I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Natera, Inc.

Condensed Consolidated Balance Sheets

(in thousands, except par value per share amount)	June 30, 2020 (Unaudited)	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 77,322	$ 61,926
Restricted cash	55	55
Short-term investments	493,852	379,065
Accounts receivable, net of allowance of $3,080 in 2020 and $2,919 in 2019	58,706	53,351
Inventory	18,033	12,394
Prepaid expenses and other current assets, net	15,536	16,376
Total current assets	663,504	523,167
Property and equipment, net	25,925	23,283
Operating lease right-of-use assets	21,475	23,730
Other assets	12,357	12,476
Total assets	$ 723,261	$ 582,656
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 3,450	$ 8,604
Accrued compensation	16,583	16,088
Other accrued liabilities	53,082	49,043
Deferred revenue, current portion	52,392	56,016
Short-term debt financing	50,053	50,123
Total current liabilities	175,560	179,874
Long-term debt financing	197,476	73,656
Deferred revenue, long-term portion	22,533	23,808
Operating lease liabilities, long-term portion	23,115	26,297
Other long-term liabilities	310	310
Total liabilities	418,994	303,945
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Common stock, $0.0001 par value: 750,000 shares authorized at both June 30, 2020 and December 31, 2019, respectively; 79,717 and 78,005 shares issued and outstanding at June 30, 2020 and December 31, 2019, respectively	8	8
Additional paid in capital	1,093,072	976,955
Accumulated deficit	(794,583)	(699,171)
Accumulated other comprehensive income	5,770	919
Total stockholders' equity	304,267	278,711
Total liabilities and stockholders' equity	$ 723,261	$ 582,656

See accompanying notes to the unaudited interim condensed consolidated financial statements.

Natera, Inc.

Condensed Consolidated Statements of Operations and Comprehensive Loss

(Unaudited)

	Three months ended June 30,		Six months ended June 30,	
	2020	2019	2020	2019
(in thousands, except per share data)				
Revenues				
Product revenues	$ 80,414	$ 65,099	$ 167,460	$ 128,463
Licensing and other revenues	6,058	9,256	13,024	12,716
Total revenues	86,472	74,355	180,484	141,179
Cost and expenses				
Cost of product revenues	42,731	41,382	84,251	82,987
Cost of licensing and other revenues	4,208	2,443	7,666	4,141
Research and development	23,005	12,124	41,230	23,559
Selling, general and administrative	68,188	47,042	133,869	90,874
Total cost and expenses	138,132	102,991	267,016	201,561
Loss from operations	(51,660)	(28,636)	(86,532)	(60,382)
Interest expense	(4,038)	(2,721)	(6,502)	(5,445)
Interest and other income, net	1,924	836	3,911	1,289
Loss on debt extinguishment	(5,848)	—	(5,848)	—
Loss before income taxes	(59,622)	(30,521)	(94,971)	(64,538)
Income tax expense	(15)	(1,895)	(38)	(1,969)
Net loss	$ (59,637)	$ (32,416)	$ (95,009)	$ (66,507)
Unrealized gain on available-for-sale securities, net of tax	104	1,061	4,850	1,347
Comprehensive loss	$ (59,533)	$ (31,355)	$ (90,159)	$ (65,160)
Net loss per share (Note 12):				
Basic and diluted	$ (0.75)	$ (0.48)	$ (1.21)	$ (1.01)
Weighted-average number of shares used in computing basic and diluted net loss per share:				
Basic and diluted	79,069	68,224	78,681	65,542

See accompanying notes to the unaudited interim condensed consolidated financial statements.

Natera, Inc.
Condensed Consolidated Statements of Stockholders' Equity (Deficit)
(Unaudited)

	Three months ended June 30, 2019					
(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
Balance as of March 31, 2019	63,340	$ 7	$ 613,680	$ (266)	$ (608,435)	$ 4,986
Issuance of common stock upon exercise of stock options	398	—	3,405	—	—	3,405
Issuance of common stock under employee stock purchase plan	132	—	2,147	—	—	2,147
Issuance of common stock for public offering, net	6,053	—	107,595	—	—	107,595
Issuance of common stock to Orbimed	25	—	506	—	—	506
Vesting of restricted stock	87	—	—	—	—	—
Stock-based compensation	—	—	5,804	—	—	5,804
Unrealized gain on available-for sale securities	—	—	—	1,061	—	1,061
Net loss	—	—	—	—	(32,416)	(32,416)
Balance as of June 30, 2019	70,035	$ 7	$ 733,137	$ 795	$ (640,851)	$ 93,088

	Six months ended June 30, 2019					
(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
Balance as of December 31, 2018	62,083	$ 7	$ 607,236	$ (552)	$ (574,529)	$ 32,162
Issuance of common stock upon exercise of stock options	1,468	—	5,983	—	—	5,983
Issuance of common stock under employee stock purchase plan	132	—	2,147	—	—	2,147
Issuance of common stock for public offering, net	6,053	—	107,595	—	—	107,595
Issuance of common stock to Orbimed	25	—	506	—	—	506
Vesting of restricted stock	274	—	—	—	—	—
Stock-based compensation	—	—	9,855	—	—	9,855
Unrealized gain on available-for sale securities	—	—	—	1,347	—	1,347
Cumulative-effect adjustment upon adoption of ASU 2018-07	—	—	(185)	—	185	—
Net loss	—	—	—	—	(66,507)	(66,507)
Balance as of June 30, 2019	70,035	$ 7	$ 733,137	$ 795	$ (640,851)	$ 93,088

	Three months ended June 30, 2020					
(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
Balance as of March 31, 2020	78,652	$ 8	$ 988,199	$ 5,666	$ (734,946)	$ 258,927
Issuance of common stock upon exercise of stock options	680	—	6,981	—	—	6,981
Issuance of common stock under ESPP	97	—	3,062	—	—	3,062
Equity component of Convertible Notes, net	—	—	82,873	—	—	82,873
Vesting of restricted stock	288	—	—	—	—	—
Stock-based compensation	—	—	11,957	—	—	11,957
Unrealized gain on available-for sale securities	—	—	—	104	—	104
Net loss	—	—	—	—	(59,637)	(59,637)
Balance as of June 30, 2020	79,717	$ 8	$ 1,093,072	$ 5,770	$ (794,583)	$ 304,267

	Six months ended June 30, 2020					
(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders' Equity
Balance as of December 31, 2019	78,005	$ 8	$ 976,955	$ 920	$ (699,171)	$ 278,711
Issuance of common stock upon exercise of stock options	1,037	—	10,808	—	—	10,808
Issuance of common stock under ESPP	97	—	3,062	—	—	3,062
Equity component of Convertible Notes, net	—		82,873	—	—	82,873
Vesting of restricted stock	578	—	—	—	—	—
Stock-based compensation	—	—	19,374	—	—	19,374
Unrealized gain on available-for sale securities	—	—	—	4,850	—	4,851
Cumulative-effect adjustment upon adoption of ASU 2016-13	—		—	—	(403)	(403)
Net loss	—	—	—	—	(95,009)	(95,009)
Balance as of June 30, 2020	79,717	$ 8	$ 1,093,072	$ 5,770	$ (794,583)	$ 304,267

See accompanying notes to the unaudited interim condensed consolidated financial statements.

Natera, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Six Months Ended June 30,	
	2020	**2019**
(in thousands)		
Operating activities		
Net loss	$ (95,009)	$ (66,507)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	4,036	3,952
Premium amortization and discount accretion on investment securities	1,887	151
Stock-based compensation	19,374	9,855
Non-cash lease expense	3,880	3,849
Amortization of debt discount and issuance cost	2,180	215
Other non-cash charges (benefits)	(341)	415
Loss on debt extinguishment	5,848	—
Provision for credit losses	1,445	—
Changes in operating assets and liabilities:		
Accounts receivable	(5,972)	(829)
Inventory	(5,410)	(1,815)
Prepaid expenses and other current assets	(5,610)	(4,464)
Other assets	99	(9,499)
Accounts payable	(4,684)	(6,378)
Accrued compensation	495	(2,519)
Other accrued liabilities	6,602	2,331
Deferred revenue	(4,900)	35,492
Net cash used in operating activities	(76,080)	(35,751)
Investing activities		
Purchases of investments	(266,139)	(162,176)
Proceeds from sale of investments	11,500	—
Proceeds from maturity of investments	142,815	62,780
Purchases of property and equipment, net	(10,130)	(1,599)
Net cash used in investing activities	(121,954)	(100,995)
Financing activities		
Proceeds from exercise of stock options	10,808	5,983
Proceeds from issuance of common stock under employee stock purchase plan	3,062	2,147
Proceeds from Convertible Notes	278,317	—
Loan payment	(78,757)	—
Proceeds from public offering	—	107,595
Net cash provided by financing activities	213,430	115,725
Net (decrease) increase in cash, cash equivalents and restricted cash	15,396	(21,021)
Cash, cash equivalents and restricted cash, beginning of period	61,981	51,004
Cash, cash equivalents and restricted cash, end of period	$ 77,377	$ 29,983
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 2,976	$ 7,343
Supplemental non-cash investing and financing activities:		
Obtaining right-of-use assets in exchange for lease liabilities	$ —	$ 28,191
Purchases of property and equipment in accounts payable and accruals	$ 255	$ 323

See accompanying notes to the unaudited interim condensed consolidated financial statements.

Natera, Inc.
Notes to Unaudited Interim Condensed Consolidated Financial Statements

1. Description of Business

Natera, Inc. (the "Company") was formed in the state of California as Gene Security Network, LLC in November 2003 and incorporated in the state of Delaware in January 2007. The Company's mission is to change the management of genetic disease worldwide. The Company operates a laboratory certified under the Clinical Laboratory Improvement Amendments ("CLIA") providing a host of preconception and prenatal genetic testing services. The Company determines its operating segments based on the way it organizes its business to make operating decisions and assess performance. The Company has only one segment, which is the discovery, development and commercialization of genetic testing services, and it has a subsidiary which operates in the state of Texas.

The Company's product offerings include its Panorama Non-Invasive Prenatal Test ("NIPT") that screens for chromosomal abnormalities of a fetus typically with a blood draw from the mother; Vistara ("Vistara"), a single-gene mutations screening test performed to identify single-gene disorders; Horizon Carrier Screening ("HCS") to determine carrier status for a large number of severe genetic diseases that could be passed on to the carrier's children; Spectrum Pre-implantation Genetic Screening ("PGS") and Spectrum Pre-implantation Genetic Diagnosis ("PGD") to analyze chromosomal anomalies or inherited genetic conditions during an *in vitro* fertilization ("IVF") cycle to select embryos with the highest probability of becoming healthy children; Anora Products of Conception ("POC") test to rapidly and extensively analyze fetal chromosomes to understand the cause of miscarriage; Non-Invasive Paternity Testing ("PAT"), to determine paternity by analyzing the fragments of fetal deoxyribonucleic acid ("DNA") in a pregnant mother's blood and a blood sample from the alleged father(s), which is marketed and sold by a licensee from whom the Company receives a royalty; Signatera™, a circulating tumor DNA technology that analyzes and tracks mutations specific to an individual's tumor; and Prospera, a technology to assess organ transplant rejection. All testing is available principally in the United States. The Company also offers its Panorama test to customers outside of the United States, primarily in Europe as well as expanded its scope to now screen twin pregnancies for zygosity and chromosomal abnormalities. The Company also offers Constellation ("Constellation"), a cloud-based software product that allows laboratory customers to gain access through the cloud to the Company's algorithms and bioinformatics in order to validate and launch tests based on the Company's technology. Through the third quarter of 2019, the Company offered Evercord for the collection and storage of newborn cord blood and cord tissue units, which was later sold to a third-party buyer.

2. Summary of Significant Accounting Policies

During the six months ended June 30, 2020, there were no material changes to our significant accounting policies as disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (filed on March 2, 2020), except as described in Recently Adopted Accounting Pronouncements below.

Basis of Presentation

The accompanying unaudited interim condensed consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") for interim financial information. The unaudited interim condensed consolidated financial information includes only adjustments of a normal recurring nature necessary for a fair presentation of the results of operations, financial position, changes in stockholders' equity, and cash flows. The results of operations for the three and six months ended June 30, 2020, are not necessarily indicative of the results for the full year or the results for any future periods. The condensed consolidated balance sheet as of December 31, 2019 has been derived from audited financial statements at that date, these financial statements should be read in conjunction with the audited financial statements, and related notes for the year ended December 31, 2019 included in the Company's Annual Report on Form 10-K filed with the SEC on March 2, 2020.

Liquidity Matters

The Company has incurred net losses since its inception and anticipates net losses and negative operating cash flows for the near future. The Company had a net loss of $95.0 million for the six months ended June 30, 2020 and an accumulated deficit of $794.6 million as of June 30, 2020. As of June 30, 2020, the Company had $77.4 million in cash, cash equivalents, and restricted cash, $493.9 million in marketable securities, $50.1 million of outstanding balance of the Credit Line (as defined in Note 10, *Debt*) including accrued interest, and $287.5 million outstanding principal balance of the its 2.25% Convertible Senior Notes (the "Convertible Notes") to the initial purchasers in a private placement and for initial resale to qualified institutional buyers pursuant to the exemption from registration provided by Rule 144A under the Securities Act. The Company used a portion of the net proceeds from the offering of the Convertible Notes to repay its obligations under its 2017 Term Loan with OrbiMed (see Note 10, *Debt*).

While the Company has introduced multiple products that are generating revenues, these revenues have not been sufficient to fund all operations. Accordingly, the Company has funded the portion of operating costs that exceeds revenues through a combination of equity issuances, debt issuances, and other financings.

The Company continues to develop and commercialize future products and, consequently, it will need to generate additional revenues to achieve future profitability and may need to raise additional equity or debt financing. If the Company raises additional funds by issuing equity securities, its stockholders will experience dilution. Additional debt financing, if available, may involve covenants restricting its operations or its ability to incur additional debt. Any additional debt financing or additional equity that the Company raises may contain terms that are not favorable to it or its stockholders and requires significant debt service payments, which diverts resources from other activities. Additional financing may not be available at all, or in amounts or on terms acceptable to the Company. If the Company is unable to obtain additional financing, it may be required to delay the development and commercialization of its products and significantly scale back its business and operations.

In April 2019, the Company completed an underwritten equity offering and sold 6,052,631 shares of its common stock at a price of $19 per share to the public. Before offering expenses of $0.6 million, the Company received proceeds of $108.1 million net of the underwriting discount. In October 2019, the Company completed another underwritten equity offering and sold 6,571,428 shares of its common stock at a price of $35 per share to the public. Before offering expenses of $0.4 million, the Company received proceeds of $216.2 million net of the underwriting discount.

Based on the Company's current business plan, the Company believes that its existing cash and marketable securities will be sufficient to meet its anticipated cash requirements for at least 12 months after August 6, 2020.

Principles of Consolidation

The accompanying condensed consolidated financial statements include all the accounts of the Company and its subsidiaries. The Company established a subsidiary that operates in the state of Texas to support the Company's laboratory and operational functions. All intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of financial statements in accordance with generally accepted accounting principles (GAAP) in the United States requires management to make estimates and assumptions about future events that affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities, and reported amounts of revenues and expenses. Significant items subject to such estimates include the allowance for doubtful accounts, the operating right-of-use assets and the associated lease liabilities, deferred revenues associated with unsatisfied performance obligations, accrued liability for potential refund requests, the valuation of the Convertible Notes, stock-based compensation, the fair value of common stock, income tax uncertainties, and the expected consideration to be received from contracts with customers. These estimates and assumptions are based on management's best estimates and judgment. Management regularly evaluates its estimates and assumptions using historical experience and other factors, including contractual terms and statutory limits; however, actual results could differ from these estimates and could have an adverse effect on the Company's financial statements.

Credit Losses

Trade accounts receivable and other receivables. The allowance for doubtful accounts is based on the Company's assessment of the collectability of customer accounts. The Company regularly reviews the allowance by considering factors such as historical experience, credit quality, the age of the accounts receivable balances, and current economic conditions that may affect a customer's ability to pay.

The following is a roll-forward of the allowances for credit losses related to trade accounts receivable and other receivables for the six months ended June 30, 2020:

	June 30, 2020
	(in thousands)
Beginning balance	$ 2,919
Cumulative-effect adjustment upon adoption of ASU 2016-13	403
Provision for credit losses	1,445
Write-offs	(457)
Total	$ 4,310

Available-for-sale debt securities. The amended guidance from ASU 2016-13 requires the measurement of expected credit losses for available-for-sale debt securities held at the reporting date over the remaining life based on historical experience, current conditions, and reasonable and supportable forecasts. The Company evaluated its investment portfolio under the new available-for-sale debt securities impairment model guidance. The vast majority of the Company's investment portfolio are low risk, investment grade securities.

Investments

Investments consist primarily of debt securities such as U.S. Treasuries, U.S. agency and municipal bonds. Management determines the appropriate classification of securities at the time of purchase and re-evaluates such determination at each balance sheet date. The Company generally classifies its entire investment portfolio as available-for-sale. The Company views its available-for-sale portfolio as available for use in current operations. Accordingly, the Company classifies all investments as short-term, irrespective of maturity date. Available-for-sale securities are carried at fair value, with unrealized gains and losses reported in accumulated other comprehensive income (loss), which is a separate component of stockholders' equity.

Risk and Uncertainties

The Company is subject to risks and uncertainties as a result of the COVID-19 pandemic. The extent of the impact of the COVID-19 pandemic on the Company's business is highly uncertain and difficult to predict, as the response to the pandemic information is rapidly evolving. The Company's test volumes in Q2 2020 remained relatively flat from Q1 2020, however, test volumes may be adversely impacted by the COVID-19 pandemic. The average selling price of the Company's genetic tests in Q2 2020 decreased slightly as compared to Q1 2020 and resulted in a negative impact to the results of operations. The Company cannot predict volatility of the volumes and selling process of its genetic tests.

Financial instruments that potentially subject the Company to credit risk consist of cash, accounts receivable and investments. The Company limits its exposure to credit loss by placing its cash in financial institutions with high credit ratings. The Company's cash may consist of deposits held with banks that may at times exceed federally insured limits. The Company performs evaluations of the relative credit standing of these financial institutions and limits the amount of credit exposure with any one institution.

The Company performs evaluations of financial conditions for insurance carriers, patients, clinics and laboratory partners and generally does not require collateral to support credit sales. For the three and six months ended June 30, 2020, and 2019, there were no customers exceeding 10% of total revenues on an individual basis. As of June 30, 2020 and December 31, 2019, there were no customers with an outstanding balance exceeding 10% of net accounts receivable.

Accumulated Other Comprehensive Income (Loss)

Comprehensive loss and its components encompass all changes in equity other than those with stockholders, and include net loss, unrealized gains and losses on available-for-sale marketable securities.

	Three months ended June 30,		Six months ended June 30,	
	2020	2019	2020	2019
	(in thousands)		*(in thousands)*	
Beginning balance	$ 5,666	$ (266)	$ 920	$ (552)
Net unrealized gain on available-for-sale securities, net of tax	104	1,061	4,850	1,347
Reclassifications of losses realized from sale of available-for-sale securities	—	—	—	—
Increase in other comprehensive loss	104	1,061	4,850	1,347
Ending balance	$ 5,770	$ 795	$ 5,770	$ 795

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") under its accounting standard codifications or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed below, the Company believes that the impact of accounting standards updates recently issued that are not yet effective will not have a material impact on its financial position or results of operations upon adoption.

Recently Adopted Accounting Pronouncements

Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*. ASU 2018-13 proposes new disclosure requirements for unrealized gains or losses recognized in other comprehensive income that are attributable to fair value changes in assets and liabilities categorized within Level III of the fair value hierarchy, as well as quantitative information about significant unobservable inputs used to value such assets and liabilities. It eliminates the requirement to disclose the reasons for the transfers of assets and liabilities measured in fair value on a recurring basis between Level I and Level II. The Company has adopted this ASU as of January 1, 2020, which did not have a material impact on its consolidated financial statements.

Goodwill - Internal-Use Software

In August 2018, the FASB issued ASU 2018-15, *Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. The amendments in this update align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by the amendments in this update. The Company adopted ASU 2018-15 as of January 1, 2020 using the prospective approach, which did not have a material impact on its condensed consolidated financial statements upon the adoption.

Credit Losses

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments* and also issued subsequent amendments to the initial guidance: ASU 2018-19, ASU

2019-04, and ASU 2019-05. The standard requires measurement and recognition of expected credit losses for financial assets by requiring an allowance to be recorded as an offset to the amortized cost of such assets. For available-for-sale debt securities, expected credit losses should be estimated when the fair value of the debt securities is below their associated amortized costs. The Company adopted ASU 2016-13, as amended, effective January 1, 2020 using the modified retrospective method and recorded a cumulative-effect adjustment of $0.4 million in retained earnings as of January 1, 2020.

Collaborative Arrangements

In November 2018, the FASB issued ASU 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*, which clarifies that certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer. In addition, Topic 808 precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. This guidance will be effective for the Company beginning January 1, 2020. The Company has adopted this standard as of January 1, 2020, which did not have a material impact on its condensed consolidated financial statements upon the adoption.

In December 2019, the FASB issued ASU 2019-12, Simplifying the Accounting for Income Taxes (Topic 740), which simplifies the accounting for income taxes, eliminates certain exceptions within ASC 740, Income Taxes, and clarifies certain aspects of the current guidance to promote consistency among reporting entities. ASU 2019-12 is effective for fiscal years beginning after December 15, 2020. An entity that elects early adoption must adopt all the amendments in the same period. Most amendments within this ASU are required to be applied on a prospective basis, while certain amendments must be applied on a retrospective or modified retrospective basis. The Company has adopted this standard as of June 30, 2020, which did not have a material impact on its condensed consolidated financial statements upon the adoption.

New Accounting Pronouncements Not Yet Adopted

In March 2020, ASU 2020-04, *Reference Rate Reform (Topic 848)* was issued which provides temporary optional guidance to ease the potential burden in accounting for reference rate reform. The new guidance provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include contract modifications, hedging relationship, and sale or transfer of debt securities classified as HTM. Early adoption of this ASU is permitted, and the Company may elect to apply the amendments prospectively through December 31, 2022. The Company's financial instruments that are in the scope of ASU 2020-04 include but are not limited to the UBS credit line agreement. The Convertible Notes will not be impacted since the interest rate is not based on LIBOR.

In August 2020, ASU 2020-06, *Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40)* was issued which simplifies the accounting for convertible instruments. The guidance removes certain accounting models which separate the embedded conversion features from the host contract for convertible instruments. Either a modified retrospective method of transition or a fully retrospective method of transition is permissible for the adoption of this standard. Update No. 2020-06 is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. Early adoption is permitted no earlier than the fiscal year beginning after December 15, 2020. The Company is currently evaluating the impact of the adoption of this standard on its consolidated financial statements.

3. Revenue Recognition

The Company recognizes revenues when, or as, performance obligations in the contracts are satisfied, in the amount reflecting the expected consideration to be received from the goods or services transferred to the customers.

Product Revenues

Product revenues are derived from contracts with insurance carriers, laboratory partners and patients in connection with sales of prenatal genetic tests. The majority of the Company's revenues is derived from Panorama NIPT, HCS (as defined in Note 1, *Description of Business*), and to a lesser extent, other genetic tests, including Signatera CLIA and Prospera. The Company enters into contracts with insurance carriers with primarily payment terms related to tests provided to the patients who have health insurance coverage. Insurance carriers are considered as third-party payers on behalf of the patients, and the patients are considered as the customers who receive genetic test services. Tests may be billed to insurance carriers, patients, or a combination of insurance carriers and patients. Further, the Company sells tests to a number of domestic and international laboratory partners and identifies the laboratory partners as customers provided that there is a test services agreement between the two parties.

A performance obligation represents a promise in a contract to transfer a distinct good or service to a customer, which represents a unit of accounting in accordance with ASC 606. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. The Company considers a performance obligation satisfied once the Company has transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service. A portion of the consideration should be allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The Company evaluates its contracts with insurance carriers, laboratory partners and patients and identifies the performance obligations in those contracts, which are the delivery of the test results.

The total consideration which the Company expects to collect in exchange for the Company's products is an estimate and may be fixed or variable. Consideration includes reimbursement from both patients and insurance carriers, adjusted for variable consideration related to disallowed cases, discounts, refunds and doubtful accounts, and is estimated using the expected value approach. For insurance carriers with similar reimbursement characteristics, the Company uses a portfolio of relevant historical data to estimate variable consideration and total collections for the Company's products. The Company constrains the estimated variable consideration when it assesses it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. The consideration expected from laboratory partners usually includes a fixed amount, but it can be variable depending on the volume of tests performed, and the Company determines the variable consideration using the expected value approach. For insurance carriers, laboratory partners and patients, the Company allocates the total consideration to a single performance obligation, which is the delivery of the test results to the customers.

When assessing the total consideration for insurance carriers and patients, a certain percentage of revenues is further constrained for estimated refunds.

The Company generally bills an insurance carrier, a laboratory partner or a patient upon delivery of test results. The Company also bills patients directly for out-of-pocket costs involving co-pays and deductibles that they are responsible for. Tests billed to insurance carriers and directly to patients usually take an average of nine to twelve months to collect payment, and for tests billed to laboratory distribution partners, the average collection cycle takes approximately two to three months. At times, the Company may or may not get reimbursed for the full amount billed. Further, the Company may not get reimbursed at all for tests performed if such tests are not covered under the insurance carrier's reimbursement policies or the Company is not a qualified provider to the insurance carrier, or if the tests were not previously authorized.

Product revenue is recognized in an amount equal to the total consideration (as described above) at a point in time when the test results are delivered. The Company reserves certain amounts in other accrued liabilities on the balance sheet in anticipation of requests for refunds of payments previously made by insurance carriers, which are accounted for as reductions in product revenues in the statement of operations and comprehensive loss. During the three and six months ended June 30, 2020, $0.6 million and $1.6 million were released from amounts previously held in reserves in other

accrued liabilities, and $0.8 million and $1.3 million of such reserves were released during the three and six months ended June 30, 2019, respectively. The release of amounts reserved were recognized as product revenue within that period.

Licensing and Other Revenues

The Company recognizes licensing revenues from its cloud-based distribution service offering, Constellation, by granting licenses to its licensees to use certain of the Company's proprietary intellectual properties and cloud-based software and IVD kits. The Company also recognizes revenues from the Signatera research use only ("RUO") offering, the Qiagen LLC, BGI Genomics Co., Ltd., and Foundation Medicine, Inc. agreements.

Constellation

The laboratory partners with which the Company enters into a licensing arrangement represent the licensees and are identified as customers. The licensees do not have the right to possess the Company's software, but rather receive professional services through the cloud software. These arrangements often include: (i) the delivery of the professional services through the cloud software, (ii) the necessary support and training, and (iii) the IVD kits to be consumed as tests are processed. The Company does not consider the software as a service, the support and training as being distinct in the context of such arrangements, and therefore they are combined as a single performance obligation. The software, support and training are delivered simultaneously to the licensees over the term of the arrangement.

The Company bills the majority of licensees, who process the tests in their laboratories, a fixed price for each test processed. Licensing revenues are recognized as the performance obligations are satisfied (i.e., upon the delivery of each test) and reported in licensing and other revenues in the statements of operations and comprehensive loss.

Signatera

The Company enters into agreements with pharmaceutical companies to utilize the Company's Signatera tests typically to study new cancer treatments or to validate the outcomes of clinical trials for which the pharmaceutical companies are identified as customers. Such arrangements generally involve performing whole exome sequencing ("WES") services and the testing of patient samples to detect cancer mutations using its Signatera test. Each test is billable to customers and the personalized cancer profile also makes each test distinct within the context of the contract as customers can exercise control over the test results upon delivery. The Company allocates the contract price to each test using the stand-alone selling price for each service and recognizes the test processing revenue as individual test results are delivered to customers.

Qiagen

In March 2018, the Company entered into a License, Development and Distribution Agreement ("the Qiagen Agreement") with Qiagen under which the Company granted Qiagen a license to develop, manufacture, distribute and commercialize NGS-based genetic testing assays and sequencing systems utilizing such assays, which incorporate the Company's proprietary technology. According to the terms of the agreement, the Company is initially entitled to receive an upfront license fee and prepaid royalties totaling $40.0 million, which was fully collected in 2018. All or a portion of the prepaid royalties are refundable in limited circumstances. In addition, the Company was entitled to potential milestone payments from Qiagen upon the successful achievement of certain volume, regulatory and commercial milestones, and tiered royalties of $10.0 million, of which the Company has received $5.0 million due as of December 31, 2018. The Qiagen Agreement has a term of 10 years and expires in March 2028, and it may be terminated earlier in certain circumstances. Upon termination of the Qiagen Agreement, the license granted to Qiagen will also terminate, except in certain limited circumstances. The Company provided to Qiagen standard indemnification protections, which is part of an assurance that the license meets the contract's specifications and is not an obligation to provide goods or services.

In October 2019, Qiagen announced that it had discontinued the development of its next generation sequencing platform and is now partnered with another supplier to develop next generation sequencing based tests. The Company subsequently notified Qiagen of its material breach of the Qiagen Agreement.

Effective in March 2020, the Company terminated the Qiagen Agreement, and all or a portion of the prepaid royalties are refundable in limited circumstances, including upon termination in certain circumstances. The parties are currently in discussions regarding their respective obligations resulting from the termination of the Qiagen Agreement. Because the amount of prepaid royalty subject to refund is not finalized, the refund amount, if any, is uncertain as of June 30, 2020. As a result, this variable consideration was not included in the transaction price for the second quarter of 2020 to mitigate the risk of significant reversal of the cumulative revenue in the subsequent periods. Accordingly, no revenues were recognized on the prepaid royalties which may be subject to a refund.

BGI Genomics

In February 2019, the Company entered into a License Agreement with BGI Genomics Co., Ltd. ("BGI Genomics") to develop, manufacture, and commercialize NGS-based genetic testing assays for clinical and commercial use. The agreement has a term of ten years and expires in February 2029. According to the agreement, the Company is entitled to a total of $50 million, comprised of upfront technology license fees, prepaid royalties relating to future sales of licensed products and performance of assay interpretation services, and milestone payments. During the three months ended June 30, 2019, the Company received $35.6 million, net of withholding taxes, of these amounts. The Company recorded a receivable of $2.5 million upon achieving the first milestone as of June 30, 2019. Also, as required by the agreement with BGI Genomics, in June 2019 the Company prepaid $6.0 million to BGI Genomics for future sequencing services and $4.0 million for future sequencing equipment. These advance payments for equipment and services to be received in future periods aggregating to $10.0 million were recorded in long-term advances.

Pursuant to the agreement, the Company licensed its intellectual property and will provide development services. Following completion of development services, the Company will provide assay interpretation services over the term of the agreement. The Company concluded that the license is not a distinct performance obligation as it does not have a stand-alone value to BGI Genomics apart from the related development services. Therefore, license and related development services, for each of NIPT and Oncology products, represents a single performance obligation.

The Company is responsible for granting a license to specified intellectual property and performing certain development activities to customize its genetic testing assays for oncology and NIPT for use with BGI Genomics' sequencing instruments and proprietary technology platform. Revenue associated with these performance obligations is recognized over time using the input method, based on costs incurred to perform the development services, since the level of costs incurred over time best reflect the transfer of development services. Revenue associated with the assay interpretation services will be recognized upon delivery of these services. Funds received in advance are recorded as deferred revenue and will be recognized as the related services are delivered.

The initial transaction price was primarily comprised of license and milestone fees. The Company constrains the estimated variable consideration when it assesses it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. Certain milestone and license fees were constrained and not included in the transaction price due to the uncertainties of research and development. The Company re-evaluates the transaction price, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The allocation of the transaction price was performed based on standalone selling prices, which are based on estimated amounts that the Company would charge for a performance obligation if it were sold separately.

In accordance with ASC 340-40, any incremental costs incurred to obtain a contract with a customer are required to be capitalized and amortized over the period in which the goods and services are transferred to the customer. The Company has elected to apply a practical expedient under ASC 340-40 to recognize the incremental costs of obtaining a contract as an expense when incurred provided that the amortization period of such costs, if capitalized, is one year or less. The incremental costs incurred in connection with the BGI Genomics arrangement is not material on an accumulated basis and therefore will not be capitalized on the balance sheet but will be expensed as incurred.

Foundation Medicine, Inc.

In August 2019, the Company entered into a License and Collaboration Agreement ("the Foundation Medicine Agreement") with Foundation Medicine, Inc. ("Foundation Medicine") to develop and commercialize personalized circulating tumor DNA monitoring assays, for use by biopharmaceutical and clinical customers who order Foundation Medicine's FoundationOne CDx. The agreement has an initial term of five years, expiring in August 2024, with automatic renewals thereafter for successive one-year terms, unless the agreement is earlier terminated in accordance with its terms. Natera and Foundation Medicine will share the revenues generated from both biopharmaceutical and clinical customers in accordance with the terms of the agreement. The agreement provides for approximately $13.3 million in upfront licensing fees and prepaid revenues payable to the Company, and up to approximately $32.0 million in minimum annual payments and payments tied to the Company's achievement of certain developmental, regulatory, and commercial milestones. As of December 31, 2019, the Company received $16.3 million of these amounts, of which $3.0 million was for achieving certain milestones, and $13.3 million was for licensing fees and prepaid revenue. No additional payments have been received in the six months ending June 30, 2020.

Pursuant to the agreement, the Company will provide development services in conjunction with granting the use of the Company's intellectual property. Following completion of those development services, the Company will provide assay testing services over the term of the agreement. The Company has concluded that the license is not a distinct performance obligation as it is highly interrelated and interdependent with the related development services. Therefore, license and related development services represent a single performance obligation.

The Company is responsible for providing the technology license and certain development services that are required to customize its proprietary Signatera test to work with Foundation Medicine's FoundationOne CDx. The intellectual property has been licensed to Foundation Medicine for the customized test. In addition, the Company is responsible for delivering clinical study plans in order to demonstrate efficacy of the customized test. Revenues associated with each of the performance obligations are recognized over time using the input method, based on costs incurred to perform the development services, since the level of costs incurred over time best reflect the transfer of development services. Revenue associated with the assay testing services will be recognized upon delivery of these services. Funds received in advance are recorded as deferred revenue and will be recognized as the related services are delivered.

The initial transaction price was primarily comprised of license and milestone fees. The Company constrains the estimated variable consideration when it assesses it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. Certain milestone fees were constrained and not included in the transaction price due to the uncertainties of research and development. The Company re-evaluates the transaction price, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The allocation of the transaction price was performed based on standalone selling prices, which are based on estimated amounts that the Company would charge for a performance obligation if it were sold separately.

In accordance with ASC 340-40, any incremental costs incurred to obtain a contract with a customer are required to be capitalized and amortized over the period in which the goods and services are transferred to the customer. The Company has elected to apply a practical expedient under ASC 340-40 to recognize the incremental costs of obtaining a contract as an expense when incurred provided that the amortization period of such costs, if capitalized, is one year or less.

Disaggregation of Revenues

The Company measures its performance results primarily based on revenues recognized from the three categories described below. The following table shows disaggregation of revenues by payer types:

	Three months ended June 30,		Six months ended June 30,	
	2020	2019	2020	2019
(in thousands)				
Insurance carriers	$ 67,630	$ 50,777	$ 138,302	$ 100,978
Laboratory and other partners	13,041	15,132	28,724	25,155
Patients	5,801	8,446	13,458	15,046
Total revenues	$ 86,472	$ 74,355	$ 180,484	$ 141,179

The following table presents total revenues by geographic area based on the location of the Company's payers:

	Three months ended June 30,		Six months ended June 30,	
	2020	2019	2020	2019
(in thousands)				
United States	$ 80,757	$ 62,393	$ 167,488	$ 122,676
Americas, excluding U.S.	721	767	1,503	1,585
Europe, Middle East, India, Africa	3,584	4,318	7,060	8,322
Asia Pacific and Other	1,410	6,877	4,433	8,596
Total revenues	$ 86,472	$ 74,355	$ 180,484	$ 141,179

The following table summarizes the Company's beginning and ending balances of accounts receivable and deferred revenues:

(in thousands)	Balance at June 30, 2020	Balance at December 31, 2019
Assets:		
Accounts receivable	$ 58,706	$ 53,351
Liabilities:		
Deferred revenue, current portion	$ 52,392	$ 56,016
Deferred revenue, long-term portion	22,533	23,808
Total deferred revenues	$ 74,925	$ 79,824

The following table shows the changes in the balance of deferred revenues during the period:

(in thousands)	Deferred Revenues
Balance at December 31, 2019	$ 79,824
Increase in deferred revenues	746
Revenue recognized during the period that was included in deferred revenues at the beginning of the period	(4,943)
Revenue recognized from performance obligations satisfied within the same period	(702)
Balance at June 30, 2020	$ 74,925

During the six months ended June 30, 2020, revenue recognized that was included in the deferred revenue balance at the beginning of the period totaled $4.9 million with approximately $4.6 million related to BGI Genomics and Foundation Medicine, and the remaining $0.3 million related to genetic testing services. The current portion of deferred revenue includes $0.5 million of contract assets from the BGI Genomics agreement. The contract assets and contract liabilities originate from the same contract and are presented as a single contract liability on the condensed consolidated balance sheets.

4. Fair Value Measurements

The Company's financial assets and liabilities carried at fair value are comprised of investment assets that include money market and investments.

The fair value accounting guidance requires that assets and liabilities be carried at fair value and classified in one of the following three categories:

Level I: Quoted prices in active markets for identical assets and liabilities that the Company has the ability to access.

Level II: Observable market-based inputs or unobservable inputs that are corroborated by market data, such as quoted prices, interest rates, and yield curves.

Level III: Inputs that are unobservable data points that are not corroborated by market data.

This hierarchy requires the Company to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value.

Assets and Liabilities That Are Measured at Fair Value on a Recurring Basis

The following table represents the fair value hierarchy for the Company’s financial assets and financial liabilities measured at fair value on a recurring basis:

	June 30, 2020				December 31, 2019			
	Level I	Level II	Level III	Total	Level I	Level II	Level III	Total
	(in thousands)							
Financial Assets:								
Money market deposits	$ 28,795	$ —	$ —	$ 28,795	$ 22,477	$ —	$ —	$ 22,477
U.S. Treasury securities	404,416	—	—	404,416	293,157	—	—	293,157
Municipal securities	—	89,436	—	89,436	—	85,908	—	85,908
Total financial assets	$ 433,211	$ 89,436	$ —	$ 522,647	$ 315,634	$ 85,908	$ —	$ 401,542

5. Financial Instruments

The Company elected to invest a portion of its cash assets in conservative, income earning, and liquid investments. Cash equivalents and investments, all of which are classified as available-for-sale securities, consisted of the following:

	June 30, 2020				December 31, 2019			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
				(in thousands)				
Money market deposits	$ 28,795	$ —	$ —	$ 28,795	$ 22,477	$ —	$ —	$ 22,477
U.S. Treasury securities (1)	399,622	4,820	(26)	404,416	292,506	731	(80)	293,157
Municipal securities	88,460	981	(5)	89,436	85,638	277	(7)	85,908
Total	$ 516,877	$ 5,801	$ (31)	$ 522,647	$ 400,621	$ 1,008	$ (87)	$ 401,542
Classified as:			—					
Cash equivalents (2)				$ 28,795				$ 22,477
Short-term investments				493,852				379,065
Total				$ 522,647				$ 401,542

(1) Per the Company's investment policy, all U.S. Treasury securities are classified as short-term investments irrespective of holding period.
(2) Includes cash sweep accounts and U.S. Treasury money market mutual funds.

The Company invests in U.S. Treasuries, U.S. agency and high quality municipal bonds which mature at par value and are all paying their coupons on schedule. The Company has therefore concluded there is currently no other than temporary impairment of its investments and will continue to recognize unrealized gains and losses in other comprehensive income (loss). During the six months ended June 30, 2020, the Company sold $11.5 million of investments. There were no sales of investments during the six months ended June 30, 2019. During the six months ended June 30, 2020, the amount of gross realized gains and realized losses upon sales of investments were insignificant. The Company uses the specific investment identification method to calculate realized gains and losses and amounts reclassified out of other comprehensive income to net income. As of June 30, 2020, the Company had 9 investments in an unrealized loss position in its portfolio. An allowance for credit losses was not necessary for the second quarter of 2020 since the fair market value for a majority of the available-for-sale securities increased as a result of a significant average yield rate decrease for similar securities as of June 30, 2020.

In accordance with the adoption of ASU 2016-13 (Topic 326), the Company has assessed the unrealized loss position for available-for-sale debt securities for which an allowance for credit losses has not been recorded. The fair value for investment securities at an unrealized loss position as of June 30, 2020 was $117.8 million. The aggregate amount of unrealized losses of these securities were not significant, and the impact of the securities in a continuous loss position to the condensed consolidated statements of operations and comprehensive loss were not material as of June 30, 2020.

The following table summarizes the Company's portfolio of available-for-sale securities by contractual maturity as of June 30, 2020:

	June 30, 2020	
	Amortized Cost	Fair Value
(in thousands)		
Less than one year	$ 264,713	$ 265,534
Greater than one year but less than five years	223,369	228,318
Total	$ 488,082	$ 493,852

6. Balance Sheet Components

Property and Equipment, net

The Company's property and equipment consisted of the following:

(in thousands)	Useful Life	June 30, 2020	December 31, 2019
Machinery and equipment	3-5 years	$ 45,801	$ 36,414
Furniture and fixtures	3 years	1,376	1,376
Computer equipment	3 years	2,311	1,828
Capitalized software held for internal use	3 years	6,578	5,917
Leasehold improvements	Lesser of useful life or lease term	12,968	11,556
Construction-in-process		2,376	7,716
		71,410	64,807
Less: Accumulated depreciation and amortization		(45,485)	(41,524)
Total Property and Equipment, net		$ 25,925	$ 23,283

During the six months ended June 30, 2020, the increase in net property in equipment was due to purchases of new equipment for our laboratory located in Texas to expand testing capabilities, offset by depreciation expense of $4.0 million recorded in the six months ended June 30, 2020. The Company did not incur an impairment charge during the six months ended June 30, 2020.

Other Assets

In August 2017, the Company entered into the 2017 Term Loan with OrbiMed (as described in Note 10, *Debt*) and issued 300,000 shares of its common stock in exchange for OrbiMed's initial and remaining funding commitments. In April 2019, the Company issued an additional 25,000 shares of its common stock to OrbiMed for extending the expiration date to draw the unused borrowing capacity until December 31, 2019. The Company previously classified $1.2 million out of the total debt issuance costs in noncurrent assets for the unused borrowing capacity of $50.0 million. The debt discount was amortized on a straight-line basis over the remaining term of the loan. Since the option to draw the unused borrowing capacity has expired as of December 31, 2019, the Company reclassed $0.9 million, the unamortized portion of debt issuance cost previously classified in noncurrent assets, to long-term debt financing. Subsequently, the debt was extinguished (See Note 10, *Debt*) and accordingly, as of June 30, 2020, total unamortized remaining in noncurrent assets was zero.

As of June 30, 2020, other assets also included long-term advances to BGI Genomics of $10.0 million for future sequencing equipment and services. Furthermore, other assets include additional consideration estimated at $2.5 million in connection with the sale of Evercord, which represent the amount the Company is entitled to receive from the buyer as a percentage of collections on the transferred accounts receivable as part of the sale (i.e., receivables from third-party buyer). The consideration decreased from $4.7 million as of December 31, 2019 due to $1.0 million of net collections from the buyer and $1.2 million credit loss expense on the additional consideration. The credit loss expense was determined based on a recent collectability assessment of the accounts receivables transferred to the buyer on the disposal date.

Accrued Compensation

The Company's accrued compensation consisted of the following:

(in thousands)	June 30, 2020	December 31, 2019
Accrued paid time off	$ 2,098	$ 1,850
Accrued commissions	7,154	5,767
Accrued bonuses	4,179	5,710
Other accrued compensation	3,152	2,761
Total accrued compensation	$ 16,583	$ 16,088

Other Accrued Liabilities

The Company's other accrued liabilities consisted of the following:

(in thousands)	June 30, 2020	December 31, 2019
Reserves for refunds to insurance carriers	$ 13,100	$ 9,410
Accrued charges for outsourced testing	6,189	8,408
Testing and laboratory materials from suppliers	5,823	4,301
Marketing and corporate affairs	2,558	2,957
Legal, audit and consulting fees	4,596	2,873
Accrued shipping charges	658	305
Sales tax payable	1,142	1,691
Accrued specimen service fees	2,667	2,269
Clinical trials and studies	2,269	1,092
Operating lease liabilities, current portion	6,160	5,739
Fixed asset purchases	233	1,482
Other accrued expenses	7,687	8,516
Total other accrued liabilities	$ 53,082	$ 49,043

Reserves for refunds to insurance carriers include overpayments from and amounts to be refunded to insurance carriers, and additional amounts that the Company estimates for potential refund requests during the period. When the Company releases these previously accrued amounts, they are recognized as product revenues in the statements of operations and comprehensive loss.

The following table summarizes the reserve balance and activities for refunds to insurance carriers:

(in thousands)	June 30, 2020	June 30, 2019
Beginning balance	$ 9,410	10,012
Additional reserves	8,563	4,799
Reserves released and actual refunds	(4,873)	(3,914)
Ending balance	$ 13,100	$ 10,897
Reserves released into revenue	$ 1,622	$ 1,263

7. Leases

Operating Leases

In September 2015, the Company's subsidiary entered into a long-term lease agreement for laboratory and office space totaling approximately 94,000 square feet in Austin, Texas. The lease term is 132 months beginning in December 2015 and expiring in November 2026 with monthly payments beginning in December 2016.

In October 2016, the Company entered into a lease directly with its landlord for laboratory and office spaces at its corporate headquarters located in San Carlos, California. The Company currently occupies approximately 113,000 square feet comprised of two office spaces (the "First Space" and the "Second Space"). The First Space covers approximately 88,000 square feet, and the Second Space totals approximately 25,000 square feet. The term of this lease is approximately 84 months and expires in October 2023. This lease contains an option to renew the lease term for five years, but the fair market rent amount upon renewal is not available from the landlord.

In March 2018, the Company entered into a lease for its cord blood tissue storage facility in Tukwila, Washington that covers approximately 10,000 square feet. The lease term of this facility began in June 2018 with rent payment commencing in August 2018. The lease term is 62 months expiring in July 2023. The Company has the option to extend this lease for five years, and the fair market rent upon renewal is not determinable. However, since the Company sold its business related to cord blood and tissue storage in September 2019, the Company is in the process of identifying a sublessor for the facility and will not exercise its option to renew the facility upon expiration.

In addition, the Company entered into a sublease agreement in June 2019 with a third party to sublease 25,879 square feet of space located on the third floor of the San Carlos, California building while maintaining its primary obligation as the intermediate lessor. The term of this lease is approximately 48 months commencing in October 2019 and expiring in September 2023. The yearly lease payment starts at $1.9 million and will escalate annually starting in October 2020.

The Company has also entered into leases of individual workspaces at premises located in different locations on a month-to-month basis and is not committed to an established lease term. The Company has elected to not recognize them as the right-of-use assets on the balance sheet as they are all considered as short-term leases. Expenses associated with short-term lease were not significant in the three months ended June 30, 2020.

The operating lease right-of-use assets are classified as noncurrent assets in the balance sheet. The corresponding lease liabilities are separated into current and long-term portions as follows:

(in thousands)	June 30, 2020
Operating lease liabilities, current portion included in other accrued liabilities	$ 6,160
Operating lease liabilities, long-term portion	23,115
Total operating lease liabilities	$ 29,275

The initial recognition of the operating lease liabilities was measured as the present value of the future minimum lease payments using a discount rate determined as of January 1, 2019. The operating right-of-use assets was calculated as the operating lease liabilities discounted at the present value, less the amount of unamortized tenant improvement allowance and deferred rent. The discount rate used was the Company's incremental borrowing rate given that the implicit rate to each lease was not readily determinable. In accordance with ASC 842, the incremental borrowing rate was estimated as the annual percentage yield resulting from a corporate debt financing over a loan term approximating the remaining term of each lease, with the effect of certain credit risk rating. As of June 30, 2020, the weighted-average remaining lease term was 2.72 years and the weighted-average discount rate was 10.77%.

The Company continues to recognize lease expense on a straight-line basis. The lease expense includes the amortization of the right-of-assets with the associated interest component estimated by applying the effective interest method. For the three and six months ended June 30, 2020, total lease expense recognized in the condensed statements of operations and comprehensive loss were $1.9 million and $3.9 million, respectively. The lease expense for the three and six months ended June 30, 2019 were $2.0 million and $3.8 million, respectively. Cash paid for amounts in the measurement of operating lease liabilities totaled $2.2 million and $4.4 million for the three and six months ended June 30, 2020, respectively.

The present value of the future annual minimum lease payments under all non-cancellable operating leases as of June 30, 2020 are as follows:

	Operating Leases
	(in thousands)
Year ending December 31:	
2020 (remaining 6 months)	$ 4,439
2021	9,067
2022	9,319
2023	7,797
2024	2,400
2025 and thereafter	4,730
	37,752
Less: imputed interest	(8,477)
Operating lease liabilities	$ 29,275

8. Commitments and Contingencies

Legal Proceedings

From time to time, the Company is involved in disputes, litigation, and other legal actions, including those with respect to intellectual property, employment, testing and other matters. Such actions may include allegations of negligence, products/professional liability or other similar legal claims, and could involve claims for substantial compensatory and/or punitive damages or claims for indeterminate amounts of damages. The Company is aggressively defending and/or prosecuting its current litigation matters, but cannot provide any assurance as to the ultimate outcome or that an adverse resolution would not have a material adverse effect on its financial condition and results of operations. There are many uncertainties associated with any litigation and these actions or other third party claims against the Company, or by the Company against third parties, may cause the Company to incur costly litigation and/or substantial settlement charges. In addition, the resolution of any intellectual property litigation may require the Company to make royalty payments, which could adversely affect gross margins in future periods. If this were to occur, the Company's business, financial condition, results of operations, and cash flows could be adversely affected.

The Company assesses legal contingencies to determine the degree of probability and range of possible loss for potential accrual in its financial statements. When evaluating legal contingencies, the Company may be unable to provide a meaningful estimate due to a number of factors, including the procedural status of the matter in question, the presence of complex or novel legal theories, and/or the ongoing discovery and development of information important to the matters. In addition, damage amounts claimed in litigation against it may be unsupported, exaggerated or unrelated to possible outcomes, and as such are not meaningful indicators of its potential liability. During the periods presented, the Company has not recorded any accrual for loss contingencies associated with such legal proceedings, determined that an unfavorable outcome is probable or reasonably possible, or determined that the amount or range of any possible loss is reasonably estimable.

Illumina Litigation.

In March 2018, Illumina, Inc., or Illumina, filed a lawsuit (the ’831 lawsuit) against the Company in the United States District Court for the Northern District of California, alleging that the Company’s Panorama test infringes certain claims of U.S. Patent No. 9,493,831 (the ’831 patent) and seeking, among other relief, damages or other monetary relief including costs and pre- and post-judgment interest, treble damages, injunctive relief, attorneys’ fees and costs. In August 2018, the Company filed a counterclaim against Illumina, alleging that certain of Illumina’s NIPT tests infringe on the Company’s U.S. Patent No. 8,682,592 (the ’592 patent) and seeking, among other relief, damages or other monetary relief including costs and pre- and post-judgment interest, treble damages, injunctive relief, attorneys’ fees and costs (together with the ‘831 lawsuit, the “Illumina Litigation”). On June 13, 2019, Illumina filed a petition for *inter partes* review of the ’592 patent, which petition has been instituted. On May 8, 2020, the parties settled the Illumina Litigation pursuant to which all claims in the Illumina Litigation, including compulsory counterclaims, relating to NIPT and PGS/PGD activities occurring before the date of such settlement were resolved and dismissed. Such settlement does not impact the *inter partes* review of the ’592 patent, or a pending patent opposition proceeding against Illumina’s European Patent No. 3006573.

CareDx Litigation Matters.

On March 26, 2019, CareDx, Inc., or CareDx, filed suit against the Company in the United States District Court for the District of Delaware (“CareDx’s Patent Case”). The suit alleges that the Company infringed two patents, 9,845,497 and 8,703,652. The complaint seeks unspecified damages and injunctive relief. On May 16, 2019, the Company filed a motion to dismiss CareDx’s Patent Case for failure to state a claim, and a hearing on the motion took place on November 21, 2019. On March 23, 2020, CareDx additionally alleged in an amended complaint that the Company infringed U.S. Patent No. 10,329,607. On June 12, 2020, Natera filed a motion for early summary judgment of invalidity against all three of CareDx’s patent assertions. On July 9, 2020, CareDx filed its opposition to the Company’s motion.

In an action that has been consolidated with CareDx’s Patent Case, Natera has also alleged that CareDx infringes Natera’s U.S. Patent Nos. 10,526,658 and 10,597,724, seeking unspecified damages and injunctive relief.

In addition, on April 10, 2019, CareDx filed suit against the Company in the United States District Court for the District of Delaware, alleging false advertising, trademark disparagement, unfair competition, and unfair or deceptive trade practices based on statements describing studies that concern the Company’s technology and CareDx’s technology (“CareDx’s Advertising Case”). The complaint seeks unspecified damages and injunctive relief. On May 30, 2019, the Company filed a motion to dismiss the entirety of CareDx’s Advertising Case for failure to state a claim. On February 7, 2020, CareDx filed an amended complaint withdrawing its trademark disparagement claim. On February 18, 2020, the Company filed a counterclaim against CareDx in the United States District Court for the District of Delaware, alleging false advertising, unfair competition and deceptive trade practices and seeking unspecified damages and injunctive relief.

Other Litigation Matters.

On January 27, 2020, the Company filed suit against ArcherDX, Inc., or ArcherDX, in the United States District Court for the District of Delaware, alleging that certain ArcherDX DNA oncology products infringe Natera’s U.S. Patent No. 10,538,814. On April 15, 2020, Natera filed an amended complaint alleging additional ArcherDX DNA and RNA oncology products infringe Natera’s U.S. Patent Nos. 10,557,172; 10,597,708; and 10,590,482. The amended complaint seeks monetary damages and injunctive relief. On August 6, 2020, the Company filed an additional suit against ArcherDX in the United States District Court for the District of Delaware, alleging that certain ArcherDX DNA oncology products infringe Natera’s U.S. Patent No. 10,731,220 and seeking monetary damages and injunctive relief.

On June 17, 2020, the Company filed suit against Progenity, Inc., or Progenity, in the United States District Court for the Western District of Texas, alleging that Progenity’s NIPT test infringes Natera’s U.S. Patent Numbers 9,228,234; 9,424,392; 10,227,652; 10,240,202; 10,266,893; and 10,522,242 (the “Natera Patents”). The complaint seeks treble damages and injunctive relief. The Company filed a second suit against Progenity in the United States District Court for the Northern District of Texas on June 19, 2020, alleging that Progenity’s NIPT test infringes the Natera Patents, and

seeking treble damages and injunctive relief. On or about July 2, 2020, Progenity filed suit against the Company in the United States District Court for the Southern District of California, seeking declaratory judgment of non-infringement of the Natera Patents.

On or about June 1, 2020, a suit was filed against the Company in the United States District Court for the District of Delaware by Ravgen, Inc., alleging infringement of U.S. Patent Nos. 7,727,720 and 7,332,277. The complaint seeks monetary damages and injunctive relief.

On or about August 13, 2019, a suit was filed against the Company in the Circuit Court of Cook County, Illinois by a patient alleging claims relating to a discordant test result and seeking monetary damages.

On March 15, 2019, a purported class action lawsuit was filed against the Company in the United States District Court for the Northern District of California, alleging that the plaintiff received an unauthorized text message to her cellular telephone in violation of the Telephone Consumer Protection Act. Among other relief, the complaint seeks statutory and other damages, injunctive relief, attorneys' fees, and costs. On June 18, 2019, the Company filed a motion to dismiss, which was denied. An amended complaint was filed on April 23, 2020.

Director and Officer Indemnifications

As permitted under Delaware law, and as set forth in the Company's Certificate of Incorporation and its Bylaws, the Company indemnifies its directors, executive officers, other officers, employees and other agents for certain events or occurrences that may arise while in such capacity. The maximum potential amount of future payments the Company could be required to make under this indemnification is unlimited; however, the Company has insurance policies that may limit its exposure and may enable it to recover a portion of any future amounts paid. Assuming the applicability of coverage, the willingness of the insurer to assume coverage, and subject to certain retention, loss limits and other policy provisions, the Company believes any obligations under this indemnification would not be material, other than an initial $1.5 million for securities related claims and $0.3 million for commercial general liability claims. However, no assurances can be given that the covering insurers will not attempt to dispute the validity, applicability, or amount of coverage without expensive litigation against these insurers, in which case the Company may incur substantial liabilities as a result of these indemnification obligations.

Third-Party Payer Reimbursement Audits

From time to time, the Company receives recoupment requests from third-party payers for alleged overpayments. The Company disagrees with the contentions of pending requests and/or has recorded an estimated reserve for the alleged overpayments.

Contractual Commitments

The following table sets forth the material contractual commitments as of June 30, 2020 with a remaining term of at least one year:

Party	Commitments	Expiry Date
	(in thousands)	
Laboratory instruments supplier	$ 5,525	December-2021
Material supplier	11,220	May-2030
Application service providers	8,727	Jan-21 - Dec-24
Gene sequencing reagents and kits provider	473	April-2021
Software Development Provider	1,442	December-2024
Other material suppliers	8,841	Various
Total	$ 36,228	

9. Stock-Based Compensation

2015 Equity Incentive Plan

In June 2015, the Board adopted, and the Company's stockholders approved, the Company's 2015 Equity Incentive Plan (the "2015 Plan"), which, by its terms, took effect as of the Company's IPO on July 2, 2015. The 2015 Plan replaced the Company's 2007 Stock Plan (the "2007 Plan"). No further awards have been granted under the 2007 Plan after July 1, 2015. However, any remaining awards that were outstanding under the 2007 Plan will continue to be governed by the terms of that plan. The Company initially reserved 3,451,495 shares of its common stock for issuance under the 2015 Plan; in addition, the Company authorized the reservation of up to 9,890,310 shares of common stock to cover shares reserved but unissued under the 2007 Plan and shares subject to outstanding awards under the 2007 Plan that expire or lapse unexercised or shares issued under the 2007 Plan that are subsequently reacquired by the Company.

Performance-based Awards

The Company grants certain senior-level executives performance stock options and units which vest based on either market and time-based service conditions or performance and time-based service conditions, which are referred to herein as performance-based awards. The Company has assessed the performance-based award with the appropriate valuation method and has recognized the applicable stock-based compensation expense. The following table summarizes the performance-based and market-based awards as of June 30, 2020:

Period Granted	Options Granted	RSUs Granted	Options Vested	RSUs Vested	Milestone	Valuation Method
			(in thousands)			
Q1 2019	200	300	119	184	(1)	Monte-Carlo Simulation
Q2 2019	—	188	—	—	(2)	Fair Market Value
Q3 2019	—	50	—	25	(1)	Monte-Carlo Simulation
Q1 2020	150	300	—	—	(1)	Monte-Carlo Simulation
Q1 2020	—	436	—	—	(3)	Fair Market Value
Q1 2020	129	—	—	—	(3)	Black-Scholes-Merton
Q2 2020	—	21	—	—	(3)	Fair Market Value

(1) The awards will vest based on the achievement of certain values of the Company's common stock at multiple thresholds within certain periods and are contingent upon the completion of requisite service through the date of such vesting.

(2) The vesting of the awards will be triggered after the end of the achievement milestone, as measured by the Company.

(3) The awards will vest based on achievement of certain revenue target and are contingent upon the completion of requisite service through the date of such vesting.

The Company has recognized $3.8 million and $5.2 million in stock-based compensation for performance-based awards for the three and six months ended June 30, 2020, respectively. The Company has recognized $0.8 million and $0.8 million in stock-based compensation for performance-based awards for the three and six months ended June 30, 2019, respectively.

The fair value of performance-based awards with market conditions granted estimated using a Monte Carlo simulation model used the following inputs for the period ended June 30, 2020:

	June 30, 2020				
Risk-free interest rate	0.61	%	—	1.64	%
Expected dividend yield				0.00	%
Expected volatility	55	%	—	65	%
Expected term (years)	5.25		—	7.25	

Employee Stock Purchase Plan

There have not been any changes to the Company's 2015 Natera, Inc. Employee Stock Purchase Plan (the "ESPP") as disclosed in Form 10-K for the fiscal year ended December 31, 2019. The Company has made 893,548 shares available for issuance under the Plan, a number that is automatically increased by the least of (i) 1% of the total number of shares of common stock actually issued and outstanding on the last business day of the prior fiscal year, (ii) 880,000 shares of common stock (subject to certain adjustments pursuant to Subsection (c) below), or (iii) a number of shares of common stock determined by the Board.

The first offering period of 2020 started on November 1, 2019 and ended on April 30, 2020, and 97,247 shares were purchased in the six months ending June 30, 2020 for proceeds of $3.1 million.

Stock Options

The following table summarizes option activity for the three months ended June 30, 2020:

	Outstanding Options				
(in thousands, except for contractual life and exercise price)	Shares Available for Grant	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value
Balance at December 31, 2019	6,416	8,497	$ 10.39	6.88	$ 197,955
Additional shares authorized	3,120	—			
Options granted	(446)	446	$ 26.75		
Options exercised	—	(1,037)	$ 10.42		
Options forfeited/cancelled	84	(84)	$ 16.00		
RSUs granted	(4,670)	—			
RSUs forfeited/cancelled	210	—			
Balance at June 30, 2020	4,714	7,822	$ 11.26	6.55	$ 301,915
Exercisable at June 30, 2020		5,523	$ 5.77	8.84	$ 226,552
Vested and expected to vest at June 30, 2020		7,682	$ 11.16	6.52	$ 297,314

Restricted Stock Units

The following table summarizes restricted stock unit ("RSU") activity for the six months ended June 30, 2020:

(in thousands, except for grant date fair value)	Shares	Weighted-Average Grant Date Fair Value
Balance at December 31, 2019	2,404	$ 19.86
Granted	2,335	$ 27.89
Vested	(578)	$ 15.50
Cancelled/forfeited	(105)	$ 21.58
Balance at June 30, 2020	4,056	$ 24.10

Stock-Based Compensation Expense

Stock based compensation is related to stock options and RSUs granted to the Company's employees and 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 on a straight-line basis. No compensation cost is recognized when the requisite service has not been met and the awards are therefore forfeited.

Employee stock-based compensation expense was calculated based on awards ultimately expected to vest and has been reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods, if actual forfeitures differ from those estimates. Non-employee stock-based compensation expense was not adjusted for estimated forfeitures up until the occurrence of the actual forfeiture of the associated awards.

The following tables present the effect of employee and non-employee stock-based compensation expense on selected statements of operations line items for the three months ended June 30, 2020 and 2019.

	Three months ended June 30,					
	2020			2019		
	Employee	Non-Employee	Total	Employee	Non-Employee	Total
	(in thousands)					
Cost of revenues	$ 441	$ —	$ 441	$ 215	$ 10	$ 225
Research and development	2,631	282	2,913	1,264	—	1,264
Selling, general and administrative	8,527	76	8,603	4,226	89	4,315
Total	$ 11,599	$ 358	$ 11,957	$ 5,705	$ 99	$ 5,804

	Six months ended June 30,					
	2020			2019		
	Employee	Non-Employee	Total	Employee	Non-Employee	Total
	(in thousands)					
Cost of revenues	$ 755	$ —	$ 755	$ 383	$ 10	$ 393
Research and development	4,313	442	4,755	2,157	—	2,157
Selling, general and administrative	13,779	85	13,864	6,873	432	7,305
Total	$ 18,847	$ 527	$ 19,374	$ 9,413	$ 442	$ 9,855

As of June 30, 2020, approximately $95.7 million of unrecognized compensation expense, adjusted for estimated forfeitures, related to unvested option awards and RSUs will be recognized over a weighted-average period of approximately 2.9 years.

Valuation of Stock Option Grants to Employees and Non-employees

The Company utilizes Black-Scholes option pricing model when estimating the fair value of stock options. For the three and six months ended June 30, 2020, the following valuation assumptions were applied on both the employee and non-employee options. In the same period of the prior year, the valuation assumptions as follows were only used for stock options granted to employees.

	Three months ended June 30,		Six months ended June 30,	
	2020	2019	2020	2019
Expected term (years)	10.0	5.30 — 10.00	5.27 — 10.00	5.30 — 10.00
Expected volatility	53.94 %	42.71 % — 43.49 %	49.94 % — 58.53 %	42.53 % — 43.49 %
Expected dividend rate	0.00 %	0.00 %	0.00 %	0.00 %
Risk-free interest rate	0.71 %	1.78 % — 2.51 %	0.44 % — 1.70 %	1.78 % — 2.60 %

As of June 30, 2020, total options outstanding include 65,485 shares of option awards that were granted to non-employees, of which 20,262 shares are unvested. Stock-based compensation expense related to stock options granted to non-employees is recognized as the stock option is earned and the services are rendered. The Company believes that the estimated fair value of the stock options is more readily measurable than the fair value of the services rendered.

10. Debt

Credit Line Agreement

In September 2015, the Company entered into a credit line with UBS (the "Credit Line") providing for a $50.0 million revolving line of credit that can be drawn down in increments at any time. The Credit Line was amended in July 2017 and bears interest at 30-day LIBOR plus 1.10%. The Credit Line is secured by a first priority lien and security interest in the Company's money market and marketable securities held in its managed investment account with UBS. UBS has the right to demand full or partial payment of the Credit Line Obligations and terminate the Credit Line, in its discretion and without cause, at any time.

For the three months ended June 30, 2020 and 2019, the Company recorded interest expense on the Credit Line of $0.2 million and $0.5 million, respectively; and for the six months ended June 30, 2020 and 2019, interest expense on the Credit Line of $0.5 million and $0.9 million was recorded, respectively. Interest payments on the Credit Line were made within the same periods. As of June 30, 2020, remaining accrued interest was $1.1 million, and the total principal amount outstanding with accrued interest was $49.0 million.

2017 Term Loan

In August 2017, the Company entered into the 2017 Term Loan with OrbiMed, which has a maximum borrowing capacity of $100.0 million. On the closing date of August 8, 2017, the Company borrowed $75.0 million, with the remaining $25.0 million available to borrow at the Company's option at any time through December 31, 2018. Subsequently, the Company entered into several amendments and extended the expiration date until December 31, 2019 to draw the unused borrowing capacity of $50.0 million. After the amendments, the interest rate was equal to the sum of (i) 8.25% plus (ii) the higher of 1.00% or LIBOR, provided the Company draw the minimum capacity of $25.0 million. If the amount drawn is less than $25.0 million, the interest rate would remain at the sum of (i) 8.75% plus (ii) the higher of 1.00% or LIBOR. As a fee in consideration of extending the commitment to provide this option to draw until December 31, 2019, the Company issued an additional 25,000 shares of our common stock to OrbiMed. As of December 31, 2019, the Company did not exercise such option, and the right to draw the unused borrowing capacity has expired.

For the three months ended June 30, 2020 and 2019, the Company recorded interest expense for the 2017 Term Loan totaling $0.4 million and $2.2 million, respectively, and $2.5 million and $4.5 million for the six months ended June 30, 2020 and 2019, respectively, which also included the amortization of debt discount. Debt discount amortized as interest expense in the statements of operations and comprehensive loss for the three months ended June 30, 2020 was nominal and $0.1 million in the three months ended June 30, 2019. For the six months ended June 30, 2020 and 2019 debt discount amortized as interest expense was $0.1 million and $0.2 million respectively.

In April 2020, the Company used a portion of the net proceeds from the offering of the Convertible Notes to repay its obligations under its 2017 Term Loan with OrbiMed. The payment amount was $79.2 million, which includes the principal amount of $75.0 million, $3.8 million of early payment penalties, and $0.4 million in accrued interest. In accordance with ASC Topic 470, the Company accounted for this transaction as debt extinguishment. The difference between the reacquisition price of the debt and the net carrying amount of the debt on the extinguishment date is recorded

in loss on debt extinguishment in our condensed consolidated statements of operations and comprehensive loss. The loss on debt extinguishment of was computed as follows:

	June 30, 2020
	(in thousands)
Debt principal balance	$ 75,000
Plus: early payment penalties	3,757
Reacquisition price of debt	$ 78,757
Debt principal balance	$ 75,000
Less: unamortized debt discount	(2,091)
Net carrying amount at extinguishment date	$ 72,909
Loss on debt extinguishment	$ 5,848

Convertible Notes

In April 2020, the Company issued $287.5 million aggregate principal amount of Convertible Notes due 2027 in a private placement offering to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended. The Convertible Notes were issued pursuant to an indenture in April 2020 between the Company and an institution of fiduciary asset as trustee. The Convertible Notes issued in the offering include an option to purchase an additional $37.5 million aggregate principal amount to the initial purchasers, which was exercised in full on the initial issuance.

The Convertible Notes are senior, unsecured obligations of the Company and bear interest at a rate of 2.25% per year, payable in cash semi-annually in arrears in May and November of each year, beginning in November 2020. The Convertible Notes mature in May 2027, unless earlier converted, repurchased or redeemed in accordance with their terms. Upon conversion, the Convertible Notes are convertible into cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election.

The Company received net proceeds from the Convertible Notes of $278.3 million, after deducting the initial purchasers' discounts and debt issuance costs. The Company used approximately $79.2 million of the net proceeds from the Convertible Notes offering to repay its obligations under the 2017 Term Loan with OrbiMed.

The holders of the Convertible Notes may convert all or a portion of their Convertible Notes at their option at any time prior to the close of business on the business day starting in February 2027 in multiples of $1,000 principal amount, under any the following circumstances:

- During any fiscal quarter commencing after September 30, 2020 (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% of the conversion price on each applicable trading day.
- During the five business day period after any five consecutive trading day period in which the trading price per $1,000 principal amount of Convertible Notes for each trading day of that five-day consecutive trading period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day.
- If the Company calls any or all of the Convertible Notes for redemption at any time prior to the close of business on the second business day prior to the redemption date.
- Upon the occurrence of certain distributions.
- Upon the occurrence of specified corporate transactions.

As of June 30, 2020, none of the above circumstances had occurred, and as such, the Convertible Notes were not convertible. The value of Convertible Notes, if-converted, exceeds its principal amount by $39.8 million as of June 30, 2020. Since the Company is in a net loss position in the periods presented, the shares which would be issued upon conversion of the Converted Notes are excluded from the net loss per share calculation as it would have an antidilutive effect.

The Convertible Notes are convertible into shares of the Company's common stock, par value $0.001 per share, at an initial conversion rate of 25.7785 shares of common stock per $1,000 principal amount of the Convertible Notes, which is equivalent to an initial conversion price of approximately $38.79 per share of common stock, convertible to 7,411,704 shares of common stock. The conversion rate and corresponding conversion price are subject to adjustment upon the occurrence of certain events but will not be adjusted for any accrued or unpaid interest. The holders of the Convertible Notes who redeem their Convertible Notes in connection with a make-whole fundamental change are, under certain circumstances, entitled to an increase in the conversion rate. Additionally, in the event of a fundamental change, the holders of the Convertible Notes may require the Company to repurchase for cash all or a portion of their Convertible Notes at a price equal to 100% of the principal amount, plus any accrued and unpaid interest.

The Company may not redeem the Convertible Notes prior to May 2024, and no sinking fund is provided for the Convertible Notes. The Company may redeem for cash all or any portion of the Convertible Notes, at the Company's option, on or after May 2024, if the last reported sale price of the Company's common stock has been at least 130% of the conversion price then in effect for at least 20 trading days during any 30 consecutive trading day period ending on the trading day immediately preceding the date on which the Company provides notice of redemption. The redemption price will be equal to 100% of the principal amount of the Convertible Notes to be redeemed plus accrued and unpaid interest.
The Convertible Notes are accounted for in accordance with ASC 470-20, Debt with Conversion and Other Options, as the Convertible Notes may be settled entirely or partially in cash upon conversion. The Company separately accounted for the liability component and equity component of the Convertible Notes by allocating the debt proceeds between the 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. The Company used a discounted cash flow method and applied the average annual market yield of 7.832% as an input to measure its fair value. The allocation was performed in a manner that reflected the Company's non-convertible debt borrowing rate for similar debt. The carrying amount of the equity component is determined by deducting the fair value of the liability component from the initial debt proceeds. The fair value of liability component of the Convertible Notes on the date of issuance was $201.9 million, and accordingly, the remaining proceeds of $85.6 million are allocated to the equity component on the date of issuance. The carrying value of the liability component of the Convertible Notes is classified as long-term debt, and the equity component is classified as permanent equity in the Company's condensed consolidated balance sheet as of June 30, 2020.

After allocating the proceeds of the debt and equity components, the Company further allocated $9.2 million initial purchasers' debt discount and debt issuance cost of $8.6 million and $0.6 million, respectively. The debt issuance costs primarily consisted of legal, accounting, and other professional fees. These costs were allocated to the liability and equity components based on the allocation of the proceeds as follows:

	June 30, 2020		
	(in thousands)		
	Amount	**Equity Component**	**Debt Component**
Debt Discount	$ 8,625	$ 2,568	$ 6,057
Debt Issuance Cost	558	166	392
Total	$ 9,183	$ 2,734	$ 6,449

The portion allocated to the liability component is amortized to interest expense using the effective interest method over the expected life of the Convertible Notes or approximately its seven-year term. The effective interest rate on the liability component of the Convertible Notes for the period from the date of issuance through May 2027 is 8.27%, which remains unchanged from the date of issuance.

The outstanding Convertible Notes balances as of June 30, 2020, are summarized in the following table:

	June 30, 2020
	(in thousands)
Liability Component	
Outstanding Principal	$ 287,500
Unamortized debt discount and debt issuance cost	(90,024)
Net carrying amount	$ 197,476
Equity component, net of issuance costs	$ 82,873

As of June 30, 2020, the estimated fair value of the liability component of our Convertible Notes was $201.9 million and was based upon observable (Level II) inputs including pricing information from recent trades of the Convertible Notes. The estimated fair value of the equity component on the date of issuance is $85.6 million, resulting in a total fair value of $287.5 million for the Convertible Note at issuance.

The unamortized debt discount and issuance cost is comprised of $83.7 million of debt discount resulting from allocating proceeds to the equity component, $5.9 million of debt discount from the liability component representing the difference between the net proceeds received upon issuance of debt and the amount repayable at its maturity, and $0.4 million of debt issuance costs.

The following table presents total interest expense recognized related to the Convertible Notes during the three and six months ended June 30, 2020:

	June 30, 2020
	(in thousands)
Cash interest expense	
Contractual interest expense	$ 1,348
Non-cash interest expense	
Amortization of debt discount and debt issuance cost	2,030
Total interest expense	$ 3,378

11. Income Taxes

In response to the COVID-19 pandemic, the Coronavirus Aid, Relief and Economic Security Act (CARES Act) was signed into law in March 2020. The CARES Act includes modifications for net operating loss carryovers and carrybacks, limitations of business interest expense, immediate refund of alternative minimum tax (AMT) credit carryovers as well as a technical correction to the Tax Cuts and Jobs Act of 2017, for qualified improvement property. As of June 30, 2020, the Company expects that these provisions will not have a material impact as the Company has no net operating losses or AMT credits that would fall under these provisions and does not expect interest expense to be deductible due to current and historical losses.

During the three and six months ended June 30, 2020, the Company recorded total income tax expense of approximately $15,000 and $38,000, respectively. During the three and six months ended June 30, 2019, the Company recorded total income tax expense of approximately $1.9 million and $2.0 million, respectively. The income tax expense is primarily attributable to foreign income tax expenses resulting from testing to clinics and licenses cloud-based software and intellectual property, that are based in a foreign country. There was no state income tax expense recorded for the three and six months ended June 30, 2020. Due to the Company's history of cumulative operating losses, the Company concluded that, after considering all the available objective evidence, it is not more likely than not that all of the Company's net deferred tax assets will be realized. Accordingly, all of the Company's deferred tax assets, which includes net operating loss or NOL carryforwards and tax credits related primarily to research and development, continue to be subjected to a

valuation allowance as of June 30, 2020. The Company will continue to maintain a full valuation allowance until there is sufficient evidence to support recoverability of its deferred tax assets.

As described in Note 10, *Debt*, the Company accounted for the issuance of the Convertible Notes by separating the Convertible Notes into separate liability and equity components. The portion of the proceeds allocated to equity created a basis difference at issuance and resulted in a deferred tax liability. The debt issuance costs attributable to the equity component are deductible for tax and represent a deferred tax asset as of the issuance date. However, since the Company has a full valuation allowance, both the deferred tax liability related to the equity component and the deferred tax asset related to the debt issuance costs had no impact to income tax expense in the three and six months ended June 30, 2020.

The Company had $9.3 million and $8.6 million in unrecognized tax benefits at June 30, 2020 and December 31, 2019, respectively. The reversal of the uncertain tax benefits would not affect the effective tax rate to the extent that the Company continues to maintain a full valuation allowance against its deferred tax assets. Unrecognized tax benefits may change during the next twelve months for items that arise in the ordinary course of business.

Interest and/or penalties related to income tax matters are recognized as a component of income tax expense. As of June 30, 2020, there were no accrued interest and penalties related to uncertain tax positions.

12. Net Loss per Share

Basic net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted-average number of common shares outstanding for the period, excluding shares subject to repurchase and without consideration of potentially dilutive securities. Diluted net loss per share is computed by giving effect to all potentially dilutive common shares outstanding for the period. For purposes of this computation, outstanding common stock options, and restricted stock units are considered to be common share equivalents. Common share equivalents are excluded from the computation in periods in which they have an anti-dilutive effect, unless the consideration of any one of them gives a dilutive effect.

The following table provides the basic and diluted net loss per share computations for the three and six months ended June 30, 2020 and 2019.

	Three months ended June 30,		Six months ended June 30,	
(in thousands, except per share data)	2020	2019	2020	2019
Numerator:				
Net loss, basic and diluted	$ (59,637)	$ (32,416)	$ (95,009)	$ (66,507)
Denominator:				
Weighted-average number of shares used in computing net loss per share, basic and diluted	79,069	68,224	78,681	65,542
Net loss per share, basic and diluted	$ (0.75)	$ (0.48)	$ (1.21)	$ (1.01)

The following table shows total outstanding potentially dilutive shares excluded from the computation of diluted loss per share as their effect would be anti-dilutive, as of June 30, 2020 and 2019:

	June 30,	
	2020	2019
(in thousands)		
Options to purchase common stock	7,822	9,406
Restricted stock units	4,051	2,331
Employee stock purchase plan	51	54
Convertible Notes	7,411	—
Total	19,335	11,791

ITEM 2. 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 in conjunction with our unaudited condensed consolidated financial statements and related notes included in Part I, Item 1 of this report.

Overview

We are a growing diagnostics company with proprietary molecular and bioinformatics technology that we deploy to change the management of genetic disease worldwide. Our goal is to develop and commercialize non- or minimally-invasive tests to evaluate risk for a wide range of genetic conditions, such as Down syndrome, the results of which can enable early detection, diagnosis and treatment. Our technology has been proven clinically and commercially in the prenatal testing space. We have begun translating this success into other areas, and we are leveraging our core expertise to develop products for oncology diagnostic applications as well as transplant rejection and organ health. We seek to enable even wider adoption of our technology through our global cloud-based distribution model. In addition to our direct sales force in the United States, we have a global network of over 100 laboratory and distribution partners, including many of the largest international laboratories.

We offer a comprehensive suite of thirteen products in reproductive health and prenatal testing – thirteen molecular diagnostic tests and a newborn stem cell banking offering to complement our prenatal testing portfolio – as well as our offerings in oncology and organ health, and our Constellation cloud-based platform. We generate a majority of our revenues from the sale of Panorama, our non-invasive prenatal test, "NIPT," as well as our Horizon Carrier Screening ("HCS") tests. Commercialization of our products consisted of Spectrum Preimplantation Genetic Screening in 2009 and Spectrum Preimplantation Genetic Diagnosis in 2010; Anora Products of Conception ("POC") in 2010; our non-invasive prenatal paternity test in 2011; Horizon Carrier Screening in 2012; Panorama NIPT in 2013; our microdeletions panel for Panorama in 2014; Constellation in 2015; Vistara, Signatera (RUO) and Panorama for twin pregnancies in 2017; and full-scale commercial launches of the CLIA version of Signatera and of Prospera in 2020.

In the quarter ended June 30, 2020, we processed most of our tests in our laboratory certified under the Clinical Laboratory Improvement Amendments of 1988 ("CLIA") in San Carlos, California. A portion of our HCS, Vistara, and Signatera testing is performed by third-party laboratories. Our customers include independent laboratories, national and regional reference laboratories, medical centers and physician practices for our screening tests; and research laboratories and pharmaceutical companies for our Signatera technology. We market and sell our prenatal screening tests both through our direct sales force and through our laboratory distribution partners. We bill clinics, laboratory distribution partners, patients and insurance payers for the tests we perform. In cases where we bill laboratory distribution partners, our partners in turn bill clinics, patients and insurers. The majority of our revenue comes from insurers which we have in-network contracts reimburse for NIPT procedures based on positive coverage determinations, which means that the insurer has determined that NIPT in general is medically necessary for this category of patient. In the United States, the majority of insurance providers provide positive NIPT coverage.

The principal focus of our commercial operations currently is to distribute molecular diagnostic tests through both our direct sales force and laboratory distribution partners, and our Constellation licensees under our cloud-based distribution model. The number of tests that we accession is a key indicator that we use to assess our business. A test is accessioned when we receive the test at our laboratory, the relevant information about the test is entered into our computer system and the test sample is routed into the appropriate sample flow. This number is a subset of the number of tests that we process, which includes tests distributed through our Constellation licensees. The number of tests that we process is a key metric as it tracks overall volume growth, particularly as our laboratory partners may transition from sending samples to our laboratory to our cloud-based distribution model. During the six months ended June 30, 2020, we processed 469,500 tests, comprised of approximately 444,000 tests accessioned in our laboratory, compared to approximately 394,700 tests processed during the six months ended June 30, 2019, comprised of approximately 368,300 tests accessioned in our laboratory. This increase in volume represents continuous commercial growth of Panorama and HCS, both as tests performed in our laboratory as well as through our Constellation software platform.

The percent of our revenues attributable to our U.S. direct sales force for the six months ended June 30, 2020 was 86%, an increase from 82% for the six months ended June 30, 2019. The percent of our revenues attributable to U.S. laboratory distribution partners for the six months ended June 30, 2020 was 7%, an increase from 5% in the same period in the prior year. Our ability to increase our revenues and gross profit will depend on our ability to further penetrate the U.S. market with our direct sales force. The percent of our revenues attributable to international laboratory distribution partners and other international sales for the six months ended June 30, 2020 was 7%, down from 13% for the six months ended June 30, 2019, due primarily to the increase in US direct sales as a percentage of revenue.

In addition to distributing molecular diagnostic tests to be performed at our laboratory, either directly or through our laboratory distribution partners, we also establish licensing arrangements with laboratories under our cloud-based distribution model, whereby our laboratory licensees run the molecular workflows themselves and then access our bioinformatics algorithms through our cloud-based Constellation software. This cloud-based distribution model results in lower revenues and gross profit per test than in cases where we process a test ourselves; however, because we don't incur the costs of processing the tests, our costs per test under this model are also lower. We began entering into these licensing arrangements starting in the fourth quarter of 2015.

For the six months ended June 30, 2020, total revenues were $180.5 million, compared to $141.2 million in the six months ended June 30, 2019. Revenues generated from our genetic testing accounted for $167.5 million or 93% of total revenues for the six months ended June 30, 2020; $128.5 million or 91% of total revenues for the six months ended June 30, 2019. For the periods ended June 30, 2020 and 2019, there were no customers exceeding 10% of the total revenues on an individual basis. Revenues from customers outside the United States were $13.0 million, representing 7% of total revenues for the six months ended June 30, 2020. For the six months ended June 30, 2019, revenues from customers outside the United States were $18.5 million, representing approximately 13% total revenues. Most of our revenues have been denominated in U.S. dollars but we began to generate revenue in foreign currency in 2015, primarily denominated in Euros and Singapore Dollars.

Our net loss for the six months ended June 30, 2020 and 2019, were $95.0 million and $66.5 million, respectively. This included non-cash stock compensation expense of $19.4 million and $9.9 million for the six months ended June 30, 2020 and 2019, respectively. As of June 30, 2020, we had an accumulated deficit of $794.6 million.

COVID-19 Impact

The COVID-19 pandemic continues to present a global public health and economic challenge and is affecting our business operations and the U.S. and other major economies and financial markets. The spread of COVID-19 has caused us to modify our business practices (including employee travel, mandating that all non-essential personnel work from home, temporary closures of our offices, and cancellation of physical participation in sales activities, meetings, events and conferences), and we may take further actions as may be required by government authorities or that we determine are in the best interests of our employees, customers and business partners. Such actions could also impact our ability to fully integrate businesses we may acquire in the future. There is no certainty that such actions will be sufficient to mitigate the risks posed by the virus or otherwise be satisfactory to government authorities. If significant portions of our workforce, and particularly our laboratory staff, are unable to work effectively, including due to illness, quarantines, social distancing, government actions or other restrictions in connection with the COVID-19 pandemic, our operations will be impacted.

The extent to which the COVID-19 pandemic impacts our business, results of operations and financial condition will depend on future developments, which are highly uncertain and cannot be predicted, including, but not limited to, the duration and spread of the pandemic, its severity, the actions to contain the virus or address its impact, and how quickly and to what extent normal economic and operating activities can resume. The COVID-19 pandemic could limit the ability of our customers, suppliers and business partners to perform under their contracts with us, including third-party payers' ability to make timely payments to us during and following the pandemic. We may also experience a shortage of laboratory supplies and reagents or a suspension of services from other laboratories or third parties. We have also become increasingly dependent on growing and maintaining a network of mobile phlebotomy specialists who can provide testing capabilities, as many consumers are unable to visit clinics, hospitals or other testing facilities as a result of the COVID-19 pandemic. Even after the COVID-19 pandemic has subsided, we may continue to experience an adverse impact to our business because of its global economic impact, including any recession that has occurred or may occur in the future.

Specifically, difficult macroeconomic conditions as a result of COVID-19, such as decreases in per capita income and level of disposable income, increased and prolonged unemployment, a decline in consumer confidence, as well as limited or significantly reduced points of access of our products, could have a material adverse effect on the demand for some of our products, such as our products targeted for the IVF market. Decreased demand for our tests, particularly in the United States, could negatively affect our overall financial performance. A significant portion of our revenue is concentrated in the United States, where the impact of COVID-19 has been significant, and the potential decrease in demand for our tests could have a disproportionately negative impact on our business and financial results.

Our test volumes in the second quarter of 2020 remained relatively flat from the previous quarter, however, test volumes may by adversely impacted by the COVID-19 pandemic. The average selling price of our genetic tests in second quarter of 2020 decreased slightly compared to the prior quarter which resulted in a negative impact to the results of operations. We cannot predict volatility of the volumes and selling process of our genetic tests. While it is too early to predict the full impact COVID-19 will have on our business, we expect it to potentially have an adverse impact on our financial results for at least the next quarter and potentially the full year, depending upon the timing of any lifting of COVID-19 limitations on the U.S. healthcare system and general economic recovery. In response to the COVID-19 pandemic, we have implemented measures to protect the health of our employees and to support the functionality of our laboratories. We will continue to support and incur expenditures towards COVID-19 prevention and employee safety.

Components of the Results of Operations

Revenues

We generate revenues from the sale of our genetic tests, primarily from the sale of our Panorama and HCS tests. Our two primary distribution channels are our direct sales force and our laboratory partners. In cases where we promote our tests through our direct sales force, we generally bill directly to a patient, clinic or insurance carrier, or a combination of the insurance carrier and patient for the fees.

Sales of Panorama, HCS, Vistara, Anora, PGS, PGD, Signatera CLIA, and Prospera tests are recorded as product revenues. Revenues recognized from tests processed through our Constellation software platform, and revenue recognized from the Qiagen, BGI Genomics, and Foundation Medicine agreements (collectively the "Strategic Partnership Agreements"), and Signatera research use only ("RUO") offering are reported in licensing and other revenues.

In cases where we sell our tests through our laboratory partners, the majority of our laboratory partners bill the patient, clinic or insurance carrier for the performance of our tests, and we are entitled to either a fixed price per test or a percentage of their collections. We also recognize licensing revenues through the licensing and the provisioning of services to support the use of our proprietary technology by licensees under our cloud-based distribution model. As of June 30, 2020, we are recognizing revenues on 15 licensing and service arrangements with laboratories under our cloud-based distribution model from which we recognized revenue from in the six months ended June 30, 2020.

Our ability to increase our revenues will depend on our ability to further penetrate the domestic and international markets and, in particular, generate sales through our direct sales force, develop and commercialize additional tests, obtain reimbursement from additional third-party payers and increase our reimbursement rate for tests performed. In particular, our financial performance depends on reimbursement for Panorama in the average risk population and for microdeletions. The use of Panorama in the average risk population is not yet broadly reimbursed, although many third-party payers have begun to reimburse for this. Many third-party payers do not currently reimburse for microdeletions screening, as further discussed in the risk factor entitled "*Reimbursement and Regulatory Risks Related to Our Business— If we are unable to expand or maintain third-party payer coverage and reimbursement for Panorama and our other tests, or if we are required to refund any reimbursements already received, our revenues and results of operations would be adversely affected*," in part because there is currently limited published data on the performance of microdeletions screening tests. A new current procedure terminology ("CPT") code for microdeletions went into effect beginning January 1, 2017. We have experienced low average reimbursement rates thus far for microdeletions testing under this new code, and we expect that this new code will cause, at least in the near term, our microdeletions reimbursement to remain low, due to third-party payers declining to reimburse and through reduced reimbursement under the new code. This has had, and we expect it will continue to have, an adverse impact on our revenues. In addition, a new CPT code for expanded carrier screening went into effect beginning

January 1, 2019, and has had, and may continue to have, an adverse effect on our reimbursement rates for our broader Horizon carrier screening panel for which we previously primarily received reimbursement on a per-condition basis, as those tests may be reimbursed as a combined single panel instead of as multiple individual tests. Because our revenues from Horizon continue to represent an increasing proportion of our overall revenues, a decline in our reimbursement rates for, and therefore our average selling price of, Horizon, could result in a decline in our overall revenue.

Our financial performance has also been impacted by our larger in-network coverage with third-party payers, which we believe is crucial to our growth and long-term success. However, because the negotiated fees under our contracts with third-party payers are typically lower than the list price of our tests, as we enter into additional in-network contracts with insurance providers, our average reimbursement per test may decrease as compared to out-of-network contracts. While we expect the reduction in average reimbursement per test from in-network pricing to reduce our revenues and gross margins in the near term, in-network pricing is more predictable than out-of-network pricing, and we intend to continue to mitigate the impact by driving more business from our most profitable accounts. In addition, our strategy to offer our tests to laboratory licensees via our Constellation cloud-based software platform may also cause our revenues to decrease because we do not process the tests and perform the molecular biology analysis in our own laboratory under this model, and therefore are not able to charge as high an amount, and as a result realize lower revenues per test than when we perform the entire test ourselves. However, cost of licensing and other revenues for the Constellation software platform are relatively low, and therefore, its associated gross margin is higher.

Cost of Product Revenues

The components of our cost of product revenues are material and service costs, impairment charges associated with testing equipment, personnel costs, including stock-based compensation expense, equipment and infrastructure expenses associated with testing samples, electronic medical records, order and delivery systems, shipping charges to transport samples, costs incurred from outsourcing our tests to third parties, and allocated overhead such as rent, information technology costs, equipment depreciation and utilities. Costs associated with performing tests are recorded when the test is accessioned. We expect cost of product revenues in absolute dollars to increase as the number of tests we perform increases.

However, having rapidly achieved scale, we have increased our focus on more efficient use of labor, automation, and DNA sequencing. For example, we updated the molecular and bioinformatics process for Panorama to further reduce the sequencing reagents, test steps and associated labor costs required to obtain a test result, while increasing the accuracy of the test to allow it to run with lower fetal fraction input. These improvements also reduced the frequency of the need to require blood redraws from the patient.

Cost of Licensing and Other Revenues

The components of our cost of licensing and other revenues are material costs associated with test kits sold to Constellation clients, development and support services relating to our Strategic Partnership Agreements, and costs associated with specimens and Whole Exome Sequencing (“WES”) from both in-house and by third party providers, as well as labor costs, relating to our Signatera (RUO) offering.

We currently have 15 revenue generating licensing and service agreements with laboratories and continue to have active discussions with many other potential licensees under our Constellation distribution model. We consider our cost of licensing and other revenues for the Constellation software platform to be relatively low, and therefore we expect its associated gross margin is higher. We expect our cost of licensing will increase in relation to volume growth.

Critical Accounting Policies

Our management’s discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenue generated, and expenses incurred during the reporting periods. Our estimates are based on our

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 may differ from these estimates under different assumptions or conditions. We consider our critical accounting policies and estimates to be revenue recognition, leases, inventory, fair value measurements including the valuation of 2.25% Convertible Senior Notes due 2027 (the "Convertible Notes"), and stock-based compensation.

Recent Accounting Pronouncements

There are no recent accounting pronouncements that have a material impact to our condensed consolidated financial statements. See Note 2, *Summary of Significant Accounting Policies*, of Item 1, *Financial* Statement, for recently adopted accounting pronouncements.

Revenue Recognition

We recognize revenues when, or as, performance obligations in the contracts are satisfied, in the amount reflecting the expected consideration to be received from the goods or services transferred to the customers.

Product Revenues

Product revenues are derived from contracts with insurance carriers, laboratory partners and patients in connection with sales of prenatal genetic tests. The majority of our revenues are derived from Panorama NIPT, HCS, and to a lesser extent, other genetic tests including Signatera CLIA and Prospera. We enter into contracts with insurance carriers with primarily payment terms related to tests provided to the patients who have health insurance coverage. Insurance carriers are considered to be third-party payers on behalf of the patients, and the patients are considered as the customers who receive genetic test services. Tests may be billed to insurance carriers, patients, or a combination of insurance carriers and patients. Further, we sell tests to a number of domestic and international laboratory partners and identify the laboratory partners as customers provided that there is a test services agreement between us and them.

Licensing and Other Revenues

We recognize licensing revenues from our Constellation cloud-based distribution model, pursuant to which we grant licenses to laboratories to access our proprietary bioinformatics algorithms through our cloud-based software to analyze the results of molecular workflows that such licensees perform in their laboratories. In addition, the royalties we receive from our arrangement with a prenatal paternity licensee are recognized Constellation revenues.

We also recognize revenues from our Signatera (RUO) offering, which is for research use only to cancer researchers and biopharmaceutical companies. We enter into agreements with pharmaceutical companies to utilize our Signatera tests typically to study new cancer treatments or to validate the outcomes of clinical trials for which the pharmaceutical companies are identified as customers.

We also recognize revenues from our Strategic Partnership Agreements. The performance obligations are unique in each agreement and would typically require the license of intellectual property, development services, support services, and future test work. We also record revenues from the sale of IVD kits in licensing and other revenues.

Results of Operations

Comparison of the three months ended June 30, 2020 and 2019

	Three Months Ended June 30,		Change	
	2020	2019	Amount	Percent
(in thousands except percentages)				
Revenues				
Product revenues	$ 80,414	$ 65,099	$ 15,315	23.5 %
Licensing and other revenues	6,058	9,256	(3,198)	(34.6)
Total revenues	86,472	74,355	12,117	16.3
Cost and expenses				
Cost of product revenues	42,731	41,382	1,349	3.3
Cost of licensing and other revenues	4,208	2,443	1,765	72.2
Research and development	23,005	12,124	10,881	89.7
Selling, general and administrative	68,188	47,042	21,146	45.0
Total cost and expenses	138,132	102,991	35,141	34.1
Loss from operations	(51,660)	(28,636)	(23,024)	80.4
Interest expense	(4,038)	(2,721)	(1,317)	48.4
Interest and other income, net	1,924	836	1,088	130.1
Loss on debt extinguishment	(5,848)	—	(5,848)	100.0
Loss before income taxes	(59,622)	(30,521)	(29,101)	95.3
Income tax expense	(15)	(1,895)	1,880	(99.2)
Net loss	$ (59,637)	$ (32,416)	$ (27,221)	84.0 %

Revenues

Total revenues are comprised of product revenues, which are primarily driven by sales of our Panorama and HCS tests, and licensing and other revenues, which primarily includes development licensing revenue, licensing of our Constellation software to our licensees, and revenues from our Signatera (RUO) offering. Total revenues increased by $12.1 million, or 16.3%, when compared to the three months ended June 30, 2019.

We derive our revenues from tests based on units reported to customers—tests delivered with a result. All reported units are either accessioned in our laboratory or processed outside of our laboratory. As noted in "Overview," the number of tests that we process is a key metric as it tracks overall volume growth. During the three months ended June 30, 2020, total reported units were approximately 220,100, comprised of approximately 208,400 tests reported in our laboratory. Comparatively, during the three months ended June 30, 2019, total reported units were approximately 187,600, comprised of approximately 174,800 tests reported in our laboratory.

Product Revenues

During the three months ended June 30, 2020, product revenues increased by $15.3 million, or 23.5% compared to the three months ended June 30, 2019, as a result of the continued revenue growth from test volumes.

Licensing and Other Revenues

Licensing and other revenues decreased by $3.2 million, or 34.6%, during the three months ended June 30, 2020 when compared to the three months ended June 30, 2019. The decrease in revenue was primarily due to a decline in revenues recognized from our Strategic Partnership Agreements of approximately $4.3 million. In addition, we recognized $2.1 million revenues from the Evercord offering during the three months ended June 30, 2019 while no revenues were recognized during the three months ended June 30, 2020. The decrease in revenue was offset by a $3.1 million increase in revenues from an oncology product offering.

Cost of Product Revenues

During the three months ended June 30, 2020, cost of product revenues slightly increased compared to the three months ended June 30, 2019 by approximately $1.4 million, or 3.3% primarily due to labor and higher overhead costs of approximately $3.9 million driven by the increase in accessioned cases of $3.1 million and $0.8 million of COVID-19 related costs (e.g., virus preventative supplies, hazard pay, and salary increases for essential workers). Further, we recorded higher costs related to inventory consumption of $2.3 million also driven by the increase in accessioned cases, which was partially offset by a net decrease of $4.7 million of specimen fees.

Cost of Licensing and Other Revenues

Cost of licensing and other revenues for the three months ended June 30, 2020, when compared to the three months ended June 30, 2019, increased by $1.8 million, or 72.2%. During the three months ended June 30, 2020, the increase in licensing and other costs was primarily due to increases in costs to satisfy performance obligations for our Signatera (RUO) offering concurrently with the increase in Signatera (RUO) revenues and development costs for our Strategic Partnership Agreements of $3.3 million, partially offset by decreases of $1.5 million in cost related to the Evercord offering as we no longer offer this service starting in the third quarter of 2019.

Research and Development

Research and development expenses during the three months ended June 30, 2020 increased by $10.9 million, or 89.7%, when compared to the three months ended June 30, 2019. The increase was primarily driven by salary from headcount growth and consulting related expenditures of $8.4 million, clinical studies related our new product offerings of $1.8 million, and $0.7 million in corporate expenses including overhead, depreciation, and additional research and development workflow costs for the Austin, Texas laboratory facility.

Selling, General and Administrative

Selling, general and administrative expenses increased by $21.1 million, or 45%, in the three months ended June 30, 2020 compared to the three months ended June 30, 2019. The increase in selling, general and administrative expenses was primarily attributable to higher salaries and related expenses of $13.0 million from headcount growth as we expand our product offering, $4.2 million from increased stock-based compensation, $3.5 million of higher corporate and other expense associated with our third-party billing and collection vendors, equipment for remote work and supplies due to the COVID-19 pandemic, $1.5 million from higher outside service costs in connection with domestic and international consultants, audit and legal fees, and $0.6 million from higher tradeshow expenses. These increases were offset by a decrease of $1.7 million of travel related costs due to restrictions from the COVID-19 pandemic.

Loss on Debt Extinguishment

The loss on debt extinguishment of $5.8 million was a result of the repayment of the total outstanding principal and interest under the 2017 Term Loan with Orbimed in the second quarter of 2020. Refer to note 10, *Debt*, in Item 1, *Financial Statements*, for further details.

Interest Expense

Interest expense increased by $1.3 million, or 48.4%, in the three months ended June 30, 2020 compared to the same period in the prior year. The increase was primarily due to the issuance of the Convertible Notes in April 2020 with an outstanding principal balance of $287.5 million at a 2.25% interest rate (refer to note 10, *Debt*, in Item 1, *Financial Statements*, for details).

Interest and Other Income

Interest and other income for the three months ended June 30, 2020 increased $1.1 million compared to the same period in the prior year, primarily due to additional interest income from larger cash, cash equivalent and investments balances of $0.4 million, sublease income of $0.5 million, and other income of $0.2 million.

Comparison of the six months ended June 30, 2020 and 2019

	Six months ended June 30,		Change	
	2020	2019	Amount	Percent
(in thousands except percentages)				
Revenues				
Product revenues	$ 167,460	$ 128,463	$ 38,997	30.4 %
Licensing and other revenues	13,024	12,716	308	2.4
Total revenues	180,484	141,179	39,305	27.8
Cost and expenses				
Cost of product revenues	84,251	82,987	1,264	1.5
Cost of licensing and other revenues	7,666	4,141	3,525	85.1
Research and development	41,230	23,559	17,671	75.0
Selling, general and administrative	133,869	90,874	42,995	47.3
Total cost and expenses	267,016	201,561	65,455	32.5
Loss from operations	(86,532)	(60,382)	(26,150)	43.3
Interest expense	(6,502)	(5,445)	(1,057)	19.4
Interest and other income, net	3,911	1,289	2,622	203.4
Loss on debt extinguishment	(5,848)	—	(5,848)	100.0
Loss before income taxes	(94,971)	(64,538)	(30,433)	47.2
Income tax expense	(38)	(1,969)	1,931	(98.1)
Net loss	$ (95,009)	$ (66,507)	$ (28,502)	42.9 %

Revenues

Total revenues are comprised of product revenues, which are primarily driven by sales of our Panorama and HCS tests, and licensing and other revenues, which primarily includes development licensing revenue, licensing of our Constellation software to our licensees and revenues from our Signatera (RUO) offering. Total revenues increased by $39.3 million, or 28%, when compared to the six months ended June 30, 2019.

We derive our revenues from tests based on units reported to customers—tests delivered with a result. All reported units are either accessioned in our laboratory or processed outside of our laboratory. As noted in "Overview," the number of tests that we process is a key metric as it tracks overall volume growth. During the six months ended June 30, 2020, total reported units were approximately 441,500, comprised of approximately 417,600 tests reported in our laboratory. Comparatively, during the six months ended June 30, 2019, total reported units were approximately 373,400, comprised of approximately 348,200 tests reported in our laboratory.

Product Revenues

During the six months ended June 30, 2020, product revenues increased by $39.0 million, or 30.4% compared to the six months ended June 30, 2019, as a result of the continued revenue growth from test volumes.

Licensing and Other Revenues

Licensing and other revenues increased by $0.3 million, or 2.4%, during the six months ended June 30, 2020 when compared to the six months ended June 30, 2019. The increase in revenues was due to $5.0 million from our oncology

product offering. This was partially offset by a decrease of $3.6 million from the Evercord offering due to the sale of this business in the third quarter of 2019 and $1.3 million from our Strategic Partnership Agreements.

Cost of Product Revenues

During the six months ended June 30, 2020, cost of product revenues increased slightly by $1.3 million or 1.5% when compared to the six months ended June 30, 2019, primarily due to labor and higher overhead costs of approximately $7.2 million driven by the increase in accessioned cases and our HCS automation workflow of $6.2 million and $1.0 million of COVID-19 related costs (e.g., virus preventative supplies, hazard pay, and salary increases for essential workers). Further, we recorded higher costs related to inventory consumption of $3.6 million also driven by the increase in accessioned cases, which was partially offset by a net decrease of $8.9 million in specimen fees and $0.7 million in cost savings on shipping services.

Cost of Licensing and Other Revenues

Cost of licensing and other revenues for the six months ended June 30, 2020, when compared to the six months ended June 30, 2019, increased by $3.5 million, or 85.1%. During the six months ended June 30, 2020, the increases in licensing and other costs was primarily due higher costs to satisfy performance obligations for our Signatera (RUO) offering concurrently with the increase in Signatera (RUO) revenues and development costs for our Strategic Partnership Agreements of $5.7 million, partially offset by decreases of $2.2 million in cost related to the Evercord offering as we no longer offer this service starting in the third quarter of 2019.

Research and Development

Research and development expenses during the six months ended June 30, 2020 increased by $17.7 million, or 75.0%, when compared to the six months ended June 30, 2019. The increases were primarily driven by salary from headcount growth and consulting related expenditures of $13.8 million, $2.0 million for clinical studies related our new product offerings, $2.2 million of laboratory related expenditures primarily due to the expansion of the Austin, Texas laboratory facility, and $0.3 increase related to computer hardware purchases. This was partially offset by a decrease in corporate and overhead expenses of $0.6 million.

Selling, General and Administrative

Selling, general and administrative expenses increased by $43.0 million, or 47.3%, in the six months ended June 30, 2020 compared to the six months ended June 30, 2019. The increase in selling, general and administrative expenses was primarily attributable to higher salaries and related expenses of $22.0 million resulting from headcount growth as we expand our product offering and increases in payroll related expenses, $6.6 million from increased stock-based compensation, $5.5 million from higher outside service costs in connection with domestic and international consultants, audit and legal fees, $3.0 million from higher fees from our third-party billing and collection vendors, $1.6 million of larger trade show costs to promote new product lines, $1.2 million bad debt expense related to the Evercord receivable impairment recorded during the six months ending June 30, 2020, and $3.1 million higher corporate expenses, which primarily includes equipment for remote work and supplies due to the COVID-19 pandemic, business insurance, bank fees.

Loss on Debt Extinguishment

The loss on debt extinguishment of $5.8 million was a result of the repayment of the outstanding principal and interest under the 2017 Term Loan with Orbimed in the second quarter of 2020. Refer to note 10, *Debt*, in Item 1, *Financial Statements*, for details.

Interest Expense

Interest expense increased by $1.1 million, 19.4%, in the six months ended June 30, 2020 compared to the same period in the prior year. The increase was primarily due to the issuance of the Convertible Notes in April 2020 with an

outstanding principal balance of $287.5 million at a 2.25% interest rate (refer to note 10, *Debt*, in Item 1, *Financial Statements*, for details).

Interest and Other Income

Interest and other income increased by $2.6 million for the six months ended June 30, 2020, compared to the same period in the prior year, primarily due to additional interest income from larger cash, cash equivalent and investments balances of $1.4 million, sublease income of $1.0 million, and $0.2 million from other income.

Liquidity and Capital Resources

We have incurred net losses each year since our inception. For the six months ended June 30, 2020, we had a net loss of $95.0 million, and we expect to continue to incur losses in future periods as we continue to devote a substantial portion of our resources to our research and development and commercialization efforts for our existing and new products. As of June 30, 2020, we had an accumulated deficit of $794.6 million. We had $77.4 million in cash and cash equivalents and restricted cash, $493.9 million in marketable securities, $50.1 million of outstanding balance of the Credit Line including accrued interest, and $287.5 million outstanding principal balance on the Convertible Notes to the initial purchasers in a private placement and for initial resale to qualified institutional buyers pursuant to the exemption from registration provided by Rule 144A under the Securities Act. We used a portion of the net proceeds from the offering of the Convertible Notes to repay its obligations under its 2017 Term Loan with OrbiMed (see Note 10, *Debt,* in Item 1, *Financial Statements*).

While we have introduced multiple products that are generating revenues, these revenues have not been sufficient to fund all operations. Accordingly, we have funded the portion of operating costs that exceeds revenues through a combination of equity issuances and debt and other financings. We expect to develop and commercialize future products and, consequently, we will need to generate additional revenues to achieve future profitability and may need to raise additional equity or incur additional debt. If we raise additional funds by issuing equity securities, our stockholders would experience dilution. Additional debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any additional debt financing or additional equity that we raise may contain terms that are not favorable to us or our stockholders and requires significant debt service payments, which diverts resources from other activities. Additional financing may not be available at all, or in amounts or on terms acceptable to us. If we are unable to obtain additional financing, we may be required to delay the development and commercialization of our products and significantly scale back our business and operations.

In April 2019, we completed an underwritten equity offering and sold 6,052,631 shares of common stock at a price of $19 per share to the public. Before offering expenses of $0.6 million, we received proceeds of $108.1 million net of the underwriting discount. In October 2019, we completed another underwritten equity offering and sold 6,571,428 shares of its common stock at a price of $35 per share to the public. Before offering expenses of $0.4 million, we received proceeds of $216.2 million net of the underwriting discount.

Based on our current business plan, we believe that our existing cash and marketable securities will be sufficient to meet our anticipated cash requirements for at least 12 months after August 6, 2020.

Credit Line Agreement

In September 2015, we entered into the Credit Line with UBS providing for a $50.0 million revolving line of credit which can be drawn in increments at any time. The Credit Line was amended in July 2017 and bears interest at 30-day LIBOR plus 1.10%, and it is secured by a first priority lien and security interest in our money market and marketable securities held in our managed investment account with UBS. UBS has the right to demand full or partial payment of the Credit Line obligations and terminate it, in its discretion and without cause, at any time.

2017 Term Loan

In August 2017, we entered into the 2017 Term Loan with OrbiMed, which has a maximum borrowing capacity of $100.0 million. On the closing date of August 8, 2017, we borrowed $75.0 million, with the remaining $25.0 million available to borrow at our option at any time through December 31, 2019. Subsequently, we entered into several amendments and extended the expiration date until December 31, 2019 to draw the unused borrowing capacity of $50.0 million. After the amendments, the interest rate was equal to the sum of (i) 8.25% plus (ii) the higher of 1.00% or LIBOR, provided we draws the minimum capacity of $25.0 million. If the amount drawn is less than $25.0 million, the interest rate would remain at the sum of (i) 8.75% plus (ii) the higher of 1.00% or LIBOR. As a fee in consideration of extending the commitment to provide this option to draw until December 31, 2019, we issued an additional 25,000 shares of our common stock to OrbiMed. We did not exercise such option, and the right to draw the unused borrowing capacity has expired. In April 2020, we used a portion of the net proceeds from the offering of the Convertible Notes to repay our obligations under its 2017 Term Loan with OrbiMed.

Convertible Notes

In April 2020, we issued $287.5 million aggregate principal amount of Convertible Notes in a private placement offering to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended. The Convertible Notes were issued pursuant to an indenture in April 2020 between we and an institution of fiduciary asset as trustee. The Convertible Notes issued in the offering include an option to purchase an additional $37.5 million aggregate principal amount to the initial purchasers, which was exercised in full on the same day of issuance.

The Convertible Notes are senior, unsecured obligations of we and bear interest at a rate of 2.25% per year, payable in cash semi-annually in arrears in May and November of each year, beginning in November 2020. The Convertible Notes mature in May 2027, unless earlier converted, repurchased or redeemed in accordance with their terms. Upon conversion, the Convertible Notes are convertible into cash, shares of our common stock or a combination of cash and shares of our common stock, at our election.

We received net proceeds from the Convertible Notes of $278.3 million, after deducting the initial purchasers' discounts and debt issuance costs. We used approximately $79.2 million of the net proceeds from the Convertible Notes offering to repay our obligations under the 2017 Term Loan with OrbiMed.

Cash Flows

The following table summarizes our condensed consolidated cash flows for the periods indicated:

	Six Months Ended June 30,	
	2020	**2019**
(in thousands)		
Cash used in operating activities	$ (76,080)	$ (35,751)
Cash used in investing activities	(121,954)	(100,995)
Cash provided by financing activities	213,430	115,725
Net (decrease) increase in cash, cash equivalents and restricted cash	15,396	(21,021)
Cash, cash equivalents and restricted cash, beginning of period	61,981	51,004
Cash, cash equivalents and restricted cash, end of period	$ 77,377	$ 29,983

Cash Used in Operating Activities

Cash used in operating activities during the six months ended June 30, 2020 was $76.1 million. The net loss of $95.0 million includes $38.3 million in non-cash charges resulting from $4.0 million of depreciation and amortization, $3.9 million non-cash lease expense, $19.4 million of stock-based compensation expense, $2.2 million of amortization of debt discount, $1.9 million premium amortization and discount accretion on investment securities, $1.4 million provision

for credit losses and a $5.8 million loss on debt extinguishment. These non-cash charges were offset by $0.3 million in other non-cash benefits. Operating assets had cash outflows of $16.9 million resulting from $6.0 million increases in accounts receivable, $5.4 million increases in inventory, and $5.6 million increases in prepaids and other current assets net of allowances for credit loss associated with receivables from third-party buyer, offset by $0.1 million decreases in other assets. Operating liabilities had cash outflows of $2.5 million resulting from a $4.9 million decrease in deferred revenue and $4.7 million decrease in accounts payable, offset by $6.6 million increase in other accrued liabilities and $0.5 million increase in accrued compensation.

Cash used in operating activities during the six months ended June 30, 2019 was $35.8 million. The net loss of $66.5 million includes $18.4 million in non-cash charges resulting from $4.0 million of depreciation and amortization, $3.8 million of non-cash lease expense, $9.9 million of stock-based compensation expense; amortization of debt discount, premium amortization and discount accretion on investment securities totaling $0.4 million, $0.2 million of inventory excess adjustments, and $0.1 million in other non-cash charges. Operating assets had $16.6 million cash outflow resulting from $0.8 million increases in accounts receivable, $1.8 million increases in inventory, $4.5 million increases in prepaid and other current assets, $9.5 million increases in other assets. Operating liabilities generated cash inflows of $28.9 million due to an increase of deferred revenues of $35.5 million primarily driven by prepaid license, royalties and one milestone payment from BGI, and an increase in other accrued liabilities by $2.3 million, offset by a decrease in accounts payable of $6.4 million and a decrease in accrued compensation of $2.5 million.

Cash Used in Investing Activities

Cash used in investing activities for the six months ended June 30, 2020 totaled $122.0 million, which was comprised of purchasing new investments of $266.1 million and $10.1 million in acquisitions of property, plant and equipment, offset by $142.8 million from proceeds of investments maturities and $11.5 million proceeds from sale of investments.

Cash used in investing activities for the six months ended June 30, 2019 totaled $101.0 million, which was comprised of purchasing new investments of $162.2 million, acquisitions of property, plant and equipment of $1.6 million, offset by $62.8 million in proceeds resulting from maturities of investments.

Cash Provided by Financing Activities

Cash provided by financing activities for the six months ended June 30, 2020 totaled $213.4 million comprised of net proceeds from the issuance of the Convertible Notes for $278.3 million and $13.9 million cash proceeds from the exercise of stock options and issuance of common stock under the employee stock purchase plan. This was offset by a $79.2 million repayment of the 2017 Term Loan with OrbiMed.

Cash provided by financing activities for the six months ended June 30, 2019 totaled $115.7 million. The cash proceeds were primarily comprised $107.6 million net of underwriting discount and issuance costs from the equity offering completed in the second quarter of 2019. The remainder were comprised of proceeds from exercise of stock options and shares purchased from the employee stock purchase plan.

Contractual Obligations and Other Commitments

See Note 8 – *Commitments and Contingencies* for details.

Off-Balance Sheet Arrangements

Other than our obligation to settle the conversion option under the Convertible Notes described in Note 10, *Debt*, in Item 1, *Financial Statements*, we do not have any off-balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily relate to interest rates. Our Credit Line has an interest rate of one-month LIBOR plus 1.10%. The LIBOR rate is variable. An incremental change in the borrowing rate of 100 basis points would increase our annual interest expense by $0.5 million based on our $50.1 million gross debt outstanding on our Credit Line, including principal and accrued interest as of June 30, 2020. The interest rate for our Convertible Notes are fixed at 2.25% and not exposed market risk related to interest rates. Our investment portfolio is exposed to market risk from changes in interest rates. This risk is mitigated as we have maintained a relatively short average maturity for our investment portfolio. An incremental change in the investment yield of 100 basis points would increase our annual interest income by approximately $5.0 million annually in relation to amounts we would expect to earn, based on our short-term investments as of June 30, 2020.

Foreign Currency Exchange Rate Fluctuations

Our operations are currently conducted primarily in the United States. As we expand internationally, our results of operations and cash flows may become subject to fluctuations due to changes in foreign currency exchange rates. In periods when the U.S. dollar declines in value as compared to the foreign currencies in which we incur expenses, our foreign-currency based expenses will increase when translated into U.S. dollars. In addition, future fluctuations in the value of the U.S. dollar may affect the price at which we sell our tests outside of the United States. To date, our foreign currency risk has been minimal, and we have not historically hedged our foreign currency risk; however, we may consider doing so in the future.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2020. The term "disclosure controls and procedures," as defined in Rule 13a-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Based on the evaluation of our disclosure controls and procedures as of June 30, 2020, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

There were no material changes 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 report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting despite a large group of our employees are working remotely due to the COVID-19 pandemic.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent 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 controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a 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 management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we are involved in legal proceedings. The results of such legal proceedings and claims cannot be predicted with certainty, and regardless of the outcome, legal proceedings could have an adverse impact on us because of defense and settlement costs, diversion of resources and other factors.

For information regarding certain current legal proceedings, see “Note 8—Commitments and Contingencies—Legal Proceedings” in the Notes to Unaudited Interim Condensed Consolidated Financial Statements, which is incorporated herein by reference.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information contained in this report, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our condensed consolidated financial statements and related notes, before investing in our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results. If any unfavorable events or circumstances actually occurs, our business may suffer, the trading price of our common stock and our Convertible Notes (as defined herein) could decline, and you could lose all or part of your investment.

Risks Related to Our Business and Industry

We face risks related to health epidemics, including the current COVID-19 pandemic, which could have a material adverse effect on our business and results of operations.

Our business has been and could continue to be adversely affected by a widespread outbreak of contagious disease, including the ongoing pandemic of respiratory illness caused by a novel strain of coronavirus, SARS-CoV-2, causing the Coronavirus Disease 2019, also known as COVID-19. Global health concerns relating to the COVID-19 pandemic have been weighing on the macroeconomic environment, and the pandemic has significantly increased economic volatility and uncertainty.

The pandemic has resulted in government authorities implementing numerous measures to try to contain the virus, such as travel bans and restrictions, quarantines, shelter-in-place or stay-at-home orders, and business shutdowns. For example, our personnel located at our headquarters in California and elsewhere in the United States and in other countries have been subject to shelter-in-place or stay-at-home orders from state and local governments for the past several months. These measures have adversely impacted and may further impact our employees and operations, and the operations of our customers, suppliers and business partners, and may negatively impact spending patterns, payment cycles and insurance coverage levels. These measures have adversely affected and are expected to continue to adversely affect demand for our tests. Many of our customers, including hospitals and clinics, have suspended non-emergency appointments and services, which has resulted in a significant decrease in our test volume. In addition, because we rely heavily on our direct sales force to sell our tests, we expect our sales cycle, particularly for new customers, will be significantly impacted. Travel bans, restrictions and border closures have also impacted our ability to ship test kits to and receive samples from our customers. In addition, certain aspects of our business, such as laboratory processes, cannot be conducted remotely. These measures by government authorities may continue to remain in place for a significant period of time and they are likely to continue to adversely affect our test volume, sales activities and results of operations.

In addition, it may be more difficult for us to develop new products for commercial release, as we expect it will be more difficult to complete our research and development efforts and commence and complete clinical trials while the pandemic is ongoing. It is also possible that demand for products that we may pursue could be materially and adversely affected as a result of COVID-19, disruptions to our or our customers' operations, and any related economic impact.

The spread of COVID-19 has caused us to modify our business practices (including employee travel, mandating that all non-essential personnel work from home, temporary closures of our offices, and cancellation of physical participation in sales activities, meetings, events and conferences) and increase our operating costs, and we may take further actions as may be required by government authorities or that we determine are in the best interests of our employees, customers and business partners. Such actions could also impact our ability to fully integrate businesses we may acquire in the future. There is no certainty that such actions will be sufficient to mitigate the risks posed by the virus or otherwise be satisfactory to government authorities. If significant portions of our workforce, and particularly our laboratory staff, are unable to work effectively, including due to illness, quarantines, social distancing, government actions or other restrictions in connection with the COVID-19 pandemic, our operations will be impacted.

The extent to which the COVID-19 pandemic impacts our business, results of operations and financial condition will depend on future developments, which are highly uncertain and cannot be predicted, including, but not limited to, the duration and spread of the pandemic, its severity, the actions to contain the virus or address its impact, and how quickly and to what extent normal economic and operating activities can resume. The COVID-19 pandemic could limit the ability of our customers, suppliers and business partners to perform under their contracts with us, including third-party payers' ability to make timely payments to us during and following the pandemic. We may also experience a shortage of laboratory supplies and reagents or a suspension of services from other laboratories or third parties. We have also become increasingly dependent on growing and maintaining a network of mobile phlebotomy specialists who can provide testing capabilities, as many consumers are unable to visit clinics, hospitals or other testing facilities as a result of the pandemic. Even after the pandemic has subsided, we may continue to experience an adverse impact to our business as a result of its global economic impact, including any recession that has occurred or may occur in the future.

Specifically, difficult macroeconomic conditions, such as decreases in per capita income and level of disposable income, increased and prolonged unemployment or a decline in consumer confidence as a result of the pandemic, as well as limited or significantly reduced points of access of our products, could have a material adverse effect on the demand for some of our products, such as our products targeted for the IVF market. Decreased demand for our tests, particularly in the United States, could negatively affect our overall financial performance. A significant portion of our revenue is concentrated in the United States, where the impact of COVID-19 continues to be significant, and the potential decrease in demand for our tests could have a disproportionately negative impact on our business and financial results.

In addition, the stock market has been unusually volatile during the COVID-19 pandemic and such volatility may continue. Our stock price has also experienced volatility during this time, including occasional significant declines, and such declines may repeat or continue for the foreseeable future.

We do not yet know the full extent and duration of the impact of the COVID-19 pandemic on our business, our operations, and the global economy as a whole, and there are no comparable recent events which may provide guidance in this respect. However, the effects have impacted our business and operations, we expect that they will continue to have a material adverse impact on our business and results of operations.

We derive the significant majority of our revenues from Panorama and Horizon, and if our efforts to further increase the use and adoption of Panorama and Horizon or to develop new products and services in the future do not succeed, our business will be harmed.

Historically, including for the three months ended June 30, 2020 and the year ended December 31, 2019, the significant majority of our revenues were derived from sales of our Panorama NIPT and our Horizon carrier screening, or HCS, test, and we expect this to continue to be the case. With respect to Panorama in particular, continued and additional market demand for Panorama, and reimbursement for the average risk population and for microdeletions, are key elements to our future success. The market demand for NIPTs and carrier screening tests continue to evolve. We cannot guarantee that physicians will recommend and order Panorama or Horizon, and our laboratory distribution partners and licensees may not actively or effectively market Panorama or Horizon.

Our ability to increase sales and establish significant levels of adoption and reimbursement for Panorama and Horizon is uncertain, and it may be challenging for us to achieve profitability for many reasons, including, among others:

- the market for our tests may not grow as we expect; in particular, NIPTs may not gain acceptance for use in the average-risk pregnancy population or as a screen for microdeletions, which would limit the market for Panorama, and we may fail to compete successfully in this market, whatever size;
- if we are unable to demonstrate that our tests are superior to competing tests, laboratories, clinics, clinicians, physicians, payers and patients may not adopt use of Panorama, Horizon or our other tests on a broad basis, and may not be willing to pay the price premium over competing tests that we have, to date, been able to achieve;

- third-party payers, such as commercial insurance companies and government insurance programs, may decide not to reimburse for Panorama or Horizon, may not reimburse for uses of Panorama for the average-risk pregnancy population or for the screening of microdeletions, or may set the amounts of any reimbursements at prices that do not allow us to cover our expenses; in fact, many third-party payers currently have negative coverage determinations or otherwise do not reimburse for average-risk patient populations or for microdeletions screening and we expect low reimbursement rates for microdeletions screening to continue, at least in the near term; also, most state Medicaid programs currently either reimburse at low rates or do not reimburse for our tests;

- third-party payers have increasingly required that prior authorization be obtained prior to conducting genetic testing as a condition to reimbursing for it, which has reduced and/or delayed the reimbursement amounts we receive for Panorama, Horizon and our other tests;

- the results of our clinical trials and any additional clinical and economic utility data that we may develop, present and publish or that comes from the commercial use of our tests may be inconsistent with prior data, may raise questions about the performance of our tests, or may fail to convince laboratories, clinics, clinicians, physicians, payers or patients of the value of our tests; furthermore, we may be unable to achieve stable reimbursement for microdeletions unless and until sufficient validation data on the sensitivity and specificity of our test for these conditions become available, which may take longer than we anticipate;

- we may experience supply constraints, including those due to the failure of our key suppliers to provide required sequencers and reagents in sufficient amounts or of adequate quality or disputes with our key suppliers, including those with respect to the required sequencers and reagents from our supplier, Illumina, Inc., or Illumina, who is also one of our main NIPT competitors through its subsidiary, Verinata Health Inc., or Verinata, and with whom we are currently involved in patent proceedings as further described in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements;

- we may experience increased cost of product revenues, and cost of licensing and other revenues, as a percentage of total revenues, as has been the case in previous fiscal periods;

- the U.S. Food and Drug Administration, or the FDA, or other U.S. or foreign regulatory or legislative bodies may adopt new regulations or policies, or take other actions that impose significant restrictions on our ability to market and sell Panorama, Horizon or our other tests, including requiring FDA clearance or approval for the sale of Panorama or Horizon or of the sequencers, reagents, kits and other consumable products that we purchase from third parties in order to perform our testing;

- our laboratory partners may choose to develop their own tests that are competitive with ours or offer tests provided by our competitors due to pricing or other reasons as has happened in the past, or otherwise fail to effectively market our tests; and competitors may develop and commercialize more effective and/or less expensive tests that deliver comparable results as our tests;

- we may fail to adequately protect or enforce our intellectual property relating to our tests, leading to increased competition; or other parties may claim that the practice of our technology by us or our licensees and collaborators infringes such other party's intellectual property rights, as each of Illumina and CareDX, Inc. have done in lawsuits filed against us, as discussed further in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements; if we are required to pay license fees in order to license third-party intellectual property rights due to actual or alleged infringement based on our running our tests, we may experience increased costs in running our tests, and we may be unable to pass such costs on to our customers;

- we may be unable to dedicate adequate resources to the maintenance and further technological advancement of Panorama and Horizon that are necessary for such tests to be competitive in the marketplace because of the demands placed on our research and development and product teams with respect to our continuously expanding portfolio of products and programs, including our Signatera and Prospera tests;

- in the event that it is in our commercial or financial interest or we are forced to transition sequencing platforms for Panorama, we may be unable to do so in a commercially sustainable way and that could survive claims of infringement of intellectual property rights of Illumina and other competitors, in a timely manner or at all; and

- we may not be successful in commercializing our cloud-based distribution model.

If the market for Panorama or Horizon, or our market share for either test, fail to grow or grow more slowly than expected, our business, operating results and financial condition will be harmed.

We have incurred losses since our inception and we anticipate that we will continue to incur losses for the foreseeable future, which could harm our future business prospects.

We have incurred net losses each year since our inception in 2003. To date, we have financed our operations primarily through private placements of preferred stock, convertible debt and other debt instruments, our initial public offering and our registered public equity offerings. Our net loss for the three months ended June 30, 2020 and 2019 was $59.6 million and $32.4 million, respectively. As of June 30, 2020, and December 31, 2019, we had an accumulated deficit of $794.6 million and $699.2 million, respectively. Such losses may continue to increase in the future as we continue to devote a substantial portion of our resources to efforts to increase the adoption of, and reimbursement for, Panorama, Horizon and our other products, improve these products, and research and develop and commercialize new products, which increasingly are in industries that are new to us, such as oncology and organ health.

In addition, the rate of growth in our revenues has fluctuated in the past, and may continue to do so in future periods. In particular, such rate of growth may be negative, low or flat, including if the rate of growth of our test volumes slows. A significant element of our business strategy is to maintain increased in-network coverage with third-party payers; however, the negotiated fees under our contracts with third-party payers are typically lower than the list price of our tests, and in some cases the third-party payers that we contract with have negative coverage determinations for some of our offerings, in particular Panorama for the average-risk pregnancy population and for microdeletions screening. Therefore, being in-network with third-party payers has had, and may continue to have, an adverse impact on our revenues especially if we are unable to increase the adoption of, and obtain favorable coverage determinations for reimbursement for, our products. Furthermore, a CPT code for microdeletions went into effect beginning in January 2017. We have experienced low average reimbursement rates for microdeletions testing under this code, and we expect that this code will continue to cause our microdeletions reimbursement to remain low, at least in the near term, either due to reduced reimbursement, or third-party payers declining to reimburse, under the microdeletions code, which has had and will likely continue to have an adverse effect on our revenues. In addition, a new CPT code for expanded carrier screening went into effect beginning in January 2019, and has had, and may continue to have, an adverse effect on our reimbursement rates for our broader Horizon carrier screening panel, for which we previously primarily received reimbursement on a per-condition basis, as those tests may be reimbursed as a combined single panel instead of as multiple individual tests.

As further discussed in the risk factor entitled "*—We may not be successful in commercializing our cloud-based distribution model*," our results of operations may be adversely affected if we do not sell a sufficient volume of tests under our cloud-based distribution model to offset the lower revenues per test performed under that model. Our ability to forecast our future operating results, including revenues, cash flows and profitability, is limited and subject to a number of uncertainties. We have also encountered and will continue to encounter risks and uncertainties frequently experienced by growing companies in the life sciences and technology industry, such as those described in this report. If our assumptions regarding these risks and uncertainties are incorrect or these risks and uncertainties change, or if we do not address these risks successfully, our operating and financial results may differ materially from our expectations, and our business may suffer.

Uncertainty in the development and commercialization of our enhanced or new tests or services could materially adversely affect our business, financial condition and results of operations.

Our success will depend in part on our ability to effectively introduce enhanced or new offerings. The focus of our research and development efforts have expanded beyond reproductive health products, as we are now also applying our expertise in processing and analyzing cell-free DNA in the fields of cancer monitoring and organ health. In recent

years we have developed and/or launched several new products or enhanced versions of existing products, including our first offerings in oncology and in organ transplantation, and we expect to continue our efforts in all of these areas. The development and launch of enhanced or new tests requires the completion of certain clinical development and commercialization activities that are complex, costly, time-intensive and uncertain, and requires us to accurately anticipate patients', clinicians', payers' and other counterparties' attitudes and needs as well as emerging technology and industry trends. This process is conducted in various stages, and each stage presents the risk that we will not achieve our goals.

We have relatively limited experience developing and commercializing cell-free DNA tests outside of the reproductive health space, and we may not be successful in our current or future efforts to do so. We also have limited experience forecasting our future financial performance from our new products, including non-NIPT types of cell-free DNA tests, and our actual results may fall below our financial guidance or other projections, or the expectations of analysts or investors, which could cause the price of our common stock and the trading price of our Convertible Notes to decline. We may experience research and development, regulatory, marketing and other difficulties that could delay or prevent our introduction of enhanced or new tests and result in increased costs and the diversion of management's attention and resources from other business matters, such as from our Panorama and Horizon product offerings, which currently represent the significant majority of our revenues. For example, any tests that we may enhance or develop may not prove to be clinically effective in clinical trials or commercially, or may not meet our desired target product profile, be offered at acceptable cost and with the sensitivity, specificity and other test performance metrics necessary to address the relevant clinical need or commercial opportunity; our test performance in commercial experience may be inconsistent with our validation or other clinical data; we may not be successful in achieving market awareness and demand, whether through our own sales and marketing operations or through collaborative arrangements; healthcare providers may not order or use, or third-party payers may not reimburse for, any tests that we may enhance or develop; or we may otherwise have to abandon a test or service in which we have invested substantial resources. In particular, we are subject to the risk that the biological characteristics of the genetic mutations we seek to target, and upon which our technologies rely, are uncertain and difficult to predict. For example, in our efforts to detect and analyze circulating tumor DNA in plasma for MRD assessment and recurrence surveillance, our success depends on tumors shedding mutant DNA into the bloodstream in sufficient quantities such that our technology can detect such mutations. As further discussed in the risk factor entitled "*If our products do not perform as expected, our operating results, reputation and business will suffer*," we may also experience unforeseen difficulties when implementing updates to our processes, as we have occasionally experienced with Panorama and with Horizon.

We cannot assure you that we can successfully complete the clinical development of any new or enhanced product, or that we can establish or maintain the collaborative relationships that may be essential to our clinical development and commercialization efforts. Clinical development requires large numbers of patient specimens and, for certain products, may require large, prospective, and controlled clinical trials. We may not be able to enroll patients or collect a sufficient number of appropriate specimens in a timely manner; or we may experience delays during clinical development due to slower than anticipated enrollment, which we experienced in the past with our SNP-based Microdeletions and Aneuploidy RegisTry, or SMART, study, or due to changes in study design or other unforeseen circumstances, such as our decisions to expand our SMART study; or we may be unable to afford or manage the large-sized clinical trials that some of our planned future products may require. The data collected from any studies we complete may not be favorable or consistent with our existing data or may not be statistically significant or compelling to the medical community or to third-party payers seeking such data for purposes of determining coverage for our tests. This is particularly true with respect to testing in the average-risk pregnancy population and for microdeletions screening using our Panorama test. For example, in January 2017 we published data from our DNAFirst study showing that NIPT can be effectively and appropriately offered as a primary screen for all pregnant women regardless of risk due to maternal age or other factors; while this study is a key piece of our evidence package that we believe has led to favorable average risk NIPT coverage decisions by many prominent insurers, we cannot be certain whether or to what extent it has impacted such coverage, or adoption, of Panorama in the average-risk population.

The publication of clinical data in peer-reviewed journals is a crucial step in commercializing and obtaining reimbursement for tests such as ours, and our inability to control when, if ever, results are published may delay or limit our ability to derive sufficient revenues from any test that is the subject of a study. Peer-reviewed publications regarding our tests may be limited by many factors, including delays in the completion of, poor design of, or lack of compelling data from, clinical studies, as well as delays in the review, acceptance and publication process. If our tests or the technology

underlying our current tests or future tests do not receive sufficient favorable exposure in peer-reviewed publications, the rate of clinician adoption of our tests and positive reimbursement coverage determinations for our tests could be negatively affected.

In addition, as further described in the risk factor entitled "*—If the FDA were to begin actively regulating our tests, we could incur substantial costs and delays associated with trying to obtain premarket clearance or approval and incur costs associated with complying with post-market controls,*" development of the data necessary to obtain regulatory clearance and approval of a test is time-consuming and carries with it the risk of not yielding the desired results. The performance achieved in published studies may not be repeated in later studies that may be required to obtain FDA premarket clearance or approval or regulatory approvals in foreign jurisdictions. Limited results from earlier-stage verification studies may not predict results from studies in larger numbers of subjects drawn from more diverse populations over longer periods of time. Unfavorable results from ongoing preclinical and clinical studies may delay, limit or prevent regulatory approvals or clearances or commercialization of our product candidates, or could result in delays, modifications or abandonment of ongoing analytical or future clinical studies, or abandonment of a product development program, any of which could have a material adverse effect on our business, operating results or financial condition.

These and other factors beyond our control could result in delays or other difficulties in the research and development, approval, production, launch, marketing or distribution of enhanced or new tests and could adversely affect our competitive position and results of operations.

Our quarterly results may fluctuate from period to period, which could adversely impact the value of our common stock.

Our quarterly results of operations, including our revenues, gross margin, net loss and cash flows, may vary from period to period as a result of a variety of factors, many of which are outside of our control, including those listed elsewhere in this "Risk Factors" section, and as a result, period-to-period comparisons of our operating results may not be meaningful. Our quarterly results should not be relied upon as an indication of future performance. In addition, to the extent that we continue to spend considerably on our internal sales and marketing and research and development efforts, we expect to incur costs in advance of achieving the anticipated benefits of such efforts. Fluctuations in quarterly results and key metrics may cause our results to fall below our financial guidance or other projections, or the expectations of analysts or investors, which could adversely affect the trading price of our common stock and Convertible Notes, and the price at which the holders of our Convertible Notes can sell the common stock received upon conversion of the Convertible Notes. We also face competitive pricing and reimbursement pressures, and we may not be able to maintain our premium pricing in the future, which would adversely affect our operating results.

Competition in our industry is intense; if we are unable to compete successfully with respect to our current or future products or services, we may be unable to increase or sustain our revenues or achieve profitability.

We compete primarily in the molecular testing field, which is characterized by rapid technological changes, frequent new product introductions, reimbursement challenges, emerging competition, intellectual property disputes and litigation, price competition, aggressive marketing practices, evolving industry standards and changing customer preferences. Our principal competition in reproductive health comes from existing testing methods, technologies and products that are used by OB/GYNs, MFM specialists or IVF centers. These include other NIPTs and carrier screening tests offered by our competitors, as well as established, traditional first-line prenatal screening methods, such as serum protein measurement, where doctors measure certain hormones in the blood, and invasive prenatal diagnostic tests like amniocentesis, which have been used for many years and are therefore difficult to displace or supplement. In addition, new testing methods may be developed which may displace or be preferred over NIPTs, such as whole genome sequencing or single cell analysis. We are new to the fields of oncology and organ transplantation, and face competition in these business areas from other companies, many of which are larger, more established and have more experience and more resources than we do. Some companies in the ctDNA-based liquid biopsy field are expanding their research and development efforts to include tracking more tumor-specific variants and/or other biomarkers in addition to ctDNA, on the basis that these analyses may collectively result in improved sensitivity and earlier detection than currently available tests, such as Signatera. We cannot assure you that research, discoveries or other advancements by other companies will not render our existing or potential products and services uneconomical or result in products and services that are superior or otherwise preferable to our current or future products and services.

We compete with numerous companies in the genetic diagnostics space. Our primary competitors in NIPT include Sequenom, which was recently acquired by LabCorp; Illumina, through its subsidiary Verinata; Ariosa, a subsidiary of Roche; Myriad Genetics, Inc., which has acquired Counsyl, Inc; Invitae Corp.; Bio-Reference, a business unit of OPKO Health, Inc.; Quest; Premaitha Health PLC; BGI; Progenity; and NxGen. All of our main NIPT competitors in the United States are owned or controlled by companies much larger than ours and with much greater resources for sales, marketing and research and development efforts. Our primary competitors in carrier screening include LabCorp; Myriad Genetics, Inc.; Mount Sinai Genomics, Inc. d/b/a Sema4; Invitae Corp.; Progenity; Quest; Recombine Inc.; GeneDx, Inc., a subsidiary of Bio-Reference; and GenPath Diagnostics, a business unit of Bio-Reference. In the field of ctDNA-based MRD assessment and recurrence surveillance, we face competition from various companies that offer or seek to offer competing solutions, such as Roche Diagnostics, a division of Roche; Guardant Health, Inc., Adaptive Biotechnologies, Personal Genome Diagnostics, Inc.; Exact Sciences Corp.; Inivata, Inc.; C2i Genomics, Inc.; and ArcherDX, Inc., which has entered into an agreement to be acquired by Invitae Corp. In the field of transplant rejection, our primary competitors include CareDx, Inc. and Eurofins Viracor, Inc. We expect that competition in these spaces will continue to increase.

Some of our competitors' products and services are sold at a lower price than ours, which could cause sales of our tests and services to decline or force us to reduce our prices. Our current and future competitors could have greater technological, financial, reputational and market access advantages than us, and we may not be able to compete effectively against them. Increased competition is likely to result in pricing pressures, which could harm our revenues, operating income or market share. We are increasingly subject to litigation with our competitors; for example, as disclosed elsewhere in these Risk Factors and Report, we are or have recently been in active litigation with competitors in each of the reproductive health, oncology and organ transplantation fields, which involve considerable costs to us as well as management time and attention. If we are unable to compete successfully, we may be unable to increase or sustain our revenues or achieve profitability.

We may not be successful in commercializing our cloud-based distribution model.

We utilize a cloud-based distribution model to deploy our bioinformatics technology for use by other laboratories. Under this model, clinical laboratories around the world, including in the U.S., license our technology to develop and run their own NIPT or other molecular testing assays in their own facilities as LDTs, and then access our proprietary algorithms through our cloud-based Constellation software to analyze the assay results. In the diagnostics industry, the market for cloud-based solutions and services is not as mature as the market for on-premise enterprise software, and it remains uncertain whether and to what extent our cloud-based distribution model will achieve and sustain high levels of customer demand and market acceptance. As of July 15, 2020, only 15 licensees are using Constellation commercially to market NIPT products and one licensee is using Constellation commercially to market its non-invasive prenatal paternity test in the United States and internationally. The rate of adoption of our cloud-based distribution model continues to be slower than we anticipated, and depends on a number of factors, including the cost, performance and perceived value associated with our solution, as well as our ability to address security, privacy and regulatory requirements or concerns. In particular, all of our licensees under our cloud-based distribution model are required to use Illumina sequencers and reagents to run their tests that they develop based on our technology. As further described in the risk factor entitled "—*We rely on a limited number of suppliers or, in some cases, single suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or immediately transition to alternative suppliers*," we are aware that Illumina has required our licensees to pay an additional license fee in certain jurisdictions in order to secure a supply agreement for the sequencers and reagents necessary to run NIPT under our cloud-based distribution model. Furthermore, Illumina competes with us through its subsidiary Verinata, and may not charge a similar license fee for Verinata's licensed-based offering to other laboratories. As a result, our potential or current licensees may be unable to commercially launch their tests under our cloud-based distribution model in a financially viable manner, which has dissuaded and could continue to dissuade potential or current licensees from licensing from us or launching a test based on our technology. In addition, if a test developed by any of our licensees under our cloud-based distribution model in the United States is found not to be an LDT, the licensee may not be able to market its test, and we would not receive the anticipated revenues from that licensee.

We also do not know whether, over the long term, this model will result in benefits or cost savings at the levels that we anticipate or at all. For example, to the extent that any of our laboratory customers for whom we currently perform our tests entirely in our laboratory transition to our cloud-based distribution model, our revenues from such customers will decrease because we are not able to charge as high an amount per test as when we perform the entire test ourselves. If the

lower revenues per test performed is not offset by a sufficient increase in volume of tests sold, our overall revenues will be lower, and our results of operations may be adversely affected.

Among the risks to our business and results of operations from our Constellation model are the following:

- our and our licensees' ability to obtain required regulatory authorizations from the FDA and international regulatory agencies as further described in the risk factor entitled "*Reimbursement and Regulatory Risks Related to Our Business—Failure to obtain necessary regulatory approvals may adversely affect our ability to expand our operations internationally, including our ability to continue commercializing our cloud-based distribution model;*"

- supply constraints, including with respect to the blood collection tubes that are used for our Panorama test and that are supplied by Streck, Inc., or Streck, as further described in the risk factor entitled "*—We rely on a limited number of suppliers or, in some cases, single suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or immediately transition to alternative suppliers;*"

- allegations or potential third-party claims that the tests, based on our technology, developed by our licensees violate such third parties' intellectual property rights in the territories in which our licensees commercialize their tests;

- licensing portions of our proprietary technology to third parties that may not take the same security precautions as we do to protect this information; and

- an inability to achieve anticipated benefits and costs savings.

If we or other cloud-based solution providers experience security incidents, loss of customer data or disruptions in delivery or other problems, the market for cloud-based solutions in the diagnostics industry, including our solutions, may be adversely affected. Such events could also result in potential lawsuits and liability claims, which could have a material adverse effect on our business. If there is a reduction in demand for cloud-based solutions caused by technological challenges, weakening economic conditions, security or privacy concerns, competing technologies and products or other challenges, we may not be successful in executing our Constellation business model, and our results of operations may be adversely affected..

We may be subject to increased compliance risks as a result of our rapid growth, including our dependence on our sales, marketing and billing efforts.

Approximately 86% and 80% of our total revenues for the three months ended June 30, 2020 and the year ended December 31, 2019, respectively. were attributable to our U.S. direct sales. We have had to expand our training and compliance efforts in line with our increasing reliance on personnel in our sales, marketing and billing functions, and our expansion of these functions in line with the overall growth in our business. We continue to monitor our personnel, but we have in the past experienced, and may in the future experience, situations in which employees fail to strictly adhere to our policies. In addition, sales and marketing activities in the healthcare space are subject to various rules and regulations, as described in the risk factor entitled "*—Reimbursement and Regulatory Risks Related to Our Business—If we or our laboratory distribution partners, consultants or commercial partners act in a manner that violates healthcare fraud and abuse laws or otherwise engage in misconduct, we may be subject to civil or criminal penalties*;" moreover, our billing and marketing messaging can be complex and nuanced, and there may be errors or misunderstandings in our employees' communication of such messaging. Furthermore, we utilize text messaging, email, phone calls and other similar methods to communicate with patients who are existing or potential users of our products for various business purposes. These activities subject us to laws and regulations relating to communications with consumers, such as the CAN-SPAM Act and the Telephone Consumer Protection Act, violations of which could subject us to claims by consumers, who may seek actual or statutory damages, which could be material in the aggregate. As described further in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements, a purported class action lawsuit has been filed against us, alleging that we sent an unauthorized text message to a plaintiff's cellular telephone. As we continue to scale up our sales and marketing efforts in line with the growth in our business, in

particular our increased pace of product launches as well as further geographical expansion, we face an increased need to continuously monitor and improve our policies, processes and procedures to maintain compliance with a growing number and variety of laws and regulations, including with respect to consumer marketing. To the extent that there is any violation, whether actual, perceived or alleged, of our policies or applicable laws and regulations, we may incur additional training and compliance costs, may receive inquiries from third-party payers or other third parties, or be held liable or otherwise responsible for such acts of non-compliance. Any of the foregoing could adversely affect our cash flow and financial condition.

We rely on internal and third-party data centers and platforms to host our laboratory and cloud-based software, and any interruptions of service or failures may impair our laboratory operations or the delivery of our cloud-based services and harm our business.

We currently maintain a data center at our laboratory facilities in San Carlos, California. In addition, our proprietary bioinformatics algorithms are a crucial component of our test processing, and combine information derived from our mmPCR assay workflows with publicly available data from the broader scientific community to analyze and return test results. We host the significant majority of these algorithms on a cloud-based software platform pursuant to an agreement with DNAnexus, Inc., or DNAnexus, and both we and our Constellation licensees access our algorithms through the DNAnexus platform. The DNAnexus platform is hosted on third-party data center hosting facilities operated by Amazon Web Services, or AWS, located primarily in the United States and in the European Union. These algorithms cannot currently be run other than through the DNAnexus platform; they are currently used to run our Panorama NIPT and NIPT analysis for our Constellation licensees, as well as Horizon, Signatera, Prospera and certain of our research and development activities, and we plan to utilize the platform for additional applications in the future. In the event of any technical problems that may arise in connection with our on-site data center, the DNAnexus platform or the AWS servers on which the DNAnexus platform is hosted, or difficulties in or termination of our relationship with DNAnexus, we could experience interruptions in our laboratory operations or our cloud-based services, and we and our Constellation licensees may be unable to access our proprietary algorithms and therefore be unable to process tests or conduct any other activities that require access to such algorithms. We do not have any backup platform, server or other means to host our algorithms, and may be unable to find and implement an alternative platform that is satisfactory for our needs on commercially reasonable terms, in a timely manner, or at all. These types of problems may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, spikes in customer usage and denial of service issues. Interruptions in our operations or service may reduce our revenue, cause us to issue refunds, result in the loss of customers, cause laboratory licensees to terminate their contracts with us, adversely affect our ability to attract new laboratory licensees, or harm our reputation. We could also be exposed to potential lawsuits and liability claims.

If our products do not perform as expected, our operating results, reputation and business will suffer.

Our success depends on the market's confidence that we can provide reliable, high-quality testing results. There is no guarantee that the accuracy and reproducibility we have demonstrated to date will continue as our test volumes continue to increase and our product portfolio continues to expand. We believe that our customers are particularly sensitive to test limitations and errors, including inaccurate test results and the need on occasion to perform second blood draws, or redraws, on patients, for which Panorama experiences a higher rate than advertised for other NIPTs. As a result, if our tests do not perform as expected or favorably in comparison to competitive tests, our operating results, reputation, and business will suffer. We may also become subject to legal claims arising from such limitations, errors, or inaccuracies.

Our tests use a number of complex and sophisticated biochemical and bioinformatics processes, many of which are highly sensitive to external factors. An operational, technological or other failure in one of these complex processes, or fluctuations in external variables, may result in sensitivity or specificity rates that are lower than we anticipate or that vary between test runs, a higher than anticipated number of tests that require redraws or fail to produce results, or longer than expected turnaround times, which we have experienced and will likely continue to experience on occasion as a result of issues with laboratory equipment, components or materials or otherwise. In addition, we regularly evaluate and refine our testing processes, and any refinements we make may not improve our tests as we expect and may result in unanticipated issues that may adversely affect our test performance as described above, which we have experienced in the past. Such operational, technical and other difficulties adversely affect test performance, may impact the commercial attractiveness of our products, and may increase our costs or divert our resources, including management's time and attention, from other projects and priorities. Furthermore, any changes to our testing process may require us to use new or different suppliers or

materials with whom or which we are unfamiliar, and which may not perform as we anticipate, and could cause delays, downtime or other operational issues.

In addition, as further discussed in the risk factor entitled "*If we are unable to successfully grow revenues for our current or future products or services in addition to Panorama, our business and results of operations may be adversely affected*," our Vistara NIPT is a relatively new test offering, as are Signatera and Prospera. Any failure to meet consumer expectations could harm our reputation.

We rely on third-party laboratories to perform portions of our service offerings.

We and our subsidiaries outsource the portions of testing that we do not perform in-house to third-party CLIA certified laboratories. For example, a portion of our Horizon carrier screening testing and our Vistara single-gene mutations testing is performed by third-party laboratories. These third-party laboratories are subject to contractual obligations to perform these services for us, but are not otherwise under our control. We therefore do not control the capacity and quality control efforts of these third-party laboratories other than through our ability to enforce contractual obligations on volume and quality systems, and we have no control over such laboratories' compliance with applicable legal and regulatory requirements. We also have no control over the timeliness of such laboratories' performance of their obligations to us, and third-party laboratories that we have contracted with have in the past had, and occasionally continue to have, issues with delivering results to us or resolving issues with us within the time frames we expected or established in our contracts with them, which sometimes results in longer than expected turnaround times for, or negatively impacts the performance of, these tests and services. We may not have sufficient alternative backup if one or more of the third-party laboratories that we contract with are unable to satisfy their obligations to us with sufficient performance, quality and timeliness. Any natural or other disaster, acts of war or terrorism, shipping embargoes, labor unrest or political instability or similar events at one or more of our third-party laboratories' facilities that causes a loss of capacity would heighten the risks that we face. Changes to or termination of our agreements or inability to renew our agreements with these third-party laboratories or enter into new agreements with other laboratories that are able to perform such portions of our service offerings could impair, delay or suspend our efforts to market and sell these tests and services. In the event of any adverse developments with these third-party laboratories or their ability to perform their obligations to us in a timely manner and in accordance with the standards that we and our customers expect, our ability to service our customers may be delayed, interrupted or otherwise adversely affected, which could result in a loss of customers and harm to our reputation. Furthermore, when these issues arise, we have had to expend time, management attention and other resources to address and remedy such issues. In addition, certain third-party payers, including some state Medicaid payers, that we are under contract with may take the position that sending out testing to third-party laboratories and billing for such tests is contrary to the terms of our provider agreement and may refuse to pay us for the testing. If any of these events occur, our business, financial condition and results of operations could suffer. Further, some state laws impose anti-markup restrictions that prevent an entity from realizing a profit margin on outsourced testing. If we or our subsidiaries are unable to markup outsourced testing, our revenues and operating margins may suffer.

If we are unable to successfully grow revenues for our products or services in addition to Panorama and Horizon, our business and results of operations may be adversely affected.

Our ability to successfully grow revenues for products or services in addition to Panorama and Horizon, is uncertain and is subject to many of the risks we face with respect to Panorama and Horizon. For example, the adoption and demand for such products or services may not grow as we expect; we may not be able to demonstrate that such products or services are equivalent or superior to competing products or services; third-party payers may not reimburse for our tests, or may set the amounts of such reimbursements at prices that do not allow us to cover our expenses; we may fail to compete successfully in the relevant product markets, or our laboratory distribution partners may choose to more actively or exclusively market tests by competitors; we may experience supply constraints; and we may fail to adequately protect our intellectual property relating to our products or others may claim we infringe their intellectual property rights, which has occurred, as disclosed elsewhere in these Risk factors, with respect to litigation with Illumina regarding Panorama, with ArcherDX regarding Signatera and with CareDx regarding Prospera. In addition, because our revenues from Horizon now represent a significant proportion of our overall revenues, any adverse impact we experience with respect to Horizon could result in an impact to our overall revenues, or a component of such overall revenues; for example, a decline in our reimbursement rates for, and therefore our average selling price of, Horizon, could result in a decline in our overall blended average selling price. If we are not able to increase adoption of and grow revenues for our products or services, our business and results of operations may be adversely affected.

We began offering our Vistara single-gene mutations screening test in May 2017; our Signatera cancer recurrence monitoring offering for research use only in August 2017; our twin pregnancies screening capability for Panorama in October 2017; and, on a limited basis, both our Signatera CLIA test and Prospera transplant rejection test in 2019, with full-scale commercial launches of both Signatera and Prospera in 2020. Our success with these offerings is subject to many of the risks affecting our business generally, as well as the inherent difficulties with launching a new offering, including risks inherent in launching multiple new offerings simultaneously. Our Signatera and Prospera offerings, while based upon our core molecular diagnostic technology, are in fields that are new to us; and Vistara is subject to the risks inherent in commercializing a product with a laboratory partner. We have had to review and, in some cases, revise our processes, procedures and agreements with our business partners to address unforeseen operational issues and other contingencies, and will likely continue to do so as these areas of our business grow. We cannot assure you that our Vistara, Signatera or Prospera offerings will be successful.

If our primary CLIA-certified laboratory facility becomes inoperable, we will be unable to perform our tests and our business will be harmed.

We have recently expanded our laboratory operations capacity in Austin, Texas to support continued growth in our Panorama and Horizon tests and to help ensure business continuity. We are still ramping up our test processing capacity and abilities at this location, including by obtaining recognition as a Medicaid provider in certain states in which we are not already credentialed, which is required in order for us to obtain reimbursement from each such states' Medicaid program, as further described in the risk factor entitled "*—Our revenues may be adversely affected if we are unable to successfully obtain reimbursement from the Medicare program and state Medicaid programs."* We currently otherwise have no backup or redundant facility to perform our main product and source of revenue, Panorama, which we perform at our primary San Carlos, California laboratory facility. Our Signatera and Prospera tests are currently also performed at our San Carlos facility, and our efforts in oncology and organ health represent significant areas of focus for us, both operationally and financially. Our San Carlos facility is situated near active earthquake fault lines. Our facility may be harmed or rendered inoperable, or samples could be damaged or destroyed, by natural or manmade disasters, including earthquakes, flooding, power outages and contamination, which may render it difficult or impossible for us to perform our tests for some period of time. The inability to perform our tests or the backlog of tests that could develop if our San Carlos facility is inoperable for even a short period of time may result in the loss of customers or harm our reputation.

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

We have sourced and will continue to source components of our technology, including sequencers, reagents, tubes and other laboratory materials, from third parties. In particular, our sequencers, many of our reagents, including for Panorama, Horizon and Signatera as described below, and our blood collection tubes, are sole sourced.

For example, our molecular diagnostics tests are currently only validated to perform on Illumina's sequencing platform; in addition, Illumina is currently the sole supplier of our sequencers and related reagents for Panorama, Horizon, Signatera and Prospera, along with certain hardware and software, pursuant to a supply agreement that expires in May 2030. Without sequencers and the related reagents, we would be unable to run our tests and commercialize our products. In addition, all of the licensees under our cloud-based distribution model do not have alternatives other than to use Illumina sequencers and reagents to run the tests that they develop based on our technology. In addition, Illumina and Sequenom, which was acquired by LabCorp, have entered into a patent pooling agreement pursuant to which both parties have pooled their intellectual property directed to NIPT. We understand from public filings that under the patent pooling agreement, Illumina has the exclusive worldwide rights to, among other things, license third-party laboratories to develop and sell NIPTs utilizing the pooled intellectual property and to enforce the pooled intellectual property against suspected infringers. Illumina has granted us certain rights to Illumina's intellectual property related to NIPT, including the pooled intellectual property, for running our own tests; however, we do not have an express license to grant rights under the pooled intellectual property to the licensees under our cloud-based distribution model. We are aware that Illumina has required our licensees, in order to secure a supply agreement for the sequencers and reagents necessary to run NIPT under our cloud-based distribution model, to pay an additional fee for a license under the pooled intellectual property in jurisdictions in which Illumina believes certain of the pooled intellectual property is enforceable. This additional fee has dissuaded and could continue to dissuade potential or current licensees from licensing from us or launching a test based on our technology. In

addition, we have been involved in patent infringement litigation against Illumina, as further described in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements, which we and Illumina have largely settled; however, there remains outstanding a challenge by Illumina to the validity of our patent that was subject to the litigation, as well as a pending patent opposition proceeding by us against a European patent held by Illumina. In addition, Illumina directly competes with us in the NIPT market through its subsidiary, Verinata. We understand Illumina supplies the same or similar sequencers and consumables to Verinata. Because of Illumina's ownership of Verinata, we face increased risk and uncertainty regarding continuity of a successful working relationship with Illumina under our supply agreement, as well as in our ability to compete with Verinata in the marketplace in view of economic advantages enjoyed by Verinata with respect to the cost of sequencers and related consumables. Our failure to maintain a continued supply of the sequencers and reagents, along with the right to use certain hardware and software, would adversely impact our business, financial condition, and results of operations. In particular, while we are seeking to validate our tests on additional sequencing platforms, such as under our license agreement with BGI Genomics Co., Ltd., or BGI Genomics, we have not, to date, validated any alternative sequencing platform on which our testing could be run in a commercially viable manner. These efforts will require significant resources, expenditures and time and attention of management, and there is no guarantee that we will be successful in implementing any such sequencing platforms in a commercially sustainable way. We also cannot guarantee that we will appropriately prioritize or select alternative sequencing platforms on which to focus our efforts, in particular given our limited product and research and development resources and various business initiatives, which could result in increased costs and delayed timelines or otherwise impact our business and results of operations.

In addition, our Panorama test is currently only validated to be performed using Streck's blood collection tubes, and Streck is the sole supplier of the blood collection tubes included in our Panorama test under a supply arrangement with Streck under which we are required to exclusively use Streck tubes. Similarly, all of the licensees under our cloud-based distribution model also have no current alternative but to use these blood collection tubes to run the tests that they develop based on our technology. We also only use Streck tubes for the primary analysis of Signatera results, and for our Prospera test. Furthermore, the blood collection tubes supplied by Streck are intended for research use only and are labeled as RUO. Our sequencers, sourced from Illumina, as well as certain other reagents we use for Panorama and our other tests, are also labeled as RUO. As discussed further in the risk factor entitled *"Reimbursement and Regulatory Risks Related to Our Business—Changes in the way the FDA regulates the reagents, other consumables, and testing equipment we use when developing, validating, and performing our tests could result in delay or additional expense in bringing our tests to market or performing such tests for our customers,*" the FDA may determine that a product labeled RUO is, nonetheless, intended to be used diagnostically, and could take enforcement action against the supplier of the product. If this were to occur with respect to Streck, Illumina or any of our other suppliers of RUO products, we could be required to obtain one or more alternative sources of these products, and we may not be able to do so on commercially reasonable terms or at all. In addition, Streck's blood collection tubes have not been registered as a medical device in all countries in which we market our Panorama test. As discussed in the risk factor entitled "*Reimbursement and Regulatory Risks Related to Our Business—Failure to obtain necessary regulatory approvals may adversely affect our ability to expand our operations internationally, including our ability to continue commercializing our cloud-based distribution model,"* the regulatory authorities in some of these countries may determine that such registration is required, which could impact our ability to offer Panorama in such countries. Furthermore, because our licensees under our cloud-based distribution model also exclusively use such sole-sourced components to run the tests they develop based on our technology, and our laboratory distribution partners must use certain of such sole-sourced components in order to utilize our tests, any enforcement action against the supplier by the FDA or any other regulatory authority in the jurisdictions in which our licensees and laboratory distribution partners are located could have an adverse impact on our business.

Because we rely on third-party manufacturers, we do not control the manufacture of these components, including whether such components will meet our quality control requirements, nor the ability of our suppliers to comply with applicable legal and regulatory requirements. In many cases, our suppliers are not contractually required to supply these components to the quality or performance standards that we require. If the supply of components we receive does not meet our quality control or performance standards, we may not be able to use the components, or if we use them not knowing that they are of inadequate quality, which occasionally occurs with respect to certain reagents, our tests may not work properly or at all, or may provide erroneous results, and we may be subject to significant delays caused by interruption in production or manufacturing or to lost revenue from such interruption or from spoiled tests. In addition, any natural or

other disaster, acts of war or terrorism, shipping embargoes, labor unrest or political instability or similar events at our third-party manufacturers' facilities that cause a loss of manufacturing capacity would heighten the risks that we face.

In the event of any adverse developments with our sole suppliers, or if any of our sole suppliers modifies any of the components they supply to us, our ability to supply our products may be interrupted, and obtaining substitute components could be difficult or require us to re-design or re-validate our products. In addition, if we obtain FDA clearance, approval or authorization for any of our tests as an in vitro diagnostic, or IVD, such issues with suppliers or the components that we source from suppliers could affect our commercialization efforts for such an IVD, as further described in the risk factor entitled "*Reimbursement and Regulatory Risks Related to Our Business—If the FDA were to begin actively regulating our tests, we could incur substantial costs and delays associated with trying to obtain premarket clearance or approval and incur costs associated with complying with post-market controls.*" Our failure to maintain a continued supply of components, or a supply that meets our quality control requirements, or changes to or termination of our agreements or inability to renew our agreements with these parties or enter into new agreements with other suppliers, particularly in the case of sole suppliers such as Streck and Illumina, could result in the loss of access to important components of our tests and impact our test performance or affect our ability to perform our tests in a timely manner or at all, which could impair, delay or suspend our commercialization activities. In the event that we transition to a new supplier from any of our sole suppliers, doing so could be time-consuming and expensive, may result in interruptions in our ability to supply our products to the market, could affect the performance of our tests or could require that we re-validate our affected tests using replacement equipment and supplies, which could delay the performance of our tests and result in increased costs. Any of these occurrences could have a material adverse effect on our business, financial condition and results of operations.

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

Our core business depends on our ability to quickly and reliably deliver test results to our customers. We typically receive blood samples for analysis at our laboratory facilities within days of collection from the patient. Disruptions in delivery service, whether due to error by the courier service, labor disruptions, bad weather, natural disaster, terrorist acts or threats or for other reasons, could adversely affect specimen integrity, our ability to process or store samples in a timely manner and to service our customers, and ultimately our reputation and our business. In addition, if we are unable to continue to obtain expedited delivery services on commercially reasonable terms, our operating results may be adversely affected.

Security breaches, loss of data and other disruptions, including with respect to cybersecurity, could compromise sensitive information related to our business or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and reputation.

In the ordinary course of our business, we collect and store sensitive data, including legally-protected personal information, such as test results and other patient health information, credit card and other financial information, insurance information, and personally identifiable information. We also store sensitive intellectual property and other proprietary business information, including that of our customers, payers and collaboration partners. We are highly dependent on information technology networks and systems, including a combination of on-site systems, managed data center systems and cloud-based data center systems, and the Internet, to securely process, transmit, and store a wide variety of business-critical information, including research and development information, commercial information and business and financial information. We also communicate sensitive data, including patient data, telephonically, through our website, through facsimile, through integrations with third party electronic medical records systems, and through relationships with third party vendors and their subcontractors, both in the United States and internationally. The laws of some foreign countries do not protect data privacy to the same extent as the laws of the United States.

The secure processing, storage, maintenance and transmission of this critical information are vital to our operations and business strategy. Although we take measures to protect sensitive information from unauthorized access, use or disclosure, our information technology and infrastructure, and that of our technology and other third party service providers and their subcontractors, are nevertheless inherently vulnerable, to some extent, to cyber-attacks by hackers or viruses or breaches due to employee error, technical error, malfeasance or other disruptions. We have on occasion experienced such disruptions. Any such breach or interruption could compromise our data security, and the information

we store could be inaccessible by us or could be accessed by unauthorized parties, publicly disclosed, lost or stolen. Any such interruption in access, improper access, disclosure, modification, or other loss of information could result in legal claims or proceedings, liability or penalties under laws and regulations that protect the privacy of personal information, such as the Health Insurance Portability and Accountability Act of 1996, or HIPAA, European data privacy regulations, such as the General Data Protection Regulation, or GDPR, state privacy regulations such as the California Consumer Privacy Act. We may be required to comply with state breach notification laws, become subject to mandatory corrective action, or be required to verify the correctness of database contents. Unauthorized access, loss or dissemination could also disrupt our operations, including our ability to perform tests, provide test results, bill payers or patients, process claims and appeals, provide customer assistance services, conduct research and development activities, develop and commercialize tests, collect, process and prepare company financial information, provide information about our tests, and manage the administrative aspects of our business, any of which could damage our reputation and adversely affect our business. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may compound these adverse consequences. Any such breach could also result in the compromise of our trade secrets and other proprietary information, which could adversely affect our competitive position.

For example, in May 2019, we were notified of a data security incident that compromised the computer systems of Retrieval-Masters Creditors Bureau, Inc. d/b/a American Medical Collection Agency, or AMCA, one of our third party vendors, and affected a limited number of our patients whose data was stored in AMCA's systems. While the accessed data did not include Social Security numbers, the credit card information of a small number of the patients was compromised. We notified the affected individuals as required by HIPAA.

Our cloud-based distribution model adds additional data privacy risk, as certain personal health and other information may be sent to and stored in the cloud by our laboratory licensees, many of which are located outside of the United States. We contractually prohibit our licensees from sending personally-identifiable information to our cloud servers, and the vendor that hosts our software in the cloud is contractually required to comply with data privacy laws, such as HIPAA and GDPR. However, we cannot be certain that these third parties will comply with the terms of our agreements, nor that they will not experience security breaches or other disruptions.

The marketing, sale, and use of Panorama, Horizon and our other products could result in substantial damages arising from product liability or professional liability claims that exceed our resources.

The marketing, sale and use of Panorama, Horizon and our other products could lead to product liability claims against us if someone were to allege that our test failed to perform as it was designed or as claimed in our promotional materials, was performed pursuant to incorrect or inadequate laboratory procedures, if we delivered incorrect or incomplete test results, or if someone were to misinterpret test results. In addition, we may be subject to liability for errors in, a misunderstanding of, or inappropriate reliance upon, the information we provide, or for failure to provide such information, in connection with our marketing and promotional activities or as part of the results generated by Panorama, Horizon and our other products. For example, Panorama could provide a low-risk result which a patient or physician may rely upon to make a conclusion about the health of the fetus, which may, in fact, have the condition for which we delivered a low-risk result because the Panorama result was a so-called false negative. Even though Panorama and our other tests are highly accurate, they are not 100% accurate and we may report false negative results. If the resulting baby with the condition is born, the family may file a lawsuit against us claiming product or professional liability, as has happened in the past and may happen in the future. A product liability or professional liability claim could result in substantial damages and be costly and time-consuming for us to defend. Although we maintain product and professional liability insurance, our insurance may not fully protect us from the financial impact of defending against product liability or professional liability claims or any judgments, fines or settlement costs arising out of any such claims. Any product liability or professional liability claim brought against us, with or without merit, could increase our insurance rates, cause our insurance coverage to be terminated or prevent us from securing insurance coverage in the future. Additionally, any product liability or professional liability lawsuit could harm our reputation, result in a cessation of our services or cause our partners to terminate our agreements with them, any of which could adversely impact our results of operations.

If we are unable to successfully scale our operations, our business could suffer.

Our overall test volumes grew from approximately 515,200 to 668,600 and further to 804,300 tests processed during the years ended December 31, 2017, 2018 and 2019, respectively, and since 2009 we have launched 16 product offerings, four of them in 2017 alone and additional products launched or planned for 2020. In addition, we regularly evaluate and refine our testing process, often significantly updating our workflows, as with Panorama in 2017 and Horizon in 2018. As our test volumes and product offerings continue to grow, we will need to continue to ramp up our testing capacity and implement increases in scale. We will need additional or new equipment, laboratory space and qualified laboratory personnel, and will need to increase office and laboratory space, expand our customer service capabilities, implement billing and systems process improvements, enhance our controls and procedures and expand our internal quality assurance program and technology platform. The value of Panorama, Horizon and our other products depends on our ability to perform the tests on a timely basis and at an exceptionally high standard of quality, and on maintaining our reputation for such timeliness and quality. Failure to implement necessary procedures, transition to new facilities, equipment or processes or to hire the necessary personnel in a timely and effective manner could result in higher processing costs or an inability to meet market demand, or could otherwise affect our operating results, as we have experienced in the past.

In addition, our efforts to scale our operations may be unable to keep pace with an increase in the frequency of our launches of new or enhanced products and services. We have launched eight new products in since 2017, three of which are in markets or industries new to us. As we continue to launch additional offerings and product enhancements, we will need to manage our resources among various initiatives, and such competing priorities could lead to delays in one or more of our business initiatives. Conversely, to the extent that we scale our operations, infrastructure and other resources but do not ultimately meet our anticipated timelines in our product development efforts, we will experience higher costs and expenses than necessary until our project timelines and operational resources become aligned. We may also, intentionally or unintentionally, allocate resources to new products or initiatives in a manner disproportionate to the amount of revenue that such initiatives generate compared to our existing or core offerings. We cannot assure you that our efforts to scale our commercial operations will not negatively affect the quality of our test process or results, or that we will be successful in managing the growing complexity of our business operations.

To execute our growth plan, we must attract and retain highly qualified personnel. Competition for these personnel is intense, especially for sales, scientific, medical, laboratory, research and development and other technical personnel, and especially in the San Francisco Bay Area where our headquarters and main laboratory facilities are located, and the turnover rate of such personnel can be high. We have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications. Many of the companies with which we compete for highly qualified personnel have greater resources than we have. If we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached their legal obligations to their former employers, which occurs from time to time. In addition, job candidates and existing employees in the San Francisco Bay Area often consider the value of the equity awards they receive in connection with their employment. To the extent that our current or potential employees perceive the value of our equity awards to be low, our ability to recruit, retain and motivate highly skilled employees may be adversely affected, which could then have an adverse effect on our business and future growth prospects. Furthermore, to the extent that we are unable to retain our employees and they leave our company to join one of our competitors, we cannot assure you that any invention, non-disclosure or non-compete agreements we have in place will provide meaningful protection against a departing employee's unauthorized use or disclosure of our confidential information, as further discussed in "*—Risks Relating to our Intellectual Property—If we are not able to adequately protect our trade secrets and other proprietary information, the value of our technology and products could be significantly diminished*."

In addition, our growth may place a significant strain on our operating and financial systems and our management, sales, marketing and administrative resources. As a result of our growth, our operating costs may escalate faster than we anticipate, we may face difficulties in obtaining additional office or laboratory space, and some of our internal systems may need to be enhanced or replaced. If we cannot effectively manage our expanding operations and our costs, we may not be able to grow successfully or we may grow at a slower pace, and our business could be adversely affected.

If our sales, distribution, development or other partnerships are not successful and we are not able to offset the resulting impact through our own efforts or through agreements with new partners, our commercialization activities may be impaired and our financial results could be adversely affected.

Part of our business strategy is to develop relationships with laboratory and other partners to sell our other products, both in the United States and internationally. For example, we have entered into an agreement with BGI Genomics pursuant to which, among others, we will commercialize Signatera in China and develop reproductive health tests on BGI Genomics's sequencing platform; and an agreement with Foundation Medicine to develop and commercialize personalized circulating tumor DNA monitoring assays for use by biopharmaceutical and clinical customers who order Foundation Medicine's companion diagnostic cancer test. Developing and commercializing products with third parties reduces our control over such development and commercialization efforts and subjects us to the various risks inherent in a joint effort with a third party, such as delays, operational issues, technical difficulties and other contingencies outside of our influence or control. Distributing Panorama, Signatera and our other products through partners reduces our control over our revenues, our market penetration and our gross margin on sales by the partner if we could have otherwise made that sale through our direct sales force. The financial condition of these third parties could weaken, or they could terminate their relationship with us and/or stop selling our products, as has happened in the past; reduce their marketing efforts in respect of our products; develop and commercialize or otherwise sell competing products in addition to or in lieu of our tests, as has also occurred; merge with or be acquired by a competitor of ours or a company that chooses to de-prioritize the efforts to sell our products; or otherwise breach their agreements with us. For example, as further described in "*Note 3—Revenue Recognition—Licensing and Other Revenues—Qiagen*," we had entered into a license, distribution and development agreement with Qiagen pursuant to which, among others, Qiagen would distribute an NIPT based on our Panorama test on a sequencer to be developed by us and Qiagen; however, Qiagen has announced that it has discontinued the development of its Next Generation Sequencing Platform and has now partnered with Illumina to develop next-generation sequencing based tests. Furthermore, our laboratory partners may misappropriate our trade secrets or use our proprietary information in such a way as to expose us to litigation and potential liability; and our compliance risk may increase to the extent that we are responsible for our partners' sales and marketing activities. Disagreements or disputes with our laboratory partners, including disagreements over customers, proprietary rights or our or their compliance with contractual obligations, might cause delays or impair the commercialization of Panorama, Signatera or our other tests, lead to additional responsibilities for us with respect to new tests, or result in litigation or arbitration, any of which would divert management attention and resources and be time-consuming and expensive. As is typical for companies in our industry, we are continually evaluating and pursuing various strategic or commercial partnerships, relationships, or collaborations, some of which may involve the sale and issuance of our common stock, which could result in additional dilution of the percentage ownership of our stockholders and could cause the price of our common stock and the trading price of our Convertible Notes to decline.

If our partnerships are not successful, our ability to increase sales of our products and to successfully execute our strategy could be compromised.

Our financial condition and results of operations may be adversely affected by international regulatory and business risks.

As we expand our operations, including by offering our tests in other countries, we are increasingly subject to varied and complex foreign and international laws and regulations due to operating, offering our products, or contracting with employees, contractors and other service providers in various other countries. Compliance with these laws and regulations often involves significant costs and may require changes in our business practices that may result in reduced revenues and adversely affect our operating results.

We are subject to the Foreign Corrupt Practices Act of 1977, as amended, or 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. Our reliance on independent laboratories to sell Panorama and other products 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 pharmaceutical field have faced criminal penalties under the FCPA for allowing their agents to deviate from appropriate practices in doing business with foreign government officials. 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. Any violations of these laws, or

allegations of such violations, could disrupt our operations, involve significant management distraction, involve significant costs and expenses, including legal fees, and we could be subject to severe penalties, including criminal and civil penalties, disgorgement, and other remedial measures, any of which could result in a material adverse effect on our business, prospects, financial condition, or results of operations.

In addition, our international activities are subject to U.S. economic and trade sanctions, which restrict or otherwise limit our ability to do business in certain designated countries. Other limitations, such as restrictions on the import into the United States or the export to other countries of tissue or genetic data necessary for us to perform our tests, or restrictions on importation and circulation of blood collection tubes or other equipment or supplies by countries outside of the United States, may limit our ability to offer our tests internationally. We may also face competition from companies located in the countries in which we or our partners or licensees offer our tests, and in which we may be at a competitive disadvantage because the country may favor a local provider or for other reasons.

By operating internationally, we may experience longer accounts receivable payment cycles and difficulties in collecting accounts receivable; realize lower margins due to lower pricing in many countries; incur potentially adverse tax consequences, including the complexities of foreign value added tax systems, tax inefficiencies related to our corporate structure and restrictions on the repatriation of earnings; experience financial accounting and reporting burdens and complexities; experience difficulties in staffing and managing foreign operations, including under labor and employment laws and regulations that are new or unfamiliar to us; be subject to trade barriers such as tariffs, quotas, preferential bidding or import or export licensing requirements; be exposed to political, social and economic instability abroad, including terrorist attacks and security concerns; be exposed to fluctuations in currency exchange rates; and experience reduced or varied protection for intellectual property rights and practical difficulties in enforcing intellectual property and other rights, including with respect to assignment of inventions to us by our consultants in foreign jurisdictions.

Outside of the United States we enlist local and regional laboratories, contract employees and other contracted service providers to assist with various aspects of our business operations, including blood draws, engineering, sales, marketing, billing and customer support. Subject to regulatory clearance where required, we also contract with international licensees to run the molecular portion of our tests in their own labs and then access our algorithm for analysis of the resulting data through our cloud-based Constellation platform. Locating, qualifying and engaging additional distribution partners and local laboratories with local industry experience and knowledge is necessary to effectively market and sell our tests outside of the United States. We may not be successful in finding, attracting and retaining such distribution partners or laboratories, or we may not be able to enter into such arrangements on favorable terms. Sales practices and other activities utilized by our distribution partners, contract employees and other service providers, some of which may be locally acceptable, may not comply with relevant standards required under United States laws that apply to our operations overseas, including through third parties, which could create additional compliance risk. Our training and compliance program and our other internal control policies and procedures, and our contractual terms with these third parties, may not always protect us from acts committed by our employees, contractors, partners or agents abroad. Non-compliance by us or our employees, contractors, partners or agents, whether maliciously or in error, of any applicable laws or regulations could result in fines or penalties, or adversely affect our ability to operate and grow our business. Even if we are able to effectively manage our international operations, if our distribution partners and local and regional laboratory licensees are unable to effectively manage their businesses, our business and results of operations could be adversely affected. Furthermore, the legal landscape governing advertising, promotional and other marketing activities can vary widely from jurisdiction to jurisdiction, and is often more complex, less clear or less developed than in the United States. If our marketing activities are found to be in violation of local laws, regulations or practices, we may be subject to fines and other penalties, and may be required to cease marketing or commercialization activities in such jurisdiction. If our sales and marketing efforts are not successful outside of the United States, we may not achieve market acceptance for our tests outside of the United States, which would harm our business.

Operating internationally requires significant management attention and financial resources. We cannot be certain that the investment and additional resources required to increase international revenues or expand our international presence will produce desired levels of revenues or profitability.

If we lose the services of our founder and Executive Chairman or other members of our senior management team, we may not be able to execute our business strategy.

Our success depends in large part upon the continued service of our senior management team. In particular, our founder and Executive Chairman, Matthew Rabinowitz, as well as Steve Chapman, our Chief Executive Officer, are critical to our vision, strategic direction, culture, products and technology. Although Dr. Rabinowitz spends significant time with us and is active in our management, he is no longer our Chief Executive Officer. In addition, we do not maintain key-man insurance for Dr. Rabinowitz, Mr. Chapman or any other member of our senior management team. The loss of our founder and Executive Chairman, our Chief Executive Officer or one or more other members of our senior management team could have an adverse effect on our business.

We may engage in acquisitions, dispositions or other strategic transactions that could disrupt our business, cause dilution to our stockholders or reduce our financial resources.

From time to time, we may enter into transactions to acquire or dispose of businesses, products or technologies or to engage in other strategic transactions. Because we have not made any such acquisitions to date, our ability to do so successfully is unproven. Even if we identify suitable transactions, we may not be able to complete such transactions on favorable terms or at all. Any acquisitions or other strategic transactions we consummate may not strengthen our competitive position, and these transactions may be viewed negatively by customers or investors. We may decide to incur debt in connection with an acquisition or issue shares of our common stock or other equity securities to the stockholders of the acquired company, which would cause dilution to our existing stockholders. We could incur losses resulting from such strategic transactions, including undiscovered liabilities of an acquired business that are not covered by any indemnification we may obtain from the seller. In addition, we may not be able to successfully integrate any acquired personnel, technologies and operations into our existing business in an effective, timely and non-disruptive manner. Any dispositions may also cause us to lose revenue and may not strengthen our financial position. Strategic transactions may also divert management attention from day-to-day responsibilities, increase our expenses, result in accounting charges, and reduce our cash available for operations and other uses. We cannot predict the number, timing or size of future strategic transactions or the effect that any such transactions might have on our operating results.

We may need to raise additional funds through public or private equity or debt financings, corporate collaborations or licensing arrangements to continue to fund or expand our operations.

Our actual liquidity and capital funding requirements will depend on numerous factors, including:

- our ability to achieve broader commercial success with Panorama, Horizon and our other products;
- the costs and success of our research, development, and commercialization efforts for potential new products;
- our ability to obtain more extensive coverage and reimbursement for our tests, including in the average-risk patient population and for microdeletions screening in NIPT, as well as in additional indications in oncology as we continue to expand our offerings in that field;
- our ability to generate sufficient revenues from our cloud-based distribution model;
- our ability to collect on our accounts receivable;
- our need to finance capital expenditures and further expand our clinical laboratory operations;
- our ability to manage our operating costs; and
- the timing and results of any regulatory authorizations that we are required to obtain for our tests.

Additional capital, if needed, may not be available on satisfactory terms or at all. Furthermore, any additional capital raised through the sale of equity or equity-linked securities, or grant of equity or equity-linked securities in connection with any debt financing, will dilute stockholders' ownership interests in us and may have an adverse effect on the price of our common stock and the trading price of our Convertible Notes. In addition, the terms of any financing may adversely affect stockholders' holdings or rights. Debt financing, if available, may include restrictive covenants, and may impose other constraints on us and our operations, as was the case under our 2017 Term Loan. To the extent that we raise capital through collaborations and licensing arrangements, it may be necessary to relinquish some rights to our technologies or grant licenses on terms that may not be favorable to us.

If we are not able to obtain adequate funding when needed, we may have to delay development programs or sales and marketing initiatives. In addition, we may have to work with a partner on one or more of our tests or programs, which could lower the economic value of those programs to our company.

Ethical, legal and social concerns related to the use of genetic information could reduce demand for our tests.

DNA testing, like that conducted using Panorama, Horizon, Signatera, and our other products, has raised ethical, legal and social issues regarding privacy and the appropriate uses of the resulting information. Governmental authorities could, for social or other purposes, limit or regulate the use of genomic information or genomic testing or prohibit testing for genetic predisposition to certain conditions, particularly for those that have no known cure. Patients may also refuse to use genetic tests even if permissible, for similar reasons; they may also refuse genetic testing due to concerns regarding eligibility for life or other insurance. Ethical and social concerns may also influence U.S. and foreign patent offices and courts with regard to patent protection for technology relevant to our business. These and other ethical, legal and social concerns may limit market acceptance of our tests or reduce the potential markets for services and products enabled by our technology platform, either of which could harm our business.

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

We have a significant amount of net operating loss, or NOL, carryforwards that can be used to offset potential future taxable income and related income taxes. As of December 31, 2019, we had federal and state NOL carryforwards of approximately $514.0 million and $271.6 million, respectively, which, if not utilized, begin to expire in 2027 and 2028, respectively. Approximately $194.2 million of these federal NOLs can be carried forward indefinitely. We also had federal research and development credit carryforwards of approximately $15.7 million, which begin to expire in 2027, and state research and development credit carryforwards of approximately $13.0 million, which can be carried forward indefinitely. Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change" (generally defined as a greater than 50% change, by value, in equity ownership over any three-year period), the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may not be within our control. Our ability to use these carryforwards could be limited if we experience an "ownership change."

Our estimates of total addressable market opportunity and forecasts of market growth may prove to be inaccurate, and even if the market in which we compete achieves the forecasted growth, our business could fail to grow at similar rates.

Total addressable market opportunity estimates and growth forecasts are subject to significant uncertainty and are based on assumptions and estimates that may not prove to be accurate. Our publicly announced estimates and forecasts relating to the size and expected growth of our market may prove to be inaccurate. Even if the market in which we compete meets our size estimates and forecasted growth, our business could fail to grow at similar rates.

Reimbursement and Regulatory Risks Related to Our Business

If we are unable to expand, maintain or obtain third-party payer coverage and reimbursement for Panorama, Horizon and our other tests, or if we are required to refund any reimbursements already received, our revenues and results of operations would be adversely affected.

Our business depends on our ability to obtain and maintain adequate reimbursement coverage from third-party payers and patients. Third-party reimbursement for our testing represents a significant portion of our revenues, and we expect third-party payers such as insurance companies and government healthcare programs to continue to be our most significant source of payments. In particular, we believe that the following will be necessary for us to continue to achieve commercial success: expanding insurance coverage from the high-risk to the average-risk pregnancy population, which represents roughly 80% of the United States pregnancy market, and for microdeletions screening, and obtaining positive coverage determinations and favorable reimbursement rates from commercial third-party payers, the Centers for Medicare & Medicaid, or CMS, and state reimbursement programs for our tests. It continues to be the case that we do not expect to receive reimbursement for a significant number of Panorama tests for average-risk patients and for microdeletions that we perform. In addition, while our Signatera test received a Medicare positive draft local coverage determination for certain forms of colorectal cancer in August 2019, that local coverage decision has not been finalized and it remains unclear whether and to what extent Signatera will be reimbursed for this indication. Furthermore, while we have recently received a positive coverage decision for our Prospera test, we cannot guarantee that our test will continue to be reimbursed at the same or a similar rate as we have received thus far. If we are unable to obtain or maintain adequate reimbursement coverage from, or achieve in-network status with, third-party payers for our existing or future tests, our ability to generate revenues will be limited. For example, physicians may be reluctant to order our tests due to the potential of a substantial cost to the patient if reimbursement coverage is unavailable or insufficient.

In making coverage determinations, third-party payers often rely on practice guidelines issued by professional societies. The American College of Medical Genetics, or ACMG, has issued updated guidelines recommending informing pregnant women that NIPT is the most sensitive screening option for Patau, Edwards and Down syndromes, as well as of the availability of the expanded use of NIPT to screen for clinically relevant copy number variants, or CNVs, in the context of counseling that includes the risks/benefits and limitations of screening for CNVs. A CNV is a genetic mutation in which a segment of the genome has been deleted or duplicated, including microdeletions in which a small segment of a chromosome is deleted. The International Society for Prenatal Diagnosis, or ISPD, has issued guidelines that are supportive of performing NIPT in average-risk pregnancies, as well as high-risk pregnancies. However, the Society for Maternal Fetal Medicine, or SMFM, has issued guidelines for NIPT stating that, while all pregnant women should be informed of the option to receive NIPT, conventional screening methods, such as traditional serum screening, rather than NIPT, remain the most appropriate choice for first-line screening for average-risk pregnancies. While we expect the ACMG and SMFM guidelines to result in an increase in the number of average-risk women who are informed of NIPT and that may request it as a result, not all third-party payers reimburse for NIPT for these average-risk patients. Currently, Aetna Inc., UnitedHealthcare Insurance Company and a number of other third-party payers (with the exception of a temporary expansion in coverage by one such third-party payer as a result of the COVID-19 pandemic) have negative coverage determinations for NIPT in average-risk patient populations, meaning that their policy is not to reimburse for NIPT for patients in the average-risk population. The SMFM guidelines also echoed a previous statement from SMFM that routine screening for microdeletions should not be performed. Many third-party payers do not reimburse for microdeletions screening. While we have published data on the performance of Panorama for the 22q11.2 deletion syndrome, we have and may continue to experience low reimbursement rates for Panorama for microdeletions, at least until additional validation data on the sensitivity and specificity of our tests becomes available. If we are unable to present satisfactory additional data on the performance of Panorama for 22q11.2 deletion syndrome, including from our SMART study, we may be unable to obtain positive coverage determinations for our test. If third-party payers do not reimburse for NIPT for average-risk pregnancies or microdeletions in the future, our future revenues and results of operations would be adversely affected, particularly to the extent that we continue to perform large volumes of tests for which third-party payors do not reimburse.

In addition, a CPT code for microdeletions took effect in January 2017. We have experienced low average reimbursement rates for microdeletions under this code, and we expect that this code will continue to cause our microdeletions reimbursement to remain low, at least in the near term, due to third-party payers declining to reimburse

and as a result of reduced reimbursement, under the code, which has had, and we expect to continue to have, an adverse effect on our revenues. Also, a new CPT code for expanded carrier screening tests took effect in January 2019. The new code has caused and may continue to cause reimbursement rates for our broader Horizon carrier screening panel to decrease because those tests may be reimbursed as a combined single panel instead of as multiple individual tests.

The reimbursement environment, particularly for molecular diagnostics, is continually changing and our efforts to broaden reimbursement for our tests with third-party payers may not be successful. Third-party payers from whom we have received reimbursement may withdraw coverage or decrease the amount of reimbursement coverage for our tests at any time and for any reason. In some cases, our tests or their uses within certain populations, such as for microdeletions, are considered experimental by third-party payers and, as a result, some payers have decided not to reimburse for such tests. In addition, some third-party payers bundle payment for multiple tests or tests that screen for multiple conditions, such as our Horizon test or our Panorama test and the separate Panorama screen for microdeletions, into a single payment rate, thereby limiting our reimbursement in those situations. Payers may also dispute our billing or coding. Based on any of the foregoing, third-party payers may also decide to deny payment or recoup payment for testing that they contend to have been not medically necessary, against their coverage determinations, or for which they have otherwise overpaid, and we may be required to refund reimbursements already received. We deal with requests for recoupment from third-party payers from time to time in the ordinary course of our business, and it is likely that we will continue to do so in the future. See "Note 8—Commitments and Contingencies —Third-Party Payer Reimbursement Audits" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements. If a third-party payer denies payment for testing, reimbursement revenue for our testing could decline. If a third-party payer successfully proves that payment for prior testing was in breach of contract or otherwise contrary to law, they may recoup payment, which amounts could be significant and would impact our results of operations, and it may decrease reimbursement going forward. We may also decide to negotiate and settle with a third-party payer in order to resolve an allegation of overpayment. Any of these outcomes might require us to restate our financials from a prior period, which would likely cause our stock price to decline. For example, in 2018 we reached a settlement with certain government payers regarding past reimbursement submissions; although the settlement involved no admission of fault by us and no corporate integrity agreement, we cannot guarantee that we will not be subject to similar claims, resulting in additional settlements or repayments, in the future.

Furthermore, some of our contracts with third-party payers contain so-called most favored nation provisions, pursuant to which we have agreed that we will not bill the third-party payer more than we bill any other third-party payer. We must therefore monitor our billing and claims submissions to ensure that we remain in compliance with these contractual requirements with third-party payers. If we do not successfully manage these most favored nation provisions, we may need to forego revenues from some third-party payers or reduce the amount we bill to each third-party payor with a most-favored nation clause in its contract that is violated, which would adversely affect our revenues. This situation could also subject us to claims for recoupment, which could require the time and attention of our management, require the expense of engaging outside counsel or consultants, and may be a distraction from development of our business, adversely impacting our operations. Such recoupment demands could also ultimately result in an obligation to repay amounts previously earned.

In addition, if a third-party payer denies coverage, it may be difficult for us to collect from the patient, and we may not be successful in doing so. In particular, we are often unable to collect the full amount of a patient's responsibility where we are an out-of-network provider and the patient is left with a large balance, despite our good faith efforts to collect. As a result, we cannot always collect the full amount due for our tests when third-party payers deny coverage, cover only a portion of the invoiced amount or the patient has a large deductible, which may cause payers to raise questions regarding our billing policies and patient collection practices. We believe that our billing policies and our patient collection practices are compliant with applicable laws. However, we have in the past received, and we may in the future receive, inquiries from third-party payers regarding our billing policies and collection practices. While we have addressed these inquiries as and when they have arisen, there is no guarantee that we will always be successful in addressing such concerns in the future, which may result in a third-party payer deciding to reimburse for our tests at a lower rate or not at all, seeking recoupment of amounts previously paid to us, or bringing legal action to seek reimbursement of previous amounts paid. Any of such occurrences could cause reimbursement revenue for our testing, which constitutes the large majority of our revenue, to decline. Additionally, if we were required to make a repayment, such repayment could be significant, which would impact our results of operations, and we might be required to restate our financials from a prior period, which would likely cause our stock price to decline.

We are aware of policies and practices of our competitors to offer patients a set cap on their out-of-pocket responsibility, waive patient responsibility altogether, and, in some cases, to not send patients a bill at all, all of which we believe is not in accordance with third-party payers' policies and, in many cases, not compliant with the law. In contrast, it is our policy not to offer such caps or waivers and to send bills to patients for services rendered. Because of this discrepancy, our offerings may be perceived as less attractive to patients and their healthcare providers, who are concerned about patients having a large financial responsibility for these products. As a result, we believe that our revenues and results of operations have been adversely affected, and may continue to be so affected to the extent that our competitors continue such practices.

Our revenues may be adversely affected if we are unable to successfully obtain reimbursement from the Medicare program and state Medicaid programs.

Our revenues from Medicare are currently relatively small, given the population that Medicare covers, and the fact that our testing in women's health, which has comprised the significant majority of our business, generally is not received by Medicare beneficiaries. As a result, we do not expect our Medicare revenues to change materially with regard to NIPT. However, Medicare reimbursement impacts our revenue from our Prospera test and will impact our future revenue from our Signatera test, as a large proportion of oncology and transplant patients are covered by Medicare. Furthermore, Medicare reimbursement can affect both Medicaid reimbursement, which is relevant to NIPT, and reimbursement from commercial third-party payers. Specifically, fee-for-service Medicaid programs generally do not reimburse at rates that exceed Medicare's fee-for-service rates, and many commercial third-party payers set their payment rates at a percentage of the amounts that Medicare pays for testing services. Medicare reimbursement rates are typically based on the Clinical Laboratory Fee Schedule, or CLFS, set by CMS. Our current Medicare Part B reimbursement was not set pursuant to a national coverage determination by CMS. Although we believe that coverage is available under Medicare Part B even without such a determination, we currently lack the certainty afforded by a formal national coverage determination by CMS. Thus, CMS could issue an adverse coverage determination as to Panorama which could influence other third-party payers, including Medicaid, and could have an adverse effect on our revenues.

It is estimated that nearly half of all births in the United States are to state Medicaid program recipients. Each state's Medicaid program has its own coverage determinations related to our testing, and many state Medicaid programs do not provide their recipients with coverage for our testing. Even if our testing is covered by a state Medicaid program, we must be recognized as a Medicaid provider by the state in which the Medicaid recipient receiving the services resides in order for us to be reimbursed by a state's Medicaid program, including under a Medicaid managed care plan. Our primary San Carlos laboratory is currently recognized by 48 states as a Medicaid provider, and we are currently in the process of obtaining recognition of our Austin laboratory as a Medicaid provider in states in which the Austin laboratory is not already credentialed; however, even if we are recognized as a Medicaid provider in a state, if Medicare's CLFS rate for our services and tests are low, the Medicaid reimbursement amounts are sometimes as low, or lower, than the Medicare reimbursement rate. In addition, from time to time we receive requests from state Medicaid programs seeking information or documents to determine eligibility for and the amount of Medicaid reimbursement. As a result of all of these factors, many state Medicaid programs only reimburse our testing at a very low dollar amount, or not at all. Low or zero-dollar Medicaid reimbursement rates for our tests could have an adverse effect on our business and revenues.

Our revenues may be adversely impacted if third-party payers withdraw coverage or provide lower levels of reimbursement due to changing policies, billing complexities or other factors.

We are in network, or under contract, with the significant majority of third-party payers from whom we receive reimbursement; this means that we have agreements with most third-party payers that govern approval or payment terms. However, these contracts do not guarantee reimbursement for all testing we perform. For example, many third-party payers with whom we have written agreements have policies that state they will not reimburse for use of NIPTs for average-risk pregnancies or for the screening of microdeletions, or don't have a policy in place to reimburse for microdeletions screening. In addition, the terms of certain of our agreements require a physician or qualified practitioner's signature on test requisitions or require other controls and procedures prior to conducting a test. In particular, third-party payers have increasingly required prior authorization to be obtained prior to conducting a test, as a condition to reimbursing for the test. This has placed a burden on our billing operations as we have to dedicate or source resources to ensuring that these requirements are met and to conduct follow-up and address issues as they arise, and has also impacted our results of

operations, including our gross margins, since the fourth quarter of 2017, when these requirements began to take effect. To the extent we or the physicians ordering our tests do not follow the prior authorization requirements, we may be subject to claims for recoupment of reimbursement amounts previously paid to us, or may not receive some or all of the reimbursement payments to which we would otherwise be entitled. This has occurred in some cases and may occur more frequently in the future, which does and would have an adverse impact on our revenues.

Where we are considered to be an out of network provider, which is the case with some third-party payers from whom we receive reimbursement, such third-party payers could withdraw coverage and decline to reimburse for our tests in the future, for any reason. Managing reimbursement on a case-by-case basis is time-consuming and contributes to an increase in the number of days it takes us to collect on accounts, which also increases our risk of non-payment. Negotiating reimbursement on a case-by-case basis also typically results in the receipt of reimbursement at a significant discount to the list price of our tests.

Even if we are being reimbursed for our tests, third-party payers may review and adjust the rate of reimbursement, require co-payments from patients or stop paying for our tests. Government healthcare programs and other third-party payers continue to increase their efforts to control the cost, utilization and delivery of healthcare services by demanding price discounts or rebates and limiting coverage of, and amounts they will pay for, molecular diagnostic tests. These measures have resulted in reduced payment rates and decreased utilization in the clinical laboratory industry. Because of these cost-containment measures, governmental and commercial third-party payers may reduce, suspend, revoke or discontinue payments or coverage at any time, including payors that currently provide reimbursement for our tests. Reduced reimbursement of our tests may harm our business, financial condition or results of operations.

Billing for clinical laboratory testing services is complex. We perform tests in advance of payment and without certainty as to the outcome of the billing process. In cases where we expect to receive a fixed fee per test due to our reimbursement arrangements, we may nevertheless encounter disputes over pricing and billing. Among the factors complicating our billing of third-party payers are disparity in coverage among various payers; disparity in, and increasingly difficult, information and billing requirements among payers, including with respect to prior authorization requirements and procedures and establishing medical necessity; and incorrect or missing billing information, which is required to be provided by the ordering healthcare practitioner. These billing complexities, and the associated uncertainty in obtaining payment for our tests, could result in reduced reimbursement of our tests, which could harm our business, financial condition and results of operations.

In the United States, the AMA generally assigns specific billing codes for laboratory tests under a coding system known as Current Procedure Terminology, or CPT, which we and our ordering healthcare providers must use to bill and receive reimbursement for our diagnostic tests. Once the CPT code is established by the AMA, CMS establishes payment levels and coverage rules under Medicare while private payers independently establish rates and coverage rules. A CPT code specific to NIPT for aneuploidies, and a CPT code for microdeletions, are in place, and CMS has established a pricing benchmark for aneuploidy and microdeletions testing. However, our microdeletions reimbursement has decreased since the implementation of the microdeletions CPT code because third-party payers are declining to reimburse under this code or reimbursing at a much lower rate than we had previously received. Furthermore, we cannot guarantee that we will be able to negotiate favorable rates for this code or receive reimbursement at all if we are unable to collect and publish additional data and obtain positive coverage determinations for Panorama for microdeletions. In addition, a CPT code for expanded carrier screening tests has been implemented, which has caused and may continue to cause reimbursement rates for our Horizon expanded carrier screening tests to decline. We do not currently have assay-specific CPT codes assigned for all of our tests, and there is a risk that we may not be able to obtain such codes or, if obtained, we may not be able to negotiate favorable rates for such codes. We currently submit for reimbursement using CPT codes based on the guidance of outside coding experts and legal counsel. There is a risk that the codes we currently submit may be rejected or withdrawn or that third-party payers will seek refunds of amounts that they claim were inappropriately billed based on either the CPT code used, or the number of units billed. In addition, third-party payers may not establish positive coverage policies for our tests or adequately reimburse for any CPT code we may use, or seek recoupment for testing previously performed, which have occurred in the past.

If the FDA were to begin actively regulating our tests, we could incur substantial costs and delays associated with trying to obtain premarket clearance or approval and incur costs associated with complying with post-market controls.

We currently offer a number of genetic tests, and each of those tests is an LDT. An LDT is generally considered to be a test that is designed, developed, validated and used within a single laboratory. The FDA takes the position that it has the authority to regulate such tests as medical devices under the FDC Act, but it has generally exercised enforcement discretion with regard to LDTs. This means that even though the FDA believes it can impose regulatory requirements on LDTs, such as requirements to obtain premarket approval or clearance of LDTs, it has generally chosen not to enforce those requirements to date.

The regulation by the FDA of LDTs remains uncertain. The FDA has laid out elements of a potential LDT regulatory framework, but has not established any regulatory requirements. The FDA has also sought to restrict the marketing of a number of LDTs used for pharmacogenomics. The FDA's activities around regulating LDTs prompted the drafting of legislation governing diagnostic products and services that sought to substantially revamp the regulation of both LDTs and IVDs. Congress may still act to provide further direction to the FDA on the regulation of LDTs and substantially modify the regulation of IVDs.

In the meantime, the FDA could require us to seek premarket clearance, approval or authorization to offer our tests for clinical use even before it finalizes any future guidance. If FDA premarket clearance, approval or authorization is required for any of our existing or future tests, we may be forced to stop selling our tests or we may be required to modify claims or make other changes to our tests while we work to obtain FDA clearance, approval or authorization. Our business would be adversely affected while such review is ongoing and if we are ultimately unable to obtain premarket clearance, approval or de novo authorization. For example, the regulatory premarket clearance, approval or de novo authorization process may involve, among other things, successfully completing analytical, pre-clinical and/or clinical studies beyond the studies we have already performed or plan to perform for each of our products and would involve submitting a premarket notification, or 510(k), a de novo application, or filing a PMA application with the FDA. As further described in the risk factor entitled "*Uncertainty in the development and commercialization of our enhanced or new tests or services could materially adversely affect our business, financial condition and results of operations,*" completing such studies requires the expenditure of time, attention and financial and other resources, and may not yield the desired results, which may delay, limit or prevent regulatory clearances, approvals or authorizations. In addition, we may require cooperation in our filings for FDA clearance, approval or authorization from third-party manufacturers of the components of our tests. If we are unable to obtain such required cooperation, we may be unable to achieve the desired regulatory clearances, approvals or authorizations, or may be delayed or be required to expend additional costs and other resources in doing so. For example, Illumina currently is our sole sequencer and sequencing reagent supplier. If we seek to achieve regulatory clearance, approval or authorization for Panorama, to the extent that Panorama incorporates Illumina's sequencer or sequencing reagents, we may require Illumina's cooperation in the regulatory process. We may face difficulty obtaining cooperation from Illumina because Illumina is the parent company of Verinata, a direct competitor of ours in the NIPT field. In addition, we have been party to certain intellectual property proceedings with Illumina as described in "Note 8 —Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements. Furthermore, if FDA premarket clearance, approval or de novo authorization is required, our cash flows may be adversely affected until we obtain such clearance, approval or authorization, as most third-party payers, including Medicaid, will not reimburse for use of medical devices which are required to be cleared or approved but which have not been.

In May 2019, the FDA granted Breakthrough Device designation for our Signatera test for use in the post-surgical detection and quantification of ctDNA in the blood of patients previously diagnosed with certain types of cancer and in combination with certain drugs, which enables us to have increased interactions with FDA. We cannot assure you that this designation will lead to accelerated review or approval of our regulatory submissions for Signatera.

We cannot assure you that Panorama or any of our other tests for which we decide to pursue or are required to obtain premarket clearance, approval or de novo authorization by the FDA will be cleared, approved or authorized on a timely basis, if at all. In addition, if a test has been cleared, approved or authorized, certain kinds of changes that we may make to improve the test, or as a result of issues with suppliers of the components of the test or if a supplier modifies its component upon which our approval relies, may need to be cleared, approved or authorized by the FDA before we can implement them, which could increase the time and expense involved in implementing such changes commercially. Ongoing compliance with FDA regulations would increase the cost of conducting our business and subject us to heightened

regulation by the FDA and penalties for failure to comply with these requirements, any of which may adversely impact our business and results of operations.

Furthermore, the FDA or the Federal Trade Commission, or FTC, may object to the materials and methods we use to promote the use of our current tests or other LDTs we may develop in the future, including with respect to the product claims in our promotional materials, and may initiate enforcement actions against us. Enforcement actions by the FDA may include, among others, untitled or warning letters; fines; injunctions; civil or criminal penalties; recall or seizure of current or future tests, products or services; operating restrictions and partial suspension or total shutdown of production. Enforcement actions by the FTC may include, among others, injunctions, civil penalties, and equitable monetary relief.

Failure to obtain necessary regulatory approvals may adversely affect our ability to expand our operations internationally, including our ability to continue commercializing our cloud-based distribution model.

An important part of our business strategy is to expand and offer our tests internationally, either by providing our testing services directly or through our laboratory partners, or through our licensees under our Constellation cloud-based distribution model. As we do so, we will become increasingly subject to or impacted by the regulatory requirements of foreign jurisdictions, which are varied and complex. Our tests, and certain components of our tests, may be subject to the regulatory approval requirements in each foreign country in which they are sold by us or a laboratory partner, or by our licensees under our cloud-based distribution model, and our future performance would depend on us or our partners or licensees obtaining any necessary regulatory approvals in a timely manner. For example, while we have entered into a license agreement with BGI Genomics to commercialize our Signatera test in China and to develop reproductive health tests in select markets using BGI Genomics's sequencing instruments and platform, such commercialization and development activities will be subject to obtaining and maintaining necessary regulatory approvals in the relevant jurisdictions. In addition, while we have obtained a CE Mark from the European Commission for our Constellation software and the key reagents required for our licensees to run their NIPT based on our technology, we have not obtained a CE Mark for our Panorama test as a whole. Therefore, while we are able to offer Constellation in the European Union and other countries that accept a CE Mark, we are unable to offer Panorama as an IVD directly in these jurisdictions. This, coupled with our use of our Panorama brand name under our Constellation model, has caused regulatory authorities to question whether we, our laboratory partners or our licensees may be marketing, commercializing or otherwise offering our tests without required approvals. We are occasionally required to address inquiries from regulatory authorities in various countries, such as those in the European Union, regarding the regulatory status of our Panorama or Constellation offerings, and expect that we will continue to face similar inquiries. If we do not continue to satisfactorily address any such questions in the future, we may be required to cease offering our products, either directly or through our partners or licensees, in the relevant country. This may in turn result in similar concerns, and subsequent cessation of our sources of revenue, in other countries.

We may also be at a competitive disadvantage in the European Union to our competitors who have obtained a CE Mark for their end to end NIPT. In addition, as further described in the risk factor entitled "Risks Related to Our Business and Industry —*We rely on a limited number of suppliers or, in some cases, single suppliers, for some of our laboratory instruments and materials and may not be able to find replacements or immediately transition to alternative suppliers*," blood collection tubes sourced solely from Streck are required to run our tests. These blood collection tubes are CE Marked by the European Commission; however, if such blood collection tubes are not registered in jurisdictions that do not accept a CE Mark, we may be unable to expand our business in such jurisdictions.

We may also need to obtain regulatory clearance, approval or authorization in the United States for our Constellation software in order for it to be used by third parties in the development and commercialization of their diagnostic tests based on our technology. We have discussed with the FDA the regulatory status of a portion of our Constellation software, the copy number calculator, or CNC, to make calls of copy number variants, which are genetic mutations in which relatively large regions of the genome have been deleted or duplicated. The FDA has indicated that the CNC may be appropriate for review under the de novo classification process, which is less burdensome than the premarket approval, or PMA, process. The FDA stated that it would not prevent us from marketing Constellation in the United States while we discuss with the FDA how it will be regulated; however, it is possible that the FDA may reverse itself either on the appropriate regulatory review path or on the issue of our ability to continue to market Constellation. In addition, the 21st Century Cures Act, enacted in 2016, included a number of changes to the FDA's regulatory approach to software that

may have bearing on the regulatory status of our Constellation software. We cannot guarantee that we will be able to obtain such clearance, approval or authorization for our Constellation software, in the event that we are required to do so. If we are unable to do so, we would be unable to commercialize our cloud-based distribution model in the United States. If we are able to do so, we will be subject to ongoing FDA obligations and continued regulatory oversight and review, including compliance with requirements such as the quality system regulation, or QSR, which establishes extensive requirements for quality assurance and control as well as manufacturing procedures; the listing of our devices with the FDA; adverse event and malfunction reporting; corrections and removals reporting; and labeling and promotional requirements. We may also be subject to additional FDA post-marketing obligations. If we are not able to maintain regulatory compliance to the extent required, we may not be permitted to offer our Constellation software and may be subject to enforcement action by the FDA, such as the issuance of warning or untitled letters, fines, injunctions and civil penalties; recall or seizure of products; operating restrictions and criminal prosecution.

Regulatory approval can be a lengthy, expensive and uncertain process. In addition, regulatory processes are subject to change, and new or changed regulations can result in unanticipated delays and cost increases. For example, the European Commission has adopted revised in-vitro diagnostic regulations, or IVDR, which are expected to become effective in 2022. Among others, the new regulations introduce risk-based classification for IVDs and will require notified body involvement for various classes of devices, including reproductive health tests such as Panorama, which will be classified as a Class C product. As such, we will also be required to submit clinical evidence and post-market performance data to regulators. We or our partners or licensees may not be able to obtain regulatory approvals on a timely basis, if at all, which may cause us to incur additional costs or prevent us from marketing our tests in the United States or in foreign countries.

Changes in laws and regulations, or in their application, may adversely affect our business, financial condition and results of operations.

The clinical laboratory testing industry is highly regulated, and failure to comply with applicable regulatory, supervisory, accreditation, registration or licensing requirements may adversely affect our business, financial condition and results of operations. In particular, the laws and regulations governing the marketing and research of clinical diagnostic testing are extremely complex and in many instances there are no clear regulatory or judicial interpretations of these laws and regulations, increasing the risk that we may be found to be in violation of these laws.

Furthermore, the molecular diagnostics industry as a whole is a growing industry and regulatory agencies such as the United States Department of Health and Human Services, or HHS, or the FDA may apply heightened scrutiny to new developments in the field. While we have taken steps to ensure compliance with the current regulatory regime in all material respects, given its nature and our geographical diversity, there could be areas where we are non-compliant. Any change in the federal or state laws or regulations relating to our business may require us to implement changes to our business or practices, and we may not be able to do so in a timely or cost-effective manner. Should we be found to be non-compliant with current or future regulatory requirements, we may be subject to sanctions which could include changes to our operations, adverse publicity, substantial financial penalties and criminal proceedings, which may adversely affect our business, financial condition and results of operations by increasing our cost of compliance or limiting our ability to develop, market and commercialize our tests.

In addition, there has been a recent trend of increased U.S. federal and state regulation, scrutiny and enforcement relating to payments made to referral sources, which are governed by laws and regulations including the Stark law, the federal Anti-Kickback Statute, the federal False Claims Act, and EKRA as well as state equivalents of such laws. Among other requirements, the Stark law requires laboratories to track, and places a cap on, non-monetary compensation provided to referring physicians.

While we have a compliance plan to address compliance with government laws and regulations, including applicable fraud and abuse laws and regulations such as those described in this risk factor, the evolving commercial compliance environment and the need to build and maintain robust and scalable systems to comply with regulations in multiple jurisdictions with different compliance and reporting requirements increases the possibility that we could inadvertently violate one or more of these requirements.

If we fail to comply with federal, state and foreign laboratory licensing requirements, we could lose the ability to perform our tests or experience disruptions to our business.

We are subject to 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 require clinical laboratories to obtain a certificate and mandate specific standards in the areas of personnel qualifications, administration, participation in proficiency testing, patient test management and quality assurance. CLIA certification is also required in order for us to be eligible to bill state and federal healthcare programs, as well as many private third-party payers, for our tests. Our laboratories located in San Carlos, California and Austin, Texas are both CLIA certified, and our main laboratory in San Carlos, CA is accredited by the College of American Pathologists, or CAP, a CMS-approved accreditation organization**.** We intend to seek CAP accreditation for our Austin, TX laboratory as well. To renew these certifications, we are subject to survey and inspection every two years. Moreover, CLIA and/or state inspectors may conduct random inspections of our clinical laboratory or conduct an inspection as a result of a complaint or reported incident, as has occurred. Any failure to address identified deficiencies, or to otherwise comply with CLIA, CAP or state requirements, can result in enforcement actions, including the revocation, suspension, or limitation of our CLIA and/or CAP certificate of accreditation or state laboratory permit, as well as a directed plan of correction, on-site monitoring, civil monetary penalties, civil actions for injunctive relief, criminal penalties, suspension or exclusion from the Medicare and Medicaid programs and significant adverse publicity. Bringing our laboratory back into compliance with CLIA requirements could cause us to incur significant expenses and potentially lose revenues in order to address deficiencies and achieve compliance.

Some states require that we hold licenses or permits to test samples from patients in those states and as a result we are also required to maintain standards related to state licensure to conduct testing in our laboratories under state law. California state laboratory laws and regulations establish standards for the operation of our clinical laboratory and performance of test services in San Carlos, California as well as in our Austin, Texas laboratory, because our Texas laboratory receives specimens originating from California. Additionally, all personnel involved in testing in our California laboratory must maintain a California state license or be supervised by licensed personnel. We maintain a license in good standing with the California Department of Public Health, or CAPH, for both our California and Texas laboratories. In addition, because we receive test specimens originating from New York, we have obtained a state laboratory permit for our San Carlos laboratory from the New York Department of Health, or DOH, which mandates proficiency testing regardless of whether the laboratory is physically located in New York. The New York state laboratory laws, regulations and rules are at least as stringent than the CLIA regulations and establish standards for the operation of a clinical laboratory and performance of test services; and the laboratory director must maintain a Certificate of Qualification issued by New York's DOH. As under CLIA, we are subject to routine on-site inspections or inspections in response to a complaint under both California and New York state laboratory laws and regulations. If we are found to be out of compliance with either California or New York requirements, CAPH or New York's DOH may suspend, restrict or revoke our license or laboratory permit, respectively (and, with respect to California, may exclude persons or entities from owning, operating or directing a laboratory for two years following such license revocation), assess civil monetary penalties, or impose specific corrective action plans, among other sanctions. We cannot assure you that the regulators in any state from which we have obtained a required license or permit will at all times find us to be in compliance with the applicable laws of their respective state, which may result in suspension, limitation, revocation or annulment of our laboratory's license for that state or negative impact to our CLIA certificate, censure, or civil monetary penalties, and would result in our inability to test samples from patients in that state. Any such consequences could materially and adversely affect our business by prohibiting or limiting our ability to offer testing.

Changes in government healthcare policy could increase our costs and negatively impact coverage and reimbursement for our tests by governmental and other third-party payers.

The U.S. government has shown significant interest in pursuing healthcare reform and reducing healthcare costs. Government healthcare policy has been and will likely continue to be a topic of extensive legislative and executive activity in the U.S. federal government and many U.S. state governments. As a result, our business could be affected by potentially significant and unanticipated changes in government healthcare policy, such as changes in reimbursement levels by government third-party payers. Any such changes could substantially impact our revenues, increase costs and divert

management attention from our business strategy. We cannot predict the impact, if any, of governmental healthcare policy changes on our business, financial condition and results of operations.

In the United States, the Patient Protection and Affordable Care Act, as amended by the Healthcare and Education Reconciliation Act of 2010, or collectively, the PPACA, was signed into law in March 2010 and significantly impacted the U.S. pharmaceutical and medical device industries, including the diagnostics sector, in a number of ways. Among other things, the PPACA expanded healthcare fraud and abuse laws such as the False Claims Act and the Anti-Kickback Statute, including but not limited to required disclosures of financial arrangements with physician customers, required reporting of discovered overpayments, lower thresholds for violations, new government investigative powers, and enhanced penalties for such violations. The PPACA restricts insurers from charging higher premiums or denying coverage to individuals with pre-existing conditions, and requires insurers to cover certain preventative services without charging any copayment or coinsurance, including screening for lung, breast, colorectal and cervical cancers. However, there have been multiple attempts to repeal PPACA or significantly scale back its applicability, which could negatively impact reimbursement for our testing. This could adversely affect our test volumes and, in turn, our business, financial condition, results of operations, and cash flows. For example, the Tax Cuts and Jobs Act of 2017, or the Tax Act, repeals the requirement under PPACA that consumers buy insurance or pay a penalty unless they qualified for an applicable exemption. The repeal of this mandate means that fewer consumers may carry insurance coverage and therefore may be less likely to elect to receive our testing because they would be required to pay out of pocket for such tests, which could impact our test volumes and adversely affect our business, financial condition, results of operations, and cash flows. The PPACA also created a new system of health insurance "exchanges" designed to make health insurance available to individuals and certain groups through state- or federally-administered marketplaces in addition to existing channels for obtaining health insurance coverage. If Panorama or any of our other tests are not covered by plans offered in the health insurance exchanges, our business, financial condition and results of operations could be adversely affected. Furthermore, various proposed legislative initiatives with respect to the PPACA, including possible repeal of the PPACA, have resulted in considerable uncertainty and concern regarding, for example, a patient's election to undergo genetic screening and whether doing so may impact health insurance eligibility. Because it is unclear whether or how the PPACA may change, and whether and to what extent NIPT, cancer screening or other genetic screening may be affected, we are uncertain how our business may be impacted.

In addition to the PPACA, various healthcare reform proposals have also emerged from federal and state governments. The Protecting Access to Medicare Act of 2014, or PAMA, introduced a multi-year pricing program for services payable under the CLFS that is designed to bring Medicare allowable amounts in line with the often lower negotiated payment rates paid by private payers. The implementation of the PAMA rates have negatively impacted overall pricing and reimbursement for many clinical laboratory testing services and continue to be the subject of controversy in the industry. We believe that the new rates under PAMA will have minimal impact on our business in the near term because our revenues from Medicare are currently very low; however, we expect the new rates to have greater impact on us as we begin billing for our Signatera and Prospera testing. In addition, federal budgetary limitations and changes in healthcare policy, such as the creation of broad limits for our tests and requirements that beneficiaries of government health plans pay for, or pay for higher portions of, clinical laboratory tests or services received, could substantially diminish the utilization of our tests, increase costs and adversely affect our ability to generate revenues and achieve profitability.

We cannot predict whether future healthcare initiatives will be implemented at the federal or state level or how any such future legislation, regulation or initiative may affect us. Current or potential future federal legislation and the expansion of government's role in the U.S. healthcare industry, as well as changes to the reimbursement amounts paid by third-party payers for our current and future tests, may adversely affect our test volumes and adversely affect our business, financial condition, results of operations, and cash flows.

If we or our laboratory distribution partners, consultants or commercial partners act in a manner that violates healthcare fraud and abuse laws or otherwise engage in misconduct, we may be subject to civil or criminal penalties.

We are subject to healthcare fraud and abuse regulation and enforcement by both the U.S. federal government and the states in which we conduct our business, including:

- HIPAA, which created federal civil and criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters and also imposes significant obligations with respect to maintenance of the privacy and security, and transmission, of individually identifiable health information;
- federal and state laws and regulations governing informed consent for genetic testing and the use of genetic material;
- federal and state laws and regulations governing the submission of claims, as well as billing and collection practices, for healthcare services;
- the federal Anti-Kickback Statute, which prohibits, among other things, the knowing and willful solicitation, receipt, offer or payment of remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs such as Medicare;
- the federal False Claims Act which prohibits, among other things, the presentation of false or fraudulent claims for payment from Medicare, Medicaid, or other government-funded third-party payers;
- federal laws and regulations governing the Medicare program, providers of services covered by the Medicare program, and the submission of claims to the Medicare program, as well as the Medicare Manuals issued by CMS and the local medical policies promulgated by the Medicare Administrative Contractors with respect to the implementation and interpretation of such laws and regulations;
- the federal Stark law, also known as the physician self-referral law, which, subject to certain exceptions, prohibits a physician from making a referral for certain designated health services covered by the Medicare program (and according to case law in some jurisdictions, the Medicaid program as well), including laboratory and pathology services, if the physician or an immediate family member has a financial relationship with the entity providing the designated health services;
- the federal Civil Monetary Penalties Law, which, subject to certain exceptions, prohibits, among other things, the offer 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;
- the Eliminating Kickbacks in Recovery Act of 2018, or EKRA, which, among other things, prohibits the knowing or willful payment or offer, or the solicitation or receipt, of any remuneration, whether directly or indirectly, overtly or covertly, in cash or in kind, in exchange for the referral or inducement of laboratory testing;
- the prohibition on reassignment by the program beneficiary of Medicare claims to any party; and
- state law equivalents of the above U.S. federal laws, such as the Stark law, Anti-Kickback Statute and false claims laws, which may apply to items or services reimbursed by any third-party payer, including commercial insurers, and state data privacy and security laws and which may be more stringent than HIPAA.

Furthermore, a development affecting our industry is the increased enforcement of the federal False Claims Act and, in particular, actions brought pursuant to the False Claims Act's "whistleblower" or "qui tam" provisions. The False Claims Act imposes liability for, among other things, knowingly presenting, or causing to be presented, a false or fraudulent claim for payment by a federal governmental payer program. The qui tam provisions of the False Claims Act allow a private individual to bring civil actions on behalf of the federal government for violations of the False Claims Act and permit such individuals to share in any amounts paid by the defendant to the government in fines or settlement. When an entity is determined to have violated the False Claims Act, it is subject to mandatory damages of three times the actual damages sustained by the government, plus mandatory civil penalties of up to approximately $22,363 for each false claim. In addition, various states have enacted false claim laws analogous to the federal False Claims Act, and in some cases go even further because many of these state laws apply where a claim is submitted to any third-party payer and not merely a governmental payer program. For example, in 2018 we reached a settlement with certain government payers regarding past reimbursement submissions. Although the settlement involved no admission of fault by us and no corporate integrity agreement, we cannot guarantee that we will not be subject to similar claims in the future.

Many of these laws and regulations have not been fully interpreted by regulatory authorities or the courts, and their provisions are open to a variety of interpretations. We have adopted policies and procedures designed to comply with these laws, and in the ordinary course of our business, we conduct internal reviews of our compliance with these laws. However, the rapid growth and expansion of our business both within and outside of the United States may increase the potential for violating these laws or our internal policies and procedures, and the uncertainty around the interpretation of these laws and regulations increases the risk that we may be found in violation of these or other laws and regulations, or of allegations of such violations, including pursuant to private qui tam actions brought by individual whistleblowers in the name of the government as described above. If our operations, including the conduct of our employees, distributors, consultants and commercial partners, are found to be in violation of any laws or regulations that apply to us, we may be subject to penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement of profits, exclusion from participation in government programs, injunctions, recall or seizure of products, total or partial suspension of production, denial or withdrawal of pre-marketing product approvals, contractual damages, reputational harm, diminished profits and future earnings and the curtailment or restructuring of our operations, any of which could materially and adversely affect our business, financial condition and results of operations.

Failure to comply with privacy and security laws and regulations could result in fines, penalties and damage to our reputation and have a material adverse effect on our business.

The federal HIPAA privacy and security regulations, including the expanded requirements under the Health Information Technology for Economic and Clinical Health Act, or HITECH, which was enacted as part of the American Recovery and Reinvestment Act of 2009, establish comprehensive federal standards with respect to the use and disclosure of protected health information by health plans, healthcare providers, and healthcare clearinghouses, in addition to setting standards to protect the confidentiality, integrity and security of protected health information. The regulations establish a complex regulatory framework on a variety of subjects, including patient authorization of the use and disclosure of, administrative, technical and physical safeguards for, and analysis of security incidents and breach notification requirements with respect to, protected health information. HIPAA, as amended by HITECH, provides for significant fines and other penalties for wrongful use or disclosure of protected health information in violation of privacy and security regulations, including potential civil and criminal fines and penalties.

The HIPAA privacy and security regulations establish minimum requirements, and do not supersede state laws that are more stringent. A number of states include medical information in the definition of personal information and have implemented requirements or standards more stringent than HIPAA. Therefore, while we have implemented policies and procedures related to compliance with the HIPAA regulations, we are also required to comply with various state privacy and security laws and regulations, and could incur penalties, compliance costs as a result of non-compliance or damages under state laws pursuant to an action brought by a private party for the wrongful use or disclosure of confidential health information or other private personal information. In addition, other federal and state laws that protect the privacy and security of patient information may be subject to enforcement and interpretation by various governmental authorities and courts, resulting in complex compliance issues.

The European Union's data privacy regulations, the General Data Protection Regulation, or GDPR, became subject to enforcement in May 2018. These regulations comprehensively reform the prior data protection rules of the European Union, and are more stringent, provide for higher potential liabilities, and apply to a broader range of personal data than those in the United States. The GDPR is applicable to U.S.-based companies, such as ours, that do business or offer services in, or that process or hold personal data of data subjects in, the European Union. While our current processes and practices comply with the GDPR, we will need to expend considerable time and resources, including management attention, to continue to revise our practices to ensure ongoing compliance with GDPR. Furthermore, the GDPR enables EU member states to enact jurisdiction-specific requirements in key areas, which could require us to modify our plans to comply with the GDPR, or otherwise to implement multiple policies unique to the jurisdictions in which we operate, which could make it more difficult and resource-intensive to continue to operate in the European Union.

As we continue to expand and grow our business, our overall compliance with applicable laws and regulations may result in increased costs and attention of management, and failure to comply may result in significant fines, penalties and damage to our reputation. Additionally, the interpretation and application of health-related, privacy and data protection laws are often uncertain, contradictory and in flux, and it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our practices. As a result, we could be subject to government-imposed fines or orders requiring that we change our practices, which could cause us to incur substantial costs and may adversely affect our business and our reputation.

Changes in the way the FDA regulates the reagents, other consumables, and testing equipment we use when developing, validating, and performing our tests could result in delay or additional expense in bringing our tests to market or performing such tests for our customers.

Many of the sequencers, reagents, kits and other consumable products used to perform our testing, as well as the instruments and other capital equipment that enable the testing, are offered for sale for research use only, or RUO. In addition, we offer a version of our Signatera test as a research use only offering. Products that are intended for research use only and are labeled as RUO are exempt from compliance with FDA requirements, including the approval, clearance or authorization and other product quality requirements for medical devices. A product labeled RUO but which is actually intended for clinical diagnostic use may be viewed by the FDA as adulterated and misbranded under the FDC Act and subject to FDA enforcement action. The FDA has said that when determining the intended use of a product labeled RUO, it will consider the totality of the circumstances surrounding distribution of the product, including how the product is marketed and to whom. In addition, many of the reagents used to perform our testing are offered for sale as analyte specific reagents, or ASRs. ASRs are medical devices and must comply with QSR provisions and other device requirements, but most are exempt from 510(k) and PMA premarket review. The FDA could disagree with a supplier's assessment that the supplier's products are ASRs, or could conclude that products labeled as RUO are actually intended for clinical diagnostic use, and could take enforcement action against the supplier, such as us with respect to Signatera (RUO), including requiring the supplier to cease offering the product while it seeks clearance, approval or authorization. Suppliers of RUO products that we employ in our other tests may cease selling their respective products, and we may be unable to obtain an acceptable substitute on commercially reasonable terms or at all, which could significantly and adversely affect our ability to provide timely testing results to our customers or could significantly increase our costs of conducting business.

The sequencers and reagents supplied to us by Illumina and the blood collection tubes supplied to us by Streck are labeled as RUO in the United States. We are using these sequencers, reagents and blood collection tubes for clinical diagnostic use. If the FDA were to require clearance, approval or authorization for the sale of Illumina's sequencers and if Illumina does not obtain such clearance, approval or authorization, we would have to find an alternative sequencing platform for Panorama. We currently have not validated an alternative sequencing platform on which Panorama could be run in a commercially viable manner. If we were not successful in selecting, acquiring on commercially reasonable terms and implementing an alternative platform on a timely basis, our business, financial condition and results of operations would be adversely affected. Similarly, a decision by the FDA to require clearance, approval or authorization for the sale by Streck of the blood collection tubes used for Panorama, or a finding that any of our other suppliers failed to comply with applicable requirements, could result in interruptions in our ability to supply our products to the market and adversely affect our operations.

Our use of hazardous materials in the development of our tests exposes us to risks related to accidental contamination or injury and requires us to comply with regulations governing hazardous waste materials.

Our research and development activities involve the controlled use of hazardous materials and chemicals. We cannot eliminate the risk of accidental contamination or injury to employees or third parties from the use, storage, handling or disposal of these materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our resources or any applicable insurance coverage we may have. In addition, we are subject on an ongoing basis to federal, state and local regulations governing the use, storage, handling and disposal of these materials and specified hazardous waste materials. An increase in the costs of compliance with such laws and regulations could harm our business and results of operations.

If the validity of an informed consent from a patient intake for Panorama or our other tests is challenged, we could be precluded from billing for such testing, forced to stop performing such tests, or required to repay amounts previously received, which would adversely affect our business and financial results.

All clinical data and blood samples that we receive are required to have been collected from individuals who have provided appropriate informed consent for us to perform our testing, both commercially and in clinical trials. We seek to ensure that the individuals from whom the data and samples are collected do not retain or have conferred any proprietary or commercial rights to the data or any discoveries derived from them. Our partners operate in a number of different countries in addition to the United States, and, to a large extent, we rely upon them to comply with the individual's informed consent and with U.S. and international laws and regulations. The collection of data and samples in many different states and foreign 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. The individual's informed consent obtained in any particular country could be challenged in the future, and those informed consents could be deemed invalid, unlawful or otherwise inadequate for our purposes. Any findings against us, or our partners, could deny us access to, or force us to stop testing samples in, a particular country or could call into question the results of our clinical trials. We could also be precluded from billing third-party payers for tests for which informed consents are challenged, or could be requested to refund amounts previously paid by third-party payers for such tests. We could become involved in legal challenges, which could require significant management and financial resources and adversely affect our revenues and results of operations.

Risks Related to Our Intellectual Property

Litigation or other proceedings resulting from either third-party claims of intellectual property infringement, or asserting infringement by third parties of our technology, is costly, time-consuming, and could limit our ability to commercialize our products or services.

Our success depends in part on our non-infringement of the patents or intellectual property rights of third parties, and our ability to successfully prevent third parties from infringing our intellectual property. We operate in a crowded technology area in which there has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the genetic diagnostics industry. Third parties, including our competitors, have asserted and may in the future assert that we are infringing their intellectual property rights.

We are or have recently been engaged in patent infringement lawsuits and other intellectual property disputes against Illumina, CareDx, and ArcherDX, as described in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements. We may become subject to and/or initiate future intellectual property litigation as our product portfolio, and the level of competition in our industry segments, grow.

Should we be unsuccessful defending against patent infringement claims, we may be required to pay substantial royalties, money damages, or be enjoined offering certain products or services. We may be required to change our marketing practices, pay large damages awards, and in the case of patent infringement, pay unsustainably high royalties to obtain licenses from third parties. In addition, we could experience delays in product introductions or sales growth while we attempt to develop non-infringing alternatives. Any of these or other adverse outcomes could prevent us from offering our tests or otherwise have a material adverse effect on our business, financial condition and our results of operations.

We cannot predict whether, or offer any assurance that, the patent infringement claims we have initiated or may initiate in the future will be successful. We may become subject to counterclaims by patent infringement defendants. Our patents may be declared invalid or unenforceable, or narrowed in scope. Even if we prevail in an infringement action, we cannot assure you that we would be adequately compensated for the harm to our business. If we are unable to enjoin third-party infringement, our revenues may be adversely impacted and we may lose market share; and such third-party product may continue to exist in the market, but fail to meet our regulatory or safety standards, thereby causing irreparable harm to our reputation as a provider of quality products, which in turn could result in loss of market share and have a material adverse effect on our business, financial condition and our results of operations.

In addition, our agreements with some of our customers, suppliers, and other entities with whom we do business require us to defend or indemnify these parties to the extent they become involved in patent infringement claims, including the types of claims described in this risk factor. We have agreed, and may in the future agree, to defend or indemnify third parties if we determine it to be in the best interests of 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, financial condition and results of operations.

Any inability to effectively protect our proprietary technologies could harm our competitive position.

Our success and ability to compete depend to a large extent on our ability to develop proprietary products and technologies and to maintain adequate protection of our intellectual property in the United States and other countries; this becomes increasingly important as we expand our operations and enter into strategic collaborations with partners to develop and commercialize products. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and we may encounter difficulties in establishing and enforcing our proprietary rights outside of the United States. In addition, the proprietary positions of companies developing and commercializing tools for molecular diagnostics, including ours, generally are uncertain and involve complex legal and factual questions. This uncertainty may materially affect our ability to defend or obtain patents or to address the patents and patent applications owned or controlled by our collaborators and licensors.

We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies are protected by valid and enforceable patents or are effectively maintained as trade secrets. We have worked to procure patents protecting our technologies, but our procurement efforts may not always be successful, and any patents we successfully procure may be challenged in ways that lead to post-procurement scope reduction or invalidity. For example, our U.S. Patent No. 8,682,592 is currently the subject of a petition for *inter partes* review filed by Illumina, which petition has been instituted, as described in "Note 8—Commitments and Contingencies—Legal Proceedings" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements. These challenges may impede our ability to protect our proprietary rights from unauthorized use. In addition, any finding that others have claims of inventorship or ownership rights to our patents and applications could require us to obtain certain rights to practice related technologies, which may not be available on favorable terms.

Certain of our intellectual property was partly supported by a U.S. government grant awarded by the National Institutes of Health, and the government accordingly has certain rights in this intellectual property, including a non-exclusive, non-transferable, irrevocable worldwide license to use applicable inventions for any governmental purpose. Such rights also include "march-in" rights, which refer to the right of the U.S. government to require us to grant a license to the technology to a responsible applicant if we fail to achieve practical application of the technology or if action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry.

Any of these factors could adversely affect our ability to obtain commercially relevant or competitively advantageous patent protection for our products.

If we are not able to adequately protect our trade secrets and other proprietary information, the value of our technology and products could be significantly diminished.

We rely on trade secret and proprietary know-how protection for our confidential and proprietary information and have taken security measures to protect this information. These measures, however, may not provide adequate protection. For example, we have a policy of requiring our consultants, advisors and collaborators, including, for example, our strategic collaborators with whom we seek to develop and commercialize products, to enter into confidentiality agreements and our employees to enter into invention, non-disclosure and non-compete agreements. However, breaches of our physical or electronic security systems, or breaches caused by our employees failing to abide by their confidentiality obligations during or upon termination of their employment with us, could compromise these protection efforts. Any action we take to enforce our rights may be time-consuming, expensive, and possibly unsuccessful. Even if successful, the resulting remedy may not adequately compensate us for the harm caused by the breach. These risks are heightened in countries where laws or law enforcement practices may not protect proprietary rights as fully as in the United States or Europe. Any unauthorized use or disclosure of, or access to, our trade secrets, know-how or other proprietary information, whether accidentally or through willful misconduct, could have a material adverse effect on our programs and our strategy, and on our ability to compete effectively.

If our trademarks and trade names are not adequately protected, we may not be able to build name recognition in our markets of interest, and our business may be adversely affected.

Failure to maintain our trademark registrations, or to obtain new trademark registrations in the future, could limit our ability to protect our trademarks and impede our marketing efforts in the countries in which we operate. We may not be able to protect our rights to trademarks and trade names which we may need to build name recognition with potential partners or customers in our markets of interest. As a means to enforce our trademark rights and prevent infringement, we may be required to file trademark claims against third parties or initiate trademark opposition proceedings. This can be expensive and time-consuming, and possibly unsuccessful. Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented, declared generic or determined to infringe on other marks.

Our pending trademark applications in the United States and in other foreign jurisdictions where we may file may not be successful. Even if these applications result in registered trademarks, third parties may challenge these trademarks in the future. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected.

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

We employ individuals who were previously employed at other biotechnology or diagnostic companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or willfully used or disclosed confidential information of our employees' former employers or other third parties. We may also be subject to claims that our employees' former employers or other third parties have an ownership interest in our patents. Litigation may be necessary to defend against these claims, and if we are unsuccessful, we could be required to pay substantial damages and could lose rights to important intellectual property. Even if we are successful, litigation could result in substantial costs to us and could divert the time and attention of our management and other employees.

Risks Related to Our Convertible Notes

We have incurred substantial indebtedness that may decrease our business flexibility, access to capital, and/or increase our borrowing costs, which may adversely affect our operations and financial results.

In April 2020, we issued $287.5 million aggregate principal amount of 2.25% Convertible Senior Notes due 2027, or the Convertible Notes. Our indebtedness may:

- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;

- limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions or other general business purposes;
- require us to use a substantial portion of our cash flow from operations to make debt service payments;
- limit our flexibility to plan for, or react to, changes in our business and industry;
- place us at a competitive disadvantage compared to our less leveraged competitors; and
- increase our vulnerability to the impact of adverse economic and industry conditions.

Further, the indenture governing the Convertible Notes does not restrict our ability to incur additional indebtedness and we and our subsidiaries may incur substantial additional indebtedness in the future, subject to the restrictions contained in any future debt instruments existing at the time, some of which may be secured indebtedness.

Servicing our debt will require a significant amount of cash. We may not have sufficient cash flow from our business to pay our outstanding debt, and we may not have the ability to raise the funds necessary to settle conversions of the Convertible Notes in cash or to repurchase the Convertible Notes upon a fundamental change, which could adversely affect our business and results of operations.

Our ability to make scheduled payments of the principal of, to pay interest on, or to refinance our indebtedness, including the amounts payable under the Convertible Notes, depends on our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our indebtedness and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt, or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Further, holders of the Convertible Notes have the right to require us to repurchase all or a portion of their Convertible Notes upon the occurrence of a "fundamental change" (as defined in the indenture governing the Convertible Notes) before the maturity date at a repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion of the Convertible Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Convertible Notes being converted. However, we may not have enough available cash, or be able to obtain sufficient financing, at the time we are required to repurchase the Convertible Notes.

The conditional conversion feature of the Convertible Notes, when triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Convertible Notes is triggered, holders of the Convertible Notes will be entitled to convert their Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation in cash, which could adversely affect our liquidity.

In addition, even if holders of Convertible Notes do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

The accounting method for convertible debt securities that may be settled in cash, such as the Convertible Notes, could have a material effect on our reported financial results.

The accounting method for reflecting the Convertible Notes on our balance sheet, accruing interest expense for the Convertible Notes and reflecting the underlying shares of our common stock in our reported diluted earnings per share may adversely affect our reported earnings and financial condition.

We expect that, under applicable accounting principles, the initial liability carrying amount of the Convertible Notes will be the fair value of a similar debt instrument that does not have a conversion feature, valued using our cost of capital for straight, unconvertible debt. We will reflect the difference between the net proceeds from the sale of the Convertible Notes and the initial carrying amount as a debt discount for accounting purposes, which is amortized into interest expense over the term of the Convertible Notes. As a result of this amortization, the interest expense to be recognized for the Convertible Notes for accounting purposes will be greater than the cash interest payments we will pay on the Convertible Notes, which results in lower reported net income. The lower reported income resulting from this accounting treatment could depress the trading price of our common stock and the Convertible Notes.

In addition, under certain circumstances we may be eligible to use the treasury stock method to reflect the shares underlying the Convertible Notes in our diluted earnings per share. Under this method, if the conversion value of the Convertible Notes exceeds their principal amount for a reporting period, then we will calculate our diluted earnings per share assuming that all the Convertible Notes were converted and that we issued shares of our common stock to settle the excess. However, if reflecting the Convertible Notes in diluted earnings per share in this manner is anti-dilutive, or if the conversion value of the Convertible Notes does not exceed their principal amount for a reporting period, then the shares underlying the Convertible Notes will not be reflected in our diluted earnings per share. In addition, if accounting standards change in the future and we are not permitted to use the treasury stock method, then our diluted earnings per share may decline. For example, in July 2019, the Financial Accounting Standards Board published an exposure draft proposing to amend these accounting standards to eliminate the treasury stock method for convertible instruments and instead require application of the "if-converted" method. Under that method, if it is adopted, diluted earnings per share would generally be calculated assuming that all the Convertible Notes were converted solely into shares of common stock at the beginning of the reporting period, unless the result would be anti-dilutive. The application of the if-converted method may reduce our reported diluted earnings per share.

Furthermore, if any of the conditions to the convertibility of the Convertible Notes is satisfied, then we may be required under applicable accounting standards to reclassify the liability carrying value of the Convertible Notes as a current, rather than a long-term, liability. This reclassification could be required even if no noteholders convert their Convertible Notes and could materially reduce our reported working capital.

Conversion of the Convertible Notes will dilute the ownership interest of existing stockholders, including holders who had previously converted their Convertible Notes, or may otherwise depress the price of our common stock.

The conversion of some or all of the Convertible Notes will dilute the ownership interests of existing stockholders to the extent we deliver shares of our common stock upon such conversion. The Convertible Notes are currently convertible and may from time to time in the future be convertible at the option of their holders prior to their scheduled terms under certain circumstances. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

Risks Related to Ownership of Our Common Stock

The market price of our common stock has been and may be volatile, which could subject us to litigation.

The trading prices of the securities of life sciences companies, including ours, have been and may continue to be highly volatile. Accordingly, the market price of our common stock and trading price of our Convertible Notes are likely

to be subject to wide fluctuations in response to numerous factors, many of which are beyond our control, such as those in this "Risk Factors" section and others including:

- actual or anticipated variations in our and our competitors' results of operations, as well as how those results compare to analyst and investor expectations;
- announcements by us or our competitors of new products, significant acquisitions, other strategic transactions, including strategic and commercial partnerships and relationships, joint ventures, divestitures, collaborations or capital commitments;
- failure of analysts to initiate or maintain coverage of our company, issuance of new securities analysts' reports or changed recommendations for our stock;
- forward-looking statements related to our financial guidance or projections, our failure to meet or exceed our financial guidance or projections or changes in our financial guidance or projections;
- commencement of, or our involvement in, litigation;
- announcement or expectation of additional debt or equity financing efforts;
- any major change in our management; and
- general economic conditions and slow or negative growth of our markets.

In addition, if the market for life sciences stocks or the stock market in general experiences uneven investor confidence, the market price of our common stock and trading price of our Convertible Notes could decline for reasons unrelated to our business, operating results or financial condition. The market price of our common stock and trading price of our Convertible Notes might also decline in reaction to events that affect other companies within, or outside, our industry even if these events do not directly affect us. Some companies, including us, that have experienced volatility in the trading price of their stock have been the subject of securities class action litigation. For example, we have in the past been subject to a purported securities class action lawsuit filed against us, our directors and certain of our officers and stockholders related to our initial public offering. Under certain circumstances, we have contractual and other legal obligations to indemnify and to incur legal expenses on behalf of current and former directors and officers, and on behalf of our former underwriters, in connection with any future lawsuits. Any lawsuit to which we are a party, with or without merit, may result in an unfavorable judgment. We also may decide to settle lawsuits on unfavorable terms. Any such negative outcome could result in payments of substantial damages or fines, damage to our reputation or adverse changes to our offerings or business practices. Defending against litigation is costly and time-consuming, and could divert our management's attention and resources. Furthermore, during the course of litigation, there could be negative public announcements of the results of hearings, motions or other interim proceedings or developments, which could have a material adverse effect on the market price of our common stock and trading price of our Convertible Notes.

Commencing December 31, 2019, we were no longer an "emerging growth company," and the reduced disclosure requirements applicable to emerging growth companies no longer apply to us.

As of December 31, 2019, we ceased to qualify as an "emerging growth company", as defined by the Jumpstart Our Businesses Act of 2012, or the JOBS Act, because as of June 30, 2019, the market value of our common stock that was held by non-affiliates exceeded $700 million. As a result, we are no longer permitted to take advantage of reduced regulatory and reporting requirements that are otherwise generally applicable to public companies. These include, not being required to comply with the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation, and exemptions from the requirements of holding non-binding advisory votes on executive compensation and golden parachute payments. As we are no longer an emerging growth company, we expect to incur additional expenses and devote substantial management effort toward ensuring compliance with those requirements applicable to companies that are not emerging growth companies. Compliance with these

additional laws, rules and regulations has and will continue to increase our legal and financial compliance costs, make some activities more difficult, time consuming or costly and increase demand on our systems and resources. In addition, management's attention may be diverted from other business concerns and our costs and expenses will increase, which could harm our business and operating results. We may also need to hire more employees in the future or engage additional outside consultants to comply with these requirements, which will increase our costs and expenses.

If we are unable to implement and maintain effective internal controls over financial reporting in the future, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock and trading price of our Convertible Notes could be adversely affected.

We are required to maintain internal controls over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act requires that we evaluate and determine the effectiveness of our internal controls over financial reporting and provide a management report on internal controls over financial reporting. The Sarbanes-Oxley Act also requires that our management report on internal controls over financial reporting be attested to by our independent registered public accounting firm.

Although we determined that our internal control over financial reporting was effective as of December 31, 2019, we must continue to monitor and assess our internal controls over financial reporting. If we have a material weakness in our internal controls over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated. If we identify material weaknesses in our internal controls over financial reporting, if we are unable to comply with the requirements of Section 404 in a timely manner, if we are unable to assert that our internal controls over financial reporting are effective, or, when required in the future, if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal controls over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock and trading price of our Convertible Notes could be adversely affected, and we could become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities.

We do not intend to pay dividends on our capital stock so any returns will be limited to changes in the value of our common stock.

We have never declared or paid any cash dividends on our capital stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, our ability to pay cash dividends on our capital stock may be prohibited or limited by the terms of any current or future debt financing arrangement. Any return to stockholders will therefore be limited to the increase, if any, in the price of our common stock.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans or in connection with acquisitions or strategic or commercial transactions, could result in additional dilution of the percentage ownership of our stockholders and could cause the price of our common stock and trading price of our Convertible Notes to decline.

From time to time, we may issue additional securities or sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine. We also expect to continue to issue common stock to employees and directors pursuant to our equity incentive plans. If we sell or issue common stock, convertible securities, or other equity securities, or common stock is issued pursuant to equity incentive plans, investors in our common stock may be materially diluted. We may decide to issue common stock or other equity securities in connection with an acquisition or a strategic or commercial transaction, which could cause dilution to our existing stockholders. New investors in such transactions could gain rights, preferences and privileges senior to those of holders of our common stock.

Sales of a substantial number of shares of our common stock in the public markets could cause the price of our common stock to decline and adversely impact the trading price of our Convertible Notes.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could depress the market price of our common stock and could impair our ability to raise capital through

the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

We may issue our shares of common stock or securities convertible into our common stock from time to time in connection with a financing, acquisition, investments or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the trading price of our common stock and the value of our Convertible Notes to decline.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock and our Convertible Notes depends in part on the research and reports that securities or industry analysts publish about us or our business. Currently, only a small number of securities analysts cover our stock. If more analysts do not commence coverage of us, or if industry analysts cease coverage of us or fail to publish reports on us regularly, the trading price for our common stock and our Convertible Notes could be adversely affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price and the trading price of our Convertible Notes would likely decline.

Insiders have substantial control over us and will be able to influence corporate matters.

As of June 30, 2020, our directors and executive officers and their affiliates beneficially owned, in the aggregate, approximately 11.56% of our outstanding capital stock. As a result, these stockholders are and will continue to be able to exercise significant influence over all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions, such as a merger or other sale of our company or its assets. This concentration of ownership could limit stockholders' ability to influence corporate matters and may have the effect of delaying or preventing a third party from acquiring control over us.

Provisions in our amended and restated certificate of incorporation, amended and restated bylaws, Convertible Notes and the indenture governing our Convertible Notes, and Delaware law might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the market price of our common stock and the trading price of our Convertible Notes.

Our amended and restated certificate of incorporation, amended and restated bylaws, Convertible Notes and the indenture governing our Convertible Notes contain provisions that could depress the market price of our common stock and the trading price of our Convertible Notes by acting to discourage, delay or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions, among other things:

- authorize the issuance of "blank check" preferred stock that our board of directors could use to implement a stockholder rights plan;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon by stockholders at annual stockholder meetings;
- establish a classified board of directors so that not all members of our board are elected at one time;
- permit the board of directors to establish the number of directors;

- provide that directors may only be removed "for cause" and only with the approval of 75% of our stockholders;
- require super-majority voting to amend some provisions in our amended and restated certificate of incorporation and amended and restated bylaws; and
- provide that the board of directors is expressly authorized to make, alter or repeal our amended and restated bylaws.

In addition, Section 203 of the Delaware General Corporation Law may discourage, delay or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations and other transactions between us and holders of 15% or more of our common stock.

In addition, if a "fundamental change" (as defined in the indenture governing the Convertible Notes) occurs prior to the maturity date of the Convertible Notes, holders of the Convertible Notes will have the right, at their option, to require us to repurchase all or a portion of their Convertible Notes. If a "make-whole fundamental change" (as defined in the indenture governing the Convertible Notes) occurs prior to the maturity date, we will in some cases be required to increase the conversion rate of the Convertible Notes for a holder that elects to convert its Convertible Notes in connection with such make-whole fundamental change. Furthermore, we are prohibited from engaging in certain mergers or acquisitions unless, among other things, the surviving entity of such transaction assumes our obligations under the Convertible Notes.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law or any action asserting a claim against us that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees and may discourage these types of lawsuits. Alternatively, if a court were to find the choice of forum provision contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, financial condition and results of operations.

Changes in accounting standards and their interpretations could adversely affect our operating results.

U.S. GAAP are subject to interpretation by the Financial Accounting Standards Board, or FASB, the Public Company Accounting Oversight Board, or PCAOB, the SEC, and various other bodies that promulgate and interpret appropriate accounting principles. These principles and related implementation guidelines and interpretations can be highly complex and involve subjective judgments. A change in these principles or interpretations, including the implementation of ASU 2016-02, Leases (Topic 842), or accounting for the Convertible Notes, could have a significant effect on our reported financial results, and could affect the reporting of transactions completed before or after the announcement of a change in such principles. Additionally, the adoption of these standards may potentially require enhancements or changes in our systems and will require significant time and cost on behalf of our financial management. A discussion of these standards and other pending changes in GAAP, are further discussed in "Note 2—Summary of Significant Accounting Policies" in the Notes to Unaudited Interim Condensed Consolidated Financial Statements.

ITEM 2 UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

(a) *Recent Sales of Unregistered Securities*

None.

(b) *Use of Proceeds*

Not applicable.

(c) *Purchases of Equity Securities by the Issuer and Affiliated Purchasers*

None.

ITEM 3 DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4 MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5 OTHER INFORMATION

As previously disclosed on our Current Report on Form 8-K filed on April, 16, 2020 with the Securities and Exchange Commission, on April 13, 2020, we issued and sold an aggregate principal amount of $287.5 million of our 2.25% Convertible Senior Notes due 2027 (the "Notes") in a private placement in reliance on Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"), and for initial resale by Morgan Stanley & Co. LLC ("Morgan Stanley"), J.P. Morgan Securities LLC ("J.P. Morgan") and Cowen and Company, LLC ("Cowen"), as representatives (the "Representatives") of the purchasers named therein (collectively, the "Initial Purchasers") to qualified institutional buyers pursuant to the exemption from registration provided by Rule 144A under the Securities Act. The net proceeds from the offering of the Notes, given the Initial Purchasers' full exercise of their option to purchase additional Notes, were approximately $278.4 million after deducting the initial purchasers' discount and estimated offering expenses payable by us. We relied on these exemptions from registration based in part on representations made by the Initial Purchasers. To the extent that any shares of our common stock ("Common Stock") are issued upon conversion of the Notes, they will be issued in transactions anticipated to be exempt from registration under the Securities Act by virtue of Section 3(a)(9) thereof. A maximum of 9,634,700 shares of our common stock may be issued upon conversion of the Notes, subject to adjustment.

The Notes are convertible at an initial conversion rate of 25.7785 shares of our Common Stock per $1,000 principal amount of the Notes, which is equivalent to an initial conversion price of approximately $38.79 per share of Common Stock subject to adjustment. Prior to the close of business on the business day immediately preceding February 1, 2027, such conversion is subject to the satisfaction of certain conditions. On or after February 1, 2027, holders may convert all or a portion of their Notes at any time prior to close of business on the second business day immediately preceding May 1, 2027 regardless of such conditions. Upon conversion, holders will receive cash, shares of Common Stock or a combination of cash and shares of Common Stock, at our election.

ITEM 6 EXHIBITS

INDEX TO EXHIBITS

		Incorporated by Reference				
Exhibit No.	**Description**	**Form**	**File No.**	**Exhibit**	**Filing Date**	**Filed Herewith**
4.1	Indenture (including form of Note) with respect to the Company's 2.25% Convertible Senior Notes due 2027, dated as of April 16, 2020, between the Company and Wilmington Trust, National Association, as trustee	8-K	001-37478	4.1	04/16/2020	
10.1*	Sixth Amendment to Supply Agreement, dated May 8, 2020, by and between Registrant and Illumina, Inc.					X
31.1	Certification of Principal Executive Officer required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1†	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.2†	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
101.INS	XBRL Instance Document.					X
101.SCH	XBRL Taxonomy Extension Schema Document.					X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.					X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.					X

		Incorporated by Reference				
Exhibit No.	**Description**	**Form**	**File No.**	**Exhibit**	**Filing Date**	**Filed Herewith**
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.					X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.					X

* Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment. Omitted portions have been submitted separately to the SEC.

† The certifications attached as Exhibits 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the SEC and are not to be incorporated by reference into any filing of Natera, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, regardless of any general incorporation language contained in any filing.

SIGNATURES

Pursuant to the requirements of 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.

NATERA, INC.

Date: August 6, 2020

By: / s / *Steve Chapman*
Name: **Steve Chapman**
Title: **Chief Executive Officer, President, and Director (Principal Executive Officer)**

By: / s / *Michael Brophy*
Name: **Michael Brophy**
Title: **Chief Financial Officer (Principal Financial and Accounting Officer)**

Exhibit 10.1

THE SYMBOL "[*]" DENOTES PLACES WHERE CERTAIN IDENTIFIED INFORMATION HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS BOTH (i) NOT MATERIAL, AND (ii) WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED

SIXTH AMENDMENT TO SUPPLY AGREEMENT

This Sixth Amendment to Supply Agreement (the "**Sixth Amendment**") is effective as of the date last signed below (the "**Sixth Amendment Date**") between Illumina, Inc., a Delaware corporation having a place of business at 5200 Illumina Way, San Diego, CA 92122 ("**Illumina**") and Natera, Inc., having a place of business at 201 Industrial Road, Suite 410, San Carlos, CA 94070 ("**Customer**"). Customer and Illumina may be referred to herein as "**Party**" or "**Parties.**"

WHEREAS, Illumina and Customer are Parties to a Supply Agreement having an Effective Date of August 16, 2013, and amended on September 18, 2014, September 23, 2015, June 8, 2016, January 3, 2019, and December 18, 2019 (the "**Agreement**");

WHEREAS, the Parties are involved in a patent proceeding, Illumina, Inc. v. Natera, Inc., pending in the United States District Court for the Northern District of California, Case No. 18-cv-01662-SI (the "**Action**");

WHEREAS, the Parties have agreed to enter into a settlement agreement dismissing the Action with prejudice and to amend the Agreement to grant Customer rights under Illumina's NIPT Application Specific IP for NIPT Uses;

NOW, THEREFORE, in consideration of the mutual promises and covenants hereinafter set forth, the Parties hereto agree to amend the Agreement as follows:

1. Amendments.

i. The last sentence of Section 3(d) of the Agreement is deleted in its entirety.

ii. Section 4 of the Agreement is hereby amended by adding the following sentence to the end of Section 4:

For the avoidance of doubt, all patents subject to the Pooled Patents Agreement entered into between Illumina and Sequenom, Inc. as of December 2, 2014, as amended from time to time (including, without limitation, U.S. Patent No. 9,493,831), are included in NIPT Application Specific IP.

iii. The first sentence of Section 17(a) of the Agreement is deleted in its entirety and replaced with the following:

This Agreement shall commence on the Effective Date and terminate on the date that is ten (10) years after the Sixth Amendment Date, unless otherwise terminated earlier as provided hereunder or extended by mutual written agreement of the Parties.

iv. Section 17(c)(vi) of the Agreement is deleted in its entirety.

v. In Section 17(c)(vii) of the Agreement, references to "Third Amendment Date" shall be replaced with "Sixth Amendment Date".

vi. Exhibit A to the Agreement is hereby amended as follows:

i. Exhibit A, Part 1, Section 2 (NIPT Use Rights) is deleted in its entirety and replaced with the following:

NIPT Use Rights. Subject to the terms and conditions and requirements of this Agreement, Customer's (a) purchase of Consumables (whether TG Consumables or Non-TG Consumables) under this Agreement, and (b) payment of the NIPT Test Fee confers upon Customer the non-exclusive, non-transferable (except as set forth in this Section 20(f) of this Agreement), personal non-sublicensable right [*] to use those Consumables with Illumina Hardware and Software for **NIPT Use**, such Consumables and Illumina Hardware and Software to be used in the Country, including without limitation the requirement that Customer uses such Consumables, Illumina Hardware and Software for NIPT Use only with each other and [*] . The Parties agree that the preceding sentence is designed to and does alter the effect of [*] . For clarity, the rights granted above do not extend to the use of any non-Illumina sequencing instruments or consumables. Illumina represents and warrants that it has the right to grant Customer the foregoing rights (including, without limitation, with respect to all patents in the Pooled Patents Agreement entered into between Illumina and Sequenom, Inc. as of December 2, 2014, as amended from time to time).

ii. Exhibit A, Part 1, Section 3 is hereby amended as follows:

1 The current Exhibit A, Part 1, Section 3.a (Exclusivity) is deleted in its entirety and replaced with the following:

Commitment to Illumina Platform. In exchange for the discounts on Consumables and Illumina Hardware offered to Customer under this Agreement, Customer agrees that, for [*] from Sixth Amendment Date, Customer [*] in the [*] following the Sixth Amendment Date; [*] in the [*] following the Sixth Amendment Date; [*] in the [*] following the Sixth Amendment Date [*]. If Customer, at its discretion, chooses [*] (which choice, for clarity, would not be deemed a breach of the Supply Agreement), then Customer would [*]. Customer will notify Illumina in writing within [*] days of the first date [*], and thereafter, Customer will not be [*]. If Customer has not [*], then Illumina may request from time to time that an authorized officer of Customer provide Illumina with written certification that Customer is, and has been since the Sixth Amendment Date or the last such certification, [*], and Customer will provide such certification. Illumina will waive the [*] and will supply in accordance with [*]. The foregoing [*] is a condition of [*] and does not prevent (and nothing in this Agreement shall be construed to prevent) Customer from using non-Illumina sequencing platforms (but, for clarity, no rights under Illumina Intellectual Property Rights are granted with

respect to the use of other sequencing platforms). For the avoidance of doubt, [*] will not, without more, result in [*] .

2 The current Exhibit A, Part 1, Section 3.b (TG Consumables for Clinical Use) is deleted in its entirety and replaced with the following:

TG Consumables for Clinical Use. During the Term, when Customer uses Consumables for NIPT Use or Additional Clinical Use, Customer will use only TG Consumables and Temporary Consumables for NIPT Use and Additional Clinical Use; provided that Customer may additionally use Non-TG Consumables for NIPT Use after providing the notice described below, [*], (however such Non-TG Consumables will not have TG Consumable attributes such as single lot shipment or extended shelf life). If Customer intends to transition from TG Consumables to Non-TG Consumables for NIPT Use, Customer shall provide at least [*] days written notice to Illumina. For clarity, Other Clinical Uses would continue to require the use of TG Consumables and Temporary Consumables. For the avoidance of doubt, the use of Non-TG Consumables as provided in this Section 3.b shall be an exception, with respect to NIPT Use, to any language in this Agreement that states or implies a limitation or restriction to using only TG Consumables or Temporary Consumables for NIPT Use.

iii. Exhibit A, Part 1, Section 6.a (NIPT Test Fee) is deleted in its entirety and replaced with the following:

(A) From the Effective Date of the Sixth Amendment until October 1, 2020, in consideration for the negotiated discounts on Consumables provided in Exhibit B and the use of Illumina [*] in the field of NIPT Use, and (B) beginning October 1, 2020, and for the remainder of the Term, in consideration for the use of [*] in the field of NIPT Use, Customer agrees to pay Illumina a fee for each test (on a per patient basis) for NIPT Use performed using any Product purchased under this Agreement where the result is reported (by Customer or another party) to a patient, doctor, other authorized person or referring laboratory ("NIPT Test Fee"). For clarity, [*]. The NIPT Test Fee will apply whenever Customer uses Product to perform any portion of a NIPT or test for NIPT Use, irrespective of whether a third party performs a portion of the NIPT or test on Customer's behalf and irrespective of whether the Customer has invoiced or received payment for the NIPT. For the avoidance of doubt, and without limitation, Customer will owe a NIPT Test Fee if Customer uses the aforementioned Products and products to sequence, in whole or in part for an NIPT or test for NIPT Use, nucleic acids present in the cell-free fraction of maternal blood or maternal blood components, and then another party analyzes the data generated from such sequencing. Until September 30, 2020, the NIPT Test Fee will be [*] multiplied by the number of tests for NIPT Use performed (in whole or in part) by Customer in that quarter. Beginning October 1,

2020, the NIPT Test fee shall be determined by the schedule set forth below. Illumina represents and warrants that [*] .

TEST FEE SCHEDULE

The NIPT Test Fee will be assessed [*], [*] following the [*] of each calendar year and [*] following the [*] of each calendar year, for the purpose of determining the NIPT Test Fee applicable for the [*], according to the following table.

Annualized NIPT Test Volume	Initial NIPT Test Fee	NIPT Test Fee after Reduction Event*
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]

*This column, having reduced NIPT Test Fees at certain volume tiers, applies only if [*] .

iv. Exhibit A, Part 4 is hereby amended as follows:

1 In Section 7, references to "Third Amendment Date" shall be replaced with "Sixth Amendment Date".

2 The following sentence is added to the end of Section 8.a.ii:

For clarity, [*] will not incur Revenue Share obligations if [*].

3 Section 8.a.iii is deleted in its entirety and replaced with the following:

[*] ([*]) of Customer's Revenue for Natera IVD Kits and [*] ([*]) of Customer's Revenue for Subject Tests ("Revenue Share").

4 Section 8 is amended to add a new section 8.e as follows:

Illumina hereby provides Customer with a [*] ($[*]) capital expenditure credit applicable to the purchase of Illumina Hardware for use in oncology

and organ transplant monitoring product development. In addition, Illumina shall provide Customer with in-kind contributions of [*] to offset up to [*]% of Customer's expenses for new oncology product development (including, without limitation, Consumables, site fees, investigator fees, FTEs, etc.) on the Illumina platform and comparison studies and evidence development (with respect to those oncology products) including, without limitation, clinical studies with biopharmaceutical partners, through [*] , up to a cumulative cap of [*] ($[*]) (based on Customer's then current price for such Consumables, after giving effect to applicable discounts). Customer will provide Illumina with such documentation relating to these expenses as Illumina may reasonably request from time to time. The Parties will in good faith negotiate the timing of the disbursement of such Consumables. For clarity, in no event will the Consumables provided by Illumina as contemplated in this Section 8.e be used by Customer for NIPT Use.

5 Section 9 is added as follows:

All rights granted to Customer to develop Natera IVD Kits will expire on [*]. However, Customer may continue developing any Natera IVD Kits for which [*] , and may commercialize those Natera IVD Kits after that date under the financial terms provided in Section 8, subject to Illumina's continued commercialization of the relevant Illumina Hardware and Consumables. For clarity, Customer may also continue commercializing Natera IVD Kits that were developed before [*] , under the financial terms provided in Section 8. Illumina will have no further obligations with respect to Natera IVD Kits after [*] . For clarity, the foregoing sentence shall not affect Illumina's general support obligations to its customers who purchase Illumina Hardware and Consumables used with Natera IVD Kits that Illumina continues to commercialize after [*] , as agreed to between Illumina and such customers.

v. Exhibit B to the Agreement is hereby deleted in its entirety and replaced by the new Exhibit B set forth on Attachment 1 hereto.

vi. Section 2 of the Fourth Amendment is deleted in its entirety.

2. No License. For the avoidance of doubt, except as otherwise expressly set forth herein, no license of other right is being granted in this Sixth Amendment under or to use any Application Specific IP or Other IP.

3. Entire Agreement. Except as expressly stated herein, this Sixth Amendment does not alter any term or condition of the Agreement. This Sixth Amendment represents the entire agreement between the Parties regarding the subject matter hereof and supersedes all prior discussions, communications, agreements, and understandings of any kind and nature between the Parties regarding the subject matter hereof.

4. Reference to Agreement. On and after the Sixth Amendment Date, each reference in the Agreement to "this Agreement", "hereunder", or words of like import referring to the Agreement shall mean and be a reference to the Agreement as modified by this Sixth Amendment.

5. Governing Law. This Sixth Amendment and performance by the Parties hereunder shall be construed in accordance with the laws of the State of California, U.S.A., without regard to provisions on the conflicts of laws.

6. Counterparts. This Sixth Amendment may be executed in one or more counterparts, and each of which shall be deemed to be an original, and all of which shall constitute one and the same instrument.

[*Signature page follows directly]*

IN WITNESS WHEREOF, the Parties hereto acknowledge and agree to the terms and conditions of this Sixth Amendment and have caused this Agreement to be executed by their respective duly authorized representatives to be effective as of the Sixth Amendment Date.

Natera, Inc.	**Illumina, Inc.**
By: /s/ John Fesko	By: /s/ Mark Van Oene
Name: John Fesko	Name: Mark Van Oene
Title: Chief Business Officer	Title: Chief Commercial Officer
Date: 5/18/20	Date: May 8, 2020

ATTACHMENT 1

EXHIBIT B

Only the Products listed on this Exhibit B are subject to purchase under this Agreement.

The following pricing schedule replaces and supersedes all conflicting pricing terms in this Agreement. Notwithstanding anything to the contrary, no additional discounts shall apply unless otherwise specified by Illumina at a later date. Nothing in this Exhibit B may be construed as an obligation on Illumina to continue selling the Products for the duration of the Term.

[*] **Consumables:**

Until [*], Natera's prices for the [*] consumable Products specified in Table 1 (the "**Legacy Products**") are listed in Table 1. Until [*] , Natera's price for Legacy Products will be the base price listed in Table 1 without any discount; provided that, beginning [*] , if Customer achieves Total Spend above $[*], an additional [*] , [*] , or [*] discount will apply corresponding to the Total Spend amount specified in Table 1 below.

"Total Spend" is determined quarterly at the first day of each calendar quarter (i.e., January 1, April 1, July 1, October 1), and equals (1) the total amount (minus freight, taxes, and any product credits or offsets) Illumina has invoiced Customer for shipments of all Products delivered to Customer during the 12 calendar month period that immediately precedes such first day of a calendar quarter under this Agreement, which includes Products purchased under this Agreement and Products purchased from Illumina outside of this Agreement, (2) the total amount Illumina has invoiced customer for Services during the 12 calendar month period that immediately precedes such first day of a calendar quarter under this Agreement, which includes Services purchased under this Agreement and Services purchased from Illumina outside of this Agreement; and (3) the total amount of NIPT Test Fees paid by Customer to Illumina during the 12 calendar month period that immediately precedes such first day of a calendar quarter under this Agreement.

Table 1:

			[*]	[*]	[*]
Legacy Product Part #	**Description**	**Base Price**	**Total Spend** [*]	**Total Spend** [*]	**Total Spend** [*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]

After [*] , Customer's prices for Legacy Products will be Illumina's then-current list price for each such Legacy Product less the volume-based discount listed in Table 3 below (in the column designated with the asterisk and specified as "S1, S2, SP Discount for [*] ").

[*] **Consumables:**

Customer's prices for the [*] consumable Products specified in Table 2 below will be the then-current list price for each such Product less the discount listed in Table 3 below corresponding to the applicable Overall Sequencing Consumable Spend and the aggregate number of [*] purchased by Customer from Illumina.

"Overall Sequencing Consumable Spend" is determined quarterly at the first day of each calendar quarter (i.e., January 1, April 1, July 1, October 1), and equals the total amount (minus freight, taxes, and any product credits or offsets) Illumina has invoiced Customer for shipments of all Sequencing Consumables delivered to Customer during the 12 calendar month period that immediately precedes such first day of a calendar quarter under this Agreement, which includes Sequencing Consumables purchased under this Agreement and Sequencing Consumables purchased from Illumina outside of this Agreement. Overall Sequencing Consumable Spend does not include, by way of example, amounts invoiced for array products, Test Fees, Services, or Hardware.

"Sequencing Consumable" means a Consumable directed for use on an Illumina sequencing instrument.

Table 2:

[*] Consumables Part Number	Product Name	Current List price
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]
[*]	[*]	[*]

Table 3:

	[*]		[*]	
Overall Sequencing Consumable Spend	**S1, S2, SP Discount***	**S4 Discount**	**S1, S2, SP Discount**	**S4 Discount**
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]

* As specified above, this column of volume discounts will also dictate the discount off of then-current list price for Legacy Products after [*], corresponding to the applicable Overall Sequencing Consumable Spend.

[*]**:**

Customer's price for the following Product will be the price specified in Table 4 below:

Table 4:

Description	**Natera Price**
[*]	[*]

Quotations:

Illumina will provide Customer quarterly quotations referencing the prices at which Customer may purchase the above Products during the applicable quarter, which prices will reflect the then-current list price less the discounts specified above. Each such quote is valid only for the applicable quarter. Customer acknowledges that Illumina's ability to provide quarterly quotations is dependent upon Customer adhering to the forecasting and Purchase Order requirements specified in the Agreement, and therefore Illumina's requirement to provide quarterly quotations is contingent upon Customer adhering to those requirements. If Customer does not adhere to those requirements, in addition to Illumina's other rights and remedies, Illumina may instead provide annual quotations in February of each year.

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Steve Chapman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Natera, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2020

By: */s/ Steve Chapman*
Name: **Steve Chapman**
Title: **Chief Executive Officer and President**
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL AND ACCOUNTING OFFICER
PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael Brophy, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Natera, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 6, 2020

By: */ s / Michael Brophy*
Name: **Michael Brophy**
Title: **Chief Financial Officer**
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Steve Chapman, Chief Executive Officer and President of Natera, Inc. (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The quarterly report on Form 10-Q for the Company for the quarter ended June 30, 2020 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 6, 2020

By: */ s / Steve Chapman*
Name: **Steve Chapman**
Title: **Chief Executive Officer and President**
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael Brophy, Chief Financial Officer of Natera, Inc. (the "Company"), certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The quarterly report on Form 10-Q for the Company for the quarter ended June 30, 2020 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 6, 2020

By: */ s /* *Michael Brophy*
Name: **Michael Brophy**
Title: **Chief Financial Officer**
(Principal Financial and Accounting Officer)