UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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, 2023

OR

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

For the transition period from to

Commission File Number: 001-38683

GUARDANT HEALTH, INC.

(Exact Name of Registrant as Specified in its Charter)

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

3100 Hanover Street
Palo Alto, California, 94304
Registrant's telephone number, including area code: (855) 698-8887

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

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.00001 par value per share	**GH**	**The 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

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

As of July 28, 2023, the registrant had 117,692,117 shares of common stock, $0.00001 par value per share, outstanding.

GUARDANT HEALTH, INC.
FORM 10-Q

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q, including the section titled "*Management's Discussion and Analysis of Financial Condition and Results of Operations*," contains forward-looking statements regarding future events and our future results that are based on our current expectations, estimates, forecasts and projections as well as the current beliefs and assumptions of our management, including about our business, our financial condition, our results of operations, our cash flows, and the industry and environment in which we operate. Statements that include words such as "believe," "may," "will," "estimate," "continue," "anticipate," "would," "could," "should," "intend" and "expect," variations of these words, and similar expressions, are intended to identify forward-looking statements. These forward-looking statements speak only as of the date of this Quarterly Report on Form 10-Q and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. Factors that might cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A,"*Risk Factors*" and elsewhere in our Annual Report on Form 10-K for the year ended December 31, 2022, in Part II, Item 1A, "*Risk Factors*" and elsewhere in this Quarterly Report on Form 10-Q, and in other reports we file with the U.S. Securities and Exchange Commission, or the SEC. While forward-looking statements are based on the reasonable expectations of our management at the time that they are made, you should not rely on them. We undertake no obligation to revise or update publicly any forward-looking statements for any reason, whether as a result of new information, future events or otherwise, except as may be required by law.

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

PART I—FINANCIAL INFORMATION

Item 1. Unaudited Condensed Consolidated Financial Statements

Guardant Health, Inc.

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

	June 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 271,073	$ 141,647
Short-term marketable debt securities	953,776	869,584
Accounts receivable, net	86,468	97,256
Inventory, net	60,529	51,598
Prepaid expenses and other current assets, net	25,809	31,509
Total current assets	1,397,655	1,191,594
Property and equipment, net	155,741	167,920
Right-of-use assets, net	165,273	174,001
Intangible assets, net	10,361	11,727
Goodwill	3,290	3,290
Other assets, net	107,697	61,453
Total Assets	$ 1,840,017	$ 1,609,985
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	$ 188,696	$ 175,817
Deferred revenue	12,237	17,403
Total current liabilities	200,933	193,220
Convertible senior notes, net	1,138,678	1,137,391
Long-term operating lease liabilities	198,230	210,015
Other long-term liabilities	9,450	9,179
Total Liabilities	1,547,291	1,549,805
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock, par value of $0.00001 per share; 10,000,000 shares authorized, no shares issued and outstanding as of June 30, 2023 and December 31, 2022	—	—
Common stock, par value of $0.00001 per share; 350,000,000 shares authorized as of June 30, 2023, and December 31, 2022; 117,662,134 and 102,619,383 shares issued and outstanding as of June 30, 2023, and December 31, 2022, respectively	1	1
Additional paid-in capital	2,169,911	1,742,114
Accumulated other comprehensive loss	(8,469)	(19,522)
Accumulated deficit	(1,868,717)	(1,662,413)
Total Stockholders' Equity	292,726	60,180
Total Liabilities and Stockholders' Equity	$ 1,840,017	$ 1,609,985

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

Guardant Health, Inc.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Revenue:				
Precision oncology testing	$ 125,244	$ 92,062	$ 238,637	$ 176,198
Development services and other	11,906	17,082	27,227	29,045
Total revenue	137,150	109,144	265,864	205,243
Costs and operating expenses:				
Cost of precision oncology testing	49,357	34,375	94,463	65,059
Cost of development services and other	4,491	2,352	12,458	3,649
Research and development expense	90,359	85,455	183,487	167,212
Sales and marketing expense	71,043	73,603	147,166	138,035
General and administrative expense	41,516	43,680	81,961	84,947
Total costs and operating expenses	256,766	239,465	519,535	458,902
Loss from operations	(119,616)	(130,321)	(253,671)	(253,659)
Interest income	6,727	1,387	9,787	2,165
Interest expense	(645)	(645)	(1,289)	(1,289)
Other income (expense), net	41,259	378	39,605	330
Fair value adjustments of noncontrolling interest liability	—	(99,785)	—	(99,785)
Loss before provision for income taxes	(72,275)	(228,986)	(205,568)	(352,238)
Provision for income taxes	496	446	736	422
Net loss	$ (72,771)	$ (229,432)	$ (206,304)	$ (352,660)
Net loss per share, basic and diluted	$ (0.67)	$ (2.25)	$ (1.95)	$ (3.46)
Weighted-average shares used in computing net loss per share, basic and diluted	108,808	102,047	105,752	101,950

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

Guardant Health, Inc.

Condensed Consolidated Statements of Comprehensive Loss (unaudited)
(in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Net loss	$ (72,771)	$ (229,432)	$ (206,304)	$ (352,660)
Other comprehensive income (loss):				
Unrealized gain (loss) on available-for-sale securities	4,933	(4,528)	12,468	(17,286)
Foreign currency translation adjustments	(1,252)	(1,419)	(1,415)	(2,211)
Other comprehensive income (loss)	3,681	(5,947)	11,053	(19,497)
Comprehensive loss	$ (69,090)	$ (235,379)	$ (195,251)	$ (372,157)

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

Guardant Health, Inc.

Condensed Consolidated Statements of Stockholders' (Deficit) Equity (unaudited)
(in thousands, except share data)

	Three Months Ended June 30, 2023					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' (Deficit) Equity
	Shares	Amount				
Balance as of April 1, 2023	102,708,305	$ 1	$ 1,763,544	$ (12,150)	$ (1,795,946)	$ (44,551)
Issuance of common stock upon follow-on public offering, net of offering costs of $21,131	14,375,000	—	381,369	—	—	381,369
Issuance of common stock upon exercise of stock options	10,830	—	63	—	—	63
Vesting of restricted stock units	269,218	—	—	—	—	—
Common stock issued under employee stock purchase plan	298,781	—	6,697	—	—	6,697
Taxes paid related to net share settlement of restricted stock units	—	—	(4,116)	—	—	(4,116)
Stock-based compensation	—	—	22,354	—	—	22,354
Other comprehensive income	—	—	—	3,681	—	3,681
Net loss	—	—	—	—	(72,771)	(72,771)
Balance as of June 30, 2023	117,662,134	$ 1	$ 2,169,911	$ (8,469)	$ (1,868,717)	$ 292,726

	Three Months Ended June 30, 2022					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance as of April 1, 2022	101,895,835	$ 1	$ 1,682,406	$ (18,314)	$ (1,131,053)	$ 533,040
Issuance of common stock upon exercise of stock options	50,797	—	1,194	—	—	1,194
Vesting of restricted stock units	52,114	—	—	—	—	—
Common stock issued under employee stock purchase plan	188,110	—	5,742	—	—	5,742
Taxes paid related to net share settlement of restricted stock units	—	—	(1,222)	—	—	(1,222)
Stock-based compensation	—	—	25,544	—	—	25,544
Tender offer issued in connection with the Joint Venture Acquisition and acquisition related costs	—	—	(9,832)	—	—	(9,832)
Other comprehensive loss	—	—	—	(5,947)	—	(5,947)
Net loss	—	—	—	—	(229,432)	(229,432)
Balance as of June 30, 2022	102,186,856	$ 1	$ 1,703,832	$ (24,261)	$ (1,360,485)	$ 319,087

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

	Six Months Ended June 30, 2023					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance as of January 1, 2023	102,619,383	$ 1	$ 1,742,114	$ (19,522)	$ (1,662,413)	$ 60,180
Issuance of common stock upon follow-on public offering, net of offering costs of $21,131	14,375,000	—	381,369	—	—	381,369
Issuance of common stock upon exercise of stock options	31,879	—	220	—	—	220
Vesting of restricted stock units	337,091	—	—	—	—	—
Common stock issued under employee stock purchase plan	298,781	—	6,697	—	—	6,697
Taxes paid related to net share settlement of restricted stock units	—	—	(5,109)	—	—	(5,109)
Stock-based compensation	—	—	44,620	—	—	44,620
Other comprehensive income	—	—	—	11,053	—	11,053
Net loss	—	—	—	—	(206,304)	(206,304)
Balance as of June 30, 2023	117,662,134	$ 1	$ 2,169,911	$ (8,469)	$ (1,868,717)	$ 292,726

	Six Months Ended June 30, 2022					
	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance as of January 1, 2022	101,767,446	$ 1	$ 1,657,593	$ (4,764)	$ (1,007,825)	$ 645,005
Issuance of common stock upon exercise of stock options	156,015	—	2,157	—	—	2,157
Vesting of restricted stock units	75,285	—	—	—	—	—
Vesting of common stock exercised early	—	—	8	—	—	8
Common stock issued under employee stock purchase plan	188,110	—	5,742	—	—	5,742
Taxes paid related to net share settlement of restricted stock units	—	—	(2,179)	—	—	(2,179)
Stock-based compensation	—	—	50,343	—	—	50,343
Tender offer issued in connection with the Joint Venture Acquisition and acquisition related costs	—	—	(9,832)	—	—	(9,832)
Other comprehensive loss	—	—	—	(19,497)	—	(19,497)
Net loss	—	—	—	—	(352,660)	(352,660)
Balance as of June 30, 2022	102,186,856	$ 1	$ 1,703,832	$ (24,261)	$ (1,360,485)	$ 319,087

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

Guardant Health, Inc.

Condensed Consolidated Statements of Cash Flows (unaudited)
(in thousands)

	Six Months Ended June 30,	
	2023	2022
OPERATING ACTIVITIES:		
Net loss	$ (206,304)	$ (352,660)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	20,976	15,986
Operating lease costs	14,708	14,197
Contingent consideration	10	3,805
Stock-based compensation	44,620	50,343
Amortization of debt issuance costs	1,287	1,284
Amortization of (discount) premium on marketable debt securities	(3,085)	3,800
Unrealized gains on marketable equity securities	(67,879)	—
Impairment of non-marketable equity securities and other related assets	29,054	—
Fair value adjustments of noncontrolling interest liability	—	99,785
Other	98	20
Cash effect of changes in operating assets and liabilities:		
Accounts receivable, net	10,695	2,355
Inventory, net	(8,931)	(29,218)
Prepaid expenses and other current assets, net	(891)	23,670
Other assets, net	1,700	4,301
Accounts payable and accrued liabilities	16,512	22,424
Operating lease liabilities	(14,970)	(6,595)
Deferred revenue	(6,056)	5,949
Net cash used in operating activities	(168,456)	(140,554)
INVESTING ACTIVITIES:		
Purchase of marketable debt securities	(561,339)	(238,601)
Maturity of marketable debt securities	492,700	335,000
Purchase of non-marketable equity securities and other related assets	(1,227)	(12,750)
Purchase of property and equipment	(14,037)	(45,734)
Net cash (used in) provided by investing activities	(83,903)	37,915
FINANCING ACTIVITIES:		
Payments made on finance lease obligations	(37)	(35)
Proceeds from issuance of common stock upon exercise of stock options	220	2,158
Proceeds from issuances of common stock under employee stock purchase plan	6,697	5,742
Taxes paid related to net share settlement of restricted stock units	(5,109)	(2,179)
Joint Venture Acquisition	—	(177,785)
Proceeds from follow-on public offering	402,500	—
Payment of offering costs related to follow-on public offering	(21,271)	—
Net cash provided by (used in) financing activities	383,000	(172,099)
Net effect of foreign exchange rate changes on cash, cash equivalents and restricted cash	(1,415)	(2,211)
Net increase (decrease) in cash, cash equivalents and restricted cash	129,226	(276,949)
Cash, cash equivalents and restricted cash—Beginning of period	141,948	492,288
Cash, cash equivalents and restricted cash—End of period	$ 271,174	$ 215,339

	Six Months Ended June 30,	
	2023	2022
Supplemental Disclosures of Cash Flow Information:		
Operating lease liabilities arising from obtaining right-of-use assets	$ 1,964	$ 4,073
Supplemental Disclosures of Noncash Investing and Financing Activities:		
Purchase of property and equipment included in accounts payable and accrued liabilities	$ 2,151	$ 16,901
Tender offer issued in connection with the Joint Venture Acquisition and acquisition related costs	$ —	$ 9,688
Reconciliation of cash, cash equivalents and restricted cash:		
Cash and cash equivalents	$ 271,073	$ 215,169
Restricted cash – included in other assets, net	101	170
Total cash, cash equivalents and restricted cash	$ 271,174	$ 215,339

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

Guardant Health, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements

1. Description of Business

Guardant Health, Inc., or the Company, is a leading precision oncology company focused on helping conquer cancer globally through the use of its proprietary tests, vast data sets and advanced analytics. The Company believes its tests can transform cancer care by unlocking insights that will help patients at all stages of the disease, including at its earliest stages, when it's most treatable. For patients with advanced stage cancer, the Company has commercially launched Guardant360 LDT and Guardant360 CDx, the first comprehensive liquid biopsy test approved by the U.S. Food and Drug Administration, or the FDA, to provide tumor mutation profiling with solid tumors and to be used as a companion diagnostic in connection with non-small cell lung cancer, or NSCLC, and breast cancer. The Company has also launched the Guardant360 TissueNext tissue test for advanced-stage cancer, Guardant Reveal blood test to detect residual and recurring disease in early-stage colorectal, breast and lung cancer patients, and Guardant360 Response blood test to predict patient response to immunotherapy or targeted therapy eight weeks earlier than current standard-of-care imaging. In addition, the Company has developed Guardant Galaxy suite of advanced analytical technologies to enhance the performance and clinical utility of its portfolio of cancer tests, and to power the next generation of biomarker and drug discovery.

The Company also collaborates with biopharmaceutical companies in clinical studies by providing the above-mentioned tests, as well as the GuardantOMNI blood test for advanced-stage cancer, and the GuardantINFINITY blood test, a next-generation smart liquid biopsy that provides new, multi-dimensional insights into the complexities of tumor molecular profiles and immune response to advance cancer research and therapy development. Using data collected from its tests, the Company has also developed its GuardantINFORM platform to help biopharmaceutical companies accelerate precision oncology drug development through the use of this in-silico research platform to unlock further insights into tumor evolution and treatment resistance across various biomarker-driven cancers.

For early cancer detection, the Company has launched the Shield LDT test to address the needs of individuals eligible for colorectal cancer screening. From a simple blood draw, Shield uses a novel multimodal approach to detect colorectal cancer signals in the bloodstream, including DNA that is shed by tumors. In December 2022, the Company announced that the ECLIPSE study, an over 20,000 patient registrational study evaluating the performance of its Shield blood test for detecting colorectal cancer in average-risk adults, met co-primary endpoints. In addition, in March 2023, the Company submitted a premarket approval application for its Shield blood test to the FDA.

The Company was incorporated in Delaware in December 2011 and is headquartered in Palo Alto, California.

2. Summary of Significant Accounting Policies

Basis of Presentation

The Company's condensed consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America, or GAAP. The accompanying condensed consolidated financial statements include the accounts of Guardant Health, Inc., its consolidated Joint Venture (see Note 3, *Joint Venture*), and its wholly owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. Certain reclassifications of prior period amounts were made to conform with the current period presentation.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities and the related disclosures at the date of the condensed consolidated financial statements, as well as the reported amounts of revenues and expenses during the periods presented. The Company bases its estimates on historical experience and other market-specific or other relevant assumptions that it believes to be reasonable under the circumstances. Estimates are used in several areas including, but not limited to, estimation of variable consideration, estimation of credit losses, standalone selling price allocation included in contracts with multiple performance obligations, goodwill and identifiable intangible assets, stock-based compensation, incremental borrowing rate for operating leases, contingencies, certain inputs into the provision for (benefit from) income taxes, including related reserves, valuation of non-marketable securities, among others. These estimates generally involve complex issues and require judgments, involve the analysis of historical results and prediction of future trends, can require extended periods of time to resolve and are subject to change from period to period. Actual results may differ materially from management's estimates.

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

Unaudited Interim Condensed Financial Statements

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with GAAP for interim financial information and in accordance with the instructions to Form 10-Q and Rule 10-01 of Regulation S-X of the Securities Act of 1933, as amended, or the Securities Act. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. These unaudited condensed consolidated financial statements include all adjustments, consisting only of normal recurring accruals that the Company believes are necessary to fairly state the financial position and the results of the Company's operations and cash flows for interim periods in accordance with GAAP. Interim-period results are not necessarily indicative of results of operations or cash flows for a full year or any subsequent interim period.

The accompanying condensed consolidated financial statements should be read in conjunction with the Company's audited financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2022.

Restricted Cash

Restricted cash consists of payroll withholding related to the Company's enrollment in a voluntary disability insurance plan. Restricted cash balance was $0.1 million and $0.3 million as of June 30, 2023, and December 31, 2022, respectively, which was included in other assets, net in the accompanying condensed consolidated balance sheets.

Non-Marketable Securities

The Company acquires certain equity investments in private companies to promote business and strategic objectives. The Company's investments in non-marketable equity securities do not give the Company the ability to control or exercise significant influence over the investees. One of the investees is concluded to be a variable interest entity, or VIE, but the Company is deemed not to be the primary beneficiary as the Company does not have the power to direct the activities that most significantly impact the VIE's economic performance. The Company's non-marketable equity and other related investments totaled $4.2 million and $25.0 million as of June 30, 2023, and December 31, 2022, respectively, and are included in other assets, net on the accompanying condensed consolidated balance sheets.

Non-marketable securities are recorded at cost, subject to periodic impairment reviews and adjustments for observable price changes from orderly transactions. The Company's evaluation of impairment of such non-marketable securities is based on adverse changes in market conditions and the regulatory or economic environment, qualitative and quantitative analysis of the operating performance and financial condition of the investee; changes in operating structure or management of the investee; and additional funding requirements of the investee. As a result of the evaluation, the Company recorded an impairment of $16.6 million and $22.1 million for the three and six months ended June 30, 2023 for one of its non-marketable equity security investments, included in other income (expense), net on the Company's condensed consolidated statement of operations. In addition, pursuant to one of the investments in non-marketable securities purchased by the Company, the Company acquired rights to purchase the investee at a pre-determined price subject to additional adjustments based on the performance of the investee, on or before December 31, 2022. In September 2022, the Company decided not to exercise such rights to purchase the investee and recorded an impairment of $5.3 million based on an independent third-party valuation. Pursuant to another investment in non-marketable securities purchased by the Company, the Company acquired rights to purchase the investee at a pre-determined price subject to additional adjustments based on the performance of the Company, on or before October 1, 2023, and acquired rights to obtain the exclusive license of the investee's certain technologies. In June 2023, the Company recorded an impairment of $7.0 million, included in other income (expense), net on the Company's condensed consolidated statement of operations. No other impairment or downward adjustments to the carrying value of non-marketable securities have been otherwise recorded.

Concentration of Risk

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

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

The Company is subject to credit risk from its accounts receivable. The majority of the Company's accounts receivable arises from the provision of precision oncology services, and development services and other, primarily with biopharmaceutical companies and international laboratory partners, all of which have high credit ratings. The Company has not experienced any material losses related to receivables from individual customers, or groups of customers. The Company does not require collateral. Accounts receivable are recorded net of allowance for credit losses, if any.

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

	Revenue				Accounts Receivable, Net	
	Three Months Ended June 30,		Six Months Ended June 30,			
	2023	2022	2023	2022	June 30, 2023	December 31, 2022
	(unaudited)				(unaudited)	
Customer A	*	*	*	*	13 %	12 %
Customer B	32 %	29 %	32 %	30 %	12 %	11 %
Customer C	*	*	*	*	12 %	*

* less than 10%

The Company is also subject to credit risk from its other receivables and other assets. The Company's other receivables and other assets include payments due from a third-party in relation to the settlement of a patent dispute reached in August 2020 for $8.0 million payable over a period of 6 years. In December 2020, 2021 and 2022, the Company received the first, second and third installment payments of $1.0 million, $1.1 million and $1.1 million, respectively. The Company has evaluated and recorded a credit loss for the remaining $4.8 million considering the third-party's credit worthiness and lack of financial history.

The following table presents the receivable and the related credit loss amounts:

	June 30, 2023	December 31, 2022
	(unaudited) (in thousands)	
Prepaid expenses and other current assets:		
Gross Amount	$ 1,100	$ —
Allowance for Credit Losses	(1,100)	—
Net Amount	$ —	$ —
Other assets:		
Gross Amount	$ 3,700	$ 4,800
Allowance for Credit Losses	(3,700)	(4,800)
Net Amount	$ —	$ —

There were no activities for the allowance for credit losses during the three months ended June 30, 2023 and 2022. The following table summarizes the allowance for credit losses activities for the six months ended June 30, 2023 and 2022:

	Six Months Ended June 30,	
	2023	2022
	(unaudited) (in thousands)	
Prepaid expenses and other current assets:		
Allowance for credit losses—Beginning of period	$ —	$ —
Reclassification	1,100	1,100
Allowance for credit losses—End of period	$ 1,100	$ 1,100
Other assets:		
Allowance for credit losses—Beginning of period	$ 4,800	$ 5,900
Reclassification	(1,100)	(1,100)
Allowance for credit losses—End of period	$ 3,700	$ 4,800

Accounts Receivable, Net

Accounts receivable represent valid claims against commercial and governmental payers, biopharmaceutical companies, research institutes, international laboratory partners and distributors, including unbilled receivables, and royalty payments due from third parties for licensing the Company’s technologies. Unbilled receivables include balances due from biopharmaceutical customers related to development services and other revenues that are recognized upon the achievement of performance-based milestones but prior to the achievement of contractual billing rights. As of June 30, 2023, and December 31, 2022, the Company had unbilled receivables of $4.4 million and $5.4 million, respectively.

The Company evaluates the collectability of its accounts receivable based on historical collection trends, the financial condition of payment partners, and external market factors and provides for an allowance for potential credit losses based on management’s best estimate of the amount of probable credit losses. As of June 30, 2023, and December 31, 2022, the Company had an immaterial allowance for credit losses related to its accounts receivable.

Asset Acquisition

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

Goodwill and Intangible Assets, net

Intangible assets related to in-process research and development costs, or IPR&D, acquired in a business combination are considered to be indefinite-lived until the completion or abandonment of the associated research and development efforts. If and when development is complete, the associated assets would be deemed finite-lived and would then be amortized based on their respective estimated useful lives at that point in time. Prior to completion of the research and development efforts, the assets are considered indefinite-lived. During this period, the assets will not be amortized but will be tested for impairment on an annual basis and between annual tests if the Company becomes aware of any events occurring or changes in circumstances that would indicate a reduction in the fair value of the IPR&D projects below their respective carrying amounts. In connection with the launch of Shield LDT in May 2022, the Company's IPR&D of $1.6 million was reclassified as an intangible asset with a useful life of 2 years.

Goodwill represents the excess of the purchase price over the fair value of net identifiable assets and liabilities. Goodwill is not amortized but is tested for impairment at least annually during the fourth fiscal quarter, or if circumstances indicate its value may no longer be recoverable. The Company continues to operate in one segment, which is considered to be the sole reporting unit and, therefore, goodwill is tested for impairment at the enterprise level. As of June 30, 2023, there has been no impairment of goodwill.

Intangible assets are carried at cost, net of accumulated amortization. The Company does not have intangible assets with indefinite useful lives other than goodwill. Amortization is recorded on a straight-line basis over the intangible asset's useful life, which is approximately 2—12 years.

Post-acquisition Contingent Consideration

Post-acquisition contingent consideration is recognized over the service period, subject to meeting the respective service requirements and performance metrics. The Company recorded post-acquisition contingent consideration expense of $0.5 million and $0.2 million, for the three months ended June 30, 2023, and 2022, respectively, and $1.1 million and $2.3 million for the six months ended June 30, 2023, and 2022, respectively, in research and development expenses on the Company's condensed consolidated statement of operations.

Leases

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

Convertible Senior Notes

Convertible senior notes are accounted for as a liability and measured at their amortized cost. Transaction costs related to the issuance of the notes are netted with the liability and are amortized to interest expense over the term of the notes, using an effective interest rate method.

Revenue Recognition

The Company derives revenue from the provision of precision oncology testing services, as well as from development services and other. Precision oncology testing services include genomic profiling and the delivery of other genomic information derived from the Company's platform. Development services include companion diagnostic development and regulatory approval, clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect and GuardantINFORM. Other revenue includes amounts derived from licensing the Company's technologies, kit fulfillment and screening services. The Company currently receives payments from third-party commercial and governmental payers, certain hospitals and oncology centers and individual patients, as well as biopharmaceutical companies, research institutes, international laboratory partners and distributors.

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

Precision oncology testing

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

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

Development services and other

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

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

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

The Company also recognizes revenue from other development services, in addition to companion diagnostic development and regulatory approval services noted above, such as clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect and GuardantINFORM. These revenues are generally recognized over time based on an input method to measure progress in the period when the associated services have been performed.

In addition, other revenue includes amounts derived from licensing the Company's digital sequencing technologies to its domestic customers and international laboratory partners, kit fulfillment and screening services. For the licensed technology, the Company is compensated through royalty-based payments, non-refundable upfront payments, guaranteed minimum payments, and/or sample milestone payments. Depending on the nature of the technology licensing arrangements, and considering factors including but not limited to enforceable right to payment and payment terms, and if an asset with alternative use is created, these revenues are recognized in the period when royalty-bearing sales occur, when the technology transfer is complete, or over the technology transfer period. Kit fulfillment related revenues are recognized when such products are delivered.

Contracts with multiple performance obligations

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

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

Deferred revenue

Deferred revenue, which is a contract liability, consists primarily of payments received in advance of revenue recognition from contracts with customers. For example, development services and other contracts with biopharmaceutical customers often contain upfront payments which results in the recording of deferred revenue to the extent cash is received prior to the Company's performance of the related services. Contract liabilities are relieved as the Company performs its obligations under the contract and revenue is consequently recognized. As of June 30, 2023 and December 31, 2022, the deferred revenue balance was $15.1 million and $21.2 million, respectively, of which $2.9 million and $3.8 million is considered long-term and was recorded within other long-term liabilities on the accompanying condensed consolidated balance sheets. Revenue recognized in the six months ended June 30, 2023 that was included in the deferred revenue balance as of December 31, 2022 was $11.8 million, and revenue recognized in the six months ended June 30, 2022 that was included in the deferred revenue balance as of December 31, 2021 was $5.3 million, respectively.

Transaction price allocated to the remaining performance obligations

Transaction price allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes deferred revenue and non-cancelable amounts that will be invoiced and recognized as revenues in future periods. The Company expects to recognize substantially all of the remaining transaction price in the next 1-2 years.

Costs of Precision Oncology Testing

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

Cost of Development Services and Other

Cost of development services and other primarily includes costs incurred for the performance of development services requested by the Company’s biopharmaceutical customers, and costs associated with the Company's partnership agreements and screening services. For development of new products, costs incurred before technological feasibility has been achieved are reported as research and development expenses, while costs incurred thereafter are reported as cost of development services and other.

Research and Development Expenses

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

Stock-Based Compensation

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

The Company uses the Black-Scholes option-pricing model to estimate the fair value of stock options granted under the 2012 Stock Plan (as amended and restated), or the 2012 Plan, and the 2018 Incentive Award Plan, or the 2018 Plan, and stock purchase rights granted under the 2018 Employee Stock Purchase Plan. The Black-Scholes option-pricing model requires assumptions to be made related to the expected term of an award, expected volatility, risk-free rate and expected dividend yield. Forfeitures are accounted for as they occur.

The Company measures the grant date fair value of its service-based and performance-based restricted stock units issued to employees and non-employees based on the closing market price of the common stock on the date of grant. For restricted stock units with only service-based vesting conditions, compensation expense is recognized in the Company's condensed consolidated statement of operations on a straight-line basis over the requisite service period. Compensation expense for restricted stock units with performance metrics, or PSUs, is calculated based upon expected achievement of the metrics specified in the grant, and is recognized in the Company's condensed consolidated statement of operations using an accelerated attribution model over the requisite service period for each separately vesting portion of the award. No stock-based compensation expense is recorded for PSUs, unless it is determined to be probable that the related performance metrics will be met. Any PSUs that remain unvested at the end of the performance period will be forfeited.

Net Loss Per Share

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

3. Joint Venture

In May 2018, the Company and an affiliate of SoftBank formed and capitalized Guardant Health AMEA, Inc., the Joint Venture, for the sale, marketing and distribution of the Company's tests generally outside the Americas and Europe, and to accelerate commercialization of its products in Asia, the Middle East and Africa. Under the terms of the joint venture agreement, each party held an approximately 50% ownership interest in the Joint Venture and two seats on the board of the Joint Venture.

In June 2022, the Company purchased all of the shares of the Joint Venture, or the Joint Venture Acquisition, held by SoftBank and its affiliates in consideration for a cash payment of the aggregate purchase price of $177.8 million, which resulted in $99.8 million of fair value adjustments to the noncontrolling interest liability. In connection with the Joint Venture Acquisition, the Company also issued a tender offer to purchase the Joint Venture's Class B common stock issued and issuable upon exercise of vested Joint Venture's stock options held by the Joint Venture's employees.

Prior to the completion of the Joint Venture Acquisition, the Joint Venture was deemed to be a VIE, and the Company had been identified as the VIE's primary beneficiary. As the primary beneficiary, the Company had consolidated the financial position, results of operations and cash flows of the Joint Venture in its financial statements and all intercompany balances had been eliminated in consolidation. Upon completion of the Joint Venture Acquisition and the tender offer, Guardant Health AMEA, Inc. became the Company's wholly owned subsidiary.

4. Condensed Consolidated Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consist of the following:

	June 30, 2023	December 31, 2022
	(unaudited)	
	(in thousands)	
Machinery and equipment	$ 109,339	$ 95,764
Leasehold improvements	102,228	99,781
Computer hardware	31,898	29,744
Construction in progress	9,173	20,598
Furniture and fixtures	8,602	8,367
Computer software	1,970	1,797
Property and equipment, gross	$ 263,210	$ 256,051
Less: accumulated depreciation	(107,469)	(88,131)
Property and equipment, net	$ 155,741	$ 167,920

Depreciation expense related to property and equipment was $9.9 million and $8.1 million for the three months ended June 30, 2023, and 2022, respectively, and $19.6 million and $14.8 million for the six months ended June 30, 2023, and 2022, respectively.

Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities consist of the following:

	June 30, 2023	December 31, 2022
	(unaudited)	
	(in thousands)	
Accounts payable	$ 79,784	$ 68,911
Accrued compensation	45,775	55,788
Operating lease liabilities	24,707	21,878
Others	38,430	29,240
Total accounts payable and accrued liabilities	$ 188,696	$ 175,817

5. Fair Value Measurements, Cash Equivalents and Marketable Securities

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

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

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

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

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

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

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

	June 30, 2023			
	Fair Value	Level 1	Level 2	Level 3
		(unaudited) (in thousands)		
Financial Assets:				
Money market funds	$ 61,999	$ 61,999	$ —	$ —
Commercial paper	143,686	—	143,686	—
Total cash equivalents	$ 205,685	$ 61,999	$ 143,686	$ —
Commercial paper	$ 196,924	$ —	$ 196,924	$ —
U.S. government debt securities	756,852	—	756,852	—
Total short-term marketable debt securities	$ 953,776	$ —	$ 953,776	$ —
Long-term marketable equity securities	$ 86,171	$ 86,171	$ —	$ —
Total	$ 1,245,632	$ 148,170	$ 1,097,462	$ —
Financial Liabilities:				
Contingent consideration	$ 6,440	$ —	$ —	$ 6,440
Total	$ 6,440	$ —	$ —	$ 6,440

	December 31, 2022			
	Fair Value	Level 1	Level 2	Level 3
		(in thousands)		
Financial Assets:				
Money market funds	$ 3,104	$ 3,104	$ —	$ —
U.S. government debt securities	14,987	—	14,987	—
Total cash equivalents	$ 18,091	$ 3,104	$ 14,987	$ —
U.S. government debt securities	$ 869,584	$ —	$ 869,584	$ —
Total short-term marketable debt securities	$ 869,584	$ —	$ 869,584	$ —
Long-term marketable equity securities	$ 18,291	$ 18,291	$ —	$ —
Total	$ 905,966	$ 21,395	$ 884,571	$ —
Financial Liabilities:				
Contingent consideration	$ 6,430	$ —	$ —	$ 6,430
Total	$ 6,430	$ —	$ —	$ 6,430

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

In July 2022, one of the Company's equity investees, Lunit Inc., or Lunit, completed its initial public offering, or IPO, subsequent to which, the Company started to account for the investment in Lunit at fair value on a recurring basis, and classified the investment as marketable equity securities within Level 1 of the fair value hierarchy as the investment is valued using the quoted market price. The Company is subject to a 2-year lock-up period from Lunit's IPO date, during which the Company shall not transfer Lunit's shares between accounts, establish or cancel pledges, sell, or withdraw such shares, without approval from the Korea Exchange. As of June 30, 2023 and December 31, 2022, the balance of the investment in Lunit was $86.2 million and $18.3 million, respectively, included in other assets, net on the Company's condensed consolidated balance sheets. In addition, the Company recorded $64.0 million and $67.9 million unrealized gains on the investment in Lunit for the three and six months ended June 30, 2023, respectively, included in other income (expense), net on the Company's condensed consolidated statement of operations. The Company did not record any unrealized gains or losses on the investment in Lunit for the three and six months ended June 30, 2022.

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

Acquisition-related contingent consideration is measured at fair value on a quarterly basis and change in estimated contingent consideration to be paid are included in operating expenses in the condensed consolidated statements of operations. The fair value of acquisition-related contingent consideration is estimated using a multiple-outcome discounted cash flow valuation technique. Contingent consideration is classified within Level 3 of the fair value hierarchy, as it is based on a probability that includes significant unobservable inputs. The significant unobservable inputs include a probability-weighted estimate of achievement of certain commercialization milestones, and discount rate to present value the expected payments. A significant change in any of these input factors in isolation could have a material impact to fair value measurement. As of June 30, 2023 and December 31, 2022, the Company's contingent consideration liability was $6.4 million and $6.4 million, respectively, of which $4.9 million and $4.9 million is considered long-term and was recorded within other long-term liabilities on the accompanying condensed consolidated balance sheets.

Prior to the completion of the Joint Venture Acquisition in June 2022, the fair value of the noncontrolling interest liability was considered to be a Level 3 measurement and was determined based on an annual internal rate of return of 20% on the initial amount of $41.0 million invested by SoftBank in May 2018, to the date of Company's exercising the call right in November 2021. The noncontrolling interest liability was fully paid by June 30, 2022 (see Note 3, *Joint Venture*).

The following table summarizes the activities for the Level 3 financial instruments:

	Noncontrolling Interest Liability		Contingent Consideration			
	Three Months Ended June 30,	Six Months Ended June 30,	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2022	2023	2022	2023	2022
			(unaudited) (in thousands)			
Fair value — beginning of period	$ 78,000	$ 78,000	$ 6,130	$ 6,015	$ 6,430	$ 3,625
Increase in fair value	99,785	99,785	310	1,415	10	3,805
Settlement	(177,785)	(177,785)	—	—	—	—
Fair value — end of period	$ —	$ —	$ 6,440	$ 7,430	$ 6,440	$ 7,430

The Company considers the fair value of the Convertible Notes as of June 30, 2023, and December 31, 2022, to be a Level 2 measurement. The fair value of the Convertible Notes is primarily affected by the trading price of the Company's common stock and market interest rates. As such, the carrying value of the Convertible Notes does not reflect the market rate. See Note 7, *Debt*, for additional information related to the fair value of the Convertible Notes.

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

	June 30, 2023			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(unaudited) (in thousands)			
Money market fund	$ 61,999	$ —	$ —	$ 61,999
Commercial paper	340,612	—	(2)	340,610
U.S. government debt securities	761,152	117	(4,417)	756,852
Total	$ 1,163,763	$ 117	$ (4,419)	$ 1,159,461

	December 31, 2022			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(in thousands)			
Money market fund	$ 3,104	$ —	$ —	$ 3,104
U.S. government debt securities	901,342	8	(16,779)	884,571
Total	$ 904,446	$ 8	$ (16,779)	$ 887,675

The following tables present the estimated fair values and gross unrealized losses of the Company's marketable debt securities that have been in a continuous unrealized loss position as of June 30, 2023 and December 31, 2022.

	June 30, 2023					
	Less Than 12 Months		12 Months or Greater		Total	
	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss
	(unaudited) (in thousands)					
Commercial paper	$ 24,785	$ (2)	$ —	$ —	$ 24,785	$ (2)
U.S. government debt securities	$ 111,068	$ (140)	$ 389,224	$ (4,277)	$ 500,292	$ (4,417)
Total	$ 135,853	$ (142)	$ 389,224	$ (4,277)	$ 525,077	$ (4,419)

	December 31, 2022					
	Less Than 12 Months		12 Months or Greater		Total	
	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss	Estimated Fair Value	Gross Unrealized Loss
	(in thousands)					
U.S. government debt securities	$ 170,975	$ (2,958)	$ 685,754	$ (13,821)	$ 856,729	$ (16,779)
Total	$ 170,975	$ (2,958)	$ 685,754	$ (13,821)	$ 856,729	$ (16,779)

There have been no material realized gains or losses on marketable debt securities for the periods presented. The Company determined that it did have the ability and intent to hold all marketable debt securities that have been in a continuous loss position until maturity or recovery and the loss position was temporary due to market volatility, thus there has been no recognition of credit losses for the three and six months ended June 30, 2023, and 2022, respectively.

6. Intangible Assets, Net and Goodwill

The following table presents details of purchased intangible assets as of June 30, 2023, and December 31, 2022:

	June 30, 2023			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Remaining Weighted-Average Useful Life
	(unaudited)			
	(in thousands)			(in years)
Intangible assets subject to amortization:				
Acquired license	$ 11,886	$ (4,128)	$ 7,758	7.3
Non-compete agreements and other covenant rights	5,100	(3,164)	1,936	2.4
Acquired technology	1,600	(933)	667	0.8
Total intangible assets subject to amortization	18,586	(8,225)	10,361	
Intangible assets not subject to amortization:				
Goodwill	3,290	—	3,290	
Total purchased intangible assets	$ 21,876	$ (8,225)	$ 13,651	

	December 31, 2022			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Remaining Weighted-Average Useful Life
	(in thousands)			(in years)
Intangible assets subject to amortization:				
Acquired license	$ 11,886	$ (3,579)	$ 8,307	7.8
Non-compete agreements and other covenant rights	5,100	(2,747)	2,353	2.9
Acquired technology	1,600	(533)	1,067	1.4
Total intangible assets subject to amortization	18,586	(6,859)	11,727	
Intangible assets not subject to amortization:				
Goodwill	3,290	—	3,290	
Total purchased intangible assets	$ 21,876	$ (6,859)	$ 15,017	

Amortization of finite-lived intangible assets was $0.7 million and $0.6 million for the three months ended June 30, 2023, and 2022, respectively, and $1.4 million and $1.1 million for the six months ended June 30, 2023, and 2022, respectively.

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

Year Ending December 31,	(unaudited) (in thousands)
Remainder of 2023	$ 1,381
2024	2,219
2025	1,670
2026	1,212
2027	1,107
2028 and thereafter	2,772
Total	$ 10,361

7. Debt

Convertible Senior Notes

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

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

- during any calendar quarter (and only during such calendar quarter) commencing after the calendar quarter ending on March 31, 2021, if the last reported sale price of the Company's common stock exceeds 130% of the conversion price for each of at least 20 trading days (whether or not consecutive) during the 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter, or the sale price condition;
- during the five consecutive business days immediately after any ten consecutive trading day period, or the measurement period, if the trading price per $1,000 principal amount of the Notes for each trading day of the measurement period is less than 98% of the product of the last reported sale price of the Company's common stock on such trading day and the conversion rate on such trading day; or
- upon the occurrence of specified corporate events

From and after August 15, 2027, holders of the 2027 Notes may convert their 2027 Notes at any time at their election until the close of business on the second scheduled trading day immediately before the maturity date.

The Company will settle conversions by paying or delivering, as applicable, cash, shares of its common stock or a combination of cash and shares of its common stock, at the Company’s election.

The initial conversion rate is 7.1523 shares of common stock per $1,000 principal amount of 2027 Notes, which represents an initial conversion price of approximately $139.82 per share of common stock. The conversion rate and conversion price will be subject to customary adjustments upon the occurrence of certain events. In addition, if certain corporate events that constitute a “Make-Whole Fundamental Change” occur, then the conversion rate will, in certain circumstances, be increased for a specified period of time.

The Company may not redeem the 2027 Notes at its option at any time before November 20, 2024. The Notes will be redeemable, in whole or in part, at the Company's option at any time, and from time to time, on or after November 20, 2024 and on or before the 25th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the Notes to be redeemed, plus accrued and unpaid special interest and additional interest, if any, to, but excluding, the redemption date, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the conversion price on (i) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company sends the related redemption notice; and (ii) the trading day immediately before the date the Company sends such notice. In addition, calling any Note for redemption will constitute a Make-Whole Fundamental Change with respect to that Note, in which case the conversion rate applicable to the conversion of that Note will be increased in certain circumstances if it is converted after it is called for redemption.

If certain corporate events that constitute a "Fundamental Change" occur, then, subject to a limited exception for certain cash mergers, holders of Notes may require the Company to repurchase their 2027 Notes at a cash repurchase price equal to the principal amount of the 2027 Notes to be repurchased, plus accrued and unpaid special interest and additional interest, if any, to, but excluding, the fundamental change repurchase date. The definition of Fundamental Change includes certain business combination transactions involving the Company and certain de-listing events with respect to the Company's common stock.

Since the 2027 Notes were not convertible as of June 30, 2023 and December 31, 2022, the net carrying amount of the 2027 Notes was classified as a long-term liability.

The following table sets forth the net carrying amounts of the 2027 Notes as of June 30, 2023, and December 31, 2022:

	June 30, 2023	December 31, 2022
	(unaudited)	
	(in thousands)	
Liability component:		
Principal	$ 1,150,000	$ 1,150,000
Less: debt issuance costs, net of amortization	(11,322)	(12,609)
Net carrying amount	$ 1,138,678	$ 1,137,391

The total estimated fair value of the 2027 Notes was $823.7 million and $717.5 million as of June 30, 2023, and December 31, 2022, respectively. The fair value was determined based on the closing trading price per $100 of the 2027 Notes as of the last day of trading for the period.

The interest expense recognized in relation to amortization of debt issuance costs was $0.6 million and $1.3 million for the three and six months ended June 30, 2023 and 2022, respectively, which represented an effective interest rate of 0.2% and 0.2% for the three and six months ended June 30, 2023, and 2022, respectively.

Note Hedges

To minimize the impact of potential economic dilution upon conversion of the 2027 Notes, the Company entered into convertible note hedge transactions, or the 2027 Note Hedges, with respect to its common stock concurrent with the issuance of the Notes. The 2027 Note Hedges cover, subject to customary adjustments, the number of shares of common stock initially underlying the Notes. The strike price of the 2027 Note Hedges will initially be approximately $182.60 per share, which represents a premium of 75% over the last reported sale price of the Company's common stock of $104.34 per share on November 16, 2020, and is subject to certain adjustments under the terms of the 2027 Note Hedges.

The 2027 Note Hedges will expire upon maturity of the 2027 Notes. The 2027 Note Hedges are separate transactions and are not part of the terms of the 2027 Notes. Holders of the 2027 Notes will not have any rights with respect to the 2027 Note Hedges. The shares receivable related to the 2027 Note Hedges are excluded from the calculation of diluted earnings per share as they are anti-dilutive.

As these transactions meet certain accounting criteria, the 2027 Note Hedges are recorded in stockholders' equity and are not accounted for as derivatives. The Company paid an aggregate amount of $90.0 million for the 2027 Note Hedges, which has been recorded as a reduction to additional paid-in capital and will not be remeasured.

8. Leases

The Company has entered into various operating lease agreements for office space, data center, lab and warehouse use, with remaining terms of up to 10 years, some of which include one or more options to renew. As leases approach maturity, the Company considers various factors such as market conditions and the terms of any renewal options that may exist to determine whether it will renew the lease, as such, the Company does not include renewal options in its lease terms for calculating its lease liability, as the renewal options allow it to maintain operational flexibility and the Company is not reasonably certain it will exercise these renewal options at the time of the lease commencement.

Operating lease expense was $7.4 million and $7.2 million for the three months ended June 30, 2023, and 2022, respectively, and $14.7 million and $14.2 million for the six months ended June 30, 2023, and 2022, respectively, which includes both lease and non-lease components (primarily common area maintenance charges and property taxes).

	June 30, 2023	December 31, 2022
	(unaudited)	
Weighted-average remaining lease term (in years)	8.7	9.1
Weighted-average discount rate	3.89 %	3.93 %

The following table summarizes the Company's future principal contractual obligations for operating lease commitments as of June 30, 2023:

Year Ending December 31,		(unaudited) (in thousands)
Remainder of 2023	$	16,027
2024		33,582
2025		32,605
2026		27,776
2027		24,479
2028 and thereafter		125,157
Total operating lease payments	$	259,626
Less: imputed interest		(36,689)
Total operating lease liabilities	$	222,937

Finance leases are not material to the Company's condensed consolidated financial statements.

9. Commitments and Contingencies

Legal Proceedings

In addition to commitments and obligations incurred in the ordinary course of business, from time to time the Company may be subject to a variety of claims and legal proceedings, including claims from customers and vendors, pending and potential legal actions for damages, governmental investigations and other matters. For example, the Company has received, and may in the future continue to receive letters, claims or complaints from others alleging false advertising, patent infringement, violation of employment practices and trademark infringement. The Company has also instituted, and may in the future institute, additional legal proceedings to enforce its rights and seek remedies, such as monetary damages, injunctive relief and declaratory relief. The Company cannot predict the results of any such disputes, and despite the potential outcomes, the existence thereof may have an adverse material impact on the Company because of diversion of management time and attention as well as the financial costs related to resolving such disputes.

The Company and its affiliates are parties to the legal claims and proceedings described below. The Company is vigorously defending itself against those claims and in those proceedings. Significant developments in those matters are described below. If the Company is unsuccessful in defending, or if it determines to settle, any of these matters, it may be required to pay substantial sums, be subject to injunction and/or be forced to change how it operates its business, which could have a material adverse impact on its financial position or results of operations.

Unless otherwise stated, the Company is unable to reasonably estimate the loss or a range of possible loss for the matters described below. Often, it is not reasonably possible for the Company to determine that a loss is probable for a claim, or to reasonably estimate the amount of loss or a range of loss, because of the limited information available and the potential effects of future events and decisions by third parties, such as courts and regulators, that will determine the ultimate resolution of the claim. Many of the matters described are at preliminary stages, raise novel theories of liability or seek an indeterminate amount of damages. It is not uncommon for claims to be resolved over a number of years. The Company reviews loss contingencies at least quarterly to determine whether the loss probability has changed and whether it can make a reasonable estimate of the possible loss or range of loss. When the Company determines that a loss from a claim is probable and reasonably estimable, it records a liability in the amount of its estimate for the ultimate loss. The Company also provides disclosure when it is reasonably possible that a loss may be incurred or when it is reasonably possible that the amount of a loss will exceed its recorded liability.

Intellectual Property Disputes

In August 2021, TwinStrand Biosciences, Inc., or TwinStrand Biosciences, and the University of Washington filed a patent infringement suit in the United States District Court for the District of Delaware alleging that the Company infringes U.S. Patent Nos. 10,287,631; 10,689,699; 10,752,951; and 10,760,127. The Company answered the complaint in October 2021, denying TwinStrand Biosciences' allegations and asserted counterclaims of invalidity, unenforceability due to inequitable conduct and infringement of four of the Company's patents. Discovery in the case has concluded, the parties have filed summary judgment motions, and trial is scheduled to commence in November 2023.

On August 1, 2023, the Company publicly announced that it entered into a Collaboration and Settlement Agreement, or the Collaboration Agreement, with Illumina, Inc., or Illumina. Under the terms of the Collaboration Agreement, the parties have agreed to extend their long-standing commercial relationship by agreeing to collaborate on the sharing of specimen samples in order to advance cancer research, and by entering into a new long-term purchase and supply commitment. Furthermore, the parties agreed to dismiss with prejudice the March 2022 lawsuit filed by Illumina in the U.S. District Court for the District of Delaware, *Illumina, Inc. v. Guardant Health, Inc. et al*, Case No. 1:22-cv-00334-GBW-CJB, including any allegations related to the subject intellectual property.

False Advertising Dispute

In May 2021, the Company also filed a lawsuit against Natera, Inc., or Natera, in the United States District Court for the Northern District of California, wherein the Company alleged that Natera is misleading healthcare providers about the performance of the Company's new oncology test, Guardant Reveal, by suggesting the test is inaccurate and/or insensitive, and inferior to Natera's Signatera assay. The Company is seeking an injunction to prevent Natera from continuing to make false and misleading statements and to require Natera to take corrective actions. Natera has asserted counterclaims of false and misleading statements, false advertising, unlawful trade practices and unfair competition. The Company moved to dismiss Natera's counterclaims, and in January 2022, the court granted in part and denied in part the Company's motion to dismiss. The Company and Natera have both moved for summary judgment on various claims, with the court granting in part non-dispositive motions brought by each party. Trial is scheduled to commence in November 2023.

Civil Investigative Demand

In January 2022, the Company received a Civil Investigative Demand, or CID, from the United States Attorney for the Northern District of California in connection with an investigation under the False Claims Act. The CID requests information and documents regarding billing of government-funded programs for the Company's panel of genetic tests known as Guardant360. The Company is fully cooperating with the investigation. At this time, the Company is unable to predict the outcome of this investigation.

10. Common Stock

The Company's common stockholders are entitled to dividends if and when declared by the Company's Board of Directors, or the Board of Directors. As of June 30, 2023, and December 31, 2022, no dividends on the Company's common stock had been declared by the Board of Directors.

The Company's common stock has been reserved for the following potential future issuances:

	June 30, 2023	December 31, 2022
	(unaudited)	
Shares underlying outstanding stock options	3,568,684	3,402,574
Shares underlying unvested restricted stock units	3,248,496	3,687,888
Market-based restricted stock units	2,260,764	2,260,764
Performance-based restricted stock units	451,664	341,713
Shares available for issuance under the 2018 Incentive Award Plan	8,920,920	5,438,296
Shares available for issuance under the 2018 Employee Stock Purchase Plan	1,845,724	1,118,311
Total	20,296,252	16,249,546

Follow-on Public Offering

In May 2023, the Company completed a follow-on underwritten public offering, in which it issued and sold 14,375,000 shares of its common stock at a price of $28.00 per share, and received net proceeds of $381.4 million after deducting underwriting discounts and commissions and other offering costs of $21.1 million.

11. Stock-Based Compensation

Stock Option Activity

A summary of the Company's stock option activity under the 2012 Plan and the 2018 Plan and related information is as follows:

		Options Outstanding			
	Shares Available for Grant	Shares Subject to Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
			(unaudited)		(in thousands)
Balance as of January 1, 2023	5,438,296	3,402,574	$ 34.34	6.8	$ 39,749
2018 Plan annual increase[1]	3,689,000	—			
Granted	(296,462)	296,462	32.18		
Exercised	—	(31,879)	6.89		
Canceled	97,736	(98,473)	67.61		
Restricted stock units granted	(499,855)	—	—		
Restricted stock units canceled	602,156	—	—		
Performance-based restricted stock units granted	(126,041)	—	—		
Performance-based restricted stock units canceled	16,090	—	—		
Balance as of June 30, 2023	8,920,920	3,568,684	$ 33.49	6.6	$ 55,487
Vested and Exercisable as of June 30, 2023		2,232,274	$ 23.19	5.0	$ 53,053

(1) Effective as of January 1, 2023, an additional 3,689,000 shares of common stock became available for issuance under the 2018 Plan, as a result of the operation of an automatic annual increase provision therein.

Aggregate intrinsic value represents the difference between the estimated fair value of the underlying common stock and the exercise price of outstanding, in-the-money options. The total intrinsic value of the options exercised was $0.3 million and $2.0 million for the three months ended June 30, 2023, and 2022, respectively, and $0.7 million and $9.3 million for the six months ended June 30, 2023, and 2022, respectively.

The weighted-average grant date fair value of options granted was $20.90 and $23.41 per share for the three months ended June 30, 2023, and 2022, respectively, and $20.75 and $23.67 per share for the six months ended June 30, 2023, and 2022, respectively.

Future stock-based compensation for unvested options as of June 30, 2023 was $39.6 million, which is expected to be recognized over a weighted-average period of 2.7 years.

Restricted Stock Units

A summary of the Company's restricted stock unit activity excluding the performance-based and market-based restricted stock units under the 2012 Plan and the 2018 Plan and related information is as follows:

	Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
	(unaudited)	
Balance as of January 1, 2023	3,687,888	$ 60.70
Granted	499,855	30.08
Vested and released	(337,091)	56.33
Canceled	(602,156)	57.89
Balance as of June 30, 2023	3,248,496	$ 56.97

Future stock-based compensation for unvested restricted stock units as of June 30, 2023 was $148.4 million, which is expected to be recognized over a weighted-average period of 2.6 years.

Performance-based Restricted Stock Units

Since November 2020, the Compensation Committee of the Board of Directors started to approve, and the Company started to grant PSUs, under the 2018 Plan. The PSUs granted to employees consist of financial and/or operational metrics to be met over a performance period of approximately 0.3 to 4 years and an additional service period requirement of up to 2 years after the performance metrics are met. The PSUs granted to a consultant consistent of operational metrics to be met over a performance period of 4 years. The PSUs are expected to be expensed over a period of approximately 0.3 to 4.5 years subject to meeting the respective performance metrics and service requirements.

In November 2020, and as part of these PSU programs, the Company granted PSUs consisting of a performance period of 4 years combined with an additional service period requirement of six months should the vesting criteria be met. As of June 30, 2023, these PSUs had a grant-date fair value of approximately $27.3 million, net of forfeitures, however no compensation expense for these PSUs has been recorded to-date since the achievement of the performance metrics was not determined to be probable as of June 30, 2023.

A summary of the Company's PSU activity under the 2018 Plan and related information is as follows:

	PSUs Outstanding	Weighted-Average Grant Date Fair Value
	(unaudited)	
Balance as of January 1, 2023	341,713	$ 110.64
Granted	126,041	32.84
Canceled	(16,090)	118.41
Balance as of June 30, 2023	451,664	$ 88.65

Stock-based compensation recorded for the PSUs was $0.2 million and $0.3 million for the three months ended June 30, 2023, and 2022, respectively, and $0.5 million and $0.6 million for the six months ended June 30, 2023, and 2022, respectively. Future stock-based compensation for unvested PSUs that are probable to vest as of June 30, 2023 was $5.3 million, which is expected to be recognized over a weighted-average period of 2.2 years.

Market-based Restricted Stock Units

In May 2020, the Board of Directors approved and granted 1,695,574 market-based restricted stock units, or MSUs, under the 2018 Plan to each of the Company's Co-Chief Executive Officers, which is subject to the achievement of market-based share price goals established by the Board of Directors. The MSUs consist of three separate tranches and the vesting of each tranche is subject to the Company's common stock closing price being maintained at or above a predetermined share price goal for a period of 30 consecutive calendar days. The share price goal can be met any time during the seven-year performance period from the date of grant. Upon vesting, the MSUs must be held for a period of six to twelve months depending on the time of vesting within the seven-year performance period. The vesting of the MSUs can also be triggered upon a change in control event and achievement of a certain change in control price goal, or when there is a qualifying termination or in the event of death or disability. Any MSUs that remain unvested at the end of the seven-year performance period will automatically be forfeited and terminated without further consideration. The following table presents additional information relating to each MSU award:

Tranche	Price Goal	Number of RSUs
Tranche 1	$120 per share	565,192
Tranche 2	$150 per share	565,191
Tranche 3	$200 per share	565,191

The grant date fair values of the MSUs were determined using a Monte Carlo valuation model for each tranche. The related stock-based compensation expense for each tranche was recognized based on an accelerated attribution method over the estimated derived service period. The derived service period was the median duration of the successful stock price paths to meet the price goal for each tranche as simulated in the Monte Carlo valuation model. The Monte Carlo valuation model used assumptions such as volatility, risk-free interest rate, cost of equity and dividend estimated for the performance period of the MSU. The weighted-average grant date fair value of the MSUs was $67.00 per share and the weighted-average derived service period was estimated to be in the range of 0.83 – 2.07 years.

On January 1, 2021, Tranche 1 of the MSUs became vested because it had met both service requirement and market-based performance metrics as the predetermined share price goal of $120 per share was achieved for a period of 30 consecutive calendar days. As of June 30, 2023 and December 31, 2022, 2,260,764 shares of market-based restricted stock units, with a weighted-average grant date fair value of $65.20 per share, were outstanding under the 2018 Plan. No MSUs were granted, vested or canceled during the six months ended June 30, 2023.

All three tranches of the MSUs were fully expensed as of June 30, 2022. Stock-based compensation for the MSUs was $7.6 million and $16.1 million for the three and six months ended June 30, 2022, which was recorded in general and administrative expenses on the Company's condensed consolidated statement of operations.

AMEA 2020 Equity Incentive Plan

In August 2020, the board of directors of the Joint Venture approved its 2020 Equity Incentive Plan, or the AMEA 2020 Plan, under which the Joint Venture may grant equity incentive awards such as stock options, restricted stock, restricted stock units, stock appreciation rights and cash-based awards to its employees and non-employees.

In June 2022, in connection with the Joint Venture Acquisition, the Company issued a tender offer to purchase the Joint Venture's Class B common stock issued and issuable upon exercise of vested Joint Venture's stock options, at a price of $4.44 per share determined pursuant to an independent valuation. In July 2022, the Company settled the tender offer with the 39 grantees for a total amount of $13.7 million. In addition, in connection with the Joint Venture Acquisition, the unvested Joint Venture's stock options were cancelled and such grantees received replacement awards covering a number of shares of the Company's common stock. The replacement awards, valued at $4.1 million, are subject to the same vesting schedule that applied to the unvested Joint Venture's stock option immediately prior to the close of the Joint Venture Acquisition transaction, to be recognized over a weighted-average period of 2.2 years. The Company accounted for this as a modification which resulted in an immaterial incremental stock-based compensation expense. After the settlement of the tender offer in July 2022, the Company cancelled the AMEA 2020 Plan.

Stock-Based Compensation Expense

The following table presents the effect of employee and non-employee related stock-based compensation expense including the Joint Venture:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands)			
Cost of precision oncology testing	$ 1,176	$ 1,215	$ 2,378	$ 2,379
Cost of development services and other	477	—	951	—
Research and development expense	8,221	6,116	16,899	11,459
Sales and marketing expense	5,823	5,987	13,326	11,512
General and administrative expense	6,657	12,226	11,066	24,993
Total stock-based compensation expense	$ 22,354	$ 25,544	$ 44,620	$ 50,343

Valuation of Stock Options

The grant date fair value of stock options was estimated using a Black-Scholes option-pricing model with the following weighted-average assumptions:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited)			
Expected term (in years)	5.50 – 6.01	4.20 – 6.10	5.50 – 6.10	4.20 – 6.10
Expected volatility	69.5% – 70.5%	65.5% – 68.8%	69.5% – 70.5%	63.3% – 68.8%
Risk-free interest rate	3.4% – 4.0%	3.0% – 3.4%	3.4% – 4.2%	1.9% – 3.4%
Expected dividend yield	—%	—%	—%	—%

The determination of the fair value of stock options on the date of grant using a Black-Scholes option-pricing model is affected by the estimated fair value of common stock of the Company, as well as assumptions regarding a number of variables that are complex, subjective and generally require significant judgment to determine. The valuation assumptions were determined as follows:

Fair Value of Common Stock

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

Expected Term

The expected term represents the period that the options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term) as the Company has concluded that its stock option exercise history does not provide a reasonable basis upon which to estimate expected term.

Expected Volatility

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

Risk-Free Interest Rate

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

Expected Dividend Yield

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

2018 Employee Stock Purchase Plan

In September 2018, the Company's Board of Directors adopted and its stockholders approved the 2018 Employee Stock Purchase Plan, or the ESPP. A total of 922,250 shares of common stock were initially reserved for issuance under the ESPP. Effective as of January 1, 2020 and March 2, 2023, an additional 942,614 and 1,026,194 shares of common stock became available for issuance under the ESPP.

Subject to any plan limitations, the ESPP allows eligible employees to contribute, normally through payroll deductions, up to 10% of their earnings for the purchase of the Company's common stock at a discounted price per share. The price at which common stock is purchased under the ESPP is equal to 85% of the fair market value of the Company's common stock on the first or last day of the offering period, whichever is lower. The ESPP provides for separate six-month offering periods beginning on May 15 and November 15 of each year.

Shares of common stock purchased under the ESPP were 298,781 and 188,110 for the three and six months ended June 30, 2023 and 2022, respectively. The total compensation expense related to the ESPP was $1.4 million and $1.3 million for the three months ended June 30, 2023, and 2022, respectively, and $3.0 million and $2.3 million for the six months ended June 30, 2023, and 2022, respectively.

The fair value of the stock purchase right granted under the ESPP was estimated on the first day of each offering period using the Black-Scholes option pricing model. The valuation assumptions used were substantially consistent with the assumption used to value stock options with the exception of the expected term which was based on the term of each purchase period.

The grant date fair value of the stock purchase right granted under the ESPP was estimated using a Black-Scholes option-pricing model with the following assumptions:

	Three and Six Months Ended June 30,	
	2023	2022
	(unaudited)	
Expected term (in years)	0.50	0.50
Expected volatility	76.6%	92.0%
Risk-free interest rate	5.2%	1.5%
Expected dividend yield	—%	—%

As of June 30, 2023, the unrecognized stock-based compensation expense related to the ESPP was $1.2 million, which is expected to be recognized over the remaining term of the offering period of 0.4 years.

12. Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands, except per share data)			
Net loss, basic and diluted	$ (72,771)	$ (229,432)	$ (206,304)	$ (352,660)
Net loss per share, basic and diluted	$ (0.67)	$ (2.25)	$ (1.95)	$ (3.46)
Weighted-average shares used in computing net loss per share, basic and diluted	108,808	102,047	105,752	101,950

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share, as the inclusion of all potential shares of common stock outstanding would have been anti-dilutive. The following weighted-average common stock equivalents were excluded from the calculation of diluted net loss per share for the periods presented as they had an anti-dilutive effect:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands)			
Stock options issued and outstanding [1]	3,416	2,575	3,397	2,562
Restricted stock units	3,375	1,754	3,463	1,619
MSUs	2,261	2,261	2,261	2,261
PSUs	361	349	349	353
ESPP obligation	177	108	220	96
Convertible senior notes	8,225	8,225	8,225	8,225
Total	17,815	15,272	17,915	15,116

(1) Excludes stock options of 483,693 shares of the Joint Venture's Class B common stock granted under the AMEA 2020 Plan as of June 30, 2022.

13. Income Taxes

The income tax expense for the three and six months ended June 30, 2023 was determined based upon estimates of the Company's effective income tax rates in various jurisdictions. The difference between the Company's effective income tax rate and the U.S. federal statutory rate is primarily attributable to state income taxes, foreign income taxes, the effect of certain permanent differences, and full valuation allowance against net deferred tax assets.

The income tax expense for the three and six months ended June 30, 2023, and 2022, relates primarily to state minimum income tax and income tax on the Company's earnings in foreign jurisdictions.

14. Segment and Geographic Information

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

The following table sets forth the Company's revenue by geographic areas based on the customers' locations:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands)			
United States	$ 129,262	$ 100,836	$ 248,173	$ 191,707
International [1]	7,888	8,308	17,691	13,536
Total revenue	$ 137,150	$ 109,144	$ 265,864	$ 205,243

(1) No single country outside of the United States accounted for more than 10% of total revenue during the three and six months ended June 30, 2023, and 2022, respectively.

As of June 30, 2023, and December 31, 2022, 98% and 99%, respectively, of the Company's long-lived assets and right-of-use assets are located in the United States.

15. Related Party Transactions

As discussed in Note 3, *Joint Venture*, in May 2018, the Company and an affiliate of SoftBank formed and capitalized the Joint Venture to accelerate commercialization of its products in Asia, the Middle East and Africa. Prior to the completion of the Joint Venture Acquisition in June 2022, the Company had consolidated the financial position, results of operations and cash flows of the Joint Venture in its financial statements and all intercompany balances had been eliminated in consolidation.

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 together with the unaudited condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q. This discussion and other parts of this Quarterly Report on Form 10-Q contain forward-looking statements that involve risk and uncertainties, such as statements of our plans, objectives, beliefs, expectations and intentions. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A, "Risk Factors," of our Annual Report on Form 10-K for the year ended December 31, 2022 and in Part II, Item 1A, "Risk Factors" of this Quarterly Report on Form 10-Q.

Overview

We are a leading precision oncology company focused on helping conquer cancer globally through the use of our proprietary tests, vast data sets and advanced analytics. We believe our tests can transform cancer care by unlocking insights that will help patients at all stages of the disease, including at its earliest stages, when it's most treatable. For patients with advanced-stage cancer, we have commercially launched Guardant360 LDT and Guardant360 CDx, the first comprehensive liquid biopsy test approved by the U.S. Food and Drug Administration, or the FDA, to provide tumor mutation profiling with solid tumors and to be used as a companion diagnostic in connection with non-small cell lung cancer, or NSCLC, and breast cancer. We have also launched the Guardant360 TissueNext tissue test for advanced-stage cancer, Guardant Reveal blood test to detect residual and recurring disease in early-stage colorectal, breast and lung cancer patients, and Guardant360 Response blood test to predict patient response to immunotherapy or targeted therapy eight weeks earlier than current standard-of-care imaging. In addition, we have developed Guardant Galaxy suite of advanced analytical technologies to enhance the performance and clinical utility of our portfolio of cancer tests, and to power the next generation of biomarker and drug discovery.

We also collaborate with biopharmaceutical companies in clinical studies by providing the above-mentioned tests, as well as the GuardantOMNI blood test for advanced-stage cancer, and the GuardantINFINITY blood test, a next-generation smart liquid biopsy that provides new, multi-dimensional insights into the complexities of tumor molecular profiles and immune response to advance cancer research and therapy development. Using data collected from our tests, we have also developed our GuardantINFORM platform to help biopharmaceutical companies accelerate precision oncology drug development through the use of this in-silico research platform to unlock further insights into tumor evolution and treatment resistance across various biomarker-driven cancers.

For early cancer detection, we have launched the Shield LDT test to address the needs of individuals eligible for colorectal cancer screening. From a simple blood draw, Shield uses a novel multimodal approach to detect colorectal cancer signals in the bloodstream, including DNA that is shed by tumors. In December 2022, we announced that the ECLIPSE study, an over 20,000 patient registrational study evaluating the performance of our Shield blood test for detecting colorectal cancer in average-risk adults, met co-primary endpoints. In addition, in March 2023, we submitted a premarket approval application for our Shield blood test to the FDA. We also expect to expand into lung and multi-cancer screening with our investigational, next-generation Shield assay.

We currently perform our tests in our laboratories located in Redwood City, California, and San Diego, California. Our Redwood City laboratory is certified pursuant to the Clinical Laboratory Improvement Amendments of 1988, or CLIA, accredited by the College of American Pathologists, or CAP, permitted by the New York State Department of Health, or NYSDOH, and licensed in California and four other states. Our San Diego laboratory is CAP-accredited, CLIA-certified and licensed in California. In addition, our Palo Alto, California laboratory is currently operated as a center for our research and technology development. We have also received CAP accreditation, and In Vitro Diagnostic, or IVD, sample processing approval from Japan's Ministry of Health, Labour and Welfare, or the MHLW, for our laboratory in Japan.

We generated total revenue of $137.2 million and $109.1 million for the three months ended June 30, 2023, and 2022, respectively, and $265.9 million and $205.2 million for the six months ended June 30, 2023, and 2022, respectively. We also incurred net losses of $72.8 million and $229.4 million for the three months ended June 30, 2023, and 2022, respectively, and $206.3 million and $352.7 million for the six months ended June 30, 2023, and 2022, respectively. We have funded our operations to date principally from the sale of our stock, convertible senior notes, and revenue from our precision oncology testing and development services and other. In May 2023, we completed a follow-on underwritten public offering, in which we issued and sold 14,375,000 shares of our common stock at a price of $28.00 per share and received net proceeds of $381.4 million after deducting underwriting discounts and commissions and other offering costs of $21.1 million. As of June 30, 2023, we had cash, cash equivalents and marketable debt securities of approximately $1.2 billion.

Factors affecting our performance

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

- ***Testing volume, pricing and customer mix.*** Our revenue and costs are affected by the volume of testing and mix of customers from period to period. We evaluate both the volume of tests that we perform for patients on behalf of clinicians and the number of tests we perform for biopharmaceutical companies. Our performance depends on our ability to retain and broaden adoption with existing customers, as well as attract new customers. We believe that the test volume we receive from clinicians and biopharmaceutical companies are indicators of growth in each of these customer verticals. Customer mix for our tests has the potential to significantly affect our results of operations, as the average selling price for biopharmaceutical sample testing is currently higher than our average reimbursement for clinical tests because we are not a contracted provider for, or our tests are not covered by clinical patients' insurance for, the majority of the tests that we perform for patients on behalf of clinicians. Revenue from clinical tests for patients covered by Medicare represented approximately 43% and 45% of our precision oncology revenue from clinical customers during the three months ended June 30, 2023, and 2022, respectively, and approximately 44% and 45% of our precision oncology revenue from clinical customers for the six months ended June 30, 2023, and 2022, respectively.

- ***Payer coverage and reimbursement.*** Our revenue depends on achieving broad coverage and reimbursement for our tests from third-party payers, including both commercial and government payers. Precision oncology revenue from tests for clinical customers is calculated based on our expected cash collections, using the estimated variable consideration. The variable consideration is estimated based on historical collection patterns as well as the potential for changes in future reimbursement behavior by one or more payers. Estimation of the impact of the potential for changes in reimbursement requires significant judgment and considers payers' past patterns of changes in reimbursement as well as any stated plans to implement changes. Any cash collections over the expected reimbursement period exceeding the estimated variable consideration are recorded in future periods based on actual cash received. Payment from commercial payers can vary depending on whether we have entered into a contract with the payers as a "participating provider" or do not have a contract and are considered a "non-participating provider". Payers often reimburse non-participating providers, if at all, at a lower amount than participating providers. Because we are not contracted with these payers, they determine the amount that they are willing to reimburse us for any of our tests and they can prospectively and retrospectively adjust the amount of reimbursement, adding to the complexity in estimating the variable consideration. When we contract with a payer to serve as a participating provider, reimbursements by the payer are generally made pursuant to a negotiated fee schedule and are limited to only covered indications or where prior approval has been obtained. Becoming a participating provider can result in higher reimbursement amounts for covered uses of our tests and, potentially, no reimbursement for non-covered uses identified under the payer's policies or the contract. As a result, the potential for more favorable reimbursement associated with becoming a participating provider may be offset by a potential loss of reimbursement for non-covered uses of our tests. Current Procedural Terminology, or CPT, coding plays a significant role in how our tests are reimbursed both from commercial and governmental payers. In addition, Z-Code Identifiers are used by certain payers, including under Medicare's Molecular Diagnostic Services Program, or MolDx, to supplement CPT codes for our molecular diagnostics tests. Changes to the codes used to report to payers may result in significant changes in its reimbursement. If their policies were to change in the future to cover additional cancer indications, we anticipate that our total reimbursement would increase. In January 2021, a proprietary laboratory analyses, or PLA code was issued for our Guardant360 CDx with an effective date in April 2021. Additionally, based on this new PLA code, we applied to the Centers for Medicare and Medicaid Services, or CMS, for our Guardant360 CDx test to become an advanced diagnostic laboratory test, or ADLT. In March 2021, CMS approved ADLT status to the Guardant360 CDx test, based on which Medicare paid us at the lowest available commercial rate per test, from April 1, 2021 to December 31, 2021. Effective January 1, 2022, Medicare has started to reimburse Guardant360 CDx services at the median rate of claims paid by commercial payers and this rate will apply until December 2023. In March 2022, Palmetto GBA, the Medicare administrative contractor for MolDX, conveyed coverage for our Guardant360 TissueNext test under the existing local coverage determination. The policy covers our Guardant360 TissueNext test for Medicare fee-for-service patients with advanced solid tumor cancers. In July 2022, Palmetto GBA conveyed coverage for our Guardant Reveal test for fee-for-service Medicare patients in the United States with stage II or III colorectal cancer whose testing is initiated within three months following curative intent therapy, with an effective date of December 2021. In April 2023, Palmetto GBA conveyed coverage for our Guardant360 Response test for fee-for-service Medicare patients in the U.S. with metastatic or inoperable solid tumors who are on an immune checkpoint inhibitor therapy, tested four to ten weeks from therapy initiation. In July 2023, the MHLW granted national reimbursement approval for our Guardant360 CDx test for patients with advanced or metastatic solid tumor cancers in Japan. Due to the

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

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

- ***Research and development.*** A significant aspect of our business is our investment in research and development, including the development of new products. In particular, we have invested heavily in clinical studies as we believe these studies are critical to gaining physician adoption and driving favorable coverage decisions by payers. With respect to Guardant Reveal, in October 2021, we initiated a 1,000-patient prospective, observational, multi-center study, which we refer to as the ORACLE study, designed to evaluate the performance of our Guardant Reveal liquid biopsy test to predict cancer recurrence after curative intent treatment, across 11 solid tumor types. In addition, with respect to Guardant Reveal, in December 2022, we entered into a partnership with Susan G. Komen®, the world's leading breast cancer organization, to bring the patient perspective to the development of clinical studies that help identify early-stage breast cancer patients who are at high risk of disease recurrence and may benefit from additional monitoring or therapy. With respect to Shield, in December 2022, we announced that the ECLIPSE study, an over 20,000 patient registrational study evaluating the performance of our Shield blood test for detecting colorectal cancer in average-risk adults, met co-primary endpoints. The test demonstrated 83% sensitivity in detecting individuals with colorectal cancer. Specificity was 90% in both individuals without advanced neoplasia and in those who had a negative colonoscopy result. These results exceed the performance criteria set forth by the CMS for reimbursement. This test also demonstrated 13% sensitivity in detecting advanced adenomas. Based on these study results, in March 2023, we submitted a premarket approval application for our Shield blood test to the FDA. In addition, to evaluate the performance of our investigational, next-generation Shield assay in detecting lung cancer in high-risk individuals ages 50-80, in January 2022, we enrolled the first patient in a nearly 10,000-patient prospective, registrational study, which we refer to as the SHIELD LUNG study. The study is anticipated to run in approximately 100 centers in the United States and Europe. We are continuing to enroll more patients for these on-going studies, and have expended considerable resources, and expect to increase such expenditures over the next few years, to support our research and development programs with the goal of fueling further innovation.

- ***International expansion.*** A component of our long-term growth strategy is to expand our commercial footprint internationally, and we expect to increase our sales and marketing expense to execute on this strategy. We currently offer our tests in countries outside the United States primarily through distributor relationships, direct contracts with hospitals or partnerships with research organizations.

  In May 2018, we formed and capitalized Guardant Health AMEA, Inc., with SoftBank, relating to the sale, marketing and distribution of our tests generally outside the Americas and Europe, and to accelerate commercialization of our products in Asia, the Middle East and Africa. In June 2022, we purchased all of the shares held by SoftBank and its affiliates, and upon completion of the transaction, we obtained full control over operations of Guardant Health AMEA, Inc. throughout the Asia, Middle East and Africa region.

  In December 2020, we signed our first public private partnership agreement with Vall D'Hebron Institute of Oncology, or VHIO, one of Europe's leading cancer research institutions, and in May 2022, the first blood-based cancer testing services in Europe based on our industry-leading digital sequencing platform became available at the VHIO testing facility in Spain. In October 2021, we signed a partnership agreement with The Royal Marsden NHS Foundation Trust, a premier cancer center within the United Kingdom for patient care, research and teaching of all types of cancer. We expect these partnerships will lead to the establishment of our testing services at the partner laboratories, using our digital sequencing technology, as well as generation of clinical and economic evidence to support commissioning in other areas of Europe.

In June 2022, we signed a strategic partnership agreement with Adicon Holdings Limited, a leading independent clinical laboratory company based in China, to offer our industry-leading comprehensive genomic profiling tests to biopharmaceutical companies conducting clinical studies in China. We expect the partnership to help biopharmaceutical companies bring the next generation of cancer therapies to patients in the region.

The success of our international expansion strategy depends on a number of factors, including the internal and external constraints placed on our international laboratory partners and biopharmaceutical companies in the context of broader global, regional and U.S. economic and geopolitical conditions. For example, deterioration in the bilateral relationship between the United States and China may impact international trade, government spending, regional stability and macroeconomic conditions. The impact of these potential developments, including any resulting sanctions, export controls or other restrictive actions that may be imposed against governmental or other entities in, for example, China, may contribute to disruption of our international partnerships and instability and volatility in the global markets, which in turn could adversely impact our operations and weaken our financial results.

- ***Sales and marketing expense.*** Our financial results have historically, and will likely continue to, fluctuate significantly based upon the impact of our sales and marketing expense, increase in headcount, and in particular, our various marketing programs around existing and new product introductions.
- ***General and administrative expense***. Our financial results have historically, and will likely continue to, fluctuate significantly based upon the impact of our general and administrative expense, and in particular, our stock-based compensation expense. Our equity awards, including market-based and performance-based restricted stock units, are intended to retain and incentivize employees to lead us to sustained, long-term superior financial and operational performance.
- ***COVID-19 Global Pandemic***. The global coronavirus 2019, or COVID-19, pandemic has negatively affected, and we expect will continue to negatively affect, our revenue and our clinical studies. For example, our biopharmaceutical customers are facing challenges in recruiting patients and in conducting clinical studies to advance their pipelines, for which our tests could be utilized. In addition, disruptions caused by the pandemic have adversely affected the quantity and quality of certain sequencers, reagents, blood tubes and other similar materials that are critical to our commercial and research and development programs. We currently have a limited amount of stock of these components. Failure in the future to secure sufficient supply of critical components could materially and adversely affect our ability to manufacture or supply marketed products and product candidates or complete our ongoing research and development programs on the timelines previously established, which could materially and adversely affect our business and future prospects. The severity of the impact on our business will depend on a number of factors, including the duration and severity of the pandemic and the impact of any variants of the virus on us, our customers, and our suppliers.

While each of these areas presents significant opportunities for us, they also pose significant risks and challenges that we must address. See Part I, Item 1A, “Risk Factors” of our Annual Report on Form 10-K for the year ended December 31, 2022, and Part II, Item 1A, “Risk Factors” of this Quarterly Report on Form 10-Q, for more information.

Components of results of operations

Revenue

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

Precision oncology testing. Precision oncology testing revenue is generated from sales of our tests to clinical and biopharmaceutical customers. In the United States, through June 30, 2023, we generally performed tests as an out-of-network service provider without contracts with health insurance companies. We submit claims for payment for tests performed for patients covered by U.S. private payers. We also submit claims to Medicare for reimbursement for our Guardant360 CDx, Guardant360 LDT, Guardant360 TissueNext, Guardant Reveal and Guardant360 Response clinical testing performed for qualifying patients. Revenue from clinical tests for patients covered by Medicare represented approximately 43% and 45% of our precision oncology revenue from clinical customers during the three months ended June 30, 2023, and 2022, respectively, and 44% and 45% of our precision oncology revenue from clinical customers during the six months ended June 30, 2023, and 2022, respectively.

Development services and other. Development services revenue primarily represents services that we provide to biopharmaceutical companies, large medical institutions and international laboratory partners. We collaborate with biopharmaceutical companies in the development and clinical studies of new drugs. As part of these collaborations, we provide services related to regulatory filings to support companion diagnostic device submissions for our test panels. Under these arrangements, we generate revenue from progression of our collaboration efforts, as well as from provision of on-going support. In addition to companion diagnostic development and regulatory approval services, we also provide other development services, including clinical study setup, monitoring and maintenance, testing development and support, GuardantConnect and GuardantINFORM. Other revenue includes amounts derived from licensing our technologies, kit fulfillment and screening services.

Costs and operating expenses

Cost of precision oncology testing. Cost of precision oncology testing generally consists of cost of materials, including inventory write-downs; cost of labor, including employee benefits, bonus, and stock-based compensation; equipment and infrastructure expenses associated with processing test samples, such as sample accessioning, library preparation, sequencing, and quality control analyses; freight; curation of test results for physicians; phlebotomy; and license fees due to third parties. Infrastructure expenses include depreciation of laboratory equipment, rent costs, depreciation of leasehold improvements and information technology costs. Costs associated with performing our tests are recorded as the tests are performed regardless of whether revenue was recognized with respect to the tests. While we do not believe the technologies underlying the third-party licenses are necessary to permit us to provide our tests, we do believe these technologies are potentially valuable and of possible strategic importance to us or our competitors.

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

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

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

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

General and administrative expense. Our general and administrative expenses include costs for our executive, accounting and finance, information technology, legal and human resources functions. These expenses consist principally of salaries, bonuses, employee benefits, travel expenses and stock-based compensation, as well as professional services fees such as consulting, audit, tax and legal fees, and general corporate costs and allocated overhead expenses. In addition, our general and administrative expenses also include severance costs related to workforce reduction. We expect that our general and administrative expenses will continue to increase as we incur additional costs to support the growth of our business. These expenses, though expected to increase in absolute dollars, are expected to decrease modestly as a percentage of revenue in the long term, though they may fluctuate as a percentage of revenue from period to period due to the timing and extent of these expenses being incurred.

Interest income

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

Interest expense

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

Other income (expense), net

Other income (expense), net consists of foreign currency exchange gains and losses, fair value adjustments of marketable equity securities, impairment of non-marketable equity securities and other related assets, and non-recurring payments due and received in relation to the settlement of license and patent disputes. We expect our foreign currency gains and losses to continue to fluctuate in the future due to changes in foreign currency exchange rates.

Results of operations

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands)			
Revenue:				
Precision oncology testing	$ 125,244	$ 92,062	$ 238,637	$ 176,198
Development services and other	11,906	17,082	27,227	29,045
Total revenue	137,150	109,144	265,864	205,243
Costs and operating expenses:				
Cost of precision oncology testing[(1)]	49,357	34,375	94,463	65,059
Cost of development services and other[(1)]	4,491	2,352	12,458	3,649
Research and development expense[(1)]	90,359	85,455	183,487	167,212
Sales and marketing expense[(1)]	71,043	73,603	147,166	138,035
General and administrative expense[(1)]	41,516	43,680	81,961	84,947
Total costs and operating expenses	256,766	239,465	519,535	458,902
Loss from operations	(119,616)	(130,321)	(253,671)	(253,659)
Interest income	6,727	1,387	9,787	2,165
Interest expense	(645)	(645)	(1,289)	(1,289)
Other income (expense), net	41,259	378	39,605	330
Fair value adjustments of noncontrolling interest liability	—	(99,785)	—	(99,785)
Loss before provision for income taxes	(72,275)	(228,986)	(205,568)	(352,238)
Provision for income taxes	496	446	736	422
Net loss	$ (72,771)	$ (229,432)	$ (206,304)	$ (352,660)

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(unaudited) (in thousands)			
Cost of precision oncology testing	$ 1,176	$ 1,215	$ 2,378	$ 2,379
Cost of development services and other	477	—	951	—
Research and development expense	8,221	6,116	16,899	11,459
Sales and marketing expense	5,823	5,987	13,326	11,512
General and administrative expense	6,657	12,226	11,066	24,993
Total stock-based compensation expense	$ 22,354	$ 25,544	$ 44,620	$ 50,343

In November 2020, we granted restricted stock units with certain performance metrics, or PSUs, consisting of a performance period of 4 years combined with an additional service period requirement of six months should the vesting criteria be met. As of June 30, 2023, these PSUs had a grant-date fair value of approximately $27.3 million, net of forfeitures, however no compensation expense for these PSUs has been recorded to-date since the achievement of the performance metrics was not determined to be probable as of June 30, 2023. At each reporting date, we will continue to assess the likelihood of the performance criteria being met and will record a cumulative catch-up adjustment should the achievement of the performance metrics be determined to be probable. For example, had the achievement of the performance metrics been determined to be probable as of June 30, 2023, we would have recorded a total charge of $16.1 million, of which $1.4 million would have been recorded to cost of development services and other, and $5.7 million, $5.8 million and $3.2 million would have been recorded as components of research and development expense, sales and marketing expense, and general and administrative expense, respectively, in the condensed consolidated statements of operations for the three months ended June 30, 2023. In addition, any of these PSUs that remain unvested at the end of the performance period would be forfeited.

Comparison of the Three Months Ended June 30, 2023 and 2022

Revenue

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited) (in thousands)			
Precision oncology testing	$ 125,244	$ 92,062	$ 33,182	36 %
Development services and other	11,906	17,082	(5,176)	(30)%
Total revenue	$ 137,150	$ 109,144	$ 28,006	26 %

Total revenue was $137.2 million for the three months ended June 30, 2023, compared to $109.1 million for the three months ended June 30, 2022, an increase of $28.0 million, or 26%.

Precision oncology testing revenue increased to $125.2 million for the three months ended June 30, 2023, from $92.1 million for the three months ended June 30, 2022, an increase of $33.2 million, or 36%.

Precision oncology revenue from tests for clinical customers was $100.2 million for the three months ended June 30, 2023, up 42% from $70.5 million for the three months ended June 30, 2022. This increase in clinical testing revenue was driven primarily by an increase in sample volume. Total tests for clinical customers increased to approximately 43,500 for the three months ended June 30, 2023, from approximately 29,300 for the three months ended June 30, 2022.

Precision oncology revenue from tests for biopharmaceutical customers was $25.0 million for the three months ended June 30, 2023, and $21.6 million for the three months ended June 30, 2022, respectively. This increase in revenue was primarily due to an increase in sample volume, including our GuardantINFINITY smart liquid biopsy test launched in September 2022. Total tests for biopharmaceutical customers increased to approximately 6,700 for the three months ended June 30, 2023, from approximately 6,000 for the three months ended June 30, 2022, primarily due to an increase in the number of biopharmaceutical customers and their contracted projects.

Development services and other revenue decreased to $11.9 million for the three months ended June 30, 2023, from $17.1 million for the three months ended June 30, 2022, a decrease of $5.2 million, or 30%. This decrease in development services and other revenue was primarily due to the timing and amount of milestones related to our partnership agreements and the change in companion diagnostics collaboration projects with biopharmaceutical customers during the three months ended June 30, 2023.

Cost of Revenue

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Cost of precision oncology testing	$ 49,357	$ 34,375	$ 14,982	44 %
Cost of development services and other	4,491	2,352	2,139	91 %
Total cost of revenue	$ 53,848	$ 36,727	$ 17,121	47 %

Total cost of revenue was $53.8 million for the three months ended June 30, 2023, compared to $36.7 million for the three months ended June 30, 2022, an increase of $17.1 million, or 47%.

Cost of precision oncology testing was $49.4 million for the three months ended June 30, 2023, compared to $34.4 million for the three months ended June 30, 2022, an increase of $15.0 million, or 44%. This increase in cost of precision oncology testing was primarily attributable to an increase in sample volume, resulting in a $8.4 million increase in material costs, and a $5.0 million increase in production labor and overhead costs.

Cost of development services and other was $4.5 million for the three months ended June 30, 2023, compared to $2.4 million for the three months ended June 30, 2022, an increase of $2.1 million. This increase in cost of development services and other was primarily due to costs associated with providing screening testing services and our partnership agreements, partially offset by costs associated with our companion diagnostics collaboration projects with biopharmaceutical customers during the three months ended June 30, 2023.

Operating Expenses

Research and development expense

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Research and development	$ 90,359	$ 85,455	$ 4,904	6 %

Research and development expenses were $90.4 million for the three months ended June 30, 2023, compared to $85.5 million for the three months ended June 30, 2022, an increase of $4.9 million, or 6%. This increase in research and development expense was primarily related to continued investment in the development of our technologies and products, and our clinical studies, resulting in an increase of $6.3 million in outside service fees, and an increase of $2.1 million in stock-based compensation, partially offset by a decrease of $3.4 million related to allocated facility and information technology infrastructure costs.

Sales and marketing expense

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Sales and marketing	$ 71,043	$ 73,603	$ (2,560)	(3)%

Selling and marketing expenses were $71.0 million for the three months ended June 30, 2023, compared to $73.6 million for the three months ended June 30, 2022, a decrease of $2.6 million, or 3%. This decrease was primarily related to a decrease of $1.7 million in marketing activity related costs, and a decrease of $1.1 million in personnel costs.

General and administrative expense

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
General and administrative	$ 41,516	$ 43,680	$ (2,164)	(5)%

General and administrative expenses were $41.5 million for the three months ended June 30, 2023, compared to $43.7 million for the three months ended June 30, 2022, a decrease of $2.2 million, or 5%. This decrease was primarily due to a decrease of $5.6 million in stock-based compensation, of which $7.6 million decrease was primarily related to the market-based restricted stock units issued to our Co-Chief Executive Officers which were fully expensed as of June 30, 2022, partially offset by an increase of $3.0 million in other legal expenses, and an increase of $2.4 million in professional service expenses related to outside legal, accounting, consulting and IT services.

Interest income

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Interest income	$ 6,727	$ 1,387	$ 5,340	385 %

Interest income was $6.7 million for the three months ended June 30, 2023, compared to $1.4 million for the three months ended June 30, 2022, an increase of $5.3 million, primarily due to higher interest rates.

Interest expense

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Interest expense	$ (645)	$ (645)	$ —	— %

Interest expense was primarily attributable to the amortization of debt issuance costs related to our convertible senior notes issued in November 2020, for the three months ended June 30, 2023, and 2022.

Other income (expense), net

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Other income (expense), net	$ 41,259	$ 378	$ 40,881	*

* Not meaningful

Other income (expense), net was a $41.3 million income for the three months ended June 30, 2023, compared to a $0.4 million income for the three months ended June 30, 2022, an increase of $40.9 million. This increase was primarily attributable to $64.0 million of unrealized gains recorded for our marketable equity security investment in Lunit, Inc., partially offset by $23.6 million of impairment recorded for our non-marketable equity security investments and other related assets, during the three months ended June 30, 2023.

Fair value adjustments of noncontrolling interest liability

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Fair value adjustments of noncontrolling interest liability	$ —	$ (99,785)	$ 99,785	(100)%

Fair value adjustments of noncontrolling interest liability for the three months ended June 30, 2022 was made as a result of the Joint Venture Acquisition completed in June 2022.

Provision for income taxes

	Three Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Provision for income taxes	$ 496	$ 446	$ 50	11 %

* Not meaningful

Provision for income taxes was immaterial for the three months ended June 30, 2023, and 2022.

Comparison of the Six Months Ended June 30, 2023 and 2022

Revenue

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Precision oncology testing	$ 238,637	$ 176,198	$ 62,439	35 %
Development services and other	27,227	29,045	(1,818)	(6)%
Total revenue	$ 265,864	$ 205,243	$ 60,621	30 %

Total revenue was $265.9 million for the six months ended June 30, 2023, compared to $205.2 million for the six months ended June 30, 2022, an increase of $60.6 million, or 30%.

Precision oncology testing revenue increased to $238.6 million for the six months ended June 30, 2023, from $176.2 million for the six months ended June 30, 2022, an increase of $62.4 million, or 35%.

Precision oncology revenue from tests for clinical customers was $191.7 million for the six months ended June 30, 2023, up 40% from $136.5 million for the six months ended June 30, 2022. This increase in clinical testing revenue was driven primarily by an increase in sample volume. Total tests for clinical customers increased to approximately 82,600 for the six months ended June 30, 2023, from approximately 56,400 for the six months ended June 30, 2022.

Precision oncology revenue from tests for biopharmaceutical customers was $46.9 million for the six months ended June 30, 2023, and $39.7 million for the six months ended June 30, 2022, respectively. This increase in revenue was primarily due to an increase in sample volume, including our GuardantINFINITY smart liquid biopsy test launched in September 2022. Total tests for biopharmaceutical customers increased to approximately 12,850 for the six months ended June 30, 2023, from approximately 11,100 for the six months ended June 30, 2022, primarily due to an increase in the number of biopharmaceutical customers and their contracted projects.

Development services and other revenue decreased to $27.2 million for the six months ended June 30, 2023, from $29.0 million for the six months ended June 30, 2022, a decrease of $1.8 million, or 6%. This decrease in development services and other revenue was primarily due to revenue decrease from our companion diagnostics collaboration projects and other service agreements with biopharmaceutical customers and our royalty agreements, partially offset by revenue increase from our partnership agreements during the six months ended June 30, 2023.

Cost of Revenue

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(dollars in thousands)			
Cost of precision oncology testing	$ 94,463	$ 65,059	$ 29,404	45 %
Cost of development services and other	12,458	3,649	8,809	241 %
Total cost of revenue	$ 106,921	$ 68,708	$ 38,213	56 %

Total cost of revenue was $106.9 million for the six months ended June 30, 2023, compared to $68.7 million for the six months ended June 30, 2022, an increase of $38.2 million, or 56%.

Cost of precision oncology testing was $94.5 million for the six months ended June 30, 2023, compared to $65.1 million for the six months ended June 30, 2022, an increase of $29.4 million, or 45%. This increase in cost of precision oncology testing was primarily attributable to an increase in sample volume, resulting in a $16.6 million increase in material costs, a $10.0 million increase in production labor and overhead costs, and a $2.4 million increase in other costs, including costs related to kits, freight and curation of test results for physicians.

Cost of development services and other was $12.5 million for the six months ended June 30, 2023, compared to $3.6 million for the six months ended June 30, 2022, an increase of $8.8 million. This increase in cost of development services and other was primarily due to costs associated with providing screening testing services and our partnership agreements, partially offset by costs associated with our companion diagnostics collaboration projects with biopharmaceutical customers during the six months ended June 30, 2023.

Operating Expenses

Research and development expense

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Research and development	$ 183,487	$ 167,212	$ 16,275	10 %

Research and development expenses were $183.5 million for the six months ended June 30, 2023, compared to $167.2 million for the six months ended June 30, 2022, an increase of $16.3 million, or 10%. This increase in research and development expense was primarily related to continued investment in the development of our technologies and products, and our clinical studies, resulting in an increase of $15.2 million in outside service fees, an increase of $5.4 million in stock-based compensation, and an increase of $2.8 million in office and administrative costs, partially offset by a decrease of $6.5 million in material costs, and a decrease of $3.0 million related to allocated facility and information technology infrastructure costs.

Sales and marketing expense

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Sales and marketing	$ 147,166	$ 138,035	$ 9,131	7 %

Selling and marketing expenses were $147.2 million for the six months ended June 30, 2023, compared to $138.0 million for the six months ended June 30, 2022, an increase of $9.1 million, or 7%. This increase was related to commercial infrastructure buildout and marketing activities to support existing products and new product launch, primarily resulting in an increase of $4.8 million in travel and accommodation costs, an increase of $2.7 million in personnel costs, and an increase of $1.8 million in stock-based compensation.

General and administrative expense

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
General and administrative	$ 81,961	$ 84,947	$ (2,986)	(4)%

General and administrative expenses were $82.0 million for the six months ended June 30, 2023, compared to $84.9 million for the six months ended June 30, 2022, a decrease of $3.0 million, or 4%. This decrease was primarily due to a decrease of $13.9 million in stock-based compensation, of which $16.1 million decrease was primarily related to the market-based restricted stock units issued to our Co-Chief Executive Officers which were fully expensed as of June 30, 2022, and $2.3 million decrease was related to forfeitures, respectively, and a decrease of $3.8 million in acquisition related contingent consideration, partially offset by an increase of $7.5 million in severance costs related to a workforce reduction incurred in the first quarter of 2023, an increase of $3.1 million in personnel cost in line with our business expansion, an increase of $3.0 million in other legal expenses, and an increase of $2.9 million in professional service expenses related to outside legal, accounting, consulting and IT services.

Interest income

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Interest income	$ 9,787	$ 2,165	$ 7,622	352 %

Interest income was $9.8 million for the six months ended June 30, 2023, compared to $2.2 million for the six months ended June 30, 2022, an increase of $7.6 million, primarily due to higher interest rates.

Interest expense

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Interest expense	$ (1,289)	$ (1,289)	$ —	— %

Interest expense was primarily attributable to the amortization of debt issuance costs related to our convertible senior notes issued in November 2020, for the six months ended June 30, 2023, and 2022.

Other income (expense), net

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Other income (expense), net	$ 39,605	$ 330	$ 39,275	*

* Not meaningful

Other income (expense), net was a $39.6 million income for the six months ended June 30, 2023, compared to a $0.3 million income for the six months ended June 30, 2022, an increase of $39.3 million. This increase was primarily attributable to $67.9 million of unrealized gains recorded for our marketable equity security investment in Lunit, Inc., partially offset by $29.1 million of impairment recorded for our non-marketable equity security investments and other related assets, during the six months ended June 30, 2023.

Fair value adjustments of noncontrolling interest liability

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Fair value adjustments of noncontrolling interest liability	$ —	$ (99,785)	$ 99,785	(100)%

Fair value adjustments of noncontrolling interest liability for the six months ended June 30, 2022 was made as a result of the Joint Venture Acquisition completed in June 2022.

Provision for income taxes

	Six Months Ended June 30,		Change	
	2023	2022	$	%
	(unaudited)			
	(in thousands)			
Provision for income taxes	$ 736	$ 422	$ 314	74 %

Provision for income taxes was immaterial for the six months ended June 30, 2023, and 2022.

Liquidity and capital resources

We have incurred losses and negative cash flows from operations since our inception, and as of June 30, 2023, we had an accumulated deficit of $1.9 billion. We expect to incur additional operating losses in the near future and our operating expenses will increase as we continue to invest in clinical studies and develop new products, expand our sales organization, and increase our marketing efforts to drive market adoption of our tests. As demand for our tests are expected to continue to increase from physicians and biopharmaceutical companies, we anticipate that our capital expenditure requirements could also increase if we require additional laboratory capacity.

We have funded our operations to date principally from the sale of stock, convertible debt and through revenue from precision oncology testing and development services and other. As of June 30, 2023, we had cash and cash equivalents of $271.1 million and marketable debt securities of $953.8 million. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to provide liquidity while ensuring capital preservation. Additionally, we have investments held in marketable debt securities consisting of United States treasury securities and commercial paper that can be immediately liquid.

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

If our available cash, cash equivalents and marketable debt securities and anticipated cash flows from operations are insufficient to satisfy our liquidity requirements including because of lower demand for our products as a result of lower than currently expected rates of reimbursement from our customers or other risks described in this Quarterly Report on Form 10-Q and in our Form 10-K for the year ended December 31, 2022, we may seek to sell additional common or preferred equity or convertible debt securities, enter into a credit facility or another form of third-party funding or seek other debt financing. The sale of equity and convertible debt securities may result in dilution to our stockholders and, in the case of preferred equity securities or convertible debt, those securities could provide for rights, preferences or privileges senior to those of our common stock. The terms of debt securities issued or borrowings pursuant to a credit agreement could impose significant restrictions on our operations. If we raise funds through collaborations and licensing arrangements, we might be required to relinquish significant rights to our platform technologies or products or grant licenses on terms that are not favorable to us. Additional capital may not be available to us on reasonable terms, or at all.

Cash flows

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

	Six Months Ended June 30,	
	2023	2022
	(unaudited)	
	(in thousands)	
Net cash used in operating activities	$ (168,456)	$ (140,554)
Net cash (used in) provided by investing activities	$ (83,903)	$ 37,915
Net cash provided by (used in) financing activities	$ 383,000	$ (172,099)

Operating activities

Cash used in operating activities during the six months ended June 30, 2023, was $168.5 million, which resulted from a net loss of $206.3 million, and cash effect of net change in our operating assets and liabilities of $1.9 million, partially offset by non-cash charges of $39.8 million. Non-cash charges primarily consisted of $44.6 million of stock-based compensation, $29.1 million of impairment of non-marketable equity securities and other related assets, $21.0 million of depreciation and amortization, and $14.7 million of operating lease costs, partially offset by $67.9 million of unrealized gains on marketable equity securities, and $3.1 million of amortization of discount on marketable debt securities. The cash effect of net change in our operating assets and liabilities was primarily the result of a $15.0 million payment of operating lease liabilities net of receipt of tenant improvement allowance, a $8.9 million increase in inventory, net, due to forecasted higher testing volumes, and increased inventory level to offset potential disruption in supply chain, and a $6.1 million decrease in deferred revenue, partially offset by a $16.5 million increase in accounts payable and accrued liabilities, and a $10.7 million decrease in accounts receivable, net.

Cash used in operating activities during the six months ended June 30, 2022 was $140.6 million, which resulted from a net loss of $352.7 million, partially offset by non-cash charges of $189.2 million and cash effect of net change in our operating assets and liabilities of $22.9 million. Non-cash charges primarily consisted of $99.8 million of fair value adjustments of noncontrolling interest liability in connection with the Joint Venture Acquisition, $50.3 million of stock-based compensation, $16.0 million of depreciation and amortization, $14.2 million of operating lease costs, $3.8 million of amortization of premium on marketable debt investments, and $3.8 million of revaluation adjustments to contingent consideration. The cash effect of net change in our operating assets and liabilities was primarily the result of a $23.7 million decrease in prepaid expenses and other current assets, net, primarily driven by a $25.0 million one-time payment pursuant to a settlement and license agreement entered into in December 2021, a $22.4 million increase in accounts payable and accrued liabilities, primarily due to increased personnel and increase in accrued and other liabilities, a $5.9 million increase in deferred revenue primarily due to upfront payments from international laboratory partners, and a $4.3 million decrease in other assets, net, partially offset by a $29.2 million increase in inventory, net, due to forecasted higher testing volumes, and increased inventory level to offset potential disruption in supply chain, and a $6.6 million payment of operating lease liabilities net of receipt of tenant improvement allowance.

Investing activities

Cash used in investing activities during the six months ended June 30, 2023, was $83.9 million, which resulted primarily from purchases of marketable debt securities of $561.3 million, and purchases of property and equipment of $14.0 million, partially offset by maturities of marketable debt securities of $492.7 million.

Cash provided by investing activities during the six months ended June 30, 2022, was $37.9 million, which resulted primarily from maturities of marketable debt securities of $335.0 million, partially offset by purchases of marketable debt securities of $238.6 million, purchases of property and equipment of $45.7 million, and purchase of non-marketable equity securities and other related investments of $12.8 million.

Financing activities

Cash provided by financing activities during the six months ended June 30, 2023, was $383.0 million, which was primarily attributable to gross proceeds from the follow-on public offering of $402.5 million, and proceeds from issuances of common stock under our employee stock purchase plan of $6.7 million, partially offset by payment of offering costs related to the follow-on public offering of $21.3 million, and taxes paid related to net share settlement of restricted stock units of $5.1 million.

Cash used in financing activities during the six months ended June 30, 2022, was $172.1 million, which was primarily attributable to consideration payment for the Joint Venture Acquisition of $177.8 million, and taxes paid related to net share settlement of restricted stock units of $2.2 million, partially offset by proceeds from issuances of common stock under our employee stock purchase plan of $5.7 million, and proceeds from exercise of stock options of $2.2 million.

Critical accounting policies and estimates

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

Our significant accounting policies are described in more detail in Note 2 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q and in Item 7, "*Management's Discussion and Analysis of Financial Condition and Results of Operations*", in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022. During the three and six months ended June 30, 2023, there were no material changes to our critical accounting policies from those discussed previously.

Recent accounting pronouncements

Not applicable.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

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

Interest rate risk

We are exposed to market risk for changes in interest rates related primarily to our cash and cash equivalents, marketable debt securities and our indebtedness. As of June 30, 2023, we had cash and cash equivalents of $271.1 million held primarily in cash deposits, money market funds and commercial paper. Our marketable debt securities are held in U.S. government debt securities and commercial paper. As of June 30, 2023, we had short-term marketable debt securities of $953.8 million. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of the interest rates in the United States. As of June 30, 2023, a hypothetical 100 basis point increase in interest rates would have resulted in an approximate $3.0 million decline of the fair value of our available-for-sale securities and a hypothetical 100 basis point decrease in interest rates would have resulted in an approximate $3.0 million increase of the fair value of our available-for-sale securities. This estimate is based on a sensitivity model that measures market value changes when changes in interest rates occur.

Foreign currency risk

The majority of our revenue is generated in the United States. Through June 30, 2023, we have generated an insignificant amount of revenues denominated in foreign currencies. As we expand our presence in the international market, our results of operations and cash flows are expected to increasingly be subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign exchange rates. As of June 30, 2023, the effect of a hypothetical 10% change in foreign currency exchange rates would not be material to our financial condition or results of operations. To date, we have not entered into any hedging arrangements with respect to foreign currency risk. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in currency rates.

Item 4. Controls and Procedures

Evaluation of disclosure controls and procedures

Our Co-Chief Executive Officers, or Co-CEOs, and our Chief Financial Officer, or CFO with the participation of other members of our management, have evaluated the effectiveness of our "disclosure controls and procedures" (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or Exchange Act) as of June 30, 2023, and our Co-CEOs and our CFO have concluded that our disclosure controls and procedures are effective based on their evaluation of these controls and procedures as required by paragraph (b) of Exchange Act Rules 13a-15 or 15d-15.

Changes in internal control

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Quarterly Report on Form 10-Q that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Limitations on effectiveness of controls and procedures

Our management, including our Co-CEOs and our CFO, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived 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 also is 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

The information under the caption "*Commitments and Contingencies – Legal Proceedings*" in Note 9 to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q, concerning certain legal proceedings in which we are involved, is hereby incorporated by reference. The resolution of any such legal proceeding is subject to inherent uncertainty and could have a material adverse effect on our financial condition, cash flows or results of operations.

Item 1A. Risk Factors

Our business, financial condition and operating results are affected by a number of factors, whether currently known or unknown, including risks specific to us or the healthcare industry as well as risks that affect businesses in general. In addition to the information set forth in this Quarterly Report on Form 10-Q, you should consider carefully the factors discussed in Part I, Item 1A, "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on February 23, 2023. The risks and uncertainties disclosed in such Annual Report and in this Quarterly Report could materially adversely affect our business, financial condition, cash flows or results of operations and thus our stock price. During the second quarter of fiscal 2023, there were no material changes to our previously disclosed risk factors.

These risk factors may be important to understanding other statements in this Quarterly Report and should be read in conjunction with the unaudited condensed consolidated financial statements and related notes in Part I, Item 1, "*Financial Statements*" and Part I, Item 2, "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" of this Quarterly Report. Because of such risk factors, as well as other factors affecting our financial condition and operating results, past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

Not applicable.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

Not applicable.

Item 6. Exhibits.

Exhibit Number	Description	Form	File No.	Exhibit	Filing Date	Filed/Furnished Herewith
3.1	Amended and Restated Certificate of Incorporation	8-K	001-38683	3.1	10/9/2018	
3.2	Amended and Restated Bylaws	8-K	001-38683	3.2	10/9/2018	
10.1	Executive Severance Plan					*
31.1	Certification of the Co-Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
31.2	Certification of the Co-Chief Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
31.3	Certification of the Chief Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
32.1	Certification of the Co-Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
32.2	Certification of the Co-Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
32.3	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					*
101.SCH	Inline XBRL Taxonomy Extension Schema Document					*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					*
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					*
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101)					*

* Filed herewith.
** Furnished herewith.

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 hereunto duly authorized

GUARDANT HEALTH, INC.

Dated:	August 3, 2023	By:	/s/ Helmy Eltoukhy
		Name:	Helmy Eltoukhy
		Title:	Co-Chief Executive Officer (Principal Executive Officer)
Dated:	August 3, 2023	By:	/s/ AmirAli Talasaz
		Name:	AmirAli Talasaz
		Title:	Co-Chief Executive Officer (Principal Executive Officer)
Dated:	August 3, 2023	By:	/s/ Michael Bell
		Name:	Michael Bell
		Title:	Chief Financial Officer (Principal Accounting Officer and Principal Financial Officer)

Exhibit 10.1

GUARDANT HEALTH, INC.
EXECUTIVE SEVERANCE PLAN

As amended and restated on
May 2, 2023

Guardant Health, Inc., a Delaware corporation, (the "Company") has adopted this Executive Severance Plan, including the attached Exhibits (the "Plan"), for the benefit of Participants (as defined below) on the terms and conditions hereinafter stated. The Plan, as initially adopted on September 15, 2018 and amended on March 11, 2019 and May 2, 2023, is intended to provide severance protections to a select group of management or highly compensated employees (within the meaning of ERISA (as defined below)) in connection with qualifying terminations of employment.

1. **Defined Terms**. Capitalized terms used but not otherwise defined herein shall have the meanings indicated below:

1.1 "Base Compensation" means the Participant's annual base salary rate in effect immediately prior to a Qualifying Termination, disregarding any reduction which gives rise to Good Reason.

1.2 "Board" means the Board of Directors of the Company.

1.3 "Cash Salary Severance" means the portion of a Participant's Cash Severance that is based on the Participant's Base Compensation determined in accordance with Exhibit A or Exhibit B attached hereto, as applicable.

1.4 "Cash Severance" means the Cash Salary Severance and, if applicable, the Target Incentive Compensation Severance.

1.5 "Cause" means the occurrence of any one or more of the following events unless, to the extent capable of correction, the Participant fully corrects the circumstances constituting Cause within 15 days after receipt of written notice thereof:

(a) the Participant's willful failure to substantially perform his or her duties with the Company (other than any such failure resulting from the Participant's incapacity due to physical or mental illness or any such actual or anticipated failure after his or her issuance of a notice of termination for Good Reason), after a written demand for performance is delivered to the Participant by the Committee, which demand specifically identifies the manner in which the Committee believes that the Participant has not performed his or her duties;

(b) the Participant's commission of an act of fraud or material dishonesty resulting in reputational, economic or financial injury to the Company;

(c) the Participant's material misappropriation or embezzlement of the property of the Company or any of its affiliates;

(d) the Participant's commission of, including any entry by the Participant of a guilty or no contest plea to, a felony (other than a traffic violation) or other crime involving moral turpitude, or the Participant's commission of unlawful harassment or discrimination;

(e) the Participant's willful misconduct or gross negligence with respect to any material aspect of the Company's business or a material breach by the Participant of his or her fiduciary duty to the Company, which willful misconduct, gross negligence or material breach has a material and demonstrable adverse effect on the Company; or the Participant's material breach of either the Participant's obligations under a written agreement between the Company and the Participant or a Company policy.

1.6 "Change in Control" shall have the meaning set forth in the Company's 2018 Incentive Award Plan, as may be amended from time to time.

1.7 "CIC Protection Period" means the period beginning on and including three months prior to the date of a Change in Control and ending on and including the one-year anniversary of the date of a Change in Control.

1.8 "CIC Termination" means a Qualifying Termination which occurs during the CIC Protection Period.

1.9 "Claimant" shall have the meaning set forth in Section 11.1 hereof.

1.10 "COBRA" means the Consolidated Omnibus Budget Reconciliation Act of 1985.

1.11 "COBRA Period" means the number of months during which the Participant is entitled to COBRA Premium Payments, determined in accordance with Exhibit A or Exhibit B attached hereto, as applicable.

1.12 "COBRA Premium Payment" shall have the meaning set forth in Section 4.2(b) hereof.

1.13 "Code" means the Internal Revenue Code of 1986, as amended from time to time, or any successor thereto.

1.14 "Committee" means the Compensation Committee of the Board, or such other committee as may be appointed by the Board to administer the Plan.

1.15 "Date of Termination" means the effective date of the termination of the Participant's employment.

1.16 "Employee" means an individual who is an employee (within the meaning of Code Section 3401(c)) of the Company or any of its subsidiaries.

1.17 "Equity Award Treatment" shall have the meaning set forth in Section 4.3 hereof.

1.18 "ERISA" means the Employee Retirement Income Security Act of 1974, as amended, and the regulations promulgated thereunder.

1.19 "Excise Tax" shall have the meaning set forth in Section 7.1 hereof.

1.20 "Good Reason" means the occurrence of any one or more of the following events without the Participant's prior written consent, unless the Company fully corrects the circumstances constituting Good Reason (provided such circumstances are capable of correction) as provided below:

(a) a material diminution in the Participant's position (including status, offices, titles and reporting requirements), authority, duties or responsibilities, excluding for this purpose any isolated, insubstantial or inadvertent actions not taken in bad faith and which are remedied by the Company promptly after receipt of notice thereof given by the Participant;

(b) the Company's material reduction of the Participant's Base Compensation, as the same may be increased from time to time, other than as a result of a proportionate, across-the-board reduction of base compensation payable to similarly situated employees of the Participant; or

(c) a material change in the geographic location at which the Participant performs his or her principal duties for the Company to a new location that is more than 30 miles from the location at which the Participant performs his or her principal duties for the Company as of the date on which the Participant first becomes a Participant in the Plan.

Notwithstanding the foregoing, the Participant will not be deemed to have resigned for Good Reason unless (1) the Participant provides the Company with written notice setting forth in reasonable detail the facts and circumstances claimed by the Participant to constitute Good Reason within 90 days after the date of the occurrence of any event that the Participant knows or should reasonably have known to constitute Good Reason, (2) the Company fails to cure such acts or omissions within 30 days following its receipt of such notice, and (3) the effective date of the Participant's termination for Good Reason occurs no later than 60 days after the expiration of the Company's cure period.

1.21 "Independent Advisors" shall have the meaning set forth in Section 7.2 hereof.

1.22 "Participant" means each Employee who is selected by the Administrator (or designee thereof in accordance with Section 4 hereof) to participate in the Plan and is provided with (and, if applicable, countersigns) a

Participation Notice in accordance with Section 13.2 hereof, other than any Employee who, at the time of his or her termination of employment, is covered by another plan or agreement with the Company or a subsidiary that provides for cash severance or termination benefits. For the avoidance of doubt, retention bonus payments, change in control bonus payments and other similar payments shall not constitute "cash severance" for purposes of this definition.

1.23 "Participation Notice" shall have the meaning set forth in Section 13.2 hereof.

1.24 "Performance-Based Equity Award" means a Company equity-based award which vests, solely or in part, based on the achievement of performance goals.

1.25 "Qualifying Termination" means a termination of the Participant's employment with the Company or a subsidiary, as applicable, by the Company or a subsidiary, as applicable, without Cause, or by the Participant for Good Reason. Notwithstanding anything contained herein, in no event shall a Participant be deemed to have experienced a Qualifying Termination (a) if such Participant is offered and/or accepts a comparable employment position with the Company or any subsidiary, or (b) if in connection with a Change in Control or any other corporate transaction or sale of assets involving the Company or any subsidiary, such Participant is offered and accepts a comparable employment position with the successor or purchaser entity (or an affiliate thereof), as applicable. A Qualifying Termination shall not include a termination due to the Participant's death or disability.

1.26 "Release" shall have the meaning set forth in Section 4.4 hereof.

1.27 "Severance Benefits" means, collectively, the Cash Severance, the COBRA Premium Payments, and, if applicable, the Equity Award Treatment to which a Participant may become entitled pursuant to the Plan.

1.28 "Target Incentive Compensation" means the Participant's target cash performance bonus, if any, for the year in which the Date of Termination occurs.

1.29 "Target Incentive Compensation Severance" means the portion of a Participant's Cash Severance that is based on the Participant's Target Incentive Compensation, determined in accordance with Exhibit B attached hereto.

1.30 "Time-Based Equity Award" means a Company equity-based award which vests based solely on the Participant's continued service with the Company or any subsidiary (including any Company performance-based equity award to the extent applicable performance goals have been satisfied and the award remains subject to vesting only based on continued service).

1.31 "Total Payments" shall have the meaning set forth in Section 7.1 hereof.

2. **Notification**. The Administrator shall, pursuant to a Participation Notice, notify each Participant that such Participant has been selected to participate in the Plan.

3. **Administration**. Subject to Section 13.4 hereof, the Plan shall be interpreted, administered and operated by the Committee (the "Administrator"), which shall have complete authority, subject to the express provisions of the Plan, to interpret the Plan, to prescribe, amend and rescind rules and regulations relating to the Plan, and to make all other determinations necessary or advisable for the administration of the Plan. The Administrator may delegate any of its duties hereunder to a subcommittee, or to such person or persons from time to time as it may designate other than to any Participant in the Plan. All decisions, interpretations and other actions of the Administrator (including with respect to whether a Qualifying Termination has occurred) shall be final, conclusive and binding on all parties who have an interest in the Plan.

4. **Severance Benefits.**

4.1 Eligibility. Each Employee who qualifies as a Participant and who experiences a Qualifying Termination is eligible to receive Severance Benefits under the Plan.

4.2 Qualifying Termination Payment. In the event that a Participant experiences a Qualifying Termination (other than a CIC Termination), then, subject to the Participant's execution and, to the extent applicable, non-revocation of a Release in accordance with Section 4.4 hereof, and subject to any additional requirements specified in the Plan, the Company shall pay or provide to the Participant the following Severance Benefits:

(a) Cash Salary Severance Payment. The Company shall pay to the Participant a lump-sum cash payment in an amount equal to the amount determined in accordance with Exhibit A attached hereto. Subject to Section 6.2 hereof, the Cash Salary Severance (as set forth on Exhibit A) shall be paid to the Participant within 60 days following the Date of Termination.

(b) COBRA. Subject to the requirements of the Code, if the Participant properly elects health care continuation coverage under the Company's group health plans pursuant to COBRA, to the extent that the Participant is eligible to do so, then the Company shall directly pay or, at its election, reimburse the Participant for the COBRA premiums for the Participant and the Participant's covered dependents (in an amount determined based on the same benefit levels as would have applied if the Participant's employment had not been terminated based on the Participant's elections in effect on the Date of Termination) until the earlier of the end of the month during which the Participant's COBRA Period, determined in accordance with Exhibit A attached hereto, ends or the date the Participant becomes eligible for healthcare coverage under a subsequent employer's health plan (the "COBRA Premium Payment"). Notwithstanding the foregoing, (i) if any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the period of continuation coverage to be, exempt from the application of Code Section 409A under Treasury Regulation Section 1.409A-1(a)(5), or (ii) the Company is otherwise unable to continue to cover the Participant under its group health plans without penalty under applicable law (including without limitation, Section 2716 of the Public Health Service Act), then, in either case, an amount equal to each remaining Company reimbursement shall thereafter be paid to the Participant in substantially equal monthly installments over the COBRA Period (or the remaining portion thereof).

4.3 CIC Termination Payment. In the event that a Participant experiences a CIC Termination, then, subject to the Participant's execution and, to the extent applicable, non-revocation of a Release in accordance with Section 4.4 hereof, and subject to any additional requirements specified in the Plan, (a) the Company shall pay or provide to the Participant, as applicable, the Severance Benefits set forth in Sections 4.2(a) and (b) hereof; *provided, however*, that the amount of the Cash Salary Severance and the COBRA Period shall be determined in accordance with Exhibit B attached hereto (instead of in accordance with Exhibit A) and any Cash Salary Severance set forth in Exhibit B that exceeds the Cash Salary Severance the Participant's would receive pursuant to Exhibit A will be paid in a lump-sum on the later of the 60th day following the Date of Termination and the date of the Change in Control, (b) the Company shall pay to the Participant the Target Incentive Compensation Severance (as set forth on Exhibit B), in a lump-sum cash payment on the later of the 60th day following the Date of Termination and the date of the Change in Control and (c) each outstanding Time-Based Equity Award held by the Participant as of his or her Date of Termination shall vest in full and as applicable, become exercisable upon the later of the effectiveness of the Release and as of immediately prior to the consummation of a Change in Control (the "Equity Award Treatment"). Each outstanding Company equity-based award held by the Participant as of his or her Date of Termination that is a Performance-Based Equity Award shall be treated in accordance with the applicable award agreement.

4.4 Release. Notwithstanding anything herein to the contrary, no Participant shall be eligible or entitled to receive or retain any Severance Benefits under the Plan unless he or she executes a general release of claims in a form prescribed by the Company (the "Release") within 21 days (or 45 days if necessary to comply with applicable law) after the Date of Termination and, if he or she is entitled to a seven day post-signing revocation period under applicable law, does not revoke such Release during such seven day period.

4.5 Reduction for other Severance Payments or Notice Period. The amount of Severance Benefits to which a Participant is otherwise entitled under the Plan shall be reduced by any other severance benefits payable to the Participant under any other Company plan, program, agreement, statutorily required severance, or legally required notice period for which the Company, in its discretion, provides pay in lieu of notice.

5. **Limitations**. Notwithstanding any provision of the Plan to the contrary, if a Participant's status as an Employee is terminated for any reason other than due to a Qualifying Termination, the Participant shall not be entitled to receive any Severance Benefits under the Plan, and the Company shall not have any obligation to such Participant under the Plan.

6. **Section 409A**.

6.1 General. To the extent applicable, the Plan shall be interpreted and applied consistent and in accordance with Code Section 409A and Department of Treasury regulations and other interpretive guidance issued thereunder. Notwithstanding any provision of the Plan to the contrary, to the extent that the Administrator determines that any payments or benefits under the Plan may not be either compliant with or exempt from Code Section 409A and related Department of Treasury guidance, the Administrator may in its sole discretion adopt such

amendments to the Plan or take such other actions that the Administrator determines are necessary or appropriate to (a) exempt the compensation and benefits payable under the Plan from Code Section 409A and/or preserve the intended tax treatment of such compensation and benefits, or (b) comply with the requirements of Code Section 409A and related Department of Treasury guidance; *provided*, *however*, that this Section 6.1 shall not create any obligation on the part of the Administrator to adopt any such amendment or take any other action, nor shall the Company have any liability for failing to do so.

6.2 Potential Six-Month Delay. Notwithstanding anything to the contrary in the Plan, no amounts shall be paid to any Participant under the Plan during the six-month period following such Participant's "separation from service" (within the meaning of Code Section 409A(a)(2)(A)(i) and Treasury Regulation Section 1.409A-1(h)) to the extent that the Administrator determines that paying such amounts at the time or times indicated in the Plan would result in a prohibited distribution under Code Section 409A(a)(2)(B)(i). If the payment of any such amounts is delayed as a result of the previous sentence, then on the first business day following the end of such six-month period (or such earlier date upon which such amount can be paid under Code Section 409A without resulting in a prohibited distribution, including as a result of the Participant's death), the Participant shall receive payment of a lump-sum amount equal to the cumulative amount that would have otherwise been payable to the Participant during such six-month period without interest thereon.

6.3 Separation from Service. A termination of employment shall not be deemed to have occurred for purposes of any provision of the Plan providing for the payment of any amounts or benefits that constitute "nonqualified deferred compensation" under Code Section 409A upon or following a termination of employment unless such termination is also a "separation from service" within the meaning of Code Section 409A and, for purposes of any such provision of the Plan, references to a "termination," "termination of employment" or like terms shall mean "separation from service".

6.4 Reimbursements. To the extent that any payments or reimbursements provided to a Participant under the Plan are deemed to constitute compensation to the Participant to which Treasury Regulation Section 1.409A-3(i)(1)(iv) would apply, such amounts shall be paid or reimbursed reasonably promptly, but not later than December 31st of the year following the year in which the expense was incurred. The amount of any such payments eligible for reimbursement in one year shall not affect the payments or expenses that are eligible for payment or reimbursement in any other taxable year, and the Participant's right to such payments or reimbursement of any such expenses shall not be subject to liquidation or exchange for any other benefit.

6.5 Installments. For purposes of applying the provisions of Code Section 409A to the Plan, each separately identified amount to which a Participant is entitled under the Plan shall be treated as a separate payment. In addition, to the extent permissible under Code Section 409A, the right to receive any installment payments under the Plan shall be treated as a right to receive a series of separate payments and, accordingly, each such installment payment shall at all times be considered a separate and distinct payment as permitted under Treasury Regulation Section 1.409A-2(b)(2)(iii). Whenever a payment under the Plan specifies a payment period with reference to a number of days, the actual date of payment within the specified period shall be within the sole discretion of the Company.

7. **Limitation on Payments**.

7.1 Best Pay Cap. Notwithstanding any other provision of the Plan, in the event that any payment or benefit received or to be received by a Participant (including any payment or benefit received in connection with a termination of the Participant's employment, whether pursuant to the terms of the Plan or any other plan, arrangement or agreement) (all such payments and benefits, including the Severance Benefits, being hereinafter referred to as the "Total Payments") would be subject (in whole or part), to the excise tax imposed under Code Section 4999 (the "Excise Tax"), then, after taking into account any reduction in the Total Payments provided by reason of Code Section 280G in such other plan, arrangement or agreement, the Cash Severance benefits under the Plan shall first be reduced, and any noncash severance payments hereunder shall thereafter be reduced, to the extent necessary so that no portion of the Total Payments is subject to the Excise Tax but only if (a) the net amount of such Total Payments, as so reduced (and after subtracting the net amount of federal, state and local income taxes on such reduced Total Payments and after taking into account the phase out of itemized deductions and personal exemptions attributable to such reduced Total Payments) is greater than or equal to (b) the net amount of such Total Payments without such reduction (but after subtracting the net amount of federal, state and local income taxes on such Total Payments and the amount of Excise Tax to which the Participant would be subject in respect of such unreduced Total Payments and after taking into account the phase out of itemized deductions and personal exemptions attributable to such unreduced Total Payments).

7.2 Certain Exclusions. For purposes of determining whether and the extent to which the Total Payments will be subject to the Excise Tax, (a) no portion of the Total Payments, the receipt or retention of which the Participant has waived at such time and in such manner so as not to constitute a "payment" within the meaning of Code Section 280G(b), will be taken into account; (b) no portion of the Total Payments will be taken into account which, in the written opinion of an independent, nationally recognized accounting firm (the "Independent Advisors") selected by the Company, does not constitute a "parachute payment" within the meaning of Code Section 280G(b)(2) (including by reason of Code Section 280G(b)(4)(A)) and, in calculating the Excise Tax, no portion of such Total Payments will be taken into account which, in the opinion of Independent Advisors, constitutes reasonable compensation for services actually rendered, within the meaning of Code Section 280G(b)(4)(B), in excess of the "base amount" (as defined in Code Section 280G(b)(3)) allocable to such reasonable compensation; and (c) the value of any non-cash benefit or any deferred payment or benefit included in the Total Payments shall be determined by the Independent Advisors in accordance with the principles of Code Sections 280G(d)(3) and (4).

8. **No Mitigation**. No Participant shall be required to seek other employment or attempt in any way to reduce or mitigate any Severance Benefits payable under the Plan and the amount of any such Severance Benefits shall not be reduced by any other compensation paid or provided to any Participant following such Participant's termination of service.

9. **Successors**.

9.1 Company Successors. The Plan shall inure to the benefit of and shall be binding upon the Company and its successors and assigns. Any successor (whether direct or indirect and whether by purchase, lease, merger, consolidation, liquidation or otherwise) to all or substantially all of the Company's business and/or assets shall assume and agree to perform the obligations of the Company under the Plan.

9.2 Participant Successors. The Plan shall inure to the benefit of and be enforceable by each Participant's personal or legal representatives, executors, administrators, successors, heirs, distributees, devisees, legatees or other beneficiaries. If a Participant dies while any amount remains payable to such Participant hereunder, all such amounts shall be paid in accordance with the terms of the Plan to the executors, personal representatives or administrators of such Participant's estate.

10. **Notices**. All communications relating to matters arising under the Plan shall be in writing and shall be deemed to have been duly given when hand delivered, faxed, emailed or mailed by reputable overnight carrier or United States certified mail, return receipt requested, addressed, if to a Participant, to the address on file with the Company or to such other address as the Participant may have furnished to the Company in writing in accordance herewith and, if to the Company, to such address as may be specified from time to time by the Administrator, except that notice of change of address shall be effective only upon actual receipt.

11. **Claims Procedure**; **Arbitration**.

11.1 Claims. Generally, Participants are not required to present a formal claim in order to receive benefits under the Plan. If, however, any person believes that benefits are being denied improperly, that the Plan is not being operated properly, or that their legal rights are being violated with respect to the Plan (the "Claimant"), the Claimant must file a formal claim, in writing, with the Administrator. This requirement applies to all claims that any Claimant has with respect to the Plan, except to the extent the Administrator determines, in its sole discretion, that it does not have the power to grant all relief reasonably being sought by the Claimant. Subject to the temporary extension of deadlines described in Exhibit C, a formal claim must be filed within 90 days after the date the Claimant first knew or should have known of the facts on which the claim is based, unless the Administrator consents otherwise in writing. The Administrator shall provide a Claimant, on request, with a copy of the claims procedures established under Section 11.2 hereof.

11.2 Claims Procedure. The Administrator has adopted procedures for considering claims (which are set forth in Exhibit C attached hereto), which it may amend or modify from time to time, as it sees fit. These procedures shall comply with all applicable legal requirements. These procedures may provide that final and binding arbitration shall be the ultimate means of contesting a denied claim (even if the Administrator or its delegates have failed to follow the prescribed procedures with respect to the claim). The right to receive benefits under the Plan is contingent on a Claimant using the prescribed claims and arbitration procedures to resolve any claim.

12. **Covenants**.

12.1 Restrictive Covenants. A Participant's right to receive and/or retain the Severance Benefits payable under this Plan is conditioned upon and subject to the Participant's continued compliance with any restrictive covenants (e.g., confidentiality, non-solicitation, non-competition, non-disparagement) contained in any other written agreement between the Participant and the Company, as in effect on the date of the Participant's Qualifying Termination.

12.2 Return of Property. A Participant's right to receive and/or retain the Severance Benefits payable under the Plan is conditioned upon the Participant's return to the Company of all Company documents (and all copies thereof) and other Company property (in each case, whether physical, electronic or otherwise) in the Participant's possession or control.

13. **Miscellaneous**.

13.1 Entire Plan; Relation to Other Agreements. The Plan, together with any Participation Notice issued in connection with the Plan, contains the entire understanding of the parties relating to the subject matter hereof and supersedes any prior agreement, arrangement and understanding between any Participant, on the one hand, and the Company and/or any subsidiary, on the other hand, with respect to the subject matter hereof. Severance Benefits payable under the Plan are not intended to duplicate any other severance benefits payable to a Participant by the Company. By participating in the Plan and accepting the Severance Benefits hereunder, the Participant acknowledges and agrees that any prior agreement, arrangement and understanding between any Participant, on the one hand, and the Company and/or any subsidiary, on the other hand, with respect to the subject matter hereof is hereby revoked and ineffective with respect to the Participant.

13.2 Participation Notices. The Administrator shall have the authority, in its sole discretion, to select Employees to participate in the Plan and to provide written notice to any such Employee that he or she is a Participant in, and eligible to receive Severance Benefits under, the Plan (a "Participation Notice") at or any time prior to his or her termination of employment.

13.3 No Right to Continued Service. Nothing contained in the Plan shall (a) confer upon any Participant any right to continue as an employee of the Company or any subsidiary, (b) constitute any contract of employment or agreement to continue employment for any particular period, or (c) interfere in any way with the right of the Company to terminate a service relationship with any Participant, with or without Cause.

13.4 Termination and Amendment of Plan. Prior to the consummation of a Change in Control, the Plan may be amended or terminated by the Administrator at any time and from time to time, in its sole discretion. For a period of one year from and after the consummation of a Change in Control, the Plan may not be amended, modified, suspended or terminated except with the express written consent of each Participant who would be adversely affected by any such amendment, modification, suspension or termination. After the expiration of such one-year period, and subject to Section 2 hereof, the Plan may again be amended or terminated by the Administrator at any time and from time to time, in its sole discretion (provided, that no such amendment or termination shall adversely affect the rights of any Participant who has experienced a Qualifying Termination on or prior to the date of such amendment or termination).

13.5 Survival. Section 7 (Limitation on Payments), Section 11 (Claims Procedure; Arbitration) and Section 12 (Covenants) hereof shall survive the termination or expiration of the Plan and shall continue in effect.

13.6 Severance Benefit Obligations. Notwithstanding anything contained herein, Severance Benefits paid or provided under the Plan may be paid or provided by the Company or any subsidiary employer, as applicable.

13.7 Withholding. The Company shall have the authority and the right to deduct and withhold an amount sufficient to satisfy federal, state, local and foreign taxes required by law to be withheld with respect to any Severance Benefits payable under the Plan.

13.8 Benefits Not Assignable. Except as otherwise provided herein or by law, no right or interest of any Participant under the Plan shall be assignable or transferable, in whole or in part, either directly or by operation of law or otherwise, including without limitation by execution, levy, garnishment, attachment, pledge or in any manner; no attempted assignment or transfer thereof shall be effective; and no right or interest of any Participant under the Plan shall be liable for, or subject to, any obligation or liability of such Participant. When a payment is due under the

Plan to a Participant who is unable to care for his or her affairs, payment may be made directly to his or her legal guardian or personal representative.

13.9 Applicable Law. The Plan is intended to be an unfunded "top hat" pension plan within the meaning of U.S. Department of Labor Regulation Section 2520.104-23 and shall be interpreted, administered, and enforced as such in accordance with ERISA. To the extent that state law is applicable, the statutes and common law of the State of Delaware, excluding any that mandate the use of another jurisdiction's laws, will apply.

13.10 Validity. The invalidity or unenforceability of any provision of the Plan shall not affect the validity or enforceability of any other provision of the Plan, which shall remain in full force and effect.

13.11 Captions. The captions contained in the Plan are for convenience only and shall have no bearing on the meaning, construction or interpretation of the Plan's provisions.

13.12 Expenses. The expenses of administering the Plan shall be borne by the Company or its successor, as applicable.

13.13 Unfunded Plan. The Plan shall be maintained in a manner to be considered "unfunded" for purposes of ERISA. The Company shall be required to make payments only as benefits become due and payable. No person shall have any right, other than the right of an unsecured general creditor against the Company, with respect to the benefits payable hereunder, or which may be payable hereunder, to any Participant, surviving spouse or beneficiary hereunder. If the Company, acting in its sole discretion, establishes a reserve or other fund associated with the Plan, no person shall have any right to or interest in any specific amount or asset of such reserve or fund by reason of amounts which may be payable to such person under the Plan, nor shall such person have any right to receive any payment under the Plan except as and to the extent expressly provided in the Plan. The assets in any such reserve or fund shall be part of the general assets of the Company, subject to the control of the Company.

* * * * *

EXHIBIT A

CALCULATION OF NON-CHANGE IN CONTROL SEVERANCE AMOUNTS

Tier	Cash Salary Severance	COBRA Period
1	Cash Salary Severance: 100% Base Compensation	12 months
2	Cash Salary Severance: 50% Base Compensation	6 months
3	Cash Salary Severance: 50% Base Compensation	6 months

EXHIBIT B

CALCULATION OF CHANGE IN CONTROL SEVERANCE AMOUNTS

Tier	Cash Severance	Equity Acceleration	COBRA Period
1	1. Cash Salary Severance: 150% Base Compensation 2. Target Incentive Compensation Severance: 100% of Target Incentive Compensation	Full vesting acceleration of Time-Based Equity Awards	18 months
2	1. Cash Salary Severance: 100% Base Compensation 2. Target Incentive Compensation Severance: 100% of Target Incentive Compensation	Full vesting acceleration of Time- Based Equity Awards	12 months
3	1. Cash Salary Severance: 75% Base Compensation 2. Target Incentive Compensation Severance: 75% of Target Incentive Compensation	Full vesting acceleration of Time- Based Equity Awards	9 months

EXHIBIT C

DETAILED CLAIMS PROCEDURES

Section 1.1. Claim Procedure. Claims for benefits under the Plan shall be administered in accordance with Section 503 of ERISA and the Department of Labor Regulations thereunder. The Administrator shall have the right to delegate its duties under this Exhibit and all references to the Administrator shall be a reference to any such delegate, as well. The Administrator shall make all determinations as to the rights of any Claimant. A Claimant may authorize a representative to act on his or her behalf with respect to any claim under the Plan. A Claimant who asserts a right to any benefit under the Plan he has not received, in whole or in part, must file a written claim with the Administrator. All written claims shall be submitted to Vice President, Human Resources at ghtotalrewards@guardanthealth.com or 3100 Hanover Street, Palo Alto, CA 94304.

(a) Regular Claims Procedure. The claims procedure in this Section 1.1(a) shall apply to all claims for Plan benefits.

(1) Timing of Denial. If the Administrator denies a claim in whole or in part (an "adverse benefit determination"), then the Administrator will provide notice of the decision to the Claimant within a reasonable period of time, not to exceed 90 days after the Administrator receives the claim, unless the Administrator determines that any extension of time for processing is required. In the event that the Administrator determines that such an extension is required, written notice of the extension will be furnished to the Claimant before the end of the initial 90 day review period. The extension will not exceed a period of 90 days from the end of the initial 90 day period, and the extension notice will indicate the special circumstances requiring such extension of time and the date by which the Administrator expects to render the benefit decision.

(2) Denial Notice. The Administrator shall provide every Claimant who is denied a claim for benefits with a written or electronic notice of its decision. The notice will set forth, in a manner to be understood by the Claimant:

i. the specific reason or reasons for the adverse benefit determination;

ii. reference to the specific Plan provisions on which the determination is based;

iii. a description of any additional material or information necessary for the Claimant to perfect the claim and an explanation as to why such information is necessary; and

iv. an explanation of the Plan's appeal procedure and the time limits applicable to such procedures, including a statement of the Claimant's right to bring an action under Section 502(a) of ERISA after receiving a final adverse benefit determination upon appeal.

(3) Appeal of Denial. The Claimant may appeal an initial adverse benefit determination by submitting a written appeal to the Administrator within 60 days of receiving notice of the denial of the claim, subject to the temporary extension of deadlines described in Section 1.1(a)(8) below. The Claimant:

i. may submit written comments, documents, records and other information relating to the claim for benefits;

ii. will be provided, upon request and without charge, reasonable access to and copies of all documents, records and other information relevant to the Claimant's claim for benefits; and

iii. will receive a review that takes into account all comments, documents, records and other information submitted by the Claimant relating to the appeal, without regard to whether such information was submitted or considered in the initial benefit determination.

(4) Decision on Appeal. The Administrator will conduct a full and fair review of the claim and the initial adverse benefit determination. The Administrator holds regularly scheduled meetings at least quarterly. The Administrator shall make a benefit determination no later than the date of the regularly scheduled meeting that immediately follows the Administrator's receipt of an appeal request, unless the appeal request is filed within 30 days preceding the date of such meeting. In such case, a benefit determination may be made by no later than the date of the second regularly scheduled meeting following the Administrator's receipt of the appeal request. If special circumstances require a further extension of time for processing, a benefit determination shall be rendered no later

than the third regularly scheduled meeting of the Administrator following the Administrator's receipt of the appeal request. If such an extension of time for review is required, the Administrator shall provide the Claimant with written notice of the extension, describing the special circumstances and the date as of which the benefit determination will be made, prior to the commencement of the extension. The Administrator generally cannot extend the review period any further unless the Claimant voluntarily agrees to a longer extension. The Administrator shall notify the Claimant of the benefit determination as soon as possible but not later than five days after it has been made.

(5) Notice of Determination on Appeal. The Administrator shall provide the Claimant with written or electronic notification of its benefit determination on review. In the case of an adverse benefit determination, the notice shall set forth, in a manner intended to be understood by the Claimant:

i. the specific reason or reasons for the adverse benefit determination;

ii. reference to the specific Plan provisions on which the adverse benefit determination is based;

iii. a statement that the Claimant is entitled to receive, upon request and without charge, reasonable access to, and copies of, all documents, records and other information relevant to the claim for benefits;

iv. a statement describing any voluntary appeal procedures offered by the Plan and the Claimant's right to obtain the information about such procedures; and

v. a statement of the Claimant's right to bring an action under Section 502(a) of ERISA.

(b) Exhaustion; Judicial Proceedings. No action at law or in equity shall be brought to recover benefits under the Plan until the claim and appeal rights described in the Plan have been exercised and the Plan benefits requested in such appeal have been denied in whole or in part. If any judicial proceeding is undertaken to appeal the denial of a claim or bring any other action under ERISA, the evidence presented may be strictly limited to the evidence timely presented to the Administrator. Any such judicial proceeding must be filed by the earlier of: (a) one year after the Administrator's final decision regarding the claim appeal or (b) one year after the Participant or other Claimant commenced payment of the Plan benefits at issue in the judicial proceeding.

(c) Administrator's Decision is Binding. Benefits under the Plan shall be paid only if the Administrator decides in its sole discretion that a Claimant is entitled to them. In determining claims for benefits, the Administrator has the authority to interpret the Plan, to resolve ambiguities, to make factual determinations, and to resolve questions relating to eligibility for and amount of benefits. Subject to applicable law, any decision made in accordance with the above claims procedures is final and binding on all parties and shall be given the maximum possible deference allowed by law. A misstatement or other mistake of fact shall be corrected when it becomes known and the Administrator shall make such adjustment on account thereof as it considers equitable and practicable.

(d) Temporary Extension of Deadlines. The Administrator shall extend the deadline to submit a claim or appeal under the Plan the extent required under ERISA or Department of Labor guidance. A Claimant may contact the Administrator in order to confirm whether the 90-day deadline to file a claim or the 60-day deadline to file an appeal has been extended. Due to the COVID-19 pandemic, the period from March 1, 2020 through the date that is 60 days after the end of the National Emergency (or such other date declared by the Department of Labor) will be disregarded in calculating a Claimant's deadline to file a claim or appeal; provided, however, that a given deadline will not be extended by more than one year.

Exhibit 31.1

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

I, Helmy Eltoukhy, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Guardant Health, 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(s) 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(s) 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 3, 2023

/s/ Helmy Eltoukhy
Helmy Eltoukhy
Co-Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, AmirAli Talasaz, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Guardant Health, 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(s) 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(s) 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 3, 2023

/s/ AmirAli Talasaz
AmirAli Talasaz
Co-Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.3

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

I, Michael Bell, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Guardant Health, 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(s) 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(s) 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 3, 2023

/s/ Michael Bell

Michael Bell
Chief Financial Officer
(Principal Accounting Officer and Principal Financial 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

In connection with the Quarterly Report of Guardant Health, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 3, 2023

/s/ Helmy Eltoukhy
Helmy Eltoukhy
Co-Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

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

In connection with the Quarterly Report of Guardant Health, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 3, 2023

/s/ AmirAli Talasaz
AmirAli Talasaz
Co-Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Exhibit 32.3

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

In connection with the Quarterly Report of Guardant Health, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: August 3, 2023

/s/ Michael Bell
Michael Bell
Chief Financial Officer
(Principal Accounting Officer and Principal Financial Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.