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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2020

or

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

For the transition period from to

Commission file number: 001-36536

CAREDX, INC.

(Exact name of registrant as specified in its charter)

Delaware	**94-3316839**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

1 Tower Place
South San Francisco, California 94080
(Address of principal executive offices and zip code)

(415) 287-2300
(Registrant's telephone number, including area code)

N/A
(Former name, former address and former fiscal year, if changed since last report)

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

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, par value $0.001 per share	CDNA	The Nasdaq Stock Market LLC

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

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

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

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

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

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

There were 43,784,236 shares of the registrant's Common Stock issued and outstanding as of April 28, 2020.

CareDx, Inc.
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PART I. FINANCIAL INFORMATION

ITEM 1. UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

CareDx, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)
(In thousands, except share data)

	March 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 32,191	$ 38,223
Accounts receivable	22,841	24,057
Inventory	6,947	6,014
Prepaid and other current assets	4,089	3,628
Total current assets	66,068	71,922
Property and equipment, net	5,501	4,430
Operating leases right-of-use assets	17,004	4,730
Intangible assets, net	43,112	45,541
Goodwill	23,857	23,857
Restricted cash	242	256
Other assets	1,000	1,000
Total assets	$ 156,784	$ 151,736
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,621	$ 5,506
Accrued compensation	6,127	12,484
Accrued and other liabilities	15,576	16,838
Total current liabilities	28,324	34,828
Deferred tax liability	1,502	1,973
Common stock warrant liability	1,017	6,607
Deferred payments for intangible assets	5,311	5,207
Operating lease liability, less current portion	17,503	2,370
Other liabilities	1,743	1,751
Total liabilities	55,400	52,736
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock: $0.001 par value; 10,000,000 shares authorized at March 31, 2020 and December 31, 2019; no shares issued and outstanding at March 31, 2020 and December 31, 2019	—	—
Common stock: $0.001 par value; 100,000,000 shares authorized at March 31, 2020 and December 31, 2019; 43,019,547 shares and 42,498,430 shares issued and outstanding at March 31, 2020 and December 31, 2019, respectively	42	42
Additional paid-in capital	447,888	437,976
Accumulated other comprehensive loss	(6,910)	(5,205)
Accumulated deficit	(339,636)	(333,813)
Total stockholders' equity	101,384	99,000
Total liabilities and stockholders' equity	$ 156,784	$ 151,736

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

CareDx, Inc.
Condensed Consolidated Statements of Operations
(Unaudited)
(In thousands, except share and per share data)

	Three Months Ended March 31,	
	2020	2019
Revenue:		
Testing services revenue	$ 31,442	$ 21,518
Product revenue	4,695	4,433
Digital and other revenue	2,243	31
Total revenue	38,380	25,982
Cost of revenue	12,392	9,733
Gross profit	25,988	16,249
Operating expenses:		
Research and development	10,013	5,614
Sales and marketing	11,723	6,925
General and administrative	10,003	9,106
Total operating expenses	31,739	21,645
Loss from operations	(5,751)	(5,396)
Other income (expense):		
Interest income, net	96	342
Change in estimated fair value of common stock warrant liability	(405)	(3,009)
Other expense, net	(63)	(74)
Total other expense	(372)	(2,741)
Loss before income taxes	(6,123)	(8,137)
Income tax benefit	300	606
Net loss	$ (5,823)	$ (7,531)
Net loss per share (Note 3):		
Basic	$ (0.14)	$ (0.18)
Diluted	$ (0.14)	$ (0.18)
Weighted-average shares used to compute net loss per share:		
Basic	42,823,427	41,611,399
Diluted	42,823,427	41,611,399

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

CareDx, Inc.
Condensed Consolidated Statements of Comprehensive Loss
(Unaudited)
(In thousands)

	Three Months Ended March 31,	
	2020	2019
Net loss	$ (5,823)	$ (7,531)
Other comprehensive loss:		
Foreign currency translation adjustments, net of tax	(1,705)	(724)
Net comprehensive loss	$ (7,528)	$ (8,255)

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

CareDx, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)
(In thousands, except share data)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2019	42,498,430	$ 42	$ 437,976	$ (5,205)	$ (333,813)	$ 99,000
Issuance of common stock under ESPP	38,147	—	699	—	—	699
RSU settlements, net of shares withheld	139,552	—	(1,507)	—	—	(1,507)
Issuance of common stock for services	3,091	—	66	—	—	66
Issuance of common stock for cash upon exercise of stock options	44,861	—	155	—	—	155
Issuance of common stock for cash upon exercise of warrants	295,466	—	6,299	—	—	6,299
Employee share-based compensation expense		—	4,200	—	—	4,200
Foreign currency translation adjustment	—	—	—	(1,705)	—	(1,705)
Net loss	—	—	—	—	(5,823)	(5,823)
Balance at March 31, 2020	43,019,547	$ 42	$ 447,888	$ (6,910)	$ (339,636)	$ 101,384

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2018	41,384,960	$ 41	$ 412,010	$ (4,278)	$ (311,845)	$ 95,928
Issuance of common stock under ESPP	31,184	—	341	—	—	341
RSU settlements, net of shares withheld	146,159	—	(2,378)	—	—	(2,378)
Issuance of common stock for services	2,112	—	51	—	—	51
Issuance of common stock for cash upon exercise of stock options	253,347	—	1,365	—	—	1,365
Issuance of common stock for cash upon exercise of warrants	94,707	—	2,569	—	—	2,569
Employee share-based compensation expense	—	—	6,001	—	—	6,001
Foreign currency translation adjustment	—	—	—	(724)	—	(724)
Net loss	—	—	—	—	(7,531)	(7,531)
Balance at March 31, 2019	41,912,469	$ 41	$ 419,959	$ (5,002)	$ (319,376)	$ 95,622

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

CareDx, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In thousands)

	Three Months Ended March 31,	
	2020	2019
Operating activities:		
Net loss	$ (5,823)	$ (7,531)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation	4,259	6,053
Revaluation of common stock warrant liability to estimated fair value	405	3,009
Depreciation and amortization	1,619	1,161
Amortization of right-of-use assets	612	372
Revaluation of contingent consideration to estimated fair value	190	—
Changes in operating assets and liabilities:		
Accounts receivable	2,346	(2,782)
Inventory	(1,343)	(372)
Prepaid and other assets	(545)	(541)
Operating leases liabilities, net	(344)	(475)
Accounts payable	1,757	(449)
Accrued compensation	(5,914)	(4,249)
Accrued and other liabilities	48	202
Change in deferred taxes	(322)	(265)
Net cash used in operating activities	(3,055)	(5,867)
Investing activities:		
Purchase of property and equipment, net	(1,704)	(543)
Net cash used in investing activities	(1,704)	(543)
Financing activities:		
Proceeds from issuance of common stock under employee stock purchase plan	358	341
Taxes paid related to net share settlement of restricted stock units	(1,507)	(2,378)
Proceeds from exercise of warrants	304	78
Proceeds from exercise of stock options	155	1,365
Principal payments on debt and finance lease obligations	(45)	(42)
Contingent payments related to the acquisition of Conexio Genomics Pty Ltd.	—	(52)
Net cash used in financing activities	(735)	(688)
Effect of exchange rate changes on cash and cash equivalents	(552)	(87)
Net decrease in cash, cash equivalents and restricted cash	(6,046)	(7,185)
Cash, cash equivalents, and restricted cash at beginning of period	38,479	64,808
Cash, cash equivalents, and restricted cash at end of period	$ 32,433	$ 57,623

	March 31, 2020	December 31, 2019
Cash, Cash Equivalents and Restricted Cash as of:		
Cash and cash equivalents	$ 32,191	$ 38,223
Restricted cash	242	256
Total cash, cash equivalents and restricted cash at the end of period	$ 32,433	$ 38,479

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

CareDx, Inc.
Notes to Unaudited Condensed Consolidated Financial Statements

1. ORGANIZATION AND DESCRIPTION OF BUSINESS

CareDx, Inc. ("CareDx" or the "Company") together with its subsidiaries, is a leading precision medicine company focused on the discovery, development and commercialization of clinically differentiated, high-value healthcare solutions for transplant patients and caregivers. The Company's headquarters are in South San Francisco, California. The primary operations are in Brisbane, California; Omaha, Nebraska; Fremantle, Australia and Stockholm, Sweden.

The Company's commercially available testing services consist of AlloSure® Kidney, which is a donor-derived cell-free DNA ("dd-cfDNA") solution for kidney transplant patients, and AlloMap® Heart, which is a gene expression solution for heart transplant patients. The Company has initiated several clinical studies to generate data on its existing and planned future testing services. The Company also offers high quality products that increase the chance of successful transplants by facilitating a better match between a donor and a recipient of stem cells and organs.

In 2019, the Company began providing digital solutions to transplant centers following the acquisitions of Ottr Complete Transplant Management ("OttrCare") and XynManagement, Inc. ("XynManagement").

Testing Services

In October 2017, the Company commercially launched AlloSure Kidney, its proprietary next generation sequencing-based test that measures dd-cfDNA in kidney transplant recipients. The Medicare reimbursement rate for AlloSure Kidney is currently $2,841. AlloSure Kidney has also received payment from private payers on a case-by-case basis, with the first private payer, BCBS of South Carolina, issuing a positive coverage decision in its October 2019 review.

AlloMap Heart has been a covered service for Medicare beneficiaries since January 1, 2006. The Medicare reimbursement rate for AlloMap Heart is currently $3,240. AlloMap Heart has also received positive coverage decisions from many of the largest U.S. private payers.

Clinical Studies

In January 2018, the Company initiated the Kidney Allograft Outcomes AlloSure Kidney Registry study ("K-OAR"), to develop additional data on the clinical utility of AlloSure Kidney for surveillance of kidney transplant recipients. K-OAR is a multicenter, non-blinded, prospective observational cohort study which has enrolled more than 1,500 renal transplant patients who will receive AlloSure Kidney long-term surveillance.

In September 2018, the Company initiated the Surveillance HeartCare™ Outcomes Registry ("SHORE"). SHORE is a prospective, multi-center, observational registry of patients receiving HeartCare for surveillance. HeartCare combines the gene expression profiling technology of AlloMap Heart with the dd-cfDNA analysis of AlloSure® Heart in one surveillance solution. In August 2019, AlloSure Heart received a positive draft Local Coverage Determination for Medicare coverage.

In February 2019, AlloSure® Lung was made available for lung transplant patients through a compassionate use program while the test is undergoing further studies.

In September 2019, the Company announced the commencement of the Outcomes of KidneyCare on Renal Allografts ("OKRA") study, which is an extension of K-OAR. OKRA is a prospective, multi-center, observational, registry of patients receiving KidneyCare for surveillance. KidneyCare combines the dd-cfDNA analysis of AlloSure Kidney with the gene expression profiling technology of AlloMap Kidney and the predictive artificial intelligence technology of KidneyCare iBox developing a multimodality surveillance solution. The Company has not yet made any applications to payers for reimbursement coverage of AlloMap Kidney or KidneyCare iBox.

Products

TruSight HLA is a next generation sequencing ("NGS")-based high resolution typing solution that provides NGS-level resolution to Human Leukocyte Antigen ("HLA") typing. The Company's suite of AlloSeq products are commercial NGS-based kitted solutions that the Company acquired as a result of its license agreement with Illumina, Inc. ("Illumina") . These products include: AlloSeq™ Tx, a high-resolution HLA typing solution, AlloSeq™ cfDNA, a surveillance solution designed to measure dd-cfDNA in blood to detect active rejection in transplant recipients, and AlloSeq™ HCT, a solution for chimerism testing for stem cell transplant recipients.

Olerup SSP® is used to type HLA alleles, based on the sequence specific primer ("SSP") technology. Olerup SBT™ is a complete product range for sequence-based typing of HLA alleles. QTYPE® enables HLA typing at a low to intermediate resolution for samples that require a fast turnaround time and uses real-time polymerase chain reaction, or PCR methodology.

Digital and Other

Following the acquisitions of both OttrCare and XynManagement, the Company is a leading provider of transplant patient tracking software (“Ottr software”), as well as of transplant quality tracking and waitlist management solutions. Ottr software provides comprehensive solutions for transplant patient management and enables integration with electronic medical record ("EMR") systems providing patient surveillance management tools and outcomes data to transplant centers. XynManagement provides two unique solutions, XynQAPI software (“XynQAPI”) and Waitlist Management. XynQAPI simplifies transplant quality tracking and Scientific Registry of Transplant Recipients (“SRTR”) reporting. Waitlist Management includes a team of transplant assistants who maintain regular contact with patients on the waitlist to help prepare for their transplant and maintain eligibility.

COVID-19 Outbreak

On January 30, 2020, the World Health Organization (the “WHO”) announced a global health emergency because of a new strain of coronavirus originating in Wuhan, China (the “COVID-19 outbreak”) and the risks to the international community as the virus spreads globally beyond its point of origin. In March 2020, the WHO classified the COVID-19 outbreak as a pandemic, based on the rapid increase in exposure globally. The full impact of the COVID-19 outbreak, including the impact associated with preventative and precautionary measures that the Company, other businesses and governments are taking, continues to evolve as of the date of this report. As such, it is uncertain as to the full magnitude that the pandemic will have on the Company, but the pandemic may materially affect the Company's financial condition, liquidity and future results of operations.

With hospitals increasingly caring for COVID-19 patients, hospital administrators have chosen to limit, or even defer, non-emergency procedures. Immunosuppressed transplant patients either self-prescribed or were asked to avoid transplant centers and caregiver visits to reduce the risk of contracting COVID-19. With transplant surveillance visits down, the Company experienced a slowdown in testing services volumes in the final weeks of March and during April 2020.

As a response to the COVID-19 outbreak, and to enable immune-compromised transplant patients to continue to have their blood drawn, in late March 2020 the Company launched RemoTraC, a remote home-based blood draw solution using mobile phlebotomy for AlloSure and AlloMap surveillance tests, as well as for other standard monitoring tests. To date, more than 140 transplant centers can offer RemoTraC to their patients and over 2,000 kidney, heart, and lung transplant patients have enrolled. Based on existing and new relationships with partners, the Company has established a nationwide network of more than 10,000 mobile phlebotomists.

In April 2020, the Company partnered with an international consortium, which includes the National Institutes of Health (NIH) and the European Society of Transplantation (ESOT), to initiate the C19TxR registry to provide real-time analytics and insights on transplant patients with COVID-19.

The Company is maintaining its testing, manufacturing, and distribution facilities while implementing specific protocols to reduce contact among employees. In areas where COVID-19 impacts healthcare operations, the Company’s field-based sales and clinical support teams are supporting providers through telephone and online platforms. To reduce the risk to employees and their families from potential exposure to COVID-19, most of the Company’s employees have been required to work from home. The Company has also restricted non-essential business travel to protect the health and safety of its employees, patients, and customers.

Liquidity and Going Concern

The Company has incurred significant losses and negative cash flows from operations since its inception and had an accumulated deficit of $339.6 million at March 31, 2020. As of March 31, 2020, the Company had cash and cash equivalents of $32.2 million.

The Company may require additional financing in the future to fund working capital and the Company's future product developments. Additional financing might include issuance of equity securities, debt, or cash. There can be no assurance that the Company will be successful in acquiring additional funding at levels sufficient to fund its operations or on terms favorable to the Company. The Company believes its existing cash balance and expected revenues will be sufficient to meet its anticipated cash requirements for the next 12 months.

See Note 14, Subsequent Events, regarding certain liquidity events that occurred after March 31, 2020.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The significant accounting policies and estimates used in preparation of the unaudited condensed consolidated financial statements are described in the Company’s audited consolidated financial statements as of and for the year ended December 31,

2019, and the notes thereto, which are included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019. Material changes to the significant accounting policies previously disclosed in the Company's Annual Report on Form 10-K for the year ended December 31, 2019 are reflected below.

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP"), and follow the requirements of the Securities and Exchange Commission (the "SEC") for interim reporting. As permitted under those rules, certain notes and other financial information that are normally required by U.S. GAAP can be condensed or omitted. These unaudited condensed consolidated financial statements have been prepared on the same basis as the Company's annual consolidated financial statements and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments that are necessary for a fair statement of the Company's financial information. The condensed consolidated balance sheet as of December 31, 2019 has been derived from audited consolidated financial statements as of that date but does not include all of the financial information required by U.S. GAAP for complete financial statements. Operating results for the three months ended March 31, 2020 are not necessarily indicative of the results that may be expected for the year ending December 31, 2020.

Reclassifications and Changes in Presentation

Certain prior period amounts have been reclassified to conform with the current period presentation, including: (i) combined presentation of cost of testing services, cost of product, and cost of digital, and (ii) separate presentation of gross profit. These reclassifications had no effect on the reported results of operations.

Use of Estimates

The preparation of unaudited condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses in the unaudited condensed consolidated financial statements and accompanying notes. On an ongoing basis, management evaluates its estimates, including those related to transaction price estimates used for testing services revenue; standalone fair value of digital revenue performance obligations; accrued expenses for clinical studies; inventory valuation; the fair value of issued common stock warrants and embedded derivatives; the fair value of assets and liabilities acquired in a business combination or an assets acquisition (including identifiable intangible assets acquired); the fair value of contingent consideration recorded in connection with a business combination; the grant date fair value assumptions used to estimate stock-based compensation expense; income taxes; impairment of long-lived assets and indefinite-lived assets (including goodwill); and legal contingencies. Actual results could differ from those estimates.

Concentrations of Credit Risk and Other Risks and Uncertainties

For the three months ended March 31, 2020 and 2019, approximately 53% and 55% respectively, of total revenue was derived from Medicare. No other payers or customers represented more than 10% of total revenue for these periods.

As of March 31, 2020 and December 31, 2019, approximately 20% and 36%, respectively, of accounts receivable was due from Medicare. No other payer or customer represented more than 10% of accounts receivable on either March 31, 2020 or December 31, 2019.

Leases

Effective January 1, 2019, the Company adopted Accounting Standard Codification ("ASC") Topic 842, *Leases* using the optional transition method and applied the standard only to leases that existed at that date. The Company determines if an arrangement is or contains a lease at contract inception. A right-of-use ("ROU") asset, representing the underlying asset during the lease term, and a lease liability, representing the payment obligation arising from the lease, are recognized on the condensed consolidated balance sheet at lease commencement based on the present value of the payment obligation. For operating leases, expense is recognized on a straight-line basis over the lease term. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the ROU asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet.

The present value of lease payments is determined by using the interest rate implicit in the lease, if that rate is readily determinable; otherwise, the Company uses its incremental borrowing rate.

The Company's leases have remaining terms of 0.25 years to 8.92 years, some of which include options to extend the lease term.

Recent Accounting Pronouncements

In August 2018, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update ("ASU") No. 2018-15, *Intangibles – Goodwill and Other – Internal – Use Software (ASC Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"). ASU 2018-15 became effective for fiscal years beginning after December 15, 2019 and interim periods therein. Early adoption of ASU 2018-15 is permitted including adoption in any interim period. The Company adopted the standard on January 1, 2020. The adoption of the new standard did not have a material impact on the Company's condensed consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (ASC Topic 820)* ("ASU 2018-13"), which modifies, removes and adds certain disclosure requirements on fair value measurements based on the FASB Concepts Statement, Conceptual Framework for Financial Reporting—Chapter 8: Notes to Financial Statements. ASU 2018-13 is effective for the Company's interim and annual reporting periods during the year ending December 31, 2020, and all annual and interim reporting periods thereafter. The amendments on changes in unrealized gains and losses, the range and weighted-average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted upon issuance of ASU 2018-13. An entity is permitted to early adopt any removed or modified disclosures upon issuance of ASU 2018-13 and delay adoption of the additional disclosures until their effective date. The Company adopted the standard on January 1, 2020. The adoption of the new standard did not have a significant impact on the Company's condensed consolidated financial statements.

In March 2017, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments (ASC Topic 326)*("ASU 2016-13"), which amends the FASB's guidance on the impairment of financial instruments. The ASU adds to U.S. GAAP an impairment model known as the current expected credit loss ("CECL") model, which is based on expected losses rather than incurred losses. Under the new guidance, an entity recognizes as an allowance its estimate of lifetime expected credit losses, which the FASB believes will result in more timely recognition of such losses. The new CECL standard is effective for public companies for annual reporting periods beginning after December 15, 2019, and interim periods therein. ASU 2016-13 has a greater impact on banks. However, nonbank entities that have financial instruments or other assets such as trade receivables, contract assets, lease receivables, financial guarantees, loans and loan commitments, and held-to-maturity debt securities are subject to the CECL model. The Company adopted the standard on January 1, 2020. The adoption of the new standard did not have a significant impact on the Company's condensed consolidated financial statements.

3. NET LOSS PER SHARE

Basic and diluted net loss per share have been computed by dividing the net loss by the weighted-average number of common shares outstanding during the period, without consideration of common share equivalents as their effect would have been antidilutive.

The following tables set forth the computation of the Company's basic and diluted net loss per share (in thousands, except shares and per share data):

	Three Months Ended March 31,	
	2020	2019
Numerator:		
Net loss used to compute basic and diluted net loss per share	$ (5,823)	$ (7,531)
Denominator:		
Weighted-average shares used to compute basic and diluted net loss per share	42,823,427	41,611,399
Net loss per share:		
Basic and diluted	$ (0.14)	$ (0.18)

The following potentially dilutive securities have been excluded from diluted net loss per share as at March 31, 2020 and 2019 because their effect would be antidilutive:

	Three Months Ended March 31,	
	2020	2019
Shares of common stock subject to outstanding options	2,845,862	2,536,412
Shares of common stock subject to outstanding common stock warrants	49,006	530,627
Restricted stock units	1,502,012	1,034,484
Total common stock equivalents	4,396,880	4,101,523

4. FAIR VALUE MEASUREMENTS

The Company records its financial assets and liabilities at fair value. The carrying amounts of certain financial instruments of the Company, including cash and cash equivalents, prepaid expenses and other current assets, accounts payable and accrued liabilities, approximate fair value due to their relatively short maturities. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The accounting guidance establishes a three-tiered hierarchy, which prioritizes the inputs used in the valuation methodologies in measuring fair value as follows:

- Level 1: Inputs that include quoted prices in active markets for identical assets and 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 following table sets forth the Company's financial assets and liabilities measured at fair value on a recurring basis, as of March 31, 2020 and December 31, 2019 (in thousands):

	March 31, 2020			
	Fair Value Measured Using			
	(Level 1)	(Level 2)	(Level 3)	Total Balance
Assets				
Money market funds	$ 22,761	$ —	$ —	$ 22,761
Liabilities				
Common stock warrant liability	$ —	$ —	$ 1,017	$ 1,017

	December 31, 2019			
	Fair Value Measured Using			
	(Level 1)	(Level 2)	(Level 3)	Total Balance
Assets				
Money market funds	$ 29,177	$ —	$ —	$ 29,177
Liabilities				
Common stock warrant liability	$ —	$ —	$ 6,607	$ 6,607

The following table presents the issuances, exercises, changes in fair value and reclassifications of the Company's Level 3 financial instruments that are measured at fair value on a recurring basis (in thousands):

	(Level 3) Common Stock Warrant Liability
Balance as of December 31, 2019	$ 6,607
Exercise of warrants	(5,995)
Change in estimated fair value	405
Balance as of March 31, 2020	$ 1,017

The Company recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period. There were no transfers between Level 1, Level 2 and Level 3 categories during the periods presented.

In determining fair value, the Company uses various valuation approaches within the fair value measurement framework. The valuation methodologies used for the Company's instruments measured at fair value and their classification in the valuation hierarchy are summarized below:

- *Money market funds* – Investments in money market funds are classified within Level 1. Money market funds are valued at the closing price reported by the fund sponsor from an actively traded exchange. At March 31, 2020 and December 31, 2019, money market funds were included as cash and cash equivalents in the condensed consolidated balance sheets.
- *Common stock warrant liability* – The Company utilizes a binomial-lattice pricing model (the "Monte Carlo Simulation Model") that involves a market condition simulation to estimate the fair value of the warrants. The application of the Monte Carlo Simulation Model requires the use of a number of complex assumptions including the Company's stock price, expected life of the warrants, stock price volatility determined from the Company's historical stock prices and stock prices of peer companies in the diagnostics industry, and risk-free rates based on the implied yield currently available in the U.S. Treasury zero-coupon issues with a remaining term equal to the expected life of the warrants. Increases (decreases) in the assumptions discussed above result in a directionally similar impact to the fair value of the common stock warrant liability.

Common Stock Warrant Liability Valuation Assumptions:

	March 31, 2020	December 31, 2019
Private Placement Common Stock Warrant Liability		
Stock Price	$ 21.83	$ 21.57
Exercise Price	$ 1.12	$ 1.12
Remaining term (in years)	3.04	3.29
Volatility	83.00%	81.00%
Risk-free interest rate	0.29%	1.62%

5. BUSINESS COMBINATIONS

OttrCare

On May 7, 2019, the Company acquired 100% of the outstanding common stock of OttrCare for total consideration of $16.1 million. OttrCare was formed in 1993 and is a leading provider of organ transplant patient tracking software. The Ottr software provides comprehensive solutions for transplant patient management and enables integration with EMR systems providing patient surveillance management tools and outcomes data to transplant centers.

The Company accounted for the transaction as a business combination using the acquisition method of accounting. Results of operations of OttrCare have been included with the Company's results since the date of the acquisition. Acquisition-related costs of $0.6 million associated with the acquisition were expensed as incurred, and classified as part of general and administrative expenses in the condensed consolidated statement of operations.

Goodwill of $10.2 million arising from the acquisition primarily consists of synergies from integrating the Ottr software with transplant center EMR systems and the current testing solutions offered by the Company. Goodwill synergies also arise from acquired workforce know-how of transplant centers workflow. None of the goodwill is expected to be deductible for income tax purposes. All of the goodwill has been assigned to the Company's existing operating segment.

The following table summarizes the consideration paid for OttrCare and the provisional amounts of the assets acquired and liabilities assumed recognized at their estimated fair value at the acquisition date (in thousands):

	Total
Consideration	
Cash	$ 16,037
Accrued purchase consideration	111
Total consideration	$ 16,148
Recognized amounts of identifiable assets acquired and liabilities assumed	
Current assets	$ 1,525
Fixed assets	35
Identifiable intangible assets	6,600
Current liabilities	(2,210)
Total identifiable net assets acquired	5,950
Goodwill	10,198
Total consideration	$ 16,148

The allocation of the purchase price to assets acquired and liabilities assumed was based on the Company's best estimate of the fair value of such assets and liabilities as of the acquisition date.

The fair value of the acquired current liabilities as of June 30, 2019 included a preliminary deferred revenue balance of $2.3 million. During the three months ended September 30, 2019, the Company recorded an adjustment of $0.5 million to the initial valuation amount of deferred revenue, decreasing its balance to $1.8 million as of the acquisition date. This change is a result of updated assumptions and methodologies for acquired software maintenance contracts. As part of this adjustment, goodwill decreased by approximately $0.5 million.

At the acquisition date the Company estimated net deferred tax assets of approximately $0.2 million arising from temporary differences related to assets acquired and liabilities assumed. The Company estimated that OttrCare had net operating losses ("NOLs") carryforward of approximately $6.9 million, $4.3 million of which will begin to expire in 2033, and the remaining $2.6 million will be carried forward indefinitely. A full valuation allowance of $0.2 million was recognized as of the acquisition date resulting in no impact from deferred taxes to OttrCare's opening balance. An Internal Revenue Code Section 382 study for NOLs was finalized during the third quarter of 2019 and deferred taxes acquired are finalized as of December 31, 2019.

The following table summarizes the fair values of the intangible assets acquired as of the acquisition date ($ in thousands):

	Estimated Fair Value	Estimated Useful Lives (Years)
Customer relationships	$ 4,200	15
Developed technology	2,300	10
Trademark	100	2
Total	$ 6,600	

Customer relationships acquired by the Company represent the fair value of future projected revenue that is expected to be derived from sales of OttrCare's products to existing customers. The customer relationships' fair value has been estimated utilizing a multi-period excess earnings method under the income approach, which reflects the present value of the projected cash flows that are expected to be generated by the customer relationships, less charges representing the contribution of other assets to those cash flows that use projected cash flows with and without the intangible asset in place. The economic useful life was determined based on the distribution of the present value of the cash flows attributable to the intangible asset.

The acquired developed technology represents the fair value of OttrCare's proprietary software. The trademark acquired consists primarily of the OttrCare brand and markings. The fair value of both the developed technology and the trademark were determined using the relief-from-royalty method under the income approach. This method considers the value of the asset to be the value of the royalty payments from which the Company is relieved of due to its ownership of the asset. The royalty rates of 15.0% and 1.0% were used to estimate the fair value of the developed technology and the trademark, respectively.

The Company utilized a discount rate of 14.5% in estimating the fair value of these three intangible assets. As of March 31, 2020, OttrCare's digital revenue of $1.7 million was included in the Company's unaudited condensed consolidated statement of operations for the three months ended March 31, 2020. Unaudited supplemental pro forma information is not disclosed because it is considered immaterial.

XynManagement

On August 26, 2019, the Company acquired 100% of the outstanding common stock of XynManagement for total cash consideration of $2.0 million. As a result of the acquisition, the Company recognized contingent consideration of $1.4 million, including liability and equity components, goodwill of $1.7 million and intangible assets of $2.1 million. Goodwill synergies arise from acquired workforce know-how of transplant centers workflow. The goodwill for this acquisition is not deductible for income tax purposes. The contingent consideration relates to potential future cash payments upon reaching specified revenue and non-financial targets. The fair value of the contingent consideration was determined using the Monte Carlo Simulation Model.

6. GOODWILL AND INTANGIBLE ASSETS

Goodwill

Goodwill is recorded when the purchase price of an acquisition exceeds the fair value of the net tangible and identified intangible assets acquired.

Goodwill is tested annually for impairment at the reporting unit level during the fourth quarter or earlier upon the occurrence of certain events or substantive changes in circumstances. There were no indicators of impairment in the three months ended March 31, 2020. The following table presents details of the Company's goodwill for the three months ended March 31, 2020 (in thousands):

	Total
Balance as of January 1, 2020	$ 23,857
Goodwill acquired	—
Balance as of March 31, 2020	$ 23,857

Intangible Assets

The following tables present details of the Company's intangible assets as of March 31, 2020 ($ in thousands):

	March 31, 2020				
	Gross Carrying Amount	Accumulated Amortization	Foreign Currency Translation	Net Carrying Amount	Weighted Average Remaining Useful Life (In Years)
Intangible assets with finite lives:					
Acquired and developed technology	$ 29,106	$ (7,063)	$ (2,480)	$ 19,563	9.4
Customer relationships	18,168	(3,709)	(2,051)	12,408	11.6
Commercialization rights	8,079	(433)	—	7,646	9.4
Trademarks and tradenames	2,360	(663)	(305)	1,392	10.4
Total intangible assets with finite lives	$ 57,713	$ (11,868)	$ (4,836)	$ 41,009	
Acquired in-process technology	2,103	—	—	2,103	
Total intangible assets	$ 59,816	$ (11,868)	$ (4,836)	$ 43,112	

The following table presents details of the Company's intangible assets as of December 31, 2019 ($ in thousands):

	12/31/2019				
	Gross Carrying Amount	Accumulated Amortization	Foreign Currency Translation	Net Carrying Amount	Weighted Average Remaining Useful Life (In Years)
Intangible assets with finite lives:					
Acquired and developed technology	$ 29,106	$ (6,473)	$ (1,852)	$ 20,781	8.2
Customer relationships	18,168	(3,397)	(1,498)	13,273	10.1
Commercialization rights	8,079	(231)	—	7,848	9.7
Trademarks and tradenames	2,360	(618)	(206)	1,536	9.1
Total intangible assets with finite lives	$ 57,713	$ (10,719)	$ (3,556)	$ 43,438	
Acquired in-process technology	2,103	—	—	2,103	
Total intangible assets	$ 59,816	$ (10,719)	$ (3,556)	$ 45,541	

Acquisition of intangible assets

Cibiltech License and Commercialization Agreement

Effective April 30, 2019, the Company entered into a license and commercialization agreement (the “Cibiltech Agreement”) with Cibiltech SAS (“Cibiltech”). Cibiltech is a French company engaged in the development and support of predictive medicine and artificial intelligence software, services and technology, with an emphasis on personalized patient care and clinical research, including its proprietary software and service offering known in the U.S. as KidneyCare iBox for the predictive analysis of post-transplantation kidney allograft loss. The Cibiltech Agreement provides the Company with an irrevocable, non-transferable right to commercialize Cibiltech’s proprietary software in the field of transplantation in the U.S. for a period of ten years. The Company estimated the fair value of the acquired commercialization rights intangible asset based on expected contractual payments discounted to present value using a discount rate of 6%. In September 2019, the Company initiated the OKRA clinical study, which incorporates KidneyCare iBox. On such date, the Company commenced amortization of the acquired commercialization intangible asset.

On July 26, 2019, pursuant to the Cibiltech Agreement, the Company purchased $1.0 million of convertible preferred shares of Cibiltech, which is recorded in other assets. The Company does not have a significant influence on Cibiltech’s operations. The net carrying amount of intangible assets and the related amortization expense of intangible assets may change due to the effects of foreign currency fluctuations as a result of acquiring an entity with a functional currency other than the U.S. dollar.

Amortization expense was $1.1 million and $0.6 million for the three months ended March 31, 2020 and 2019, respectively. For the three months ended March 31, 2020, expenses of $0.8 million and $0.3 million were amortized to cost of revenue and sales and marketing expense, respectively. For the three months ended March 31, 2019, expenses of $0.3 million and $0.3 million were amortized to cost of product and sales and marketing expense, respectively.

The following table summarizes the Company’s estimated future amortization expense of intangible assets with finite lives as of March 31, 2020 (in thousands):

Years Ending December 31,	Cost of Revenue	Sales and Marketing	Total
Remainder of 2020	$ 2,341	$ 1,048	$ 3,389
2021	3,081	1,209	4,290
2022	3,081	1,192	4,273
2023	3,081	1,192	4,273
2024	3,081	1,192	4,273
Thereafter	12,547	7,964	20,511
Total future amortization expense	$ 27,212	$ 13,797	$ 41,009

7. BALANCE SHEET COMPONENTS

Inventory

Inventory consisted of the following (in thousands):

	March 31, 2020	December 31, 2019
Finished goods	$ 1,347	$ 1,236
Work in progress	1,685	1,189
Raw materials	3,915	3,589
Total inventory	$ 6,947	$ 6,014

Accrued and other liabilities

Accrued and other liabilities consisted of the following (in thousands):

	March 31, 2020	December 31, 2019
Deferred revenue	$ 3,482	$ 3,686
Clinical studies	4,084	3,068
Deferred payments for intangible assets	2,038	2,098
Short-term lease liability	1,570	3,017
Test sample processing fees	884	835
Accrued royalty	562	547
Contingent consideration	970	810
Professional fees	609	766
Other accrued expenses	1,377	2,011
Total accrued and other liabilities	$ 15,576	$ 16,838

8. COMMITMENTS AND CONTINGENCIES

Leases

The Company leases its operating and office facilities for various terms under long-term, non-cancelable operating lease agreements in South San Francisco, California; Brisbane, California; West Chester, Pennsylvania; Fremantle, Australia; and Stockholm, Sweden. The Company also leases equipment under finance lease agreements. The lease for the Company's facility in Vienna, Austria is on a month-to-month basis.

On January 2, 2020, the Company executed the second amendment to the operating lease agreement for the building located at Brisbane, California. The building is mainly utilized for laboratory operations and research and development. The lease will be extended for a period of eight years and two months starting on January 1, 2021. The Company has determined that the amendment constitutes a lease modification effective January 1, 2020.

The Company's facility leases expire at various dates through 2029. In the normal course of business, it is expected that these leases will be renewed or replaced by leases on other properties.

As of March 31, 2020, the carrying value of the ROU asset was $17.0 million. The related current and non-current liabilities as of March 31, 2020 were $1.6 million and $17.5 million, respectively. The current and non-current lease liabilities are included in accrued and other current liabilities and operating lease liability, less current portion, respectively, in the condensed consolidated balance sheets.

The following table summarizes the lease cost for the three months ended March 31, 2020 and 2019 (in thousands):

	Three Months Ended March 31,	
	2020	2019
Operating lease cost	$ 1,119	$ 435
Finance lease cost	53	56
Total lease cost	$ 1,172	$ 491

Finance lease cost includes interest from the lease liability and amortization of the ROU asset.

Other information:	
Weighted-average remaining lease term - Operating leases (in years)	7.07
Weighted-average remaining lease term - Finance leases (in years)	1.08
Weighted-average discount rate - Operating leases (%)	10.5%
Weighted-average discount rate - Finance leases (%)	6.5%

Rent expense under non-cancelable operating leases was $1.2 million and $0.4 million for the three months ended March 31, 2020 and 2019, respectively. Future minimum lease commitments under these operating and finance leases as of March 31, 2020, are as follows (in thousands):

Year Ending December 31,	Finance Leases	Operating Leases
Remainder of 2020	$ 157	$ 2,514
2021	71	3,511
2022	—	3,963
2023	—	2,811
2024	—	$ 2,909
Thereafter	—	$ 13,267
Total future minimum lease payments	$ 228	$ 28,975

The current portion of obligations under finance leases is included in accrued and other liabilities on the condensed consolidated balance sheets. The long-term portion is included in other liabilities on the condensed consolidated balance sheets.

Royalty Commitments

The Board of Trustees of the Leland Stanford Junior University (“Stanford”)

In June 2014, the Company entered into a license agreement with Stanford (the “Stanford License”), which granted the Company an exclusive license to a patent relating to the diagnosis of rejection in organ transplant recipients using dd-cfDNA. Under the terms of the Stanford License, the Company is required to pay an annual license maintenance fee, six milestone payments and royalties in the low single digits of net sales of products incorporating the licensed technology.

Illumina

On May 4, 2018, the Company entered into a license agreement with Illumina (the “License Agreement”). The License Agreement requires the Company to pay royalties in the mid-single to low-double digits on sales of products covered by the License Agreement.

Cibiltech Commitments

Pursuant to the Cibiltech Agreement, the Company will share an agreed-upon percentage of revenue with Cibiltech, if and when revenues are generated from KidneyCare iBox.

Other Commitments

Pursuant to the License Agreement with Illumina, the Company is obligated to complete timely development and commercialization of other NGS product lines for use in the field of bone marrow and solid organ transplantation diagnostic testing, and has agreed to minimum purchase commitments of finished products and raw materials from Illumina through 2023.

Litigation and Indemnification Obligations

In response to the Company's false advertising suit filed against Natera Inc. (“Natera”), on April 10, 2019, Natera filed a counterclaim against the Company on February 18, 2020, in the U.S. District Court for the District of Delaware alleging the Company made false and misleading claims about the performance capabilities of AlloSure. In addition, in response to the Company's patent infringement suit filed against Natera on March 26, 2019, Natera filed suit against the Company on January 13, 2020, in the U.S. District Court for the District of Delaware alleging, among other things, that AlloSure infringes Natera’s U.S. Patent 10,526,658. On March 25, 2020, Natera filed an amendment to the suit alleging, among other things, that AlloSure infringes Natera’s U.S. Patent 10,597,724. The suit seeks a judgment that the Company has infringed Natera’s patents, an order preliminarily and permanently enjoining the Company from any further infringement of such patent and unspecified damages. The Company intends to defend both of these matters vigorously, and believes that the Company has good and substantial

defenses to the claims alleged in the suits, but there is no guarantee that the Company will prevail. The Company has not recorded any liabilities for these suits.

From time to time, the Company may become involved in litigation and other legal actions. The Company estimates the range of liability related to any pending litigation where the amount and range of loss can be estimated. The Company records its best estimate of a loss when the loss is considered probable. Where a liability is probable and there is a range of estimated loss with no best estimate in the range, the Company records a charge equal to at least the minimum estimated liability for a loss contingency when both of the following conditions are met: (i) information available prior to issuance of the condensed consolidated financial statements indicates that it is probable that a liability had been incurred at the date of the condensed consolidated financial statements and (ii) the range of loss can be reasonably estimated.

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for indemnification for certain liabilities. The exposure under these agreements is unknown because it involves claims that may be made against the Company in the future but have not yet been made. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. However, the Company may record charges in the future as a result of these indemnification obligations. The Company also has indemnification obligations to its directors and executive officers for specified events or occurrences, subject to some limits, while they are serving at the Company's request in such capacities. There have been no claims to date and the Company believes the fair value of these indemnification agreements is minimal. Accordingly, the Company has not recorded any liabilities for these agreements as of March 31, 2020 and as of December 31, 2019.

9. 401(K) PLAN

The Company sponsors a 401(k) defined contribution plan covering all U.S. employees under the Internal Revenue Code of 1986, as amended. Employee contributions are voluntary and are determined on an individual basis subject to the maximum allowable under federal tax regulations. On January 1, 2018, the Company began to make contributions to the employee plan. The Company incurred expenses related to contributions to the plan of $0.3 million and $0.2 million for the three months ended March 31, 2020 and 2019, respectively.

10. WARRANTS

The Company has issued common stock warrants in connection with debt or equity financings to lenders, placement agents and investors. Issued warrants are considered standalone financial instruments and the terms of each warrant are analyzed for equity or liability classification in accordance with U.S. GAAP. Warrants that are classified as liabilities usually have various features that would require net-cash settlement by the Company. Warrants that are not liabilities, derivatives and/or meet the exception criteria are classified as equity. Warrants liabilities are remeasured at fair value at each period end with changes in fair value recorded in the condensed consolidated statements of operations until expired or exercised. Warrants that are classified as equity are valued at their relative fair value on the date of issuance, recorded in additional paid in capital and not remeasured.

In the three months ended March 31, 2020, warrants to purchase approximately 272,000 shares of common stock were exercised for cash payments of $0.3 million. During the three months ended March 31, 2020, a warrant to purchase approximately 34,000 shares of common stock was exercised on a cashless basis and approximately 24,000 shares were issued pursuant to the exercise.

In the three months ended March 31, 2019, warrants to purchase approximately 70,000 shares of common stock were exercised for cash proceeds of less than $0.1 million. The warrant liability was remeasured prior to the exercise and a change in fair value of $0.5 million was recorded in the condensed consolidated statement of operations. During the three months ended March 31, 2019 warrants to purchase approximately 56,000 shares of common stock were exercised on a cashless basis and approximately 25,000 shares were issued.

As of March 31, 2020, outstanding warrants to purchase common stock were:

	Classified as	Original Term	Exercise Price	Number of Shares Underlying Warrants
Original issue date:				
April 2016	Liability	7 years	$ 1.12	49,006
				49,006

11. STOCK INCENTIVE PLANS

Stock Options and Restricted Stock Units ("RSU")

The following table summarizes option and RSU activity under the Company's 2014 Equity Incentive Plan, 2016 Inducement Equity Incentive Plan, and 2019 Inducement Equity Incentive Plan, and related information:

	Shares Available for Grant	Stock Options Outstanding	Weighted-Average Exercise Price	Number of RSU Shares	Weighted-Average Grant Date Fair Value
Balance—December 31, 2019	504,775	2,609,848	$ 16.47	1,516,285	$ 22.51
Additional options authorized	1,699,549	—	—	—	—
Common stock awards for services	(3,091)	—	—	—	—
RSUs granted	(294,481)	—	—	294,481	23.98
RSUs vested	—	—	—	(267,029)	23.12
Options granted	(332,400)	334,900	24.00	—	—
Options exercised	—	(44,861)	3.46	—	—
Repurchase of common stock under employee incentive plans	67,477	—	—	—	—
RSUs forfeited	41,725	—	—	(41,725)	26.48
Options forfeited	43,762	(43,762)	25.75	—	—
Options expired	10,263	(10,263)	4.76	—	—
Balance—March 31, 2020	1,737,579	2,845,862	$ 17.46	1,502,012	$ 22.68

The total intrinsic value of options exercised was $0.7 million and $6.0 million in the three months ended March 31, 2020 and 2019, respectively.

As of March 31, 2020, the total intrinsic value of outstanding RSUs was approximately $32.4 million and there were $26.2 million of unrecognized compensation costs related to RSUs, which are expected to be recognized over a weighted-average period of 2.77 years.

Options outstanding that have vested and are expected to vest at March 31, 2020 are as follows:

	Number of Shares Issued (In thousands)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value (In thousands)
Vested	1,144	$ 10.72	6.61	$ 13,952
Expected to vest	1,576	21.96	8.90	5,311
Total	2,720			$ 19,263

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying stock options and the fair value of the Company's common stock at March 31, 2020 for stock options that were in-the-money.

The total fair value of options that vested during the three month period ended March 31, 2020 was $2.4 million. As of March 31, 2020, there were approximately $20.1 million of unrecognized compensation costs related to stock options, which are expected to be recognized over a weighted-average period of 3.04 years.

2014 Employee Stock Purchase Plan

The Company has an Employee Stock Purchase Plan (the "ESPP"), under which employees can purchase shares of its common stock based on a percentage of their compensation, but not greater than 15% of their respective earnings; provided, however, an eligible employee's right to purchase shares of the Company's common stock may not accrue at a rate which exceeds $25,000 of the fair market value of such shares for each calendar year in which such rights are outstanding. The ESPP has consecutive offering periods of approximately six months in length. The purchase price per share must be equal to the lower of 85% of the fair value of the common stock on the first day of the offering period or on the exercise date.

During the offering period in 2019 that ended on December 31, 2019, 38,147 shares were purchased for aggregate proceeds of $0.7 million from the issuance of shares, which occurred on January 2, 2020. During the offering period in 2019 that ended on June 30, 2019, 20,528 shares were purchased for aggregate proceeds of $0.4 million from the issuance of shares, which occurred on July 1, 2019.

Valuation Assumptions

The estimated fair values of employee stock options and ESPP shares were estimated using the Black-Scholes option pricing model based on the following weighted average assumptions:

	Three Months Ended March 31,	
	2020	2019
Employee stock options		
Expected term (in years)	6.0	6.0
Expected volatility	74.00%	70.33%
Risk-free interest rate	1.35%	2.57%
Expected dividend yield	—%	—%
Employee stock purchase plan		
Expected term (in years)	0.5	0.5
Expected volatility	62.56%	76.66%
Risk-free interest rate	1.57%	2.51%
Expected dividend yield	—%	—%

Risk-free Interest Rate**:** The Company based the risk-free interest rate over the expected term of the award based on the constant maturity rate of U.S. Treasury securities with similar maturities as of the date of grant.

Volatility: The Company used an average historical stock price volatility of its own stock and those comparable public companies that were deemed to be representative of future stock price trends.

Expected Term: The expected term represents the period for which the Company's stock-based compensation awards are expected to be outstanding and is based on analyzing the vesting and contractual terms of the awards and the holders' historical exercise patterns and termination behavior.

Expected Dividends: The Company has not paid and does not anticipate paying any dividends in the near future.

Stock-based Compensation Expense

The following table summarizes stock-based compensation expense relating to employee and nonemployee stock-based awards for the three months ended March 31, 2020 and 2019, included in the condensed consolidated statements of operations as follows (in thousands):

	Three Months Ended March 31,	
	2020	2019
Cost of revenue	$ 365	$ 776
Research and development	810	832
Sales and marketing	971	727
General and administrative	2,113	3,718
Total	$ 4,259	$ 6,053

No tax benefit was recognized related to share-based compensation expense since the Company has never reported taxable income and has established a full valuation allowance to offset all of the potential tax benefits associated with its deferred tax assets. In addition, no amounts of stock-based compensation expense were capitalized for the periods presented.

12. INCOME TAXES

The Company's effective tax rate may vary from the U.S. federal statutory tax rate due to the change in the mix of earnings in tax jurisdictions with different statutory rates, benefits related to tax credits and the tax impact of non-deductible expenses and other permanent differences between income before income taxes and taxable income. For the three months ended March 31, 2020 and 2019, the Company recorded an income tax benefit of $0.3 million and $0.6 million, respectively. The income tax benefit of $0.3 million is primarily attributable to the recognition of deferred tax assets from foreign losses and acquired deferred tax liabilities that generate a source of income for the recognition of deferred tax assets previously not recognized. The Company assesses the realizability of its net deferred tax assets by evaluating all available evidence, both positive and negative, including (i) cumulative results of operations in recent years, (ii) sources of recent losses, (iii) estimates of future taxable income, and (iv) the length of net operating loss carryforward periods. The Company believes that based on the history of its U.S. losses and other factors, the weight of available evidence indicates that it is more likely than not that it will not be able to

realize its U.S. net deferred tax assets. The Company has also placed a valuation allowance on the net deferred tax assets of its Australian operations. Accordingly, the U.S. and Australia net deferred tax assets have been offset by a full valuation allowance.

Starting in 2018, companies may be subject to global intangible low tax income ("GILTI"), which is a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations as well as the new base erosion anti-abuse tax ("BEAT") under the Tax Act. GILTI will be effectively taxed at a tax rate of 10.5%. Due to the complexity of the GILTI tax rules, companies are allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred or (2) factoring such amounts into a company's measurement of its deferred taxes. The Company has not made an election with respect to GILTI and does not believe that GILTI will have a material impact on the Company's 2020 taxes. The Company will continue to review the GILTI and BEAT rules to determine their applicability to the Company and the impact that the rules may have on the Company's results of operations and financial condition.

13. SEGMENT REPORTING

Operating segments are defined as components of an enterprise for which separate financial information is available that is evaluated regularly by the Company's Chief Operating Decision Maker ("CODM"), or decision making group, whose function is to allocate resources to and assess the performance of the operating segments. The Company has identified its Chief Executive Officer as the CODM. In determining its reportable segments, the Company considered the markets and types of customers served and the products or services provided in those markets. The Company operates in a single reportable segment.

Revenues by geographic regions are based upon the customers' ship-to address for product revenue and the region of testing for testing services revenue. The following table summarizes reportable revenues by geographic regions (in thousands):

	Three Months Ended March 31,	
	2020	2019
Testing services revenue		
United States	$ 31,329	$ 21,386
Rest of World	113	132
	$ 31,442	$ 21,518
Product revenue		
United States	$ 2,061	$ 1,832
Europe	2,002	1,943
Rest of World	632	658
	$ 4,695	$ 4,433
Digital and other revenue		
United States	$ 2,183	$ 22
Europe	30	9
Rest of World	30	—
	$ 2,243	$ 31
Total United States	$ 35,573	$ 23,240
Total Europe	$ 2,032	$ 1,952
Total Rest of World	$ 775	$ 790
Total	$ 38,380	$ 25,982

The following table summarizes long-lived assets, consisting of property and equipment, net, by geographic regions (in thousands):

	March 31, 2020	December 31, 2019
Long-lived assets:		
United States	$ 4,583	$ 3,346
Europe	406	509
Rest of World	512	575
Total	$ 5,501	$ 4,430

14. SUBSEQUENT EVENTS

Accelerated and Advance Payment Program for Medicare Providers

On March 27, 2020 the U.S. government enacted the Coronavirus Aid, Relief, and Economic Security (the "CARES Act"). Pursuant to the CARES Act, the Centers for Medicare & Medicaid Services ("CMS") expanded its current Accelerated and Advance Payment Program in order to increase cash flow to providers of services and suppliers impacted by the COVID-19 outbreak. An accelerated/advance payment is a payment intended to provide necessary funds when there is a disruption in claims submission and/or claims processing. CMS is authorized to provide accelerated or advance payments during the period of the public health emergency to any Medicare provider who submits a request to the appropriate Medicare Administrative Contractor, and meets the required qualifications. During April 2020, the Company received an advance payment from CMS of approximately $20.5 million.

The Company will continue to submit claims as usual after the issuance of the advance payment. The Company will receive full payments for its claims during the 120-day period from the date the advance payment was received. At the end of the 120-day period, the recoupment process will begin and every claim submitted by the Company will be offset to repay the advance payment. Thus, instead of receiving payment for newly submitted claims, the Company's outstanding advance payment balance will be reduced by the claim payment amount. The Company will have up to 210 days for the repayment to be completed.

At-the-Market Equity Offering Program

On August 31, 2018, the Company entered into a sales agreement (the "Sales Agreement") with Jefferies, LLC, ("Jefferies"), pursuant to which the Company may offer and sell, from time to time, through Jefferies, up to $50.0 million in shares of the Company's common stock, by any method permitted by law deemed to be an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended. During April 2020, the Company issued and sold 1,000,000 shares of the Company's common stock under the Sales Agreement. The shares were sold at an average price of $24.24 per share for aggregate net proceeds to the Company of approximately $23.5 million, after deducting sales commissions and offering costs payable by the Company.

Provider Relief Fund for Medicare Providers

Pursuant to the CARES Act, the U.S. Department of Health & Human Services will distribute an initial tranche of $30.0 billion in funds to healthcare providers that received Medicare fee-for-service ("FFS") reimbursements in 2019. These payments to healthcare providers are not loans and will not be required to be repaid. Providers will be distributed a portion of the initial $30.0 billion based on their share of total Medicare FFS reimbursements made by the U.S. in 2019. During April 2020, the Company received a payment of approximately $4.8 million, representing the Company's portion of the initial tranche of funds.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read together with the unaudited condensed consolidated financial statements and related notes included elsewhere in Item 1 of Part I of this Quarterly Report on Form 10-Q and with the audited consolidated financial statements and the related notes included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the Securities and Exchange Commission, or the SEC, on February 28, 2020.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements contained in this Quarterly Report on Form 10-Q other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, and our objectives for future operations, are forward-looking statements. The words "believe," "may," "will," "potentially," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect" and the negative and plural forms of these words and similar expressions are intended to identify forward-looking statements.

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

- the potential impact to our business, revenue and financial condition, including disruptions to our testing services, laboratories, clinical trials, supply chain and operations, due to the COVID-19 global pandemic;
- our ability to take advantage of opportunities under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, and the potential impact of the CARES Act on our business, results of operations, financial condition or liquidity;
- our ability to generate revenue and increase the commercial success of our current and future testing services, products and digital solutions;
- our ability to obtain, maintain and expand reimbursement coverage from payers for our current and other future testing services, if any;
- our plans and ability to continue updating our testing services, products and digital solutions to maintain our leading position in transplantations;
- the outcome or success of our clinical trial collaborations and registry studies; including Kidney Allograft Outcomes AlloSure Registry, or K-OAR, the Outcomes of KidneyCare™ on Renal Allografts registry study, or OKRA, and the Surveillance HeartCare Outcomes Registry, or SHORE;
- the favorable review of our testing services and product offerings, and our future solutions, if any, in peer-reviewed publications;
- our ability to obtain additional financing on terms favorable to us, or at all;
- our anticipated cash needs and our anticipated uses of our funds, including our estimates regarding operating expenses and capital requirements;
- anticipated trends and challenges in our business and the markets in which we operate;
- our dependence on certain of our suppliers, service providers and other distribution partners;
- disruptions to our business, including disruptions at our laboratories and manufacturing facilities;
- our ability to retain key members of our management team;
- our ability to make successful acquisitions or investments and to manage the integration of such acquisitions or investments;
- our ability to expand internationally;
- our compliance with federal, state and foreign regulatory requirements;
- our ability to protect and enforce our intellectual property rights, our strategies regarding filing additional patent applications to strengthen our intellectual property rights, and our ability to defend against intellectual property claims that may be brought against us;
- our ability to successfully assert, defend against or settle any litigation brought by or against us or other legal matters or disputes; and
- our ability to comply with the requirements of being a public company.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section entitled "Risk Factors" in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 28, 2020. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially and adversely from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this

report may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason after the date of this report to conform these statements to actual results or to changes in our expectations.

You should read this Quarterly Report on Form 10-Q and the documents that we reference in this Quarterly Report on Form 10-Q and have filed with the SEC as exhibits to this Quarterly Report on Form 10-Q with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect. We qualify all forward-looking statements by these cautionary statements.

Overview and Recent Highlights

We are a leading precision medicine company focused on the discovery, development and commercialization of clinically differentiated, high-value diagnostic solutions for transplant patients and caregivers. We offer testing services, products, and digital healthcare solutions along the pre- and post-transplant patient journey, and we are a leading provider of genomics-based information for transplant patients.

Highlights for the Three Months Ended March 31, 2020 and Recent Highlights

- Achieved total revenue of $38.4 million for the three months ended March 31, 2020, increasing 48% year-over-year
- Provided over 15,000 AlloSure Kidney and AlloMap Heart patient results
- Recorded seventh straight quarter of positive adjusted EBITDA
- Successfully introduced RemoTraC, a service to provide at-home blood draws for transplant patients

Due to COVID-19, quarantines, shelter-in-place and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur or could impact personnel at third-party suppliers in the United States and other countries, or the availability or cost of materials, there may be disruptions in our supply chain. Any manufacturing supply interruption of materials could adversely affect our ability to conduct ongoing and future research and testing activities.

In addition, our clinical trials may be affected by the COVID-19 outbreak. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 outbreak. Some patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, the ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19, may adversely impact our clinical trial operations.

Testing Services

Heart

AlloMap Heart is a gene expression test that helps clinicians monitor and identify heart transplant recipients with stable graft function who have a low probability of moderate-to-severe acute cellular rejection. Since 2008, we have sought to expand the adoption and utilization of our AlloMap Heart solution through ongoing studies to substantiate the clinical utility and actionability, secure positive reimbursement decisions from large private and public payers, develop and enhance our relationships with key members of the transplant community, including opinion leaders at major transplant centers, and explore opportunities and technologies for the development of additional solutions for post-transplant surveillance.

We believe the use of AlloMap Heart, in conjunction with other clinical indicators, can help healthcare providers and their patients better manage long-term care following a heart transplant, can improve patient care by helping healthcare providers avoid the use of unnecessary, invasive surveillance biopsies and may help to determine the appropriate dosage levels of immunosuppressants. In 2008, AlloMap Heart received 510(k) clearance from the U.S. Food and Drug Administration for marketing and sale as a test to aid in the identification of heart transplant recipients, who have a low probability of moderate/severe acute cellular rejection at the time of testing, in conjunction with standard clinical assessment.

AlloMap Heart has been a covered service for Medicare beneficiaries since January 1, 2006. The Medicare reimbursement rate for AlloMap Heart is currently $3,240. AlloMap Heart has also received positive coverage decisions for reimbursement from many of the largest U.S. private payers, including Aetna, Anthem, Cigna, Health Care Services Corporation, or HCSC, Humana, Kaiser Foundation Health Plan, Inc., and UnitedHealthcare.

We have also successfully completed a number of landmark clinical trials in the transplant field demonstrating the clinical utility of AlloMap Heart for surveillance of heart transplant recipients. We initially established the analytical and clinical validity of AlloMap Heart on the basis of our Cardiac Allograft Rejection Gene Expression Observational (Deng, M. et al., Am J Transplantation 2006), or CARGO, study, which was published in the American Journal of Transplantation. A subsequent clinical utility trial, Invasive Monitoring Attenuation through Gene Expression (Pham MX et al., N. Eng. J. Med., 2010), or IMAGE, published in The New England Journal of Medicine, demonstrated that clinical outcomes in recipients managed with AlloMap Heart surveillance were equivalent (non-inferior) to outcomes in recipients managed with biopsies. The results of our clinical trials have also been presented at major medical society congresses. AlloMap Heart is now recommended as part of the International Society for Heart and Lung Transplantation, or ISHLT, guidelines.

Kidney

AlloSure Kidney, our transplant surveillance solution, which was commercially launched in October 2017, is our donor-derived cell-free DNA, or dd-cfDNA, offering built on a Next Generation Sequencing, or NGS platform. In transplantation, 109 papers from 55 studies globally have shown the value of dd-cfDNA in the management of solid organ transplantation. AlloSure allows sequencing of DNA and RNA much more quickly than the previously used Sanger sequencing. AlloSure is able to discriminate dd-cfDNA from recipient-cell-free DNA, targeting polymorphisms between donor and recipient. This single-nucleotide polymorphism (SNPs) approach across all the somatic chromosomes is specifically designed for transplantation, allowing a scalable, high-quality test to differentiate dd-cfDNA.

AlloSure Kidney has received positive coverage decisions for reimbursement from Medicare. The Medicare reimbursement rate for AlloSure Kidney is $2,841. AlloSure Kidney has also received payment from private payers on a case-by-case basis, with the first private payer, BCBS of South Carolina, issuing a positive coverage decision in its October 2019 review.

Multiple studies have demonstrated that significant allograft injury can occur in the absence of changes in serum creatinine. Thus, clinicians have limited ability to detect injury early and intervene to prevent long term damage using this marker. While histologic analysis of the allograft biopsy specimen remains the standard method used to assess injury and differentiate rejection from other injury in kidney transplants, as an invasive test with complications, repetitive biopsies are not well tolerated. AlloSure provides a non-invasive test, assessing allograft injury that enables more frequent, quantitative and safer assessment of allograft rejection and injury status. Monitoring of graft injury through AlloSure allows clinicians to optimize allograft biopsies, identify allograft injury and guide immunosuppression management more accurately.

Since the analytical validation paper in the Journal of Molecular Diagnostics in 2016 before the commercial launch of AlloSure Kidney, an increasing body of evidence supports the use of AlloSure dd-cfDNA in the assessment and surveillance of kidney transplants. Bloom et al evaluated 102 kidney recipients and demonstrated that dd-cfDNA levels could discriminate accurately and non-invasively distinguish rejection from other types of graft injury. In contrast, serum creatinine has area under the curve (AUC) of 50%, showing no significant difference between patients with and without rejection. Multiple publications and abstracts have shown AlloSure's value in the management of BK viremia, showing its predictive ability in the formation of De-Novo donor specific antibodies, or DSAs, formation or worsening of proteinuria and that is predictive of estimated glomerular filtration rate decline. Most recently its utility in the assessment of T-cell mediated rejection (TCMR) 1A and borderline rejection has also been published in the American Journal of Transplantation (AJT).

The prospective multicenter trial: Kidney Allograft Outcomes AlloSure Kidney Registry, or the K-OAR study, is currently ongoing and has enrolled over 1,500 patients, with plans to survey patients with AlloSure for 3 years and provide further clinical utility of AlloSure Kidney in the surveillance of kidney transplant recipients.

HeartCare

HeartCare includes the gene expression profiling technology of AlloMap Heart with the dd-cfDNA analysis of AlloSure Heart in one surveillance solution. An approach to surveillance using HeartCare provides information from two complementary measures: (i) AlloMap Heart – a measure of immune activation, and (ii) AlloSure Heart – a measure of graft injury.

Clinical validation data from the Donor-Derived Cell-Free DNA-Outcomes AlloMap Registry (NCT02178943), or D-OAR, was published in American Journal of Transplant (AJT) in 2019. D-OAR was an observational, prospective, multicenter study to characterize the AlloSure-Heart dd-cfDNA in a routine, clinical surveillance setting with heart transplant recipients. The D-OAR study was designed to validate that plasma levels of AlloSure-Heart dd-cfDNA can discriminate acute rejection from no rejection, as determined by endomyocardial biopsy criteria.

HeartCare provides robust information about distinct biological processes, such as immune quiescence, active injury, Acute Cellular Rejection, or ACR, and Antibody Mediated Rejection. In September 2018, we initiated the SHORE study. SHORE is a prospective, multi-center, observational, registry of patients receiving HeartCare for surveillance. Patients enrolled in SHORE will be followed for 5 years with collection of clinical data and assessment of 5-year outcomes.

In August 2019, AlloSure Heart received a positive draft Local Coverage Determination for Medicare coverage. We have not yet made any applications to private payers for reimbursement coverage of AlloSure Heart.

KidneyCare

KidneyCare combines the dd-cfDNA analysis of AlloSure Kidney with the gene expression profiling technology of AlloMap Kidney and the predictive artificial intelligence technology of KidneyCare iBox in one surveillance solution. We have not yet made any applications to payers for reimbursement coverage of AlloMap Kidney or KidneyCare iBox.

In September 2019, we announced the enrollment of the first patient in the OKRA study, which is an extension of the K-OAR study. OKRA is a prospective, multi-center, observational registry of patients receiving KidneyCare for surveillance. Combined with K-OAR, 4,000 patients will be enrolled into the study.

Lung

In February 2019, AlloSure Lung became available for lung transplant patients through a compassionate use program while the test is undergoing further studies. AlloSure Lung applies proprietary NGS technology to measure dd-cfDNA from the donor lung in the recipient bloodstream to monitor graft injury. We have not yet made any applications to payers for reimbursement coverage of AlloSure Lung.

Products

We develop, manufacture, market and sell products that increase the chance of successful transplants by facilitating a better match between a solid organ or stem cell donor and a recipient, and help to provide post-transplant surveillance of these recipients.

QTYPE enables Human Leukocyte Antigen, or HLA typing at a low to intermediate resolution for samples that require a fast turn-around-time and uses real-time polymerase chain reaction, or PCR, methodology. Olerup SSP is used to type HLA alleles based on the sequence specific primer, or SSP, technology. Olerup SBT is a complete product range for sequence-based typing of HLA alleles.

On May 4, 2018, we entered into a license agreement, or the License Agreement with Illumina, Inc., or Illumina, which provides us with worldwide distribution, development and commercialization rights to Illumina's NGS product line for use in transplantation diagnostic testing.

On June 1, 2018, we became the exclusive worldwide distributor of Illumina's TruSight HLA product line. TruSight HLA is a high-resolution solution that uses NGS methodology. In addition, we were granted the exclusive right to develop and commercialize other NGS product lines in the field of bone marrow and solid organ transplantation on diagnostic testing. These NGS products include: AlloSeq Tx, a high-resolution HLA typing solution, AlloSeq cfDNA, our surveillance solution designed to measure dd-cfDNA in blood to detect active rejection in transplant recipients, and AlloSeq HCT, a NGS solution for chimerism testing for stem cell transplant recipients.

On September 12, 2019, we commercially launched AlloSeq cfDNA, our surveillance solution designed to measure dd-cfDNA in blood to detect active rejection in transplant recipients, and we received CE mark approval on January 10, 2020.

On September 20, 2019, we commercially launched AlloSeq Tx, the first of its kind NGS high-resolution HLA typing solution utilizing hybrid capture technology. This technology enables the most comprehensive sequencing, covering more of the HLA genes than current solutions and adding coverage of non-HLA genes that may impact transplant patient matching and management. AlloSeq Tx has simple NGS workflow, with a single tube for processing and steps to reduce errors.

Digital

In 2019, we began providing digital solutions to transplant centers following the acquisition of Ottr Complete Transplant Management, or OttrCare, and XynManagement, Inc., or XynManagement.

On May 7, 2019, we acquired 100% of the outstanding common stock of OttrCare. OttrCare was formed in 1993 and is a leading provider of transplant patient tracking software, or the Ottr software, which provides comprehensive solutions for transplant patient management. The Ottr software enables integration with electronic medical records, systems, including Cerner and Epic, providing patient surveillance management tools and outcomes data to transplant centers.

On August 26, 2019, we acquired 100% of the outstanding common stock of XynManagement. XynManagement provides two unique solutions, XynQAPI software, or XynQAPI, and Waitlist Management. XynQAPI simplifies transplant quality tracking and Scientific Registry of Transplant Recipients, or SRTR, reporting. Waitlist Management includes a team of transplant assistants who maintain regular contact with patients on the waitlist to help prepare for their transplant and maintain eligibility.

Financial Operations Overview

Revenue

We derive our revenue from testing services, products sales and digital and other revenues. Revenue is recorded considering a five-step revenue recognition 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.

Testing Services Revenue

Our testing services revenue is derived from AlloSure Kidney and AlloMap Heart tests, which represented 82% and 83% of our total revenues for the three months ended March 31, 2020 and 2019, respectively. Our testing services revenue depends on a number of factors, including (i) the number of tests performed; (ii) establishment of coverage policies by third-party insurers and government payers; (iii) our ability to collect from payers with whom we do not have positive coverage determination, which often requires that we pursue a case-by-case appeals process; (iv) our ability to recognize revenues on tests billed prior to the establishment of reimbursement policies, contracts or payment histories; (v) our ability to expand into markets outside of the United States; and (vi) how quickly we can successfully commercialize new product offerings.

We currently market testing services to healthcare providers through our direct sales force that targets transplant centers and their physicians, coordinators and nurse practitioners. The healthcare providers that order the tests and on whose behalf we provide our testing services are generally not responsible for the payment of these services. Amounts received by us vary from payer to payer based on each payer's internal coverage practices and policies. We generally bill third-party payers upon delivery of a test result report to the ordering physician. As such, we take the assignment of benefits and the risk of collection from the third-party payer and individual patients.

Product Revenue

Our product revenue is derived primarily from sales of Olerup SSP, QTYPE, Olerup SBT, TruSight and AlloSeq Tx products. Product revenue represented 12% and 17% of total revenue for the three months ended March 31, 2020 and 2019, respectively. We recognize product revenue from the sale of products to end-users, distributors and strategic partners when all revenue recognition criteria are satisfied. We generally have a contract or a purchase order from a customer with the specified required terms of order, including the number of products ordered. Transaction prices are determinable and products are delivered and risk of loss passed to the customer upon either shipping or delivery, as per the terms of the agreement. There are no further performance obligations related to a contract and revenue is recognized at the point of delivery consistent with the terms of the contract or purchase order.

Digital and Other Revenue

Our digital and other revenue is mainly derived from sales of our Ottr software and XynQAPI licenses and services and other licensing agreements. Digital and other revenue represented 6% and 0% of total revenue for the three months ended March 31, 2020 and 2019, respectively.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our unaudited condensed consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles. The preparation of these unaudited condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the unaudited condensed consolidated financial statements, as well as the reported revenue generated and expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the following critical accounting policies reflect the more significant estimates and assumptions used in the preparation of our financial statements. We believe the following critical accounting policies are affected by significant judgments and estimates used in the preparation of our unaudited condensed consolidated financial statements:

- Revenue recognition;
- Business combination;
- Acquired intangible assets;
- Impairment of goodwill, intangible assets and other long-lived assets; and
- Common stock warrant liability.

There were no material changes in the matters for which we make critical accounting estimates in the preparation of our unaudited condensed consolidated financial statements during the three months ended March 31, 2020 as compared to those disclosed in Management's Discussion and Analysis of Financial Condition and Results of Operations included in our annual report on Form 10-K for the year ended December 31, 2019, except that there is no derivative liability outstanding as of December 31, 2019 and March 31, 2020 and the determination of the estimated present value of lease payments using our incremental borrowing rate as discussed in Note 2, Summary of Significant Accounting Policies, in the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

Recently Issued Accounting Standards

Refer to Note 2, Summary of Significant Accounting Policies - Recent Accounting Pronouncements, to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for a description of recently issued accounting pronouncements, including the expected dates of adoption and estimated effects on our results of operations, financial position and cash flows.

Results of Operations

Comparison of the Three Months Ended March 31, 2020 and 2019

(In thousands)

	Three Months Ended March 31,		
	2020	2019	Change
Revenue:			
Testing services revenue	$ 31,442	$ 21,518	$ 9,924
Product revenue	4,695	4,433	262
Digital and other revenue	2,243	31	2,212
Total revenue	38,380	25,982	12,398
Cost of revenue	12,392	9,733	2,659
Gross profit	25,988	16,249	9,739
Operating expenses:			
Research and development	10,013	5,614	4,399
Sales and marketing	11,723	6,925	4,798
General and administrative	10,003	9,106	897
Total operating expenses	31,739	21,645	10,094
Loss from operations	(5,751)	(5,396)	(355)
Other income (expense):			
Interest income (expense), net	96	342	(246)
Change in estimated fair value of common stock warrant liability	(405)	(3,009)	2,604
Other expense, net	(63)	(74)	11
Total other income (expense)	(372)	(2,741)	2,369
Loss before income taxes	(6,123)	(8,137)	2,014
Income tax benefit	300	606	(306)
Net loss	$ (5,823)	$ (7,531)	$ 1,708

Testing Services Revenue

Testing services revenue increased by $9.9 million, or 46%, for the three months ended March 31, 2020 as compared to the same period in 2019. This increase is primarily due to an increase of more than 5,000 test results provided in the three months ended March 31, 2020, compared to the same period in 2019.

Product Revenue

Product revenue increased $0.3 million for the three months ended March 31, 2020, compared to the same period in 2019. This is primarily a result of the increase in sales of NGS HLA products.

Digital and Other Revenue

Digital and other revenue increased by $2.2 million for the three months ended March 31, 2020 compared to the same period in 2019, primarily due to the acquisition of OttrCare in May 2019 and XynManagement in August 2019.

Cost of Revenue and Gross Profit

Cost of revenue increased by approximately $2.7 million, or 27%, for the three months ended March 31, 2020, compared to the same period in 2019, primarily due to an increase in testing volume and the acquisitions of OttrCare in May 2019 and XynManagement in August 2019.

Gross profit increased by $9.7 million, or 60%, for the three months ended March 31, 2020 compared to the same period in 2019, primarily due to an increase in revenue and an improvement in gross profit margins resulting from efficiencies in testing services laboratory operations.

Research and Development

Research and development expenses increased by $4.4 million, or 78%, for the three months ended March 31, 2020, compared to the same period in 2019, primarily due to increased headcount and personnel-related costs of $2.2 million, a $1.1 million increase in external clinical studies expense and a $0.8 million increase in consulting and professional fees.

Sales and Marketing

Sales and marketing expenses increased by approximately $4.8 million, or 69%, for the three months ended March 31, 2020, compared to the same period in 2019, primarily due to increased headcount and personnel-related costs of $2.6 million, a $0.7 million increase in tradeshow and marketing costs, an increase in medical programs and sponsorship event costs of $0.7 million, and an increase in travel costs of $0.3 million.

General and Administrative

General and administrative expenses increased by $0.9 million, or 10%, for the three months ended March 31, 2020, compared to the same period in 2019. This increase was primarily due to system upgrades of $0.4 million and $0.5 million in legal fees and other expenses.

Change in Estimated Fair Value of Common Stock Warrant Liability

The change in estimated fair value of common stock warrant liability decreased from an expense of $3.0 million for the three months ended March 31, 2019 to an expense of $0.4 million for the three months ended March 31, 2020, resulting in a net change of $2.6 million, or 87%.

The $0.4 million expense in the three months ended March 31, 2020 reflects a change in the fair value of our common stock warrant liability and a charge for warrants exercised during the period. In the three months ended March 31, 2020, warrants to purchase approximately 272,000 shares of common stock with an average exercise price of $1.12 per share were exercised.

The $3.0 million expense in the three months ended March 31, 2019 reflects changes in the fair value of our common stock warrant liability and a charge for warrants exercised in the three month period ended March 31, 2019. In the three months ended March 31, 2019, we recorded a revaluation charge of $0.5 million on the 0.3 million common stock warrants outstanding at March 31, 2019. Warrants to purchase 70,000 shares of common stock with an average exercise price of $1.12 per share were exercised. The average price of our common stock at exercise was $35.50 per share, resulting in a charge of $2.5 million.

Cash Flows for the Three Months Ended March 31, 2020 and 2019

The following table summarizes the primary sources and uses of cash for the periods presented:

	Three Months Ended March 31,	
	2020	2019
	(in thousands)	
Net cash used in:		
Operating activities	$ (3,055)	$ (5,867)
Investing activities	(1,704)	(543)
Financing activities	(735)	(688)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(552)	(87)
Net decrease in cash, cash equivalents and restricted cash	$ (6,046)	$ (7,185)

Operating Activities

Net cash used in operating activities consists of net loss, adjusted for certain noncash items in the condensed consolidated statement of operations and changes in operating assets and liabilities.

Cash used in operating activities for the three months ended March 31, 2020 was $3.1 million. Our net loss of $5.8 million was our primary use of cash in operating activities and included a number of noncash items. Our noncash items included a $4.3 million stock-based compensation expense, a $0.4 million loss on the revaluation of common stock warrant liability to estimated fair value and $1.6 million of depreciation and amortization expense. Net operating assets decreased by $4.3 million.

Cash used in operating activities for the three months ended March 31, 2019 was $5.9 million. Our net loss of $7.5 million was our primary use of cash in operating activities and included a number of noncash items. Our noncash items included a $6.1 stock-based compensation expense, $3.0 million loss on the revaluation of common stock warrant and derivative liabilities to estimated fair value, $1.2 million of depreciation and amortization expense and $0.4 million of non-cash lease expense. Net operating assets decreased by $8.9 million.

Investing Activities

For the three months ended March 31, 2020 and 2019, net cash used in investing activities was $1.7 million and $0.5 million, respectively, and related to purchases of property and equipment.

Financing Activities

Net cash used in financing activities for the three months ended March 31, 2020 of $0.7 million was primarily related to repurchases of common stock under employee incentive plans of $1.5 million, partially offset by proceeds from issuances of common stock under our employee stock purchase plan of $0.4 million, proceeds from exercises of warrants of $0.3 million and proceeds from exercises of stock options of $0.2 million.

Net cash used in financing activities for the three months ended March 31, 2019 of $0.7 million was primarily related to repurchase of common stock under employee incentive plans of $2.4 million and contingent payments related to the acquisition of the business assets of Conexio Genomics Pty Ltd., of $0.1 million, partially offset by proceeds from exercise of stock options of $1.4 million, proceeds from issuances of common stock under our employee stock purchase plan of $0.3 million and proceeds from exercises of warrants of $0.1 million.

Liquidity and Capital Resources

We have incurred significant losses and negative cash flows from operations since our inception and had an accumulated deficit of $339.6 million at March 31, 2020. As of March 31, 2020, we had cash and cash equivalents of $32.2 million and no debt outstanding.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, a widespread pandemic could result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity.

Since March 31, 2020, and in response to the outbreak of the COVID-19 pandemic, we have increased our cash and cash equivalents by undertaking the following:

Accelerated and Advance Payment Program for Medicare Providers

On March 27, 2020 the U.S. government enacted the CARES Act. Pursuant to the CARES Act, the Centers for Medicare & Medicaid Services, or CMS, expanded its current Accelerated and Advance Payment Program in order to increase cash flow to

providers of services and suppliers impacted by the COVID-19 outbreak. An accelerated/advance payment is a payment intended to provide necessary funds when there is a disruption in claims submission and/or claims processing. CMS is authorized to provide accelerated or advance payments during the period of the public health emergency to any Medicare provider who submits a request to the appropriate Medicare Administrative Contractor and meets the required qualifications. During April 2020, we received an advance payment from CMS of approximately $20.5 million.

We will continue to submit claims as usual after the issuance of the advance payment. We will receive full payments for our claims during the 120-day period from the date the advance payment was received. At the end of the 120-day period, the recoupment process will begin and every claim submitted by us will be offset to repay the advance payment. Thus, instead of receiving payment for newly submitted claims, our outstanding advance payment balance will be reduced by the claim payment amount. We will have up to 210 days for the repayment to be completed.

At-the-Market Equity Offering

On August 31, 2018, we entered into a sales agreement, or the Sales Agreement, with Jefferies, LLC, as sales agent, or Jefferies, pursuant to which we may offer and sell, from time to time, through Jefferies, up to $50.0 million in shares of our common stock, by any method permitted by law deemed to be an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended. During April 2020, we issued and sold 1,000,000 shares of our common stock under the Sales Agreement. The shares were sold at an average price of $24.24 per share for aggregate net proceeds to us of approximately $23.5 million, after deducting sales commissions and offering costs payable by us.

Provider Relief Fund for Medicare Providers

Pursuant to the CARES Act, the U.S. Department of Health & Human Services will distribute an initial tranche of $30.0 billion in funds to healthcare providers that received Medicare fee-for-service, or FFS, reimbursements in 2019. These payments to healthcare providers are not loans and will not be required to be repaid. Providers will be distributed a portion of the initial $30.0 billion based on their share of total Medicare FFS reimbursements made by the U.S. in 2019. During April 2020, we received a payment of approximately $4.8 million, representing our portion of the initial tranche of funds.

Factors Affecting Our Performance

COVID-19 Outbreak

COVID-19 may impact personnel at third-party suppliers in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain. Any manufacturing supply interruption of materials could adversely affect our ability to conduct ongoing and future research and testing activities. Clinical trials, clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 outbreak. Some patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, the ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19, may adversely impact our clinical trial operations.

The Number of AlloSure Kidney and AlloMap Heart Tests We Receive and Report

The growth of our testing services business is tied to the number of AlloSure Kidney and AlloMap Heart patient samples we receive and patient results we report. We incur costs in connection with collecting and shipping all samples and a portion of the costs when we cannot ultimately issue a report. As a result, the number of patient samples received largely correlates directly to the number of patient results reported.

Reimbursement for AlloMap Heart

AlloMap Heart test volume and the corresponding reimbursement revenue has generally increased over time since the launch of AlloMap Heart, as Medicare provided reimbursement and payers adopt coverage policies and fewer payers consider AlloMap Heart to be experimental and investigational. The rate at which our tests are covered and reimbursed has, and is expected to continue to vary by payer. Revenue growth depends on our ability to maintain Medicare reimbursement, achieve broader reimbursement from third party payers and to expand the number of tests per patient and the base of healthcare providers.

The Protecting Access to Medicare Act of 2014, or PAMA, includes a substantial new payment system for clinical laboratory tests under the Clinical Laboratory Fee Schedule, or CLFS. Under PAMA, laboratories that receive the majority of their Medicare revenues from payments made under the CLFS would report initially and then on a subsequent three-year basis thereafter (or annually for advanced diagnostic laboratory tests, or ADLTs), private payer payment rates and volumes for their tests. The final PAMA ruling was issued June 17, 2016 indicating that data for reporting for the new PAMA process would begin in 2017 and the new market based rates took effect on January 1, 2018. Effective January 1, 2018, Medicare reimburses us $3,240 for AlloMap Heart testing of Medicare beneficiaries, an increase from the 2017 reimbursement rate of $2,841.

AlloMap Heart has also received positive coverage decisions for reimbursement from many of the largest U.S. private payers, including Aetna, Anthem, Cigna, HCSC, Humana, Kaiser Foundation Health Plan, Inc., and UnitedHealthcare.

Reimbursement for AlloSure Kidney

On September 26, 2017 we received notice that the Molecular Diagnostics Services, or MolDX, Program developed by Palmetto GBA had set AlloSure Kidney reimbursement at $2,841. Effective October 9, 2017, AlloSure Kidney was made available for commercial testing with Medicare coverage and reimbursement. We believe the use of AlloSure Kidney, in conjunction with other clinical indicators, can help healthcare providers and their patients better manage long-term care following a kidney transplant. In particular, we believe AlloSure Kidney can improve patient care by helping healthcare providers to reduce the use of invasive biopsies and determine the appropriate dosage levels of immunosuppressants.

Reimbursement for AlloSure Heart

On October 7, 2019, the MolDX Program released the draft Local Coverage Determination for AlloSure Cell-Free DNA Testing which added heart indication to the existing kidney indication for AlloSure coverage. The public comment period ended on November 21, 2019. If the proposed LCD is finalized, AlloSure Heart will be covered for Medicare beneficiaries when it is used in conjunction with AlloMap Heart.

Continued Growth of Product Sales

We develop, manufacture, market and sell products that increase the chance of successful transplants by facilitating a better match between a donor and a recipient of stem cells and solid organs.

QTYPE enables speed and precision in HLA typing at a low to intermediate resolution for samples that require a fast turn-around time and uses real-time PCR methodology. QTYPE received CE mark certification on April 10, 2018. Olerup SSP is used to type HLA alleles based on the SSP technology. Olerup SBT is a complete product range for sequence-based typing of HLA alleles.

On May 4, 2018, we entered into the License Agreement with Illumina, which provides us with worldwide distribution, development and commercialization rights to Illumina’s NGS product line for use in transplantation diagnostic testing. As a result, from June 1, 2018, we became the exclusive worldwide distributor of Illumina’s TruSight HLA product line. TruSight HLA is a high-resolution solution that uses NGS methodology. In addition, we were granted the exclusive right to develop and commercialize other NGS product lines for use in the field of bone marrow and solid organ transplantation diagnostic testing. These NGS products include: AlloSeq Tx, a high-resolution HLA typing solution, AlloSeq cfDNA, our surveillance solution designed to measure dd-cfDNA in blood to detect active rejection in transplant recipients, and AlloSeq HCT, a NGS solution for chimerism testing for stem cell transplant recipients.

On September 12, 2019, we commercially launched AlloSeq cfDNA, our surveillance solution designed to measure dd-cfDNA in blood to detect active rejection in transplant recipients, and we received CE mark approval on January 20, 2020.

On September 20, 2019, we commercially launched AlloSeq Tx, the first of its kind NGS high-resolution HLA typing solution utilizing hybrid capture technology. This technology enables the most comprehensive sequencing, covering more of the HLA genes than current solutions and adding coverage of non-HLA genes that may impact transplant patient matching and management. AlloSeq TX has the easiest NGS workflow, with a single tube for processing and steps to reduce errors.

Continued Growth of Digital Sales

The growth of our digital revenues is tied to the continued successful integration of our Ottr and XynQAPI software businesses, as well as continued support and maintenance of existing OttrCare and XynManagement customers. The Ottr software and XynQAPI are currently implemented in multiple locations in the U.S. The Ottr software implementation and XynQAPI implementation and support teams are based in Omaha, Nebraska.

Development of Additional Products

Our development pipeline includes other transplant diagnostic solutions to help clinicians and transplant centers make personalized treatment decisions throughout a transplant patient’s lifetime. We expect to invest in research and development in order to develop additional products. Our success in developing new products and services will be important in our efforts to grow our business by expanding the potential market for our products and diversifying our sources of revenue.

Timing of Research and Development Expenses

Our spending on research and development may vary substantially from quarter to quarter. We conduct clinical studies to validate our new products, as well as on-going clinical and outcome studies to further the published evidence to support our

commercialized tests. Spending on research and development for both experiments and studies may vary significantly by quarter depending on the timing of these various expenses.

Contractual Obligations

As of March 31, 2020, there have not been any other material changes, outside of the ordinary course of business in our outstanding contractual obligations from our significant contractual obligations as of December 31, 2019, as disclosed in the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Contractual Obligations" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 28, 2020.

Off-Balance Sheet Arrangements

As of March 31, 2020, we had no off-balance sheet arrangements as defined under Regulation S-K 303(a)(4) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the instructions thereto.

Foreign Operations

The accompanying unaudited condensed consolidated balance sheets contain certain recorded assets in foreign countries, namely Stockholm, Sweden, Vienna, Austria and Fremantle, Australia. Although these countries are considered economically stable and we have experienced no notable burden from foreign exchange transactions, export duties or government regulations, unanticipated events in foreign countries could have a material adverse effect on our operations.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We are exposed to market risks in the ordinary course of our business. We had cash and cash equivalents of $32.2 million and $38.2 million at March 31, 2020 and December 31, 2019, respectively, which consisted of bank deposits and money market funds. However, we have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates. A hypothetical 50 basis point increase or decrease in interest rates during any of the periods presented would have an approximate impact of less than $0.2 million on our condensed consolidated financial statements.

Foreign Currency Exchange Risk

We have operations in Sweden, Austria, Australia and sell to other countries throughout the world. As a result, we are subject to significant foreign currency risks, including transacting in foreign currencies, investment in a foreign entity, as well as assets and debts denominated in foreign currencies. Our testing services revenue is primarily denominated in U.S. dollars. Our product revenue is denominated primarily in U.S. dollars and the Euro. Consequently, our revenue denominated in foreign currency is subject to foreign currency exchange risk. A portion of our operating expenses are incurred outside of the U.S. and are denominated in Swedish Krona, the Euro, and the Australian Dollar, which are also subject to fluctuations due to changes in foreign currency exchange rates. An unfavorable 10% change in foreign currency exchange rates for our assets and liabilities denominated in foreign currencies at March 31, 2020, would have negatively impacted our financial results for the three months ended March 31, 2020 by less than $0.1 million and our product revenue by $0.3 million. Currently, we do not have any near-term plans to enter into a formal hedging program to mitigate the effects of foreign currency volatility. We will continue to reassess our approach to managing our risk relating to fluctuations in foreign currency exchange rates.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Management, including our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures, as such terms are defined in Rules 13a-15(b) and 15d-15(e) promulgated under the Exchange Act, as of March 31, 2020. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs. Based on such evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of March 31, 2020, our disclosure controls and procedures were effective at the reasonable assurance level and are effective to provide reasonable assurance that information required to be disclosed in the reports we file and submit under the Exchange Act, is (i) recorded, processed, summarized and reported as and when required and (ii) accumulated and

communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely discussion regarding required disclosure.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended March 31, 2020 that have materially affected or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

In response to our false advertising suit filed against Natera Inc., or Natera, on April 10, 2019, Natera filed a counterclaim against us on February 18, 2020, in the U.S. District Court for the District of Delaware alleging we made false and misleading claims about the performance capabilities of AlloSure. In addition, in response to our patent infringement suit filed against Natera on March 26, 2019, Natera filed suit against us on January 13, 2020, in the U.S. District Court for the District of Delaware alleging, among other things, that AlloSure infringes Natera's U.S. Patent 10,526,658. On March 25, 2020, Natera filed an amendment to the suit alleging, among other things, that AlloSure infringes Natera's U.S. Patent 10,597,724. The suit seeks a judgment that we have infringed Natera's patents, an order preliminarily and permanently enjoining us from any further infringement of such patent and unspecified damages. We intend to defend both of these matters vigorously, and believe we have good and substantial defenses to the claims alleged in the suits, but there is no guarantee that we will prevail.

From time to time, we may become subject to legal proceedings and claims that arise in the ordinary course of business. Although we do not believe that any matters presently pending will have a material adverse effect, individually or in the aggregate, on our financial position, results of operations or liquidity, legal matters and proceedings are inherently unpredictable and subject to significant uncertainties, some of which are beyond our control. As such, there can be no assurance that the final outcome of these matters will not materially and adversely affect our financial position, results of operations or liquidity.

ITEM 1A. RISK FACTORS

Our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 28, 2020, Part I –Item 1A, Risk Factors, describes important risk factors that could cause our business, financial condition, results of operations and growth prospects to differ materially from those indicated or suggested by forward-looking statements made in this Quarterly Report on Form 10-Q or presented elsewhere by management from time to time. There have been no material changes in the risk factors that appear in Part I - Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 28, 2020, or the Form 10-K, other than those listed below. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially and adversely affect our business.

Risks Related to Our Business

Our business may be adversely affected by the effects of health epidemics, including the recent coronavirus outbreak.

On January 30, 2020, the World Health Organization, or the WHO, announced a global health emergency because of a new strain of coronavirus originating in Wuhan, China, or the COVID-19 outbreak, and the risks to the international community as the virus spreads globally beyond its point of origin. In March 2020, the WHO classified the COVID-19 outbreak as a pandemic, based on the rapid increase in exposure globally. The full impact of the COVID-19 outbreak, including the impact associated with preventative and precautionary measures that we, other businesses and governments are taking, continues to evolve as of the date of this report. As such, it is uncertain as to the full magnitude that the pandemic will have on us, but the pandemic may materially affect our financial condition, liquidity and future results of operations.

Quarantines, shelter-in-place and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, related to COVID-19 or other infectious diseases could impact personnel at third-party suppliers in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain. Any manufacturing supply interruption of materials could adversely affect our ability to conduct ongoing and future research and testing activities.

In addition, our clinical trials may be affected by the COVID-19 outbreak. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 outbreak. Some patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, the ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19, may adversely impact our clinical trial operations.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, a widespread pandemic could result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

Management is actively monitoring the global situation on our financial condition, liquidity, operations, suppliers, industry and workforce. Given the daily evolution of the COVID-19 outbreak and the global responses to curb its spread, we are not able to estimate the effects of the COVID-19 outbreak on its results of operations, financial condition or liquidity for fiscal year 2020.

If we do not achieve our projected development goals in the time frames we announce and expect, the commercialization of additional diagnostic solutions by us may be delayed and, as a result, our business will suffer and our stock price may decline.

From time to time, we expect to estimate and publicly announce the anticipated timing of the accomplishment of various clinical and other product development goals. In addition, we have included a discussion of a number of anticipated targets in the Form 10-K. The actual timing of accomplishment of these targets could vary dramatically compared to our estimates, in some cases for reasons beyond our control, including the impact of the COVID-19 pandemic. We cannot be certain that we will meet our projected targets and if we do not meet these targets as publicly announced, the commercialization of our diagnostic solutions may be delayed or may not occur at all and, as a result, our business will suffer and our stock price may decline.

If our laboratory facility in the U.S. becomes inoperable, we will be unable to perform AlloSure Kidney, AlloMap Heart, and future testing solutions, if any, and our business will be harmed.

We perform all of our testing services for the U.S. in our laboratory located in Brisbane, California. We do not have redundant laboratory facilities. Brisbane, California is situated on or near earthquake fault lines. Our facility and the equipment we use to perform testing services would be costly to replace and could require substantial lead time to repair or replace, if damaged or destroyed. Our facilities may be harmed or rendered inoperable by natural or man-made disasters, including earthquakes, wildfires, flooding and power outages, which may render it difficult or impossible for us to perform our tests for some period of time. The inability to perform our tests may result in the loss of customers or harm our reputation, and we may be unable to regain those customers in the future. Although we possess insurance for damage to our property and the disruption of our business, we do not have earthquake insurance and thus coverage may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, if at all.

In order to establish a redundant laboratory facility, we would have to spend considerable time and money securing adequate space, constructing the facility, recruiting and training employees, and establishing the additional operational and administrative infrastructure necessary to support a second facility. Additionally, any new clinical laboratory facility opened by us in the U.S. would be required to be certified under the Clinical Laboratory Improvement Amendments of 1988, or CLIA, a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. We would also be required to secure and maintain state licenses required by several states, including California, Florida, Maryland, New York, Rhode Island and Pennsylvania, which can take a significant amount of time and result in delays in our ability to begin operations at that facility. If we failed to secure any such licenses, we would not be able to process samples from recipients in such states. We also expect that it would be difficult, time-consuming and costly to train, equip and use a third-party to perform tests on our behalf. We could only use another facility with the established state licensures and CLIA certification necessary to perform AlloSure Kidney, AlloMap Heart, or future solutions following validation and other required procedures. We cannot be certain that we would be able to find another CLIA-certified facility willing or able to adopt AlloSure Kidney, AlloMap Heart, or future solutions and comply with the required procedures, or that this laboratory would be willing or able to perform the tests for us on commercially reasonable terms.

In March 2020, the health officers of six San Francisco Bay Area counties, including San Mateo County where our laboratory is located, issued shelter-in-place orders, which (i) direct all individuals living in those counties to shelter at their places of residence (subject to limited exceptions), (ii) direct all businesses and governmental agencies to cease non-essential operations at physical locations in those counties, (iii) prohibit all non-essential gatherings of any number of individuals, and (iv) order cessation of all non-essential travel. The shelter-in-place orders took effect on mid-March 2020 and the shelter-in-place orders in the San Francisco Bay Area are scheduled to continue until at least May 3, 2020. However, such shelter-in-place orders may be extended to a later date. In addition, in mid-March 2020, the Governor of California and the State Public Health Officer and Director of the California Department of Public Health ordered all individuals living in the State of California to stay at their place of residence for an indefinite period of time (subject to certain exceptions to facilitate authorized necessary activities) to mitigate the impact of the COVID-19 pandemic. The executive order exempts certain individuals needed to maintain continuity of operations of critical infrastructure sectors as determined by the federal government. If the operations in our laboratory are deemed non-essential, or if sufficient numbers of our laboratory staff are infected with COVID-19 and are unable to perform their roles, we may not be able to perform our tests for the duration of any shelter-in-place order or while we have insufficient numbers of laboratory staff, either of which could negatively impact our business, operating results and financial condition.

Performance issues, service interruptions or price increases by our shipping carriers could adversely affect our business and harm our reputation and ability to provide our services on a timely basis.

Expedited, reliable shipping is essential to our operations. We rely heavily on providers of transport services for reliable and secure point-to-point transport of recipient samples to our laboratory and enhanced tracking of these recipient samples. Should a carrier encounter delivery performance issues such as loss, damage or destruction of a sample, it may be difficult to replace our patient samples in a timely manner and such occurrences may damage our reputation and lead to decreased demand for our services and increased cost and expense to our business. In addition, any significant increase in shipping rates could adversely affect our operating margins and results of operations. Similarly, strikes, severe weather, natural disasters or other service interruptions, such as the COVID-19 pandemic, affecting delivery services we use would adversely affect our ability to receive and process recipient samples on a timely basis.

The loss of key members of our senior management team or our inability to attract and retain highly skilled scientists, clinicians and laboratory and field personnel could adversely affect our business.

Our success depends largely on the skills, experience and performance of key members of our executive management team. The efforts of each of these persons will be critical to us as we continue to develop our technologies and testing processes. If we were to lose one or more of these key employees, including due to disease (such as COVID-19), disability or death, we may experience difficulties in competing effectively, developing our technologies and implementing our business strategies. We do not currently maintain “key person” insurance on any of our employees.

Our research and development programs and commercial laboratory operations depend on our ability to attract and retain highly skilled scientists and technicians, including geneticists, biostatisticians, engineers, licensed laboratory technicians and chemists. We may not be able to attract or retain qualified scientists and technicians in the future due to the intense competition for qualified personnel among life science businesses, particularly in the San Francisco Bay Area. We also face competition from universities, public and private research institutions and other organizations in recruiting and retaining highly qualified scientific personnel.

In addition, our success depends on our ability to attract and retain laboratory and field personnel with extensive experience in transplant recipient care and surveillance and close relationships with clinicians, pathologists and other hospital personnel. We may have difficulties locating, recruiting or retaining qualified salespeople, which could cause a delay or decline in the rate of adoption of AlloSure Kidney, AlloMap Heart, or our future solutions, if any. If we are not able to attract and retain the necessary personnel to accomplish our business objectives, we may experience constraints that will adversely affect our ability to support our discovery, development, verification and commercialization programs.

Risks Related to Our Common Stock

Our operating results may fluctuate, which could cause our stock price to decrease.

Fluctuations in our operating results may lead to fluctuations, including declines, in the share price for our common stock. In 2019, our closing stock price ranged from $19.24 to $40.08 per share, and during the first quarter of 2020, our closing stock price ranged from $13.94 to $28.25 per share. Our operating results and our share price may fluctuate from period to period due to a variety of factors, including:

- demand by clinicians and recipients for our current and future solutions, if any;
- coverage and reimbursement decisions by third-party payers and announcements of those decisions;
- clinical trial results and publication of results in peer-reviewed journals or the presentation at medical conferences;
- the inclusion or exclusion of our current and future solutions in large clinical trials conducted by others;
- new or less expensive tests and services or new technology introduced or offered by our competitors or us;
- the level of our development activity conducted for new solutions, and our success in commercializing these developments;
- our ability to efficiently integrate the business of new acquisitions;
- the level of our spending on test commercialization efforts, licensing and acquisition initiatives, clinical trials, and internal research and development;
- changes in the regulatory environment, including any announcement from the U.S. Food and Drug Administration regarding its decisions in regulating our activities;
- changes in recommendations of securities analysts or lack of analyst coverage;
- failure to meet analyst expectations regarding our operating results;
- additions or departures of key personnel;

- public health emergencies such as the COVID-19 pandemic; and
- general market conditions.

Variations in the timing of our future revenues and expenses could also cause significant fluctuations in our operating results from period to period and may result in unanticipated earning shortfalls or losses. In addition, national stock exchanges, and in particular the market for life science companies, have experienced significant price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Moreover, we may be subject to additional securities class action litigation as a result of volatility in the price of our common stock, which could result in substantial costs and diversion of management's attention and resources and could harm our stock price, business, prospects, results of operations and financial condition.

The market price of our common stock has been and will likely continue to be volatile, and you could lose all or part of your investment.

Our common stock is currently traded on the Nasdaq Global Market, but we can provide no assurances that there will be active trading on that market or on any other market in the future. If there is no active market or if the volume of trading is limited, holders of our common stock may have difficulty selling their shares. The market price of our common stock has been and may continue to be subject to wide fluctuations in response to various factors, some of which are beyond our control. In addition to the risk factors discussed here and the risk factors described in this Part II, Item 1A of this Quarterly Report on Form 10-Q and under Item "1A. Risk Factors" in the Form 10-K, factors that could cause fluctuations in the market price of our common stock include the following:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the market prices and trading volumes of life sciences stocks;
- changes in operating performance and stock market valuations of other life sciences companies generally, or those in our industry in particular;
- sales of shares of our common stock by us or our stockholders;
- entering into financing or other arrangements with rights or terms senior to the interests of common stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or failure to meet those projections;
- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements and filings with the Securities and Exchange Commission;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our operating results or fluctuations in our operating results;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any significant change in our management;
- public health emergencies, including the COVID-19 pandemic; and
- general economic conditions and slow or negative growth of our markets.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Issuer Purchases of Equity Securities

We satisfy certain U.S. federal and state tax withholding obligations due upon the vesting of restricted stock unit awards by automatically withholding from the shares being issued in connection with such award a number of shares of our common stock with an aggregate fair market value on the date of vesting equal to the minimum tax withholding obligations. The following table sets forth information with respect to shares of our common stock repurchased by us to satisfy certain tax withholding obligations during the three months ended March 31, 2020:

	(a) Total Number of Shares (or Units) Purchased		(b) Average Price Paid per Share (or Unit)
January 1, 2020 - January 31, 2020	20,047	(1)	$ 2.95
February 1, 2020 - February 29, 2020	47,328	(1)	6.44
March 1, 2020 - March 31, 2020	102	(1)	9.88
Total	67,477		—

(1) Represents shares of our common stock withheld from employees for the payment of taxes.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

Exhibit Number	
3.1(1)	Amended and Restated Certificate of Incorporation.
3.2(2)	Amended and Restated Bylaws.
4.1(3)	Form of Registrant's common stock certificate.
4.2(4)#	2014 Equity Incentive Plan, as amended.
4.(5)#	Form of Option Agreement under the 2014 Equity Incentive Plan for New Options.
4.4(6)#	2014 Employee Stock Purchase Plan and forms of agreements thereunder.
4.5(7)#	2016 Inducement Equity Incentive Plan.
4.6(8)	Form of Warrant.
4.7(9)#	CareDx, Inc. 2019 Inducement Equity Incentive Plan.
10.1*+	Second Amendment to Lease, dated January 2, 2020, by and between the Registrant and BMR-Bayshore Boulevard LP (formerly known as BMR-Bayshore Boulevard LLC), for office and laboratory space located at 3260 Bayshore Boulevard, Brisbane, California 94005.
10.2*+	Consent to Sub-Sublease Agreement, dated as of October 30, 2019, by and among AP3-SF2 CT South, LLC, SuccessFactors, Inc., Medeor Therapeutics, Inc. and CareDx, Inc. for office space located at One Tower Place, 9th Floor, South San Francisco, California 94080.
31.1*	Certification of Periodic Report by Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Periodic Report by Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of Chief Executive Officer and 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*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document
(1)	Incorporated by reference to Exhibit 3.1 to the Registrant's Form 10-Q filed with the Securities and Exchange Commission (the "SEC") on August 28, 2014.
(2)	Incorporated by reference to Exhibit 3.4 to the Registrant's Form 10-Q filed with the SEC on August 28, 2014.
(3)	Incorporated by reference to Exhibit 4.1 to the Registrant's Form 10-K filed with the SEC on March 31, 2015.
(4)	Incorporated by reference to Exhibit 4.4 to the Registrant's Form S-8 filed with the SEC on July 18, 2014.
(5)	Incorporated by reference to Exhibit 99(d)(3) to the Registrant's Form SC TO-I filed with the SEC on October 12, 2017.
(6)	Incorporated by reference to Exhibit 4.5 to the Registrant's Form S-8 filed with the SEC on July 18, 2014.
(7)	Incorporated by reference to Exhibit 4.1 to the Registrant's Form S-8 filed with the SEC on May 23, 2016.
(8)	Incorporated by reference to Exhibit 10.3 to the Registrant's Form 8-K filed with the SEC on April 14, 2016.
(9)	Incorporated by reference to Exhibit 10.1 to the Registrant's Form 8-K filed with the SEC on September 4, 2019.
#	Indicates management contract or compensatory plan or arrangement.
*	Filed herewith.

+	Non-material schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally copies of any of the omitted schedules and exhibits upon request by the SEC.
**	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 thereunto duly authorized.

CAREDX, INC.
(Registrant)

Date: April 30, 2020

By: /s/ PETER MAAG
Peter Maag
Chief Executive Officer
(Principal Executive Officer)

By: /s/ MICHAEL BELL
Michael Bell
Chief Financial Officer
(Principal Accounting and Financial Officer)

SECOND AMENDMENT TO LEASE

THIS SECOND AMENDMENT TO LEASE (this "Amendment") is entered into as of this 2nd day of January, 2020 (the "Amendment Execution Date"), by and between BMR-BAYSHORE BOULEVARD LP, a Delaware limited partnership ("Landlord," formerly known as BMR-Bayshore Boulevard LLC), and CAREDX, INC., a Delaware corporation (formerly known as XDx, Inc. (which was itself formerly known as Expression Diagnostics, Inc.) "Tenant").

RECITALS

A. WHEREAS, Landlord and Tenant are parties to that certain Lease dated as of April 27, 2006 (the "Original Lease"), as amended by that certain First Amendment to Lease dated as of November 10, 2010 (collectively, and as the same may have been further amended, amended and restated, supplemented or modified from time to time, the "Existing Lease"), whereby Tenant leases from Landlord certain premises consisting of approximately 46,034 square feet of Rentable Area (the "Premises") in the building located at 3260 Bayshore Boulevard in Brisbane, California (the "Building");

B. WHEREAS, Landlord and Tenant desire, subject to the terms and conditions set forth below, to provide for the extension of the Term of the Lease; and

C. WHEREAS, Landlord and Tenant desire to modify and amend the Existing Lease only in the respects and on the conditions hereinafter stated.

AGREEMENT

NOW, THEREFORE, Landlord and Tenant, in consideration of the mutual promises contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, agree as follows:

1. Definitions. For purposes of this Amendment, capitalized terms shall have the meanings ascribed to them in the Existing Lease unless otherwise defined herein. The Existing Lease, as amended by this Amendment, is referred to collectively herein as the "Lease." From and after the date hereof, the term "Lease," as used in the Existing Lease, shall mean the Existing Lease, as amended by this Amendment.

2. Operating Expenses.

a. Outstanding Operating Expense Amount. Within five (5) business days following the Amendment Execution Date, Tenant shall pay to Landlord an amount equal to Four Hundred Two Thousand Seventy-Eight and 88/100 Dollars ($402,078.88) (the "Outstanding Operating Expense Amount"). Tenant acknowledges and agrees that such Outstanding Operating Expense Amount is currently due and owing to Landlord under the Lease and Tenant has no defense, claim or action associated with the non-payment thereof. Notwithstanding any provision to the contrary contained in this Amendment, Tenant's failure to

timely pay the Outstanding Operating Expense Amount shall (at Landlord's sole option upon delivery of written notice to Tenant) void, nullify and deem the entirety of this Amendment of no force or effect.

b. Specific Operating Expenses. Effective retroactive to the date of the Original Lease, the following phrase contained in Section 7.1(b) of the Original Lease shall be deemed deleted and of no force or effect: "and costs incurred in connection with the sale, financing or refinancing of the Building or the Project." Tenant expressly acknowledges and agrees that, effective retroactive to the date of the Original Lease, Operating Expenses shall expressly include any and all personal property taxes and assessments imposed by any Governmental Authority (including, but not limited to, any and all such taxes and assessments attributable to any sale, financing, refinancing, or change in ownership of the Property, Building and/or Project).

3. Term Extension. The Term Expiration Date shall be extended such that the Lease shall end on February 28, 2029 ("New Expiration Date"), subject to extension or earlier termination of the Lease as provided in the Lease. The period from the date immediately following the current Term Expiration Date (*i.e*., January 1, 2021) through the New Expiration Date specified above, shall be referred to herein as the "Extension Term." Effective as of the Amendment Execution Date, the "Term Expiration Date" as used in the Lease shall mean the New Expiration Date.

4. Option to Extend Term. Landlord and Tenant hereby expressly acknowledge and agree that Article 42 of the Original Lease is hereby deleted in its entirety and is of no further force or effect. Pursuant to the terms, covenants and conditions of this Article 4, Tenant shall have the "Option" to extend the Term by five (5) years as to the entire Premises (and no less than the entire Premises) upon the following terms and conditions. Any extension of the Term pursuant to the Option shall be on all the same terms and conditions as the Lease, except as follows:

a. Basic Annual Rent during the Option term shall equal the then-current fair market value for comparable office and laboratory space in the Brisbane/South San Francisco market of comparable age, quality, level of finish and proximity to amenities and public transit, and containing the systems and improvements present in the Premises as of the date that Tenant gives Landlord written notice of Tenant's election to exercise the Option ("FMV"). Tenant may, no earlier than thirty (30) days prior to the first date on which Tenant may exercise its Option under this Section 4, request Landlord's estimate of the FMV for the Option term. Landlord shall, within fifteen (15) days after receipt of such request, give Tenant a written proposal of such FMV. If Tenant elects to exercise the Option, then Tenant shall, as provided in Section 4.3 below, provide Landlord with written notice no earlier than fifteen (15) months prior to the date the Extension Term is scheduled to expire. If Tenant gives written notice to exercise the Option, such notice shall specify whether Tenant accepts Landlord's proposed estimate of FMV. If Tenant does not accept the FMV, then the parties shall endeavor to agree upon the FMV, taking into account all relevant factors, including (a) the size of the Premises, (b) the length of the Option term, (c) rent in comparable buildings in the relevant market, including concessions

offered to new tenants, such as free rent, tenant improvement allowances and moving allowances, (d) Tenant's creditworthiness and (e) the quality and location of the Building and the Project. In the event that the parties are unable to agree upon the FMV within thirty (30) days after Tenant notifies Landlord that Tenant is exercising the Option, then either party may request that the same be determined as follows: a senior officer of a nationally recognized leasing brokerage firm with local knowledge of the Brisbane/South San Francisco laboratory/research and development leasing market (the "Baseball Arbitrator") shall be selected and paid for jointly by Landlord and Tenant. If Landlord and Tenant are unable to agree upon the Baseball Arbitrator, then the same shall be designated by the local chapter of the Judicial Arbitration and Mediation Services or any successor organization thereto (the "JAMS"). The Baseball Arbitrator selected by the parties or designated by JAMS shall (y) have at least ten (10) years' experience in the leasing of laboratory/research and development space in the Brisbane/South San Francisco market and (z) not have been employed or retained by either Landlord or Tenant or any affiliate of either for a period of at least ten (10) years prior to appointment pursuant hereto. Each of Landlord and Tenant shall submit to the Baseball Arbitrator and to the other party its determination of the FMV. The Baseball Arbitrator shall grant to Landlord and Tenant a hearing and the right to submit evidence. The Baseball Arbitrator shall determine which of the two (2) FMV determinations more closely represents the actual FMV. The arbitrator may not select any other FMV for the Premises other than one submitted by Landlord or Tenant. The FMV selected by the Baseball Arbitrator shall be binding upon Landlord and Tenant and shall serve as the basis for determination of Basic Annual Rent payable for the Option term. If, as of the commencement date of the Option term, the amount of Basic Annual Rent payable during the Option term shall not have been determined, then, pending such determination, Tenant shall pay Basic Annual Rent equal to the Basic Annual Rent payable with respect to the last year of the then-current Term. After the final determination of Basic Annual Rent payable for the Option term, the parties shall promptly execute a written amendment to the Lease specifying the amount of Basic Annual Rent to be paid during the Option term. Any failure of the parties to execute such amendment shall not affect the validity of the FMV determined pursuant to this Section.

b. The Option is not assignable separate and apart from the Lease.

c. The Option is conditional upon Tenant giving Landlord written notice of its election to exercise the Option at least twelve (12) months but no more than fifteen (15) months prior to the expiration of the Extension Term. Time shall be of the essence as to Tenant's exercise of the Option. Tenant assumes full responsibility for maintaining a record of the deadlines to exercise the Option. Tenant acknowledges that it would be inequitable to require Landlord to accept any exercise of the Option after the date provided for in this Section.

d. Notwithstanding anything contained in this Article to the contrary, Tenant shall not have the right to exercise the Option:

(i)During the time commencing from the date Landlord delivers to Tenant a written notice that Tenant is in default under any provisions of the Lease and continuing until Tenant has cured the specified default to Landlord's reasonable satisfaction; or

(ii)At any time after any Default as described in Article 24 of the Original Lease (provided, however, that, for purposes of this Section 4.4(b), Landlord shall not be required to provide Tenant with notice of such Default) and continuing until Tenant cures any such Default, if such Default is susceptible to being cured; or

(iii)In the event that Tenant has defaulted in the performance of its obligations under the Lease beyond the applicable notice and cure period two (2) or more times during the twelve (12)-month period immediately prior to the date that Tenant intends to exercise the Option, whether or not Tenant has cured such defaults.

e. The period of time within which Tenant may exercise the Option shall not be extended or enlarged by reason of Tenant's inability to exercise such Option because of the provisions of Section 4.4.

f. All of Tenant's rights under the provisions of the Option shall terminate and be of no further force or effect even after Tenant's due and timely exercise of the Option if, after such exercise, but prior to the commencement date of the new term, (a) Tenant fails to pay to Landlord a monetary obligation of Tenant for a period of twenty (20) days after written notice from Landlord to Tenant, (b) Tenant fails to commence to cure a default (other than a monetary default) within thirty (30) days after the date Landlord gives notice to Tenant of such default or (c) Tenant has defaulted under the Lease two (2) or more times and a service or late charge under Section 24.1 of the Original Lease has become payable for any such default, whether or not Tenant has cured such defaults.

5. Basic Annual Rent During Extension Term. Monthly installments of Basic Annual Rent for the Premises during the Extension Term shall be as follows:

Dates	**Square Feet of Rentable Area**	**Monthly Basic Annual Rent per Square Foot of Rentable Area◊**	**Monthly Installment of Basic Annual Rent**◊**
January 1, 2021 – December 31, 2021	46,034	$4.75 monthly	$218,661.50*
January 1, 2022 – December 31, 2022	46,034	$4.92 monthly	$226,314.65
January 1, 2023 – December 31, 2023	46,034	$5.09 monthly	$ 234,235.67
January 1, 2024 – December 31, 2024	46,034	$5.27 monthly	$242,433.91
January 1, 2025 – December 31, 2025	46,034	$5.45 monthly	$250,919.10
January 1, 2026 – December 31, 2026	46,034	$5.64 monthly	$259,701.27
January 1, 2027 – December 31, 2027	46,034	$5.84 monthly	$268,790.81
January 1, 2028 – December 31, 2028	46,034	$6.04 monthly	$278,198.49
January 1, 2029 – February 28, 2029	46,034	$6.25 monthly	$287,935.44

** Note: Subject to the Free Rent Period (as defined in Section 6.2).*

***Note: The amounts set forth in this table include the three and one-half percent (3½%) increases in Basic Annual Rent set forth in Section 6.1.*

◊ *Note: Subject to adjustment based on the amount of the Additional TI Allowance (as defined in Section 7.2 below) (if any) which Tenant elects to use pursuant to the terms of the Lease.*

6. Basic Annual Rent Adjustments; Free Basic Annual Rent Period.

a. Basic Annual Rent (including any increase to Basic Annual Rent arising from any disbursement of the Additional TI Allowance (as defined below) by Landlord in accordance with this Amendment) shall be subject to an annual upward adjustment of three and one-half percent (3½%) of the then-current Basic Annual Rent. The first such adjustment shall become effective commencing on January 1, 2022, and subsequent adjustments shall become effective on every successive annual anniversary for so long as the Lease continues in effect.

b. Notwithstanding anything to the contrary contained in the Lease, and so long as no Default by Tenant has occurred, Tenant shall not be required to pay Basic Annual Rent for the period commencing on January 1, 2021 (the "Extension Term Commencement Date") and expiring on February 28, 2021 (such period, the "Free Rent Period"); provided, however, that the total amount of Basic Annual Rent abated during the Free Rent Period shall not exceed Four Hundred Thirty-Seven Thousand Three Hundred Twenty-Three and 00/100 Dollars

($437,323.00) (the "Free Rent Cap"). The Free Rent Cap shall not be increased as a result of any increase in Basic Annual Rent arising from Landlord's disbursement of any Additional TI Allowance and, therefore, during the Free Rent Period Tenant shall be required to pay any Basic Annual Rent attributable to the Additional TI Allowance. During the Free Rent Period, Tenant shall continue to be responsible for the payment of all of Tenant's other Rent obligations under the Lease, including all Additional Rent such as Operating Expenses, the Property Management Fee and costs of utilities for the Premises. Upon the occurrence of any Default, the Free Rent Period shall immediately expire, and Tenant shall no longer be entitled to any further abatement of Basic Annual Rent pursuant to this Section. In the event of any Default that results in termination of the Lease, then, as part of the recovery to which Landlord is entitled pursuant to the Lease, and in addition to any other rights or remedies to which Landlord may be entitled pursuant to the Lease (including Article 24 of the Original Lease), at law or in equity, Landlord shall be entitled to the immediate recovery, as of the day immediately prior to such termination of the Lease, of the unamortized amount of Basic Annual Rent that Tenant would have paid had the Free Rent Period not been in effect.

7. Condition of Premises and TI Allowance.

a. Condition of Premises. Tenant acknowledges that (a) it is in possession of and is fully familiar with the condition of the Premises and, notwithstanding anything contained in the Lease to the contrary, agrees to take the same in its condition "as is" as of the first day of the Extension Term, and (b) Landlord shall have no obligation to alter, repair or otherwise prepare the Premises for Tenant's continued occupancy for the Extension Term or to pay for any improvements to the Premises, except with respect to payment of the Base TI Allowance (defined in Section 7.2 below) and, if properly requested by Tenant pursuant to the terms of this Amendment, the Additional TI Allowance (as defined in Section 7.2 below).

b. TI Allowance. Tenant shall cause the work (the "Tenant Improvements") described in the Work Letter attached hereto as Exhibit A (the "Work Letter") to be constructed in the Premises pursuant to the Work Letter at a cost to Landlord not to exceed (a) One Million One Hundred Fifty Thousand Eight Hundred Fifty and 00/100 Dollars ($1,150,850.00) (based upon Twenty-Five and 00/100 Dollars ($25.00) per square foot of Rentable Area) ("Base TI Allowance") plus (b) if properly requested by Tenant pursuant to this Section 7.2, Two Million Three Hundred One Thousand Seven Hundred and 00/100 Dollars ($2,301,700.00) (based upon Fifty and 00/100 Dollars ($50.00) per square foot of Rentable Area) ("Additional TI Allowance"), for a total of up to Three Million Four Hundred Fifty Two Thousand Five Hundred Fifty and 00/100 Dollars ($3,452,550.00) (based upon Seventy-Five and 00/100 Dollars ($75.00) per square foot of Rentable Area of the Premises). The Base TI Allowance, together with the Additional TI Allowance (if properly requested by Tenant pursuant to this Section 7.2) shall be referred to herein as the "TI Allowance." The TI Allowance may be applied to the costs of (a) construction (including, standard laboratory improvements; finishes; building fixtures; demolition, removal and related repairs of any furniture, fixtures and equipment remaining in the Premises as of the Amendment Execution Date (but only to the extent related to the construction of the new improvements forming part of the Tenant Improvements); installation costs for Tenant's electrical, telephone and data cabling and wiring, and related connection charges),

(b) project review by Landlord (which fee shall equal one and one-half percent (1½%) of the cost of the Tenant Improvements, including the Base TI Allowance and, if used by Tenant, the Additional TI Allowance), (c) commissioning of mechanical, electrical and plumbing systems by a licensed, qualified commissioning agent hired by Tenant, and review of such party's commissioning report by a licensed, qualified commissioning agent hired by Landlord, (d) space planning, architect, engineering and other related services performed by third parties unaffiliated with Tenant, (e) building permits and other taxes, fees, charges and levies by Governmental Authorities for permits or for inspections of the Tenant Improvements, (f) costs and expenses for labor and material, and (g) a project management fee for Tenant's construction manager; provided that, no more than four percent (4%) of the TI Allowance shall be applied to such project management fee. In no event shall the TI Allowance be used for (i) the cost of work that is not authorized by the Approved Plans (as defined in the Work Letter), (ii) payments to Tenant or any affiliates of Tenant, (iii) the purchase of any furniture, signage, personal property or other non-building system equipment, (iv) costs arising from any default of Tenant of its obligations under the Lease, (v) costs that are recoverable by Tenant from a third party (e.g. insurers, warrantors or tortfeasors), or (vi) as a credit against any Rent amounts payable under the Lease. Landlord shall not be obligated to expend any portion of the Additional TI Allowance(s) until Landlord shall have received from Tenant a letter in the form attached as Exhibit B hereto executed by an authorized officer of Tenant with respect to the Additional TI Allowance.

c. Deadline. Tenant shall have until the date that is twenty-four (24) months following the Amendment Execution Date (the "TI Deadline"), to submit Fund Requests (as defined in the Work Letter) to Landlord for disbursement of the unused portion of the TI Allowance, after which date Landlord's obligation to fund any such costs for which Tenant has not submitted a Fund Request to Landlord shall expire. Commencing on the Extension Term Commencement Date, the initial monthly Basic Annual Rent rate (per square foot of Rentable Area per month) for the Premises shall be increased by One and Four-Tenths Cent ($0.014) for each dollar per square foot of the Premises (or portion thereof) of Additional TI Allowance disbursed by Landlord in accordance with Section 7.2 above. The amount by which each monthly installment of Basic Annual Rent shall be increased shall be determined (and monthly Basic Annual Rent shall be increased accordingly) as of the Extension Term Commencement Date and, if such determination does not reflect use by Tenant of all or any portion of the Additional TI Allowance, the monthly Basic Annual Rent shall be determined again as of the TI Deadline, with Tenant paying (on the next succeeding day that monthly Basic Annual Rent is due under the Lease (the "TI True-Up Date")) any underpayment of the further adjusted monthly Basic Annual Rent for the period beginning on the Extension Term Commencement Date and ending on the TI True-Up Date. Notwithstanding anything to the contrary contained herein, the portion of monthly Basic Annual Rent payable that is attributable to any Additional TI Allowance shall not be abated during the Free Rent Period, and shall be subject to the annual increases set forth above.

8. Right of First Refusal. Landlord and Tenant hereby expressly acknowledge and agree that Article 43 of the Original Lease and Section 7 of the First Amendment are hereby deleted in their entirety and are of no further force or effect. Subject to any and all rights of Maverick Therapeutics, Inc., a Delaware corporation (and its successors and assigns) with

respect to the Available ROFR Premises (as defined below), Tenant shall, for the thirty-six (36) month period commencing on the Amendment Execution Date, have a right of first refusal ("ROFR") as to any rentable premises in the Building for which Landlord is seeking a tenant ("Available ROFR Premises"); provided, however, that in no event shall Landlord be required to lease any Available ROFR Premises to Tenant for any period past the date on which the Lease expires or is terminated pursuant to its terms. To the extent that Landlord renews or extends a then-existing lease with any then-existing tenant or subtenant of any space, or enters into a new lease with such then-existing tenant or subtenant for the same premises, the affected space shall not be deemed to be Available ROFR Premises. In the event Landlord receives from a third party a bona fide offer to lease Available ROFR Premises, Landlord shall provide written notice thereof to Tenant (the "Notice of Offer"), specifying the terms and conditions under which Landlord is prepared to lease the Available ROFR Premises to such third party.

a. Within five (5) business days following its receipt of a Notice of Offer, Tenant shall advise Landlord in writing whether Tenant elects to lease all (not just a portion) of the Available ROFR Premises on the terms and conditions set forth in the Notice of Offer. If Tenant fails to notify Landlord of Tenant's election within such five (5) business day period, then Tenant shall be deemed to have elected not to lease the Available ROFR Premises.

b. If Tenant timely notifies Landlord that Tenant elects to lease the Available ROFR Premises on the terms and conditions set forth in the Notice of Offer, then Landlord shall lease the Available ROFR Premises to Tenant upon the terms and conditions set forth in the Notice of Offer.

c. If Tenant notifies Landlord that Tenant elects not to lease the Available ROFR Premises on the terms and conditions set forth in the Notice of Offer, or if Tenant fails to notify Landlord of Tenant's election within the five (5) business day period described above, then Landlord shall have the right to consummate the lease of the Available ROFR Premises on substantially the same terms as set forth in the Notice of Offer following Tenant's election (or deemed election) not to lease the Available ROFR Premises. Notwithstanding the foregoing, if (i) Tenant does not exercise its ROFR with respect to the Available ROFR Premises set forth in the Notice of Offer, and (ii) Landlord does not enter into a lease for such Available ROFR Premises within a period of nine (9) months following the date of Landlord's Notice of Offer, Landlord's obligations under this Section 8, in the event it receives a bona fide offer to lease Available ROFR Premises following the expiration of such nine (9) month period, shall again become effective (subject to, and to the extent provided by, the terms and conditions of this Section 8).

d. Notwithstanding anything in this Article to the contrary, Tenant shall not exercise the ROFR during such period of time that Tenant is in default under any provision of the Lease (beyond the applicable notice and cure period). Any attempted exercise of the ROFR during a period of time in which Tenant is so in default (beyond the applicable notice and cure period) shall be void and of no effect. In addition, Tenant shall not be entitled to exercise the ROFR if Landlord has given Tenant two (2) or more notices of default under the Lease, whether

or not the defaults are cured, during the twelve (12) month period prior to the date on which Tenant seeks to exercise the ROFR.

e. Notwithstanding anything in the Lease to the contrary, Tenant shall not assign or transfer the ROFR, either separately or in conjunction with an assignment or transfer of Tenant's interest in the Lease, without Landlord's prior written consent, which consent Landlord may withhold in its sole and absolute discretion; provided, however, that Landlord's consent shall not be required for Tenant's assignment of the ROFR in connection with an Allowable Transfer as permitted under Section 25.1 of the Original Lease.

f. If Tenant exercises the ROFR, Landlord does not guarantee that the Available ROFR Premises will be available on the anticipated commencement date for the Lease as to such premises due to a holdover by the then-existing occupants of the Available ROFR Premises or for any other reason beyond Landlord's reasonable control.

g. Notwithstanding anything in the Lease to the contrary, the ROFR shall expire thirty-six (36) months following the Amendment Execution Date.

9. List of Landlord Parties/Additional Insureds. The first sentence of Section 21.4 of the Original Lease is hereby amended and restated in its entirety as follows: "The insurance required to be purchased and maintained by Tenant pursuant to the Lease shall name Landlord and BioMed Realty, L.P. and their respective officers, employees, directors, representatives, agents, general partners, members, subsidiaries, affiliates and Lenders (collectively with Landlord, the "Landlord Parties") as additional insureds." In addition, Tenant shall require its contractors and subcontractors performing work on the Premises to name the Landlord Parties as additional insureds on their respective insurance policies.

10. Broker. Tenant represents and warrants that it has not dealt with any broker or agent in the negotiation for or the obtaining of this Amendment, other than Cresa ("Broker"), and agrees to reimburse, indemnify, save, defend (at Landlord's option and with counsel reasonably acceptable to Landlord, at Tenant's sole cost and expense) and hold harmless the Landlord and its affiliates, employees, agents and contractors; and any Lender for, from and against any and all cost or liability for compensation claimed by any such broker or agent, other than Broker, employed or engaged by it or claiming to have been employed or engaged by it.

11. CASp. The Premises have not undergone inspection by a Certified Access Specialist ("CASp," as defined in California Civil Code Section 55.52). Even if not required by California law, the Premises may be inspected by a CASp to determine whether the Premises comply with the ADA, and Landlord may not prohibit a CASp performing such an inspection. If Tenant requests that such an inspection take place, Landlord and Tenant shall agree on the time and manner of the inspection, as well as which party will pay the cost of the inspection and the cost to remedy any defects identified by the CASp. A Certified Access Specialist can inspect the Premises and determine whether the Premises comply with all of the applicable construction-related accessibility standards under State law. Although State law does not require a Certified Access Specialist inspection of the Premises, Landlord may not prohibit Tenant from obtaining a Certified Access Specialist inspection of the Premises for the occupancy or potential occupancy

of Tenant, if requested by Tenant. Landlord and Tenant shall agree on the arrangements for the time and manner of the Certified Access Specialist inspection, the payment of the fee for the Certified Access Specialist inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the Premises.

12. Utilities Invoices. For any utilities serving the Premises for which Tenant is billed directly by such utility provider, Tenant agrees to furnish to Landlord (a) any invoices or statements for such utilities within thirty (30) days after Tenant's receipt thereof, (b) within thirty (30) days after Landlord's request, any other utility usage information reasonably requested by Landlord, and (c) within thirty (30) days after each calendar year during the Term, authorization to allow Landlord to access Tenant's usage information necessary for Landlord to complete an ENERGY STAR® Statement of Performance (or similar comprehensive utility usage report (e.g., related to Labs 21), if requested by Landlord) and any other information reasonably requested by Landlord for the immediately preceding year; and Tenant shall comply with any other energy usage or consumption requirements required by Applicable Laws. Tenant shall retain records of utility usage at the Premises, including invoices and statements from the utility provider, for at least sixty (60) months, or such other period of time as may be requested by Landlord. Tenant acknowledges that any utility information for the Premises, the Building and the Project may be shared with third parties, including Landlord's consultants and Governmental Authorities. In the event that Tenant fails to comply with this Section, Tenant hereby authorizes Landlord to collect utility usage information directly from the applicable utility providers. In addition to the foregoing, Tenant shall comply with all Applicable Laws related to the disclosure and tracking of energy consumption at the Premises. The provisions of this Section shall survive the expiration or earlier termination of the Lease.

13. No Default. Tenant represents, warrants and covenants that, to the best of Tenant's knowledge, Landlord and Tenant are not in default of any of their respective obligations under the Existing Lease and no event has occurred that, with the passage of time or the giving of notice (or both) would constitute a default by either Landlord or Tenant thereunder.

14. Effect of Amendment. Except as modified by this Amendment, the Existing Lease and all the covenants, agreements, terms, provisions and conditions thereof shall remain in full force and effect and are hereby ratified and affirmed. In the event of any conflict between the terms contained in this Amendment and the Existing Lease, the terms herein contained shall supersede and control the obligations and liabilities of the parties.

15. Successors and Assigns. Each of the covenants, conditions and agreements contained in this Amendment shall inure to the benefit of and shall apply to and be binding upon the parties hereto and their respective heirs, legatees, devisees, executors, administrators and permitted successors and assigns and sublessees. Nothing in this section shall in any way alter the provisions of the Lease restricting assignment or subletting.

16. Miscellaneous. This Amendment becomes effective only upon execution and delivery hereof by Landlord and Tenant. The captions of the paragraphs and subparagraphs in this Amendment are inserted and included solely for convenience and shall not be considered or given any effect in construing the provisions hereof. All exhibits hereto are incorporated herein

by reference. Submission of this instrument for examination or signature by Tenant does not constitute a reservation of or option for a lease, and shall not be effective as a lease, lease amendment or otherwise until execution by and delivery to both Landlord and Tenant.

17. Authority. Tenant guarantees, warrants and represents that the individual or individuals signing this Amendment have the power, authority and legal capacity to sign this Amendment on behalf of and to bind all entities, corporations, partnerships, limited liability companies, joint venturers or other organizations and entities on whose behalf such individual or individuals have signed.

18. Counterparts: Facsimile and PDF Signatures. This Amendment may be executed in one or more counterparts, each of which, when taken together, shall constitute one and the same document. A facsimile or portable document format (PDF) signature on this Amendment shall be equivalent to, and have the same force and effect as, an original signature.

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IN WITNESS WHEREOF, Landlord and Tenant have executed this Work Letter to be effective on the date first above written.

LANDLORD:

BMR-BAYSHORE BOULEVARD LP,a Delaware limited partnership

By: /s/ Kevin M. Simonsen Name: Kevin M. Simonsen Title: Sr. VP, General Counsel & Secretary

TENANT:

CAREDX, INC.,a Delaware corporation

By: /s/ Peter Maag Name: Peter Maag Title: CEO

EXHIBIT AWORK LETTER

This Work Letter (this "Work Letter") is made and entered into as of the 2nd day of January, 2020, by and between BMR-BAYSHORE BOULEVARD LP, a Delaware limited partnership ("Landlord," formerly known as BMR-Bayshore Boulevard LLC), and CAREDX, INC., a Delaware corporation (formerly known as XDx, Inc. (which was itself formerly known as Expression Diagnostics, Inc.) "Tenant"), and is attached to and made a part of that certain Second Amendment to Lease dated of even date herewith (as the same may be amended, amended and restated, supplemented or otherwise modified from time to time, the "Lease"), by and between Landlord and Tenant for the Premises located at 3260 Bayshore Boulevard in Brisbane, California. All capitalized terms used but not otherwise defined herein shall have the meanings given them in the Lease.

1. General Requirements.

a. Authorized Representatives.

i.Landlord designates, as Landlord's authorized representative ("Landlord's Authorized Representative"), (i) John Bochman as the person authorized to initial plans, drawings, approvals and to sign change orders pursuant to this Work Letter and (ii) an officer of Landlord as the person authorized to sign any amendments to this Work Letter or the Lease. Tenant shall not be obligated to respond to or act upon any such item until such item has been initialed or signed (as applicable) by the appropriate Landlord's Authorized Representative. Landlord may change either Landlord's Authorized Representative upon one (1) business day's prior written notice to Tenant.

ii.Tenant designates Michael Bell ("Tenant's Authorized Representative") as the person authorized to initial and sign all plans, drawings, change orders and approvals pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any such item until such item has been initialed or signed (as applicable) by Tenant's Authorized Representative. Tenant may change Tenant's Authorized Representative upon one (1) business day's prior written notice to Landlord.

b. Schedule. The schedule for design and development of the Tenant Improvements, including the time periods for preparation and review of construction documents, approvals and performance, shall be in accordance with a schedule to be prepared by Tenant (the "Schedule"). Tenant shall prepare the Schedule so that it is a reasonable schedule for the completion of the Tenant Improvements. The Schedule shall clearly identify all activities requiring Landlord participation, including specific dates and time periods when Tenant's contractor will require access to areas of the Project outside of the Premises. As soon as the Schedule is completed, Tenant shall deliver the same to Landlord for Landlord's approval, which approval shall not be unreasonably withheld, conditioned or delayed. Such Schedule shall be approved or disapproved by Landlord within ten (10) business days after delivery to Landlord. Landlord's failure to respond within such ten (10) business day period shall be deemed approval by Landlord. If

Landlord disapproves the Schedule, then Landlord shall notify Tenant in writing of its objections to such Schedule, and the parties shall confer and negotiate in good faith to reach agreement on the Schedule. The Schedule shall be subject to adjustment as mutually agreed upon in writing by the parties, or as provided in this Work Letter.

c. Tenant's Architects, Contractors and Consultants. The architect, engineering consultants, design team, general contractor and subcontractors responsible for the construction of the Tenant Improvements shall be selected by Tenant and approved by Landlord, which approval Landlord shall not unreasonably withhold, condition or delay. Landlord may refuse to use any architects, consultants, contractors, subcontractors or material suppliers that Landlord reasonably believes could cause labor disharmony or may not have sufficient experience, in Landlord's reasonable opinion, to perform work in an occupied Class "A" laboratory research building and in tenant-occupied lab areas. All Tenant contracts related to the Tenant Improvements shall provide that Tenant may assign such contracts and any warranties with respect to the Tenant Improvements to Landlord at any time.

2. Tenant Improvements. All Tenant Improvements shall be performed by Tenant's contractor, at Tenant's sole cost and expense (subject to Landlord's obligations with respect to any portion of the Base TI Allowance and, if properly requested by Tenant pursuant to the terms of the Amendment, the Additional TI Allowances) and in accordance with the Approved Plans (as defined below), the Amendment and this Work Letter. To the extent that the total projected cost of the Tenant Improvements (as reasonably projected by Landlord based on the Approved Budget (as that term is defined in Section 6.2 below)) exceeds the TI Allowance (such excess, the "Excess TI Costs"), Tenant shall pay the costs of the Tenant Improvements on a pari passu basis with Landlord as such costs become due, in the proportion of Excess TI Costs payable by Tenant to the Base TI Allowance (and, if properly requested by Tenant pursuant to the Lease, the Additional TI Allowance) payable by Landlord. If the cost of the Tenant Improvements (as projected by Landlord) increases over Landlord's initial projection, then Landlord may notify Tenant and Tenant shall pay any additional Excess TI Costs in the same way that Tenant is required to pay the initial Excess TI Costs. If Tenant fails to pay, or is late in paying, any sum due to Landlord under this Work Letter and such failure continues beyond the applicable notice and cure periods, then Landlord shall have all of the rights and remedies set forth in the Lease for nonpayment of Rent (including the right to interest and the right to assess a late charge), and for purposes of any litigation instituted with regard to such amounts the same shall be considered Rent. All material and equipment furnished by Tenant or its contractors as the Tenant Improvements shall be new or "like new;" the Tenant Improvements shall be performed in a first-class, workmanlike manner; and the quality of the Tenant Improvements shall be of a nature and character not less than the Building Standard. Tenant shall take, and shall require its contractors to take, commercially reasonable steps to protect the Premises during the performance of any Tenant Improvements, including covering or temporarily removing any window coverings so as to guard against dust, debris or damage. All Tenant Improvements shall be performed in accordance with Article 17 of the Original Lease; provided that, notwithstanding anything in the Lease or this Work Letter to the contrary, in the event of a conflict between this Work Letter and Article 17 of the Original Lease, the terms of this Work Letter shall govern.

a. Work Plans. Tenant shall prepare and submit to Landlord for approval schematics covering the Tenant Improvements prepared in conformity with the applicable provisions of this Work Letter (the "Draft Schematic Plans"). The Draft Schematic Plans shall contain sufficient information and detail to accurately describe the proposed design to Landlord and such other information as Landlord may reasonably request. Landlord shall notify Tenant in writing within ten (10) business days after receipt of the Draft Schematic Plans whether Landlord approves or objects to the Draft Schematic Plans and of the manner, if any, in which the Draft Schematic Plans are unacceptable. Landlord's failure to respond within such ten (10) business day period shall be deemed approval by Landlord. If Landlord reasonably objects to the Draft Schematic Plans, then Tenant shall revise the Draft Schematic Plans and cause Landlord's objections to be remedied in the revised Draft Schematic Plans. Tenant shall then resubmit the revised Draft Schematic Plans to Landlord for approval, such approval not to be unreasonably withheld, conditioned or delayed. Landlord's approval of or objection to revised Draft Schematic Plans and Tenant's correction of the same shall be in accordance with this Section until Landlord has approved the Draft Schematic Plans in writing or been deemed to have approved them. The iteration of the Draft Schematic Plans that is approved or deemed approved by Landlord without objection shall be referred to herein as the "Approved Schematic Plans."

b. Construction Plans. Tenant shall prepare final plans and specifications for the Tenant Improvements that (a) are consistent with and are logical evolutions of the Approved Schematic Plans and (b) incorporate any other Tenant-requested (and Landlord-approved) Changes (as defined below). As soon as such final plans and specifications ("Construction Plans") are completed, Tenant shall deliver the same to Landlord for Landlord's approval, which approval shall not be unreasonably withheld, conditioned or delayed. All such Construction Plans shall be submitted by Tenant to Landlord in electronic .pdf, CADD and full-size hard copy formats, and shall be approved or disapproved by Landlord within ten (10) business days after delivery to Landlord. Landlord's failure to respond within such ten (10) business day period shall be deemed approval by Landlord. If the Construction Plans are disapproved by Landlord, then Landlord shall notify Tenant in writing of its objections to such Construction Plans, and the parties shall confer and negotiate in good faith to reach agreement on the Construction Plans. Promptly after the Construction Plans are approved by Landlord and Tenant, two (2) copies of such Construction Plans shall be initialed and dated by Landlord and Tenant, and Tenant shall promptly submit such Construction Plans to all appropriate Governmental Authorities for approval. The Construction Plans so approved, and all change orders specifically permitted by this Work Letter, are referred to herein as the "Approved Plans."

c. Changes to the Tenant Improvements. Any changes to the Approved Plans (each, a "Change") shall be requested and instituted in accordance with the provisions of this Article 2 and shall be subject to the written approval of the non-requesting party in accordance with this Work Letter.

i. Change Request. Either Landlord or Tenant may request Changes after Landlord approves the Approved Plans by notifying the other party thereof in writing in substantially the same form as the AIA standard change order form (a "Change Request"), which Change Request shall detail the nature and extent of any requested Changes, including (a) the Change, (b) the

party required to perform the Change and (c) any modification of the Approved Plans and the Schedule, as applicable, necessitated by the Change. If the nature of a Change requires revisions to the Approved Plans, then the requesting party shall be solely responsible for the cost and expense of such revisions and any increases in the cost of the Tenant Improvements as a result of such Change. Change Requests shall be signed by the requesting party's Authorized Representative.

ii. Approval of Changes. All Change Requests shall be subject to the other party's prior written approval, which approval shall not be unreasonably withheld, conditioned or delayed. The non-requesting party shall have five (5) business days after receipt of a Change Request to notify the requesting party in writing of the non-requesting party's decision either to approve or object to the Change Request. The non-requesting party's failure to respond within such five (5) business day period shall be deemed approval by the non-requesting party. Notwithstanding the foregoing, Tenant shall not, except in order to comply with Applicable Laws, be required to make any Changes pursuant to this Section 2.3 which would have a material and adverse impact on (i) the then most current construction schedule for the Tenant Improvements, or (ii) the layout, quality or functionality (for Tenant's purposes) of the Tenant Improvements.

d. Preparation of Estimates. Tenant shall, before proceeding with any Change, using its best efforts, prepare as soon as is reasonably practicable (but in no event more than five (5) business days after delivering a Change Request to Landlord or receipt of a Change Request) an estimate of the increased costs or savings that would result from such Change, as well as an estimate of such Change's effects on the Schedule. Landlord shall have five (5) business days after receipt of such information from Tenant to (a) in the case of a Tenant-initiated Change Request, approve or reject such Change Request in writing, or (b) in the case of a Landlord- initiated Change Request, notify Tenant in writing of Landlord's decision either to proceed with or abandon the Landlord-initiated Change Request. The costs of any Change Request approved by Landlord pursuant to this Section may be deducted from the TI Allowance to the extent permitted by Section 7.2 of the Amendment.

e. Quality Control Program; Coordination. Tenant shall provide Landlord with information regarding the following (together, the "QCP"): (a) Tenant's general contractor's quality control program and (b) evidence of subsequent monitoring and action plans. The QCP shall be subject to Landlord's reasonable review and approval and shall specifically address the Tenant Improvements. Tenant shall ensure that the QCP is regularly implemented on a scheduled basis and shall provide Landlord with reasonable prior notice and access to attend all inspections and meetings between Tenant and its general contractor. At the conclusion of the Tenant Improvements, Tenant shall deliver the quality control log to Landlord, which shall include all records of quality control meetings and testing and of inspections held in the field, including inspections relating to concrete, steel roofing, piping pressure testing and system commissioning.

3. Completion of Tenant Improvements. Tenant, at its sole cost and expense (except for the Base TI Allowance and, if properly requested by Tenant pursuant to the terms of the

Amendment, the Additional TI Allowance), shall perform and complete the Tenant Improvements in all respects (a) in substantial conformance with the Approved Plans, (b) otherwise in compliance with provisions of the Lease and this Work Letter and (c) in accordance with Applicable Laws, the requirements of Tenant's insurance carriers, the requirements of Landlord's insurance carriers (to the extent Landlord provides its insurance carriers' requirements to Tenant) and the board of fire underwriters having jurisdiction over the Premises. The Tenant Improvements shall be deemed completed at such time as Tenant shall furnish to Landlord (t) evidence satisfactory to Landlord that (i) all Tenant Improvements have been completed and paid for in full (which shall be evidenced by the architect's certificate of completion and the general contractor's and each subcontractor's and material supplier's final unconditional waivers and releases of liens, each in a form acceptable to Landlord and complying with Applicable Laws, and a Certificate of Substantial Completion in the form of the American Institute of Architects document G704, executed by the project architect and the general contractor, together with a statutory notice of substantial completion from the general contractor), (ii) all Tenant Improvements have been accepted by Landlord, (iii) any and all liens related to the Tenant Improvements have either been discharged of record (by payment, bond, order of a court of competent jurisdiction or otherwise) or waived by the party filing such lien and (iv) no security interests relating to the Tenant Improvements are outstanding, (u) all certifications and approvals with respect to the Tenant Improvements that may be required from any Governmental Authority and any board of fire underwriters or similar body for the use and occupancy of the Premises (including a certificate of occupancy (or its substantial equivalent) for the Premises for the Permitted Use), (v) certificates of insurance required by the Lease to be purchased and maintained by Tenant, (w) an affidavit from Tenant's architect certifying that all work performed in, on or about the Premises is in accordance with the Approved Plans, (x) complete "as built" drawing print sets, project specifications and shop drawings and electronic CADD files on disc (showing the Tenant Improvements as an overlay on the Building "as built" plans (provided that Landlord provides the Building "as-built" plans provided to Tenant) of all contract documents for work performed by their architect and engineers in relation to the Tenant Improvements, (y) a commissioning report prepared by a licensed, qualified commissioning agent hired by Tenant and approved by Landlord for all new or affected mechanical, electrical and plumbing systems (which report Landlord may hire a licensed, qualified commissioning agent to peer review, and whose reasonable recommendations Tenant's commissioning agent shall perform and incorporate into a revised report) and (z) such other "close out" materials as Landlord reasonably requests consistent with Landlord's own requirements for its contractors, such as copies of manufacturers' warranties, operation and maintenance manuals and the like.

4. Insurance.

a. Property Insurance. At all times during the period beginning with commencement of construction of the Tenant Improvements and ending with final completion of the Tenant Improvements, Tenant shall maintain, or cause to be maintained (in addition to the insurance required of Tenant pursuant to the Lease), property insurance insuring Landlord and the Landlord Parties, as their interests may appear. Such policy shall, on a completed replacement cost basis for the full insurable value at all times, insure against loss or damage by fire,

vandalism and malicious mischief and other such risks as are customarily covered by the so- called "broad form extended coverage endorsement" upon all Tenant Improvements and the general contractor's and any subcontractors' machinery, tools and equipment, all while each forms a part of, or is contained in, the Tenant Improvements or any temporary structures on the Premises, or is adjacent thereto; provided that, for the avoidance of doubt, insurance coverage with respect to the general contractor's and any subcontractors' machinery, tools and equipment shall be carried on a primary basis by such general contractor or the applicable subcontractor(s). Tenant agrees to pay any deductible, and Landlord is not responsible for any deductible, for a claim under such insurance.

b. Workers' Compensation Insurance. At all times during the period of construction of the Tenant Improvements, Tenant shall, or shall cause its contractors or subcontractors to, maintain statutory workers' compensation insurance as required by Applicable Laws.

c. Waivers of Subrogation. Any insurance provided pursuant to this Article shall waive subrogation against the Landlord Parties and Tenant shall hold harmless and indemnify the Landlord Parties for any loss or expense incurred as a result of a failure to obtain such waivers of subrogation from insurers.

d. Additional Insurance. During the construction of the Tenant Improvements, Tenant shall, at its own cost and expense, procure the insurance required in Exhibit A-1 of the Amendment for the benefit of Tenant and Landlord (as their interests may appear) with insurers financially acceptable and lawfully authorized to do business in the California.

5. Liability. Tenant assumes sole responsibility and liability for any and all injuries or the death of any persons, including Tenant's contractors and subcontractors and their respective employees, agents and invitees, and for any and all damages to property arising from any act or omission on the part of Tenant, Tenant's contractors or subcontractors, or their respective employees, agents and invitees in the prosecution of the Tenant Improvements. Tenant agrees to Indemnify the Landlord Indemnitees from and against all Claims due to, because of or arising from any and all such injuries, death or damage, whether real or alleged, and Tenant and Tenant's contractors and subcontractors shall assume and defend at their sole cost and expense all such Claims; provided, however, that nothing contained in this Work Letter shall be deemed to indemnify Landlord from or against liability to the extent arising directly from Landlord's negligence or willful misconduct. Any deficiency in design or construction of the Tenant Improvements shall be solely the responsibility of Tenant, notwithstanding the fact that Landlord may have approved of the same in writing.

6. TI Allowance.

a. Application of TI Allowance. Landlord shall contribute, in the following order, the Base TI Allowance and, if properly requested by Tenant pursuant to the terms of the Amendment, the Additional TI Allowance toward the costs and expenses incurred in connection with the performance of the Tenant Improvements, in accordance with Section 7 of the Amendment. If the entire TI Allowance is not applied toward or reserved for the costs of the Tenant Improvements, then Tenant shall not be entitled to a credit of such unused portion of the

TI Allowance. Tenant may apply the Base TI Allowance and, if properly requested by Tenant pursuant to the terms of the Lease, the Additional TI Allowance for the payment of construction and other costs in accordance with the terms and provisions of the Lease and this Work Letter.

b. Approval of Budget for the Tenant Improvements. Notwithstanding anything to the contrary set forth elsewhere in this Work Letter or the Lease, Landlord shall not have any obligation to expend any portion of the TI Allowance until Landlord and Tenant shall have approved in writing the budget for the Tenant Improvements (the "Approved Budget"). Prior to Landlord's approval of the Approved Budget, Tenant shall pay all of the costs and expenses incurred in connection with the Tenant Improvements as they become due. Landlord shall not be obligated to reimburse Tenant for costs or expenses relating to the Tenant Improvements that exceed the amount of the TI Allowance. Landlord shall not unreasonably withhold, condition or delay its approval of any budget for Tenant Improvements that is proposed by Tenant.

c. Fund Requests. Upon submission by Tenant to Landlord as of or prior to the TI Deadline of (a) a statement (a "Fund Request") setting forth the total amount of the TI Allowance requested, (b) a summary of the Tenant Improvements performed using AIA standard form Application for Payment (G 702) executed by the general contractor and by the architect, (c) invoices from the general contractor, the architect, and any subcontractors, material suppliers and other parties requesting payment with respect to the amount of the TI Allowance then being requested, (d) unconditional lien releases from the general contractor and each subcontractor and material supplier with respect to previous payments made by either Landlord or Tenant for the Tenant Improvements in a form reasonably acceptable to Landlord and complying with Applicable Laws and (e) conditional lien releases from the general contractor and each subcontractor and material supplier with respect to the Tenant Improvements performed that correspond to the Fund Request each in a form reasonably acceptable to Landlord and complying with Applicable Laws, then Landlord shall, within thirty (30) days following receipt by Landlord of a Fund Request and the accompanying materials required by this Section, pay to (as elected by Landlord) the applicable contractors, subcontractors and material suppliers or Tenant (for reimbursement for payments made by Tenant to such contractors, subcontractors or material suppliers either prior to Landlord's approval of the Approved Budget or as a result of Tenant's decision to pay for the Tenant Improvements itself and later seek reimbursement from Landlord in the form of one lump sum payment in accordance with the Amendment and this Work Letter), the amount of Tenant Improvement costs set forth in such Fund Request or Landlord's pari passu share thereof if Excess TI Costs exist based on the Approved Budget; provided, however, that Landlord shall not be obligated to make any payments under this Section until the budget for the Tenant Improvements is approved in accordance with Section 6.2, and any Fund Request under this Section shall be submitted as of or prior to the TI Deadline and shall be subject to the payment limits set forth in Section 6.2 above and Section 7 of the Amendment. Notwithstanding anything in this Section to the contrary, Tenant shall not submit a Fund Request after the TI Deadline or more often than every thirty (30) days. Any additional Fund Requests submitted by Tenant after the TI Deadline or more often than every thirty (30) days shall be void and of no force or effect.

d. Accrual Information. In addition to the other requirements of this Section 6, Tenant shall, no later than the third (3rd) business day of each month until the Tenant Improvements are complete, provide Landlord with an estimate of (a) the percentage of design and other soft cost work that has been completed, (b) design and other soft costs spent through the end of the previous month, both from commencement of the Tenant Improvements and solely for the previous month, (c) the percentage of construction and other hard cost work that has been completed, and (d) construction and other hard costs spent through the end of the previous month, both from commencement of the Tenant Improvements and solely for the previous month.

7. Miscellaneous.

a. Incorporation of Original Lease Provisions. Sections 41.1 through 41.15 of the Original Lease are incorporated into this Work Letter by reference, and shall apply to this Work Letter in the same way that they apply to the Lease.

b. General. Except as otherwise set forth in the Lease or this Work Letter, this Work Letter shall not apply to improvements performed in any additional premises added to the Premises at any time or from time to time, whether by any options under the Lease or otherwise; or to any portion of the Premises or any additions to the Premises in the event of a renewal or extension of the original Term, whether by any options under the Lease or otherwise, unless the Lease or any amendment or supplement to the Lease expressly provides that such additional premises are to be delivered to Tenant in the same condition as the initial Premises.

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IN WITNESS WHEREOF, Landlord and Tenant have executed this Work Letter to be effective on the date first above written.

LANDLORD:

BMR-BAYSHORE BOULEVARD LP,a Delaware limited partnership

By: /s/ Kevin M. Simonsen Name: Kevin M. Simonsen Title: Sr. VP, General Counsel & Secretary

TENANT:

CAREDX, INC.,a Delaware corporation

By: /s/ Peter Maag Name: Peter Maag Title: CEO

CONSENT TO SUB-SUBLEASE AGREEMENT

This CONSENT TO SUB-SUBLEASE AGREEMENT (this "**Agreement**") is made as of October 30, 2019, by and among AP3-SF2 CT SOUTH, LLC, a Delaware limited liability company ("**Landlord**"), SUCCESSFACTORS, INC., a Delaware corporation ("**Tenant**"), MEDEOR THERAPEUTICS, INC., a Delaware corporation ("**Subtenant**"), and CAREDX, INC., a Delaware corporation ("**Sub-Subtenant**").

R E C I T A L S:

A. Reference is hereby made to that certain Lease dated as of March 29, 2012, between Landlord (as successor-in-interest to Myers Peninsula Venture, LLC) and Tenant (the "**Original Lease**"), as amended by that certain letter agreement (re: Extension of Expansion Option) dated August 21, 2012, that certain First Amendment to Lease dated as of October 31, 2012, and that certain Amended and Restated Lease Commencement Date Confirmation dated as of July, 2015 (as amended, the "**Lease**"), pursuant to which Tenant leases from Landlord approximately 116,035 rentable square feet of space (the "**Premises**"), as more particularly described in the Lease, located on the 9th, 10th, 11th, and 12th floors of that certain office building located at One Tower Place, South San Francisco, California 94080 (the "**Building**").

B. Tenant and Subtenant are parties to that certain Sublease dated as of July 13, 2018 (the "**Sublease**"), pursuant to which Subtenant subleases from Tenant a portion of the Premises containing approximately 28,968 rentable square feet of space located on the ninth (9^{th}) floor of the Building (the "**Sublet Premises**"), as more particularly described in the Sublease, which Sublease is subject to that certain Consent to Sublease dated as of August 3, 2018 (the "**Sublease Consent**"), by and among Landlord, Tenant and Subtenant.

C. Pursuant to the terms of Article 19 of the Original Lease, Tenant has requested Landlord's consent to that certain Sub-Sublease dated as of October 10, 2019, between Subtenant and Sub-Subtenant (the "**Sub-Sublease**"), with respect to a subletting by Sub-Subtenant of the entirety of the Sublet Premises. A copy of the Sub-Sublease is attached hereto as Exhibit A (the Sublease attached as Exhibit A to the Sub-Sublease was omitted in this Agreement for convenience purposes). Landlord is willing to consent to the Sub-Sublease on the terms and conditions contained herein.

D. All defined terms not otherwise expressly defined herein shall have the respective meanings given in the Lease.

A G R E E M E N T:

1. Landlord's Consent. Landlord hereby consents to the Sub-Sublease; provided, however, notwithstanding anything contained in the Sub-Sublease to the contrary, such consent is granted by Landlord only upon the terms and conditions set forth in this Agreement. Landlord's consent to the Sub-Sublease is based upon (i) the form and substance of the Sub-Sublease as set forth on Exhibit A attached hereto and (ii) the use of the Sublet Premises only for general office purposes and uses ancillary thereto in accordance with Article 11 of the Original

Lease, and none of Tenant, Subtenant nor Sub-Subtenant shall amend the Sub-Sublease or permit the Sublet Premises to be used for any other purposes whatsoever without Landlord's prior written consent. Any such amendment or change in use made without Landlord's prior written consent shall constitute a breach of the Lease. The Sub-Sublease is subject and subordinate to the Lease. Neither this Agreement nor the Sub-Sublease shall be construed to modify, waive or amend any of the terms, covenants and conditions of the Lease or to waive any breach thereof or any of Landlord's rights or remedies thereunder or to enlarge or increase any obligations of Landlord under the Lease. Landlord shall not be bound by any of the terms, covenants, conditions, provisions or agreements of the Sub-Sublease.

2. Limits of Consent.

a. Non-Release of Tenant. Neither the Sub-Sublease nor this consent thereto shall release or discharge Tenant from any liability, whether past, present or future, under the Lease or alter the primary liability of the Tenant to pay the rent and perform and comply with all of the obligations of Tenant to be performed under the Lease (including the payment of all bills rendered by Landlord for charges incurred by the Sub-Subtenant for services and materials supplied to the Sublet Premises).

b. Non-Release of Subtenant. Neither the Sub-Sublease nor this consent thereto shall release or discharge Subtenant from any liability, whether past, present or future, under the Sublease or alter the primary liability of the Subtenant to pay the rent and perform and comply with all of the obligations of Subtenant to be performed under the Sublease (including the payment of all bills rendered by Tenant for charges incurred by the Sub-Subtenant for services and materials supplied to the Sublet Premises).

c. Further Transfers. Neither the Sub-Sublease nor this consent thereto shall be construed as a waiver of Landlord's right to consent to any further subletting either by Tenant, Subtenant or by the Sub-Subtenant or to any assignment by Tenant of the Lease, assignment by the Subtenant of the Sublease, or assignment by Sub-Subtenant of the Sub-Sublease, or as a consent to any portion of the Sublet Premises being used or occupied by any other party.

3. Relationship with Landlord. Tenant and Subtenant hereby assign and transfer to Landlord the Tenant's and the Subtenant's interest in the Sub-Sublease and all rentals and income arising therefrom, subject to the terms of this Section 3. Landlord, by consenting to the Sub-Sublease agrees that until a default (beyond applicable notice and cure periods) shall occur in the performance of (a) Tenant's obligations under the Lease or Sublease Consent, or (b) Subtenant's obligations under the Sublease or Sublease Consent, Tenant and/or Subtenant (as applicable) may receive, collect and enjoy the rents accruing under the Sub-Sublease. In the event (1) Tenant shall fail to perform its obligations under the Lease and/or the Sublease Consent (whether or not Landlord terminates the Lease) and such failure is not cured within the applicable notice and cure periods, or in the event the Lease is terminated for any other reason whatsoever (including the mutual termination thereof by Landlord and Tenant), or (2) Subtenant shall fail to perform its obligations under the Sublease and/or the Sublease Consent (whether or not Landlord or Tenant terminates the Sublease) and such failure is not cured within the applicable notice and cure periods, or in the event the Sublease is terminated for any other reason

whatsoever (including the mutual termination thereof by Tenant and Subtenant), then Landlord may, at its option, by giving notice to Sub-Subtenant within two (2) days of a termination and only if the Lease or the Sublease is terminated (as applicable), as to subparts (i) and (iii), either (i) terminate the Sub-Sublease, (ii) elect to receive and collect, directly from Sub-Subtenant, all rent and any other sums owing and to be owed under the Sub-Sublease, as further set forth in Section 3.1, below, and/or (iii) elect to succeed to Subtenant's interest in the Sub-Sublease, and cause Sub-Subtenant to attorn to Landlord, as further set forth in Section 3.2, below. If Landlord elects to terminate the Sub-Sublease pursuant to clause (i) above, Sub-Subtenant acknowledges and agrees that Landlord shall not have any liability to Sub-Subtenant as a result thereof.

a. Landlord's Election to Receive Rents. Landlord shall not, by reason of the Sub-Sublease, nor by reason of the collection of rents or any other sums from the Sub-Subtenant pursuant to Section 3(ii), above, be deemed liable to Sub-Subtenant for any failure of Tenant or Subtenant to perform and comply with any obligation of Tenant or Subtenant (as applicable), and Tenant and Subtenant hereby irrevocably authorizes and directs Sub-Subtenant, upon receipt of any written notice from Landlord stating that Tenant and/or Subtenant has failed to perform an obligation under the Lease, the Sublease or the Sublease Consent, as applicable, (beyond applicable notice and cure periods), to pay to Landlord the rents and any other sums due and to become due under the Sub-Sublease. Tenant and Subtenant agree that Sub-Subtenant shall have the right to rely upon any such statement and request from Landlord, and that Sub-Subtenant shall pay any such rents and any other sums to Landlord without any obligation or right to inquire as to whether such failure exists and notwithstanding any notice from or claim from Tenant or Subtenant to the contrary. Tenant and Subtenant shall not have any right or claim against Sub-Subtenant for any such rents or any other sums so paid by Sub-Subtenant to Landlord. Landlord shall credit Tenant, and Tenant shall credit Subtenant, with any rent received by Landlord under such assignment but the acceptance of any payment on account of rent from the Sub-Subtenant as the result of any such failure shall in no manner whatsoever be deemed to be an election by Landlord to succeed to Tenant's and/or Subtenant's interest in the Sub-Sublease or cause an attornment by the Landlord to Sub-Subtenant or by Sub-Subtenant to Landlord, be deemed a waiver by Landlord of any provision of the Lease, serve to release Tenant from any liability under the terms, covenants, conditions, provisions or agreements under the Lease or Sublease Consent, or serve to release Subtenant from any liability under the terms, covenants, conditions, provisions or agreements under the Sublease or the Sublease Consent. Notwithstanding the foregoing, any payment of rent from the Sub-Subtenant directly to Landlord, regardless of the circumstances or reasons therefor, shall in no manner whatsoever be deemed an attornment by the Sub-Subtenant to Landlord in the absence of a specific written agreement or notice signed by Landlord to such an effect.

b. Landlord's Election of Subtenant's Attornment. In the event Landlord elects, at its option, to succeed to Tenant's interest in the Sublease, or Subtenant's interest in the Sub-Sublease, and cause Sub-Subtenant to attorn to Landlord pursuant to Section 3(iii) above: (a) Sub-Subtenant shall attorn to Landlord as if the Sub-Sublease were a direct lease between Landlord and Sub-Subtenant; and (b) Landlord shall undertake the obligations of Subtenant under the Sub-Sublease first arising after the time of the exercise of the option, but Landlord shall not (i) be liable for any prepayment of more than one (1) month's rent, (ii) be liable for any

act or omission of Tenant under the Sublease, or Subtenant under the Sub-Sublease, or for any default or breach of any covenant, condition, representation or warranty of Tenant under the Sublease or Subtenant under the Sub-Sublease, (iii) be subject to any defenses or offsets which Sub-Subtenant may have against Tenant or Subtenant, (iv) be bound by any changes or modifications made to the Sub-Sublease without the written consent of Landlord, (v) be bound by any obligation to pay brokerage commissions, or (vi) be personally liable for any obligations or liability under the Sub-Sublease. Sub-Subtenant shall, at Landlord's option, enter into a new lease with Landlord incorporating the provisions of the Sub-Sublease, as modified and limited by the foregoing.

4. General Provisions.

a. Consideration for Sublease and Transfer Premium. Tenant, Subtenant and Sub-Subtenant represent and warrant that there are no additional payments of rent or any other consideration of any type payable by Sub-Subtenant to Tenant or Subtenant with regard to the Sublet Premises other than as disclosed in the Sub-Sublease. Tenant and Subtenant each acknowledges that pursuant to Section 19(f) of the Original Lease, Landlord is entitled to fifty percent (50%) of the Transfer Premium (if any), as defined in Section 19(f) of the Lease.

b. Brokerage Commission. Tenant, Subtenant and Sub-Subtenant covenant and agree that under no circumstances shall Landlord be liable for any brokerage commission in connection with the Sub-Sublease and Tenant, Subtenant and Sub-Subtenant agree to protect, defend, indemnify and hold Landlord harmless from the same and from any cost or expense (including, but not limited to, reasonable attorneys' fees) incurred by Landlord in resisting any claim for any such brokerage commission.

c. Controlling Law. The terms and provisions of this Agreement shall be construed in accordance with and governed by the laws of the State of California.

d. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto, their heirs, successors and assigns. As used herein, the singular number includes the plural and the masculine gender includes the feminine and neuter.

e. Captions. The paragraph captions utilized herein are in no way intended to interpret or limit the terms and conditions hereof; rather, they are intended for purposes of convenience only.

f. Partial Invalidity. If any term, provision or condition contained in this Agreement shall, to any extent, be invalid or unenforceable, the remainder of this Agreement, or the application of such term, provision or condition to persons or circumstances other than those with respect to which it is invalid or unenforceable, shall not be affected thereby, and each and every other term, provision and condition of this Agreement shall be valid and enforceable to the fullest extent possible permitted by law.

g. Attorneys' Fees. If either party commences litigation against the other for the specific performance of this Agreement, for damages for the breach hereof or otherwise for

enforcement of any remedy hereunder, the parties hereto agree to and hereby do waive any right to a trial by jury and, in the event of any such commencement of litigation, the prevailing party shall be entitled to recover from the other party such costs and reasonable attorneys' fees as may have been incurred.

h. Landlord's Costs. Within thirty (30) days after written request by Landlord, Tenant shall, as provided in Section 19(b) of the Original Lease, pay to Landlord any costs and reasonable attorneys' fees incurred by Landlord in connection with Landlord's review and analysis of the Sub-Sublease and the preparation of this Agreement. Sub-Subtenant shall reimburse Tenant for such costs and fees in accordance with Sections 9 and 10 of the Sub-Sublease.

i. Insurance. Sub-Subtenant shall, concurrently with its execution hereof, deliver to Landlord evidence that Sub-Subtenant has obtained the insurance described in Article 15 of the Original Lease as to the Sublet Premises, including, without limitation, a certificate naming Landlord as an additional insured on the liability policy described in Section 15(a) of the Original Lease. In addition, Sub-Subtenant hereby agrees to be bound by and perform the indemnification obligations of Tenant pursuant to Section 34(a) of the Original Lease as to the Sublet Premises during the Sub-Sublease term as if references therein to "Tenant" were to "Sub-Subtenant". Sub-Subtenant further agrees that all of the exculpatory and/or waiver provisions of the Lease will apply to the Sub-Subtenant for the benefit of Landlord, including but not limited to Section 34(a) of the Original Lease, which, notwithstanding anything to the contrary herein, shall apply as between Landlord and Sub-Subtenant.

5. Counterparts and Fax/E-Mail/Electronic Signatures. This Agreement may be executed in counterparts, each of which shall be deemed an original, but such counterparts, when taken together, shall constitute one agreement. This Agreement may be executed by a party's signature transmitted by facsimile ("**fax**") or e-mail or by a party's electronic signature, and copies of this Agreement executed and delivered by means of faxed or e-mailed copies of signatures or originals of this Agreement executed by electronic signature shall have the same force and effect as copies hereof executed and delivered with original wet signatures. All parties hereto may rely upon faxed, e-mailed or electronic signatures as if such signatures were wet signatures. Any party executing and delivering this Agreement by fax or e-mail shall promptly thereafter deliver a counterpart signature page of this Agreement containing said party's original signature. All parties hereto agree that a faxed or e-mailed signature page or an electronic signature may be introduced into evidence in any proceeding arising out of or related to this Agreement as if it were an original wet signature page.

[*Remainder of Page Intentionally Left Blank; Signature Page Follows*]

IN WITNESS WHEREOF, the parties have executed this Consent to Sub-Sublease Agreement as of the day and year first above written.

"Landlord:"

AP3-SF2 CT SOUTH, LLC,a Delaware limited liability company

By: /s/ W. Neil Fox, III Print Name: W. Neil Fox, III Title: Chief Executive Officer

"Tenant:"

SUCCESSFACTORS, INC.,a Delaware corporation

By: /s/ Cynthia Hirschfeld Print Name: Cynthia Hirschfeld Title: Treasurer

"Subtenant:"

MEDEOR THERAPEUTICS, INC.,a Delaware corporation

By: /s/ Karen Smith Print Name: Karen Smith Title: CEO

"Sub-Subtenant:"

CAREDX, INC.,a Delaware corporation

By: /s/ Peter Maag Print Name: Peter Maag Title: CEO

EXHIBIT ATHE SUB-SUBLEASE

CONSENT TO SUB-SUBLEASE

This CONSENT TO SUB-SUBLEASE ("**Consent**"), dated as of the 29th day of October, 2019, is being entered among SUCCESSFACTORS, INC., a Delaware corporation ("**SuccessFactors**"), MEDEOR THERAPEUTICS, INC., a Delaware corporation ("**Medeor**"), and CAREDX, INC., a Delaware corporation ("**CareDX**").

R E C I T A L S:

A. SuccessFactors as "tenant/lessee" and AP3-SF2 CT South LLC (as successor-in-interest to Myers Peninsula Venture, LLC) ("**Master Lessor**"), as "landlord/lessor," are parties to that certain Lease dated March 29, 2012, as amended by that certain letter agreement (re: Extension of Expansion Option) dated August 21, 2012, that certain First Amendment to Lease dated as of October 31, 2012, and that certain Amended and Restated Lease Commencement Date Confirmation dated as of July 20, 2015 (collectively, the "**Master Lease**"), pursuant to which Master Lessor leases to SuccessFactors certain premises more particularly described therein (the "**Master Premises**") in the building located at 1 Tower Place, South San Francisco, CA 94080 (the "**Building**").

B. SuccessFactors and Medeor entered into a certain Sublease dated July 13, 2018 (said sublease, as the same may be amended from time to time, the "**Sublease**") for approximately 28,968 rentable square feet ("**Sublet Premises**") situated on the ninth (9^{th}) floor of the Building.

C. CareDX desires to sublet from Medeor all of the Sublet Premises (the "**Sub-Sublet Premises**") in accordance with that certain Sub-Sublease ("**Sub-Sublease**") between Medeor, as sublessor, and CareDX, as sublessee, a true, accurate and complete copy of which is attached hereto as **Exhibit A**.

NOW, THEREFORE, for good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, it is mutually covenanted and agreed as follows:

A. Unless otherwise defined, all terms contained in this Consent shall, for the purposes hereof, have the same meaning ascribed to them in the Sublease.

B. SuccessFactors consents to the subletting of the Sub-Sublet Premises by Medeor to CareDX upon and expressly subject to the following terms and conditions, to each of which Medeor and CareDX expressly agree:

1. NO MODIFICATIONS. Unless expressly provided to the contrary elsewhere in this Consent, nothing herein contained shall be construed to modify, waive, impair or affect any of the covenants, agreements, terms, provisions, or conditions contained in the Sublease or to waive any breach thereof by Medeor, or any rights of SuccessFactors against any person, firm, association or corporation liable or responsible for the performance thereof, or to enlarge or increase SuccessFactor's obligations or decrease SuccessFactor's rights under the Sublease, and

all covenants, agreements, terms, provisions and conditions of the Sublease are hereby mutually declared to be in full force and effect.

2. SUBLEASE GOVERNS. Notwithstanding anything to the contrary, the provisions of Section 24 of the Sublease shall apply to any further subletting of all or any part of the Sublet Premises or any assignment of the Sublease.

3. NO RELEASE. Medeor shall be and remain liable and responsible for the due keeping, performance and observance of all the covenants, agreements, terms, provisions and conditions set forth in the Sublease on the part of Medeor to be kept, performed and observed and for the payment of the Base Rent, Additional Rent and all other sums now and/or hereafter becoming payable thereunder.

4. SUB-SUBLEASE SUBORDINATE TO SUBLEASE. The Sub-Sublease shall be subject and subordinate at all times to the Sublease, any amendments to the Sublease hereafter made between the SuccessFactors and Medeor, the matters to which the Sublease is subordinate (including, without limitation, the Master Lease) and to all of the covenants, agreements, terms, provisions and conditions of the Sublease and to this Consent, and neither Medeor nor CareDX shall do or permit anything to be done in connection with the CareDX's occupancy of all or any part of the Sub-Sublet Premises which would violate any of covenants, agreements, terms, provisions and conditions of the Sublease or the Master Lease. The parties acknowledge and agree that SuccessFactors' consent to the Sub-Sublease hereunder is subject to and contingent upon Medeor obtaining Master Lessor's consent to the Sub-Sublease.

5. NO BROKER. Medeor and CareDX agree that SuccessFactors is not responsible for the payment of any commissions or fees in connection with the sub-sublease transaction. Medeor and CareDX jointly and severally agree to indemnify, defend and hold SuccessFactors, its partners, directors or officers and their affiliates and/or subsidiaries harmless from and against any claims, liability, losses or expenses, including attorneys' fees, court costs and disbursements incurred by SuccessFactors during settlement, at trial or on appeal, in connection with any claims for commission by any broker or agent in connection with the sub-sublease transaction.

6. ATTORNMENT. Upon the expiration, or any earlier termination of the term of the Sublease or in case of the surrender of the Sublease by Medeor to SuccessFactors, at SuccessFactors's sole option, the Sub-Sublease and the term and estate thereby granted shall expire and come to an end as of the effective date of such expiration, termination or surrender, and CareDX, at SuccessFactors's sole option, shall vacate the Sub-Sublet Premises on or before such date. In case of the failure of CareDX to so vacate the Sub-Sublet Premises, SuccessFactors shall be entitled to all the rights and remedies which are available to a SuccessFactors against a holding over after the expiration of a term by Medeor, and Medeor shall remain primarily responsible and liable for any damages suffered by SuccessFactors as a result of a holding over by CareDX. Upon the expiration or any earlier termination of the term of the Sublease or in case of the surrender of the Sublease by Medeor to SuccessFactors, CareDX shall, at the request of SuccessFactors, attorn to and accept SuccessFactors as the sublandlord under the Sub-Sublease for the balance of the term of the Sub-Sublease and be bound to perform all of the obligations imposed by the Sub-Sublease upon CareDX. Such attornment shall be evidenced by an

agreement in form and substance satisfactory to SuccessFactors which CareDX shall execute and deliver within five (5) days after request by SuccessFactors. CareDX waives the provisions of any law now or hereafter in effect which may give CareDX any right of election to terminate the Sub-Sublease or to surrender possession of the Sub-Sublet Premises in the event of (i) termination of the Sublease or (ii) any proceeding is brought by SuccessFactors to terminate the Sublease.

7. DIRECT RELATIONSHIP. CareDX agrees that if CareDX, at SuccessFactors's sole discretion, should become a direct subtenant of SuccessFactors for the Sub-Sublet Premises upon the expiration or earlier termination of the Sub-Sublease, SuccessFactors shall not: (a) be liable for any previous act or omission of Medeor under the Sub-Sublease, (b) be subject to any offset or credit which shall theretofore have accrued to CareDX against Medeor, (c) have any obligation whatsoever with respect to any security deposited under the Sub-Sublease, (d) be bound by any previous prepayment of rent or any other advance payment of monies due under the Sub-Sublease, or (e) be responsible for the payment of any commission or fees in connection with a direct relationship between SuccessFactors and CareDX. Should CareDX, at SuccessFactors's sole discretion, become a direct subtenant of SuccessFactors for the Sublet Premises, then, upon SuccessFactors's demand, Medeor shall give SuccessFactors all of the security deposit that CareDX was required to give Medeor under the Sub-Sublease and all of Medeor's interest in or to such security deposit shall automatically be forever relinquished. CareDX agrees to indemnify, defend and hold SuccessFactors, its partners, directors or officers and their affiliates and/or subsidiaries harmless from and against any claims, liability, losses or expenses, including attorneys' fees, court costs and disbursements incurred by SuccessFactors during settlement, at trial or on appeal, in connection with any such direct relationship.

8. BREACH. In case of the violation by Medeor or CareDX of any of the covenants, agreements, terms, provisions and conditions hereof, SuccessFactors may give written notice of such violation to Medeor and/or CareDX and if such violation shall not be discontinued or corrected within a reasonable time as specified in such notice, SuccessFactors may, in addition to SuccessFactors's other remedies, revoke this Consent. Except as provided in paragraph 6 above, in the event of any termination of the Sublease or the Master Lease, the Sub-Sublease shall terminate and the parties shall be relieved from all further liabilities and obligations hereunder; provided, however, if the Sublease or Master Lease terminates as a result of any default of CareDX under the Sub-Sublease, CareDX shall be liable to SuccessFactors for all damages suffered or incurred by SuccessFactors as a result of such termination.

9. INDEMNIFICATION. Medeor and CareDX hereby indemnify and agree to defend (with counsel acceptable to SuccessFactors) and to hold Master Lessor, SuccessFactors, and their respective affiliated entities, parents, subsidiaries, partnerships, joint ventures, limited liability companies, successors and assigns, now existing or hereafter created, and their respective directors, officers, partners, agents, employees, members, trustees and shareholders (the "**Indemnified Parties**") harmless for, from and against any and all claims, damages or liabilities, including reasonable attorneys' fees and expenses, imposed upon, incurred by or asserted against the Indemnified Parties which arise out of any violations by CareDX of the Sub-Sublease, any violation under the Master Lease on account of the actions of CareDX or Medeor

which may arise out of or are in any manner connected with CareDX's use and occupancy of the Sub-Sublet Premises, or any actions or omissions of CareDX, its agents, representatives employees, guests, contractors, subcontractors or invitees occurring in or around the Sub-Sublet Premises. Reference in this consent to any particular remedy shall not preclude SuccessFactors from any other remedy in law or in equity. The provisions of this Paragraph 9 shall survive the expiration of the Sub-Sublease Term or the earlier termination of the Sub-Sublease or the Master Lease.

10. ALTERATIONS. No alterations, additions (electrical or otherwise), or physical changes shall be made in the Premises, except pursuant to the covenants, agreements, provisions, terms and conditions of the Sublease.

11. SUB-SUBLEASE. Medeor and CareDX agree that: (i) a true, correct and complete copy of the Sub-Sublease has been furnished to SuccessFactors; (ii) SuccessFactors is not a party to the Sub-Sublease and is not bound by the provisions thereof; and (iii) notwithstanding the foregoing, the Sub-Sublease will not be modified or amended in any way without the prior written consent of SuccessFactors. If any provisions of this Consent shall be at variance with provisions of the Sublease or the Sub-Sublease, the provisions of this Consent shall prevail; provided, however, as between Medeor and CareDX, the Sub-Sublease shall prevail.

12. FEES. On the date hereof, Medeor shall give SuccessFactors, as additional rent, $2,500 as payment for the attorney's fees and expenses SuccessFactors incurred in reviewing the Sub-Sublease, analyzing CareDX's suitability as an occupant for space in the Building and preparing, negotiating, revising, executing and processing this Consent.

13. RENT PAYABLE TO SUCCESSFACTORS. If Medeor breaches any of the terms and provisions of the Sublease beyond notice and applicable cure periods, SuccessFactors may elect to receive directly from CareDX all sums due or payable to Medeor by CareDX pursuant to the Sub-Sublease, and upon receipt of SuccessFactors's notice, CareDX shall thereafter pay to SuccessFactors any and all sums becoming due or payable under the Sub-Sublease and Medeor shall receive from SuccessFactors a corresponding credit for such sums against any payments then due or thereafter becoming due from Medeor under the Sublease. Neither the giving of such written notice nor the receipt of such direct payments shall cause SuccessFactors to assume any of Medeor's duties, obligations and/or liabilities under the Sub-Sublease, nor shall such event impose upon SuccessFactors the duty or obligation to honor the Sub-Sublease nor subsequently to accept CareDX's attornment pursuant to Paragraphs 6 and 7 hereof.

14. RIGHTS AGAINST CAREDX. Medeor and CareDX agree that if CareDX breaches any term of the Sub-Sublease, SuccessFactors may, at its option and for its own sole benefit, exercise against CareDX all or any of the rights and remedies that Medeor has against CareDX at law, in equity or under the Sub-Sublease. Medeor acknowledges that the exercise by SuccessFactors of all or any of the foregoing rights and remedies against CareDX shall not preclude SuccessFactors from pursuing any right or remedy against Medeor. The exercise by SuccessFactors against CareDX of any or all of Medeor's rights and remedies shall neither cause

SuccessFactors to assume any of Medeor's duties, obligations and/or liabilities under the Sublease nor impose upon SuccessFactors the duty or obligation to honor the Sub-Sublease nor subsequently to accept CareDX's attornment pursuant to Paragraphs 6 and 7 hereof.

15. NO ORAL CHANGES. This Consent may not be changed orally, but only by an agreement in writing signed by the party against whom enforcement of any change is sought.

16. BINDING CONSENT. This Consent shall not be binding upon SuccessFactors unless and until it is signed by SuccessFactors.

17. NO DEFAULT. Medeor confirms that, as of the date hereof: (i) SuccessFactors has complied with all of its obligations contained in the Sublease and (ii) no event has occurred and no condition exists, which with the passage of time or the giving of notice, or both, would constitute a default, breach or violation by SuccessFactors under the Sublease.

18. USA PATRIOT ACT. CareDX represents and warrants to SuccessFactors that none of its, any of its subsidiaries or any director, officer, employee, agent, or affiliate of such party or any of its subsidiaries is an individual or entity ("**Person**") that is, or is owned or controlled by, Persons that are: (i) the subject of any sanctions administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("**OFAC**") or the U.S. Department of State, (collectively, "**Sanctions**"), or (ii) located, organized or resident in a country or territory that is, or whose government is, the subject of Sanctions, including, without limitation Cuba, Iran, North Korea, Sudan and Syria. CareDX hereby agrees to defend, indemnify and hold harmless SuccessFactors for, from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorneys' fees and costs) arising from or related to any breach of the foregoing representations and warranties.

19. EXECUTION. This Consent may be executed in several counterparts, all of which, taken together, shall constitute one original instrument. Medeor and CareDX expressly agree that if the signature of SuccessFactors, Medeor and/or CareDX on this Consent is not an original, but is a digital, mechanical or electronic reproduction (such as, but not limited to, a docusign, photocopy, fax, e-mail, PDF, Adobe image, JPEG, telegram, telex or telecopy), then such digital, mechanical or electronic reproduction shall be as enforceable, valid and binding as, and the legal equivalent to, an authentic and traditional ink-on-paper original wet signature penned manually by its signatory.

[Signatures Contained on Following Page]

IN WITNESS WHEREOF, the parties hereto have caused this Consent to be duly executed as of the 29th day of October, 2019.

SUCCESSFACTORS, INC.,a Delaware corporation

By: /s/ Cynthia Hirschfeld Name: Cynthia Hirschfeld Title: Treasurer

MEDEOR THERAPEUTICS, INC.,a Delaware corporation

By: /s/ Karen Smith Name: Karen Smith Title: CEO

CAREDX, INC.,a Delaware corporation

By: /s/ Peter Maag Name: Peter Maag Title: CEO

EXHIBIT A

Sub-Sublease[Attach complete copy of Sub-Sublease]

SUB-SUBLEASE

THIS SUB-SUBLEASE (this "**Sub-Sublease**") is dated for reference purposes as of October 10, 2019, and is made by and between **MEDEOR THERAPEUTICS, INC.**, a Delaware corporation ("**Sub-Sublandlord**"), and **CAREDX, INC.**, a Delaware corporation ("**Sub-Subtenant**"). Sub-Sublandlord and Sub-Subtenant hereby agree as follows:

1. Recitals:

i.**AP3-SF2 CT South LLC** (as successor-in-interest to Myers Peninsula Venture, LLC), as landlord ("**Master Landlord**") and **SUCCESSFACTORS, INC.**, as tenant ("**Master Tenant**") are parties to that certain Lease dated March 29, 2012 (the "**Original Master Lease**"), as amended by that certain letter agreement (re: Extension of Expansion Option) dated August 21, 2012, that certain First Amendment to Lease dated as of October 31, 2012 (the "**First Amendment to Master Lease**"), and that certain Amended and Restated Lease Commencement Date Confirmation, redacted copies of which are attached to the Master Sublease (as defined below) (collectively, the "**Master Lease**"), pursuant to which Master Landlord leases to Master Tenant, and Master Tenant leases from Master Landlord, certain premises more particularly described therein (the "**Master Premises**").

ii.Master Tenant (as sublandlord) and Sub-Sublandlord (as subtenant) are parties to that certain Sublease dated July 13, 2018 (the "**Master Sublease**"), a copy of which is attached hereto as **Exhibit "A"**, pursuant to which Master Tenant subleases to Sub-Sublandlord, and Sub-Sublandlord subleases from Master Tenant, certain premises more particularly described therein (the "**Subleased Premises**").

iii.Sub-Sublandlord desires to sub-sublease to Sub-Subtenant, and Sub-Subtenant desires to sub-sublease from Sub-Sublandlord, the entirety of the Subleased Premises consisting of approximately 28,968 rentable square feet on the 9th floor of the Building (hereinafter, the "**Sub-Subleased Premises**"), in accordance with the terms set forth herein.

2. Sub-Sublease: Subject to the terms hereof, Sub-Sublandlord hereby sub-subleases to Sub-Subtenant, and Sub-Subtenant hereby sub-subleases from Sub-Sublandlord, the Sub-Subleased Premises. Sub-Subtenant shall have exclusive use of the Sub-Subleased Premises and non-exclusive use of the common areas of the Building to the same extent as Sub-Sublandlord's rights under the Master Sublease, and in accordance with the terms of the Master Lease and Master Sublease. Sub-Sublandlord represents that to the best of Sub-Sublandlord's knowledge, (a) the Master Lease is in full force and effect and no defaults or events that, with the passage of time or the giving of notice, or both, would constitute a default, exist thereunder on the part of Master Landlord, Master Tenant or Sub-Sublandlord, (b) the Master Sublease is in full force and effect and no defaults or events that, with the passage of time or the giving of notice, or both, would constitute a default, exist thereunder on the part of Master Tenant or Sub-Sublandlord, and (c) the Master Lease and Master Sublease have not been amended, superseded or otherwise modified except to the extent expressly set forth in the Recitals, above. Except as required under the Master Lease or Master Sublease in connection with a casualty event or condemnation or as required by law, Sub-Sublandlord shall not take any voluntary action to surrender or terminate

the Master Sublease. Sub-Sublandlord shall, promptly following Sub-Sublandlord's receipt of notice from Master Tenant, notify Sub-Subtenant in writing of any event of default by Master Tenant under the Master Sublease (or Master Lease, to the extent Sub-Sublandlord has received notice of the same) within two (2) business days following Sub-Sublandlord's knowledge of such default. Sub-Sublandlord further agrees that during the Sub-Sublease Term it shall not default in the performance of its obligations under the Master Sublease, except in the case where such default arises out of Sub-Subtenant's default under this Sub-Sublease or Sub-Subtenant's acts or omissions. Sub-Sublandlord shall forward any notice of default it receives from Master Landlord and/or Master Tenant and Sub-Subtenant may, at its election, cure any monetary breach on Sub-Sublandlord's behalf.

3. Term: The term (the "**Term**") of this Sub-Sublease shall be for the period commencing on the later of (such date, being the "**Commencement Date**"): (a) the date of receipt of Landlord's Consent and Master Tenant's Consent, (b) the date Sub-Sublandlord delivers possession of the Sub-Subleased Premises to Sub-Subtenant in the condition required under this Sub-Sublease, and (c) November 1, 2019, and ending on the Sublease Expiration Date (i.e., December 31, 2022) (the "**Expiration Date**"), unless this Sub-Sublease is sooner terminated pursuant to its terms.

4. Rent:

iv. Monthly Base Rent. Sub-Subtenant shall pay to Sub-Sublandlord as Base Rent for the Sub-Subleased Premises for each month during the Term the following amounts per month ("**Base Rent**"):

Period	Annual Base Rent	Monthly Installment of Base Rent	Approximate Monthly Base Rent per Rentable Square Foot
Commencement Date – 12/31/20	$1,094,990.40	*$91,249.20	$3.15
1/1/21 - 12/31/21	$1,127,840.11	$93,986.68	$3.24
1/1/22 - 12/31/22	$1,161,675.32	$96,806.28	$3.34
***Note: Provided that Sub-Subtenant is not then in default of the Sub-Sublease, after expiration of any applicable notice and cure periods, Sub-Subtenant shall have no obligation to pay any Base Rent attributable to the first two (2) full months of the Term.**			

Monthly Base Rent shall be paid on or before the first (1st) day of each month. Sub-Subtenant shall pay the third full month's Monthly Base Rent contemporaneously with the mutual execution of this Sub-Sublease. Monthly Base Rent for any period during the Term hereof which is for less than one (1) month of the Term shall be a pro rata portion of the monthly installment based on a thirty (30) day month. Monthly Base Rent shall be payable without notice or demand and without any deduction, offset, or abatement, in lawful money of the United States of America, to an address (or by EFT) as may be designated in writing by Sub-Sublandlord.

v. Additional Rent. Except as provided herein, all monies required to be paid by Sub-Sublandlord with respect to the Sub-Subleased Premises (other than Base Rent) under the Master Sublease (as incorporated herein) shall be paid by Sub-Subtenant hereunder as and when such amounts are due under the Master Sublease (without any markup or administrative fee unless expressly provided herein) which are related to any increase in utility expenses for after business hours use of the Sub-Subleased Premises and/or related to any increase in the pro rata share of property taxes due to the sale of transfer of the property of which the Sub-Subleased Premises are a part, and/or for any other amounts due under this Sub-Sublease within ten (10) days following Sub-Subtenant's receipt of demand therefor (accompanied by reasonable supporting documentation). All such amounts shall be deemed additional rent ("**Additional Rent**"). Additional Rent, if applicable, shall not be abated during the first two months of the

Term. Base Rent and Additional Rent hereinafter collectively shall be referred to as "**Rent**". In the event Sub-Sublandlord incurs any out-of-pocket costs or expenses (or is billed by Master Landlord or Master Tenant for items) which are directly attributable to additional services that Sub-Subtenant specifically requests and are furnished to the Sub-Subleased Premises, or utilities furnished to or for the Sub-Subleased Premises for additional utility expenses related to after business hours use during the Term at the request of Sub-Subtenant or with respect to repairs made in the Sub-Subleased Premises during the Term pursuant to the terms of the Master Lease, Master Sublease and this Sub-Sublease, such costs and expenses shall be deemed Additional Rent under this Sub-Sublease, and Sub-Subtenant shall promptly pay Sub-Sublandlord or the applicable provider, as the case may be, the amount of such costs and expenses. Notwithstanding anything to the contrary contained herein, Sub-Subtenant shall not be responsible for the Base Rent, utility expenses or other charges due from Sub-Sublandlord under the terms of the Master Sublease or due from Master Tenant under the Master Lease or any other charges or costs attributable or accruing prior to the Commencement Date, except as set forth in the immediately preceding sentence. Sub-Subtenant will have no obligation to perform any of the obligations of Sub-Sublandlord as "Sublessee" under the Master Sublease or Master Tenant under the Master Lease which accrued prior to the Commencement Date but which have not been performed by Sub-Sublandlord (or Master Tenant, as applicable), including without limitation, the obligation to repair any damage to the Sub-Subleased Premises existing as of the Commencement Date, to remove any alterations, additions or improvements performed by or at the direction of Sub-Sublandlord or Master Tenant, to correct any violation of law, ordinance or regulation caused by Sub-Sublandlord or Master Tenant, or to indemnify, defend or hold harmless Sub-Sublandlord, Master Tenant or Master Landlord with respect to matters occurring prior to the Commencement Date. Sub-Sublandlord shall not be liable for damaged caused or repairs necessitated by the acts or omissions on Sub-Sublandlord during the Term.

5. Security: Upon execution hereof by Sub-Subtenant, Sub-Subtenant shall pay to Sub-Sublandlord the sum of Ninety Six Thousand Eight Hundred Six and 28/100 Dollars ($96,806.28), which shall constitute a deposit ("**Security Deposit**") as security for the faithful performance and observance by Sub-Subtenant of the terms, covenants, conditions, provisions and agreements of this Sub-Sublease. It is agreed that in the event Sub-Subtenant defaults in respect of any of the terms, covenants, conditions, provisions and agreements of this Sub-Sublease beyond any applicable notice and cure period, Sub-Sublandlord may use, apply or retain the whole or any part of the security so deposited to the extent required for the payment of any sum as to which Sub-Subtenant is in default or for any sum which Sub-Sublandlord may expend or may be required to expend by reason of Sub-Subtenant's default in respect of any of the terms, covenants, conditions, provisions and agreements of this Sub-Sublease, including but not limited to, any damages or deficiency in the reletting of the Sub-Subleased Premises, whether such damages or deficiency accrued before or after summary proceedings or other re-entry by Sub-Sublandlord. If Sub-Sublandlord so applies or retains any part of the Security Deposit, Sub-Subtenant shall, within ten (10) days of Sub-Sublandlord's demand, deposit with Sub-Sublandlord the amount so applied or retained so that Sub-Sublandlord shall have the full Security Deposit on hand at all times during the term of this Sub-Sublease. The parties agree that Sub-Sublandlord shall not be required to keep the Security Deposit separate from Sub-Sublandlord's general accounts and no interest shall be due to Sub-Subtenant on the Security

Deposit. The unapplied portion of the Security Deposit shall be returned to Sub-Subtenant within thirty (30) days following the expiration of the Term and Sub-Subtenant's surrender of the Premises in accordance with the terms of this Sub-Sublease.

6. Holdover: If Sub-Subtenant does not surrender and vacate the Sub-Subleased Premises upon the termination or expiration of this Sub-Sublease in accordance with this Sub-Sublease, Sub-Subtenant shall be a tenant at sufferance, and the parties agree that Sub-Subtenant shall pay Sub-Sublandlord holdover Rent at the monthly rate of one hundred fifty percent (150%) of the last applicable Monthly Base Rent and Additional Rent. Sub-Sublandlord and Sub-Subtenant acknowledge and agree that, under the circumstances existing as of the date of this Sub-Sublease, it is impracticable and/or extremely difficult to ascertain the reasonable rental value of the Sub-Subleased Premises as of the termination or expiration of this Sub-Sublease and that the holdover rental value established herein is a reasonable estimate of the damages that Sub-Sublandlord would suffer as the result of the failure of Sub-Subtenant to timely surrender possession of the Sub-Subleased Premises. Notwithstanding the foregoing, and in addition to all other rights and remedies on the part of Sub-Sublandlord, if Sub-Subtenant fails to surrender the Sub-Subleased Premises upon the termination or expiration of this Sub-Sublease, in addition to any other liabilities to Sub-Sublandlord accruing therefrom (including, without limitation, holdover charges and lost profits charged by Master Landlord and/or Master Tenant), Sub-Subtenant shall indemnify, defend and hold Sub-Sublandlord harmless from all claims, losses, damages, causes of action, obligations, and attorney's fees and costs, resulting from such failure.

7. Delivery: Sub-Sublandlord shall deliver the Sub-Subleased Premises to Sub-Subtenant in its AS-IS, WHERE IS condition. The parties acknowledge and agree that Sub-Sublandlord has made no representations or warranties with respect to the condition of the Sub-Subleased Premises, and Sub-Sublandlord shall have no obligation whatsoever to make or pay the cost of any alterations, improvements or repairs to the Sub-Subleased Premises. Notwithstanding the foregoing, the Sub-Subleased Premises shall be delivered to Sub-Subtenant on the Commencement Date in vacant and in broom-clean condition, and with all items of furniture, fixtures and personal property located in the Sub-Subleased Premises as of the date on which Sub-Sublandlord delivers possession thereof to Sub-Subtenant (collectively, the "**FF&E**"), except for the specific items listed in the exclusions inventory attached hereto as **Exhibit "B"**. Notwithstanding the foregoing, Sub-Sublandlord represents and warrants that, to Sub-Sublandlord's actual knowledge, all building systems serving the Sub-Subleased Premises (including, without limitation, the HVAC, electrical and plumbing systems serving the Sub-Subleased Premises) are in good condition and repair. Master Landlord shall be solely responsible for performance of any repairs required to be performed by Master Landlord under the terms of the Master Lease; provided, however, at the request of Sub-Subtenant, Sub-Sublandlord shall request that Master Tenant request performance of the same in writing from Master Landlord in accordance with the terms of Section 2(a) of the Master Sublease. By taking possession of the Sub-Subleased Premises, Sub-Subtenant conclusively shall be deemed to have accepted the Sub-Subleased Premises in its as-is, then-existing condition, without any warranty whatsoever of Sub-Sublandlord with respect thereto.

8. Assumption of Obligations: This Sub-Sublease is and at all times shall be subject and subordinate to the Master Lease and Master Sublease, and the rights of Master Landlord and Master Tenant thereunder. Sub-Subtenant hereby expressly assumes and agrees: (i) to comply with all provisions of the Master Lease and Master Sublease which are incorporated hereunder pursuant to Section 9; and (ii) to perform all the obligations on the part of the "Tenant" to be performed under the terms of the Master Lease, and "Sublessee" to be performed under the terms of the Master Sublease, as incorporated herein. In the event the Master Lease and/or Master Sublease is terminated for any reason whatsoever, this Sub-Sublease shall terminate simultaneously with such termination. In the event of a conflict between the express provisions of this Sub-Sublease and the provisions of the Master Lease or Master Sublease, as incorporated herein, or the provisions of any consent to this Sub-Sublease by Master Landlord or Master Tenant, the express provisions of this Sub-Sublease shall prevail as between Sub-Sublandlord and Sub-Subtenant. Sub-Sublandlord shall not amend or modify the Master Lease or Master Sublease in any way so as to materially and adversely affect Sub-Subtenant or its interest hereunder, materially increase Sub-Subtenant's obligations hereunder, or materially restrict Sub-Subtenant's rights hereunder, without the prior written consent of Sub-Subtenant.

9. Incorporation By Reference: Except as set forth below, the terms and conditions of this Sub-Sublease shall include all of the terms of the Master Lease (as incorporated into the Master Sublease) and the Master Sublease, and such terms are incorporated into this Sub-Sublease as if fully set forth herein, except that: (i) each reference in such incorporated sections to the "Sublease" shall be deemed a reference to this Sub-Sublease; (ii) each reference to "Sublessee" and "Sublessor" shall be deemed a reference to "Sub-Subtenant" and "Sub-Sublandlord" (in addition to Master Tenant), respectively, except as otherwise expressly set forth herein, and each reference to "Sublet Premises" shall be deemed a reference to the "Sub-Subleased Premises"; (iii) with respect to work, services, repairs, restoration, insurance, indemnities, representations, warranties or the performance of any other obligation of Master Landlord under the Master Lease, or Master Tenant under the Master Sublease, the sole obligation of Sub-Sublandlord shall be to request the same in writing from Master Tenant as and when reasonably requested to do so by Sub-Subtenant, and to use Sub-Sublandlord's reasonable efforts (without requiring Sub-Sublandlord to spend more than a nominal sum) to obtain such performance; (iv) with respect to any obligation of Sub-Subtenant to be performed under this Sub-Sublease, wherever the Master Sublease grants to Sub-Sublandlord a specified number of days to perform its obligations under the Master Sublease, except as otherwise provided herein, Sub-Subtenant shall have three (3) fewer days to perform the obligation, including, without limitation, curing any defaults; (v) with respect to any approval required to be obtained from the "Landlord" under the Master Lease, or "Sublessor" under Master Sublease, such consent must be obtained from each of Master Landlord, Master Tenant and Sub-Sublandlord; (vi) in any case where Master Landlord or Master Tenant reserves or is granted the right to manage, supervise, control, repair, alter, regulate the use of, enter or use the Sub-Subleased Premises or any areas beneath, above or adjacent thereto, perform any actions or cure any failures, such reservation or right shall be deemed to be for the benefit of each of Master Landlord, Master Tenant and Sub-Sublandlord; (vii) in any case where "Tenant" or "Sublessee" is to indemnify, defend, release or waive claims against Master Landlord or Master Tenant, such indemnity, defense, release or waiver shall be deemed to run from Sub-Subtenant to each of Master Landlord, Master Tenant

and Sub-Sublandlord; (viii) in any case where "Tenant" or "Sublessee" is to execute and deliver certain documents or notices, such obligation shall be deemed to run from Sub-Subtenant to each of Master Landlord, Master Tenant and Sub-Sublandlord; (ix) all payments shall be made to Sub-Sublandlord; (x) in all provisions of the Master Lease or Master Sublease requiring the tenant or sublessee thereunder to submit, exhibit to, supply or provide Master Landlord or Master Tenant with evidence, certificates, or any other matter or thing, Sub-Subtenant shall be required to submit, exhibit to, supply or provide, as the case may be, the same to Sub-Sublandlord, Master Tenant and Master Landlord; (xi) neither Sub-Sublandlord nor Master Tenant shall have any obligation to restore or rebuild any portion of the Sub-Subleased Premises after any destruction or taking by eminent domain; and (xii) Sub-Subtenant shall pay all consent and review fees set forth in the Master Lease and Master Sublease to Sub-Sublandlord, subject to the last sentence of Section 10 hereof. Sub-Sublandlord may enforce directly against Sub-Subtenant any of the rights and remedies granted to the Master Landlord pursuant to the Master Lease, or granted to the Master Tenant under the Master Sublease. Notwithstanding the foregoing, the following provisions of the Master Lease shall not be incorporated herein: Summary of Basic Lease Information Sections 3(b), (e), (i), (l) and (m), 6, 8 (second to the last sentence), 22, 26, 29, and 31, and any provisions granting: option rights, rights to renew or extend, rights of first refusal, rights of first negotiation and/or expansion rights.

10. Conditions Precedent: This Sub-Sublease and Sub-Sublandlord's and Sub-Subtenant's obligations hereunder are conditioned upon the written consent of Master Landlord to this Sub-Sublease ("**Landlord's Consent**") and the written consent of Master Tenant to this Sub-Sublease ("**Master Tenant's Consent**"). If the Commencement Date fails to occur within forty-five (45) days after the mutual execution of this Sub-Sublease, then Sub-Sublandlord or Sub-Subtenant may terminate this Sub-Sublease by giving the other party written notice thereof prior to the date Sub-Sublandlord delivers the Landlord's Consent and Master Tenant's Consent to Sub-Subtenant, and in such an event, Sub-Sublandlord shall not be liable therefor, and Sub-Sublandlord shall promptly return to Sub-Subtenant its Security Deposit and the pre-payment of any Rent paid by Sub-Subtenant. Sub-Sublandlord shall reimburse Master Landlord and Master Tenant its costs and fees under the Master Lease and Master Sublease with respect to consenting to this Sub-Sublease.

11. Surrender: Subject to the provisions of the Master Lease, Sub-Subtenant shall, at Sub-Subtenant's sole cost and expense, vacate and surrender the Sub-Subleased Premises in the condition required under the Master Lease (including, without limitation, Section 29 of the Original Master Lease) and remove all personal property including, but not limited to, the Purchased FF&E (defined below), as well as any other equipment, furniture, and personal property of Sub-Subtenant located on or in the Sub-Subleased Premises prior to the expiration or earlier termination of this Sub-Sublease. Notwithstanding any provision to the contrary, Sub-Subtenant's surrender obligations shall only apply to furniture, furnishings, fixtures, equipment, personal property, alterations, improvements, and computer cabling and wiring, installed or owned by Sub-Subtenant, and/or conditions created by Sub-Subtenant. In the event that Sub-Sublandlord or Master Tenant is required to remove any Specialty Alterations, FF&E, cabling/wiring, or other alterations or improvements from the Sub-Subleased Premises (excluding any such items for which Sub-Subtenant is responsible hereunder), then Sub-Subtenant shall provide

Sub-Sublandlord and Master Tenant with access to the Sub-Subleased Premises (a) at least ninety (90) days prior to the expiration of the Term (in the case of any required removal of an internal stairwell) and (b) at least thirty (30) days prior to the expiration of the Term (for all other required removals) in order to permit Sub-Sublandlord and/or Master Tenant to complete such removal and any restoration required with respect thereto (it being understood that Sub-Sublandlord shall use commercially reasonable efforts to minimize interference with Sub-Subtenant's operations within the Sub-Subleased Premises during the completion of such work). Any property not timely removed by Sub-Subtenant shall, at Sub-Sublandlord's option, become the property of Sub-Sublandlord, and all costs incurred by Sub-Sublandlord in removing and disposing of such property and restoring the Sub-Subleased Premises following such removal shall be paid by Sub-Subtenant upon demand by Sub-Sublandlord.

12. Administration of Lease: In addition to such certificates and forms Sub-Subtenant is required to complete and execute under the Master Lease and Master Sublease, Sub-Subtenant shall complete and execute all reasonable forms and documents required by Sub-Sublandlord for the administrative purposes related to this Sub-Sublease, from time to time, within ten (10) days of Sub-Sublandlord's request.

13. Broker: Sub-Sublandlord and Sub-Subtenant each represent to the other that they have dealt with no real estate brokers, finders, agents or salesmen other than Cresa Global and CSR Commercial Real Estate Services (the "**Brokers**") in connection with this transaction. Sub-Sublandlord shall pay Brokers a commission pursuant to a separate agreement. Each party agrees to hold the other party harmless from and against all claims for brokerage commissions, finder's fees or other compensation made by any other agent, broker, salesman or finder as a consequence of such party's actions or dealings with such agent, broker, salesman, or finder. Cresa Global is the broker representing Sub-Subtenant only ("Sub-Subtenant's Broker") and CSR Commercial Real Estate Services is the broker representing Sub-Sublandlord only ("Sub-Sublandlord's Broker") in this transaction. Sub-Sublandlord and Sub-Subtenant acknowledge and agree to such representation.

14. FF&E: Sub-Sublandlord hereby agrees to rent to Sub-Subtenant (at no extra charge or rent) the FF&E owned by Sub-Sublandlord and delivered to Sub-Subtenant within the Sub-Subleased Premises on the Commencement Date, all in its "AS-IS" condition, "WHERE IS", and without warranty, express or implied, of any kind or nature. Sub-Subtenant shall maintain and repair the FF&E as and when reasonably necessary at Sub-Subtenant's sole cost and expense. Provided this Sub-Sublease is in full force and effect as of the date which is thirty (30) days prior to the Sublease Expiration Date, and Sub-Subtenant is not then in default of this Sub-Sublease beyond any applicable notice and cure period and has not been in default of the Sub-Sublease for more than fifteen (15) days in the aggregate during the Term, then Sub-Subtenant shall have the option (in its sole discretion) to purchase all such FF&E for the price of One Dollar ($1.00) by written notice to Sub-Sublandlord on or before the thirtieth (30th) day prior to the Sublease Expiration Date (the "**Purchased FF&E**"). Sub-Sublandlord represents and warrants that there no party has claims for or liens against the Purchased FF&E. If Sub-Subtenant timely exercises such option, then the parties shall execute the Bill of Sale attached hereto as **Exhibit "C"** and all right, title and interest of Sub-Sublandlord in such Purchased

FF&E shall be deemed conveyed to Sub-Subtenant, and Sub-Subtenant shall, at its sole cost and expense, remove all of the Purchased FF&E from the Sub-Subleased Premises, and Sub-Subtenant shall repair any damage caused by such removal. If Sub-Subtenant shall not timely exercise such option, then such option shall be null and void and Sub-Subtenant shall have no further right or interest in the FF&E and Sub-Subtenant shall not be required to remove the FF&E from the Sub-Subleased Premises.

15. Notices: The address of each party for all purposes connected with this Sub-Sublease shall be that address set forth below its signature at the end of this Sub-Sublease. All notices, demands or communications in connection with this Sub-Sublease shall be: (a) personally delivered; or (b) properly addressed and (i) submitted to an overnight courier service, charges prepaid, or (ii) deposited in the mail (certified, return receipt requested, and postage prepaid). Notices shall be deemed delivered upon receipt, if personally delivered, one (1) business day after being submitted to an overnight courier service and three (3) business days after mailing, if mailed as set forth above. All notices given to Master Landlord or Master Tenant under the Master Lease or Master Sublease shall be considered received only when delivered in accordance with the Master Lease or Master Sublease, respectively.

16. Sub-Sublandlord's Right to Cure Defaults: At any time during the Term and with not less than three (3) business days' written notice to Sub-Subtenant (except in the event of an emergency, in which case no notice shall be required), Sub-Sublandlord may, but is not obligated to, cure or otherwise discharge any default by Sub-Subtenant under this Sub-Sublease beyond any applicable notice and cure period. Any and all costs or expenses which Sub-Sublandlord may expend or incur for this purpose shall be due and payable in full promptly upon Sub-Sublandlord's written demand thereof, plus an administrative fee of five percent (5%) on such amounts.

17. Notice of Accidents: Sub-Subtenant shall give Sub-Sublandlord notice of any fire, casualty or accident in or about the Sub-Subleased Premises promptly after Sub-Subtenant becomes aware of such event.

18. Sublease Profits: Sub-Subtenant shall have the right to further sublease all or part of the Premises, but must receive prior written consent from Sub-Sublandlord, Master Tenant and Master Landlord, prior to subleasing the Sub-Subleased Premises. Any profit from a potential further sublease will be split equally with Sub-Sublandlord and Sub-Subtenant, after deducting Sub-Sublandlord's costs including commission, legal fees and free rent. Additionally, Sub-Sublandlord shall have the right to recover its actual losses from any further subleasing profits prior to Sub-Subtenant taking any profit. Such losses shall include the difference in total rent between what Sub-Sublandlord is paying Master Tenant and the rent that Sub-Sublandlord is receiving from Sub-Subtenant. So Sub-Sublandlord will have the right to be made whole financially from any rent differential, prior to any profit provided to Sub-Subtenant. Sub-Subtenant's cost and Sub-Sublandlord's cost shall be deducted evenly (without priority to either party) on a 1:1 basis, before splitting any profit.

19. California Certified Access Specialist Inspection: Pursuant to California Civil Code § 1938, Sub-Sublandlord hereby states that the Sub-Subleased Premises have not

undergone inspection by a Certified Access Specialist (CASp) (defined in California Civil Code § 55.52(a)(3)). As a supplement to Section 32 of the Master Sublease, pursuant to Section 1938 of the California Civil Code, Sub-Sublandlord hereby provides the following notification to Sub-Subtenant:

> *"A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or Sub-Sublandlord may not prohibit the Sub-Subtenant or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the Sub-Subtenant or tenant, if requested by the Sub-Subtenant or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction related accessibility standards within the premises."*

20. Miscellaneous: This Sub-Sublease shall in all respects be governed by and construed in accordance with the laws of California. Nothing herein shall limit Sub-Sublandlord's rights and remedies under the Master Lease and/or the Master Sublease, as incorporated herein, which rights and remedies a cumulative and in addition to the rights and remedies under this Sub-Sublease.

21. Counterparts: This Sub-Sublease may be executed in several counterparts, each of which when executed and delivered is an original, but all of which together shall constitute one instrument. Delivery of an executed counterpart of this Sub-Sublease by telecopy or in electronic (i.e. "pdf" or "tif") format shall be effective as delivery of an original.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties have executed this Sub-Sublease as of the day and year first above written.

SUB-SUBLANDLORD:	**SUB-SUBTENANT:**
MEDEOR THERAPEUTICS, INC.,a Delaware corporation	**CAREDX, INC., a Delaware corporation**
By: /s/ Karen Smith Name: Karen Smith Title: CEO	By: /s/ Peter Maag Name: Peter Maag Title: CEO
Address: 1 Tower Pl 9th Floor South San Francisco CA 96080	Address: 3260 Bayshore Blvd. Brisbane, CA 94005

Master Tenant's Consent

Subject to Sub-Sublandlord and Sub-Subtenant obtaining the consent of Master Landlord to this Sub-Sublease, Master Tenant hereby gives its consent to this Sub-Sublease.

SUCCESSFACTORS, INC.

By: _____Name: _____Title: _____

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Peter Maag, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of CareDx, 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: April 30, 2020

By: /s/ Peter Maag

Peter Maag
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED 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 CareDx, 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: April 30, 2020

By: /s/ Michael Bell

Michael Bell

Chief Financial Officer

(Principal Accounting and Financial Officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER 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 on Form 10-Q of CareDx, Inc. (the "Company") for the period ended March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to their knowledge 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 results of operations of the Company.

By:	/s/ Peter Maag	By:	/s/ Michael Bell
	Peter Maag		Michael Bell
	Chief Executive Officer		Chief Financial Officer
	(Principal Executive Officer)		*(Principal Accounting and Financial Officer)*
	April 30, 2020		April 30, 2020

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies the Report, is not deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Report), irrespective of any general incorporation language contained in such filing.