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

Form 10-K

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

For the year ended December 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 001-37888

Tabula Rasa HealthCare, Inc.
(Exact name of registrant as specified in its charter)

Delaware (State of incorporation)	**45-5726437** (I.R.S. Employer Identification No.)
228 Strawbridge Drive, Suite 100 **Moorestown, NJ 08057** (Address of Principal Executive Offices, including Zip Code)	**(866) 648-2767** (Registrant's Telephone Number, including Area Code)

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 $0.0001 per share	TRHC	The Nasdaq Stock Market, LLC

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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

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

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

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

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

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

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

The aggregate market value of the voting common stock held by non-affiliates of the registrant (assuming officers and directors are affiliates) was approximately $906,645,085 as of June 30, 2020, the last business day of the registrant's most recently completed second fiscal quarter, computed based on the closing price on such date.

As of February 16, 2021, the Registrant had 24,682,459 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement to be filed subsequently and delivered to stockholders in connection with the 2021 annual meeting of stockholders are incorporated herein by reference in response to Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the Registrant's fiscal year ended December 31, 2020.

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PART I

Special Note Regarding Forward Looking Statements

This Annual Report on Form 10-K contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The statements contained in this Annual Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended ("Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended ("Exchange Act"). Forward-looking statements are often identified by the use of words such as, but not limited to, "anticipate," "believe," "can," "continue," "could," "estimate," "expect," "intend," "may," "might," "will," "plan," "project," "seek," "should," "target," "would," and similar expressions or variations intended to identify forward-looking statements. The forward-looking statements in this Annual Report on Form 10-K include, among other things, statements about:

- our expectations regarding industry and market trends, including the expected growth and continued structural change and consolidation in the market for healthcare in the United States;
- our expectations about the growth of PACE organizations;
- our expectations about private payers establishing their own at-risk programs;
- the advantages of our solutions as compared to those of competitors;
- our estimates about our financial performance and that some of our expenses will decline as a percentage of total revenue;
- the visibility into future cash flows from our business model;
- our growth strategy, including our ability to grow our client base;
- our plans to further penetrate existing markets and enter new markets;
- expectations of earnings, revenue, and other financial items;
- plans, strategies and objectives of management for future operations;
- our ability to establish and maintain intellectual property rights;
- our ability to retain and hire necessary associates and appropriately staff our operations;
- future capital expenditures;
- future economic conditions or performance;
- our plans to pursue strategic acquisitions and partnerships and international expansion;
- our plans to expand and enhance our solutions; and
- our estimates regarding capital requirements and needs for additional financing.

These statements are based on the beliefs and assumptions of our management based on information currently available to management. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to:

- our ability to adapt to changes or trends within the market for healthcare in the United States;
- a significant increase in competition from a variety of companies in the healthcare industry;
- developments and changes in laws and regulations, including increased regulation of the healthcare industry through legislative action and revised rules and standards;
- the extent to which we are successful in gaining new long-term relationships with clients or retaining existing clients;
- the growth and success of our clients, which is difficult to predict and is subject to factors outside of our control;
- our ability to maintain relationships with Thrifty Drug Stores, Inc., a group purchasing organization;
- increasing consolidation in the healthcare industry;
- managing our growth effectively;
- fluctuations in operating results;
- failure or disruption of our information technology and security systems, or of those of our third-party vendors;
- dependence on our senior management and key employees;

- our future indebtedness and our ability to obtain additional financing, reduce expenses or generate funds when necessary;
- our ability to achieve profitability in the future;
- changes or delays in the regulatory process;
- adverse economic and political conditions;
- our ability to successfully integrate acquired businesses into our business and realize the anticipated synergies and related benefits of these acquisitions;
- the volatility of our stock price;
- the impact of changes in tax laws; and
- those discussed in the section titled “Risk Factors” included in Item 1A. of Part I of this Annual Report on Form 10-K, and the risks discussed in our other filings with the Securities and Exchange Commission, or the SEC.

Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

Unless the context requires otherwise, the terms the “Company,” “Tabula Rasa HealthCare Inc.,” “we,” “us” and “our” mean Tabula Rasa HealthCare, Inc., a Delaware Corporation, and its consolidated subsidiaries.

Item 1. Business

Overview

Tabula Rasa HealthCare, Inc. is a healthcare technology company advancing the safe use of medications by creating solutions designed to empower pharmacists, providers, and patients to optimize medication regimens. Our advanced proprietary technology, MedWise™, identifies the cause of medication-related problems, including adverse drug events, so healthcare professionals can minimize harm and reduce medication-related risks. Our software and services help improve patient outcomes and lower healthcare costs through reduced hospitalizations, emergency department visits, and healthcare utilization. We also believe we have the most extensive clinical tele-pharmacy network in the United States, or U.S., with seven call centers across the country, a number of which are tethered to academic institutions. Health plans and pharmacies nationwide use our solutions to assist them in meeting a range of value-based payment requirements. Our vision and mission are supported by our industry-recognized leadership team, our significant investments and collaborations to advance precision pharmacotherapy research and its application in clinical practice, and our culture.

We operate our business through two segments, CareVention HealthCare and MedWise HealthCare. Our CareVention HealthCare segment provides our clients, primarily Programs of All-Inclusive Care, or PACE, programs, with medication fulfillment services, cloud-based software, pharmacy benefit management (PBM) solutions, and clinical pharmacist services at the point-of-care. Our MedWise HealthCare segment provides our clients, primarily health plans and retail pharmacies, with cloud-based software and full-service clinical pharmacy programs.

CareVention HealthCare

CareVention HealthCare primarily services PACE, which is a Centers for Medicare & Medicaid Services, or CMS, sponsored program providing comprehensive medical and social services to adults age 55 and older who need a nursing facility level of care but can live safely in community settings. Our clients include ArchCare Senior Life, Trinity Health, Palm Beach PACE, and St. Paul’s PACE. We go to market through a number of different brands, including CareKinesis, Capstone Risk Adjustment Services, PACElogic, TruChart, PeakTPA, PersonifilRx, and Pharmastar.

Our largest CareVention HealthCare offering is our medication fulfillment services which are built around our novel and proprietary Medication Risk Mitigation Matrix, or MRM Matrix, designed to enable clinicians to increase patient safety, create individualized medication regimens, promote adherence, reduce total medication burden, and eliminate unnecessary prescriptions. Our medication fulfillment and reminder packaging services utilize the MRM Matrix technology to reduce medication-related risk for the high-cost, high-risk PACE population. With our October 2020 acquisition of Personica and its two pharmacies, we now operate five closed-door pharmacies across the U.S. focused on serving PACE organizations. The CareVention HealthCare suite of offerings also includes risk adjustment services, pharmacy benefit management solutions, cloud-based electronic health records solutions and third-party administration services, which are all specifically tailored to the PACE market.

The CareVention HealthCare segment revenue model is primarily based on payments on a per-member per-month, or PMPM, basis, payments on a subscription basis, payments on a transaction basis, and charges and dispensing fees for medication fulfillment.

MedWise HealthCare

Our MedWise HealthCare segment is primarily comprised of service offerings from our acquisitions of SinfoníaRx in September 2017 and PrescribeWellness in March 2019. As a result of these acquisitions, we are a leading provider of Medication Therapy Management, or MTM, software and services for Medicare, Medicaid, and commercial health plans, and also a leading provider of cloud-based patient engagement software and services to more than 14,000 pharmacies nationwide. More than 280 health plans including several Blue Cross Blue Shield organizations, Express Scripts, Humana, UnitedHealth Group, and WellCare utilize our MedWise HealthCare solutions to execute a range of clinical programs. These programs support MTM, Enhanced MTM (a five-year Centers for Medicare & Medicaid Services Innovation Part D pilot that began January 1, 2017), Medicare Part C and Part D Star Ratings, Healthcare Effectiveness Data and Information Set (HEDIS) quality measures, and post-hospital discharge care transitions through a combination of our PrescribeWellness retail pharmacy network employing 30,000 healthcare professionals, primarily pharmacists, and/or our clinical tele-pharmacy call centers across the country employing nearly 500 pharmacists. Within our MedWise HealthCare segment, we offer our cloud-based software and clinical pharmacist services through a number of different brands, including MedWise, SinfoníaRx, RxCompanion, PrescribeWellness, and DoseMeRx.

The MedWise HealthCare segment revenue model is primarily based on payments on a PMPM basis, payments on a subscription basis, and payments on a fee-for-service basis for each clinical intervention.

Industry and Market

We believe demographic, legislative, and industry trends support our long-term growth targets. According to data from the U.S. Census Bureau, the number of Americans age 65 and older, or seniors, is expected to reach 74.1 million by 2030, which will represent more than one in five Americans. An April 2020 report from the Lown Institute noted polypharmacy (defined as the simultaneous use of five or more medications) has reached “epidemic proportions”. The Institute stated that 40% of seniors are taking five or more prescription medications to treat the growing prevalence of multiple chronic conditions, including heart disease, diabetes, asthma, high blood pressure, and cancer.

From a legislative perspective, we believe that important drivers supporting our growth are: the long-term transition to value-based care; CMS Medicare Part C and Part D regulations governing Star Ratings; the ongoing Part D Enhanced Medication Therapy Management, or MTM, pilot, and a changing pharmacy landscape, including the expanding scope and role of community pharmacists as highlighted by new state laws enacted in 2020 in Idaho, New Mexico, Virginia, and West Virginia, which recognize pharmacists as providers and allow for reimbursement under Medicare Part B.

From an industry perspective, we are addressing a large and growing healthcare problem, which encompasses adverse drug events, or ADEs, compounded by the demographic trends described above. In 2018, 5.8 billion prescriptions were dispensed in the U.S. per IQVIA Institute, an increase of 2.7% from 2017. That year, prescriptions for chronic, persistent conditions accounted for more than two-thirds of the total dispensed prescriptions. Also in 2018, an Annals of Pharmacology review estimated the annual cost of prescription-related morbidity and mortality resulting from non-optimized medication therapy at $528.4 billion including 275,689 deaths per year.

Our Growth Strategy

In early 2020, we articulated a long-term growth strategy based on three key tenets:

1) Further penetration of the PACE market by leveraging our existing CareVention HealthCare membership base that includes 90% of all PACE members utilizing at least one of our solutions and cross-selling to increase our average PMPM fee; organic member growth within our existing clients in part due to the acceleration of the National PACE Association’s PACE 2.0 initiative designed to significantly increase enrollment to 200,000 by 2028; and continued investments in our offerings to attract new PACE members and, more broadly, Medicare Advantage organizations.

2) Accelerating the adoption of our MedWise software and clinical pharmacy programs by health plans across all lines of business, including Medicare Part C and Part D, Medicaid managed care, and commercial clients with a focus on self-insured employer groups.

3) Increasing the number of pharmacies licensing the entire PrescribeWellness solution set, including our MedWise platform with technology integration launched in July 2020, across our growing pharmacy footprint of more than 14,000 pharmacies nationwide.

To supplement our organic growth, we made a total of seven acquisitions from the beginning of 2018 through 2020, and we continue to evaluate strategic acquisitions across both segments of our business. As a result of our most recent acquisition, Personica, and our organic member growth, our PACE clients had a combined patient census of 44,947 at the end of 2020, which compares with 31,820 and 27,690 patients at the end of 2019 and 2018, respectively.

Further Penetrate the Programs of All-Inclusive Care for the Elderly Market

We are the market leader in providing medication risk management services to PACE, a CMS-sponsored program through which participating healthcare organizations provide fully integrated healthcare services on an at-risk basis for older adults, most of whom are dually eligible for Medicare and Medicaid. Our medication management plus pharmacy fulfillment PACE clients cover approximately 31% of the total PACE enrollees nationwide at the end of 2020.

We have organized our PACE offerings under the CareVention HealthCare brand, which offers comprehensive sets of solutions, including medication management services and fulfillment, pharmacy benefit management solutions, risk adjustment services, third party administrator services and electronic health records software. By organizing our sales and marketing resources under the CareVention HealthCare brand we have streamlined efforts to facilitate cross-selling and increase the adoption of our services.

We believe that we have a significant opportunity to continue to grow within the PACE market and we expect our PACE clients to continue to grow organically to cover more eligible lives through expansion of existing sites and new PACE center locations. Based on recent industry data there are 2.2 million PACE-eligible individuals in the U.S., which is less than 3% penetrated. In 2017, the National PACE Association launched PACE 2.0, an initiative designed to facilitate the acceleration of growth in the number of PACE enrollees, or participants. The goal is 100,000 participants by 2024 and 200,000 by 2028.

Continue Expansion into the Payer and At-Risk Provider Markets

We believe that the growth of government healthcare programs and the shift to value-based care models are creating opportunities to capture growing portions of the expanding healthcare market. Accordingly, we are actively targeting at-risk, value-based markets, including managed care organizations, physician provider groups, and self-insured employer groups. We have recently started leveraging our CareVention Healthcare portfolio of services to secure contracts with a number of start-up Medicare Advantage plans, and we expect to continue to further penetrate the broader Medicare market with our solutions including targeting Direct Contracting Entities.

On January 1, 2017, we launched our Enhanced Medication Therapy Management, or EMTM, program, with a large, regional Medicare Part D Prescription Drug Plan, or Regional PDP, participating in the CMS EMTM pilot. As of February 2021, CMS has only reported the results of the first two calendar years, 2017 and 2018, of the pilot and we, along with our partners, exceeded the benchmark set by CMS for targeted savings in medical expenditures. During the first quarter of 2021, we expect to publish an internal analysis of results from calendar years 2018 and 2019 and we have engaged with one of the world’s largest providers of actuarial services to validate the methodology used to assess the impact of our services.

Continue to Innovate and Expand Platform Offerings to Meet Evolving Market Needs

We believe our strategic investments in human capital, technology, and services position us to continue to pursue rapid innovation and expand our medication risk management solutions and other platform offerings to the broader healthcare marketplace. For example, we developed the MedWise Risk Score, or MRS, and launched associated high-throughput medication risk stratification technology for identification of patients in need of clinical intervention. In 2020, we enhanced our PrescribeWellness software platform and announced a partnership with PioneerRx, one of the leading pharmacy management systems, to further expand the access to the MedWise platform in the retail pharmacy market.

Selectively Pursue Strategic Acquisitions

Since our founding in 2009, we have successfully completed and integrated eleven acquisitions, which have significantly expanded our market footprint, enhanced our medication risk management offerings and added valuable complementary services that can be sold into our existing customer base. We plan to continue to acquire assets and businesses and may enter into strategic partnerships that strengthen or expand our service offerings, capabilities and geographic reach and facilitate our entry into new markets. Our acquisition strategy is driven by our commitment to serving client needs, and we continuously assess the market for potential opportunities.

- In 2017, we acquired SinfoníaRx, or SRx, and became the leading provider of Medication Therapy Management, or MTM, services to Medicare Part D plans. We currently service more than 280 health plans and 8.6 million lives across Medicare (Part C and Part D), Medicaid managed care, and the employer market. We expect all Part D plans will eventually have to conform to new clinical requirements resulting from the CMS EMTM pilot program, and that through our participation in the pilot, we are one of a few healthcare organizations well positioned to help Part D plans covert to these new standards.

- In 2019, we acquired PrescribeWellness, a provider of cloud-based patient engagement solutions to retail pharmacy focusing on independent community pharmacies. At the end of 2020, we served more than 14,000 pharmacies. We believe the pharmacy market is evolving and our customers are looking for new ways to generate revenue beyond prescription fulfillment. Our MedWise platform allows these pharmacies to not only participate in our network and deliver reimbursable clinical interventions, but also differentiate themselves in value-based payment arrangements with payers.

- In 2020, we acquired Personica, a provider of pharmacy services, including 340B and Medicare Part D administration solutions to the PACE market. This addition to our CareVention HealthCare segment increases our pharmacy footprint, adds a new set of pharmacy benefit management capabilities, and advances our pharmacy offering to serve 340B entities, which represent some of the largest PACE programs, and, we believe, strengthens our ability to cross-sell highly complementary solutions.

Our Software and Services

Our Software

Our cloud-based software applications are designed to assist prescribers and pharmacists with patient engagement, identification of high-risk patients, clinical decision support, documentation of clinical interactions, ordering medications and lab tests, and care management.

Most of our personalized medication risk management services are based on our MRM Matrix technology. For each patient, the personalized MRM Matrix incorporates personal medical history data inputs, summarizes the aggregate risk of the medications the patient is taking based on proprietary algorithms and provides clinical alerts, including for the risk of cognitive impairment, sedation, and an unintentional overdose. This MRM Matrix can be utilized by prescribers independently or analyzed by our pharmacists, to optimize each patient's medication regimen. Elements of the MRM Matrix are currently available in the *EireneRx*, *MedWise*, *TruChart*, *PACElogic* and *PrescribeWellness* platforms.

EireneRx

EireneRx is our cloud-based medication decision-support and e-prescribing platform, which includes an order entry module used by healthcare organizations to access patient medication-related information and utilize our personalized proprietary MRM Matrix at the point-of-prescribing. *EireneRx* provides a shared patient medication profile that enables client clinicians and our pharmacists to collaborate on medication management in real time. The *EireneRx* platform provides MRM Matrix dashboards, as well as a secure instant messaging feature, through which our pharmacists answer questions and make recommendations to prescribers. *EireneRx* is integrated with our prescription fulfillment pharmacies and is also capable of sending prescriptions to substantially all pharmacies in the United States

MedWise

MedWise software provides the medication decision support components of *EireneRx*, primarily our MRM Matrix, for clients seeking to manage their medication risk and improve medication outcomes and patient relationships by enhancing their existing programs or systems. *MedWise* can be integrated with e-prescribing modules, EHRs, pharmacy management systems, clinical systems, case management platforms and other clinical databases. We believe *MedWise* is broadly applicable to all healthcare organizations that employ clinicians who prescribe medications and to those with pharmacists or other clinicians that provide support to prescribers. Managed care organizations use *MedWise* to improve medication therapy outcomes, which can provide benefits to a broad range of at-risk providers, healthcare systems, hospitals, and pharmacies.

RxCompanion

RxCompanion is a highly scalable cloud-based MTM software platform designed to aid in the identification and resolution of medication and other health-related problems. Through a patient-centric approach, *RxCompanion* utilizes demographic data, pharmacy claims, medical claims and other health information to identify at-risk patients. The potential and existing health problems, identified using hundreds of proprietary clinical algorithms, are triaged based on urgency and complexity and resolved through telephonic consultations, face-to-face consultations, or video-based consultations with MTM providers using the *RxCompanion* application.

TruChart

TruChart is a web-based electronic health record, or EHR, system for PACE organizations. This comprehensive solution covers end-to-end functionality to manage care coordination, enrollments, authorizations, utilization management, scheduling, claims payment, interfaces, and reporting. *TruChart* enables tracking of measurable outcomes in defined time frames; complete assessments for initial, episodic, and reassessments across disciplines; access to longitudinal views of cognitive and risk assessments; and utilization of population views of acuity level to stratify high-risk participants.

PACElogic

PACElogic delivers neatly organized, real-time shareable workflows covering all aspects of operations for PACE organizations and other small health plans. Features include EHR, customer relationship management, claims adjudication, electronic data interchange, care management, coordination and planning, integration with community-based providers, and all federal and state required reporting. Clinical and non-clinical data is brought together into a unified health plan management system.

DoseMeRx

DoseMeRx is unique decision support software that leverages clinically validated pharmacokinetic drug models, patient characteristics, drug concentrations, and genotypes to guide dose optimization, with a focus on the more than 5,100 community hospitals across the U.S. It is the world's first precision dosing tool designed for clinical practice that uses Bayesian dosing methods. *DoseMeRx* works by digitally constructing a virtual model of a patient's individual pharmacokinetics. Then, *DoseMeRx* calculates an accurate individualized dose to reach the therapeutic target. This model can also be used to simulate potential outcomes of different dosing regimens to ensure the best possible recommendation for every patient.

PrescribeWellness

PrescribeWellness has been empowering community pharmacies to expand their services, reach more patients, and improve Star Ratings since 2010. Compatible with 99% of pharmacy management systems, the PrescribeWellness core Patient Engagement Center platform provides a real-time dashboard of pharmacy transactions and key metrics including the ability to identify and communicate with patients for adherence and support services via text message, email, or a call recorded in their local pharmacist's voice. The software's task-based workflow helps staff fill orders, anticipate demand, and highlight any additional care a patient might need, such as medication synchronization (our StarWellness Med Sync solution), medication therapy management, or a MedWise medication safety review. Additional

solutions assist with finding health insurance coverage (PrescribeMedicare), administering and managing vaccines (VaccineComplete), and accurately documenting and billing for clinical services (PrescribeCare).

Our Services

Our clinical pharmacist collaboration service, prescription fulfillment and reminder packaging service, health plan management services including risk adjustment and third party administrator services, and pharmacy cost management service are designed to improve patient experiences and outcomes and contain costs. The revenue models under these service contracts typically include a fee assessed for each medication review, payments on a per-member per-month basis, payments on a subscription basis, and charges and dispensing fees for medication fulfillment.

Clinical Pharmacist Collaboration

We have teams of clinical pharmacists dedicated to performing both medication safety reviews, or MSRs, and comprehensive medication reviews, or CMRs. These reviews involve communication with prescribers as well as patients. Clinical pharmacist recommendations can include guidance based on the clinical application of pharmacogenomic test results, assessment of the MRM Matrix findings and of patient medical history, and optimization of medication regimens. Our clinical pharmacists provide these personalized medication recommendations through real-time digital and verbal communications. Available 24/7, 365 days per year, we support the medication risk management clinical decision-making process with medication safety recommendations including methods for enhancing adherence when appropriate.

Prescription Fulfillment and Reminder Packaging

We operate five prescription fulfillment pharmacies strategically located to efficiently distribute medications nationwide. Informed by each patient's personalized MRM Matrix, we package medications, synchronize fills, and aggregate doses by day and time-of-day to increase the ease of adherence by patients to their optimized medication regimens. Using robotic dispensing machines, our scalable, high-performance systems allow for an array of medication packaging options that include multi-dose deep-well cards and multi-dose pouches.

Health Plan Management

Long-term optimization of risk adjustment outcomes is complex and, for many organizations, significantly affects financial performance. We take a prospective approach to risk adjustment, beyond the typical strategy of providing retrospective reviews and claims data analysis. We specialize in helping clients optimize processes and systems to capture timely, complete and accurate data. Through these services, we help PACE and other healthcare organizations remain compliant with regulations, make reliable comparisons to internal and external benchmarks and identify high-volume/high-cost issues for quality program initiatives.

We provide third party administrator services that optimize a health plan’s financial management functions and fulfill regulatory requirements. Our expertise in health plan management, particularly in PACE, enables our clients to focus on delivering high-quality care to their members. Our services include enrollment management, accounts receivable, claims adjudication, risk adjustment data submission, encounter data processing and submission, and Medicare Part D data submission.

Pharmacy Benefit Management Solutions

We provide pharmacy benefit management solutions to PACE organizations. These capabilities cover a broad range of administrative and clinical functions including: claims processing, rebate administration and direct and indirect renumeration (DIR) reporting, drug utilization review (DUR) programs, prescription drug event (PDE) management, compliance and audit risk, plan-to-plan (P2P) management, annual Medicare Part D bids, coordination of benefits (COB), true out-of-pocket(TrOOP) cost support, and government and state-level reporting.

Our Clients

Our clients are typically at-risk healthcare organizations, primarily PACE organizations, managed-care organizations, including government and commercial plans, retail pharmacies and other provider groups. We have strong and long-standing relationships with our clients, in many cases providing services under multi-year contracts. As of December 31, 2020, in our largest segment, CareVention HealthCare, we served more than 130 healthcare organizations, predominantly PACE organizations. Excluding the impact of the Personica acquisition, we generated net revenue retention of 111% at our PACE clients during 2020, driven by census growth at existing clients and cross-sell revenue. For 2020, the average PMPM revenue within PACE stood at $439, which includes our October 2020 acquisition of Personica.

In our MedWise HealthCare segment, we serve more than 280 health plans and more than 14,000 retail pharmacies including all Walmart retail pharmacy locations across the U.S. Our MedWise HealthCare segment generated net revenue retention of 73% in 2020 compared to 119% in 2019. The decline in the 2020 MedWise HealthCare net revenue retention was primarily due to consolidation in the health plan industry, which redirected MTM work previously delivered by us, new restrictions related to comprehensive medications reviews completed with caregivers and prescribers, which temporarily slowed patient engagement during the year, and fewer adherence programs resulting from higher adherence rates in 2020 due to health plan actions taken to respond to COVID-19 earlier this year.

PACE Organizations

PACE, a federal and state collaboration, is one of only three established models serving the more than 12 million dual-eligible patient population in the U.S. and focuses on preventing institutional-based placement. PACE embodies many of the characteristics and trends affecting the healthcare industry as a whole, specifically value-based payment models and the desire for seniors to age in place. Our proof of concept was to provide medication risk management technology and services to PACE organizations, which are responsible for elderly patients who typically have complex medication regimens. Since our inception, we have become the market-leader in providing PACE with medication risk management services. Our PACE clients utilizing our medication risk management and pharmacy fulfillment services covered approximately 31% of the total PACE enrollees nationwide at the end of 2020. In addition, we also provide complimentary solutions to assist PACE organizations with operations.

Managed Care Organizations

According to CMS, at the end of 2020, 49.9 million Americans were enrolled in Medicare Part C (i.e., Medicare Advantage) and Part D (Prescription Drug Plan or PDP). In the past decade, the number of beneficiaries enrolled in Medicare Advantage, or MA, plans has more than doubled to 24.8 million in 2020. MA enrollment increased 9.6% in 2020 and total enrollment is expected to grow to more than 40 million by 2030. The Congressional Budget Office projects MA to increase to nearly 51% of total Medicare enrollment or more than 80 million Americans by 2030. According to Medicaid.gov, there were 33.3 million adult lives covered under Medicaid as of September 2020 and according to the Urban Institute, employer-sponsored insurance covered 143.9 million Americans as of July 2020. Many of the health plans we currently contract with have multiple lines of business spanning Medicare, Medicaid and the employer market. We currently provide a range of clinical programs including MTM, third party administrative services, risk adjustment, coding, and clinical documentation education to these markets, and we believe our solutions are broadly applicable throughout the managed care landscape, including to self-funded employer groups.

At-Risk Provider Groups

We contract with at-risk provider groups across the country to provide care transitions support and comprehensive medication management services. We risk-stratify patient cohorts for these groups and identify patients at risk for medication problems. We then collaborate with these groups on interventions to mitigate that risk. These interventions are performed by our clinical teams or in some cases by employees of the at-risk provider, who we have trained and certified.

Intellectual Property

We create, own and maintain various intellectual property assets which, in the aggregate, are of material importance to our business. Our intellectual property assets include: five issued patents and twelve pending patent applications related to our innovations, products and services; trademarks related to our brands, products and services; copyrights in software, documentation, content and databases; and trade secrets relating to data processing, statistical methodologies, data security and other aspects of our business. We are licensed to use certain technology and other intellectual property rights owned and controlled by others, and, similarly, other companies are licensed on a nonexclusive basis to use certain technology and other intellectual property rights owned and controlled by us.

We rely on patent, copyright, trademark and trade secret laws, as well as confidentiality agreements, licenses and other agreements with employees, consultants, vendors and clients. We also seek to control access to and distribution of our proprietary software, confidential information and know-how, technology and other intellectual property. We have five issued patents: (i) U.S. Pat. No. 8,392,220, entitled “Medication Management System and Method” and issued on March 5, 2013, (ii) U.S. Pat. No. 10,720,241, entitled “Medication Risk Mitigation System and Method” and issued on July 21, 2020, (iii) U.S. Pat. No. 10,890,577, entitled “Treatment Methods Having Reduced Drug-Related Toxicity and Methods of Identifying the Likelihood of Patient Harm from Prescribed Medications” and issued on January 12, 2021, (iv) EP DES 005666138-0001, entitled “Graphical User Interfaces” and issued on September 28, 2018, and (v) U.S. D893524, entitled “Display Screen with Graphical User Interface” and issued on August 18, 2020. We also have five non-provisional patent applications pending in the United States. The first application, Application No. 15/008,555, filed on January 28, 2016, relates to medication risk mitigation matrix systems and methods. The second application, Application No. 16/928,557, filed on July 14, 2020, relates to medication risk mitigation systems and methods. The third application, Application No. 17/143,936, filed on January 7, 2021, relates to treatment methods having reduced drug-related toxicity and methods for identifying patient harm. This application also has related foreign counterpart applications in Canada, China, Japan, Hong Kong, Mexico and Europe. The fourth application, Application No. 16/760,631, filed on April 30, 2020, relates to population-based medication risk stratification. This application also has related foreign counterpart applications in Canada, Europe and Singapore. The fifth application, U.S. Application No. 16/870,517, filed on May 8, 2020 is related to population-based medication risk stratification. We also have a pending design patent application, Application No. 29/746,708, filed on August 17, 2020, is related to a display screen with graphical user interface. This application also has a related foreign counterpart application in Europe. We own four copyright registrations in connection with the following software: EireneRx, PACElogic, Mobile Workforce Manager, and Enterprise Services.

We own and use trademarks in connection with products and services, including both unregistered common law marks and issued trademark registrations in the United States. Our material trademarks, service marks and other marks include: EireneRx®, Medication Risk Mitigation by CareKinesis®, MedWise Advisor®, NiaRx®, CareVentions™, Tabula Rasa HealthCare®, SinfoniaRx®, SinfoniaRx Medication Management®, Medliance®, Capstone Performance System®, Medication Risk Mitigation™, Medication Risk Mitigation Matrix™, Peak PACE Solutions™, Mediture®, TruChart®, Cognify™, PACElogic™, DoseMe™, DoseMeRx™, PersonifilRx™, Personifil™, Pharmastar PBM™, Pharmastar™, TimeToHuman™, and Time2Human™.

Our Competitive Landscape

We compete with a broad and diverse set of businesses spanning both of our major business segments, CareVention HealthCare and MedWise HealthCare. We believe the competitive landscape is highly fragmented with no single competitor offering our sophisticated medication sciences and similarly expansive capabilities and solution offerings. Our competitive advantage is largely based on our proprietary medication safety science, healthcare industry expertise, breadth and depth of services, intellectual property including six patents issued or pending, ease of use, reputation, innovation, security, price, reliability and client service. Our medication science has been developed over the course of three decades and investments in this domain include the largest pharmacodynamic and pharmacokinetic laboratory in the Western hemisphere. TRHC has invested more than $100 million in R&D across all of technology platforms from 2016 to 2020. A competitive challenge, most notably within our MedWise payer division, is to demonstrate to our existing and potential clients the value of utilizing our platforms rather than developing or assembling their own alternative capabilities or utilizing providers who offer a subset of our services. However, we believe that the combination of our competitive strengths and successful culture of innovation, including the real-world-tested nature of our solutions and subject matter expertise of our team members , make it time- and cost-prohibitive for our clients or competitors to replace or replicate all that we offer without facing material risk.

Current industry players providing medication risk management service offerings include large and small healthcare data analytics and consulting companies, community and long-term care pharmacies, national pharmacy providers, health plans, genomic testing labs and healthcare information technology companies. Many of our competitors' solutions are regulatory-driven, retrospective in nature, and offer no intervention at the point of care. The services offered by these organizations may include e-prescribing and EHRs utilizing antiquated drug interaction analysis, lab-based genomic evaluation, basic risk stratification solutions, and other traditional approaches to medication therapy management. Many health plans attempt to address non-adherence through outreach efforts, which often require in-house or third-party consultants and have low success rates. Many genomic testing labs lack the ability to apply patient test results in a useful way at the point of care. Post-acute providers typically employ pharmacist consultants to review prescription regimens every 30 days, which is retrospective in nature and generally less effective in improving patient outcomes. Furthermore, typical prescription fulfillment models are reimbursed on a fee-for-service basis and are incentivized based on prescription dispensing volumes. Our clients partner with us to mitigate and prevent medication problems, lower healthcare costs, and improve overall health outcomes, which often involves utilizing our software to optimize prescription regimens.

While we believe that no competitor provides a similar breadth and dept of solutions, we nevertheless compete with other companies' specific products or solutions and markets or care settings. For example, traditional, single drug-to-drug interaction databases are provided by Wolters Kluwer, Elsevier, and Hearst Health. Additional competitors across both of our major market segments include our health plan clients that opt to in-source clinical programs (such as MTM), as well as external vendors such as Cardinal Health, Adhere Health, CHC Health, CSS Health, and MedWatchers. Across the retail pharmacy landscape, we compete with a wide range of public and private companies including Omnicell, CVS Health, RedSail Technologies, OmniSYS, and FDS. We expect that competition will continue to increase as a result of consolidation in both the information technology and healthcare industries. The continued growth in healthcare spending, the ongoing shift to value-based payment models such as PACE and Medicare Advantage, and changes in government regulation may draw increasing attention and new competitors, such as management consultants, traditional technology companies, and start-ups may enter the market, and we may face increased competition from these sources.

Healthcare Regulatory Environment

We operate in a highly regulated industry and our business operations must comply with a number of complex and evolving federal and state agency requirements. While we believe we comply in all material respects with applicable healthcare laws and regulations, these laws can vary significantly from jurisdiction to jurisdiction, and the state and federal interpretation of existing laws and regulations, and their enforcement, may change from time to time. Additionally, a state or federal government enforcement body may disagree that we are in material compliance with applicable healthcare laws and regulations. Federal and state legislatures also may enact various legislative proposals that could materially impact certain aspects of our business.

There has been no material adverse effect to our consolidated financial statements nor competitive positions as a result of these government regulations.

A non-exhaustive list of federal and state statutes, regulations, sub-regulatory guidance and contractual provisions that may apply to our business activities include:

Healthcare Legislation

In 2010, Congress passed major health reform legislation, mostly through the Affordable Care Act (ACA). Generally, the ACA was designed to expand coverage for the uninsured while containing overall healthcare costs. Following passage, the U.S. government has issued numerous rules and regulations to implement the provisions of the Act. While not all of these rules, regulations, and reforms affect our business directly, many continue to affect the coverage and plan designs that are or will be provided by many of our clients.

The Biden Administration and the United States Congress, which is now controlled by Democrats, are considering a number of legislative and regulatory proposals which could, if passed into law, impact the healthcare system, the ACA, and/or the Medicare and Medicaid programs. Congress may take up legislation to increase the number of individuals covered by the Medicare or Medicaid programs, reduce prescription drug costs, increase price

transparency for consumers, restrict the sale of certain classes of drugs, and reform medication management practices. While not all of the potential legislation, if enacted, would affect our business directly, many could impact some or many of our business arrangements directly or indirectly. In addition, regulatory agencies have separately proposed price transparency rules for hospitals and insurers which, while not impacting our business directly, could change the way we interact with these entities. Given that legislative and regulatory change is still being formulated, we cannot predict with any certainty the outcome of any future legislation or regulation. However, despite a change in Administration, we believe that many of the legislative items noted above enjoy bipartisan support.

A recent decision from the U.S. Court of Appeals for the Fifth Circuit, in *Texas v. Azar*, upheld the district court's determination that the ACA's "individual mandate" was unconstitutional. The action, brought by various state Attorneys General, alleges the U.S. Congress invalidated the ACA when it zeroed out the tax-based shared responsibility payment, commonly known as the "individual mandate," under the Tax Cuts and Jobs Act of 2017 (Pub. L. 115-97). The case was remanded back to the district court for further proceedings and has not invalidated the ACA in Texas or elsewhere in the nation. As such, we cannot predict with any certainty how future litigation in this matter could affect our business. The environment regarding the provisions of the ACA has somewhat stabilized, but specific outcomes are difficult to predict. The timeframe for conclusion and final outcome of this litigation is uncertain given the possibility of appeal to the U.S. Supreme Court. However, if the Supreme Court declines to hear or upholds the unconstitutionality of the ACA, it could have a materially adverse effect on future business and operating results. Furthermore, it is unclear if the Biden Administration and Congress would attempt to re-implement all or a portion of the ACA if ultimately determined unconstitutional.

On October 24, 2018, President Trump signed legislation into law aimed at curbing the opioid crisis in the U.S. The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (Pub. L. 115-271), or SUPPORT Act, includes provisions that address law enforcement, public health, and coverage under the Medicare and Medicaid programs. Broad in scope, the legislation increases federal oversight of the production and distribution of opioids, bolsters fraud prevention safeguards, enhances oversight of prescription opioids, expands coverage of opioid addiction treatment services, and authorizes consumer education and provider training programs aimed at preventing and treating opioid use disorders.

Given the focus on addressing the opioid epidemic and the federal government's focus on increasing transparency in drug pricing and oversight, the legislative environment surrounding prescription drug is in flux. While not all legislative reforms affect our business directly, many continue to affect the coverage and plan designs that are or will be provided by many of our clients.

On October 10, 2018, two pieces of legislation were enacted to enhance drug price transparency. The Know the Lowest Price Act (Pub. L. 115-262) and the Patient Right to Know Drug Prices Act (Pub. L. 115-263) each prevent various parties from instituting "gag" orders or clauses against pharmacists and pharmacies, which heretofore may have prevented a pharmacist from disclosing the lowest available price of a drug to a consumer. These laws may have a financial impact on various stakeholders due to pressures to develop more competitive pricing. It is not clear how these changes might affect our business.

PACE Organizations

Our partnership with PACE organizations is a significant source of our current revenue stream. The PACE program is a unique, comprehensive managed care benefit for certain frail elderly individuals, most of whom are dually eligible for Medicare and Medicaid benefits, provided by a not-for-profit or public entity. The PACE program features a comprehensive medical and social service delivery system using an interdisciplinary team approach in an adult day health center that is supplemented by in-home and referral services in accordance with participants' needs. Financing for the program is capped, which allows providers to deliver all needed services rather than only those reimbursable under Medicare and Medicaid fee-for-service plans. PACE is a program under Medicare, and states can elect to provide PACE services to Medicaid program beneficiaries as an optional Medicaid benefit. The PACE program becomes the sole source of Medicaid and Medicare benefits for PACE participants.

HIPAA Healthcare Fraud Provisions

In addition to privacy protections, HIPAA created and expanded federal criminal statutes regarding fraud. Specifically, the HIPAA healthcare fraud statute prohibits, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program, or to obtain by false or fraudulent pretenses any of the money or property owned by a healthcare benefit program, knowingly and willfully embezzling or stealing from a healthcare benefit program, and willfully obstructing a criminal investigation of a healthcare offense. The HIPAA healthcare fraud statutes also prohibit, among other things, concealing a material fact or making a materially false statement in connection with the delivery of or payment for healthcare benefits, items or services. The ACA amended the intent standard for certain healthcare fraud statutes under HIPAA, like the federal Anti-Kickback Statute, such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Those found to have aided in a violation of these prohibitions are deemed by statute to have committed the offense and are punishable as a principal offender. The Bipartisan Budget Act of 2018 (H.R. 1892) enhanced the penalties associated with Anti-Kickback Statute violations. The HHS Office of Inspector General, which promulgates rules under the Anti-Kickback Statute, recently finalized a set of rules as part of the “Regulatory Sprint to Coordinated Care.” These rules enhance protections for entities that participate in value-based arrangements. It is not yet clear what impact these new rules will have on our business.

State and Federal Data Privacy and Security Laws

We process, collect, use and disclose individual patient data directly or for our clients and therefore, are subject to various laws protecting privacy and security of that patient information. Certain segments of our company qualify as a "Covered Entity" under HIPAA, and others qualify as a “Business Associate” to our partners who are Covered Entities. We are required to comply with HIPAA and the HITECH Act, as implemented through regulations promulgated thereunder by HHS, including the HIPAA Omnibus Final Rule, the HIPAA Privacy Rule and the HIPAA Security Rule. HIPAA generally requires Covered Entities and their Business Associates to adopt certain safeguards to ensure the privacy and security of protected health information, or PHI, and to limit uses and disclosures of such PHI to those permissible under the law. When Covered Entities utilize Business Associates to provide services, pursuant to which the Business Associate may access the Covered Entity’s PHI, the parties must enter into a Business Associate Agreement through which the Business Associate must contractually agree to safeguard PHI in certain ways and to notify the Covered Entity of improper uses or disclosures of PHI.

Covered Entities and Business Associates are required to have written policies and procedures addressing HIPAA compliance and must designate a Security Officer to oversee the development and implementation of the policies and procedures related to the safeguards to protect privacy of electronic PHI. Covered Entities must also designate a Privacy Officer, although the Privacy Officer and the Security Officer may be the same person. As part of their security policies and procedures, Covered Entities and Business Associates are required to conduct periodic risk assessments to identify vulnerabilities to electronic PHI. Additionally, Covered Entities and Business Associates are required to train all employees on their HIPAA policies and procedures. Further, in the event of a breach of PHI as defined by HIPAA, Covered Entities must notify affected individuals, HHS, and sometimes the media, and must take steps to mitigate damage, and they may be subject to fines and penalties. HIPAA violations can result in significant civil monetary penalties and/or imprisonment for up to ten years depending on the facts surrounding the violation.

Many states also have similar data privacy and security laws that track federal requirements or impose different and/or more stringent conditions for use and disclosure of PHI. Failure to comply with these laws may also result in the imposition of significant civil and/or criminal penalties. The California Consumer Privacy Act of 2018, or the CCPA, imposes rules governing how businesses handle personal data of California residents. Companies that do business in California are, as of January 1, 2020, required to disclose the types of data they collect, the purpose for the data collection, how the data will be used, as well as expand organizational responsibilities pertaining to individual rights, accountability, and governance. In November 2020, California voters passed the California Privacy Rights and Enforcement Act of 2020 (CPRA). While the CPRA will not take effect until January 1, 2023, it expands the CCPA and establishes a California regulatory agency dedicated to enforcing data privacy compliance requirements. Other states are considering legislation similar to the CCPA and the CPRA, which could expand our data protection obligations.

Federal and State Oversight of Medical Devices, Genomic Testing, Drugs, and Controlled Substances

Some technologies and software applications used in connection with healthcare analytics and genomic testing

and analysis are considered medical devices and are subject to regulation by the Food and Drug Administration, or the FDA. The 21st Century Cures Act (Pub. L. 114-255), enacted in December 2016, included certain changes to the Federal Food, Drug, and Cosmetic Act to exempt certain medical-related software from FDA regulation. In December 2017, FDA issued a draft guidance document describing FDA's proposed interpretation of the exemption under the 21st Century Cures Act for clinical decision support, or CDS, software. FDA issued a revised draft of this CDS software guidance document in September 2019, which included proposed policies of enforcement discretion for certain types of CDS software that do not fully meet the exemption criteria under the 21st Century Cures Act. Although we believe that our technologies and software are not subject to active FDA regulation, there is a risk that the FDA could disagree. There is also a risk that FDA could finalize its guidance for clinical decision support software in such a way that it excludes our software and technologies from the scope of the CDS software exemption under the 21st Century Cures Act. If the FDA determines that any of our current or future services, technologies or software applications are regulated by the FDA as medical devices, we would become subject to various statutes, regulations and policies enforced by the FDA and other governmental authorities, including both pre-market and post-market requirements, and we would need to ensure that the affected services, technologies, and/or software comply with such requirements. FDA could also require that we cease marketing and/or recall the affected services, technologies, and software unless and until they comply with FDA's requirements.

The FDA also regulates COVID-19-related drugs and medical devices, including COVID-19 tests, and generally requires emergency use authorization (EUA) or other premarket approval for such products. We market and sell certain COVID-19 tests authorized by FDA, including through PrescribeWellness and CareKinesis. Our marketing, sale, and distribution of COVID-19 tests is subject to the requirements and restrictions imposed by FDA in the EUA approval letters for such tests, as well as the state laws and regulations governing prescription devices and clinical tests.

Clinical laboratories that perform human genomic testing are subject to oversight by CMS and state regulators. The laboratories that we partner with for genomic testing must comply with federal and state laws and regulations applicable to clinical laboratories and genomic testing, including the Clinical Laboratory Improvement Amendments (CLIA) and the Eliminating Kickbacks in Recovery Act of 2018 (EKRA).

The Drug Enforcement Administration, or DEA, the FDA, and state regulators, such as state boards of pharmacy, regulate drug and controlled substance packaging, repackaging, purchasing, handling, storage, distribution, security, and dispensing activities. Our prescription fulfillment pharmacies must comply with the applicable FDA, DEA, and state statutes, regulations, and policies. In addition, our prescription fulfillment pharmacies may be subject to periodic audits by state regulators, the DEA, and/or the FDA to assess our compliance with these requirements.

Noncompliance with applicable federal or state requirements, as described above, can result in an enforcement action that could substantially harm our business.

Anti-Kickback Laws

The federal Anti-Kickback Statute, or AKS, makes it unlawful for individuals or entities, among other things, to knowingly and willfully solicit, offer, receive, or pay any kickback, bribe or other remuneration, directly or indirectly, overtly or covertly, in cash or in kind, in exchange for or to induce or reward the referral of an individual to a person for the furnishing or arranging for the furnishing of any item or service for which payment may be made in whole or in part under a federal healthcare program, or the purchase, lease or order, or arranging for or recommending purchasing, leasing or ordering, of any good, facility, service or item for which payment may be made in whole or in part under a federal healthcare program. Penalties for violations include criminal penalties and civil sanctions such as fines, imprisonment, and possible exclusion from federal healthcare programs. The Bipartisan Budget Act of 2018 (H.R. 1892) enhanced the penalties associated with Anti-Kickback Statute violations. The HHS Office of Inspector General, which promulgates rules under the Anti-Kickback Statute, recently finalized a set of rules as part of the "Regulatory Sprint to Coordinated Care." These rules enhance protections for entities that participate in value-based arrangements. It is not yet clear what impact these new rules will have on our business.

The federal AKS is an intent-based statute, but following the amendment from the ACA, a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. Further, the failure of an arrangement to satisfy all elements of an AKS safe harbor will not necessarily make it illegal, but it may subject that arrangement to increased scrutiny by enforcement authorities. The federal AKS is applicable to us as operators of specialty pharmacies, contractors to health plans and providers, and contractors to

various federal healthcare program payers. When our compensation arrangements implicate the AKS, we evaluate whether we believe they fall within one of the safe harbors. If not, we consider the factors to identify the intent behind such arrangements and the relative risk of fraud and abuse. We also design business models that seek to reduce the risk that any such arrangements might be viewed as abusive and trigger AKS scrutiny or claims.

In addition to the federal AKS, many states have anti-kickback prohibitions that may apply to arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payers.

Federal and State Self-Referral Laws

The federal physician self-referral law, often referred to as the Stark Law, with limited exceptions, prohibits physicians from referring Medicare Program or Medicaid patients to an entity for the provision of certain designated health services, among them outpatient prescription medications, if the physician or a member of such physician's immediate family has a direct or indirect financial relationship (including an ownership or investment interest or a compensation arrangement) with the entity. The Stark Law also prohibits the entity from billing Medicare or Medicaid for such designated health services. A referral that does not fall within a statutory exception is strictly prohibited by the Stark Law. A violation of the Stark Law is punishable by civil sanctions, including overpayment liability, significant fines and exclusion from participation in Medicare and Medicaid Programs. CMS, which promulgates rules under and enforces the Stark Law, recently finalized a set of rules as part of the "Regulatory Sprint to Coordinated Care." These rules enhance protections for entities that participate in value-based arrangements. It is not yet clear what impact these new rules will have on our business.

We evaluate when these physician (or immediate family member) financial arrangements are created to ensure we do not enter into a prohibited financial relationship and design structures that satisfy exceptions under the Stark Law.

Our business may implicate federal and state physician self-referral laws to the extent our pharmacy, a designated health services entity, has financial arrangements in the form of ownership, investment or compensation with referring physicians or a referring physician's immediate family member. Our pharmacy may have compensation arrangements with physicians who serve on its Clinical Advisory Panel and who order designated health services for patients enrolled in a PACE program. If any such compensation arrangements exist, we believe such compensation arrangements fall within an exception to the physician self-referral prohibition.

A number of states have statutes and regulations that prohibit the same general types of conduct as those prohibited by the Stark Law, but some have even broader application, extending beyond Medicare and Medicaid Programs and including commercial and self-payers.

Federal and State False Claims Acts

The federal false claims and civil monetary penalties laws, including the civil False Claims Act, impose criminal and civil liability on individuals and entities that, among other things, knowingly submit, or cause to be submitted, false or fraudulent claims for payment to the federal government or knowingly make, or cause to be made, a false statement in order to have a false claim paid. The civil False Claims Act provides for treble damages and mandatory and significant minimum penalties per false claim or statement ($10,781.40 to $21,562.80 per false claim). The *qui tam* or whistleblower provisions of the civil False Claims Act permit a private individual to bring actions on behalf of the federal government alleging that the defendant has submitted a false claim to the federal government, and to share in any monetary recovery. Our future activities relating to the manner in which we sell and market our services may be subject to scrutiny under these laws. False Claims Act qui tam lawsuits in healthcare are common, although the government often declines to pursue such actions following investigation. Analogous state false claims laws also may apply to our sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payers.

Other State Laws

The vast majority of, if not all, states have laws regulating licensure, registration and certification of pharmacies, pharmacists, pharmacy technicians, other pharmacy personnel, and health insurance administrators. We are licensed in all states that require such licensure in which we do business and believe that we substantially comply with all state licensing laws applicable to our business. Where required by law, we also have pharmacists licensed in all states

in which we dispense. If we violate state pharmacy licensure laws or engage in conduct prohibited under our license, we could be subject to enforcement action, including but not limited to suspension or loss of such pharmacy license.

The DEA, as well as some similar state agencies, requires our pharmacy locations to individually register in order to handle controlled substances, including prescription pharmaceuticals. Federal and various state laws also regulate specific labeling, reporting, and record-keeping related to controlled substances. We maintain DEA registrations for each of our facilities that require such registration and follow procedures intended to comply with all applicable federal and state requirements regarding dispensing controlled substances.

Human Capital

As of December 31, 2020, we had 1,614 employees. None of our employees are represented by labor unions or subject to collective bargaining agreements and substantially all of our employees currently work in the United States. We consider our employee relations to be good.

Our goals are to provide excellent service, utilize advanced technology, and proficiently deliver results. To accomplish these goals, we constantly seek to employ individuals who look for ways to do things better. We are a company whose culture aspires to cultivate teamwork, rewards excellence, focuses on quality for every aspect of our business, and promotes community involvement.

Corporate Information

We were incorporated in Delaware in May 2014. Our principal executive offices are located at 228 Strawbridge Drive, Suite 100, Moorestown, NJ 08057, and our telephone number is (866) 648-2767.

Information about Segment and Geographic Revenue

We manage our operations and allocate resources in two reportable segments: CareVention HealthCare and MedWise HealthCare. Substantially all of our revenue is recognized in the United States and substantially all of our assets are located in the United States.

Available Information

We file our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to those reports with the SEC. You may obtain copies of these documents by accessing the SEC's website at www.sec.gov. In addition, as soon as reasonably practicable after such materials are furnished to the SEC, we make copies of these documents available to the public, free of charge, through our website. Our website address is www.trhc.com.

The contents of websites referred to herein are not incorporated into this filing. Further, our references to the URLs for these websites are intended to be inactive textual references only.

Financial Information

For required financial information related to our operations, please refer to our consolidated financial statements, including the notes thereto, included with this Annual Report on Form 10-K.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below together with all of the other information contained in this Annual Report on Form 10K, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our audited consolidated financial statements and the related notes. We cannot assure you that any of the events discussed in the risk factors below will not occur. The occurrence of any of the events or developments described below could have a material and adverse impact on our business, results of operations, financial condition, and cash flows and future prospects and, if so, our future prospects would likely be materially and adversely affected. If any of such events were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment. Although we have discussed all known material risks, the risks described below are not the only ones that we may face, and additional risks or uncertainties not known to us or that we currently deem immaterial may also impair our business and future prospects.

Risk Factor Summary

The following is a summary of the risks and uncertainties that could materially adversely affect our financial condition, results of operations, cash flows, and competitive position.

Risks Relating to Our Business and Industry

- The impact of the recent COVID-19 pandemic;
- The continued evolution of the healthcare industry in the United States;
- Our inability to offer innovative products and services;
- The competitive nature of the medication management market;
- Our limited operating history;
- Our historic significant net losses;
- Our failure to effectively manage our growth;
- Our failure to grow at the rates we historically have achieved or at all;
- Our dependence on product revenue from sales of prescription medications;
- Our dependence on revenue from PACE organizations;
- Consolidation in the healthcare industry;
- Failure by PACE organization clients to meet applicable penetration benchmarks;
- Failure of our clients to grow;
- The loss of one or more of our clients;
- Our dependence on our ten largest clients;
- Our practice of billing our clients and revenue recognition over the term of the contract;
- Our inability to attract new clients;
- Our inability to maintain and enhance our reputation and brand recognition;
- Our failure to produce positive outcomes and cost reductions for our clients;
- Our dependence on positive references from existing clients;
- The unpredictability of our sales and implementation cycle;
- Any failure to offer high-quality client support services;
- The failure of our proprietary products and services to operate properly;

- Adverse drug events;
- Risks associated with sales to clients outside the United States or clients with international operations;
- Potential exposure to risks associated with international operations;
- Our dependence on a group purchasing organization;
- Restrictions to license or share data and integrate third-party technologies;
- Data loss or corruption due to failures or errors in our systems;
- Our inability, or the inability of our third party vendors, to safeguard the privacy of confidential data;
- Our reliance on internet infrastructure, bandwidth providers, and third parties;
- The potential loss of one or more of our executive officers or key employees or an inability to attract and retain highly skilled employees;
- Integration issues with future acquisitions and investments;
- The pledging of substantially all of our assets as collateral under our existing line of credit;
- Any lack of additional capital to support business growth;
- Adverse impacts due to changes in tax laws;
- The potential that we could be subject to additional state and local taxation;
- Failure to realize synergies as a result of our recent acquisitions and potential future acquisitions;
- Our inability to integrate the operations acquired as part of our past or future acquisitions; and
- Other risks associated with integrating acquired businesses, including exposures and losses and limited post-closing recourse.

Risks Related to Our Intellectual Property

- Our inability to obtain, maintain and enforce intellectual property protection for our technology and products;
- Our inability to adequately protect our trademarks, trade names, and domain names;
- The potential that we could incur substantial costs as a result of any infringement claim;
- Risks related to our use of open source software;
- Risks related to intellectual property lawsuits and litigation; and
- Our inability to protect the confidentiality of our trade secrets, know-how and other proprietary information.

Risks Related to Industry Regulation and Other Legal Compliance Matters

- The uncertain and evolving nature of healthcare regulatory and political framework;
- Restrictions imposed by data privacy and security laws, regulations and contractual obligations;
- Costs associated with compliance with state and federal statutes and regulations related to the healthcare industry; and
- Further modifications to the Medicare Part D program and changes in pricing benchmarks.

Risks Related to Our Common Stock

- The influence of executive officers, directors and principal stockholders over all matters submitted to stockholders for approval;
- Provisions of Delaware law may discourage, delay or prevent someone from acquiring us, or merging with us;
- Our exclusive forum provision;
- The volatility of our common stock;

- Our inability to implement effective internal control over financial reporting;
- Our historic lack of cash dividends; and
- The potential limited ability to use net operating loss carryforwards.

Risks Related to Our Convertible Senior Subordinated Notes

- Our inability to generate cash flow required to pay our substantial debt;
- Our potential to incur substantially more debt;
- Our inability to settle conversions of the 2026 Convertible Notes;
- The impact of the conditional conversion feature of the 2026 Convertible Notes on our financial condition;
- The impact of the accounting method for convertible debt securities that may be settled in cash; and
- Our entry into convertible note hedge and warrant transactions.

General Risk Factors

- The potential that we could become subject to litigation;
- The resources associated with the requirements of being a public company;
- The failure of securities analysts to publish research, or the publishing of, inaccurate research about our business; and
- The potential decline in the market price of our common stock.

Risks Relating to Our Business and Industry

The recent COVID-19 pandemic could have a material adverse effect on our business operations, results of operations, cash flows and financial position.

We continue to closely monitor the impact of the COVID-19 pandemic on all aspects of our business, including its impact on our clients and their patients, employees, suppliers, and other business partners. The COVID-19 pandemic has created significant volatility, uncertainty, and economic disruption, which will continue to adversely affect our business operations and may materially and adversely affect our results of operations, cash flows, and financial position.

The COVID-19 pandemic has negatively impacted our revenue growth during 2020. For example, the pandemic has delayed the closing of certain health plan deals and, in some cases, shifted project timelines to 2021, resulting in fewer new business wins to date. This year we have seen overall census growth for Programs of All-Inclusive Care for the Elderly dip below historical levels. Our MedWise HealthCare segment also has experienced delays in the timing of implementation and closing of new business and a negative impact from COVID-19 on medication adherence initiatives, which are seasonally weighted toward the second half of the calendar year. The ultimate impact of the COVID-19 pandemic on our revenue and financial performance is highly uncertain and subject to change.

We have incurred, and expect to continue to incur, additional costs resulting from our efforts to protect the health and well-being of our employees. Our five prescription fulfillment pharmacies provide essential services that require employees to continue to work on-site during the COVID-19 pandemic. We have implemented physical distancing for all employees at our prescription fulfillment pharmacies, provided pharmacy-appropriate protective equipment, instituted additional cleaning protocols, provided additional cleaning materials and encouraged the practice of frequent handwashing. If the procedures we implement are ineffective or are not followed by our employees, or if we fail to implement procedures, our employees and others may experience illness which has the potential to increase employee turnover, expose us to litigation, and raise our operating costs. We expect to continue to incur additional costs, which may be significant, as we continue to implement operational changes in response to this pandemic.

In addition, we have instituted work-from-home guidelines for all employees who can work remotely. An extended period of remote work arrangements could strain our business plans, introduce operational risk, including but not limited to cybersecurity risks, and impair our ability to manage our business. Further, our management is focused on

mitigating the spread of COVID-19, which has required and will continue to require a substantial investment of time and resources across our business and could delay other company initiatives.

COVID-19 may also adversely impact our ability to purchase or obtain pharmaceutical products which may result in higher supply chain costs and otherwise disrupt our operations. If we do not respond appropriately to the pandemic, or if customers perceive our response to be inadequate, we could suffer damage to our reputation and our brand, which could adversely affect our business.

The extent to which the COVID-19 pandemic impacts us will depend on numerous evolving factors and future developments that we are not able to predict, including: the severity of the virus; the duration of the pandemic; governmental, business, and other actions (which could include limitations on our operations or mandates to provide products or services); the impacts on our supply chain; the impact of the pandemic on economic activity; the health of and the effect on our workforce and our ability to meet staffing needs in our prescription fulfillment pharmacies and other critical functions, particularly if members of our work force are quarantined as a result of exposure; any impairment in value of our tangible or intangible assets which could be recorded as a result of weaker economic conditions; and the potential effects on our internal controls including those over financial reporting as a result of changes in working environments such as shelter-in-place and similar orders that are applicable to our team members and business partners, among others. In addition, if the pandemic continues to create disruptions or turmoil in the credit or financial markets, or impacts our credit ratings, it could adversely affect our ability to access capital on favorable terms and continue to meet our liquidity needs, all of which are highly uncertain and cannot be predicted.

How quickly, and to what extent, normal economic and operating conditions can resume is difficult to predict, and the resumption of normal business operations may be delayed or constrained by lingering effects of the COVID-19 pandemic and will depend on future developments, including the widespread availability, use and effectiveness of vaccines, which are highly uncertain and cannot be predicted

In addition, we cannot predict the impact that COVID-19 will have on our clients and their patients, suppliers, and other business partners, and each of their financial conditions; however, any material effect on these parties could adversely impact us. The impact of COVID-19 may also exacerbate other risks discussed in Item 1A. Risk Factors in our Annual Report on Form 10-K, any of which could have a material effect on us. This situation is changing rapidly and additional impacts may arise that we are not aware of currently.

The healthcare industry in the United States is rapidly evolving, which makes it difficult to forecast demand for our technology-enabled products and services. If we are not successful in promoting the benefits of our products and services, our growth may be limited.

The healthcare industry in the United States is rapidly evolving. We believe demand for our products and services has been driven in large part by price pressure in traditional fee-for-service healthcare, a regulatory environment that is incentivizing value-based care models, the movement toward patient-centricity and personalized healthcare and advances in technology. Widespread acceptance of the value-based care model is critical to our future growth and success. A reduction in the growth of value-based care or patient-centric models could reduce the demand for our products and services and result in a lower revenue growth rate or decreased revenue.

It is uncertain whether the market for technology-enabled healthcare products and services will achieve and sustain high levels of demand and market adoption. Our future financial performance will depend in part on growth in this market and on our ability to adapt to the emerging demands of our clients. It is difficult to predict the future growth rate and size of our target market.

Our success depends to a substantial extent on the willingness of healthcare organizations to increase their use of our technology and our ability to demonstrate the value of our technology to our existing clients and potential clients. If healthcare organizations do not recognize or acknowledge the benefits of our products and services or if we are unable to reduce healthcare costs or drive positive health outcomes, then the market for our products and services might not develop at all, or it might develop more slowly than we expect.

If we are unable to offer innovative products and services or our products and services fail to keep pace with our clients' needs, our clients may terminate or fail to renew their agreements with us and our revenue and results of operations may suffer.

Our success depends on providing innovative, high-quality products and services that healthcare providers and payers use to improve clinical, financial and operational performance. If we cannot adapt to rapidly evolving industry standards, technology and increasingly sophisticated and varied client needs, our existing technology could become undesirable, obsolete or harm our reputation. In order to remain competitive, we must continue to invest significant resources in our personnel and technology in a timely and cost-effective manner in order to enhance our existing products and services and introduce new high-quality products and services that existing clients and potential new clients will want. We are continually involved in a number of projects to develop new products and services, including the further refinement of our proprietary MRM Matrix. If our innovations are not responsive to the needs of our existing clients or potential new clients, are not appropriately timed with market opportunity, are not effectively brought to market or significantly increase our operating costs, we may lose existing clients or be unable to obtain new clients and our results of operations may suffer. In addition, the introduction of new solutions by competitors, the emergence of new industry standards, or the development of entirely new technologies to replace existing offerings could render our existing or future solutions obsolete.

The medication management market is highly competitive, and we may be unable to compete successfully against new entrants and established companies with greater resources and/or existing business relationships with our current and potential customers.

The medication management market is intensely competitive. We expect continued and increased competition from current and future competitors, many of which have significantly greater financial, technical, marketing and other resources than we do. The competitive challenges we face in the medication management market include, but are not limited to, the following:

- certain competitors may offer or have the ability to offer a broader range of solutions in the marketplace that we are unable to match;
- certain competitors may develop alternative solutions to the customer problems our products are designed to solve that may provide a better customer outcome or a lower cost of operation;
- certain competitors may develop new features or capabilities for their products not previously offered that could compete directly with our products;
- competitive pressures could result in increased price competition for our products and services, fewer customer orders, and reduced gross margins, any of which could harm our business;
- current and potential competitors may make strategic acquisitions or establish cooperative relationships among themselves or with third parties, including larger, more established healthcare supply companies, thereby increasing their ability to develop and offer a broader suite of products and services to address the needs of our prospective customers;
- our competitive environment has recently experienced a significant degree of consolidation which could lead to competitors developing new business models that require us to adapt how we market, sell, or distribute our products;
- other established or emerging companies may enter the medication management and supply chain solutions market, or the medication adherence market, with products and services that are preferred by our current and potential customers based on factors such as features, capabilities, or cost;
- our competitors may develop, license, or incorporate new or emerging technologies or devote greater resources to the development, promotion, and sale of their products and services than we do;

- certain competitors have greater brand name recognition and a more extensive installed base of medication and supply dispensing systems or other products and services than we do, and such advantages could be used to increase their market share;

- certain competitors may have existing business relationships with our current and potential customers, which may cause these customers to purchase medication and supply dispensing systems or automation solutions from these competitors; and

- our competitors may secure products and services from suppliers on more favorable terms or secure exclusive arrangements with suppliers or buyers that may impede the sales of our products and services

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We commenced active operations in 2011 and our operations to date have included organizing and staffing our company, business planning, raising capital and developing and marketing our products and services. As an early stage business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors.

We have incurred significant net losses and we may not be able to generate net income in the future.

As of December 31, 2020, we had an accumulated deficit of $179.9 million. Substantially all of our operating losses resulted from costs incurred in connection with our research and development program, acquisitions and from general and administrative costs associated with our operations. Our ability to generate net income is dependent upon, among other things, the acceptance of our products and services by, and the strength of, our existing and potential clients.

If we fail to effectively manage our growth, our business and results of operations could be harmed.

We have expanded our operations significantly since our inception. For example, we grew from 29 employees on January 1, 2011, the beginning of our first year of active operations, to 1,614 employees as of December 31, 2020, and our revenue increased from $284.7 million for the year ended December 31, 2019 to $297.2 million for the year ended December 31, 2020. If we do not effectively manage our growth as we continue to expand, the quality of our products and services could suffer and our revenue could decline. Our growth to date has increased the significant demands on our management, our operational and financial systems, IT infrastructure, security mechanisms and other resources. In order to successfully expand our business, we must effectively recruit, integrate and motivate new employees, while maintaining the beneficial aspects of our corporate culture. We may not be able to hire new employees, including software engineers, quickly enough to meet our needs. If we fail to effectively manage our hiring needs and successfully integrate our new hires, our efficiency and ability to meet our forecasts and our employee morale, productivity and retention could suffer, and our business and results of operations could be harmed. We must also continue to improve our existing systems for operational and financial management, including our reporting systems, procedures and controls. These improvements could require significant capital expenditures and place increasing demands on our management. We may not be successful in managing or expanding our operations or in maintaining adequate financial and operating systems and controls. If we do not successfully manage these processes, our business and results of operations could be harmed.

We may not grow at the rates we historically have achieved or at all, even if our key metrics may indicate growth, which could cause the market price of our common stock to decline.

We have experienced significant growth since 2011, our first year of active operations, with total revenue growing from $5.8 million for the year ended December 31, 2011, to $297.2 million for the year ended December 31, 2020. Future revenue may not grow at these same rates or may decline. Our future growth will depend, in part, on our ability to grow our revenue from existing clients, to complete sales to new clients and to expand our client base in the healthcare industry and with provider and payer organizations. We may not be successful in executing on our growth strategies and may not continue to grow our revenue at similar rates as we have in the past. Our ability to execute on our existing sales pipeline, create additional sales pipelines and expand our client base depends on, among other things, the attractiveness of our products and services relative to those offered by our competitors, our ability to demonstrate the value of our existing and future products and services and our ability to attract and retain a sufficient number of qualified sales and marketing personnel. In addition, clients in some market segments in which we have a more limited presence may be slower to adopt our products and services than we currently anticipate.

To date, we have derived substantially all of our product revenue from sales of prescription medications, and revenue from sales of prescription medications is dependent upon factors outside of our control.

To date, substantially all of our product revenue has been derived from sales of prescription medications and related services, and we expect to continue to derive the substantial majority of our product revenue from sales of prescription medications and related services for the foreseeable future. Revenue from prescription medication fulfillment is dependent upon a number of factors, many of which are outside of our control, such as growth or contraction in patient populations at our clients and the number and mix of medications each patient is prescribed. Any change in these factors could harm our financial results.

We derive a significant portion of our revenue from PACE organizations, and any changes in laws or regulations, or any other factors that cause a decline in the use of PACE organizations to provide healthcare could hurt our ability to generate revenue and grow our business.

We derive a significant portion of our revenue from PACE organizations, which are our largest clients, accounting for 66% of our revenue for the year ended December 31, 2020. PACE organizations reflect a relatively new, value-based model for providing healthcare to the elderly and are funded by both Medicare and Medicaid. If the laws and regulations that currently promote PACE organizations were to change in a way that makes operating a PACE organization less attractive, if other Medicare or Medicaid reimbursement models are developed that are more attractive to the healthcare providers that operate PACE organizations or if the prevalence of PACE organizations were to decline for any other reason, our ability to generate revenue and grow our business may be compromised.

Consolidation in the healthcare industry could lead to the elimination of some of our clients and make others larger, which could decrease demand for our solutions or create pricing pressure.

Many healthcare industry participants are consolidating to create larger and more integrated healthcare delivery systems. If regulatory and economic conditions continue to facilitate additional consolidation in the healthcare industry, some of our current clients, and possibly our future clients, may be eliminated. Such market fluctuations may result in decreased need for some or all of our products and services as some of our clients disappear, and others acquire larger market power, which may be used to develop various solutions in-house, rather than purchasing them from us, or negotiate fee reductions for our products and services.

Failure by PACE organization clients to meet applicable penetration benchmarks could result in loss of their service area, which could lead to our loss of that business and a corresponding decline in our revenue.

PACE organizations in many states are subject to penetration benchmarks regarding the number of eligible lives in their service areas that have been captured by the program. If the number of members covered by any of our PACE organization clients were to be reduced by a material amount, such decrease may lead to a loss of their service area, which could result in our loss of the client and a corresponding decline in our revenue.

The growth of our business relies, in part, on the growth of our clients, which is difficult to predict and is affected by factors outside of our control.

We enter into agreements with our clients under which a portion of our fees are dependent upon the number of members that are covered by our clients' programs each month. The number of members covered by a clients' program is often affected by factors outside of our control, such as the client's pricing, overall quality of service and member retention initiatives. If the number of members covered by one or more of our client's programs were to be reduced, such decrease would lead to a decrease in our revenue. In addition, the growth forecasts of our clients are subject to significant uncertainty and are based on assumptions and estimates that may prove to be inaccurate. Even if the markets in which our clients compete meet the size estimates and growth forecasted, their program membership could fail to grow at similar rates, if at all.

A few clients account for a significant portion of our revenue and, as a result, the loss of one or more of these clients could hurt our revenue.

Our largest ten clients accounted for 43%, 53%, and 56% of our total revenue during the years ended December 31, 2020, 2019, and 2018, respectively. Our engagement with our ten largest clients is generally covered through contracts that are multi-year in their duration. One or more of these clients may decline to renew their existing contracts with us upon expiration and any such failure to renew could have a negative impact on our revenue and compromise our growth strategy. Further, if one or more of these clients significantly decreases its use of our solutions, we would lose revenue and our growth would be compromised. We believe our clients view us as a trusted partner that shares their commitment to improving medication-related health outcomes and reducing overall healthcare costs.

Because we generally bill our clients and recognize revenue over the term of the contract, near-term declines in new or renewed agreements may not be reflected immediately in our operating results.

Most of our revenue in each quarter is derived from agreements entered into with our clients during previous quarters. Consequently, a decline in new or renewed agreements in any one quarter may not be fully reflected in our revenue for that quarter because, although we enter into multi-year arrangements with our clients and recognize revenue over the term of the contract, such revenue varies based on the volume and pricing of prescriptions filled and the number of members of the healthcare organization and is, thus, not recognized evenly. Such declines, however, would negatively affect our revenue in future periods. The effect of any significant downturns in sales of, and market demand for, our products and services, as well as any potential changes in our rate of renewals or renewal terms, may not be fully reflected in our results of operations until future periods. In addition, we may be unable to adjust our cost structure rapidly, or at all, to take account of reduced revenue.

If we do not continue to attract new clients, we may not be able to grow our business.

In order to grow our business, we must continually attract new clients. Our ability to do so depends in large part on the success of our sales and marketing efforts. Potential clients may seek out other options. Therefore, we must demonstrate that our products and services provide a viable solution for potential clients. If we fail to provide high-quality solutions and convince individual clients of our value proposition, we may not be able to attract new clients. If the market for our products and services declines or grows more slowly than we expect, or if the number of individual clients that use our solutions declines or fails to increase as we expect, our financial results could be harmed.

If we are not able to maintain and enhance our reputation and brand recognition, our business will be harmed.

Maintaining and enhancing our reputation and brand recognition is critical to our relationships with existing clients and to our ability to attract new clients. The promotion of our brand may require us to make substantial investments and we anticipate that, as our market becomes increasingly competitive, these marketing initiatives may become more difficult and expensive. Our marketing activities may not be successful or yield increased revenue, and to the extent that these activities yield increased revenue, the increased revenue may not offset the expenses we incur. In addition, any factor that diminishes our reputation or that of our management, including failing to meet the expectations of our clients, could make it substantially more difficult for us to attract new clients. If we do not successfully maintain and enhance our reputation and brand recognition, our business may not grow and we could lose our relationships with clients.

Initial positive outcomes and cost reductions for our clients have not been statistically analyzed, are not necessarily attributable to our services, and are not necessarily predictive of future outcomes or costs.

Although several of our clients have reported improved outcomes for their patients and cost reductions on a per member per month basis, these initial outcomes have not been statistically analyzed and are not necessarily predictive of future outcomes. Other factors, including changes in healthcare regulations or other business practices or our clients' implementation of other cost saving measures may have contributed to positive outcomes or reduced costs. Moreover, outcome and cost reduction data are often susceptible to varying interpretations and analyses, and many companies that believed their technologies and services were effective initially were unable to maintain positive results over time. If we fail to produce positive outcomes and reduce costs for our clients, they may not continue to use our services and we may be unable to attract new clients, each of which could harm our business.

Our marketing efforts depend significantly on our ability to receive positive references from our existing clients.

Our marketing efforts depend significantly on our ability to call on our current clients to provide positive references to new, potential clients. Given our limited number of long-term clients, the loss or dissatisfaction of any client could substantially harm our brand and reputation, inhibit the market adoption of our products and services, impair our ability to attract new clients and maintain existing clients and, ultimately, harm our financial results.

Our sales and implementation cycle can be long and unpredictable and can require considerable time and expense, which may cause our operating results to fluctuate.

The sales cycle for our products and services from initial sales activity with a potential client to contract execution and implementation can be long and varies widely by client, typically ranging from three to twelve months. Some of our clients undertake pilot programs for our products and services which range from six to eighteen months in length. These pilot programs may result in extended sales cycles and upfront sales costs as the potential client evaluates our products and services. Our sales efforts involve educating our clients about the use, technical capabilities and benefits of our products and services. It is possible that in the future we may experience even longer sales cycles, more complex client requirements, higher upfront sales costs and less predictability in completing some of our sales as we continue to expand into new territories and add additional products and services. If our sales cycle lengthens or our substantial upfront sales and implementation investments do not result in sufficient sales to justify our investments, our operating results may be harmed.

Any failure to offer high-quality client support services may adversely affect our relationships with our clients and harm our financial results.

Our clients depend on our technical support to resolve any issues relating to our offering and technology solutions and to provide initial and ongoing training and education, when necessary. In addition, our sales process is highly dependent on the quality of our offering, our business reputation and strong recommendations from our existing clients. Any failure to maintain high-quality and highly-responsive technical support, or a market perception that we do not maintain high-quality and highly-responsive support, could harm our reputation and compromise our ability to sell our solutions to existing and prospective clients.

We offer client support services with our offering and may be unable to respond quickly enough to accommodate short-term increases in client demand for support services, particularly as we increase the size of our client base. We also may be unable to modify the format of our support services to compete with changes in support services provided by competitors. It is difficult to predict client demand for our support services and if client demand increases significantly, we may be unable to provide satisfactory support services to our clients. Additionally, increased client demand for these services, without corresponding revenue, could increase costs and hurt our ability to achieve profitability.

Our proprietary products and services may not operate properly, which could damage our reputation, give rise to a variety of claims against us or divert our resources from other purposes, any of which could harm our business and operating results.

Technology-enabled product and service development is time-consuming, expensive and complex and may involve unforeseen difficulties. We may encounter technical obstacles, and we may discover additional problems that prevent our proprietary products and services from operating properly. If our products and services do not function reliably or fail to achieve client expectations in terms of performance, clients could assert liability claims against us and attempt to cancel their contracts with us. Moreover, material performance problems, defects or errors in our existing or new products and services may arise in the future and may result from, among other things, the lack of interoperability of our software with systems and data that we did not develop and the function of which are outside of our control or undetected in our testing. Defects or errors in our products or services might discourage existing or potential clients from purchasing services from us. Correction of defects or errors could prove to be time consuming, costly, impossible or impracticable. The existence of errors or defects in our products and services and the correction of such errors could divert our resources from other matters relating to our business, damage our reputation and increase our costs.

Adverse drug events resulting from optimizing a patient's medication regimen through recommendations made by our technology or our pharmacists could give rise to claims against us and could damage our reputation.

We provide medication risk management services which includes answering prescriber questions and making recommendations to prescribers at the point-of-prescribing, during pharmacist consultation and at periodic patient review. In the event that optimizing a patient's medication regimen through recommendations made by our technology or our pharmacists contributes to an ADE, clients and patients could assert liability claims against us, which may not be subject to a contractually agreed upon liability cap, and clients could attempt to cancel their contracts with us. Such instances may also generate significant negative publicity that could harm our reputation, increase our costs and materially affect our results of operations.

Future sales to clients outside the United States or clients with international operations might expose us to risks inherent in international markets, which could hurt our business.

An element of our growth strategy is to further expand internationally. Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks that are different from those in the United States. In January 2019, we completed our acquisition of DoseMe, which is based in Brisbane, Australia. Because of our limited experience with international operations, our current and any potential future international expansion efforts might not be successful in creating demand for our products and services outside of the United States or in effectively selling our products and services in the international markets we enter. In addition, we will face risks in doing business internationally that could hurt our business, including:

- the need to localize and adapt our products and services for specific countries, including translation into foreign languages and associated expenses;
- difficulties in staffing, supporting and managing foreign operations;
- different pricing environments, longer sales cycles and longer accounts receivable payment cycles and collections issues;
- new and different sources of competition;
- international political and economic conditions;
- weaker protection for intellectual property and other legal rights than in the United States and practical difficulties in enforcing intellectual property and other rights outside of the United States;
- laws and business practices favoring local competitors, including trade protection measures;

- compliance challenges related to the complexity of multiple, conflicting and changing governmental laws and regulations, including employment, anti-bribery, foreign investment, tax, privacy and data protection laws and regulations;
- increased financial accounting and reporting burdens and complexities;
- adverse tax consequences; and
- if we denominate our international contracts in local currencies, fluctuations in the value of the U.S. dollar and foreign currencies might negatively affect our operating results when translated into U.S. dollars.

The occurrence of any one of these risks could negatively affect our international business and, consequently, our results of operations generally. In the event that we are unable to manage the complications associated with international operations, our business prospects could be materially and adversely affected. Any further expansion in our international operations will require significant management attention and financial resources. We cannot be certain that the investment and additional resources required in establishing and expanding our international operations will produce desired levels of revenue or profitability. If we invest substantial time and resources to establish and expand our international operations and are unable to do so successfully and in a timely manner, our business and operating results will suffer.

If we expand our international operations, we will increasingly face political, legal and compliance, operational, regulatory, economic and other risks that we do not face or that are more significant than in our domestic operations. Our exposure to these risks is expected to increase.

If we expand our international operations, we will increasingly face political, legal and compliance, operational, regulatory, economic and other risks that we do not face or that are more significant than in our domestic operations. These risks vary widely by country and include varying regional and geopolitical business conditions and demands, government intervention and censorship, discriminatory regulation, nationalization or expropriation of assets and pricing constraints. Our international products need to meet country-specific client preferences as well as country-specific legal requirements, including those related to licensing, privacy, data storage, location, protection and security.

Our international operations increase our exposure to, and require us to devote significant management resources to implement controls and systems to comply with, the privacy and data protection laws of non-U.S. jurisdictions and the anti-bribery, anti-corruption and anti-money laundering laws of the United States (including the U.S. Foreign Corrupt Practices Act of 1977) and similar laws in other jurisdictions. Implementing our compliance policies, internal controls and other systems upon our expansion into new countries and geographies may require the investment of considerable time and management, financial and other resources over a number of years before any significant revenues or profits are generated. Violations of these laws and regulations could result in fines, criminal sanctions against us, our officers or employees, restrictions or outright prohibitions on the conduct of our business, and significant brand and reputational harm. We must regularly reassess the size, capability and location of our global infrastructure and make appropriate changes, and must have effective change management processes and internal controls in place to address changes in our business and operations. Our success depends, in part, on our ability to anticipate these risks and manage these difficulties, and the failure to do so could have a material adverse effect on our business, operating results, financial position, brand, reputation and/or long-term growth.

Our international operations require us to overcome logistical and other challenges based on differing languages, cultures, legal and regulatory schemes and time zones. Our international operations encounter labor laws, customs and employee relationships that can be difficult, less flexible than in our domestic operations and expensive to modify or terminate. In some countries we may be required to, or choose to, operate with local business partners, which would require us to manage our partner relationships and may reduce our operational flexibility and ability to quickly respond to business challenges.

We will purchase a significant portion of our pharmaceutical products from a group purchasing organization which receives discounts from a primary supplier.

On June 30, 2020, we entered into an Affiliated Pharmacy Agreement and Pharmaceutical Program Supply Agreement, including an associated High Volume Retailer Addendum, or the Pharmaceutical Supply Agreements, with Thrifty Drug Stores, Inc, or Thrifty Drug. Pursuant to the terms of the Pharmaceutical Supply Agreements, which have a term lasting through September 30, 2023, subject to renewal under certain circumstances, we agree to purchase not less than 98% of our total prescription product requirements from Thrifty Drug. The Pharmaceutical Supply Agreements can be terminated solely by Thrifty Drug for, among other things, a payment default that continues for ten days after notice thereof and our failure to maintain credit worthiness. If we are no longer able to purchase our pharmaceutical products from a group purchasing organization, there can be no assurance that our operations would not be disrupted or that we could obtain the necessary pharmaceutical products at similar cost or at all. In this event, failure to satisfy our clients' requirements would result in defaults under client contracts subjecting us to damages and the potential termination of those contracts.

Any restrictions on our ability to license or share data and integrate third-party technologies could harm our business.

We depend upon licenses from third parties for some of the technology and data used in our products and services, and for some of the technology platforms upon which these products and services are built and operate. Most of our third-party licenses are non-exclusive and our competitors may obtain the right to use any of the technology covered by these licenses to compete directly with us. We also license some of our technology and share data we collect with our clients, including under agreements with health systems and providers of electronic health records. We expect that we will need to obtain additional licenses from third parties in the future in connection with the development of our products and services. In addition, we obtain a portion of the data that we use from public records and from our clients for specific client engagements. Our licenses for information may not be sufficient to allow us to use the data that is incorporated into our products and services for all potential or contemplated applications and products.

In the future, data providers could withdraw their data from us or restrict our usage for any reason, including if there is a competitive reason to do so, if legislation is passed restricting the use of the data or if judicial interpretations are issued restricting use of the data that we currently use in our products and services. In addition, data providers could fail to adhere to our quality control standards in the future, causing us to incur additional expense to appropriately utilize the data. If a substantial number of data providers were to withdraw or restrict their data, or if they fail to adhere to our quality control standards, and if we are unable to identify and contract with suitable alternative data suppliers and integrate these data sources into our service offerings, our ability to provide products and services to our clients would be compromised and our future growth and success could be delayed or limited.

We also integrate into our proprietary applications and use third-party software to maintain and enhance, among other things, content generation and delivery, and to support our technology infrastructure. Some of this software is proprietary and some is open source software. Our use of third-party technologies exposes us to increased risks, including, but not limited to, risks associated with the integration of new technology into our solutions, the diversion of our resources from development of our own proprietary technology and our inability to generate revenue from licensed technology sufficient to offset associated acquisition and maintenance costs. These technologies may not be available to us in the future on commercially reasonable terms or at all and could be difficult to replace once integrated into our own proprietary applications. Most of these licenses can be renewed only by mutual consent and may be terminated if we breach the terms of the license and fail to cure the breach within a specified period of time. Our inability to obtain, maintain or comply with any of these licenses could delay development until equivalent technology can be identified, licensed and integrated, which could delay or limit our future growth.

Data loss or corruption due to failures or errors in our systems may expose us to liability, hurt our reputation and relationships with existing clients and force us to incur significant costs.

Hardware failures or errors in our systems could result in data loss or corruption or cause the information that we collect to be incomplete or contain inaccuracies that our clients regard as significant. Complex software such as ours may contain errors or failures that are not detected until after the software is introduced or updates and new versions are released. We continually introduce new software and updates and enhancements to our existing software. Despite testing by us, we may discover defects or errors in our software. Any defects or errors could expose us to risk of liability to clients and the government, and could cause delays in the introduction of new products and services, result in increased costs and diversion of development resources, require design modifications, decrease market acceptance or client satisfaction with our products and services or cause harm to our reputation. Data losses related to personal health records could result in additional risks. We are subject to data privacy and security laws and regulations and contractual obligations governing the transmission, security and privacy of health and other sensitive or proprietary information, which may impose restrictions on the manner in which we access, store, transmit, use and disclose such information and subject us to penalties if we are unable to fully comply with such laws or contractual provisions.

Furthermore, our clients might use our software together with products from other companies. As a result, when problems occur, it might be difficult to identify the source of the problem. Even when our software does not cause these problems, the existence of these errors might cause us to incur significant costs, divert the attention of our technical personnel from our product development efforts, hurt our reputation and lead to significant client relations problems.

We are subject to cybersecurity risks and other risks associated with data security breaches, and if we are unable to safeguard the security and privacy of confidential data, we may incur increased expenses to mitigate our disclosure or address any such incidents, and our reputation and business will be harmed.

Our products and services involve the collection, storage and analysis of confidential or proprietary information, and we are subject to numerous laws, rules and regulations in the United States (both federal and state) to protect both individual identifiable information as well as personal health information. If a cyber-incident, such as a phishing or ransomware attack, virus, malware installation, server malfunction, software or hardware failure, impairment of data integrity, loss of data or other computer assets, adware or other similar issue, impairs or shuts down one or more of our computing systems or our IT network, we may be subject to negative treatment and lawsuits by our clients. In addition, attention to remediating cyber incidents may distract our technical or management personnel from their normal responsibilities. Public announcements of such cyber incidents could occur and negative perception of such cyber incidents could adversely affect the price of our common stock, and we could lose sales and clients.

In certain cases, confidential or proprietary information is provided to third parties, such as the service providers that host our technology platform, and we may be unable to control the use of our information or the security protections used by third parties. Cyber incidents and malicious internet-based activity continue to increase generally, and providers of hosting and cloud-based services are often targeted. If the third parties with whom we work violate applicable laws, contracts or our security policies, these violations could also put our confidential or proprietary information at risk and otherwise hurt our business. In addition, if the security measures of our clients are compromised, even without any actual compromise of our own systems, we may face negative publicity or reputational harm if our clients or anyone else incorrectly attributes the blame for such security breaches to us or our systems. Data and security breaches can also occur as a result of non-technical issues, including breaches by us or by our third-party service providers that result in the unauthorized release of personal or confidential information, employee error or malfeasance, faulty password management or other irregularities that may result in a defeat of our or our third-party providers' security measures.

We may be required to expend significant capital and other resources to protect against security incidents caused by known cyber vulnerabilities or to alleviate problems caused by security breaches. We, our customers and our third-party service providers face an evolving threat landscape in which cybercriminals, among others, employ a complex array of cyber-attack techniques designed to access sensitive information or disrupt our operations, including, for example, the use of fraudulent or stolen access credentials, malware, ransomware, phishing, denial of service and other types of attacks. These types of cyber-attacks are becoming more prevalent, particularly in the healthcare industry, have occurred in our systems in the past, and may occur in our systems in the future. While cyber-attacks have not, to date, had a material impact on our operations, there is no assurance that such impacts will be immaterial in the future. Moreover, despite our implementation of security measures, techniques used to obtain unauthorized access to information or to sabotage information technology systems change frequently, are becoming increasingly more

sophisticated, and often are not recognized until launched against a target. Furthermore, unknown cyber vulnerabilities caused by third-party software or services may exist within our system. As a result, we or our third-party service providers may be unable to anticipate such techniques or vulnerabilities or to implement adequate preventative measures. Any compromise or perceived compromise of our security could damage our reputation and our relationship with our clients, reduce demand for our products and services and subject us to significant liability or regulatory actions. In addition, in the event that new privacy or data security laws are implemented, we may not be able to timely comply with such requirements, or such requirements may not be compatible with our current processes. Changing our processes could be time-consuming and expensive, and failure to timely implement required changes could subject us to liability for non-compliance. We may also incur significant remediation costs, including liability for stolen customer or employee information, repairing system damage or providing benefits to affected customers or employees.

We rely on internet infrastructure, bandwidth providers, other third parties and our own systems to provide services to our clients, and any failure or interruption in the services provided by these third parties or our own systems could expose us to litigation and hurt our reputation and relationships with clients.

Our ability to deliver our products and services, particularly our cloud-based solutions, is dependent on the development and maintenance of the infrastructure of the internet and other telecommunications services by third parties. This includes maintenance of a reliable network connection with the necessary speed, data capacity and security for providing reliable internet access and services and reliable telephone and facsimile services. Our services are designed to operate without perceptible interruption in accordance with our service level commitments.

We have, however, experienced limited interruptions in these systems in the past, including server failures that temporarily slow down the performance of our services, and we may experience similar or more significant interruptions in the future. We rely on internal systems as well as third-party suppliers, including bandwidth and telecommunications equipment providers, to provide our services. We do not currently maintain redundant systems or facilities for some of these services. Interruptions in these systems or services, whether due to system failures, cyber incidents, physical or electronic break-ins or other events, could affect the security or availability of our services and prevent or inhibit the ability of our clients and their patients to access our services. In the event of a catastrophic event with respect to one or more of these systems or facilities, we may experience an extended period of system unavailability, which could result in substantial costs to remedy those problems or harm our relationship with our clients and our business.

Additionally, any disruption in the network access, telecommunications or co-location services provided by third-party providers or any failure of or by third-party providers' systems or our own systems to handle current or higher volume of use could significantly harm our business. We exercise limited control over our third-party suppliers, which increases our vulnerability to problems with services they provide. Any errors, failures, interruptions or delays experienced in connection with these third-party technologies and information services or our own systems could hurt our relationships with clients and expose us to third-party liabilities. Although we maintain insurance for our business, the coverage under our policies may not be adequate to compensate us for all losses that may occur. In addition, we might not continue to be able to obtain adequate insurance coverage at an acceptable cost.

The reliability and performance of our internet connection may be harmed by increased usage or by denial-of-service attacks or related cyber incidents. The services of other companies delivered through the internet have experienced a variety of outages and other delays as a result of damages to portions of the internet's infrastructure, and such outages and delays could affect our systems and services in the future. These outages and delays could reduce the level of internet usage as well as the availability of the internet to us for delivery of our internet-based services.

We rely on third-party vendors to host and maintain our technology platform.

We rely on third-party vendors to host and maintain our technology platform, including our *EireneRx* and *Med Wise* software. Our ability to offer our products and services and operate our business is dependent on maintaining our relationships with third-party vendors, particularly Amazon Web Services, and entering into new relationships to meet the changing needs of our business. Any deterioration in our relationships with such vendors or our failure to enter into agreements with vendors in the future could harm our business and our ability to pursue our growth strategy. Because of the large amount of data that we collect and manage, it is possible that, despite precautions taken at our vendors' facilities, the occurrence of a natural disaster, cyber incident, a decision to close the facilities without adequate notice or other unanticipated problems could result in lengthy interruptions in our service. These service interruptions could cause

our platform to be unavailable to our clients and impair our ability to deliver products and services and to manage our relationships with new and existing clients.

If our vendors are unable or unwilling to provide the services necessary to support our business, or if our agreements with such vendors are terminated, our operations could be significantly disrupted. Some of our vendor agreements may be unilaterally terminated by the licensor for convenience, and if such agreements are terminated, we may not be able to enter into similar relationships in the future on reasonable terms or at all. We may also incur substantial costs, delays and disruptions to our business in transitioning such services to ourselves or other third-party vendors. In addition, third-party vendors may not be able to provide the services required in order to meet the changing needs of our business.

We depend on our senior management team, and the loss of one or more of our executive officers or key employees or an inability to attract and retain highly skilled employees could compromise our ability to pursue our growth strategy and grow our business.

Our success depends largely upon the continued services of our executive officers and other key employees. We do not maintain “key person” insurance for our executive officers, other than for our Chief Executive Officer, Dr. Calvin H. Knowlton, or any of our other key employees. From time to time, there may be changes in our senior management team resulting from the hiring or departure of executives, which could disrupt our business. We are highly dependent on Dr. Calvin H. Knowlton, our Chief Executive Officer, and Dr. Orsula Knowlton, our President. All of our employees' employment is at-will, including the employment of Drs. Calvin and Orsula Knowlton, which means that any of these employees could leave our employment at any time. The replacement of one or more of our executive officers or other key employees would likely involve significant time and costs and may significantly delay or prevent the achievement of our business objectives.

In addition, competition for qualified management in our industry is intense. Many of the companies with which we compete for management personnel have greater financial and other resources than we do. As a result, we may experience difficulty hiring and retaining qualified personnel. The departure of key personnel could also hurt our business. In such event, we would be required to hire other personnel to manage and operate our business, and we might not be able to employ a suitable replacement for the departing individual, or a replacement might not be willing to work for us on terms that are favorable to us.

In addition, in making employment decisions, particularly in the technology industry, job candidates often consider the value of the stock options or other equity instruments they are to receive in connection with their employment. Volatility in the price of our common stock might, therefore, compromise our ability to attract or retain highly skilled personnel. Furthermore, the requirement to expense stock options and other equity instruments might discourage us from granting the size or type of stock option or equity awards that job candidates require to join our company. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be harmed.

We may make future acquisitions and investments that may be difficult to integrate, divert management resources, result in unanticipated costs or dilute our stockholders.

Part of our business strategy is to acquire or invest in companies, products or technologies that complement our current products and services, enhance our market coverage or technical capabilities or offer growth opportunities. For example, we completed our acquisitions of Peak PACE, Mediture and Cognify in 2018, DoseMe and PrescribeWellness in 2019, and Personica in 2020. Future acquisitions and investments could pose numerous risks to our operations, including:

- difficulty integrating the purchased operations, products or technologies;
- substantial unanticipated integration costs;
- assimilation of the acquired businesses, which may divert significant management attention and financial resources from our other operations and could disrupt our ongoing business;
- the loss of key employees, particularly those of the acquired businesses;

- difficulty retaining or developing the acquired business's clients;
- adverse effects on our existing business relationships;
- failure to realize the potential cost savings or other financial or strategic benefits of the acquisitions, including failure to consummate any proposed or contemplated transaction; and
- liabilities from the acquired businesses for infringement of intellectual property rights, loss of intellectual property or goodwill through inadequate data security measures, unknown cyber vulnerabilities or network intrusions, or other claims and failure to obtain indemnification for such liabilities or claims.

In connection with these acquisitions or investments, we could incur debt, amortization expenses related to intangible assets or large write-offs, assume liabilities or issue stock that would dilute our current stockholders' ownership. We may be unable to complete acquisitions or integrate the operations, products or personnel gained through any such acquisition successfully or without adversely affecting our business, financial condition and results of operations.

Substantially all of our assets are pledged as collateral under our existing line of credit.

As of December 31, 2020, our total indebtedness was $266.0 million, which includes amounts outstanding on the convertible senior subordinated notes, finance lease liabilities, acquisition-related notes payables, and acquisition-related contingent consideration liabilities. Our current credit facility provides for borrowings, on a revolving basis, in an aggregate amount up to $120.0 million to be used for general corporate purposes. The credit facility is secured by all of our personal property, whether presently existing or created or acquired in the future, as well as our intellectual property. If we are unable to repay any secured borrowings when due, whether at maturity or if declared due and payable following a default, the lenders would have the right to proceed against the collateral pledged to the indebtedness and may sell the assets pledged as collateral in order to repay those borrowings. As of December 31, 2020, $10.0 million in borrowings were outstanding under the credit facility.

We may require additional capital to support business growth, and this capital might not be available to us on acceptable terms or at all.

Our operations have required a significant investment of cash since inception and we intend to continue to make significant investments to support our business growth, respond to business challenges or opportunities, develop new applications and services, enhance our existing platform and services, hire additional sales and marketing personnel, enhance our operating infrastructure and potentially acquire complementary businesses and technologies. As of December 31, 2020, we had $23.4 million of unrestricted cash.

Our future capital requirements may be significantly different from our current estimates and will depend on many factors, including our growth rate, renewal activity, the timing and extent of spending to support product development efforts, the expansion of sales and marketing activities, the introduction of new and enhanced products and services and the continuing market acceptance of our products and services. Accordingly, we might need to engage in equity or debt financings or collaborative arrangements to secure additional funds. If we raise additional funds through further issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing secured by us in the future could involve restrictive covenants relating to our capital-raising activities and other financial and operational matters, which might make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We might have to obtain funds through arrangements with collaborators or others that may require us to relinquish rights to our technologies or offerings that we otherwise would not consider. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be limited.

Our effective tax rate may increase or decrease, and we may be adversely impacted by changes in tax laws.

We are subject to income taxes in the United States. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. We are subject to audit by tax authorities where we do business. Although we believe that our tax estimates and tax positions are reasonable, they could be materially affected by many factors including the final outcome of tax audits and related litigation, the introduction of new tax accounting standards, legislation, regulations, and related interpretations, our global mix of earnings and the realizability of deferred tax assets. An increase or decrease in our effective tax rate could have a material adverse impact on our financial condition and results of operations.

In addition, at any time, U.S. federal tax laws or the administrative interpretations of those laws may be changed. In December 2017, the legislation commonly referred to as the Tax Cuts and Jobs Act, or the Tax Act, which made widespread changes to the Internal Revenue Code, was signed into law; while we believe that this law generally will have a favorable effect on corporations and their stockholders, uncertainty remains regarding the full effect that this law will have on us and our customers, stockholders and other stakeholders. We also cannot predict whether, when or to what extent other new U.S. federal tax laws, regulations, interpretations or rulings will be issued. As a result, changes in U.S. federal tax laws could adversely affect our business, financial condition and results of operations, and adversely impact our stockholders.

Occasionally, changes in state and local tax laws or regulations are enacted that may result in an increase in our tax liability. Shortfalls in tax revenues for states and municipalities in recent years may lead to an increase in the frequency and size of such changes. If such changes occur, we may be required to pay additional taxes on our assets or income.

Certain U.S. state tax authorities may assert that we have a state nexus and seek to impose state and local income taxes which could adversely affect our results of operations.

We are currently licensed to operate in all fifty states and file state income tax returns in 37 states. There is a risk that certain state tax authorities where we do not currently file a state income tax return could assert that we are liable for state and local income taxes based upon income or gross receipts allocable to such states. States are becoming increasingly aggressive in asserting a nexus for state income tax purposes. We could be subject to state and local taxation, including penalties and interest attributable to prior periods, if a state tax authority successfully asserts that our activities give rise to a nexus. Such tax assessments, penalties and interest may adversely affect our results of operations.

We face additional risks as a result of our recent acquisitions and potential future acquisitions and may be unable to integrate our businesses successfully and realize the anticipated synergies and related benefits of these acquisitions or do so within the anticipated timeframe.

We have acquired several new businesses in the past and may pursue additional acquisitions in the future. For example, we recently acquired a number of new businesses, including our acquisition of SinfoníaRx in 2017, our acquisitions of Peak PACE, Cognify and Mediture in 2018, our acquisitions of DoseMe and PrescribeWellness in 2019, and our acquisition of Personica, in 2020. Each acquisition involved, or may involve, a combination of two businesses or companies that previously operated independently, and, as a result of the acquisition, the combined company faces, or may face, various additional risks, including, among others, the following:

- our inability to successfully evaluate and utilize acquired products, services, technology or personnel;
- disruption to the acquired business's operations and relationships with service providers, customers, employees and other partners;
- negative effects on our products, product pipeline and services from the changes and potential disruption that may follow the acquisition;
- diversion of our management's attention from other strategic activities;
- our inability to successfully combine the businesses in a manner that permits the combined company to achieve the cost savings anticipated to result from the acquisition;

- diversion of significant resources from the ongoing development of our existing products, services and operations; and

- greater than anticipated costs related to the integration of the acquired business and operations into ours.

Our ability to execute all such plans will depend on various factors, many of which remain outside our control. Any of these risks could adversely affect our business and financial results.

The process of integrating the operations acquired as part of our past or future acquisitions into our operations could result in unforeseen operating difficulties and require significant resources.

The following factors, among others, could reduce our revenues and earnings, increase our operating costs, and result in a loss of projected synergies:

- if we are unable to successfully integrate the duties, responsibilities, and other factors of interest to the management and employees of the acquired business, we could lose employees to our competitors, which could significantly affect our ability to operate the business and complete the integration;

- if we are unable to implement and retain uniform standards, controls, policies, procedures and information systems; and

- if the integration process causes any delays with the delivery of our services, or the quality of those services, we could lose customers, which would reduce our revenues and earnings.

The process of integrating the businesses acquired in any acquisition and their associated services and technologies involves numerous risks that could materially and adversely affect our results of operations or stock price.

The following factors, among others, could materially and adversely affect our results of operations or stock price:

- expenses related to the acquisition process and impairment charges to goodwill and other intangible assets related to an acquisition;

- the dilutive effect on earnings per share as a result of issuances of stock and incurring operating losses;

- stock volatility due to investors' uncertainty regarding the value of the acquired businesses;

- diversion of capital from other uses;

- failure to achieve the anticipated benefits of an acquisition in a timely manner, or at all; and

- adverse outcome of litigation matters or other contingent liabilities assumed in or arising out of an acquisition.

Notwithstanding the due diligence investigation we performed, or may perform, in connection with any acquisition, the acquired businesses may have liabilities, losses, or other exposures for which we do not have adequate insurance coverage, indemnification, or other protection.

While we performed, or currently intend to perform, significant due diligence on each acquired businesses prior to consummating its acquisition, we are dependent on the accuracy and completeness of statements and disclosures made or actions taken by the acquired businesses and their representatives when conducting due diligence and evaluating the results of such due diligence. We did not, and will not, control and may be unaware of activities of an acquired business before its acquisition, including intellectual property and other litigation claims or disputes, information security vulnerabilities, violations of laws, policies, rules and regulations, commercial disputes, tax liabilities and other known and unknown liabilities.

Our post-closing recourse with respect to an acquisition may be limited under the relevant merger or purchase agreement.

The obligation of the relevant sellers to indemnify us with respect to an acquisition may be limited to, among others, breaches of specified representations and warranties and covenants included in the applicable merger or purchase agreement. Except in the event the sellers or the acquired business breaches certain, limited fundamental representations or with respect to fraud, intentional misrepresentation or willful misconduct, we are often unable to make a claim for indemnification with respect to representations and warranties unless and until the indemnifiable losses exceed an amount specified in each merger or purchase agreement. We may also be limited in our ability to make a claim for a breach of a non-fundamental representation after a certain date following the closing of the relevant acquisition. We have obtained representation and warranty insurance policies in connection with past acquisitions and may seek to obtain similar policies in the future. Our ability to make a claim under any such policy for a breach of a representation will also likely be limited after a certain date following the closing of the relevant acquisition. If any issues arise post-closing, we may not be entitled to sufficient, or any, indemnification or recourse from the sellers or our representation and warranty insurance policy, if available, which could have a material adverse impact on our business and results of operations.

Risks Related to Our Intellectual Property

If we are unable to obtain, maintain and enforce intellectual property protection for our technology and products or if the scope of our intellectual property protection is not sufficiently broad, others may be able to develop and commercialize technology and products substantially similar to ours, and our ability to successfully commercialize our technology and products may be compromised.

Our business depends on proprietary technology and content, including software, databases, confidential information and know-how, the protection of which is crucial to the success of our business. We rely on a combination of patent, trademark, trade-secret and copyright laws, confidentiality procedures, cyber security practices and contractual provisions to protect the intellectual property rights of our proprietary technology and content. We may, over time, increase our investment in protecting our intellectual property through additional trademark, patent and other intellectual property filings, which could be expensive and time-consuming. We may not be able to obtain protection for our technology and even if we are successful in attaining effective patent, trademark, trade-secret and copyright protection, it is expensive to maintain these rights and the costs of defending our rights could be substantial. Furthermore, recent changes to U.S. intellectual property laws may jeopardize the enforceability and validity of our intellectual property portfolio and harm our ability to obtain patent protection of some of our unique business methods.

In addition, these measures may not be sufficient to offer us meaningful protection or provide us with any competitive advantages. If we are unable to adequately protect our intellectual property and other proprietary rights, our competitive position and our business could be harmed, as third parties may be able to commercialize and use technologies and software products that are substantially the same as ours without incurring the development and licensing costs that we have incurred. Any of our owned or licensed intellectual property rights could be challenged, invalidated, circumvented, infringed or misappropriated, our trade secrets and other confidential information could be disclosed in an unauthorized manner to third parties, or our intellectual property rights may not be sufficient to permit us to take advantage of current market trends or to otherwise to provide us with competitive advantages, which could result in costly redesign efforts, discontinuance of some of our offerings or other competitive harm.

Monitoring unauthorized use of our intellectual property is difficult and costly. From time to time, we seek to analyze our competitors' products and services, and may in the future seek to enforce our rights against potential infringement. However, the steps we have taken to protect our proprietary rights may not be adequate to enforce our rights as against infringement or misappropriation of our intellectual property. We may not be able to detect unauthorized use of, or take appropriate steps to enforce, our intellectual property rights. Any inability to meaningfully protect our intellectual property rights could harm our ability to compete and reduce demand for our products and services. Moreover, our failure to develop and properly manage new intellectual property could hurt our market position and business opportunities. Also, some of our products and services rely on technologies, data and software developed by or licensed from third parties, and we may not be able to maintain our relationships with such third parties or enter into similar relationships in the future on reasonable terms or at all. Any loss of the right to use any third-party technologies, data or software could result in delays in implementing or provisioning our products and services until equivalent technology is either developed by us or, if available, is identified, obtained and integrated, which could harm our business.

We may also be required to protect our proprietary technology and content in an increasing number of jurisdictions, a process that is expensive and may not be successful, or which we may not pursue in every location. In addition, effective intellectual property protection may not be available to us in every country, and the laws of some foreign countries may not be as protective of intellectual property rights as those in the United States. Additional uncertainty may result from changes to intellectual property legislation enacted in the United States and elsewhere, and from interpretations of intellectual property laws by applicable courts and agencies. Accordingly, we may be unable to obtain, maintain and enforce the intellectual property rights necessary to provide us with a competitive advantage. Our failure to obtain, maintain and enforce our intellectual property rights could therefore adversely affect our business, financial condition and results of operations.

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

The registered or unregistered trademarks or trade names that we own may be challenged, infringed, circumvented, declared generic, lapsed or determined to be infringing on or dilutive of other marks. We may not be able to protect our rights in these trademarks and trade names, which we need in order to build name recognition with potential clients. In addition, third parties may in the future file for registration of trademarks similar or identical to our trademarks. If they succeed in registering or developing common law rights in such trademarks, and if we are not successful in challenging such third-party rights, we may not be able to use these trademarks to develop brand recognition of our technologies, products or services. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively.

If we cannot protect our domain names, our ability to successfully promote our brand will be impaired.

We currently own the web domain names www.tabularasahealthcare.com, www.trhc.com, www.carekinesis.com, www.careventions.com, www.medliance.com, www.capstoneperformancesystems.com, www.eirenerx.com, www.medwiseadvisor.com, www.niarx.com, www.sinfoniarx.com, www.mediture.com, www.cognify.com, and www.doseme-rx.com, which are critical to the operation of our business. The acquisition and maintenance of domain names is generally regulated by governmental agencies and their designees. The regulation of domain names in the United States and in foreign countries is subject to change. Governing bodies may establish additional top-level domains, appoint additional domain name registrars or modify the requirements for holding domain names. As a result, we may be unable to acquire or maintain relevant domain names in all countries in which we conduct business. Furthermore, it is unclear whether laws protecting trademarks and similar proprietary rights will be extended to protect domain names. Therefore, we may be unable to prevent third parties from acquiring domain names that are similar to, infringe upon or otherwise decrease the value of our trademarks and other proprietary rights. We may not be able to successfully implement our business strategy of establishing a strong brand if we cannot prevent others from using similar domain names or trademarks. This failure could impair our ability to increase our market share and revenue.

We could incur substantial costs as a result of any claim of infringement of another party's intellectual property rights.

Our commercial success depends in part on our ability to develop and commercialize our products and services without infringing or being claimed to have infringed the intellectual property or proprietary rights of third parties. Intellectual property disputes can be costly to defend and may cause our business, operating results and financial condition to suffer. As the market for technology-enabled healthcare solutions in the United States expands and intellectual property protections asserted by others increase, the risk increases that there may be intellectual property asserted by others and patents issued to third parties that relate to our products and technology of which we are not aware or that we must challenge to continue our operations as currently contemplated. Whether merited or not, we may face allegations that we, our clients, our licensees or parties indemnified by us have infringed or otherwise violated the patents, trademarks, copyrights or other intellectual property rights of third parties. In addition, we have received letters from third parties from time to time claiming that our software, technologies and methodologies are covered by their patents or that our activities are otherwise violating their patents, trademarks, copyrights or other intellectual property rights, and future claims may require us to expend time and money to address and resolve these claims. Such claims may be made by competitors seeking to obtain a competitive advantage or by other parties. Additionally, in recent years,

individuals and groups have begun purchasing intellectual property assets for the purpose of making claims of infringement and attempting to extract settlements from other technology-reliant companies.

We may also face allegations that our employees or consultants have misappropriated the intellectual property or proprietary rights of their former employers or other third parties, as the case may be. It may be necessary for us to initiate litigation to defend ourselves in order to determine the scope, enforceability and validity of third-party intellectual property or proprietary rights, or to establish our respective rights. Regardless of whether claims that we are infringing patents or other intellectual property rights have merit, such claims can be time-consuming, divert management's attention and financial resources and can be costly to evaluate and defend. Results of any such litigation are difficult to predict and may require us to stop commercializing or using our products or technology, obtain licenses, modify our products and technology while we develop non-infringing substitutes, incur substantial damages or settlement costs, or face a temporary or permanent injunction prohibiting us from marketing or providing the affected products and services. If we require a third-party license, it may not be available on reasonable terms or at all, and we may have to pay substantial royalties, upfront fees or grant cross-licenses to intellectual property rights for our products and services. We may also have to redesign our products or services so they do not infringe third-party intellectual property rights, which may not be possible or may require substantial monetary expenditures and time, during which our technology and products may not be available for commercialization or use. Even if we have an agreement to indemnify us against such costs, the indemnifying party may be unable to uphold its contractual obligations. If we cannot or do not obtain a third-party license to the infringed technology at all, license the technology on reasonable terms or obtain similar technology from another source, our ability to operate our business could be compromised.

Our use of open source software could compromise our ability to offer our services and subject us to possible litigation.

We use open source software in connection with our products and services. Companies that incorporate open source software into their products have, from time to time, faced claims challenging the use of open source software and compliance with open source license terms. As a result, we could be subject to suits by parties claiming ownership of what we believe to be open source software or claiming noncompliance with open source licensing terms. Some open source software licenses require users who distribute software containing open source software to publicly disclose all or part of the source code to the licensee's software that incorporates, links or uses such open source software, and make available to third parties for no cost, any derivative works of the open source code created by the licensee, which could include the licensee's own valuable proprietary code. While we monitor our use of open source software and try to ensure that none is used in a manner that would require us to disclose our proprietary source code or that would otherwise breach the terms of an open source agreement, such use could inadvertently occur, or could be claimed to have occurred, in part because open source license terms are often ambiguous. Any actual or claimed requirement to disclose our proprietary source code or pay damages for breach of contract could harm our business and could help our competitors develop products and services that are similar to or better than ours.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our issued patents or other intellectual property. To counter infringement or unauthorized use, we may be required to monitor for such infringement and file infringement claims, both of which can be expensive and time consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, or may construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in a proceeding could put one or more of our patents at risk of being invalidated.

We may be subject to claims by third parties asserting that our employees, our consultants or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our employees were previously employed at universities or other technology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and our consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to

claims that our employees, our consultants, or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Costly litigation may be necessary to defend against these claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our and their assignment agreements may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings against us relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

If we are unable to protect the confidentiality of our trade secrets, know-how and other proprietary information, the value of our technology, products and services could be hurt.

We may not be able to protect our trade secrets, know-how and other proprietary information adequately. Although we use reasonable efforts to protect this proprietary information and technology, our employees, consultants and other parties may unintentionally or willfully disclose our information or technology to competitors. In addition, our trade secrets, know-how and other proprietary information may be accessed or disclosed during a cyber incident, which could have a significant negative impact on us. Further, such cyber incidents, if disclosed publicly, could adversely affect the price of our common stock.

Enforcing a claim that a third party illegally obtained and is using any of our proprietary information or technology is expensive and time-consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets, know-how and other proprietary information. We rely, in part, on non-disclosure, confidentiality and invention assignment agreements with our employees, consultants and other parties to protect our trade secrets, know-how and other intellectual property and proprietary information. These agreements may not be self-executing, or they may be breached and we may not have adequate remedies for such breach. Moreover, third parties may independently develop similar or equivalent proprietary information or otherwise gain access to our trade secrets, know-how and other proprietary information.

Risks Related to Industry Regulation and Other Legal Compliance Matters

The healthcare regulatory and political framework is uncertain and evolving.

Healthcare laws and regulations are rapidly evolving and may change significantly in the future. For example, in March 2010, the ACA was adopted, which is a healthcare reform measure that seeks to contain healthcare costs while improving quality and access to coverage. The ACA includes a variety of healthcare reform provisions and requirements that have already become effective and substantially changes the way healthcare is financed by both governmental and private insurers, which may significantly affect our industry and our business. In addition, the ACA has been subject to

significant litigation and its constitutionality has been called into question. We are therefore unable to predict accurately what effect the ACA or other healthcare reform measures that may be adopted in the future, including amendments to or repeal of the ACA, will have on our business.

On January 20, 2017, President Donald J. Trump issued an executive order stating that it is the policy of the new administration to seek the prompt repeal of the ACA. Despite multiple efforts, Congress was unable to pass legislation significantly repealing or replacing the ACA in 2017, but many uncertainties remain regarding its future. The Trump Administration took additional action in October 2017 that may weaken the ACA's public health insurance marketplace, and the Tax Cuts and Jobs Act of 2017, enacted December 22, 2017, eliminates the ACA's individual mandate penalty beginning January 1, 2019. However, the Biden Administrator has signaled its intent to maintain and expand the ACA and it is possible that additional legislative or executive action with regard to the ACA will occur in 2021. The modification, expansion or repeal of certain provisions of the ACA could impact some or many of our business arrangements directly or indirectly. Given that legislative and regulatory change is still being formulated, we cannot predict with any certainty the outcome of any future legislation or regulation.

A recent decision from the U.S. Court of Appeals for the Fifth Circuit, in *Texas v. Azar*, upheld the district court's determination that the ACA's "individual mandate" was unconstitutional. The action, brought by various state attorneys general, alleges the U.S. Congress invalidated the ACA when it zeroed out the tax-based shared responsibility payment, commonly known as the "individual mandate," under the Tax Cuts and Jobs Act of 2017 (Pub. L. 115-97). The case was remanded back to the district court for further proceedings and has not invalidated the ACA in Texas or elsewhere in the nation. As such, we cannot predict with any certainty how future litigation in this matter could affect our business. The environment regarding the provisions of the ACA has somewhat stabilized, but specific outcomes are difficult to predict. The timeframe for conclusion and final outcome of this litigation is uncertain given the possibility of appeal to the U.S. Supreme Court. However, if the Supreme Court declines to hear or upholds the unconstitutionality of the ACA, it could have a materially adverse effect on future business and operating results. Furthermore, it is unclear if the Biden Administration and Congress would attempt to re-implement all or a portion of the ACA if ultimately determined unconstitutional.

On October 24, 2018, President Trump signed legislation into law aimed at curbing the opioid crisis in the U.S. The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (P.L. 115-271), or SUPPORT Act, includes provisions that address law enforcement, public health, and coverage under the Medicare and Medicaid programs. Broad in scope, the legislation increases federal oversight with respect to the production and distribution of opioids, bolsters fraud prevention safeguards, enhances oversight of prescription opioids, expands coverage of opioid addiction treatment services, and authorizes consumer education and provider training programs aimed at preventing and treating opioid use disorders. The potential for additional regulatory oversight and enforcement will likely add to the costs associated with the prescription and any downstream handling of medications. Whether it impacts medication management companies or health plans is difficult to determine without seeing the implementing regulations, but given the intent to crack down on opioid abuse in this country, it is likely that more time, attention and personnel will be required to ensure compliance. Implementation of the SUPPORT Act has been slow to occur. We cannot be sure whether additional legislative changes will be enacted, given the continued scrutiny of prescription opioids by the U.S. Congress, or predict what the impact of future regulations generated by the SUPPORT Act, if any, may be.

On October 10, 2018, two pieces of legislation were enacted to enhance drug price transparency. The Know the Lowest Price Act (S. 2553) and the Patient Right to Know Drug Prices Act (S. 2554), each prevent various parties from instituting "gag" orders or clauses against pharmacists and pharmacies, which heretofore may have prevented a pharmacist from disclosing the lowest available price of a drug to a consumer. These laws may have a financial impact on insurers and pharmacy benefit managers, as they may have to develop more competitive pricing in certain situations.

Additionally, a significant amount of our business depends on the evolution of the health care environment and concomitant clinical integration and care coordination, including certain demonstration projects operated by the federal government. If these demonstration projects are modified, cancelled, or not ultimately made permanent as part of federal health care programs, this might affect demand for the types of services we provide. Recently, CMS and OIG finalized rules as part of the federal government's "Regulatory Sprint to Coordinated Care" initiative. The impact of these rules is still unknown, but focuses on protecting and encouraging certain value-based arrangements.

In addition, we are subject to various other healthcare laws and regulations, including, among others, the Stark

Law relating to self-referrals, anti-kickback laws, including the federal Anti-Kickback Statute, antitrust laws and the data privacy and security laws and regulations described below. For instance, the CCPA imposes rules governing how businesses handle personal data of California residents. Companies that do business in California will be required to disclose the types of data they collect, the purpose for the data collection, how the data will be used, as well as expand organizational responsibilities pertaining to individual rights, accountability, and governance. Companies subject to the CCPA must have complied by January 1, 2020. There have been additional regulatory provisions and legislative amendments related to the CCPA during 2020, including the passage of the CPRA. The CPRA modifies the CCPA and will impose additional data protection obligations on companies doing business in California effective January 1, 2023. If we were to become subject to litigation or liabilities or found to be out of compliance with these or other laws, our business could be hurt. We may become subject to litigation, which could be costly and result in significant liability.

We are subject to data privacy and security laws, regulations and contractual obligations governing the transmission, security and privacy of health and other sensitive or proprietary information, which may impose restrictions on the manner in which we access, store, transmit, use and disclose such information and subject us to penalties if we are unable to fully comply with such laws or contractual provisions.

As described below, we are required to comply with numerous federal and state laws and regulations governing the collection, use, disclosure, storage and transmission of individually identifiable health information that we may obtain or have access to in connection with the provision of our services. These laws and regulations, including their interpretation by governmental agencies, are subject to frequent change. These laws and regulations include the following.

- The Health Insurance Portability and Accountability Act, or HIPAA, and its implementing regulations, required expanded protection of the privacy and security of protected health information, the execution of certain contracts to safeguard protected health information and the adoption of standards for the exchange of electronic health information, for health plans, healthcare clearinghouses and certain healthcare providers, which we refer to as Covered Entities, and their business associates. Among the standards that HHS has adopted pursuant to HIPAA are standards for electronic transactions and code sets, unique identifiers for providers, employers, health plans and individuals, security, electronic signatures, privacy and enforcement. Actual failure to comply with HIPAA could result in fines and civil and criminal penalties, as well as contractual damages, which could harm our business, finances and reputation.

- The Health Information Technology for Economic and Clinical Health Act, or the HITECH Act, enacted as part of the American Recovery and Reinvestment Act of 2009, also known as the "Stimulus Bill", effective February 22, 2010, modified HIPAA by setting forth health information security breach notification requirements and increasing penalties for violations of HIPAA, among other things. The HITECH Act requires individual notification for all breaches as defined by HIPAA, media notification of breaches affecting over 500 individuals located in the same region and either prompt or annual reporting of breaches to HHS, depending on the number of affected individuals. The HITECH Act also replaced the prior monetary penalty system of $100 per violation and an annual maximum of $25,000 per violation with a four-tier system of sanctions for breaches. Penalties now range from a minimum of $100 per violation and an annual maximum of $25,000 per violation for the first tier to a minimum of $50,000 per violation and an annual maximum of $1.5 million per violation for the fourth tier. Failure to comply with HIPAA as modified by the HITECH Act could result in fines and penalties, criminal sanctions and reputational damage that could harm our business.

- Numerous other federal and state laws may apply that restrict the use and disclosure and mandate the protection of the privacy and security of individually identifiable information, as well as employee personal information, and that require notifications and mitigation in the event of a breach. These include state medical information privacy laws, state social security number protection laws and federal and state consumer protection laws, among others. These various laws in many cases are not preempted by HIPAA and may be subject to varying interpretations by the courts and government agencies, creating complex compliance issues for us and our clients and potentially exposing us to additional expense, adverse publicity and liability.

- Federal and state consumer protection laws are increasingly being applied by the United States Federal Trade Commission and states' attorneys general to regulate the collection, use, storage and disclosure of

personal or individually identifiable information, through websites or otherwise, and to regulate the presentation of website content.

There is ongoing concern from privacy advocates, regulators and others regarding data protection and privacy issues, and the number of jurisdictions with data protection and privacy laws has been increasing. In addition, the scope of protection afforded to data subjects by many of these data protection and privacy laws has been increasing. Also, there are ongoing public policy discussions regarding whether the standards for deidentified, anonymous or pseudonomized health information are sufficient, and the risk of re-identification sufficiently small, to adequately protect patient privacy. These discussions may lead to further restrictions on the use of such information. These initiatives or future initiatives could compromise our ability to access and use data or to develop or market current or future services.

The security measures that we and our third-party vendors and subcontractors have in place to ensure compliance with privacy and data protection laws and contractual commitments may not protect our facilities and systems from security breaches, acts of vandalism or theft, cyber incidents, misplaced or lost data, programming and human errors or other similar events. The occurrence of a cyber incident that affects either individually identifiable health information or other confidential or proprietary information with which we have been entrusted may result in liability and hurt our reputation.

Additionally, as a business associate under HIPAA, we may also be liable for privacy and security breaches of protected health information and certain similar failures of our subcontractors. Even though we contractually require our subcontractors to safeguard protected health information as required by law, we still have limited control over their actions and practices. An actual or perceived breach of privacy or security of individually identifiable health information held by us or by our subcontractor may result in an enforcement action, including criminal and civil liability, against us, as well as negative publicity, reputational harm and contractual ramifications with our clients.

We are not able to predict the full extent of the impact such incidents may have on our business if such incidents occur. Any failure we may have in complying with HIPAA may result in criminal or civil liability, and due to the heightened enforcement climate and recent changes to the law, the potential for enforcement action against business associates under HIPAA is now greater than in prior years. Enforcement actions against us could be costly and could interrupt regular operations, which may harm our business. While we have not received any notices of violation of the applicable privacy and data protection laws and believe we adequately protect our information, including in compliance with such laws, there can be no assurance that we will not receive such notices in the future. Further, costly breaches can occur regardless of our compliance infrastructure.

We operate in a highly regulated industry and must comply with a significant number of complex and evolving requirements. Achieving and sustaining compliance with state and federal statutes and regulation related to the healthcare industry may prove costly. Changes in these laws could restrict our ability to conduct our business. Further, if we fail to comply with these requirements, we could incur significant penalties and our reputation could suffer.

In addition to HIPAA, additional federal and state statutes, regulations, guidance and contractual provisions regarding healthcare that may apply to our business activities, including:

- The federal Anti-Kickback Statute, or AKS, prohibits individuals and entities from knowingly and willfully paying, offering, receiving or soliciting anything of value in order to induce the referral of patients or in return for purchasing, leasing, ordering, arranging for, or recommending services or goods covered in whole or in part by Medicare, Medicaid, or other government healthcare programs. The AKS is an intent-based statute and the failure of an arrangement to satisfy all elements of a safe harbor will not necessarily make it illegal, but it may subject that arrangement to scrutiny by enforcement authorities. Any violation of the AKS can lead to significant penalties, including criminal penalties, civil fines and exclusion from participation in a federal healthcare program, among other penalties.

- Various state anti-kickback laws that sometimes track federal AKS prohibitions, although some apply to all-payers as opposed to only government healthcare programs.

- The federal physician self-referral law, often referred to as the Stark Law, prohibits physicians from referring Medicare or Medicaid patients to an entity for the provision of certain designated health services,

or DHS, among them outpatient prescription medications, if the physician or a member of such physician's immediate family has a financial relationship (including an ownership or investment interest or a compensation arrangement) with the entity, unless the financial relationship meets an exception to the self-referral prohibition. The Stark Law also prohibits the entity from billing Medicare or Medicaid for such DHS if the financial relationship fails to meet the requirements of an exception. The Stark Law is considered a "strict liability" statute in that a referral from a physician with a financial relationship that does not meet the requirements of an exception is strictly prohibited by the Stark Law. A violation of the Stark Law is punishable by civil sanctions, including overpayment liability, significant fines and exclusion from participation in Medicare and Medicaid programs.

- State data privacy and security laws that track federal requirements or impose more stringent or different requirements than HIPAA regarding storage, transmission, use and disclosure of protected health information, general individually identifiable information or other sensitive information. The CCPA imposes rules governing how businesses handle personal data of California residents. Companies that do business in California are required to disclose the types of data they collect, the purpose for the data collection, how the data will be used, as well as expand organizational responsibilities pertaining to individual rights, accountability, and governance. Companies subject to the CCPA have complied by January 1, 2020 and will need to comply with applicable CPRA requirements by January 1, 2023.

- Consumer protection laws require us to publish statements to users of our services that describe how we handle personal information. If such information that we publish is considered untrue, we may be subject to claims of deceptive practices, which could lead to significant liabilities and consequences, including, costs of defending against litigation, settling claims and loss of willingness of current and potential future clients to work with us.

- Federal and state false claims laws, including the civil False Claims Act, impose civil and criminal liability on individuals or entities that knowingly submit false or fraudulent claims for payment to the government or knowingly make, cause to be made, a false statement in order to have a false claim paid, or knowingly and improperly avoid or decrease an obligation due the federal government, such as the knowing retention of an identified overpayment. The civil False Claims Act provides for treble damages and mandatory minimum penalties per false claim or statement. In this context, it is particularly notable that a significant portion of our revenue is derived from services provided to PACE organizations. PACE organizations are funded by both Medicare and Medicaid, and the Medicare risk-adjustment methodology applies to the Medicare component of PACE organization reimbursement. PACE submissions may also be comparable to state Medicaid risk-adjustment submissions, and vary by state. Because risk adjustment submissions to Medicare and state Medicaid programs have a direct impact on the amounts that Medicare and Medicaid Programs pay to PACE organizations, these activities may be the subject of scrutiny and litigation under the federal civil False Claims Act.

- The HHS Office of Inspector General and many state Medicaid agencies maintain lists of individuals and organizations that have been excluded from participation in a federal healthcare program. A significant part of our revenue is derived from our services as federal healthcare program providers, specialty pharmacies, or contractors to federal healthcare program providers or plans and as such, we need to comply with restrictions on employing or contracting with personnel and vendors who have been excluded from participation in federal healthcare programs. Adhering to the best practice of conducting monthly screenings against the federal and state exclusion lists for employees and contractors may be costly and resource-consuming, but failure to do so may give rise to significant administrative liability and sanctions.

- As contractors to PACE organizations and Medicare Advantage organizations, or MAOs, we are subject to contractual provisions, which impose on us various obligations related to healthcare compliance and healthcare fraud, waste and abuse reduction and elimination efforts. These obligations stem from the provisions contained in prime contracts between PACE organizations and MAOs, and the federal government. Examples of such flow down provisions include subcontractor's compliance with all applicable state and federal laws, subcontractor's obligation to screen state and federal exclusion lists and its obligation to conduct periodic audits, among many others. Breaches of these requirements would not necessarily be a regulatory risk per se, but they could create contract compliance issues, which may yield

contractual damages, be costly to resolve and may hurt our reputation and restrict our ability to service such organizations in the future.

- Various state licensure, registration and certification laws are applicable to pharmacies, pharmacists, pharmacy technicians, other pharmacy personnel, and insurance administrators. If we are unable to maintain our licenses or if states place burdensome restrictions or limitations on non-resident pharmacies, this could limit or affect our ability to operate in some states. Additionally, if we or any of our personnel violate conditions of their pharmacy or pharmacist licensure, we could face penalties and lose valuable personnel.

- A number of federal and state laws and registration requirements are applicable to the purchase, handling, and dispensing controlled substances. If we are unable to maintain our registrations this could limit or affect our ability to purchase, handle, or dispense controlled substances and other violations of these laws could subject us to criminal or other sanctions.

- Federal and state laws and policies require pharmacies to maintain, enroll and participate in federal healthcare programs or to report specified changes in their operations to the agencies that administer these programs. If we do not comply with these laws, we may not be able to participate in some federal healthcare programs, which could compromise our ability to sell our solutions.

- A number of FDA regulations and guidance documents are relevant to our business. Some technologies and software applications used in healthcare analytics, genomic testing, and analysis are considered medical devices and are subject to regulation by the FDA. However, the 21st Century Cures Act, signed into law in 2016, created new statutory exemptions for medical-related software, and the FDA has issued draft guidance documents for its proposed interpretation of these exemptions and policies of enforcement discretion for software and related technologies. If the FDA determines that any of our current or future services, technologies, or software applications are regulated by the FDA as medical devices, we would become subject to various laws, regulations and policies enforced by the FDA or other governmental authorities, including both premarket and post-market requirements, and we would need to bring the affected services, technologies, or software into compliance with such requirements. The FDA could also require that we cease marketing and/or recall the affected services, technologies, and software unless and until we bring them into compliance with FDA's requirements. The FDA also regulates COVID-19 tests and generally requires emergency use authorization (EUA) or other premarket approval for such products. Our marketing and sale of COVID-19 tests must be consistent with the applicable terms of FDA's EUA approval letters and the relevant state laws governing prescription devices and clinical tests. The FDA and state regulators, such as state boards of pharmacy, also regulate drug packaging and repackaging. Our drug packaging activities must comply with the relevant FDA and state statutes, regulations and policies. Noncompliance with applicable FDA or state requirements, including those related to pharmaceutical and medical device promotional practices and the pre-market and post-market approval requirements for medical devices can result in an enforcement action that could substantially harm our business. Changes in existing regulatory requirements, our failure to comply with current or future requirements or adoption of new requirements could negatively affect our business.

- Clinical laboratories that perform human genomic testing are subject to oversight by CMS and state regulators, including the Eliminating Kickbacks in Recovery Act of 2018. If the laboratories that we partner with for genomic testing are not in compliance with the applicable CMS or state laws or regulations, they could be subject to enforcement action, which could negatively affect our business.

Further modifications to the Medicare Part D program and changes in pricing benchmarks may reduce revenue and impose additional costs to the industry.

The Medicare Prescription Drug Improvement and Modernization Act of 2003 included a major expansion of the Medicare program with the addition of a prescription drug benefit under the new Medicare Part D program. The continued impact of these regulations on our business and operations depends upon a variety of factors, including our ongoing relationships with the Part D Plans and the patient mix of our clients. Future modifications to the Medicare Part D program may reduce revenue and impose additional costs to the industry. In addition, contracts and fee schedules in the prescription drug industry, including our contracts with certain of our clients use certain published benchmarks,

including average wholesale price, or AWP, to establish pricing for prescription drugs. Most of our contracts utilize the AWP standard. However, there can be no assurance that our clients will continue to utilize AWP, as previously calculated, or that other pricing benchmarks will not be adopted to establish prices for prescription drugs within the industry.

Risks Related to Our Common Stock

Our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to influence all matters submitted to stockholders for approval.

Our executive officers and directors, combined with our stockholders who own more than five percent of our outstanding capital stock, in the aggregate, beneficially own shares representing approximately 24% of our capital stock. As a result, if these stockholders were to choose to act together, they may be able to influence all matters submitted to our stockholders for approval, as well as our management and affairs. This concentration of ownership control may:

- delay, defer or prevent a change in control;
- entrench our management and the board of directors; or
- impede a merger, consolidation, takeover or other business combination involving us that other stockholders may desire.

As a result, these executive officers, directors and current five percent or greater stockholders could pursue transactions that may not be in our best interests and which could harm our business.

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws may deter third parties from acquiring us.

Our amended and restated certificate of incorporation and amended and restated bylaws, among other things:

- divide our board of directors into three staggered classes of directors that are each elected to three-year terms;
- provide that the authorized number of directors may be changed only by resolution of our board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- prohibit stockholder action by written consent;
- authorize the issuance of "blank check" preferred stock that could be issued by our board of directors to increase the number of outstanding shares of capital stock, making a takeover more difficult and expensive;
- prohibit cumulative voting in the election of directors, which would otherwise allow less than a majority of stockholders to elect director candidates;
- provide that special meetings of the stockholders may be called only by or at the direction of the board of directors, the chairman of our board or the chief executive officer; and
- require advance notice to be given by stockholders for any stockholder proposals or director nominees.

Because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, or the DGCL, which may discourage, delay or prevent someone from acquiring us, or merging with us whether or not it is desired by or beneficial to our stockholders. Under the DGCL, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction.

These and other provisions could have the effect of discouraging, delaying or preventing a transaction involving a change in control of our company or could make it more difficult for you and other stockholders to elect directors of your choosing or to cause us to take other corporate actions that you desire.

Our amended and restated certificate of incorporation designates courts in the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that, subject to limited exceptions, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (a) any derivative action or proceeding brought on our behalf, (b) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (c) any action asserting a claim against us arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws, (d) any action to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or amended and restated bylaws or (e) any other action asserting a claim against us that is governed by the internal affairs doctrine. We refer to each of these proceedings as a covered proceeding. In addition, our amended and restated certificate of incorporation provides that if any action the subject matter of which is a covered proceeding is filed in a court other than the specified Delaware courts without the approval of our board of directors, which we refer to as a foreign action, the claiming party will be deemed to have consented to (1) the personal jurisdiction of the specified Delaware courts in connection with any action brought in any such courts to enforce the exclusive forum provision described above and (2) having service of process made upon such claiming party in any such enforcement action by service upon such claiming party's counsel in the foreign action as agent for such claiming party. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and to have consented to these provisions. These provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions. The exclusive forum provision in the Company’s amended and restated certificate of incorporation will not preclude or contract the scope of exclusive federal or concurrent jurisdiction for actions brought under the federal securities laws including the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, or the respective rules and regulations promulgated thereunder.

The price of our common stock historically has been volatile. This volatility may affect the price at which you could sell your common stock and the sale of substantial amounts of our common stock could adversely affect the price of our common stock.

The market price for our common stock has varied between a high of $69.20 and a low of $31.06 in the twelve-month period ending on February 25, 2021. This volatility may affect the price at which you could sell the common stock and the sale of substantial amounts of our common stock could adversely affect the price of our common stock. Our stock price is likely to continue to be volatile and subject to significant price and volume fluctuations in response to market and other factors, including the other factors discussed in “—Risks Relating to Our Business and Industry”; variations in our quarterly operating results from our expectations or those of securities analysts or investors; downward revisions in securities analysts’ estimates; and announcement by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments.

In addition, the sale of substantial amounts of our common stock could adversely impact its price. As of February 16, 2021, we had outstanding approximately 24,682,459 shares of our common stock, of which approximately 1,673,386 are restricted, and options to purchase approximately 2,022,507 shares of our common stock (of which approximately 1,612,627 were exercisable) as of that date. The sale or the availability for sale of a large number of shares of our common stock in the public market could cause the price of our common stock to decline.

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

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control. Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, requires that we evaluate and determine the effectiveness of our internal control over financial reporting. Our independent registered public accounting firm is required to audit the effectiveness of our internal control over financial reporting and may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating.

We may identify material weaknesses and other deficiencies in the design and operation of our internal controls over financial reporting, which may require remediation to correct in order to conclude that our internal controls over financial reporting are operating effectively. Completion of remediation does not provide assurance that our remediation or other controls will continue to operate properly. We may not detect errors on a timely basis and our consolidated financial statements may be materially misstated. If we are unable to comply with the requirements of Section 404 in a timely manner, if we are unable to assert that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could be negatively affected and we could become subject to investigations by the Nasdaq Global Market, on which our securities are listed, the SEC or other regulatory authorities, which could require us to obtain additional financial and management resources.

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

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

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

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change federal net operating loss carryforwards, or NOLs, and other pre-change federal tax attributes (such as research tax credits) to offset its post-change income may be limited. We may experience ownership changes as a result of shifts in our stock ownership that could limit the use of our NOLs. State NOL carryforwards may be similarly or more stringently limited. As a result, if we earn net taxable income, our ability to use our pre-change NOLs to offset United States federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, under the Tax Act, the amount of post-2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year, where taxable income is determined without regard to the NOL deduction itself. In addition, the Tax Act generally eliminates the ability to carry back any NOL to prior taxable years, while allowing post-2017 unused NOLs to be carried forward indefinitely. There is a risk that due to changes under the Tax Act, regulatory changes, or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities. For these reasons, we may not be able to realize a tax benefit from the use of our NOLs, whether or not we attain profitability

Risks Related to Our Convertible Senior Subordinated Notes

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including the 1.75% Convertible Senior Subordinated Notes due 2026 that we issued in February 2019, or the 2026 Convertible Notes, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Despite our current debt levels, we may still incur substantially more debt or take other actions which would intensify the risks discussed above.

Despite our current consolidated debt levels, we and our subsidiaries may be able to incur substantial additional debt in the future, subject to the restrictions contained in our debt instruments, some of which may be secured debt. We are not restricted under the terms of the indenture governing the 2026 Convertible Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of the indenture governing the 2026 Convertible Notes that could have the effect of diminishing our ability to make payments on the 2026 Convertible Notes when due. Our credit facility restricts our ability to incur additional indebtedness, including secured indebtedness, but if the facility matures or is repaid, we may not be subject to such restrictions under the terms of any subsequent indebtedness.

We may not have the ability to raise the funds necessary to settle conversions of the 2026 Convertible Notes in cash or to repurchase the 2026 Convertible Notes upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the 2026 Convertible Notes.

Holders of the 2026 Convertible Notes have the right to require us to repurchase all or a portion of their 2026 Convertible Notes upon the occurrence of a fundamental change at a repurchase price equal to 100% of the principal amount of the 2026 Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion of the 2026 Convertible Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the 2026 Convertible Notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of the 2026 Convertible Notes surrendered therefor or the 2026 Convertible Notes being converted. In addition, our ability to repurchase the notes or to pay cash upon conversions of the 2026 Convertible Notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase 2026 Convertible Notes at a time when the repurchase is required by the indenture or to pay any cash payable on future conversions of the 2026 Convertible Notes as required by the indenture would constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the 2026 Convertible Notes or make cash payments upon conversions thereof.

The conditional conversion feature of the notes, if triggered, may adversely affect our financial condition and operating results.

In certain circumstances specified in the indenture governing the 2026 Convertible Notes, holders of the 2026 Convertible Notes will be entitled to convert the notes at any time during specified periods at their option. If one or more holders elect to convert their 2026 Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the 2026 Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

The accounting method for convertible debt securities that may be settled in cash, such as the 2026 Convertible Notes, could have a material effect on our reported financial results.

In May 2008, the Financial Accounting Standards Board, which we refer to as FASB, issued FASB Staff Position No. APB 14-1, Accounting for Convertible Debt Instruments That May Be Settled in Cash upon Conversion (Including Partial Cash Settlement), which has subsequently been codified as Accounting Standards Codification 470-20, Debt with Conversion and Other Options, which we refer to as ASC 470-20. Under ASC 470-20, an entity must separately account for the liability and equity components of the convertible debt instruments (such as the 2026 Convertible Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the 2026 Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet, and the value of the equity component is treated as original issue discount for purposes of accounting for the debt component of the 2026 Convertible Notes. As a result, we are required to record a greater amount of non-cash interest expense in current periods presented as a result of the amortization of the discounted carrying value of the 2026 Convertible Notes to their face amount over the term of the 2026 Convertible Notes. We will report lower net income in our financial results because ASC 470-20 will require interest to include both the current period's amortization of the debt discount and the instrument's coupon interest, which could adversely affect our reported or future financial results and the trading price of our common stock.

In addition, under certain circumstances, convertible debt instruments (such as the 2026 Convertible Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the 2026 Convertible Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the 2026 Convertible Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued.

In August 2020, the FASB issued Account Standard Update ("ASU") 2020-06, *Debt - Debt with Conversion and Other Options (subtopic 470-20)*, effective January 1, 2022, which requires a convertible debt instrument to be accounted for as a single liability measured at its amortized cost. Interest expense recorded in the consolidated statements of operations will be close to the coupon rate interest expense. Further, for the diluted earnings per share calculation, the treasury stock method will no longer be permitted. The if-converted method will be used for the calculation of the diluted earnings per share calculation, when accounting for the shares issuable upon conversion of the 2026 Convertible Notes, which will adversely affect our diluted earnings per share.

In connection with the 2026 Convertible Notes, we entered into convertible note hedge and warrant transactions which may affect the value of our common stock.

In connection with the pricing of the 2026 Convertible Notes, we entered into convertible note hedge transactions with one or more of the initial purchasers of the Convertible Notes and/or their respective affiliates, which we refer to as the option counterparties. We also entered into warrant transactions with the option counterparties. The convertible note hedge transactions are expected generally to reduce the potential dilution upon conversion of the 2026 Convertible Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted notes. However, the warrant transactions could separately have a dilutive effect on our common stock to the extent that the market price per share of our common stock exceeds the strike price of the warrants.

In connection with establishing their initial hedges of the convertible note hedge and warrant transactions, the option counterparties or their respective affiliates purchased shares of our common stock and/or entered into various derivative transactions with respect to our common stock concurrently with, or shortly after, the pricing of the 2026 Convertible Notes. This activity may have increased (or reduced the size of any decrease in) the market price of our common stock at that time.

In addition, the option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the 2026 Convertible Notes (and are likely to do so during any observation period related to a conversion of 2026 Convertible Notes). This activity could also cause or avoid an increase or a decrease in the market price of our common stock.

In addition, if any such convertible note hedge and warrant transactions fail to become effective, the option counterparties may unwind their hedge positions with respect to our common stock, which could adversely affect the value of our common stock.

General Risk Factors

We may become subject to litigation, which could be costly and result in significant liability.

We may become subject to litigation in the future. Any future claims may result in significant defense costs and potentially significant judgments against us, some of which we are not insured against. We generally intend to defend ourselves vigorously; however, we cannot be certain of the ultimate outcomes of any claims that may arise in the future. Resolution of these types of matters against us may result in our having to pay significant fines, judgments or settlements, which, if uninsured, or if the fines, judgments and settlements exceed insured levels, could diminish our financial resources. Litigation or the resolution of litigation may also affect the availability or cost of some of our insurance coverage, which could increase our costs, expose us to increased risks that would be uninsured and compromise our ability to attract directors and officers.

The requirements of being a public company may strain our resources and distract our management, which could make it difficult to manage our business.

We are required to comply with various regulatory and reporting requirements, including those required by the SEC and the Nasdaq Stock Market. Complying with these reporting and other regulatory requirements is time-consuming and has resulted in increased costs to us. As a public company, we are subject to the reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act, and the Sarbanes-Oxley Act. These requirements may place a strain on our systems and resources. The Exchange Act requires that we file annual, quarterly and current reports with respect to our business and financial condition. The Sarbanes-Oxley Act requires that we maintain effective disclosure controls and procedures and internal controls over financial reporting.

To maintain and improve the effectiveness of our disclosure controls and procedures, we may need to commit significant resources, hire additional staff and provide additional management oversight. We may need to implement additional procedures and processes for the purpose of addressing the standards and requirements applicable to public companies. Sustaining our growth as a public company will also require us to commit additional management, operational and financial resources to identify new professionals to join our company and to maintain appropriate operational and financial systems to adequately support expansion. These activities may also divert management’s attention from other business concerns.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. If securities or industry analysts cease coverage of us, the trading price for our common stock could be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price will likely decline. If one or more of these analysts fails to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

The market price of our common stock may decline, and you could lose all or a significant part of your investment.

The market price of, and trading volume for, our common stock may be influenced by many factors, some of which are beyond our control, including, among others, the following:

- the success of competitive products, services or technologies;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to developing any of our products or services;
- the results of our efforts to discover, develop, acquire or in-license additional products;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the healthcare technology sector;
- global and general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

As a result of these and other factors, our stockholders may experience a decrease, which could be substantial, in the value of their shares of our common stock, including decreases unrelated to our financial performance or prospects.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our Company’s principal properties as of December 31, 2020 are described below:

Our corporate headquarters is located in Moorestown, New Jersey, where we lease an aggregate of 100,062 square feet of space under four lease agreements that expire in January 2030. Our corporate headquarters contains administrative and executive office spaces, a facility for prospective medication risk management which uses our proprietary technology and pharmacy distribution services, including competitive-inhibition informed robotic reminder packaging, and call centers to support our CareVention HealthCare and MedWise HealthCare services.

To support our CareVention HealthCare services, we also lease an aggregate of 12,637 square feet dedicated to medication fulfillment services in Boulder, Colorado and South San Francisco, California. Our health plan management services and related administrative offices lease an aggregate of 22,613 square feet in Webster Groves, Missouri; St. Louis, Missouri; and Eden Prairie, Minnesota. In addition, as result of our acquisition of Personica in 2020, we acquired 11,732 square feet of space under lease agreements in Warwick, Rhode Island and Altoona, Wisconsin dedicated to medication fulfillment services and pharmacy benefit management solutions.

To support our MedWise HealthCare services, we lease an aggregate of 50,679 square feet of space in Tucson, Arizona; Phoenix, Arizona; Gainesville, Florida; Austin, Texas; Irvine, California; Rochester, New York; and Quincy, Massachusetts. These properties contain call centers that support our medication safety services, facilities to support our patient engagement center, and administrative office spaces.

We lease 9,968 square feet of office space in Charleston, South Carolina dedicated to software research and development. We also lease an aggregate of 10,646 square feet of office spaces in Florida to support our scientific research and education center.

Item 3. Legal Proceedings

We are not currently involved in any significant claims or legal actions that, in the opinion of management, will have a material adverse impact on our Company.

Item 4. Mine Safety Disclosures

Not applicable.

Part II.

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

Market Information

Our common stock has been listed on the Nasdaq Global Market under the symbol "TRHC" since September 29, 2016. Prior to that date, there was no public trading market for our common stock.

Holders

As of February 16, 2021, we had 81 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities

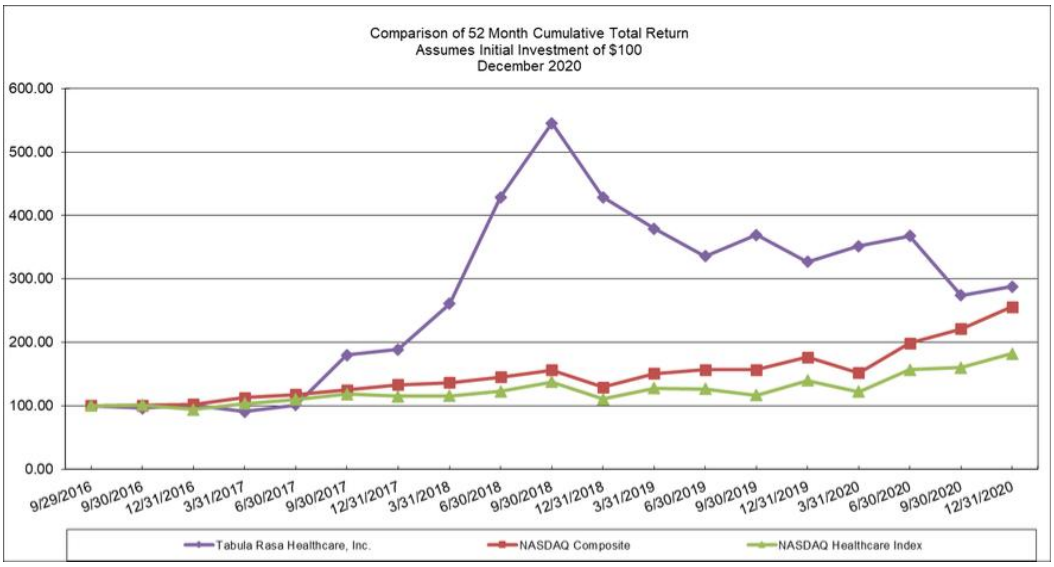
Dividends

We have never declared or paid any cash dividend on our common stock. We currently intend to retain all future earnings, if any, generated by our operations for the development and growth of our business for the foreseeable future. The decision to pay dividends is at the discretion of our board of directors and depends upon our financial condition, results of operations, capital requirements, and other factors that our board of directors deems relevant.

Stock Performance Graph

The following graph compares the cumulative total stockholder return on our common stock between September 29, 2016, the first day of trading of our common stock, and December 31, 2020, to the cumulative total returns of the Nasdaq Health Care Index and the NYSE Composite Index over the same period. This graph assumes an investment of $100 at the IPO price of $12 on September 29, 2016 in our common stock, the Nasdaq Health Care Index and the NYSE Composite Index, and assumes the reinvestment of dividends, if any.

The comparisons shown in the following graph are based upon historical data. We caution that the stock price performance shown in the graph below is not necessarily indicative of, nor is it intended to forecast, the potential future performance of our common stock.



Purchases of Equity Securities

During the year ended December 31, 2020, we did not repurchase any shares of common stock.

Item 6. Selected Financial Data

Part II, Item 6 is no longer required as the Company has adopted certain provisions within the amendments to Regulation S-K that eliminate Item 301.

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

Management's Discussion and Analysis of Financial Condition and Results of Operations is designed to provide a reader of our financial statements with a narrative from the perspective of management on the Company's financial condition, results of operations, liquidity and certain other factors that may affect future results. The following discussion and analysis of our financial condition and results of operations should be read together with our consolidated financial statements and the related notes and other financial information included elsewhere in this Annual Report on Form 10-K. The following discussion focuses on 2020 and 2019 financial condition and results of operations and year-to-year comparisons between 2020 and 2019. Similar discussion of our 2018 financial condition and results and year-to-year comparisons between 2019 and 2018 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the year ended December 31, 2019.

Overview

We are innovating and redefining the medication safety market and, creating solutions designed to empower pharmacists, providers, and patients to optimize medication regimens. Our advanced technology, MedWise™, predicts and identifies the cause of medication-related problems, including adverse drug events, so healthcare professionals can minimize harm and reduce medication-related risks. Our software and services help improve patient outcomes, reduce hospitalizations and lower healthcare costs. We also believe we have the most extensive clinical tele-pharmacy network in the United States. Our solutions are trusted by health plans and pharmacies nationwide to assist them in meeting value-based payment requirements. Our vision and mission are supported by our industry-recognized leadership team,

our significant investments and collaborations to advance medication safety-related pharmacotherapy research and its application in clinical practice, and our culture.

We operate our business through two segments, CareVention HealthCare and MedWise HealthCare, which accounted for 69% and 31% of revenue, respectively, for the year ended December 31, 2020. Our CareVention HealthCare segment provides our clients, primarily PACE programs, with medication fulfillment services, cloud-based software, pharmacy benefit management solutions, and clinical pharmacist services at the point-of-care. Our MedWise HealthCare segment provides our clients with cloud-based pharmacy software and full-service clinical pharmacy programs.

CareVention HealthCare

CareVention HealthCare primarily services PACE, which is a Centers for Medicare & Medicaid Services, or CMS, sponsored program providing comprehensive medical and social services to adults age 55 and older who need a nursing facility level of care but can live safely in community settings. Our clients include ArchCare Senior Life, Trinity Health, Palm Beach PACE, and St. Paul's PACE. We go to market through a number of different brands, including CareKinesis, Capstone Risk Adjustment Services, PACElogic, TruChart, PeakTPA, PersonifilRx, and Pharmastar.

Our largest CareVention HealthCare offering is our medication fulfillment services which are built around our novel and proprietary Medication Risk Mitigation Matrix, or MRM Matrix, designed to enable clinicians to increase patient safety, create individualized medication regimens, promote adherence, reduce total medication burden, and eliminate unnecessary prescriptions. Our medication fulfillment and reminder packaging services utilize the MRM Matrix technology to reduce medication-related risk for the high-cost, high-risk PACE population. The CareVention HealthCare suite of offerings also includes risk adjustment services, pharmacy benefit management solutions, cloud-based electronic health records solutions and third-party administration services, which are all specifically tailored to the PACE market.

The CareVention HealthCare segment revenue model is primarily based on payments on a per-member per-month, or PMPM, basis, payments on a subscription basis, payments on a transaction basis, and charges and dispensing fees for medication fulfillment.

As of December 31, 2020, our CareVention HealthCare segment served more than 130 healthcare organizations.

MedWise HealthCare

Our MedWise HealthCare segment is primarily comprised of service offerings from our acquisitions of SinfoníaRx in September 2017 and PrescribeWellness in March 2019. As a result of these acquisitions, we are a leading provider of Medication Therapy Management, or MTM, software and services for Medicare, Medicaid, and commercial health plans and also a leading provider of cloud-based patient engagement software and services to more than 14,000 pharmacies nationwide.

More than 280 health plans, including several Blue Cross Blue Shield organizations, Express Scripts, Humana, UnitedHealth Group, and WellCare, utilize our MedWise HealthCare solutions to execute a range of clinical programs. These programs support MTM, Enhanced MTM (a five-year Centers for Medicare & Medicaid Services Innovation Part D pilot that began January 1, 2017), Medicare Part D Star Ratings, Healthcare Effectiveness Data and Information Set (HEDIS) quality measures, and post-hospital discharge care transitions through a combination of our nearly 30,000 PrescribeWellness network pharmacists and/or our clinical tele-pharmacy call centers across the country employing nearly 400 pharmacists. Within our MedWise HealthCare segment, we offer our cloud-based software and clinical pharmacist services through a number of different brands, including MedWise, SinfoníaRx, RxCompanion, PrescribeWellness, and DoseMeRx. The MedWise HealthCare segment revenue model is primarily based on payments on a PMPM basis, payments on a subscription basis, and payments on a fee-for-service basis for each clinical intervention.

As of December 31, 2020, our MedWise HealthCare segment served more than 280 health plans and approximately 14,000 retail pharmacies.

Our total revenues for the years ended December 31, 2020 and 2019 were $297.2 million and $284.7 million, respectively. We incurred a net loss of $81.0 million for the year ended December 31, 2020 and net loss of $32.4 million for the year ended December 31, 2019. Our adjusted EBITDA for the year ended December 31, 2020 was $21.8 million compared to $37.9 million for the year ended December 31, 2019. See "Non-GAAP Financial Measures — Adjusted EBITDA" for our definition of Adjusted EBITDA, why we present Adjusted EBITDA and a reconciliation of net losses to Adjusted EBITDA.

We face a variety of challenges and risks, which we will need to address and manage as we pursue our growth strategy. In particular, we will need to continue to innovate in the face of a rapidly changing healthcare landscape if we are to remain competitive. We will also need to effectively manage our growth, especially related to our expansion beyond the PACE and post-acute markets to other at-risk providers and payers. Our senior management continuously focuses on these and other challenges, and we believe that our culture of innovation and our history of growth and expansion will contribute to the success of our business. We cannot, however, assure you that we will be successful in addressing and managing the many challenges and risks that we face.

Key Business Metrics

We regularly review a number of metrics, including the following key metrics, to evaluate and manage our business. These metrics are useful in evaluating our operating performance compared to that of other companies in our industry.

	Year Ended December 31,		Change	
	2020	2019	$	%
	(Dollars in thousands)			
Revenues	$ 297,219	$ 284,707	$ 12,512	4 %
Net loss	(80,966)	(32,436)	(48,530)	(150)
Adjusted EBITDA	21,775	37,921	(16,146)	(43)

We monitor the key metrics set forth in the preceding table to help us evaluate trends, establish budgets, measure the effectiveness and efficiency of our operations and gauge our cash generation. We discuss Adjusted EBITDA in more detail in "Non-GAAP Financial Measures — Adjusted EBITDA." We also monitor revenue retention rate described as follows.

Net Revenue Retention

We believe that our ability to retain revenue associated with new or existing client relationships is an indicator of the stability of our revenue base and the long-term value we provide to our clients. We assess our performance in this area using a metric we refer to as net revenue retention. We calculate our net revenue retention by comparing revenue by client and segment at the end of the most recent calendar year divided by revenue at the end of the prior calendar year from only clients that were contracted with us at the end of the prior calendar year. We believe net revenue retention is a more meaningful metric versus prior disclosures, such as client retention, as this figure captures our cross-sell success, client expansion, changes in pricing, and client churn or downgrades.

Excluding the impact of the Personica acquisition, we generated net revenue retention of 111% at our PACE clients during 2020, driven by census growth at existing clients and cross-sell revenue. Our MedWise HealthCare segment generated net revenue retention of 73% in 2020 compared to 119% in 2019. The decline in the 2020 MedWise HealthCare net revenue retention was primarily due to consolidation in the health plan industry, which redirected MTM work previously delivered by us, new restrictions related to comprehensive medications reviews completed with caregivers and prescribers, which temporarily slowed patient engagement during the year, and fewer adherence programs resulting from higher adherence rates in 2020 due to health plan actions taken to respond to COVID-19 earlier this year.

Factors Affecting our Future Performance

We believe that our future success will be dependent on many factors, including our ability to maintain and grow our relationships with existing clients, expand our client base, continue to enter new markets and expand our offerings to meet evolving market needs. While these areas present significant opportunities, they also present risks that we must manage to ensure successful results. See the section entitled "Risk Factors" for a discussion of certain risks and uncertainties that may impact our future success.

COVID-19 Pandemic

On January 30, 2020, the World Health Organization, or WHO, announced a global health emergency caused by 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. 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 COVID-19 continues to evolve as of the date of this Annual Report on Form 10-K. As such, we are uncertain as to the full magnitude of the impact that the pandemic will have on our financial condition, liquidity, and future results of operations. Management is actively monitoring the global situation and the ramification on our financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 pandemic and the global responses to curb its spread, we are not able to estimate the effects that the COVID-19 pandemic may have on our results of operations, financial condition, or liquidity for 2021. However, we are dependent on our workforce to sell and deliver our products and services. Social distancing and shelter-in-place directives could impact our ability to deploy our workforce effectively. These same developments may affect the operations of our suppliers and customers, as their own workforces and operations are disrupted by the spread of this virus.

As a result of the ongoing COVID-19 pandemic, we have experienced challenges with revenue growth. The pandemic has delayed the closing of contracts across both our CareVention HealthCare and MedWise HealthCare segments and, in some cases, shifted project priorities and timelines, which we believe resulted in fewer new business wins relative to our original expectations. Overall census growth for PACE has remained below historical levels, which has affected the Company’s CareVention HealthCare segment growth as our segment revenue growth is largely driven by organic census increases at our existing PACE organizations. We are closely monitoring the ongoing pandemic in terms of infection and death rates, the latter of which spiked in the month of May and again increased at the end of 2020, negatively impacting our overall census figures. Our MedWise HealthCare segment also has experienced delays in the timing of implementation and closing of new business, as well as a negative impact from COVID-19 on medication adherence initiatives, which are seasonally weighted toward the second half of the calendar year. The continued impact of the COVID-19 pandemic is highly uncertain and subject to change depending on factors such as the rollout of COVID-19 vaccines. We did not see material delays in scheduled PACE center openings during 2020. Accordingly, we believe that our current backlog of new extension centers and new PACE organizations under contract to open over the next 12 months could represent in excess of $75 million in annual revenue when the centers are operating at full capacity, which typically takes two to three years once a PACE center has opened its doors. The extent to which COVID-19 may impact our results and financial position will depend on future developments, which are uncertain and difficult to predict, including new information that may emerge concerning the severity of the COVID-19 pandemic, actions taken to contain it or address its impact, and the availability and widespread distribution and use of effective vaccines.

Recent Developments

Acquisitions

On October 5, 2020, we acquired all of the issued and outstanding membership interests of Personica, a provider of pharmacy services, including 340B and Medicare Part D administration solutions for PACE. The consideration for the acquisition was comprised of (i) cash consideration of $10.0 million paid upon closing, subject to certain customary post-closing adjustments; (ii) the issuance of 555,555 shares of our common stock; and (iii) promissory notes, or the Notes, for the payment of (a) $7.5 million in cash, which was paid in January 2021, (b) $5.5 million in cash within two business days following April 1, 2021, and (c) $4 million in cash within two business days following October 5, 2021. We may set-off amounts due under the Notes to the extent we are entitled to indemnification under the related purchase agreement or in respect of adjustments to the purchase price.

We account for acquisitions using the purchase method of accounting. We allocated the purchase price to the assets acquired, including intangible assets, and liabilities assumed, based on estimated fair values at the date of the acquisition. The results of operations from the acquisition are included in our consolidated financial statements from the acquisition date.

Financing

On December 18, 2020, we entered into a Loan and Security Agreement with Western Alliance Bank, or the 2020 Credit Facility, which provides for a $120.0 million secured revolving credit facility, with a $1.0 million sublimit for cash management services and letters of credit and foreign exchange transactions. The 2020 Credit Facility replaced the previous line of credit agreement with Western Alliance Bank, or the 2015 Line of Credit, which matured on December 6, 2020. The 2020 Credit Facility bears an interest rate of LIBOR plus 3.25% and matures on May 16, 2025. The 2020 Credit Facility contains certain affirmative and negative covenants, including, but not limited to, restrictions on our ability to incur indebtedness, create liens, merge or consolidate, make dispositions, pay dividends or make distributions, make investments, pay any subordinated indebtedness, enter into certain transactions with affiliates, or make capital expenditures. The 2020 Credit Facility also contains certain financial covenants, including (i) maintaining unrestricted cash balances with Western Alliance Bank, plus amounts available for draw under the credit facility of at least $10.0 million at all times, and (ii) maintaining a leverage ratio of less than 3.00:1.00, on a trailing twelve-month basis, measured quarterly. The obligations under the 2020 Credit Facility are secured by all of our Company's assets, as set forth in the Loan and Security Agreement.

Corporate Reorganization

Effective January 1, 2020, in order to facilitate the administration, management, and development of our business and minimize the burden on our tax and regulatory reporting obligations, we implemented a reorganization pursuant to which all of our domestic subsidiaries, other than CK Solutions, LLC, merged with and into our wholly-owned subsidiary CareKinesis, Inc., which had previously changed its legal name on December 20, 2019 to TRHC OpCo, Inc. In the second quarter of 2020, TRHC OpCo, Inc. further changed its name to Tabula Rasa HealthCare Group, Inc., or the TRHC Group. Following such reorganization, our only directly owned subsidiary is TRHC Group, which is the parent of CK Solutions, LLC, three foreign subsidiaries related to the acquisition of DoseMe, and Personica. In conjunction with our reorganization, we now operate our business through two segments, CareVention HealthCare and MedWise HealthCare.

Components of Our Results of Operations

Revenue

Our revenue is derived from our product sales and service activities under our CareVention HealthCare and MedWise HealthCare segments. For the years ended December 31, 2020 and 2019, product sales represented 57% and 48% of our total revenue, respectively. For the years ended December 31, 2020 and 2019, service revenue represented 43% and 52% of our total revenue, respectively.

CareVention HealthCare

PACE Product Revenue

We provide medication fulfillment pharmacy services to PACE organizations, and, while the majority of medications are routinely filled in order to treat chronic conditions, the mix and quantity of medications can vary. Revenue from medication fulfillment services is generally billed monthly or weekly, depending on whether the PACE organization is contracted with a pharmacy benefit manager (PBM), and recognized when medications are delivered and control has passed to the client. At the time of delivery, we have performed substantially all of our performance obligations under our client contracts. We do not experience a significant level of returns or reshipments.

PACE Solutions

We provide services to PACE organizations, and these services primarily include medication safety services and health plan management services, which consist of risk adjustment services, PBM solutions, electronic health records solutions, and third party administration services. Revenue related to these services primarily consists of a fixed monthly fee assessed based on number of members served, or per member per month, a fee for each claim adjudicated, and subscription fees. These fees are recognized when we satisfy our performance obligation to stand ready to provide PACE services, which occurs when our clients have access to the PACE services. We generally bill for PACE services on a monthly basis as the services are provided.

MedWise HealthCare

Product Revenue

We provide COVID-19 test kits to pharmacies and other clients. Revenue from the sale of these products is generally billed when test kits are shipped and is recognized as we satisfy our performance obligations to deliver the test kits and provide the test results. We do not experience a significant level of returns or reshipments.

Medication Safety Services

We provide medication safety services, which include identification of high-risk individuals, medication regimen reviews including patient and prescriber counseling, and targeted interventions to increase adherence and close gaps in care. Revenue related to these services primarily consists of per member per month fees and fees for each medication review and assessment completed. Revenue is recognized when we satisfy our performance obligation to stand ready to provide medication safety services, which occurs when our clients have access to the medication safety services, and when medication reviews and assessments are completed. We generally bill for the medication safety services on a monthly basis.

Software Subscription and Services

We provide software as a service, or SaaS, solutions, which allow for the identification of individuals with high medication-related risk, for patient communication and engagement, for documentation of clinical interventions, for optimizing medication therapy, for targeting adherence improvement, and for precision dosing. Revenues related to these software services primarily consist of monthly subscription fees and are recognized monthly as we meet our performance obligation to provide access to the software. Revenue for implementation and set up services is generally recognized over the contract term as the software services are provided. We generally bill for the software services on a monthly basis.

Cost of Revenue (exclusive of depreciation and amortization)

Product Cost

Cost of product revenue includes all costs directly related to the fulfillment and distribution of medications under our CareVention HealthCare offerings. Costs consist primarily of the purchase price of the medications we dispense. For the years ended December 31, 2020 and 2019, medication costs represented 79% of our total product costs. In addition to costs incurred to purchase the medications we dispense, other costs include shipping; packaging; expenses associated with operating our medication fulfillment centers, including salaries and related costs, such as stock-based compensation for personnel; technology expenses; direct overhead expenses; and allocated indirect overhead costs. We allocate indirect overhead costs among functions based on employee headcount.

Service Cost

Cost of service revenue includes all costs directly related to servicing our CareVention HealthCare and MedWise HealthCare service contracts, which primarily consist of labor costs, including stock-based compensation; outside contractors; expenses related to supporting our software platforms; direct overhead expenses; and allocated indirect overhead costs. We allocate indirect overhead costs among functions based on employee headcount.

Research and Development Expenses

Our research and development expenses consist primarily of salaries and related costs, including stock-based compensation, for personnel in our research and development functions. This personnel includes software engineers and employees engaged in scientific research, healthcare analytics, and the design and development of new scientific algorithms and the enhancement of our software and technology platforms; fees paid to third-party consultants; costs related to quality assurance and testing; and other allocated facility-related overhead and expenses.

We capitalize certain costs incurred in connection with obtaining or developing the proprietary software platforms that support our product and service contracts, including third-party contractors and payroll costs for employees directly involved with the software development. Capitalized software development costs are amortized beginning when the software project is substantially complete and the asset is ready for its intended use. Costs incurred during the preliminary project stage and post implementation stage, as well as maintenance and training costs, are expensed as incurred. We continue to focus our research and development efforts on adding new features and applications to increase the functionality and enhance the ease of use of our existing suite of software solutions.

We expect our research and development expenses will increase in absolute dollars as we increase our research and development efforts to further strengthen and enhance our software solutions and service offerings, but will decrease as a percentage of revenue in the long term as we expect our revenue to increase at a greater rate than such expenses.

Sales and Marketing Expenses

Sales and marketing expenses consist principally of salaries, commissions, bonuses, and stock-based compensation and employee benefits for sales, marketing, and account management personnel, as well as travel costs related to sales, marketing, and account management activities. Marketing costs also include costs for communication and branding materials, conferences, trade shows, public relations, and allocated overhead.

We expect our sales and marketing expenses to increase in absolute dollars as we strategically invest to grow our sales, account management, and marketing infrastructure as we introduce new products and enter new markets, but decrease as a percentage of revenue in the long term.

General and Administrative Expenses

General and administrative expenses consist principally of employee-related expenses, including salaries, benefits, and stock-based compensation, for employees who are responsible for information systems, administration, human resources, finance, strategy, legal and executive management as well as other corporate expenses associated with these functional areas. General and administrative expenses also include professional fees for legal, consulting and accounting services and allocated overhead. General and administrative expenses are expensed when incurred.

We expect that our general and administrative expenses will increase in absolute dollars as we expand our infrastructure and continue to comply with the requirements applicable to public companies, but decrease as a percentage of revenue in the long term.

Change in Fair Value of Acquisition-related Contingent Consideration

We classify our acquisition-related contingent consideration as a liability. Acquisition-related contingent consideration is subject to remeasurement at each balance sheet date. Any change in the fair value of such acquisition-related contingent consideration is reflected in our consolidated statements of operations as a change in fair value of the liability. We adjust the carrying value of the acquisition-related contingent consideration until the contingency is finally determined or final payment is made.

Intangible Asset Impairment Charge

Definite-lived intangible assets are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. When an impairment review is performed to evaluate a long-lived asset for recoverability, we compare forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. If the estimated undiscounted

future cash flows expected to result from the use of an asset are less than its carrying amount, we would recognize an impairment loss based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows.

Depreciation and Amortization Expenses

Depreciation and amortization expenses are primarily attributable to our capital investment in equipment, our capitalized software, and our acquisition-related intangibles.

Interest Expense

Interest expense is primarily attributable to interest expense associated with our 2026 Convertible Notes, our 2015 Line of Credit and 2020 Credit Facility, the promissory notes related to the Personica acquisition purchase consideration, and our finance lease obligations. It also includes the amortization of debt discount and debt issuance costs related to our various debt arrangements.

Results of Operations

Comparison of the Years Ended December 31, 2020 and 2019

The following table summarizes our results of operations for the years ended December 31, 2020 and 2019:

	Year Ended December 31,		Change	
	2020	2019	$	%
Revenue:				
Product revenue	$ 159,593	$ 137,130	$ 22,463	16 %
Service revenue	137,626	147,577	(9,951)	(7)
Total revenue	297,219	284,707	12,512	4
Cost of revenue, exclusive of depreciation and amortization shown below:				
Product cost	117,171	102,351	14,820	14
Service cost	87,641	79,004	8,637	11
Total cost of revenue, exclusive of depreciation and amortization	204,812	181,355	23,457	13
Operating expenses:				
Research and development	18,180	21,739	(3,559)	(16)
Sales and marketing	21,547	25,273	(3,726)	(15)
General and administrative	65,378	50,897	14,481	28
Change in fair value of acquisition-related contingent consideration expense	2,613	3,816	(1,203)	(32)
Intangible asset impairment charges	5,040	—	5,040	100
Depreciation and amortization	45,040	34,276	10,764	31
Total operating expenses	157,798	136,001	21,797	16
Loss from operations	(65,391)	(32,649)	(32,742)	(100)
Interest expense, net	20,743	15,986	4,757	30
Loss before income taxes	(86,134)	(48,635)	(37,499)	(77)
Income tax benefit	(5,168)	(16,199)	11,031	(68)
Net loss	$ (80,966)	$ (32,436)	$ (48,530)	(150)%

Product Revenue

Product revenue increased $22.5 million, or 16%, from $137.1 million for the year ended December 31, 2019 to $159.6 million for the year ended December 31, 2020. New business acquired from the Personica acquisition contributed approximately $1.8 million to the increase. New CareVention HealthCare clients that started services after January 2019 contributed $8.4 million to the increase. Increased medication fulfillment volume from growth in the number of patients served by our existing clients, medication mix of prescriptions filled, and payer mix contributed $11.1 million to the increase. The increase in product revenue was also due to $1.2 million of revenue generated from the sale of COVID-19 test kits in 2020 through our CareVention HealthCare segment and PrescribeWellness pharmacy network.

Service Revenue

Service revenue decreased $10.0 million, or 7%, from $147.6 million for the year ended December 31, 2019 to $137.6 million for the year ended December 31, 2020.

Service revenues generated by our MedWise HealthCare segment decreased by $11.6 million, or 11%, to $90.1 million for the year ended December 31, 2020, as compared to $101.7 million for the same period in 2019. We experienced a $14.6 million decrease in medication safety services driven by the completion of fewer comprehensive medication reviews during the year ended December 31, 2020. The reduction was primarily due to consolidation in the health plan industry, which reduced MTM volumes required by a couple larger clients, as well as new restrictions related to comprehensive medications reviews completed with caregivers and prescribers, which temporarily slowed patient engagement during the year. Also, we experienced fewer adherence programs resulting from higher adherence rates in 2020 due to health plan actions taken to respond to COVID-19 earlier this year. In addition, data analytics fees earned were down $5.5 million due to a new contract with our data aggregation partner, which began in the first quarter of 2020. These decreases were offset by an increase in software subscription and software related services revenue of $8.4 million, which was primarily attributable to the PrescribeWellness acquisition completed on March 5, 2019.

CareVention HealthCare service revenue increased by $1.7 million, or 4%, to $47.6 million for the year ended December 31, 2020 as compared to the same period in 2019. Lower fees earned from our data analytics contract negatively impacted revenue by $4.2 million. The acquisition of Personica in October 2020 contributed $1.7 million to the increase. Excluding these impacts, CareVention HealthCare service revenues increased $4.2 million. The increase was a result of new clients and growth with existing clients added since January 2019.

Cost of Product Revenue

Cost of product revenue increased $14.8 million, or 14%, from $102.4 million for the year ended December 31, 2019 to $117.2 million for the comparable period in 2020. New business acquired from the Personica acquisition contributed approximately $1.7 million to the increase. New CareVention HealthCare clients that started services after January 2019 contributed $4.8 million to the increase. In addition, increased medication volume from growth in the number of patients served by our existing customers, manufacturer price increases, and medication mix of prescriptions filled for our clients contributed approximately $5.0 million to the change. This was partially offset by a decrease in the acquisition cost of medications from our new purchasing agreement with Thrifty Drug Stores of $1.1 million. The increase in cost of product revenue was also due to a $2.0 million increase in distribution charges related to higher shipping volume for the medications we fulfilled and $1.0 million of COVID-19 test kits sold to clients during the year ended December 31, 2020. The remaining increase is primarily attributable to increases in headcount to support our overall growth.

Cost of Service Revenue

Cost of service revenue increased $8.6 million, or 11%, from $79.0 million for the year ended December 31, 2019 to $87.6 million for the year ended December 31, 2020.

Cost of service revenue related to our CareVention HealthCare segment increased $6.0 million, or 23%, to $31.6 million for the year ended December 31, 2020, as compared to the same period in 2019. Of the total increase, $1.0 million related to the acquisition of Personica in October 2020. The remaining increase was attributable to investments in infrastructure in order to better scale the delivery of third party administrative services into markets outside of PACE.

Cost of service revenue related to our MedWise HealthCare segment increased $2.6 million, or 5%, to $56.0 million for the year ended December 31, 2020, as compared to the same period in 2019. The acquisition of PrescribeWellness contributed $2.4 million to the total increase and primarily consisted of employee compensation and technology costs. Our MedWise HealthCare segment also experienced a $1.8 million increase in fees related to the higher utilization of community pharmacies to deliver clinical intervention services under our EMTM program, which in some cases drives increased levels of engagement in our high-risk target population. The increase was partially offset by a reduction in the use of contracted resources to deliver on medication safety services, primarily MTM, as well as reduced printing and postage expenses.

Research and Development Expenses

Research and development expenses decreased $3.6 million, or 16%, from $21.7 million for the year ended December 31, 2019 to $18.2 million for the year ended December 31, 2020. The decrease was mostly due to a reduction of $1.4 million in stock-based compensation expense, primarily related to performance-based equity awards and common stock awarded during 2019. The remaining decrease is primarily attributable to lower payroll costs as a result of the realignment of resources associated with our Company's reorganization in January 2020 to better support our customers and business objectives.

Sales and Marketing Expenses

Sales and marketing expenses decreased $3.7 million, or 15%, from $25.3 million for the year ended December 31, 2019 to $21.5 million for the year ended December 31, 2020. The decrease includes $5.0 million of employee compensation costs, including stock-based compensation, for personnel previously included in sales and marketing, who are now dedicated to corporate strategy and executive leadership initiatives and are recorded in general and administrative expenses. The change in allocation resulted from our Company's reorganization in January 2020 to better align resources in order to support the achievement of our business objectives. This decrease was offset by an increase of $1.3 million as a result of the acquisition of PrescribeWellness toward the end of the first quarter of 2019, which primarily related to employee compensation.

General and Administrative Expenses

General and administrative expenses increased $14.5 million, or 28%, from $50.9 million for the year ended December 31, 2019 to $65.4 million for the year ended December 31, 2020. The acquisitions of Personica and PrescribeWellness contributed $429 thousand to the increase in expenses, which consisted primarily of employee compensation costs, including stock compensation, information technology expenses, business insurance costs, and rent and utilities expenses. Excluding costs related to the acquisitions, general and administrative expenses increased by approximately $14.1 million.

The increase in general and administrative expenses was primarily attributable to higher employee compensation costs of $15.7 million, which included an $8.7 million increase in stock-based compensation expense primarily related to equity awards granted during 2020. The increase in employee compensation costs was also due to the realignment of resources dedicated to service administrative functions to support the achievement of our business objectives as a result of our Company's reorganization in January 2020. The realignment included moving resources accounting for $5.0 million to corporate strategy and executive leadership roles from sales and marketing, and $2.5 million from the transition of key employees, previously included in cost of revenues, to executive roles. Additional headcount to support the overall growth of our operations contributed $1.3 million to the increase in compensation costs, which was offset by a $1.8 million reduction in bonus expense. The remaining increases were due to higher technology-related expenses and business insurance costs. These increases in general and administrative expenses were offset by a decrease in acquisition-related costs of $2.6 million due to the larger acquisition of PrescribeWellness in the first quarter of 2019.

Acquisition-related Contingent Consideration Expense

During the years ended December 31, 2020 and 2019, we recorded a $2.6 million and $3.8 million charge, respectively, related to the fair value adjustments of our acquisition-related contingent consideration liabilities.

During the year ended December 31, 2020, we elected to accelerate the payment of the acquisition-related contingent consideration associated with our Cognify acquisition for an aggregate payment of $13.4 million, which was partially satisfied by a cash payment of $6.4 million and partially satisfied by the issuance of 135,434 shares of our common stock with a fair value of $6.9 million. In the first quarter of 2021, we made a final cash payment of $166 thousand in full satisfaction of the remaining acquisition-related contingent consideration liability. During the year ended December 31, 2020, we recorded a $2.6 million charge to increase the fair value of the Cognify acquisition-related contingent consideration primarily due to the accelerated payment. During the year ended December 31, 2019, we recorded a $3.0 million charge to increase the fair value of the Cognify acquisition-related contingent consideration primarily due to an amendment of certain definitions used in the calculation of the contingent consideration set forth in the stock purchase agreement, and the decreased discount period to the final measurement date. The Cognify contingent

consideration was based on a multiple of the excess of Cognify's 2021 revenues and EBITDA over its 2018 revenues and EBITDA, as defined in the stock purchase agreement.

During the year ended December 31, 2019, we also recognized an aggregate $817 thousand charge related to fair value adjustments for the SinfoníaRx, Peak PACE, and DoseMe acquisition-related contingent considerations, which were all subsequently paid in full during 2019.

Intangible Asset Impairment Charge

During the year ended December 31, 2020, we recorded a $5.0 million intangible asset impairment charge related to certain intangible assets obtained from the Medliance acquisition in 2014. During the fourth quarter of 2020, we became aware of changes in circumstances impacting the future performance of our pharmacy cost management services and evaluated the recoverability of the related intangible assets by comparing their carrying amount to the future net undiscounted cash flows expected to be generated by the assets to determine if the carrying value is not recoverable. The recoverability test indicated that certain customer relationships and developed technology intangible assets were impaired. As a result, we used an income approach to measure the fair value of the intangible assets and recognized non-cash impairment charges of $3.8 million and $1.2 million to the customer relationships and developed technology intangible assets, respectively, for the year ended December 31, 2020.

Depreciation and Amortization Expenses

Depreciation and amortization expenses increased $10.8 million, or 31%, from $34.3 million for the year ended December 31, 2019 to $45.0 million for the year ended December 31, 2020. This increase was primarily due to a $5.3 million increase in the amortization of capitalized software related to new software functionality placed into service since 2019 to support our CareVention HealthCare and MedWise HealthCare segments. Amortization expense also increased by $2.2 million as a result of changes in the estimated useful lives of certain intangible assets, $2.1 million as a result of intangible assets from PrescribeWellness in March 2019, and $625 thousand as a result of intangible assets from the Personica acquisition during the fourth quarter of 2020. Depreciation expense increased by $603 thousand primarily related to the completion of expanded office space at our Moorestown, New Jersey headquarters, the purchase of additional equipment for our pharmacy in Moorestown, New Jersey, and the completion of our research facility in Lake Nona, Florida during the third quarter of 2019.

Interest Expense

Interest expense increased $4.7 million from $16.0 million for the year ended December 31, 2019 to $20.7 million for the year ended December 31, 2020. The increase is primarily due to a $4.5 million increase in interest expense related to the 2026 Convertible Notes, which were issued in February 2019 and $440 thousand of interest expense on acquisition-related notes payable related to the Personica acquisition on October 4, 2020. The increase was partially offset by a decrease in interest expense of $220 thousand on the 2015 Line of Credit and 2020 Credit Facility.

Income Taxes

For the years ended December 31, 2020 and 2019, we recorded an income tax benefit of $5.2 million and $16.2 million, respectively, which resulted in an effective tax rate of 6.0% and 33.3%, respectively. The benefit primarily consists of the benefit generated by the Company's losses, the benefit from windfall tax benefits generated from the vesting of restricted stock, disqualifying dispositions, and exercising of nonqualified stock options during the period, offset by other tax expense due to the increase in the Company's valuation allowance.

NON-GAAP FINANCIAL MEASURES

Adjusted EBITDA

To provide investors with additional information about our financial results, we disclose Adjusted EBITDA, a non-GAAP financial measure. Adjusted EBITDA consists of net loss plus certain other expenses, which include interest expense, benefit for income tax, depreciation and amortization, change in fair value of acquisition-related contingent consideration expense, intangible asset impairment charge, severance expense incurred in 2020 in connection with the Company's reorganization, severance expense related to the termination of two members of senior management in 2018, acquisition-related expense, and stock-based compensation related expense. We consider acquisition-related expense to include nonrecurring direct transaction and integration costs, severance, and the impact of purchase accounting adjustments related to the fair value of acquired deferred revenue. We present Adjusted EBITDA because it is one of the measures used by our management and board of directors to understand and evaluate our core operating performance, and we consider it an important supplemental measure of performance. We believe this metric is commonly used by the financial community, and we present it to enhance investors' understanding of our operating performance and cash flows. We believe Adjusted EBITDA provides investors and other users of our financial information consistency and comparability with our past financial performance and facilitates period-to-period comparisons of operations.

Our management uses Adjusted EBITDA:

- as a measure of operating performance to assist in comparing performance from period to period on a consistent basis;
- to prepare and approve our annual budget; and
- to develop short- and long-term operational plans.

Adjusted EBITDA is not in accordance with, or an alternative to, measures prepared in accordance with GAAP. In addition, this non-GAAP measure is not based on any comprehensive set of accounting rules or principles. As a non-GAAP measure, Adjusted EBITDA has limitations in that it does not reflect all of the amounts associated with our results of operations as determined in accordance with GAAP. In particular:

- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and Adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements;
- Adjusted EBITDA does not reflect cash interest income or expense;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect the potentially dilutive impact of stock-based compensation;
- Adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us;
- Adjusted EBITDA does not reflect severance-related payments related to the termination of two members of senior management in 2018;
- Adjusted EBITDA does not reflect severance-related payments incurred in 2020 in connection with the Company's reorganization; and
- other companies, including companies in our industry, may calculate Adjusted EBITDA or similarly titled measures differently, which reduces its usefulness as a comparative measure.

Because of these and other limitations, you should consider Adjusted EBITDA alongside other GAAP-based financial performance measures, including various cash flow metrics, net loss and our other GAAP financial results and not in isolation from, or as a substitute for, financial information prepared in accordance with GAAP. You should be

aware that in the future we may incur expenses that are the same as or similar to some of the adjustments in the presentation, and we do not intend to imply that our future results will be unaffected by unusual or non-recurring items.

The following is a reconciliation of Adjusted EBITDA to our net loss for the periods presented:

	Year Ended December 31,		
	2020	2019	2018
Reconciliation of net loss to Adjusted EBITDA			
Net loss	$ (80,966)	$ (32,436)	$ (47,269)
Add:			
Interest expense, net	20,743	15,986	906
Income tax benefit	(5,168)	(16,199)	(3,376)
Depreciation and amortization	45,040	34,276	16,802
Change in fair value of acquisition-related contingent consideration expense	2,613	3,816	49,468
Intangible asset impairment charge	5,040	—	—
Severance expense	873	—	390
Acquisition-related expense	1,045	5,200	1,901
Stock-based compensation related expense	32,555	27,278	10,499
Adjusted EBITDA	$ 21,775	$ 37,921	$ 29,321

Adjusted Diluted Net (Loss) Income Per Share, or Adjusted Diluted EPS

Adjusted Diluted EPS excludes the impact of certain items and, therefore, has not been calculated in accordance with GAAP. We believe the exclusion of these items assists in providing a more complete understanding of our underlying operations, results, and trends; allows for comparability with our peer company index and industry; and enables more consistency with our expected capital structure on a going forward basis. Our management uses this measure along with corresponding GAAP financial measures to manage our business and to evaluate our performance compared to prior periods and the marketplace. We define Adjusted Diluted EPS as net loss before fair value adjustments for acquisition-related contingent consideration, intangible asset impairment charge, amortization of acquired intangibles, amortization of debt discount and issuance costs, severance expense incurred in 2020 in connection with the Company's reorganization, severance expense related to the termination of two members of senior management in 2018, acquisition-related expense, stock-based compensation related expense, and the tax impact of those items using a normalized tax rate on pre-tax income (loss) adjusted for those items expressed on a per share basis using weighted average diluted shares outstanding. We consider acquisition-related expense to include nonrecurring direct transaction and integration costs, severance, and the impact of purchase accounting adjustments related to the fair value of acquired deferred revenue.

Adjusted Diluted EPS is a non-GAAP financial measure and should not be considered in isolation or as a substitute for financial information provided in accordance with GAAP. This non-GAAP financial measure may not be computed in the same manner as similarly titled measures used by other companies. In the future, we may incur expenses that are the same as or similar to some of the adjustments in the presentation, and we do not intend to imply that our future results will be unaffected by unusual or non-recurring items.

The following table reconciles net loss per share on a diluted basis, the most directly comparable GAAP measure, to Adjusted Diluted EPS:

	Year Ended December 31,					
	2020		2019		2018	
	(In thousands except per share amounts)					
Reconciliation of diluted net loss per share to Adjusted Diluted EPS						
GAAP net loss, basic and diluted, and net loss per share, basic and diluted	$ (80,966)	$ (3.71)	$ (32,436)	$ (1.57)	$ (47,269)	$ (2.48)
Adjustments:						
Change in fair value of acquisition-related contingent consideration expense	2,613		3,816		49,468	
Intangible asset impairment charge	5,040		—		—	
Amortization of acquired intangibles	30,570		25,684		11,151	
Amortization of debt discount and issuance costs	13,301		10,595		—	
Severance expense	873		—		390	
Acquisition-related expense	1,045		5,200		1,901	
Stock-based compensation expense	32,555		27,278		10,499	
Impact to income taxes [1]	(5,132)		(22,044)		(9,220)	
Adjusted net (loss) income and Adjusted Diluted EPS	$ (101)	$ 0.00	$ 18,093	$ 0.79	$ 16,920	$ 0.77

[1] The impact to taxes was calculated using a normalized statutory tax rate applied to pre-tax income or loss adjusted for the respective items above and then subtracting or adding the tax provision or benefit, respectively, as determined for GAAP purposes.

The following table reconciles the diluted weighted average shares of common stock outstanding used to calculate net loss per share on a diluted basis for GAAP purposes to the diluted weighted average shares of common stock outstanding used to calculate Adjusted Diluted EPS:

	Year Ended December 31,		
	2020	2019	2018
Reconciliation of weighted average shares of common stock outstanding, diluted, to weighted average shares of common stock outstanding, diluted for Adjusted Diluted EPS			
Weighted average shares of common stock outstanding, basic and diluted for GAAP	21,815,388	20,622,258	19,098,294
Adjustments:			
Weighted average dilutive effect of stock options	—	1,522,196	1,747,882
Weighted average dilutive effect of restricted stock	—	762,665	863,067
Weighted average dilutive effect of contingent shares	—	39,088	261,266
Weighted average shares of common stock outstanding, diluted for Adjusted Diluted EPS [1]	21,815,388	22,946,207	21,970,509

[1] We account for the convertible senior subordinated notes utilizing the Treasury Stock Method as we intend to settle the notes entirely or partly in cash. Under this method, the underlying shares issuable upon conversion of the notes are excluded from the calculation of diluted EPS, except to the extent that the average stock price for the reporting period exceeds their conversion price of $69.95 per share. For the years ended December 31, 2020 and 2019, there was no impact on diluted EPS from the convertible senior subordinated notes as the conversion price exceeded our average stock price.

Liquidity and Capital Resources

We incurred net losses of $81.0 million, $32.4 million, and $47.3 million for the years ended December 31, 2020, 2019, and 2018, respectively. Our primary liquidity and capital requirements are for research and development, sales and marketing, general and administrative expenses, debt service obligations, and strategic business acquisitions. We have funded our operations, working capital needs, and investments with cash generated through operations, issuance of stock, and borrowings under our credit facilities. At December 31, 2020, we had unrestricted cash of $23.4 million.

Summary of Cash Flows

The following table shows a summary of our cash flows for the years ended December 31, 2020, 2019, and 2018:

	Year Ended December 31,		
	2020	2019	2018
Net cash provided by (used in) operating activities	$ 4,818	$ (5,815)	$ 15,830
Net cash used in investing activities	(28,734)	(180,925)	(43,808)
Net cash provided by financing activities	5,867	208,292	42,577
Net (decrease) increase in cash and restricted cash	$ (18,049)	$ 21,552	$ 14,599

Operating Activities

Net cash provided by operating activities was $4.8 million for the year ended December 31, 2020 and consisted primarily of our net loss of $81.0 million, $2.6 million in payments for the contingent purchase price consideration related to the Cognify acquisition, and changes in our operating assets and liabilities totaling $5.1 million, offset by the addition of noncash items of $93.5 million. These noncash items primarily included $45.0 million of depreciation and amortization expense, $32.6 million of stock-based compensation expense, $13.6 million of amortization of deferred financing costs and debt discounts primarily related to the 2026 Convertible Notes, changes in net deferred taxes of $5.3 million, a $5.0 million intangible asset impairment charge, and a $2.6 million change in fair value of the Cognify acquisition-related contingent consideration. The change in operating assets and liabilities, net of the effect from acquisitions, was primarily due to an increase in client claims receivables and an increase in accounts receivable, which was attributable to growth in our CareVention HealthCare segment as a result of new clients and growth in existing clients, as well as timing of client payments. The change in operating assets and liabilities was also due to a decrease in accrued expenses and other liabilities primarily due to lower accrued employee compensation costs. The change in operating assets and liabilities was partially offset by a decrease in prepaid expenses and other current assets primarily due to payments received related to prior year contract asset balances and non-trade receivable, and an increase in accounts payable primarily due to the timing of vendor payments.

Net cash used by operating activities was $5.8 million for the year ended December 31, 2019 and consisted primarily of our net loss of $32.4 million, $24.5 million in payments for the contingent purchase price consideration related to the SinfoníaRx, Peak PACE, and DoseMe acquisitions, changes in net deferred taxes of $16.4 million and changes in our operating assets and liabilities totaling $8.8 million, offset by the addition of noncash items of $76.3 million. The noncash items primarily included $34.3 million of depreciation and amortization expenses, $27.3 million of stock-based compensation expense, $10.9 million of amortization of deferred financing costs and debt discounts primarily related to the 2026 Convertible Notes, and $3.8 million in the aggregate related to the change in fair value of the acquisition-related contingent consideration for SinfoníaRx, Peak PACE, Cognify, and DoseMe. The significant factors that contributed to the change in operating assets and liabilities included an increase in prepaid and other current assets primarily due to an increase in contract assets and an increase in prepaid information technology expenses. The change in operating assets and liabilities was also due to a decrease in accounts payable as a result of shorter payment terms with our new medication vendor, which were partially offset by an increase in accrued expenses and other liabilities as a result of higher accrued employee compensation, contract liabilities related to our performance obligations for our services, and interest expense.

Net cash provided by operating activities was $15.8 million for the year ended December 31, 2018 and consisted primarily of our net loss of $47.3 million and changes in our operating assets and liabilities totaling $10.0 million, offset by the addition of noncash items of $73.1 million. The noncash items primarily included $49.5 million in the aggregate related to the change in fair value of the acquisition-related contingent consideration for SinfoníaRx, Peak PACE, and Cognify, $16.8 million of depreciation and amortization expenses, and $10.4 million of stock-based compensation expense, partially offset by a deferred tax benefit of $3.6 million. The significant factors that contributed to the change in operating assets and liabilities included an increase in accounts receivable primarily due to revenues generated as a result of the SinfoníaRx, Peak PACE, Mediture, and Cognify acquisitions, an increase in prepaid expenses and other current assets primarily due to an increase in contract assets related to estimated drug utilization fees in pharmacy cost management services and a decrease in accounts payable, which were partially offset by an increase in accrued expenses and other liabilities. The increase in accrued expenses and other liabilities is primarily due to an increase in accrued contract labor costs to support our MedWise HealthCare services, accrued employee related expenses, and client fund obligations acquired from the Peak PACE and Mediture acquisitions in 2018.

Investing Activities

Net cash used in investing activities was $28.7 million for the year ended December 31, 2020 and reflected $6.8 million paid in connection with the acquisition of Personica, net of cash acquired. In addition, net cash used in investing activities consisted of $18.8 million in software development costs for our CareVention Healthcare and MedWise HealthCare technologies. Net cash used in investing activities also consisted of $3.1 million in purchases of property, equipment, and leasehold improvements primarily related to equipment to support the pharmacy at our Moorestown, New Jersey location, improvements for our expanded office space at our Moorestown, New Jersey headquarters, and improvements for our new call center space in Tucson, Arizona to support our medication safety services.

Net cash used in investing activities was $180.9 million for the year ended December 31, 2019 and reflected $158.8 million paid in connection with the acquisitions of DoseMe and PrescribeWellness, net of cash acquired. In addition, net cash used in investing activities consisted of $14.5 million in software development costs for our CareVention and MedWise HealthCare technologies, $7.5 million in purchases of property, equipment and leasehold improvements, primarily related to equipment and improvements for our Moorestown, New Jersey headquarters and our research facility in Lake Nona, Florida, and $1.2 million in connection with the purchase of developed technology to support our MedWise HealthCare services. Net cash used in investing activities was partially offset by proceeds received from the repayment of the $1.0 million note receivable issued to DoseMe Holdings Pty Ltd in 2018.

Net cash used in investing activities was $43.8 million for the year ended December 31, 2018 and reflected $32.2 million, net of cash acquired, paid in connection with the acquisitions of Peak PACE, Mediture, and Cognify. Net cash used in investing activities included $5.6 million of software development costs for our CareVention HealthCare and MedWise HealthCare technologies. Net cash used in investing activities also included $5.0 million in purchases of property and equipment and in leasehold improvements, primarily related to new pharmacy dispensing equipment, equipment and improvements for our new office space in Tucson, Arizona for SinfoníaRx, and improvements for our spaces in Austin, Texas and Gainesville, Florida dedicated to our MedWise HealthCare service call centers. In addition, net cash used in investing activities included $1.0 million related to the note receivable issued to DoseMe Holdings Pty Ltd.

Financing Activities

Net cash provided by financing activities was $5.9 million for the year ended December 31, 2020 and primarily reflected $10.0 million of borrowings on our 2020 Credit Facility to fund the acquisition of Personica, and $3.9 million of proceeds received from the exercise of stock options. Net cash provided by financing activities for the year ended December 31, 2020 was partially offset by $3.8 million of payments for the contingent purchase price consideration related to the Cognify acquisition, $3.0 million in payments for payroll taxes remitted to taxing authorities on behalf of employees for shares withheld from the net exercise of stock options during 2020, and $1.3 million in payments for debt financing costs.

Net cash provided by financing activities was $208.3 million for the year ended December 31, 2019 and primarily reflected gross proceeds of $325.0 million from the issuance of the 2026 Convertible Notes, $65.9 million from the proceeds of the warrant transactions and $3.7 million of proceeds received from the exercise of stock options. Net cash provided by financing activities for the year ended December 31, 2019 was partially offset by a payment of $101.7 million for the convertible hedge options entered into in connection with the offering of the 2026 Convertible Notes, a payment of $45.0 million to repay the amounts outstanding on the 2015 Line of Credit, $29.1 million in payments for the contingent purchase price consideration related to the SinfoníaRx, Peak PACE, and DoseMe acquisitions, $9.6 million in payments for debt financing costs, and $968 thousand in payments of long-term debt.

Net cash provided by financing activities was $42.6 million for the year ended December 31, 2018 and consisted of $45.0 million of borrowings on the Amended and Restated 2015 Revolving Line to fund the acquisitions of Peak PACE, Mediture, and Cognify, $3.5 million of proceeds received from the exercise of stock options, and $156 thousand received as a result of a disgorgement related to short swing profits. Net cash provided by financing activities for the year ended December 31, 2018 was partially offset by $2.9 million in payments for the repurchase of common stock, a $1.6 million payment of contingent purchase price consideration related to our Medliance acquisition, $1.1 million in payments of long-term debt, and $539 thousand in payments for debt financing and costs associated with our common stock offering completed in December 2017.

Funding Requirements

On December 18, 2020, we entered into the 2020 Credit Facility, which provides for a $120 million secured revolving credit facility, and matures on May 16, 2025. We have $109.9 million available for borrowings under our 2020 Credit Facility, and we were in compliance with all related financial and operating covenants thereunder as of December 31, 2020. See Note 13 in our Notes to Consolidated Financial Statements in Part IV, Item 15 of this Annual Report on Form 10-K for additional information with respect to the 2020 Credit Facility.

We believe that our unrestricted cash of $23.4 million as of December 31, 2020, borrowing capacity under our 2020 Credit Facility, and cash flows from continuing operations will be sufficient to fund our planned operations through at least March 31, 2022. Our ability to maintain successful operations will depend on, among other things, new business, the retention of clients and the effectiveness of sales and marketing initiatives.

We may seek additional funding through public or private debt or equity financings. We may not be able to obtain financing on acceptable terms, or at all. The terms of any financing may adversely affect our stockholders. If we are unable to obtain funding, we could be forced to delay, reduce or eliminate our research and development programs, product portfolio expansion, or commercialization efforts, which could adversely affect our business prospects. There is no assurance that we will be successful in obtaining sufficient funding on terms acceptable to us to fund continuing operations, if at all.

Contractual Obligations and Commitments

The following summarizes our significant contractual obligations as of December 31, 2020:

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(In thousands)				
Convertible senior subordinated notes	$ 325,000	$ —	$ —	$ —	$ 325,000
Contingent consideration payments (1)	166	166	—	—	—
Acquisition-related notes payable (2)	17,000	17,000	—	—	—
Finance leases (3)	4	4	—	—	—
Operating leases (4)	29,698	4,505	7,856	6,802	10,535
Letter of credit (5)	100	—	—	—	100
Other (6)	954	594	360	—	—
Total	$ 372,922	$ 22,269	$ 8,216	$ 6,802	$ 335,635

(1) Contingent consideration represents the future cash payments as of December 31, 2020 related to our acquisition of Cognify in 2018. See Note 5 and Note 17 to our consolidated financial statements for additional information.
(2) Acquisition-related notes payable represents the future cash payments as of December 31, 2020 related to promissory notes for the purchase consideration of the Personica acquisition. See Note 5 to our consolidated financial statements for additional information.
(3) Finance lease obligations represent future lease payments for equipment including interest.
(4) The operating lease obligations represent future lease payments for office space.
(5) We are contingently liable for $100 thousand under an outstanding letter of credit related to our lease agreement for our corporate headquarters in Moorestown, New Jersey. The letter of credit renews annually and expires in September 2027.
(6) Effective December 2018, we entered into a vendor agreement to provide information technology related services that commits us to a minimum purchase obligation of $2.0 million in the first three years of the contract. As of December 31, 2020, approximately $234 thousand was remaining under the contract. In addition, effective January 1, 2020, we entered into an updated agreement with our data aggregation partner for our pharmacy cost management services, which commits us to a minimum purchase obligation of $30 thousand per month for 36 months.

Our existing office lease agreements provide us with the option to renew and generally provide for rental payments on a graduated basis. Our future operating lease obligations would change if we entered into additional operating lease agreements as we expand our operations.

In addition, effective March 2019, we entered into an Affiliated Pharmacy Agreement and Pharmaceutical Program Supply Agreement with Thrifty Drug Stores, Inc., which was replaced on July 1, 2020 by a new Affiliated Pharmacy Agreement and Pharmaceutical Program Supply Agreement, to provide us with the pharmaceutical products that we sell. The contract commits us to a minimum purchase obligation of 98% of our total prescription product requirements from Thrifty Drug Stores through September 2023.

The contractual commitment amounts in the table and described above are associated with agreements that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum, or variable price provisions and the approximate timing of the transaction.

Off-Balance Sheet

During the periods presented, we did not have any off-balance sheet arrangements, as defined by applicable SEC rules and regulations.

Critical Accounting Policies and Significant Judgments and Estimates

We base this management's discussion and analysis of our financial condition and results of operations on our consolidated financial statements, which we have prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. We evaluate our estimates and judgments, including those related to: (i) the fair value of assets acquired and liabilities assumed for business combinations, (ii) the recognition and disclosure of contingent liabilities, (iii) the useful lives of long-lived assets (including definite-lived intangible assets), (iv) the evaluation of revenue recognition criteria, (v) the realizability of long-lived assets including goodwill and intangible assets, (vi) the assumptions used to determine the fair value of right-of-use assets and liabilities for leases, and (vii) the assumptions used to determine the fair value of convertible debt instruments and related equity-

classified conversion options. We base our estimates on historical experience, known trends and events and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. You should consider your evaluation of our financial condition and results of operations with these policies, judgments, and estimates in mind.

While we describe our significant accounting policies in the notes to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K, we believe the following accounting policies are the most critical to the judgments and estimates we use in the preparation of our consolidated financial statements.

Revenue Recognition

We provide technology-enabled solutions tailored toward the specific needs of healthcare organizations, including payers, providers, and pharmacies. These solutions can be integrated or provided on a standalone basis. Contracts generally have a term of one to five years and in some cases automatically renew at the end of the initial term. In most cases, clients may terminate their contracts with a notice period ranging from 0 to 180 days without cause, thereby limiting the term in which we have enforceable rights and obligations. Revenue is recognized in an amount that reflects the consideration that is expected in exchange for the goods or services.

We use the practical expedient not to account for significant financing components because the period between recognition and collection does not exceed one year for most of our contracts. We do not disclose the amount of variable consideration that we expect to recognize in future periods as the variable consideration is allocated entirely to a wholly unsatisfied performance obligation or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of single performance obligation, and the terms of that variable consideration relate specifically to our efforts to transfer the distinct service, or to a specific outcome from transferring the distinct service. Our customers' contracts primarily include monthly fees associated with unspecified membership, claims, or medication safety reviews that fluctuate throughout the contract.

CareVention HealthCare

PACE Product Revenue

We provide medication fulfillment pharmacy services to PACE organizations, and, while the majority of medications are routinely filled in order to treat chronic conditions, the mix and quantity of medications can vary. Revenue from medication fulfillment services is generally billed monthly or weekly, depending on whether the PACE organization is contracted with a PBM, and recognized when medications are delivered and control has passed to the client. At the time of delivery, we have performed substantially all of our performance obligations under our client contracts. We do not experience a significant level of returns or reshipments.

PACE Solutions

We provide services to PACE organizations, and these services primarily include medication safety services and health plan management services, which consist of risk adjustment services, PBM solutions, electronic health records solutions, and third party administration services. Revenue related to these services primarily consists of a fixed monthly fee assessed based on number of members served, or per member per month, a fee for each claim adjudicated, and subscription fees. These fees are recognized when we satisfy our performance obligation to stand ready to provide PACE services, which occurs when our clients have access to the PACE services. We generally bill for PACE services on a monthly basis as the services are provided.

MedWise HealthCare

Product Revenue

We provide COVID-19 test kits to pharmacies and other clients. Revenue from the sale of these products is generally billed when test kits are shipped and is recognized as we satisfy our performance obligations to deliver the test kits and provide the test results. We do not experience a significant level of returns or reshipments.

Medication Safety Services

We provide medication safety services, which include identification of high-risk individuals, medication regimen reviews including patient and prescriber counseling, and targeted interventions to increase adherence and close gaps in care. Revenue related to these services primarily consists of per member per month fees and fees for each medication review and assessment completed. Revenue is recognized when we satisfy our performance obligation to stand ready to provide medication safety services, which occurs when our clients have access to the medication safety services, and when medication reviews and assessments are completed. We generally bill for the medication safety services on a monthly basis.

Software Subscription and Services

We provide software as a service, or SaaS, solutions, which allow for the identification of individuals with high medication-related risk, for patient communication and engagement, for documentation of clinical interventions, for optimizing medication therapy, for targeting adherence improvement, and for precision dosing. Revenues related to these software services primarily consist of monthly subscription fees and are recognized monthly as we meet our performance obligation to provide access to the software. Revenue for implementation and set up services is generally recognized over the contract term as the software services are provided. We generally bill for the software services on a monthly basis.

Business Combinations and Contingent Consideration

Acquired businesses are accounted for using the purchase method of accounting, which requires that the purchase price be allocated to the net assets acquired at their respective fair values. Any excess of the purchase price over the estimated fair values of the net assets acquired is recorded as goodwill. Amounts allocated to contingent consideration are recorded to the balance sheet at the date of acquisition based on their relative fair values. The purchase price allocation requires us to make significant estimates and assumptions, especially at the acquisition date, with respect to intangible assets. Although we believe the assumptions and estimates we have made are reasonable, they are based in part on historical experience and information obtained from the management of the acquired companies and are inherently uncertain.

We account for contingent consideration in accordance with applicable guidance provided within the business combination accounting rules. As part of our consideration for the SRx, Peak PACE, Cognify and DoseMe acquisitions, we were contractually obligated to pay certain consideration resulting from the outcome of future events. Therefore, we are required to update our underlying assumptions each reporting period, based on new developments, and record such contingent consideration liabilities at fair value until the contingency is resolved. Changes in the fair value of the contingent consideration liabilities were recognized each reporting period and included in our consolidated statements of operations.

Examples of critical estimates used in valuing certain intangible assets and contingent consideration include:

- future expected cash flows from sales and acquired developed technologies;
- the acquired company's trade name and customer relationships as well as assumptions about the period of time the acquired trade name and customer relationships will continue to be used in the combined company's portfolio;
- the probability of meeting the future events; and
- discount rates used to determine the present value of estimated future cash flows.

These estimates are inherently uncertain and unpredictable, and if different estimates were used the purchase price for the acquisition could be allocated to the acquired assets and liabilities differently from the allocation that we have made. In addition, unanticipated events and circumstances may occur, which may affect the accuracy or validity of such estimates, and if such events occur we may be required to record a charge against the value ascribed to an acquired asset or an increase in the amounts recorded for assumed liabilities.

Goodwill

Goodwill consists of the excess purchase price over fair value of net tangible and intangible assets acquired. Goodwill is not amortized, but is tested for impairment annually. GAAP provides an entity an option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount prior to performing the quantitative assessment. If this is the case, the quantitative impairment test is required. Factors we generally consider important in our qualitative assessment that could trigger a step-two impairment test include significant underperformance relative to expected operating trends, significant changes in the way assets are used, underutilization of our tangible assets, discontinuance of certain products by us or by our clients, changes in the competitive environment and significant negative industry or economic trends. If it is more-likely-than-not that the fair value of a reporting unit is greater than its carrying amount, the quantitative test is not required. If the quantitative impairment test is required, the fair value of the reporting unit is compared with its carrying amount (including goodwill). If the fair value of the reporting unit is less than its carrying amount, an indication of goodwill impairment exists for the reporting unit and an impairment loss is recognized for any excess of the carrying amount of the reporting unit's fair value. The fair value of a reporting unit is determined using a discounted cash flows analysis.

For the years ended December 31, 2020, 2019, and 2018, the Company performed a qualitative assessment of goodwill and determined that it is not more-likely-than-not that the fair value of its reporting units is less than the carrying amount. Accordingly, no impairment loss was recorded for the years ended December 31, 2020, 2019, or 2018.

Impairment of Long-Lived Assets Including Other Intangible Assets

Long-lived assets consist of property and equipment, software development costs and definite-lived intangible assets. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that we consider in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, we compare forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows.

Although we believe the carrying values of our long-lived assets are currently realizable, future events could cause us to conclude otherwise.

Recent Accounting Pronouncements

See Note 2 of Notes to Consolidated Financial Statements in Part IV, Item 15 of this Annual Report on Form 10-K for a summary of new accounting standards. As of January 1, 2020, we adopted the following new accounting standards: Accounting Standards Update No. 2016-13, *Financial Instruments - Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments*, Accounting Standards Update No. 2017-04, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, and Accounting Standards Update No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*. As of October 1, 2020, we adopted Accounting Standards Update No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risks in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk is principally limited to interest rate fluctuations. A risk management program is in place to manage these risks. We have estimated our market risk exposure using a sensitivity analysis. A hypothetical 10% change in interest rates during the year ended December 31, 2020, would not have had a material impact on our earnings. To further test the sensitivity of our market risk exposure, we have estimated the changes in fair value of market risk sensitive instruments assuming a hypothetical 100 basis point adverse change in market prices or rates. The results of the sensitivity analysis are summarized below.

As of December 31, 2020, there was approximately $10.0 million outstanding under our 2020 Credit Facility. We entered into the 2020 Credit Facility to replace the 2015 Line of Credit, which expired and matured pursuant to its terms on December 6, 2020. Interest on the loan is based on the LIBOR Rate plus 3.25% which exposes us to market risk due to changes in interest rates. This means that a change in the prevailing interest rates may cause our periodic interest payment obligations to fluctuate. We believe that a 100 basis point increase in interest rates would have resulted in an approximate $25.0 thousand increase to our interest expense for the year ended December 31, 2020.

There are inherent limitations in the sensitivity analysis presented, primarily due to the assumption that interest rate changes would be instantaneous and consistent with respect to our interest-bearing assets. As a result, the analysis is unable to reflect the potential effects of more complex market changes, including changes in credit risk regarding our investments, which may positively or negatively affect income. We have no interest rate hedging agreements.

Item 8. Financial Statements and Supplementary Data

Our Consolidated Financial Statements are listed in the Index to Consolidated Financial Statements and Financial Statement Schedule filed as part of this Annual Report on Form 10-K, beginning on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) and Rule 15d-15(b) of the Exchange Act, our management, including our principal executive officer and our principal financial officer, conducted an evaluation as of the end of the period covered by this Annual Report on Form 10-K of the effectiveness of the design and operation of our disclosure controls and procedures. Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures are effective at the reasonable assurance level in ensuring that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports we file under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Inherent Limitations on Effectiveness of Controls and Procedures

Internal control over financial reporting may not prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Also, projections of any evaluation of effectiveness of internal control to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for our company. Internal control over financial reporting is defined in Rules 13a-15(f) and 15(d)-15(f) promulgated under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, our Chief Executive and Chief Financial Officers and effected by our board of directors, management, and other personnel 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 and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and disposition of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles;
- provide reasonable assurance that our receipts and expenditures are being made only in accordance with authorization of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on the financial statements.

The Company acquired Personica during 2020, and management excluded Personica from its assessment of the effectiveness of the Company's internal control over financial reporting. Personica represents approximately 14% of total assets and approximately 1% of total revenue of the Company as of and for the year ended December 31, 2020. Management plans to fully integrate the operations of this business into the assessment of the effectiveness of the Company's internal control over financial reporting in 2021.

Our management, including our Chief Executive Officer and Chief Financial Officer, has conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2020. In conducting this evaluation, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework (2013)*. Based upon this evaluation and those criteria, management believes that, as of December 31, 2020, our internal controls over financial reporting were effective.

KPMG LLP, the Company's independent registered public accounting firm, has issued an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, which appears below.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) during the quarter ended December 31, 2020 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors
Tabula Rasa HealthCare, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Tabula Rasa HealthCare, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – valuation and qualifying accounts (collectively, the consolidated financial statements), and our report dated February 26, 2021 expressed an unqualified opinion on those consolidated financial statements.

The Company acquired Personica, LLC during 2020, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, Personica, LLC's internal control over financial reporting associated with approximately 14% of total assets and approximately 1% of total revenue included in the consolidated financial statements of the Company as of and for the year ended December 31, 2020. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Personica, LLC.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Philadelphia, Pennsylvania
February 26, 2021

Item 9B. Other Information

None.

Part III.

Information required by Items 10, 11, 12, 13, and 14 of Part III is omitted from this Annual Report and will be filed in our definitive proxy statement to be filed with the SEC with respect to our 2021 annual meeting of stockholders, or the Proxy Statement, or by an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report.

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 will be included in our Proxy Statement under the following captions: “Proposal 1: Election of Directors,” “Executive Officers” and “Corporate Governance” and possibly elsewhere therein and is incorporated herein by reference.

Item 11. Executive Compensation

The information required by this Item 11 will be included in our Proxy Statement under the following caption: “Executive Compensation” and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item 12 will be included in our Proxy Statement under the following caption: “Security Ownership of Certain Beneficial Owners and Management,” “Securities Authorized for Issuance under Equity Compensation Plans as of December 31, 2020” and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this Item 13 will be included in our Proxy Statement under the following caption: “Certain Relationships and Related Party Transactions” and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 will be included in our Proxy Statement under the following caption: “Principal Accountant Fees and Services” and possibly elsewhere therein and is incorporated herein by reference.

Part IV

Item 15. Exhibits and Financial Statement Schedules

A list of exhibits is set forth on the Exhibit Index immediately before the signature page of this Form 10-K, and is incorporated herein by reference.

(a) (1) The Registrant’s financial statements together with a separate table of contents are annexed hereto.

(2) Financial Statement Schedules are listed in the separate table of contents annexed hereto.
Schedule II—Valuation and Qualifying Accounts

(3) A list of exhibits is set forth on the Exhibit Index immediately before the signature page of this Form 10-K, and is incorporated herein by reference.

Item 16. Form 10-K Summary

None.

EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Filing Date	Exhibit Number	
2.1#	Asset Purchase Agreement, dated as of April 22, 2014, by and among Capstone Performance Systems, LLC (Delaware), CareKinesis, Inc., Capstone Performance Systems, LLC (Colorado), PPS Holdings, Inc. and David M. Reyes and Ronda L. Hackbart-Reyes	S-1	1/4/2016	2.2	
2.2#	Agreement and Plan of Merger, dated September 6, 2017, by and among Tabula Rasa HealthCare, Inc., TRCRD, Inc., TRSHC Holdings, LLC, Sinfonía HealthCare Corporation, Michael Deitch, Fletcher McCusker, and Michael Deitch, as Stockholders' Representative	8-K	9/7/2017	2.1	
2.3#	Membership Interest Purchase Agreement, made and entered into as of August 31, 2018, by and among TRHC MEC Holdings, LLC, each member of Mediture LLC and eClusive L.L.C., and Kelley Business Law, PLLC, solely in its capacity as the Seller Representative	10-Q	11/8/2018	2.1	
2.4#	Stock Purchase Agreement, made and entered into as of October 19, 2018, by and among TRHC MEC Holdings, LLC, the stockholders of Cognify, Inc., and Mace Wolf, solely in his capacity as the Sellers' Representative	10-K	3/1/2019	2.6	
2.5#	Share Purchase Deed, made and entered into on November 30, 2018, by and among Tabula Rasa HealthCare, Inc., DM Acquisition Pty Ltd, the shareholders and option holders of DoseMe Holdings Pty Ltd ACN 168 742 336 set forth on the signature page thereto under the heading "Sellers" and Charles Cornish, solely in his capacity as the Seller Representative	8-K	12/3/2018	2.1	
2.6#	Merger Agreement, dated March 5, 2019, by and among Tabula Rasa HealthCare, Inc., TRHC PW Acquisition, LLC, Prescribe Wellness, LLC and Fortis Advisors, LLC, as Holder Representative	8-K	3/5/2019	2.1	
2.7#	Membership Interest Purchase Agreement, made and entered into on October 5, 2020, by and among TRHC, Tabula Rasa HealthCare Group, Inc., Personica Holdings, Inc., Peter C. Farrow, Robert Tanner, Michele Bauer, Luke Johnson and Personica Holdings, Inc., as Seller Representative	8-K	10/5/2020	2.1	
3.1	Amended and Restated Certificate of Incorporation of Tabula Rasa HealthCare, Inc.	8-K	10/4/2016	3.1	
3.2	Amended and Restated Bylaws of Tabula Rasa HealthCare, Inc.	8-K	10/4/2016	3.2	
4.1	Indenture, dated as of February 12, 2019, between Tabula Rasa HealthCare, Inc. and U.S. Bank National Association, as trustee.	8-K	2/12/2019	4.1	
4.2	Form of Note (included in Exhibit 4.1)	8-K	2/12/2019	4.1	
4.3	Description of Registrant's Securities	10-K	3/2/2020	4.3	
10.1*	Tabula Rasa HealthCare, Inc. Amended and Restated 2014 Equity Compensation Plan, including forms of Incentive Stock Option Agreement, Nonqualified Stock Option Agreements and Restricted Stock Agreement thereunder	S-1/A	9/19/2016	10.1	
10.2	Form of Indemnification Agreement	S-1/A	9/19/2016	10.5	
10.3	Loan and Security Agreement, dated as of April 29, 2015, by and among Western Alliance Bank, successor in interest to Bridge Bank, National Association, and Tabula Rasa HealthCare, Inc., CareKinesis, Inc., CareVentions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc. and Medliance LLC, as amended by that Loan and Security Modification Agreement, dated as of July 1, 2016, by and between Western Alliance Bank, as successor in interest to Bridge Bank, National Association, and CareKinesis, Inc., Tabula Rasa HealthCare, Inc., CareVentions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc. and Medliance LLC, included as Exhibit 10.5, as amended by that Loan and Security Modification Agreement, dated as of September 15, 2016, by and between Western Alliance Bank, are CareKinesis, Inc., Tabula Rasa HealthCare, Inc., CareVentions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC and CK Solutions, LLC, included as Exhibit 10.6	S-1	1/4/2016	10.6	
10.4	Loan and Security Modification Agreement, dated as of July 1, 2016, by and between Western Alliance Bank, as successor in interest to Bridge Bank, National Association, and CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc. and Medliance LLC	S-1/A	7/21/2016	10.7	
10.5	Loan and Security Modification Agreement, dated as of September 15, 2016, by and between Western Alliance Bank, are CareKinesis, Inc., Tabula Rasa HealthCare, Inc., CareVentions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC and CK Solutions, LLC	S-1/A	9/19/2016	10.8	
10.6	Amended and Restated Loan and Security Agreement, dated September 6, 2017, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., CareVentions, Inc., Capstone Performance Systems,LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, SinfoníaRx, Inc., Sinfonía HealthCare Corporation, TRCRD, Inc., TRSHC Holdings, LLC, the several banks and other financial institutions or entities from time to time party thereto, and Western Alliance Bank, as a Lender and as administrative agent and collateral agent for the Lenders	8-K	9/7/2017	10.1	

10.7	Loan and Security Modification Agreement, dated May 1, 2018, by and among CareKinesis, Inc., Tabula Rasa HealthCare Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, and SinfoníaRx, Inc. and Western Alliance Bank	10-Q	8/8/2018	10.1
10.8	Loan and Security Modification Agreement, dated August 31, 2018, by and among CareKinesis, Inc., Tabula Rasa HealthCare Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, and SinfoníaRx, Inc., the several banks and other financial institutions or entities party thereto and Western Alliance Bank	10-Q	11/8/2018	10.2
10.9	Loan and Security Modification Agreement, entered into as of October 19, 2018, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, SinfoníaRx, Inc., TRHC MEC Holdings, LLC, Mediture, LLC, eClusive L.L.C., the several banks and other financial institutions or entities party thereto, and Western Alliance Bank	8-K	2/8/2019	10.1
10.10	Loan and Security Modification Agreement, entered into as of December 31, 2018, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, SinfoníaRx, Inc., TRHC MEC Holdings, LLC, Mediture, LLC, eClusive L.L.C., Cognify LLC, the several banks and other financial institutions or entities party thereto, and Western Alliance Bank	8-K	1/2/2019	10.1
10.11	Loan and Security Modification Agreement, entered into as of February 7, 2019, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, SinfoníaRx, Inc., TRHC MEC Holdings, LLC, Mediture, LLC, eClusive L.L.C., Cognify, LLC and TRHC DM Holdings, LLC, the several banks and other financial institutions or entities party thereto, and Western Alliance Bank, as a Lender and as administrative agent and collateral agent for the Lenders	8-K	2/8/2019	10.2
10.12	Loan and Security Modification Agreement, entered into as of March 5, 2019, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, SinfoníaRx, Inc., TRHC MEC Holdings, LLC, Mediture, LLC, eClusive L.L.C., Cognify, LLC and TRHC DM Holdings, LLC, the several banks and other financial institutions or entities party thereto, and Western Alliance Bank, as a Lender and as administrative agent and collateral agent for the Lenders	10-Q	5/10/2019	10.2
10.13	Loan and Security Modification Agreement, entered into as of December 20, 2019, by and among CareKinesis, Inc., Tabula Rasa HealthCare, Inc., Careventions, Inc., Capstone Performance Systems, LLC, J.A. Robertson, Inc., Medliance LLC, CK Solutions, LLC, TRSHC Holdings, LLC, SinfoníaRx, Inc., TRHC MEC Holdings, LLC, Mediture, LLC, eClusive L.L.C., Cognify, LLC and DoseMe, LLC, the several banks and other financial institutions or entities party thereto, and Western Alliance Bank, as a Lender and as administrative agent and collateral agent for the Lenders	10-K	3/2/2020	10.13
10.14	Loan and Security Modification Agreement, entered into as of September 2, 2020, by and among Tabula Rasa HealthCare Group, Inc., Tabula Rasa HealthCare, Inc., CK Solutions, LLC, the several banks and other financial institutions or entities party thereto, and Western Alliance Bank, as Lender and as administrative agent and collateral agent for the Lenders	8-K	9/9/2020	10.1
10.15	Loan and Security Modification Agreement, entered into as of October 5, 2020, by and among Tabula Rasa HealthCare Group, Inc., Tabula Rasa HealthCare, Inc., CK Solutions, LLC, the several banks and other financial institutions or entities party thereto, and Western alliance Bank, as a Lender and as administrative agent and collateral agent for the Lenders	8-K	10/5/2020	10.1
10.16	Loan and Security Agreement, entered into as of December 18, 2020, by and among Tabula Rasa HealthCare Group, Inc., Tabula Rasa HealthCare, Inc., CK Solutions, LLC, Personica, LLC, TRHC TPA, LLC, and PersonifilRX, the several banks and other financial institutions or entities party thereto, Western Alliance Bank and Regions Bank, as documentation agent	8-K	12/22/2020	10.1
10.17*	Tabula Rasa HealthCare, Inc. 2016 Omnibus Incentive Compensation Plan, including forms of Incentive Stock Option Agreement, Nonqualified Stock Option Agreement and Restricted Stock Agreement thereunder	S-1/A	9/19/2016	10.15
10.18*	Form of Director Stock Unit Agreement	10-K	3/2/2020	10.15
10.19	Lease Agreement, dated August 21, 2015, by and between 228 Strawbridge Associates, LLC and Tabula Rasa HealthCare, Inc. (Suite 100), as amended by that First Amendment to Lease Agreements, dated as of March 22, 2016, Second Amendment to Lease Agreements, dated as of February 3, 2017, and Third Amendment to Lease Agreements, effective as of July 10, 2018.	10-K	3/1/2019	10.11
10.20	Lease Agreement, dated August 21, 2015, by and between 228 Strawbridge Associates, LLC and Tabula Rasa HealthCare, Inc. (Suite 200), as amended by that First Amendment to Lease Agreements, dated as of March 22, 2016, Second Amendment to Lease Agreements, dated as of February 3, 2017, and Third Amendment to Lease Agreements, effective as of July 10, 2018	10-K	3/1/2019	10.12

10.21	Lease Agreement, dated August 21, 2015, by and between 228 Strawbridge Associates, LLC and Tabula Rasa HealthCare, Inc. (Suite 300), as amended by that First Amendment to Lease Agreements, dated as of March 22, 2016, Second Amendment to Lease Agreements, dated as of February 3, 2017, and Third Amendment to Lease Agreements, effective as of July 10, 2018	10-K	3/1/2019	10.13	
10.22#	Affiliated Pharmacy Agreement, dated March 29, 2019, between Thrifty Drug Stores, Inc. and Tabula Rasa HealthCare, Inc.	10-Q	5/10/2019	10.11	
10.23#	Pharmaceutical Program Supply Agreement, effective as of March 29, 2019, between Thrifty Drug Stores, Inc. and Tabula Rasa HealthCare, Inc.	10-Q	5/10/2019	10.12	
10.24*	Tabula Rasa HealthCare, Inc. Annual Incentive Plan, effective January 1, 2017	8-K	4/28/2017	10.4	
10.25*	Change-in-Control and Severance Agreement, dated February 26, 2018, between Dr. Calvin Knowlton and Tabula Rasa HealthCare, Inc.	8-K	3/2/2018	10.1	
10.26*	Change-in-Control and Severance Agreement, dated February 26, 2018, between Dr. Orsula Knowlton and Tabula Rasa HealthCare, Inc.	8-K	3/2/2018	10.2	
10.27*	Change-in-Control and Severance Agreement, dated February 26, 2018, between Brian Adams and Tabula Rasa HealthCare, Inc.	8-K	3/2/2018	10.3	
10.28*	First Amendment to the Tabula Rasa Healthcare, Inc. Annual Incentive Plan, dated February 26, 2018	8-K	3/2/2018	10.4	
10.29	Call Option Confirmation, dated February 7, 2019, between Tabula Rasa HealthCare, Inc. and Citibank, N.A.	8-K	2/12/2019	10.1	
10.30	Call Option Confirmation, dated February 7, 2019, between Tabula Rasa HealthCare, Inc. and Bank of America, N.A.	8-K	2/12/2019	10.2	
10.31	Warrant Confirmation, dated February 7, 2019, between Tabula Rasa HealthCare, Inc. and Citibank, N.A.	8-K	2/12/2019	10.3	
10.32	Warrant Confirmation, dated February 7, 2019, between Tabula Rasa HealthCare, Inc. and Bank of America, N.A.	8-K	2/12/2019	10.4	
10.33	Call Option Confirmation, dated February 8, 2019, between Tabula Rasa HealthCare, Inc. and Citibank, N.A.	8-K	2/12/2019	10.5	
10.34	Call Option Confirmation, dated February 8, 2019, between Tabula Rasa HealthCare, Inc. and Bank of America, N.A.	8-K	2/12/2019	10.6	
10.35	Warrant Confirmation, dated February 8, 2019, between Tabula Rasa HealthCare, Inc. and Citibank, N.A.	8-K	2/12/2019	10.7	
10.36	Warrant Confirmation, dated February 8, 2019, between Tabula Rasa HealthCare, Inc. and Bank of America, N.A.	8-K	2/12/2019	10.8	
10.37	Affiliated Pharmacy Agreement, dated as of June 30, 2020, between Thrifty Drug Stores, Inc. and Tabula Rasa HealthCare Group, Inc.	10-Q	8/6/2020	10.1	
10.38	Pharmaceutical Program Supply Agreement, effective as of July 1, 2020, between Thrifty Drug Stores, Inc. and Tabula Rasa HealthCare Group, Inc.	10-Q	8/6/2020	10.2	
10.39	Retailer Addendum to Pharmaceutical Program Supply Agreement (High Volume), effective as of June 30, 2020, by and between Thrifty Drug Stores, Inc. and Tabula Rasa HealthCare Group, Inc.	10-Q	8/6/2020	10.3	
10.41	Form of Letter Agreement, dated as of November 12, 2020, between Tabula Rasa HealthCare, Inc. and each of Calvin H. Knowlton, Orsula V. Knowlton and Brian W. Adams	8-K	11/16/2020	10.1	
21.1	Subsidiaries of Registrant				X
23.1	Consent of KPMG LLP				X
31.1	Certification of Chief Executive Officer (Principal Executive Officer) required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
31.2	Certification of Chief Financial Officer (Principal Financial Officer) required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
32.1**	Certification of Chief Executive Officer (Principal Executive Officer) and Chief Financial Officer (Principal Financial Officer), as required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document				X
101.SCH	Inline XBRL Taxonomy Extension Schema Document				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase				X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase				X
104	The cover page from the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, formatted in Inline XBRL (contained in Exhibit 101)				X

* Represents management contract or compensatory plan or arrangement.

** This certification attached as Exhibit 32.1 that accompanies this Annual Report on Form 10-K is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Tabula Rasa HealthCare, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

Certain schedules and exhibits to this agreement have been omitted pursuant to Item 601(a)(5) or 601(b)(2) of Regulation S-K, as applicable. The Company will furnish the omitted schedules and exhibits to the Securities and Exchange Commission upon request.

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.

TABULA RASA HEALTHCARE, INC.

Date: February 26, 2021	By:	/s/ DR. CALVIN H. KNOWLTON
	Name:	Dr. Calvin H. Knowlton
	Title:	Chief Executive Officer and Chairman of the Board of Directors

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Date: February 26, 2021	By:	/s/ DR. CALVIN H. KNOWLTON
	Name:	Dr. Calvin H. Knowlton
	Title:	Chief Executive Officer and Chairman of the Board of Directors *(Principal Executive Officer)*
Date: February 26, 2021	By:	/s/ BRIAN W. ADAMS
	Name:	Brian W. Adams
	Title:	Chief Financial Officer *(Principal Financial Officer)*
Date: February 26, 2021	By:	/s/ ANDREA C. SPEERS
	Name:	Andrea C. Speers
	Title:	Chief Accounting Officer *(Principal Accounting Officer)*
Date: February 26, 2021	By:	/s/ SAMIRA K. BECKWITH
	Name:	Samira K. Beckwith
	Title:	Director
Date: February 26, 2021	By:	/s/ DR. JAN BERGER
	Name:	Dr. Jan Berger
	Title:	Director
Date: February 26, 2021	By:	/s/ DR. DENNIS K. HELLING
	Name:	Dr. Dennis K. Helling
	Title:	Director
Date: February 26, 2021	By:	/s/ DR. ORSULA V. KNOWLTON
	Name:	Dr. Orsula V. Knowlton
	Title:	Director
Date: February 26, 2021	By:	/s/ KATHRINE O'BRIEN
	Name:	Kathrine O'Brien
	Title:	Director
Date: February 26, 2021	By:	/s/ MICHAEL PURCELL
	Name:	Michael Purcell
	Title:	Director
Date: February 26, 2021	By:	/s/ DR. PAMELA SCHWEITZER
	Name:	Dr. Pamela Schweitzer
	Title:	Director
Date: February 26, 2021	By:	/s/ A GORDON TUNSTALL
	Name:	A Gordon Tunstall
	Title:	Director

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
Tabula Rasa HealthCare, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Tabula Rasa HealthCare, Inc. and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – valuation and qualifying accounts (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 26, 2021 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leases (Topic 842)* and ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*.

Basis for Opinion

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

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

Critical Audit Matters

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

Sufficiency of audit evidence obtained over revenue

As discussed in Notes 2 and 3 to the consolidated financial statements, the Company had $297,219 thousand in revenue for the year ended December 31, 2020, of which $159,593 thousand was product-related and $137,626 thousand was service-related. There are multiple revenue streams for product-related and service-related revenue.

We identified the evaluation of the sufficiency of audit evidence obtained over revenue as a critical audit matter. Evaluating the sufficiency of audit evidence obtained required especially challenging auditor judgment due to the number of revenue streams and IT systems involved in the revenue recognition process. This included determining the revenue streams over which procedures were performed and evaluating the nature and extent of evidence obtained over each revenue stream. It also included the involvement of IT professionals with specialized skills and knowledge to assist in the performance of certain procedures.

The following items are the primary procedures we performed to address this critical audit matter. We applied auditor judgment to determine the revenue streams over which procedures were performed as well as the nature and extent of such procedures. For each revenue stream over which procedures were performed, we:

- evaluated the design and tested the operating effectiveness of certain internal controls over the Company's revenue recognition processes
- assessed the recorded revenue by selecting transactions and compared the amounts recognized for consistency with underlying documentation, including contracts with customers and the Company's revenue recognition policies
- involved IT professionals with specialized skills and knowledge, who assisted in testing certain IT applications used by the Company in its revenue recognition processes.

We evaluated the sufficiency of audit evidence obtained over revenue by assessing the results of procedures performed, including the appropriateness of the nature and extent of such evidence.

Fair value of a client relationships intangible asset acquired in a business combination

As discussed in Note 5 to the consolidated financial statements, the Company acquired Personica, LLC in 2020. The fair value of the total consideration for the acquired business was $50,413 thousand, of which $28,300 thousand was allocated to identified client relationships intangible assets. Fair values of client relationships intangible assets are estimated using valuation models with assistance from a third-party specialist.

We identified the assessment of the fair value of one of the identified client relationships intangible assets acquired in the business combination as a critical audit matter. A high degree of auditor judgment was required to evaluate the revenue projections in the Company's cash flow forecast and the discount rate assumptions used to determine the fair value of the client relationships intangible asset, as minor changes to those assumptions could have had a significant effect on the Company's estimate of fair value.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's business combination process, including controls related to the revenue projections and discount rate assumptions used to determine the fair value of the client relationships intangible asset. We evaluated the Company's revenue projections for the acquired entity by comparing them to actual historical results and comparing the revenue growth assumptions to forecasted growth rates in industry reports and historical results of peer companies. In addition, we involved valuation professionals with specialized skill and knowledge, who assisted in:

- evaluating the Company's discount rate, by comparing it against a discount rate range that was independently developed using publicly available market data for comparable entities
- developing an estimate of the fair value of the client relationships intangible asset using the Company's cash flow forecast and an independently developed discount rate and compared the results to the Company's fair value estimate.

/s/ KPMG LLP

We have served as the Company's auditor since 2012.

Philadelphia, Pennsylvania
February 26, 2021

TABULA RASA HEALTHCARE, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)

	December 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash	$ 23,362	$ 42,478
Restricted cash	5,170	4,103
Accounts receivable, net of allowance of $224 and $386, respectively	32,516	29,123
Inventories	4,261	3,700
Prepaid expenses	3,739	4,299
Client claims receivable	14,412	—
Other current assets	9,752	10,835
Total current assets	93,212	94,538
Property and equipment, net	15,070	15,798
Operating lease right-of-use assets	21,711	22,100
Software development costs, net	27,882	18,501
Goodwill	170,862	150,760
Intangible assets, net	183,094	189,413
Other assets	2,609	1,281
Total assets	$ 514,440	$ 492,391
Liabilities and stockholders' equity		
Current liabilities:		
Current portion of finance leases	$ 4	$ 125
Current operating lease liabilities	4,402	4,350
Acquisition-related contingent consideration	166	—
Acquisition-related notes payable	16,662	—
Accounts payable	11,245	8,622
Client claims payable	7,773	—
Accrued expenses and other liabilities	31,968	26,906
Total current liabilities	72,220	40,003
Line of credit	10,000	—
Long-term debt and finance leases, net	239,285	226,294
Noncurrent operating lease liabilities	20,381	21,017
Long-term acquisition-related contingent consideration	—	10,800
Deferred income tax liability	3,354	8,656
Other long-term liabilities	671	73
Total liabilities	345,911	306,843
Commitments and contingencies (Note 18)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; 10,000,000 shares authorized; no shares issued and outstanding at December 31, 2020 and December 31, 2019	—	—
Common stock, $0.0001 par value; 100,000,000 shares authorized, 24,222,674 and 22,496,999 shares issued and 24,004,896 and 22,321,310 shares outstanding at December 31, 2020 and December 31, 2019, respectively	2	2
Treasury stock, at cost; 217,778 and 175,689 shares at December 31, 2020 and December 31, 2019, respectively	(4,018)	(3,865)
Additional paid-in capital	352,445	288,345
Accumulated deficit	(179,900)	(98,934)
Total stockholders' equity	168,529	185,548
Total liabilities and stockholders' equity	$ 514,440	$ 492,391

See accompanying notes to consolidated financial statements.

TABULA RASA HEALTHCARE, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share amounts)

	Year Ended December 31,		
	2020	**2019**	**2018**
Revenue:			
Product revenue	$ 159,593	$ 137,130	$ 112,760
Service revenue	137,626	147,577	91,510
Total revenue	297,219	284,707	204,270
Cost of revenue, exclusive of depreciation and amortization shown below:			
Product cost	117,171	102,351	84,935
Service cost	87,641	79,004	52,734
Total cost of revenue, exclusive of depreciation and amortization	204,812	181,355	137,669
Operating expenses:			
Research and development	18,180	21,739	12,222
Sales and marketing	21,547	25,273	9,667
General and administrative	65,378	50,897	28,181
Change in fair value of acquisition-related contingent consideration expense	2,613	3,816	49,468
Intangible asset impairment charge	5,040	—	—
Depreciation and amortization	45,040	34,276	16,802
Total operating expenses	157,798	136,001	116,340
Loss from operations	(65,391)	(32,649)	(49,739)
Other expense:			
Interest expense, net	20,743	15,986	906
Loss before income taxes	(86,134)	(48,635)	(50,645)
Income tax benefit	(5,168)	(16,199)	(3,376)
Net loss	$ (80,966)	$ (32,436)	$ (47,269)
Net loss per share, basic and diluted	$ (3.71)	$ (1.57)	$ (2.48)
Weighted average common shares outstanding, basic and diluted	21,815,388	20,622,258	19,098,294

See accompanying notes to consolidated financial statements.

TABULA RASA HEALTHCARE, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except share amounts)

	For the Years Ended December 31, 2020, 2019, and 2018						
	Common Stock		Treasury Stock		Additional	Accumulated	Stockholders'
	Shares	Amount	Shares	Amount	Paid-in Capital	Deficit	Equity
Balance, January 1, 2018	19,371,005	$ 2	(73,466)	$ (959)	$ 144,074	$ (19,229)	$ 123,888
Common stock offering issuance costs	—	—	—	—	(9)	—	(9)
Issuance of common stock in connection with acquisition	139,140	—	—	—	11,471	—	11,471
Issuance of restricted stock	445,659	—	—	—	—	—	—
Forfeitures of restricted shares	—	—	(8,294)	—	—	—	—
Shares repurchased	—	—	(80,000)	(2,866)	—	—	(2,866)
Exercise of stock options, net of shares withheld	763,493	—	—	—	3,503	—	3,503
Reclassification of contingent consideration liability to be settled with common stock	—	—	—	—	39,774	—	39,774
Disgorgement of short swing profits	—	—	—	—	156	—	156
Stock-based compensation expense	—	—	—	—	10,361	—	10,361
Net loss	—	—	—	—	—	(47,269)	(47,269)
Balance, December 31, 2018	20,719,297	2	(161,760)	(3,825)	209,330	(66,498)	139,009
Issuance of common stock in connection with acquisition	149,053	—	—	—	9,504	—	9,504
Issuance of common stock awards	83,808	—	—	—	—	—	—
Issuance of restricted stock	591,402	—	—	—	—	—	—
Forfeitures of restricted shares	—	—	(13,239)	—	—	—	—
Exercise of stock options, net of shares withheld	339,214	—	(690)	(40)	3,742	—	3,702
Issuance of common stock in connection with the settlement of acquisition-related contingent consideration	614,225	—	—	—	(609)	—	(609)
Conversion feature of convertible senior subordinated notes, net of allocated debt issuance costs, net of tax effect	—	—	—	—	74,850	—	74,850
Purchase of convertible note hedges	—	—	—	—	(101,660)	—	(101,660)
Sale of warrants in connection with convertible senior subordinated notes	—	—	—	—	65,910	—	65,910
Stock-based compensation expense	—	—	—	—	27,278	—	27,278
Net loss	—	—	—	—	—	(32,436)	(32,436)
Balance, December 31, 2019	22,496,999	2	(175,689)	(3,865)	288,345	(98,934)	185,548
Issuance of common stock in connection with acquisition	555,555	—	—	—	23,589	—	23,589
Issuance of common stock awards	14,386	—	—	—	—	—	—
Issuance of restricted stock	578,261	—	—	—	—	—	—
Forfeitures of restricted shares	—	—	(51,391)	—	—	—	—
Exercise of stock options, net of shares withheld	442,039	—	(3,198)	(153)	1,103	—	950
Share adjustment	—	—	12,500	—	—	—	—
Issuance of common stock in connection with the settlement of acquisition-related contingent consideration	135,434	—	—	—	6,853	—	6,853
Stock-based compensation expense	—	—	—	—	32,555	—	32,555
Net loss	—	—	—	—	—	(80,966)	(80,966)
Balance, December 31, 2020	24,222,674	$ 2	(217,778)	$ (4,018)	$ 352,445	$ (179,900)	$ 168,529

See accompanying notes to consolidated financial statements.

TABULA RASA HEALTHCARE, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2020	**2019**	**2018**
Cash flows from operating activities:			
Net loss	$ (80,966)	$ (32,436)	$ (47,269)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	45,040	34,276	16,802
Amortization of deferred financing costs and debt discount	13,637	10,877	103
Deferred taxes	(5,302)	(16,353)	(3,648)
Stock-based compensation	32,555	27,278	10,361
Change in fair value of acquisition-related contingent consideration	2,613	3,816	49,468
Acquisition-related contingent consideration paid	(2,593)	(24,480)	—
Intangible asset impairment	5,040	—	—
Other noncash items	(66)	20	51
Changes in operating assets and liabilities, net of effect from acquisitions:			
Accounts receivable, net	(2,448)	1,444	(9,456)
Inventories	(239)	(106)	(799)
Prepaid expenses and other current assets	4,859	(7,705)	(1,651)
Client claims receivables	(5,674)	—	—
Other assets	(494)	(269)	(460)
Accounts payable	2,149	(7,809)	(778)
Accrued expenses and other liabilities	(3,642)	5,712	2,599
Client claims payables	(249)	—	—
Other long-term liabilities	598	(80)	507
Net cash provided by (used in) operating activities	4,818	(5,815)	15,830
Cash flows from investing activities:			
Purchases of property and equipment	(3,091)	(7,474)	(4,988)
Software development costs	(18,836)	(14,487)	(5,558)
Purchases of intangible assets	—	(1,202)	(30)
Issuance of note receivable	—	—	(1,000)
Proceeds from repayment of note receivable	—	1,000	—
Acquisitions of businesses, net of cash acquired	(6,807)	(158,762)	(32,232)
Net cash used in investing activities	(28,734)	(180,925)	(43,808)
Cash flows from financing activities:			
Payments for repurchase of common stock	—	—	(2,866)
Proceeds from exercise of stock options	3,943	3,702	3,523
Proceeds from disgorgement of short swing profits	—	—	156
Payments for employee taxes for shares withheld	(2,993)	—	—
Payments for debt financing costs	(1,226)	(9,630)	(175)
Borrowings on line of credit	10,000	—	45,000
Repayments of line of credit	—	(45,000)	—
Payments of equity offering costs	—	—	(364)
Payments of acquisition-related contingent consideration	(3,801)	(29,062)	(1,646)
Repayments of long-term debt and finance leases	(56)	(968)	(1,051)
Proceeds from issuance of convertible senior subordinated notes	—	325,000	—
Proceeds from sale of warrants	—	65,910	—
Purchase of convertible note hedges	—	(101,660)	—
Net cash provided by financing activities	5,867	208,292	42,577
Net (decrease) increase in cash and restricted cash	(18,049)	21,552	14,599
Cash and restricted cash, beginning of year	46,581	25,029	10,430
Cash and restricted cash, end of year	$ 28,532	$ 46,581	$ 25,029
Supplemental disclosure of cash flow information:			
Acquisition of equipment under capital leases	$ —	$ —	$ 442
Purchases of property and equipment and software development included in accounts payable and accrued expenses	$ 183	$ 19	$ 175
Cash paid for interest	$ 5,808	$ 3,181	$ 720
(Income tax refund) cash paid for taxes, net	$ (24)	$ 381	$ —
Interest costs capitalized to property and equipment and software development costs	$ 257	$ 321	$ —
Stock issued in connection with settlement of acquisition-related contingent consideration	$ 6,853	$ —	$ —
Stock issued in connection with acquisitions	$ 23,589	$ 9,504	$ 11,471
Fair value of promissory notes entered into in connection with acquisition	$ 16,355	$ —	$ —
Reconciliation of cash and restricted cash:			
Cash	$ 23,362	$ 42,478	$ 20,278
Restricted cash	5,170	4,103	4,751
Total cash and restricted cash	$ 28,532	$ 46,581	$ 25,029

See accompanying notes to consolidated financial statements.

1. Nature of Business

Tabula Rasa HealthCare, Inc. (the "Company") is a healthcare technology company advancing the safe use of medications by creating solutions designed to empower pharmacists, providers, and patients to optimize medication regimens. The Company's advanced proprietary technology, MedWise™, identifies the cause of medication-related problems, including adverse drug events, so healthcare professionals can minimize harm and reduce medication-related risks. Adverse drug events are a large and growing problem with medication therapy, costing an estimated $528 billion annually in the United States ("U.S.") and resulting in more than 275,000 deaths per year in the U.S. in 2018. The Company's software and services help improve patient outcomes and lower healthcare costs through reduced hospitalizations, emergency department visits, and healthcare utilization. In order to deliver its services, the Company has developed an extensive clinical tele-pharmacy network, with seven call centers across the U.S, a number of which are tethered to academic institutions. The Company serves a number of different organizations within the healthcare industry, including more than 280 health plans, over 14,000 pharmacies, nearly 300 hospitals, and more than 130 at-risk provider groups, the majority of which are PACE organizations.

2. Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying consolidated financial statements of the Company have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and applicable rules and regulations of the Securities and Exchange Commission (the "SEC") regarding annual financial reporting. Any reference in these notes to applicable guidance is meant to refer to the authoritative United States GAAP as found in the Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB"). The accompanying consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Effective January 1, 2020, in order to facilitate the administration, management, and development of the Company's business and minimize the burden on the Company's tax and regulatory reporting obligations, the Company implemented a reorganization pursuant to which all of the Company's domestic subsidiaries, other than CK Solutions, LLC, merged with and into the Company's wholly-owned subsidiary CareKinesis, Inc., which had previously changed its legal name on December 20, 2019 to TRHC OpCo, Inc. In the second quarter of 2020, TRHC OpCo, Inc. further changed its name to Tabula Rasa HealthCare Group, Inc. ("TRHC Group"). Following such reorganization, the Company's only directly owned subsidiary is TRHC Group, which is the parent of CK Solutions, LLC, three foreign subsidiaries related to the acquisition of DoseMe Holdings Pty Ltd, and Personica, LLC ("Personica").

In conjunction with the Company's reorganization, the Company now operates its business through two segments, CareVention HealthCare and MedWise HealthCare, effective January 1, 2020. Prior comparative periods have been revised to conform with the current period segment presentation. See Note 20 for a discussion of the Company's reportable segments.

(b) Risks Related to the COVID-19 Pandemic

On January 30, 2020, the World Health Organization ("WHO") announced a global health emergency caused by a new strain of coronavirus ("COVID-19"), originating in Wuhan, China and the risks to the international community. In March 2020, the WHO classified the COVID-19 outbreak as a pandemic ("COVID-19 pandemic), based on the rapid increase in exposure globally. The full impact of the COVID-19 pandemic continues to evolve as of the date these consolidated financial statements were issued. As such, the full magnitude of the impact that the pandemic will have on the Company's future results of operations remains uncertain. Management is actively monitoring the global situation and the ramification on the Company's financial condition, liquidity, operations, suppliers, industry, and workforce. Given the daily evolution of the COVID-19 pandemic and the global responses to curb its spread, the Company is not able to estimate the effects that the COVID-19 pandemic may have on the Company's results of operations, financial condition, or liquidity for 2021. However, the Company is dependent on its workforce to sell and deliver its products and services. Social distancing and shelter-in-place directives could impact the Company's ability to deploy its workforce effectively. These same developments may affect the operations of the Company's suppliers and customers, as their own workforces and operations are disrupted by this virus.

As a result of the ongoing COVID-19 pandemic, the Company has experienced challenges with revenue growth. The pandemic has delayed the closing of contracts across both the Company's CareVention HealthCare and MedWise HealthCare segments and, in some cases, shifted project priorities and timelines, which management believes resulted in fewer new business wins during 2020. Overall census growth for Programs of All-Inclusive Care for the Elderly ("PACE") has remained below historical levels, which has affected the Company's CareVention HealthCare segment growth. The Company's MedWise HealthCare segment also has experienced delays in the timing of implementation and closing of new business and a negative impact from COVID-19 on medication adherence initiatives, which are seasonally weighted toward the second half of the calendar year. The Company does not yet know the full extent of potential delays or impacts on its business, financing or other activities or on healthcare systems or the global economy as a whole. These effects could have a material impact on the Company's liquidity, capital resources, operations and business and those of the third parties on which it relies.

(c) Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates or assumptions.

On an ongoing basis, management evaluates its estimates and assumptions, including, but not limited to, those related to: (i) the fair value of assets acquired and liabilities assumed for business combinations, (ii) the recognition and disclosure of contingent liabilities, (iii) the useful lives of long-lived assets (including definite-lived intangible assets), (iv) the evaluation of revenue recognition criteria, (v) the realizability of long-lived assets including goodwill and intangible assets, (vi) the assumptions used to determine the fair value of right-of-use assets and liabilities for the Company's leases, and (vii) the assumptions used to determine the fair value of convertible debt instruments and related equity-classified conversion option. These estimates are based on historical data and experience, as well as various other factors that management believes to be 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. The Company has engaged and may, in the future, engage third-party valuation specialists to assist with estimates related to the valuation of assets and liabilities acquired. Such estimates often require the selection of appropriate valuation methodologies and models, and significant judgment in evaluating ranges of assumptions and financial inputs. Actual results may differ from those estimates under different assumptions or circumstances.

(d) Revenue Recognition

The Company evaluates its contractual arrangements to determine the performance obligations and transaction prices. Revenue is allocated to each performance obligation and recognized when the related performance obligation is satisfied. Shipping and handling costs associated with outbound freight after control over a product has transferred to a

customer are accounted for as a fulfillment cost and are included in cost of revenue. See Note 3 for additional detail about the Company's products and service lines.

(e) Cost of Product Revenue (exclusive of depreciation and amortization)

Cost of product revenue includes all costs directly related to the fulfillment and distribution of prescription drugs as part of the Company's CareVention HealthCare offerings. Costs consist primarily of the purchase price of the prescription drugs the Company dispenses, expenses to package, dispense, and distribute prescription drugs, expenses associated with the Company's prescription fulfillment centers, including employment costs and stock-based compensation, and expenses related to the hosting of the Company's technology platform. Such costs also include direct overhead expenses, as well as allocated miscellaneous overhead costs. The Company allocates miscellaneous overhead costs among functions based on employee headcount.

(f) Cost of Service Revenue (exclusive of depreciation and amortization)

Cost of service revenue includes all costs directly related to servicing the Company's CareVention HealthCare and MedWise HealthCare service contracts, which primarily consist of labor costs, including stock-based compensation, outside contractors, and expenses related to supporting the Company's software platforms. Cost of service revenue also includes direct overhead expenses, as well as allocated indirect overhead costs. The Company allocates indirect overhead costs among functions based on employee headcount.

(g) Research and Development

Research and development expenses consist primarily of salaries and related costs, including stock-based compensation expense, for personnel in the Company's research and development functions. This personnel includes software engineers and employees engaged in scientific research, healthcare analytics, the design and development of new scientific algorithms, and the enhancement of the Company's software and technology platforms. Research and development expenses also include costs for the design and development of new software and technology to support our service offerings, including fees paid to third-party consultants, costs related to quality assurance and testing, and other allocated facility-related overhead and expenses. Costs incurred in research and development are charged to expense as incurred.

(h) Stock-Based Compensation

The Company accounts for stock-based awards granted to employees and directors in accordance with ASC Topic 718, *Compensation — Stock Compensation*, which requires that compensation cost be recognized for awards based on the grant-date fair value of the award. That cost is recognized on a straight-line basis over the period during which an employee, director or non-employee is required to provide service in exchange for the award — the requisite service period ("vesting period"). The grant-date fair value of employee and director stock-based awards is determined using the Black-Scholes option-pricing model.

The Company classifies stock-based compensation expense in its statement of operations in the same manner in which the award recipient's payroll costs or recipient's service payments are classified.

The fair value of each stock option is estimated on the grant date using the Black-Scholes option-pricing model. The Company was a private company until its common stock commenced public trading on September 29, 2016, as such company-specific historical and implied volatility information is limited. Therefore, the Company estimates its expected stock volatility based on the combination of the historical volatility of a publicly traded set of peer companies and the historical volatility of its own traded stock price, and expects to continue to do so until such time that it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company's stock options has been determined utilizing the "simplified" method. The expected term of the stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term

of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The option price per share cannot be less than the fair market value of a share on the date the option was granted, and in the case of incentive stock options granted to an employee owning more than 10% of the total combined voting power of all classes of stock of the Company, the option price shall not be less than 110% of the fair market value of Company stock on the date of grant. Stock option grants under the 2016 Plan generally expire 10 years from the date of grant, other than incentive stock option grants to 10% shareholders, which have a 5 year term, 90 days after termination, or one year after the date of death or termination due to disability. Stock options generally vest over a period of four years, with 25% of the options becoming exercisable on the one-year anniversary of the commencement date and the remaining shares vesting monthly thereafter for 36 months in equal installments of 2.08% per month.

(i) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment date. Valuation allowances are provided when necessary to reduce deferred tax assets to the amount expected to be realized.

(j) Net Loss per Share

Basic and diluted net loss per share is computed by dividing net loss by the weighted average number of shares of common stock of the Company outstanding during the period.

(k) Cash

Cash as of December 31, 2020 and 2019 consists of cash on deposit with banks. The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. The Company did not have any cash equivalents as of December 31, 2020 and 2019.

(l) Restricted Cash

Cash and cash equivalents that are restricted as to withdrawal or use under certain contractual agreements are recorded in restricted cash on the Company’s consolidated balance sheets. As part of the Company’s third party administrative services under the CareVention HealthCare segment, the Company holds funds on behalf of its clients. These amounts are recorded as restricted cash with an offsetting liability recorded in accrued expenses and other liabilities on the Company’s consolidated balance sheets.

(m) Accounts Receivable, net

Accounts receivable are recorded at the invoiced amount and do not bear interest. The Company maintains an allowance for doubtful accounts for estimated losses inherent in its accounts receivable portfolio. In establishing the required allowance, management estimates the expected lifetime credit losses on the Company’s trade receivables and contract assets using a broad range of reasonable and supportable information, which includes consideration of historical losses and current market conditions on the Company’s clients. The Company reviews its allowance for doubtful accounts monthly. The allowance for doubtful accounts was $224 and $386 as of December 31, 2020 and 2019, respectively.

(n) Inventories

Inventories consist of prescription medications and are stated at the lower of cost and net realizable value. Cost is determined using the first-in, first-out method.

(o) Client Claims Receivable and Client Claims Payable

In conjunction with providing pharmacy benefit management ("PBM") solutions for its clients, the Company collects payments for claims from its clients and remits them to the pharmacies that fulfilled the claims. Client claims receivable represents amounts invoiced to the Company's PBM solutions clients for the adjudicated claims of the clients' members' claims. Client claims payable represents amounts owed to the pharmacies that fulfilled the clients' member claims.

(p) Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, current operating lease liabilities, and noncurrent operating lease liabilities in the consolidated balance sheets. Finance leases are included in property and equipment, net, current portion of long-term debt and finance leases, and long-term debt and finance leases, net, in the consolidated balance sheets. ROU assets represent the Company's right to use an underlying asset for the lease term, and lease liabilities represent the Company's obligation to make lease payments arising from the lease.

ROU assets and liabilities are recognized at the lease commencement date based on the estimated net present value of lease payments over the lease term. As the rate implicit in the lease is not readily determinable for most leases, the Company uses its incremental borrowing rate in determining the net present value of lease payments. The Company estimates its incremental borrowing rate for each lease as of the measurement date with consideration of the risk-free rate for varying maturities corresponding to the remaining lease term, the risk premium attributed to the Company's credit rating for a secured or collateralized instrument, and comparable borrowings of similarly-rated companies.

Leases with an initial term of 12 months or less are not recorded on the balance sheet. The lease expense for short-term leases is recognized on a straight-line basis over the lease term. Many leases include options to renew, with the exercise of lease renewal options at the Company's sole discretion. The lease terms that include options to renew the lease require such renewal to be included when it is reasonably certain that the Company will exercise such option. The depreciable life of finance lease assets and leasehold improvements is limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise.

The Company's lease agreements do not contain any residual value guarantees. The Company has elected to include both lease and nonlease components as a single lease component for its operating leases.

(q) Property and Equipment, net

Property and equipment are stated at cost less accumulated depreciation. Additions or improvements that increase the useful life of existing assets are capitalized, while expenditures for repairs and maintenance that do not improve or extend the lives of the respective assets are charged to expense as incurred. Depreciation is recognized using the straight-line method over the estimated useful lives of the assets. The Company depreciates computer hardware and purchased software over a life of three years and office furniture and equipment over a life of five years. Leasehold improvements are amortized over the shorter of the estimated useful life of the asset or the lease term. Property and equipment under capital leases are amortized over the shorter of the lease term or the estimated useful life of the asset. Upon retirement or sale, the cost and related accumulated depreciation of assets disposed of are removed from the accounts and any resulting gain or loss is included in the consolidated statements of operations.

(r) Software Development Costs, net

Certain development costs of the Company's internal-use software are capitalized in accordance with ASC Topic 350, *Intangibles — Goodwill and Other* ("ASC 350"), which outlines the stages of computer software development and specifies when capitalization of costs is required. The Company capitalizes certain costs incurred in connection with obtaining or developing the proprietary platforms that support the Company's product and service contracts. These costs include third-party contractors and payroll costs for employees directly involved with the software development. Projects that are determined to be in the development stage are capitalized. Subsequent additions, modifications, or upgrades to internal-use software are capitalized to the extent that they allow the software to perform tasks it previously did not perform. Capitalized software costs are amortized beginning when the software project is substantially complete and the asset is ready for its intended use. Capitalized internal-use software costs are amortized using the straight-line method over the remaining estimated useful life of the assets, which is generally three years. Costs incurred in the preliminary project stage and post-implementation stage, as well as maintenance and training costs, are expensed as incurred.

(s) Goodwill

Goodwill consists of the excess purchase price over fair value of net tangible and intangible assets acquired. Goodwill is not amortized, but instead tested for impairment at least annually. Goodwill is assessed for impairment on October 1st of each year or more frequently if events or changes in circumstances indicate that the asset might be impaired. The Company evaluates goodwill in accordance with ASU No. 2017-04, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*, which requires the Company to perform its goodwill impairment assessment by comparing the fair value of its reporting units with their respective carrying values.

Prior to performing the quantitative assessment, the Company has the option to perform a qualitative assessment to determine whether it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount. Factors generally considered in the Company's qualitative assessment that could trigger a quantitative assessment include significant underperformance relative to expected operating trends, significant changes in the way assets are used, underutilization of the Company's tangible assets, discontinuance of certain products by the Company or by the Company's clients, changes in the competitive environment, and significant negative industry or economic trends. If the Company determines that it is more-likely-than-not that the fair value of a reporting unit is below the carrying amount, a quantitative goodwill impairment test is required. In the quantitative assessment, the fair value of the reporting unit is determined using a discounted cash flow analysis and compared to its carrying amount. If the fair value of the reporting unit is greater than its carrying amount, then the carrying amount is deemed to be recoverable and no further action is required. If the fair value of the reporting unit is less than its carrying amount, then an indication of goodwill impairment exists for the reporting unit and an impairment loss is recognized in the amount by which the carrying amount exceeds the reporting unit's fair value, and a charge is recorded on the Company's consolidated statements of operations.

For the year ended December 31, 2020, 2019, and 2018, the Company performed a qualitative assessment of goodwill and determined that it is not more-likely-than-not that the fair value of its reporting units is less than the carrying amount. Accordingly, no impairment loss was recorded for the years ended December 31, 2020, 2019, or 2018.

(t) Impairment of Long-Lived Assets Including Other Intangible Assets

Long-lived assets consist of property and equipment, software development costs, and definite-lived intangible assets. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset are less than its carrying amount. The impairment loss would be based on the

excess of the carrying value of the impaired asset over its fair value, determined based on discounted cash flows. For the year ended December 2020, the Company recorded an impairment charge of $5,040 related to certain definite-lived intangible assets obtained from the Medliance acquisition in 2014. The Company did not record any impairment losses on long-lived assets for the years ended December 31, 2019 and 2018. See Note 10 - Goodwill and Intangible Assets for additional information.

(u) Deferred Debt Financing Costs

Costs related to obtaining debt financing are capitalized and amortized to interest expense over the term of the related debt using the effective-interest method. If debt is prepaid or retired early, the related unamortized deferred financing costs are written off in the period the debt is retired.

(v) Contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. Legal fees and other expenses related to litigation are expensed as incurred and included in general and administrative expenses in the consolidated statements of operations.

(w) Shipping and Handling Costs

Shipping and handling costs are charged to cost of product revenue when incurred. Shipping and handling costs totaled $8,443, $6,342, and $4,708 for the years ended December 31, 2020, 2019, and 2018, respectively.

(x) Advertising Costs

Advertising costs are charged to operations when the advertising first takes place. The Company incurred advertising expense of $368, $469 and $184 for the years ended December 31, 2020, 2019, and 2018, respectively, which is included in sales and marketing expense.

(y) Business Combinations

The costs of business combinations are allocated to the assets acquired and liabilities assumed, in each case based on estimates of their respective fair values at the acquisition dates, using the purchase method of accounting. Fair values of intangible assets are estimated by valuation models prepared by management and third-party specialists. The assets purchased and liabilities assumed have been reflected in the Company's consolidated balance sheets, and the results are included in the consolidated statements of operations and consolidated statements of cash flows from the date of acquisition. Acquisition-related contingent consideration that is classified as a liability is measured at fair value at the acquisition date with changes in fair value after the acquisition date affecting earnings in the period of the estimated fair value change. Acquisition-related transaction costs, including legal and accounting fees and other external costs directly related to the acquisition, are recognized separately from the acquisition and expensed as incurred in general and administrative expenses in the consolidated statements of operations. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates, or actual results.

(z) Segment Data

The Company operates its business through two segments for the purposes of assessing performance and making operating decisions. The Company's chief operating decision maker (“CODM”), the Chief Executive Officer, allocates resources and assesses performance based upon financial information at the reportable segment level. Substantially all revenues are generated and substantially all tangible assets are held in the U.S. See Note 20 for a discussion of the Company’s reportable segments.

(aa) Concentration of Credit Risk

The Company's medication fulfillment services clients are sponsors of the federal Medicare Part D plan (prescription drug coverage plan) and, therefore, subject to the reporting requirements established by the Centers for Medicaid and Medicare Services ("CMS"). Under CMS guidelines, Medicare Part D sponsors are required to remit payment for claims within 14 calendar days of the date on which an electronic claim is received and within 30 calendar days of the date on which non-electronically submitted claims are received. The Company extends credit to clients based upon such terms, as well as management's evaluation of creditworthiness, and generally collateral is not required.

The Company’s clients also include health plans, pharmacies, and other healthcare providers. Credit associated with these accounts is extended based upon management’s evaluation of creditworthiness and is monitored on an on-going basis.

As of December 31, 2020, no single client represented more than 10% of net accounts receivable. As of December 31, 2019, one client represented 15% of net accounts receivable.

For the years ended December 31, 2020, 2019, and 2018, one client accounted for 12%, 13% and 14% of total revenue, respectively.

(bb) Fair Value of Financial Instruments

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

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

Level 2 — Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities or other inputs that are observable or can be corroborated by observable market.

Level 3 — Unobservable inputs which are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The fair value hierarchy also requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

(cc) Recent Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* and, thereafter, has subsequently provided updates and improvements (as so updated and improved, “ASU 2016-02”). The new standard establishes a ROU model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases are classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. ASU 2016-02 was effective for annual periods beginning after December 15, 2018, including interim periods within those annual periods, with early adoption permitted. In July 2018, the FASB issued ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements* (“ASU 2018-11”), which provided an additional modified transition method by which entities may elect to initially apply the transition requirements in ASU 2016-02 at the effective date with the effects of initial application recognized as a cumulative effect adjustment to the opening balance of retained earnings in the period of adoption, and without retrospective application to any comparative

prior periods presented. The Company adopted ASU 2016-02 on January 1, 2019 using the modified transition method permitted by ASU 2018-11.

The Company elected the package of practical expedients permitted under the transition guidance, which permits the Company to carry forward its prior conclusions about lease identification, lease classification, and initial direct costs, but did not elect the hindsight practical expedient. ROU assets and liabilities for the Company's existing leases were recognized on January 1, 2019 based on the estimated net present value of lease payments over the remaining lease term. The adoption of ASU 2016-02 resulted in the recording of lease assets and lease liabilities of $18,469 and $21,173, respectively, as of January 1, 2019. The standard had no impact on the Company's opening balance of accumulated deficit, consolidated net operations or cash flows. See Note 8 for additional information on the Company's leases.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments*, and thereafter, has subsequently provided updates and improvements (as so updated and improved, "ASU 2016-13"). ASU 2016-13 requires entities to estimate expected lifetime credit losses on financial assets including (1) loans, accounts receivable, trade receivables, and other financial assets measured at amortized cost, (2) loan commitments and certain other off-balance-sheet credit exposures, (3) debt securities and other financial assets measured at fair value through other comprehensive income, and (4) beneficial interests in securitized financial assets. ASU 2016-13 is effective for financial statements issued for fiscal years beginning after December 15, 2019. The Company adopted ASU 2016-13 on January 1, 2020 using the prospective transition method. The implementation of this guidance requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates on the Company's trade receivables and contract assets. The adoption of ASU 2016-13 did not have a material impact on the Company's consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"). ASU 2017-04 simplifies the accounting for goodwill impairment by eliminating the requirement to calculate the implied fair value of goodwill to measure an impairment charge. Instead, entities will be required to record an impairment charge based on the excess of a reporting unit's carrying value over its fair value. ASU 2017-04 is effective for financial statements issued for fiscal years beginning after December 15, 2019 and early adoption is permitted. The Company adopted ASU 2017-04 on January 1, 2020. The adoption of ASU 2017-04 did not have a material effect on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). ASU 2018-13 updates the disclosure requirements for fair value measurements and is effective for financial statements issued for fiscal years beginning after December 15, 2019. The Company adopted ASU 2018-13 on January 1, 2020. The adoption of ASU 2018-13 did not have a material impact on the Company's consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"*).* ASU 2019-12 simplifies the accounting for income taxes by removing certain exceptions and improving the application of existing guidance. The provisions of this guidance (except as specifically mentioned within ASU 2019-12) are to be applied prospectively upon their effective date. The Company early adopted ASU 2019-12 effective October 1, 2020 and the adoption of ASU 2019-12 did not have a material impact on the Company's consolidated financial statements.

In August 2020, the FASB issued ASU No. 2020-06, *Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40)* ("ASU 2020-06"). ASU 2020-06 provides new guidance to simplify the accounting for convertible instruments by eliminating the cash conversion model. As compared with the current accounting standards, more convertible debt instruments will be reported as a single liability instrument and the interest rate of more convertible debt instruments will be closer to the coupon interest rate. ASU 2020-06 also aligns the consistency of diluted earnings per share calculations for convertible instruments by requiring that (1) an entity use the if-converted method and (2) share settlement be included in the diluted earnings per share calculation for both convertible instruments and equity contracts when those contracts include an

option of cash settlement or share settlement. The treasury stock method will no longer be permitted. ASU 2020-06 is effective for financial statements issued for fiscal years beginning after December 15, 2021 and early adoption is permitted.

Under ASC 470-20 *Debt with Conversion and Other Options* ("ASC 470-20"), the Company separately accounted for the liability and equity components of its 1.75% convertible senior subordinated notes (the "2026 Notes"), which may be settled entirely or partly in cash upon conversion. The equity component was required to be included in the additional paid-in capital section of stockholders' equity on the Company's consolidated balance sheet, and the value of the equity component was treated as original issue discount for purposes of accounting for the debt component of the 2026 Notes. As a result, the Company is currently required to record a greater amount of non-cash interest expense in current periods presented related to the amortization of the discounted carrying value of the 2026 Notes to their face amount over the term of the 2026 Notes. Because the Company intends to settle the 2026 Notes entirely or partly in cash, the Company currently uses the treasury stock method when calculating their potential dilutive effect, if any. See Note 13 for further details on the 2026 Notes.

ASU 2020-06 allows adoption through either a modified retrospective method or fully retrospective method of transition. In applying the modified retrospective transition method, the cumulative effect of the accounting change should be recognized as an adjustment to the opening balance of retained earnings at the date of adoption. For the full retrospective method, the cumulative effect of the accounting change should be recognized as an adjustment to the opening balance of retained earnings in the first comparative period presented. The Company expects to early adopt ASU 2020-06 effective January 1, 2020, and is currently evaluating which transition method to use. Upon adoption, the Company expects a decrease to additional paid-in capital, an increase to the carrying value of its convertible notes and a decrease in accumulated deficit. After adoption, the Company expects a reduction in its reported interest expense. Additionally, the Company expects the use of the if-converted method for calculating diluted earnings per share will result in an increase in weighted-average shares outstanding.

3. Revenue

The Company generates revenue from its CareVention HealthCare and MedWise HealthCare segments. See Note 20 for additional discussion of the Company's reportable segments.

Client contracts generally have a term of one to five years and generally renew at the end of the initial term. In most cases, clients may terminate their contracts with a notice period ranging from 0 to 180 days without cause, thereby limiting the term in which the Company has enforceable rights and obligations. Revenue is recognized in an amount that reflects the consideration that is expected in exchange for the goods or services provided. Generally, there are not significant differences between the timing of revenue recognition and billing. Consequently, the Company has determined that client contracts do not include a financing component.

The Company does not disclose the amount of variable consideration that the Company expects to recognize in future periods as the variable consideration in the Company's contracts is allocated entirely to a wholly unsatisfied performance obligation or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of single performance obligation, and the terms of that variable consideration relate specifically to the Company's efforts to transfer the distinct service, or to a specific outcome from transferring the distinct service. The Company's contracts primarily include monthly fees associated with unspecified membership, claims, or medication safety reviews that fluctuate throughout the contract. See below for a description of the Company's revenues by segment.

CareVention HealthCare

PACE Product Revenue

The Company provides medication fulfillment pharmacy services to PACE, and, while the majority of medications are routinely filled in order to treat chronic conditions, the mix and quantity of medications can vary. Revenue from medication fulfillment services is generally billed monthly or weekly, depending on whether the PACE organization is contracted with a pharmacy benefit manager, and recognized when medications are delivered and control has passed to the client. At the time of delivery, the Company has performed substantially all of its performance obligations under its client contracts. The Company does not experience a significant level of returns or reshipments.

PACE Solutions

The Company provides medication safety services and health plan management services to PACE organizations. These services include risk adjustment services, third party administration services, PBM solutions, and electronic health records software. Revenue related to these services primarily consists of a fixed monthly fee assessed based on number of members served, or per member per month, a fee for each claim adjudicated, and subscription fees. These fees are recognized when the Company satisfies its performance obligation to stand ready to provide PACE services, which occurs when the Company's clients have access to the PACE services. The Company generally bills for PACE services on a monthly basis.

MedWise HealthCare

Product Revenue

The Company provides COVID-19 test kits to pharmacies and other clients. Revenue from the sale of these products is generally billed when test kits are shipped and is recognized as the Company satisfies its performance obligations to deliver the test kits and provide the test results. The Company does not experience a significant level of returns or reshipments.

Medication Safety Services

The Company provides medication safety services, which include identification of high-risk individuals, medication regimen reviews including patient and prescriber counseling, and targeted interventions to increase adherence and close gaps in care. Revenue related to these services primarily consists of per member per month fees and fees for each medication review and assessment completed. Revenue is recognized when the Company satisfies its performance obligation to stand ready to provide medication safety services, which occurs when the Company's clients have access to the medication safety services, and when medication reviews and assessments are completed. The Company generally bills for the medication safety services on a monthly basis.

Software Subscription and Services

The Company provides software as a service ("SaaS") solutions, which allow for the identification of individuals with high medication-related risk, for patient communication and engagement, for documentation of clinical interventions, for optimizing medication therapy, for targeting adherence improvement, and for precision dosing. Revenues related to these software services primarily consist of monthly subscription fees and are recognized monthly as the Company meets its performance obligation to provide access to the software. Revenue for implementation and set up services is generally recognized over the contract term as the software services are provided. The Company generally bills for the software services on a monthly basis.

(Amounts in thousands, except share and per share data)

Disaggregation of Revenue

In the following table, revenue is disaggregated by reportable segment. Substantially all of the Company's revenue is recognized in the U.S. and substantially all of the Company's assets are located in the U.S.

	Year Ended December 31,		
	2020	2019	2018
CareVention HealthCare:			
PACE product revenue	$ 158,692	$ 137,130	$ 112,760
PACE solutions	47,577	45,908	25,448
	$ 206,269	$ 183,038	$ 138,208
MedWise HealthCare:			
Product revenue	$ 901	$ —	$ —
Medication safety services	49,863	69,917	60,956
Software subscription and services	40,186	31,752	5,106
	$ 90,950	$ 101,669	$ 66,062
Total revenue	$ 297,219	$ 284,707	$ 204,270

Contract balances

Assets and liabilities related to the Company's contracts are reported on a contract-by-contract basis at the end of each reporting period. Contract balances consist of contract assets and contract liabilities. Contract assets are recorded when the right to consideration for services is conditional on something other than the passage of time. Contract assets relating to unbilled receivables are transferred to accounts receivable when the right to consideration becomes unconditional. Contract assets are classified as current or non-current based on the timing of the Company's rights to the unconditional payments. Contract assets are generally classified as current and recorded within other current assets on the Company's consolidated balance sheets.

Contract liabilities include advance customer payments and billings in excess of revenue recognized. The Company generally classifies contract liabilities in accrued expenses and other current liabilities and in other long-term liabilities on the Company's consolidated balance sheets. The Company anticipates that it will satisfy most of its performance obligations associated with its contract liabilities within one year.

The following table provides information about the Company's contract assets and contract liabilities from contracts with clients as of December 31, 2020 and 2019.

	December 31, 2020	December 31, 2019
Contract assets	$ 7,601	$ 6,165
Contract liabilities	3,876	4,930

(Amounts in thousands, except share and per share data)

Significant changes in the contract assets and the contract liabilities balances during the years ended December 31, 2020 and 2019 are as follows:

	December 31, 2020	December 31, 2019
Contract assets:		
Contract assets, beginning of year	$ 6,165	$ 3,075
Decreases due to cash received	(4,523)	(4,958)
Changes to the contract assets at the beginning of the year as a result of changes in estimates	518	1,613
Changes during the year, net of reclassifications to receivables	(268)	6,435
Increases due to business combination	5,709	—
Contract assets, end of year	$ 7,601	$ 6,165
Contract liabilities:		
Contract liabilities, beginning of year	$ 4,930	$ 1,733
Revenue recognized that was included in the contract liabilities balance at the beginning of the year	(3,912)	(1,533)
Increases due to cash received, excluding amounts recognized as revenue during the year	2,858	2,969
Increases due to business combinations, excluding amounts recognized as revenue during the year	—	1,761
Contract liabilities, end of year	$ 3,876	$ 4,930

4. Net Loss per Share

The following table presents the calculation of basic and diluted net loss per share for the Company's common stock:

	Year Ended December 31,		
	2020	2019	2018
Numerator (basic and diluted):			
Net loss	$ (80,966)	$ (32,436)	$ (47,269)
Denominator (basic and diluted):			
Weighted average shares of common stock outstanding, basic and diluted	21,815,388	20,622,258	19,098,294
Net loss per share, basic and diluted	$ (3.71)	$ (1.57)	$ (2.48)

The following potential common shares, presented based on amounts outstanding as of December 31, 2020, 2019, and 2018, were excluded from the calculation of diluted net loss per share for the years ended December 31, 2020, 2019, and 2018 because including them would have had an anti-dilutive effect:

	Year Ended December 31,		
	2020	2019	2018
Stock options to purchase common stock	2,096,556	2,755,343	2,490,114
Unvested restricted stock	1,386,908	1,213,581	1,070,061
Common stock warrants	4,646,393	4,646,393	—
Contingently issuable shares	—	57,651	—
	8,129,857	8,672,968	3,560,175

Shares of common stock associated with the potential conversion of the Company's convertible senior subordinated notes have been excluded from the table above.

(Amounts in thousands, except share and per share data)

5. Acquisitions

2020 Acquisitions

Personica

On October 5, 2020, the Company entered into a Membership Interest Purchase Agreement (the "Purchase Agreement") with TRHC Group, Personica Holdings, Inc., a Wisconsin corporation, and other seller parties, whereby the Company completed the acquisition of all the issued and outstanding membership interests of Personica, LLC, a Delaware limited liability company ("Personica"), and its subsidiaries, a provider of PBM solutions and pharmacy services, including 340B and Medicare Part D administration solutions to the PACE market. The purchase price consisted of (i) cash consideration of $10,000, which is subject to certain customary post-closing adjustments, (ii) the issuance of 555,555 shares of the Company's common stock valued at $23,589, and (iii) the delivery of promissory notes (collectively, the "Notes") for the payment of (a) $7,500 in cash, which was paid in January 2021, (b) $5,500 in cash within two business days following April 1, 2021, and (c) $4,000 in cash within two business days following October 5, 2021. The Company may set off amounts due under the Notes to the extent the Company is entitled to indemnification under the Purchase Agreement or in respect of adjustments to the purchase price.

In connection with the acquisition of Personica, the Company incurred direct acquisition costs of $794 during the year ended December 31, 2020, which were recorded in general and administrative expenses in the consolidated statement of operations.

The following table summarizes the purchase price consideration based on the estimated acquisition-date fair value of the acquisition consideration:

Cash consideration at closing, including post-closing adjustments	$	10,469
Promissory notes at closing, at fair value		16,355
Stock consideration at closing		23,589
Total fair value of acquisition consideration	$	50,413

The following table summarizes the preliminary allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition.

Cash	$	3,662
Accounts receivable		945
Inventories		322
Client claims receivable		8,737
Prepaid expenses and other current assets		3,514
Property and equipment		665
Operating lease right-of-use assets		645
Other assets		15
Trade names		700
Client relationships		28,300
Non-competition agreements		290
Goodwill		20,102
Total assets acquired	$	67,897
Client claims payable		(8,022)
Accrued expenses and other liabilities		(8,519)
Trade accounts payable		(310)
Operating lease liabilities		(633)
Total purchase price	$	50,413

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included trade names, client relationships, and non-competition agreements, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 5.6, 12.0, and 5.0 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 11.8 years.

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of Personica and the promissory notes issued. The fair values of the trade names were estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of Personica. The fair value of client relationships was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with each client grouping. The fair value of the non-competition agreements was estimated using the discounted earnings method by estimating the potential loss of earnings absent the non-competition agreements, assuming the covenantor competes at different time periods during the life of the agreements. The fair values of the promissory notes were estimated using market interest rates for similar terms.

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is deductible for U.S. income tax purposes.

The Company believes the goodwill related to the acquisition was a result of providing the Company complementary service offerings that will enable the Company to leverage its services with existing and new clients. The goodwill is deductible for income tax purposes.

Revenue from Personica includes medication fulfillment pharmacy services to PACE organizations. Revenue for these services, and the related costs, is recognized when medications are delivered and control has passed to the client, and is included in product revenue and cost of revenue – product cost, respectively, in the Company’s consolidated statements of operations. For the year ended December 31, 2020, product revenue of $1,804 was included in the Company’s consolidated statement of operations. Revenue from Personica is also comprised of monthly fees per adjudicated claim for PBM solutions. Revenue for these services, and the related costs, is recognized each month as performance obligations are satisfied and costs are incurred, and is included in service revenue and cost of revenue – service cost, respectively, in the Company’s consolidated statements of operations. For the year ended December 31, 2020, service revenue of $1,738 from Personica was included in the Company’s consolidated statement of operations. Net loss of $5, which includes amortization of $625 associated with acquired intangible assets, from Personica was included in the Company’s consolidated statement of operations for the year ended December 31, 2020.

(Amounts in thousands, except share and per share data)

The Company continues to evaluate the fair value of certain assets acquired and liabilities assumed related to the acquisition. Additional information, which existed as of the acquisition date, but was at that time unknown to the Company, may become known during the remainder of the measurement period. Changes to amounts recorded as a result of the final determination may result in a corresponding adjustment to these assets and liabilities, including goodwill. The determination of the estimated fair values of all assets acquired is expected to be completed within one year from the date of acquisition.

2019 Acquisitions

PrescribeWellness

On March 5, 2019, the Company entered into, and consummated the transactions contemplated by, a Merger Agreement ("Merger Agreement") with Prescribe Wellness, LLC, a Nevada limited liability company ("PrescribeWellness") and Fortis Advisors LLC, a Delaware limited liability company, solely in its capacity as the initial Holder Representative. PrescribeWellness was a leading cloud-based patient engagement solutions company that facilitated collaboration between more than 12,000 pharmacies with patients, payers, providers, and pharmaceutical companies. The Company paid $150,000 in cash consideration upon closing, subject to certain customary adjustments as set forth in the Merger Agreement.

In connection with the acquisition of PrescribeWellness, the Company incurred direct acquisition costs of $3,243 during the year ended December 31, 2019, which were recorded in general and administrative expenses in the consolidated statement of operations.

The fair value of the acquisition consideration, net of post-closing adjustments, was $148,626 paid in cash.

The following table summarizes the final allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition.

Accounts receivable	$	2,608
Prepaid expenses and other current assets		1,345
Property and equipment		1,155
Operating lease right-of-use-assets		1,515
Trade name		4,100
Developed technology		20,000
Patient database		21,700
Client relationships		74,100
Goodwill		30,714
Total assets acquired	$	157,237
Operating lease liabilities		(1,515)
Trade accounts payable		(1,733)
Accrued expenses and other liabilities		(5,363)
Total purchase price	$	148,626

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included a trade name, developed technology, patient database, and client relationships, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 5, 10, 5, and 14 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 11.4 years.

(Amounts in thousands, except share and per share data)

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of PrescribeWellness. The fair value of the trade name and developed technology was estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of PrescribeWellness. The fair value of the patient database was estimated using a cost to replace method. The fair value of client relationships was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with each client grouping.

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is deductible for U.S. income tax purposes.

The Company believes the goodwill related to the acquisition of PrescribeWellness resulted from the establishment of new market opportunities while at the same time expanding its service offering to its existing customer base. The goodwill is deductible for income tax purposes.

Revenue from PrescribeWellness is primarily comprised of subscription fees for its cloud-based patient engagement solutions. Revenue for these services, and the related costs, is recognized each month as performance obligations are satisfied and costs are incurred, and is included in service revenue and cost of revenue – service cost, respectively, in the Company's consolidated statements of operations. For the year ended December 31, 2019, service revenue of $26,832 from PrescribeWellness was included in the Company's consolidated statement of operations. Service revenue was recorded net of a reduction of $1,656 for the year ended December 31, 2019, due to the purchase accounting effects of recording deferred revenue at fair value. Net loss of $9,047, which includes amortization of $10,377 associated with acquired intangible assets, from PrescribeWellness was included in the Company's consolidated statement of operations for the year ended December 31, 2019.

DoseMe

On January 2, 2019, the Company completed the acquisition of all of the outstanding share capital and options to purchase the share capital of DoseMe Holdings Pty Ltd, a proprietary company limited by shares organized under the Laws of Australia ("DoseMe"). DoseMe is the developer of DoseMeRx, an advanced precision dosing tool to help clinicians more accurately dose patients' high-risk parenteral (intravenous) medications. The acquisition was made pursuant to a Share Purchase Deed, made and entered into as of November 30, 2018. The consideration for the acquisition was comprised of (i) cash consideration of up to $10,000 paid at closing, subject to certain customary post-closing adjustments as set forth in the Share Purchase Deed, (ii) the issuance of 149,053 shares of the Company's common stock, and (iii) the potential for a contingent earn out payment of up to $10,000, based on the financial performance of DoseMe. During the third quarter of 2019, the Company elected to accelerate the final payment of the contingent earn-out payment and paid $8,750 in cash in full satisfaction of the contingent purchase price consideration.

In connection with the acquisition of DoseMe, the Company incurred direct acquisition costs of $104 and $689 during the years ended December 31, 2019 and 2018, respectively, which were recorded in general and administrative expenses in the consolidated statements of operations.

The following table summarizes the purchase price consideration based on the estimated acquisition-date fair value of the acquisition consideration.

Cash consideration at closing, net of post-closing adjustments	$	10,136
Stock consideration at closing		9,504
Estimated fair value of contingent consideration		8,720
Total fair value of acquisition consideration	$	28,360

(Amounts in thousands, except share and per share data)

The following table summarizes the final allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition:

Accounts receivable	$	9
Prepaid expenses and other current assets		110
Trade name		89
Developed technology		16,200
Non-competition agreements		500
Goodwill		11,835
Total assets acquired	$	28,743
Trade accounts payable		(17)
Accrued expenses and other liabilities		(366)
Total purchase price, including contingent consideration of $8,720	$	28,360

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included a trade name, developed technology and non-competition agreements, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 4, 7.5 and 5 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 7.4 years.

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of DoseMe. The fair value of the trade name was estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of DoseMe. The fair value of the developed technology was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with the economic return on contributory assets and estimated revenues generated. The fair value of the non-competition agreements was estimated using the discounted earnings method by estimating the potential loss of earnings absent the non-competition agreements, assuming the covenantor competes at different time periods during the life of the agreements. See Note 17 for additional discussion of the fair value assessment of the acquisition-related contingent consideration.

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is deductible for U.S. income tax purposes.

The Company believes the goodwill related to the acquisition of DoseMe resulted from gaining a complementary capability that, when combined with the Company's existing platform, will create significant market opportunity. The goodwill is deductible for U.S. income tax purposes.

Revenue from DoseMe is primarily comprised of subscription and license fees for use of DoseMe's advanced precision dosing software. Revenue for these services, and the related costs, is recognized each month as performance obligations are satisfied and costs are incurred, and is included in service revenue and cost of revenue – service cost, respectively, in the Company's consolidated statements of operations. For the year ended December 31, 2019, service revenue of $336 from DoseMe was included in the Company's consolidated statements of operations. Net loss of $4,250, which includes amortization of $2,282 associated with acquired intangible assets, from DoseMe was included in the Company's consolidated statement of operations for the year ended December 31, 2019.

(Amounts in thousands, except share and per share data)

2018 Acquisitions

Cognify

On October 19, 2018, the Company entered into and consummated the transactions contemplated by a Stock Purchase Agreement with each stockholder of Cognify, Inc., ("Cognify"), and Mace Wolf, solely in his capacity as the Sellers' Representative, to acquire all of the issued and outstanding capital stock of Cognify. Cognify was a provider of electronic health record solutions in the PACE market and to managed long-term care and medical home providers. The consideration for the acquisition was comprised of (i) $10,823 in cash paid upon closing, subject to certain customary post-closing adjustments, upon the terms and subject to the conditions contained in the purchase agreement; (ii) the issuance of 93,579 shares of the Company's common stock; and (iii) contingent purchase price consideration to be paid 50% in cash and 50% in the Company's common stock. The stock consideration issued at the closing of the acquisition had an acquisition-date fair value of $7,477 based on the closing trading price on October 19, 2018.

In connection with the acquisition of Cognify, the Company incurred direct acquisition and integration costs of $346 during the year ended December 31, 2018, which were recorded in general and administrative expenses in the consolidated statements of operations.

The Company, with the assistance of a third-party appraiser, utilized a Monte Carlo simulation to determine the estimated acquisition-date fair value of the acquisition-related contingent consideration of $8,100. The fair value measurement was based on significant inputs not observable in the market and thus represents a Level 3 measurement within the fair value hierarchy. See Note 17 for additional discussion of the fair value assessment of the acquisition-related contingent consideration.

The following table summarizes the purchase price consideration based on the estimated acquisition-date fair value of the acquisition consideration:

Cash consideration at closing, net of post-closing adjustments	$	10,231
Stock consideration at closing		7,477
Estimated fair value of contingent consideration		8,100
Total fair value of acquisition consideration	$	25,808

The following table summarizes the final allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition:

Accounts receivable	$	520
Prepaid expenses and other current assets		12
Property and equipment		153
Trade name		130
Developed technology		2,100
Client relationships		9,400
Goodwill		16,982
Total assets acquired	$	29,297
Accrued expenses and other liabilities		(515)
Deferred income tax liability, net		(2,974)
Total purchase price, including contingent consideration of $8,100	$	25,808

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included a trade name, developed technology, and client relationships, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 3, 9, and 12.3 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 11.6 years.

(Amounts in thousands, except share and per share data)

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of Cognify. The fair values of the trade name and developed technology were estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of Cognify. The fair value of client relationships was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with each client grouping.

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is not deductible for income tax purposes.

The Company believes the goodwill related to the acquisition was a result of providing the Company a complementary service offering that will enable the Company to leverage its services with existing and new clients. The goodwill is not deductible for income tax purposes.

Revenue from Cognify is primarily comprised of per member per month fees and annual subscription fees for electronic health record solutions. Revenue for these services and the related costs is recognized each month as performance obligations are satisfied and costs are incurred, and is included in service revenue and cost of revenue – service cost, respectively, in the Company's consolidated statements of operations. For the year ended December 31, 2018, service revenue of $620 and net loss of $160 from Cognify were included in the Company's consolidated statement of operations.

Mediture

On August 31, 2018, the Company entered into a membership interest purchase agreement with each member of Mediture LLC and eClusive L.L.C. (collectively, "Mediture") and Kelley Business Law, PLLC, solely in its capacity as the seller representative, pursuant to which the Company acquired all of the issued and outstanding membership and/or economic interests of Mediture. Mediture was a provider of electronic health record solutions and third party administrator services in the Programs of All-Inclusive Care for the Elderly ("PACE") market and also services several managed long-term care organizations in the State of New York. The consideration for the acquisition was comprised of (i) $18,500 cash consideration paid upon closing, subject to certain customary post-closing adjustments, upon the terms and subject to the conditions contained in the purchase agreement and (ii) the issuance of 45,561 shares of the Company's common stock. The stock consideration issued at the closing of the acquisition had an acquisition-date fair value of $3,994 based on the closing trading price on August 31, 2018.

In connection with the acquisition of Mediture, the Company incurred direct acquisition and integration costs of $494 during the year ended December 31, 2018, which were recorded in general and administrative expenses in the consolidated statement of operations.

The following table summarizes the purchase price consideration based on the estimated acquisition-date fair value of the acquisition consideration.

Cash consideration at closing, net of post-closing adjustments	$	17,471
Stock consideration at closing		3,994
Total fair value of acquisition consideration	$	21,465

(Amounts in thousands, except share and per share data)

The following table summarizes the final allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition:

Cash	$	2,427
Accounts receivable		887
Prepaid expenses and other current assets		146
Property and equipment		219
Trade name		300
Developed technology		2,300
Client relationships		4,500
Non-competition agreement		1,300
Goodwill		13,477
Total assets acquired	$	25,556
Accrued expenses and other liabilities		(3,833)
Trade accounts payable		(112)
Other long-term liabilities		(146)
Total purchase price	$	21,465

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included a trade name, developed technology, client relationships, and non-competition agreements, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 3, 3.3, 11.9, and 5 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 8.1 years.

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of Mediture. The fair value of the trade name and developed technology was estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of Mediture. The fair value of client relationships was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with each client grouping. The fair value of the non-competition agreements was estimated using the discounted earnings method by estimating the potential loss of earnings absent the non-competition agreements, assuming the covenantor competes at different time periods during the life of the agreements.

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is deductible for income tax purposes.

The Company believes the goodwill related to the acquisition was a result of providing the Company a complementary service offering that will enable the Company to leverage its services with existing and new clients. The goodwill is deductible for income tax purposes.

Revenue from Mediture is primarily comprised of per member per month fees and annual subscription fees for electronic health record solutions and third party administration services. Revenue for these services and the related costs are recognized each month as performance obligations are satisfied and costs are incurred, and are included in service revenue and cost of revenue – service cost, respectively, in the Company’s consolidated statements of operations. For the year ended December 31, 2018, service revenue of $4,528 and net income of $1,291 from Mediture were included in the Company’s consolidated statement of operations.

(Amounts in thousands, except share and per share data)

Peak PACE Solutions

On May 1, 2018, the Company entered into an asset purchase agreement with Peak PACE Solutions, LLC ("Peak PACE") and certain other parties thereto pursuant to which such subsidiary acquired substantially all of the assets, and assumed certain enumerated liabilities, of Peak PACE, an organization that helps PACE organizations manage the business functions that drive the major sources of reimbursement revenue and utilization costs. The acquisition consideration was comprised of cash consideration consisting of (i) $7,719 payable upon the closing of the acquisition, subject to certain customary post-closing adjustments, upon the terms and subject to the conditions contained in the asset purchase agreement, and (ii) contingent purchase price to be paid in cash based on the achievement of certain performance goals for the twelve-month period ending December 31, 2018. During the second quarter of 2019, the Company made a cash payment of $1,642 in full satisfaction of the Peak PACE acquisition-related contingent consideration payable.

In connection with the acquisition of Peak PACE, the Company incurred direct acquisition and integration costs of $271 during the year ended December 31, 2018, which were recorded in general and administrative expenses in the consolidated statement of operations.

The following table summarizes the purchase price consideration based on the estimated acquisition-date fair value of the acquisition consideration:

Cash consideration at closing, net of post-closing adjustments	$	7,563
Estimated fair value of contingent consideration		1,620
Total fair value of acquisition consideration	$	9,183

The following table summarizes the final allocation of the purchase price based on the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition:

Cash	$	606
Property and equipment		84
Trade name		290
Client relationships		5,220
Non-competition agreement		50
Goodwill		3,559
Total assets acquired	$	9,809
Accrued expenses and other liabilities		(626)
Total purchase price, including contingent consideration of $1,620	$	9,183

The purchase price was allocated to the tangible assets and identifiable intangible assets acquired and liabilities assumed based on their acquisition-date estimated fair values. The identifiable intangible assets principally included a trade name, client relationships, and non-competition agreements, all of which are subject to amortization on a straight-line basis and are being amortized over a weighted average life of 1.5, 10, and 5 years, respectively. The weighted average amortization period for acquired intangible assets as of the date of acquisition is 9.5 years.

The Company, with the assistance of a third-party appraiser, assessed the fair value of the assets of Peak PACE. The fair value of the trade name was estimated using the relief from royalty method. The Company derived the hypothetical royalty income from the projected revenues of Peak PACE. The fair value of client relationships was estimated using a multi period excess earnings method. To calculate fair value, the Company used cash flows discounted at a rate considered appropriate given the inherent risks associated with each client grouping. The fair value of the non-competition agreements was estimated using the differential approach which involves valuing the business under two different scenarios. The first valuation assumes the non-competition agreements are in place and the second valuation assumes that they are not. The difference in the value of the business under each approach is attributed to the non-competition agreements.

(Amounts in thousands, except share and per share data)

The useful lives of the intangible assets were estimated based on the expected future economic benefit of the assets and are being amortized over the estimated useful life in proportion to the economic benefits consumed using the straight-line method.

The amortization of intangible assets is deductible for income tax purposes.

The Company believes the goodwill related to the acquisition was a result of providing the Company a complementary service offering that will enable the Company to leverage its services with existing and new clients. The goodwill is deductible for income tax purposes.

Revenue from Peak PACE is primarily comprised of per member per month fees for third party administration services. Revenue for these services and the related costs are recognized each month as performance obligations are satisfied and costs are incurred, and are included in service revenue and cost of revenue – service cost, respectively, in the consolidated statements of operations. For the year ended December 31, 2018, service revenue of $5,801 and net income of $524 from Peak PACE were included in the Company's consolidated statement of operations.

Pro forma (unaudited)

The unaudited pro forma results presented below include the results of the aforementioned acquisitions as if the Personica acquisition had been consummated as of January 1, 2019 and as if the PrescribeWellness and DoseMe acquisitions had been consummated as of January 1, 2018. The unaudited pro forma results presented below also include the results of the 2018 acquisitions of Cognify, Mediture, and Peak PACE as if these acquisitions had been consummated as of January 1, 2017. The unaudited pro forma results include the amortization associated with acquired intangible assets, interest expense on the debt incurred to fund these acquisitions, insurance expense for additional required business insurance coverage, stock compensation expense related to equity awards granted to employees of the acquired companies, adjustments to revenue for the purchase accounting effects of recording deferred revenue at fair value, and the estimated tax effect of adjustments to loss before income taxes. Material nonrecurring charges, including direct acquisition costs, directly attributable to the transactions are excluded. In addition, the unaudited pro forma results do not include any expected benefits of the acquisitions. Accordingly, the unaudited pro forma results are not necessarily indicative of either future results of operations or results that might have been achieved had the acquisitions been consummated as of January 1, 2019, 2018 and 2017.

	Year Ended December 31,		
	2020	2019	2018
Revenue	$ 306,092	$ 300,134	$ 249,628
Net loss	(80,442)	(34,548)	(62,285)

6. Other Current Assets

As of December 31, 2020 and 2019, other current assets consisted of the following:

	December 31, 2020	December 31, 2019
Contract assets	$ 7,601	$ 6,165
Non-trade receivables	647	3,186
Other	1,504	1,484
Total other current assets	$ 9,752	$ 10,835

(Amounts in thousands, except share and per share data)

7. Property and Equipment

As of December 31, 2020 and 2019, property and equipment consisted of the following:

	Estimated useful life	December 31, 2020	December 31, 2019
Computer hardware and purchased software	3 years	$ 8,971	$ 7,970
Office furniture and equipment	5 years	12,376	10,237
Leasehold improvements	3-15 years	11,645	11,319
		32,992	29,526
Less: accumulated depreciation and amortization		(17,922)	(13,728)
Property and equipment, net		$ 15,070	$ 15,798

Depreciation and amortization expense on property and equipment for the years ended December 31, 2020, 2019 and 2018 was $5,012, $4,409 and $3,493, respectively.

8. Leases

The Company has entered into various operating and finance leases for office space and equipment. The operating leases expire on various dates through 2030, and certain of such leases also contain renewal options and escalation clauses. In addition to the base rent payments, the Company will be obligated to pay a pro rata share of operating expenses and taxes.

The components of lease expense were as follows:

	Year Ended December 31, 2020	2019
Operating lease cost	$ 4,618	$ 3,981
Finance lease cost:		
Amortization of leased assets	138	580
Interest on lease liabilities	1	46
Total finance lease costs	139	626
Variable lease costs	1,360	918
Short-term lease costs	140	247
Total lease cost	$ 6,257	$ 5,772

(Amounts in thousands, except share and per share data)

Supplemental balance sheet information related to leases was as follows:

	December 31, 2020	December 31, 2019
Operating leases:		
Operating lease right-of-use assets	$ 21,711	$ 22,100
Current operating lease liabilities	$ 4,402	$ 4,350
Noncurrent operating lease liabilities	20,381	21,017
Total operating lease liabilities	$ 24,783	$ 25,367
Finance leases:		
Property and equipment	$ 41	$ 2,130
Accumulated amortization	(38)	(1,907)
Property and equipment, net	$ 3	$ 223
Current obligations of finance leases	$ 4	$ 125
Finance leases, net of current obligations	—	3
Total finance lease liabilities	$ 4	$ 128
Weighted average remaining lease term (in years):		
Operating leases	7.7	8.4
Finance leases	0.3	0.3
Weighted average discount rate:		
Operating leases	4.56 %	4.43 %
Finance leases	10.98 %	5.92 %

Supplemental cash flow information related to leases was as follows:

	Year Ended December 31,	
	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for operating leases	$ 4,516	$ 4,138
Operating cash flows for finance leases	1	42
Financing cash flows for finance leases	56	968
Leased assets obtained in exchange for lease liabilities:		
Operating leases*	$ 2,400	$ 4,926
Finance leases	—	—

*Excludes operating lease assets acquired in connection with the acquisitions of DoseMe, PrescribeWellness, and Personica on the acquisition date.

(Amounts in thousands, except share and per share data)

Maturities of lease liabilities as of December 31, 2020 were as follows:

	Operating leases	Finance leases
2021	$ 4,490	$ 4
2022	4,020	—
2023	3,760	—
2024	3,477	—
2025	3,246	—
Thereafter	10,427	—
Total minimum lease payments	29,420	4
Less imputed interest	(4,637)	—
Present value of lease liabilities	24,783	4
Less current portion	(4,402)	(4)
Total long-term lease liabilities	$ 20,381	$ —

As of December 31, 2020, the Company had an additional operating lease commitment that commenced on January 1, 2021 of approximately $278 for office spaces in Eden Prairie, Minnesota and has a lease term of approximately eight years from the occupancy date.

As previously disclosed in the 2018 Annual Report on Form 10-K under the previous lease accounting standard, rent expense related to operating leases and interest expense related to capital leases were as follows:

	Year Ended December 31, 2018
Operating lease rent expense	$ 3,016
Interest expense related to capital leases	115

9. Software Development Costs

The Company capitalizes certain costs incurred in connection with obtaining or developing its proprietary software platforms, which are used to support its service contracts, including external direct costs of material and services, payroll costs for employees directly involved with the software development, and interest expense related to the borrowings attributable to software development. As December 31, 2020 and 2019, capitalized software costs consisted of the following:

	December 31, 2020	December 31, 2019
Software development costs	$ 48,548	$ 29,714
Less: accumulated amortization	(20,666)	(11,213)
Software development costs, net	$ 27,882	$ 18,501
Capitalized software development costs included above not yet subject to amortization	$ 4,382	$ 3,294

Amortization expense for the years ended December 31, 2020, 2019 and 2018 was $9,458, $4,183, and $2,158, respectively.

(Amounts in thousands, except share and per share data)

10. Goodwill and Intangible Assets

Goodwill

The Company's goodwill and related changes during the years ended December 31, 2020 and 2019 are as follows:

	Tabula Rasa HealthCare	CareVention HealthCare	MedWise HealthCare	Total
Balance at January 1, 2019	$ 108,213	$ —	$ —	$ 108,213
Goodwill from 2019 acquisitions	42,549	—	—	42,549
Adjustments to goodwill related to prior year acquisitions	(2)	—	—	(2)
Balance at January 1, 2020	150,760	—	—	150,760
Segment realignment	(150,760)	95,248	55,512	—
Goodwill from 2020 acquisition	—	20,102	—	20,102
Balance at December 31, 2020	$ —	$ 115,350	$ 55,512	$ 170,862

There were no indicators of goodwill impairment during the years ended December 31, 2020, 2019 or 2018 and there are no accumulated impairment charges as of December 31, 2020, 2019 or 2018.

As discussed in Note 2 – Summary of Significant Accounting Policies, the Company realigned the composition of its segments to correspond with the Company's reorganization effective on January 1, 2020. As a result, the Company now operates through two segments, CareVention HealthCare and MedWise HealthCare, rather than as a single operating segment. As a result of this reorganization, the Company reallocated the goodwill balance to the CareVention HealthCare and MedWise HealthCare segments based on a relative fair value approach.

Intangible Assets

During the fourth quarter of 2020, the Company became aware of changes in circumstances impacting the future performance of the Company's pharmacy cost management services, which are recorded in the MedWise segment and relate to certain intangible assets obtained from the Medliance acquisition in 2014. The Company evaluated the recoverability of the related intangible assets by comparing their carrying amount to the future net undiscounted cash flows expected to be generated by the asset group to determine if the carrying value is not recoverable. The recoverability test indicated that certain customer relationships and developed technology intangible assets were impaired. As a result, the Company used an income approach to measure the fair value of the intangible assets and recognized non-cash impairment charges of $3,815 and $1,225 to the customer relationships and developed technology intangible assets, respectively, for the year ended December 31, 2020.

During 2020, the Company completed an assessment of the useful lives of the Company's tradenames and determined to decrease the estimated useful life of a certain tradename from 10 to 3.4 years due to the realignment of strategic branding initiatives as a result of the Company's reorganization in 2020, as described in Note 2.

There were no indicators of impairment during the years ended December 31, 2019 or 2018 and there were no intangible asset impairment charges for the years ended December 31, 2019 or 2018.

(Amounts in thousands, except share and per share data)

Intangible assets consisted of the following as of December 31, 2020 and 2019:

	Weighted Average Amortization Period (in years)	Gross Value	Accumulated Amortization	Intangible Assets, net
December 31, 2020				
Trade names	3.7	$ 11,955	$ (8,286)	$ 3,669
Client relationships	12.2	152,654	(32,437)	120,217
Non-competition agreements	5.0	6,892	(3,976)	2,916
Developed technology	8.0	67,369	(24,858)	42,511
Patient database	5.0	21,700	(7,957)	13,743
Domain name	10.0	59	(21)	38
Total intangible assets		$ 260,629	$ (77,535)	$ 183,094

	Weighted Average Amortization Period (in years)	Gross Value	Accumulated Amortization	Intangible Assets, net
December 31, 2019				
Trade names	7.1	$ 11,255	$ (3,845)	$ 7,410
Client relationships	12.2	128,169	(20,977)	107,192
Non-competition agreements	5.0	6,602	(2,641)	3,961
Developed technology	8.0	68,593	(15,870)	52,723
Patient database	5.0	21,700	(3,617)	18,083
Domain name	10.0	59	(15)	44
Total intangible assets		$ 236,378	$ (46,965)	$ 189,413

Amortization expense for intangible assets for the years ended December 31, 2020, 2019 and 2018 was $30,570, $25,684, and $11,150, respectively.

The estimated amortization expense for each of the next five years and thereafter is as follows:

Years Ending December 31,	
2021	28,440
2022	27,089
2023	25,804
2024	18,521
2025	14,038
Thereafter	69,202
Total estimated amortization expense	$ 183,094

(Amounts in thousands, except share and per share data)

11. Accrued Expenses and Other Liabilities

At December 31, 2020 and 2019, accrued expenses and other liabilities consisted of the following:

	December 31, 2020	December 31, 2019
Employee related expenses	$ 8,218	$ 12,582
Contract liability	3,205	4,857
Customer deposits	904	—
Client funds obligations*	5,170	4,106
Contract labor	1,374	329
Interest	3,690	2,133
Professional fees	572	337
Consideration payable to customer	5,968	740
Non-income taxes payable	151	898
Other expenses	2,716	924
Total accrued expenses and other liabilities	$ 31,968	$ 26,906

*This amount represents client funds held by the Company, with an offsetting amount included in restricted cash.

12. Notes Payable Related to Acquisition

On October 5, 2020, as part of the consideration of the Personica acquisition, the Company entered into promissory notes (collectively, the "Notes") in the aggregate principal amount of $17,000 payable to the owners of Personica (see Note 5). The Notes bear an interest rate of 3.25% and are payable as follows: (a) $7,500 in cash, which was paid in January 2021, (b) $5,500 in cash within two business days following April 1, 2021, and (c) $4,000 in cash within two business days following October 5, 2021. The Notes were recorded at their aggregate acquisition-date fair value of $16,355 and are being accreted up to their face values over their respective terms using the effective-interest method. For the year ended December 31, 2020, the Company recognized $440 of interest expense relates to the Notes, of which $133 was accrued and $307 was the non-cash accretion of the discounts recorded. As of December 31, 2020, the Notes had a fair value of $16,662.

13. Lines of Credit and Long-Term Debt

(a) Lines of Credit

On September 6, 2017, the Company entered into an Amended and Restated Loan and Security Agreement (the "2015 Line of Credit"), whereby the Company amended and restated its revolving line of credit, originally entered into with Bridge Bank (now Western Alliance Bank) in 2015, and had subsequently amended. The Amended and Restated 2015 Line of Credit provided for borrowing availability in an aggregate amount up to $60,000 to be used for general corporate purposes, with a $1,000 sublimit for cash management services, letters of credit and foreign exchange transactions. The 2015 Line of Credit matured pursuant to its terms on December 6, 2020.

On December 18, 2020, the Company and its subsidiaries entered into a Loan and Security Agreement with Western Alliance Bank, which provides for a $120,000 secured revolving credit facility, with a $1,000 sublimit for cash management services and letters of credit and foreign exchange transactions (the "2020 Credit Facility"), and replaced the 2015 Line of Credit.

Amounts under the 2020 Credit Facility may be borrowed, repaid, and re-borrowed from time to time until the maturity date on May 16, 2025, and may be used for, among other things, working capital and other general corporate purposes. Loans under the 2020 Credit Facility will bear interest at a rate equal to the LIBOR rate plus 3.25%. The obligations under the 2020 Credit Facility are secured by all of the assets of the borrowers, subject to certain exceptions and exclusions as set forth in the Loan and Security Agreement.

The Loan and Security Agreement contains certain affirmative and negative covenants that are binding on the Company, including, but not limited to, restrictions (subject to specified exceptions and qualifications) on the Company's ability to incur indebtedness, create liens, merge or consolidate, make dispositions, pay dividends or make distributions, make investments, pay any subordinated indebtedness, enter into certain transactions with affiliates, or make capital expenditures. In addition, the Loan and Security Agreement imposes certain financial covenants, including that the Company (i) maintain unrestricted cash balances with Western Alliance Bank, plus amounts available for draw under the 2020 Credit Facility of at least $10,000 at all times, and (ii) maintain a leverage ratio of less than 3.00:1.00, on a trailing twelve-month basis, measured quarterly. The 2020 Credit Facility is subject to a commitment fee of 0.50% of the total commitment under the 2020 Credit Facility payable on the closing date, and 0.25% of the total commitment under the 2020 Credit Facility payable on each anniversary thereafter. Additionally, the Credit Facility is subject to an unused line fee.

As of December 31, 2020, the Company was in compliance with all of the financial covenants related to the 2020 Credit Facility, and management expects that the Company will be able to maintain compliance with the financial covenants.

As of December 31, 2020, the Company had $10,000 outstanding under the 2020 Credit Facility, plus an outstanding letter of credit of $100 issued pursuant to the 2015 Line of Credit in connection with the Company's lease agreement for its office space in Moorestown, NJ. The letter of credit remains outstanding under the 2020 Credit Facility, renews annually and expires in September 2027, and reduces amounts available under the 2020 Credit Facility. As of December 31, 2020, amounts available for borrowings under the 2020 Credit Facility was $109,900.

As of December 31, 2020, the interest rate on the 2020 Credit Facility was 3.44% and the effective rate for the unused line fee was 0.45%. As of December 31, 2019, the interest rate on the 2015 Line of Credit was 5.58%. Interest expense on the 2020 Credit Facility and 2015 Line of Credit in the aggregate was $131, $351, and $712 for the years ended December 31, 2020, 2019 and 2018, respectively.

In connection with the 2020 Credit Facility, the Company recorded deferred financing costs of $1,176. In connection with the 2015 Line of Credit (and all predecessor agreements prior to the amendment or the amendment and restatement thereof), the Company recorded deferred financing costs of $831, of which $50 related to fiscal 2020. The Company is amortizing the deferred financing costs associated with the 2020 Credit Facility and 2015 Line of Credit to interest expense using the effective-interest method over their respective terms. The Company amortized $336, $282, and $103 to interest expense for the years ended December 31, 2020, 2019 and 2018, respectively. Deferred financing costs of $1,156 and $266, net of accumulated amortization, are included in other assets on the accompanying consolidated balance sheets as of December 31, 2020 and 2019, respectively.

(b) Convertible Senior Subordinated Notes

On February 12, 2019, the Company issued and sold an aggregate principal amount of $325,000 of 1.75% convertible senior subordinated notes (the "2026 Notes") in a private placement pursuant to Rule 144A under the Securities Act of 1933, as amended. The 2026 Notes bear interest at a rate of 1.75% per year, payable semiannually in arrears on February 15 and August 15 of each year, beginning on August 15, 2019. The notes will mature on February 15, 2026, unless earlier converted or repurchased. The initial conversion rate for the notes is 14.2966 shares of the Company's common stock per $1 principal amount of notes. This conversion rate is equal to an initial conversion price of approximately $69.95 per share of the Company's common stock. Net proceeds from the 2026 Notes were used to pay the cost of convertible note hedge transactions (described below), repay amounts outstanding under the 2015 Revolving Line of Credit, fund the PrescribeWellness acquisition (as described in Note 5), fund the payment of the acquisition-related contingent consideration for SinfoníaRx (as described in Note 17), and for general corporate purposes.

Holders may convert all or any portion of their 2026 Notes at any time prior to the close of business on the business day immediately preceding August 15, 2025 only under the following circumstances: (1) during any calendar quarter commencing after March 31, 2019 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (2) during the five business day period after any five consecutive trading day period (the measurement period) in which the trading price (as defined in the indenture governing the 2026 Notes) per $1 principal amount of 2026 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day; or (3) upon the occurrence of specified corporate events, including certain distributions, the occurrence of a fundamental change or make-whole fundamental change (as defined in the indenture governing the 2026 Notes) or a transaction resulting in the Company's common stock converting into other securities or property or assets. On or after August 15, 2025 until the close of business on the first scheduled trading day immediately preceding the maturity date, a holder may convert all or any portion of its 2026 Notes regardless of the foregoing circumstances. Upon conversion, the Company will pay or deliver shares of its common stock, cash or a combination thereof at the Company's option. As of December 31, 2020, none of the conditions allowing holders of the 2026 Notes to convert had been met.

In accounting for the issuance of the 2026 Notes, the Company separated the 2026 Notes into liability and equity components. With the assistance of a third party valuation specialist, the carrying amount of the liability component was calculated by utilizing a discounted cash flow model of the contractual cash flows that were discounted at a risk-adjusted interest rate in order to estimate the fair value of a similar debt instrument that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was $102,900 and was determined by deducting the fair value of the liability component from the par value of the 2026 Notes. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The initial associated deferred tax effect of $25,884 was recorded as a reduction of additional paid-in capital because the equity component was not expected to be deductible for income tax purposes. On February 12, 2021, the Company received a private letter ruling from the Internal Revenue Service, which determined, based on information submitted and representations made by the Company, that the Company met the requirements to deduct the interest expense resulting from the amortization of the debt discount (see Note 14). The excess of the principal amount of the liability component over its carrying amount ("debt discount") is amortized to interest expense over the term of the 2026 Notes at an effective interest rate of 8.05% over the contractual term.

Debt issuance costs related to the 2026 Notes of $9,372, comprised of discounts and commissions payable to the initial purchasers of $8,937 and third party offering costs of $435, were allocated to the liability and equity components of the 2026 Notes based on their relative values. Issuance costs attributable to the liability component were $6,405 and are being amortized to interest expense using the effective interest method over the contractual term. Issuance costs attributable to the equity component were netted with the equity component in stockholders' equity.

During the year ended December 31, 2020, the Company recognized $18,682 of interest expense related to the 2026 Notes, of which $5,688 was paid or accrued and $12,994 was non-cash accretion of the debt discounts recorded. The 2026 Notes have a carrying value of $239,285 as of December 31, 2020. In addition, unpaid additional interest payable as a result of the failure to remove the restrictive legend on the 2026 Convertible Notes had accrued on the 2026 Convertible Notes from and including February 17, 2020, but ceased accruing on February 16, 2021 as a result of the restrictive legend being removed. The amount of accrued additional interest was $1,413 as of December 31, 2020. As a result, total accrued interest payable related to the 2026 Notes was $3,546 as of December 31, 2020 and is included in accrued expenses and other liabilities on the consolidated balance sheets.

(Amounts in thousands, except share and per share data)

During the year ended December 31, 2019, the Company recognized $15,619 of interest expense related to the 2026 Notes, of which $5,024 was paid or accrued and $10,595 was non-cash accretion of the debt discounts recorded. The 2026 Notes had a carrying value of $226,291 as of December 31, 2019. Accrued interest payable on the 2026 Notes of $2,133 as of December 31, 2019 was included in accrued expenses and other liabilities on the consolidated balance sheets.

The 2026 Notes are classified as long-term debt on the Company's consolidated balance sheets, and will be until such Notes are within one year of maturity.

(c) Convertible Note Hedge and Warrant Transactions

In connection with the offering of the 2026 Notes, the Company entered into convertible note hedge transactions with affiliates of certain of the initial purchasers (the "option counterparties") of the 2026 Notes pursuant to the terms of call option confirmations. The Company has the option to purchase a total of 4,646,393 shares of its common stock at a price of approximately $69.95 per share. The total premiums paid for the note hedges were $101,660. The Company also entered into warrant transactions with the option counterparties whereby they have the option to purchase 4,646,393 shares of the Company's common stock at a price of $105.58 per share. The Company received $65,910 in cash proceeds from the sale of the warrants. As these instruments are considered indexed to the Company's own stock and are considered equity classified, the convertible note hedges and warrants are recorded in stockholders' equity, are not accounted for as derivatives and are not remeasured each reporting period. The net costs incurred in connection with the convertible note hedge and warrant transactions were recorded as a reduction to additional paid-in capital on the Company's consolidated balance sheets.

The convertible note hedge transactions are expected generally to reduce the potential dilution to the Company's common stock upon conversion of the 2026 Notes and/or offset any potential cash payments the Company is required to make in excess of the principal amount of converted 2026 Notes, as the case may be. The warrant transactions could separately have a dilutive effect on the Company's common stock to the extent that the market price per share of the Company's common stock exceeds the strike price of the warrants.

(d) Long-Term Debt Maturities

The following table represents the total long-term debt obligations of the Company at December 31, 2020 and December 31, 2019:

	December 31, 2020	December 31, 2019
Convertible senior subordinated notes	$ 325,000	$ 325,000
Unamortized discount, including debt issuance costs, on convertible senior subordinated notes	(85,715)	(98,709)
Convertible senior subordinated notes, net	239,285	226,291
Finance leases	4	128
Total long-term debt and finance leases, net	239,289	226,419
Less current portion, net	(4)	(125)
Total long-term debt and finance leases, less current portion, net	$ 239,285	$ 226,294

14. Income Taxes

The Company accounts for income taxes under ASC Topic 740 —*Income Taxes* ("ASC 740"). Deferred income tax assets and liabilities are determined based upon differences between financial reporting and tax bases of assets and liabilities, which are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse.

(Amounts in thousands, except share and per share data)

The components of the Company's loss before income taxes are as follows:

	Years Ended December 31,		
	2020	2019	2018
United States	$ (83,617)	$ (45,821)	$ (50,645)
International	(2,517)	(2,814)	—
	$ (86,134)	$ (48,635)	$ (50,645)

The benefit from income taxes consists of the following:

	Years Ended December 31,		
	2020	2019	2018
Current:			
US federal	$ —	$ —	$ 1
State and local	134	154	271
Total current income tax expense	134	154	272
Deferred:			
US federal	(2,802)	(13,356)	(3,150)
State and local	(2,500)	(2,997)	(498)
Total deferred income tax benefit	(5,302)	(16,353)	(3,648)
Total income tax benefit	$ (5,168)	$ (16,199)	$ (3,376)

The Company had no current or deferred international income tax expense during the years ended December 31, 2020, 2019, and 2018, respectively.

For the years ended December 31, 2020 and 2019, the Company had an effective tax rate of 6.0% and of 33.3%, respectively. The tax benefits primarily consist of the benefits generated by the Company's U.S. federal and state and local losses, the benefits from windfall tax benefits generated from the vesting of restricted stock, disqualifying dispositions, and exercising of nonqualified stock options during the period, offset by other tax expense due to the increase in the Company's valuation allowance.

For the year ended December 31, 2018, the Company had an effective tax rate of 6.7%. The effective tax rate was primarily from windfall tax benefits generated from the vesting of restricted stock, disqualifying dispositions, and exercising of nonqualified stock options during the period, offset by a tax expense generated from the fair value adjustment of the Company's contingent consideration liabilities.

(Amounts in thousands, except share and per share data)

The principal components of the Company's deferred tax assets and liabilities are as follows:

	December 31,	
	2020	2019
Deferred tax assets:		
Net federal operating loss carryforward	$ 30,897	$ 17,218
Net state operating loss carryforward	7,225	4,536
Net international operating loss carryforward	2,874	1,723
Interest expense limitation carryforward	3,224	1,339
Accruals	1,132	916
Stock options	6,902	5,362
Operating lease liabilities	6,543	6,389
Other	290	502
Deferred tax assets	59,087	37,985
Less: valuation allowances	(23,178)	(3,161)
Deferred tax assets after valuation allowance	35,909	34,824
Deferred tax liabilities:		
Unamortized debt discount	(20,665)	(23,597)
Fixed assets	(7,542)	(4,175)
Operating lease right-of-use assets	(5,732)	(5,533)
Amortizable intangible assets	(2,156)	(7,760)
Indefinite-lived intangibles	(3,029)	(1,685)
Other	(139)	(730)
Deferred tax liabilities	(39,263)	(43,480)
Net deferred tax liabilities	$ (3,354)	$ (8,656)

As of December 31, 2020, the Company had federal net operating loss ("NOL") carryforwards of $146,296, state NOL carry forwards of $135,684, and international NOL carryforwards of $9,580, each of which are available to reduce future taxable income. The pre-2018 NOL carryforwards, if not utilized, will begin to expire in 2029 for federal purposes, and in 2022 for state purposes. The international NOLs do not expire.

On February 12, 2021, the Company received a private letter ruling from the Internal Revenue Service, which determined, based on information submitted and representations made by the Company, that the Company met the requirements to deduct the interest expense resulting from the amortization of the debt discount associated with the 2026 Notes. As a result, during the first quarter of 2021, the Company will record a reduction of substantially all of its deferred tax liability related to the unamortized debt discount.

ASC 740 requires a valuation allowance to reduce the deferred tax assets reported if, based on the weight of available evidence, it is more-likely-than-not that some portion or all of the deferred tax assets will not be realized. During 2018, additional jurisdictions announced they will require consolidated returns to be filed beginning in 2019. The Company determined that its deferred tax liabilities provide sufficient sources of recoverability to realize the Company’s deferred tax assets in those jurisdictions, and as a result, the Company released $561 of its deferred tax asset valuation allowance as of December 31, 2018. At December 31, 2019, based on the Company’s future reversals of existing taxable temporary differences, management determined it was more-likely-than-not that the Company would be able to realize the benefits of the majority of its deferred tax assets. At December 31, 2019, the Company recorded a valuation allowance only on deferred tax assets in certain state and international jurisdictions. At December 31, 2020, after consideration of all evidence, both positive and negative, the Company increased its valuation allowance against U.S. federal and state deferred tax assets because the Company has determined that it is more-likely-than-not that these assets will not be fully realized. In addition, the Company has continued to record a full valuation allowance against its international deferred tax assets.

(Amounts in thousands, except share and per share data)

The changes in valuation allowance were as follows:

	Year-Ended December 31,	
	2020	2019
Balance at beginning of the year	$ 3,161	$ 1,436
Increase due to NOLs and temporary differences	19,877	1,424
Increase due to acquired NOLs	—	301
Change in foreign exchange rate	140	—
Balance at end of the year	$ 23,178	$ 3,161

A reconciliation of income tax benefit (expense) at the statutory federal income tax rate and income taxes as reflected in the financial statements is as follows:

	December 31,		
	2020	2019	2018
Federal statutory rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal benefit	5.3	5.6	0.5
Change in valuation allowance	(23.1)	(2.9)	(0.2)
Non-deductible stock compensation and tax windfall benefits, net	2.5	7.2	6.4
Change in fair value of contingent consideration	(0.6)	(1.6)	(20.6)
Non-deductible expenses and other	0.9	4.0	(0.4)
Effective income tax rate	6.0 %	33.3 %	6.7 %

The tax benefits of uncertain tax positions are recognized only when the Company believes it is more likely than not that the tax position will be upheld on examination by the taxing authorities based on the merits of the position. The Company recognizes interest and penalties, if any, related to unrecognized income tax benefits in income tax expense. Through December 31, 2020, the Company had no unrecognized tax benefits or related interest and penalties accrued.

In the normal course of business, the Company is subject to examination by taxing authorities from federal, state, and international governments. As of December 31, 2020, the Company's tax years beginning in 2016 remain open for examination by taxing authorities.

15. Stockholders' Equity

On April 25, 2017 the Board authorized the Company to repurchase up to $5,000 of its common stock at prevailing market prices through open market, block and privately-negotiated transactions, at such times and in such amounts as management deems appropriate. The Company funded repurchases of its common stock through a combination of cash on hand, cash generated by operations, or borrowings under the Amended and Restated 2015 Line of Credit. During the year ended December 31, 2019, the Company did not repurchase any shares of its common stock. During the year ended December 31, 2018, the Company repurchased 80,000 shares at an average price of $35.82 per share for a total of $2,866. The repurchase program expired on March 15, 2019.

In connection with the offering of the 2026 Notes, the Company issued warrants to purchase 4,646,393 shares of the Company’s common stock at a price of $105.58 per share. As of December 31, 2020, no warrants have been exercised and all warrants to purchase shares of the Company’s common stock were outstanding. See Note 13 for additional information related to the 2026 Notes.

(Amounts in thousands, except share and per share data)

16. Stock-Based Compensation

In September 2016, the Company adopted the 2016 Equity Compensation Plan ("2016 Plan"). During the term of the 2016 Plan, the share reserve will automatically increase on the first trading day in January of each calendar year by an amount equal to the lesser of 5% of the total number of outstanding shares of common stock on the last trading day in December of the prior calendar year or such other number set by the Board. In accordance with the terms of the 2016 Plan, the share reserve increased by 1,116,065 shares on January 2, 2020. As of December 31, 2020, 1,171,581 shares were available for future grants under the 2016 Plan.

Restricted Common Stock

The Company issues restricted stock awards pursuant to the 2016 Plan to certain employees, including executive officers, and non-employee directors. Restricted stock awards generally vest over a one to four year period and the unvested portion of the restricted stock award is forfeited if the employee or non-employee director leaves the Company before the vesting period is completed. The grant date fair value of restricted stock awards is determined using the Company's closing stock price at grant date.

The following table summarizes the restricted stock award activity under the 2016 Plan for the years ended December 31, 2020, 2019, and 2018:

	Number of shares	Weighted average grant-date fair value
Outstanding at January 1, 2018	753,666	$ 12.25
Granted	445,659	32.83
Vested	(120,970)	12.78
Forfeited	(8,294)	31.27
Outstanding at December 31, 2018	1,070,061	20.61
Granted	591,402	54.91
Vested	(434,643)	18.54
Forfeited	(13,239)	55.05
Outstanding at December 31, 2019	1,213,581	37.69
Granted	581,107	59.83
Vested	(356,389)	45.89
Forfeited	(51,391)	57.14
Outstanding at December 31, 2020	1,386,908	$ 44.14

For the years ended December 31, 2020, 2019, and 2018, $22,042, $12,984 and $3,809 of expense was recognized related to restricted stock awards, excluding performance-based restricted stock awards described below, respectively. As of December 31, 2020, there was unrecognized compensation expense of $38,220 related to non-vested restricted stock awards, excluding performance-based restricted stock awards described below, under the 2016 Plan, which is expected to be recognized over a weighted average period of 2.5 years.

Performance-Based Stock Awards

On August 6, 2018, the Board approved the grant of a performance-based stock award to a consultant pursuant to the 2016 Plan. The award provided for the issuance of 50,000 shares of common stock based on the achievement of certain milestones. The award had a grant-date fair value of $61.85 per share based on the Company's closing stock price on the grant date. Compensation cost was recognized over the service period based on management's determination that it was probable that the milestones will be achieved. As of December 31, 2019, all milestones were achieved and there was no unrecognized compensation expense related to the performance-based stock award. During the years ended December 31, 2020 and 2019, the Company issued 5,000 and 45,000 shares, respectively, of common

(Amounts in thousands, except share and per share data)

stock related to this award for the achievement of certain milestones. For the years ended December 31, 2019 and 2018, the Company recorded $1,708 and $1,385, respectively, of expense related to this performance-based stock award.

On May 4, 2020, pursuant to the 2016 Plan, the Board approved grants totaling 10,686 shares of restricted stock to an employee. The grants vest subject to certain performance conditions being achieved during the two-year period ending March 2, 2022. The awards have a grant-date fair value of $56.14 per share based on the Company's closing stock price on the grant date. Stock-based compensation costs associated with these grants are recognized over the service period based upon the Company's assessment of the probability that the performance conditions will be achieved. The Company recognized no stock-based compensation expense related to these grants for the year ended December 31, 2020 as the achievement of the underlying performance conditions was considered unlikely. As of December 31, 2020, there was $600 of unrecognized compensation expense related to these performance-based restricted stock awards.

On October 29, 2020, pursuant to the 2016 Plan, the Board approved grants totaling 26,400 shares of restricted stock to certain employees. The grants vest subject to the achievement of certain milestones. The awards have a grant-date fair value of $35.95 per share based on the Company's closing stock price on the grant date. Stock-based compensation costs associated with these grants are recognized over the service period based upon the Company's assessment of the probability that the performance conditions will be achieved. The Company recognized $152 of stock-based compensation expense related to these grants for the year ended December 31, 2020. As of December 31, 2020, there was $797 of unrecognized compensation expense related to these performance-based restricted stock awards.

Other Stock Awards

During the year ended December 31, 2020, the Board approved the grant of stock awards to select employees pursuant to the 2016 Plan. The awards provided for the issuance of 9,386 shares of the Company's common stock, which immediately vested on the grant date. These grants had a weighted average grant-date fair value of $52.29 per share. For the year ended December 31, 2020, the Company recorded $491 of expense related to these stock awards.

During the year ended December 31, 2019, the Board approved the grant of stock awards to select employees and a non-employee director pursuant to the 2016 Plan. The awards provided for the issuance of 38,808 shares of the Company's common stock, which immediately vested on the grant date. These grants had a weighted average grant-date fair value of $52.31 per share. For the year ended December 31, 2019, the Company recorded expense of $2,030 related to these stock awards.

Stock Options

The Company recorded $9,870, $10,556 and $5,167 of stock-based compensation expense related to the vesting of employee and non-employee stock options for the years ended December 31, 2020, 2019, and 2018, respectively.

The table below sets forth the weighted average assumptions for employee grants during the years ended December 31, 2020, 2019, and 2018.

	Year Ended December 31,		
Valuation assumptions:	2020	2019	2018
Expected volatility	56.10 %	68.00 %	58.50 %
Expected term (years)	5.25	6.03	6.07
Risk-free interest rate	1.21 %	2.41 %	2.46 %
Dividend yield	—	—	—

The weighted average grant date fair value of employee options granted during the years ended December 31, 2020, 2019, and 2018 was $33.78, $34.14 and $22.01, respectively.

(Amounts in thousands, except share and per share data)

The following table summarizes stock option activity for the years ended December 2020, 2019, and 2018:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic value
Outstanding at January 1, 2018	2,883,175	$ 9.26		
Granted	512,515	38.77		
Exercised	(797,207)	6.15		
Forfeited	(108,369)	23.63		
Outstanding at December 31, 2018	2,490,114	15.70		
Granted	745,525	54.66		
Exercised	(345,893)	11.73		
Forfeited	(134,403)	49.45		
Outstanding at December 31, 2019	2,755,343	25.10		
Granted	5,000	68.10		
Exercised	(554,007)	11.69		
Forfeited	(109,780)	44.17		
Outstanding at December 31, 2020	2,096,556	$ 27.74	6.2	$ 40,862
Options vested and expected to vest at December 31, 2020	2,096,556	$ 27.74	6.2	$ 40,862
Exercisable at December 31, 2020	1,608,237	$ 21.90	5.7	$ 38,199

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the Company's closing stock price or estimated fair value on the last trading day of the fiscal year for those stock options that had exercise prices lower than the fair value of the Company's common stock. This amount changes based on the fair market value of the Company's stock. The total intrinsic value of options exercised during the years ended December 31, 2020, 2019 and 2018 was $22,768, $14,316 and $33,937, respectively.

As of December 31, 2020, there was $13,191 of unrecognized compensation cost related to nonvested stock options granted under the 2016 Plan, which is expected to be recognized over a weighted average period of 1.9 years.

Cash received from option exercises for the years ended December 31, 2020, 2019, and 2018 was $3,943, $3,702 and $3,523, respectively. During the year ended December 31, 2020, 62,310 shares of common stock, with a fair value of $2,993, were delivered by option holders as payment for employee payroll taxes owed for the exercise of stock options.

The Company recorded total stock-based compensation expense for the years ended December 31, 2020, 2019 and 2018 in the following expense categories of its consolidated statement of operations:

	Year Ended December 31,		
	2020	2019	2018
Cost of revenue - product	$ 887	$ 1,196	$ 692
Cost of revenue - service	3,996	3,780	1,590
Research and development	6,061	7,499	2,566
Sales and marketing	2,432	4,282	1,580
General and administrative	19,179	10,521	3,933
Total stock-based compensation expense	$ 32,555	$ 27,278	$ 10,361

(Amounts in thousands, except share and per share data)

17. Fair Value Measurements

The Company's financial instruments consist of accounts receivable, contract assets, accounts payable, contract liabilities, accrued expenses, acquisition-related contingent consideration, acquisition-related notes payable, and long-term debt, which includes the Company's convertible senior subordinated notes and finance leases. The carrying values of accounts receivable, contract assets, accounts payable, contract liabilities, accrued expenses, and acquisition-related notes payable are representative of their fair value due to the relatively short-term nature of those instruments. See Note 8 for additional information on the Company's finance leases. See below for additional information on the Company's convertible senior subordinated notes.

The Company had classified liabilities measured at fair value on a recurring basis at December 31, 2019 as follows:

	Fair Value Measurement at Reporting Date Using			
	Level 1	Level 2	Level 3	Balance as of December 31, 2019
Liabilities				
Acquisition-related contingent consideration - long-term	$ —	$ —	$10,800	$ 10,800

The acquisition-related contingent consideration liability represents the estimated fair value of the additional cash and equity consideration payable that is contingent upon the achievement of certain financial and performance milestones. In accordance with ASC 805, *Business Combinations*, all changes in liability-classified contingent consideration subsequent to the initial acquisition-date measurement are recorded in net income or loss.

Acquisition-related contingent consideration is measured at fair value on a recurring basis and may include the use of significant unobservable inputs, hence, these instruments represent Level 3 measurements within the fair value hierarchy. As of December 31, 2020, due to the accelerated payment of the Cognify acquisition-related contingent consideration further described below, the acquisition-related contingent consideration payment amount was fixed.

In connection with the 2017 acquisition of the SinfoníaRx business, additional contingent consideration was payable by the Company based on SinfoníaRx's EBITDA, as defined in the merger agreement, multiplied by a variable EBITDA multiple, which was based on a formula as set forth in the merger agreement. The SinfoníaRx acquisition-related contingent consideration, which was liability-classified, was recorded at the estimated fair value at the acquisition date of September 6, 2017. The Company, with the assistance of a third-party appraiser, utilized a Monte Carlo simulation to derive estimates of the contingent consideration payments as of the acquisition date and at each subsequent period. For the year ended December 31, 2018, the Company recorded a $49,903 charge for the change in the fair value of the SinfoníaRx acquisition-related contingent consideration based on an increase in the EBITDA multiple used in the contingent consideration payment calculation as a result of an increase in the Company's market capitalization and an increase in SinfoníaRx's EBITDA for the year. During the year ended December 31, 2019, the Company recorded a $624 charge for the change in fair value of the final SinfoníaRx acquisition-related contingent consideration amount. During the first quarter of 2019, the Company made the final cash payment of $43,150 and issued 614,225 shares of its common stock, with a fair value of $39,166, in full satisfaction of the SinfoníaRx acquisition-related contingent consideration payable.

In connection with the 2018 acquisition of the Peak PACE business, additional consideration was payable by the Company based on Peak PACE's EBITDA, as defined in the asset purchase agreement, multiplied by an EBITDA multiple. The Peak PACE acquisition-related contingent consideration, which was liability-classified, was recorded at the estimated fair value at the acquisition date of May 1, 2018. The Company, with the assistance of a third-party appraiser, utilized a Monte Carlo simulation to derive estimates of the contingent consideration payments as of the acquisition date and at each subsequent period. During the year ended December 31, 2018, the Company recorded a $141 gain for the change in the fair value of the Peak PACE acquisition-related contingent consideration primarily based on a decrease in the EBITDA used in the contingent consideration payment calculation. During the year ended December 31, 2019, the Company recorded a $163 charge for the change in the fair value of the final Peak PACE

acquisition-related contingent consideration amount. The Company made the final cash payment of $1,642 in full satisfaction of the Peak PACE acquisition-related contingent consideration payable during the second quarter of 2019.

In connection with the 2018 acquisition of the Cognify business, additional consideration was payable by the Company based on a multiple of the excess of certain PACE solutions' 2021 revenues and Adjusted EBITDA over their 2018 revenues and Adjusted EBITDA, as defined in the stock purchase agreement. The Cognify acquisition-related contingent consideration, which is liability-classified, was recorded at the estimated fair value at the acquisition date of October 19, 2018. The Company, with the assistance of a third-party appraiser, utilized a Monte Carlo simulation to derive estimates of the contingent consideration payments as of the acquisition date and at each subsequent reporting period.

During the third quarter of 2020, pursuant to the terms of the stock purchase agreement, the Company elected to accelerate the payment of the acquisition-related contingent consideration for an aggregate payment amount of $13,413, which was partially satisfied during 2020 by cash payments of $6,394 and the issuance of 135,434 shares of the Company's common stock, with a fair value of $6,853. During the year ended December 31, 2018, the Company recorded a $300 gain for the change in the fair value of Cognify acquisition-related contingent consideration primarily due to an increase in the 2018 results. During the year ended December 31, 2019, the Company recorded a $3,000 charge for the change in the fair value of the Cognify acquisition-related contingent consideration primarily due to an amendment of certain definitions used in the calculation of the contingent consideration set forth in the stock purchase agreement and decreased discount period to the final measurement date. During the year ended December 31, 2020, the Company recorded a $2,613 charge for the change in the fair value of the Cognify acquisition-related contingent consideration liability primarily due to the accelerated payment. The fair value of the Cognify acquisition-related contingent consideration was calculated to be $166 and $10,800 as of December 31, 2020 and December 31, 2019, respectively. The Company made the final cash payment of $166 in full satisfaction of the remaining acquisition-related contingent consideration liability in January 2021.

In connection with the 2019 acquisition of DoseMe, additional consideration was payable by the Company based on a multiple of DoseMe's revenues associated with signed contracts during the twelve-month period ending November 30, 2019, as defined in the share purchase deed. The DoseMe acquisition-related contingent consideration, which was liability-classified, was recorded at the estimated fair value at the acquisition date of January 2, 2019. The Company, with the assistance of a third-party appraiser, utilized a Monte Carlo simulation to derive estimates of the contingent consideration payments as of the acquisition date and at each subsequent period. During the year ended December 31, 2019, the Company recorded a $30 charge for the change in fair value of the final DoseMe acquisition-related contingent consideration amount. During the third quarter of 2019, the Company elected to accelerate the payment of the contingent consideration and made a final cash payment of $8,750 in full satisfaction of the DoseMe acquisition-related contingent consideration payable.

(Amounts in thousands, except share and per share data)

The changes in fair value of the Company's acquisition-related contingent consideration liability for the years ended December 31, 2020 and 2019 was as follows:

Balance at January 1, 2019	$ 51,197
Acquisition date fair value of the DoseMe contingent consideration	8,720
Fair value of cash consideration paid	(53,542)
Adjustments to fair value measurement	3,816
Reclassification of amounts to be settled in common stock to equity	609
Balance at December 31, 2019	$ 10,800
Cash consideration paid	(6,394)
Fair value of stock consideration paid	(6,853)
Adjustments to fair value measurement	2,613
Balance at December 31, 2020	$ 166

The following table presents the financial instruments that are not carried at fair value but require fair value disclosure as of December 31, 2020:

	Face Value	Carrying Value	Fair Value
1.75% Convertible Senior Subordinated Notes due 2026	$ 325,000	$ 239,285	$ 308,679

The fair value of the 2026 Notes at each balance sheet date is determined based on recent quoted market prices for these notes which is a level 2 measurement. As discussed in Note 13, the 2026 Notes are carried at their aggregate face value of $325,000, less any unaccreted debt discount and unamortized debt issuance costs.

18. Commitments and Contingencies

(a) Employment Agreements

The Company has employment agreements with each of the Company's named executive officers and certain non-executive officers and key employees that provide for, among other things, salary and performance bonuses or other incentive compensation. Certain employment agreements may also provide for payments in the event of termination of the executives upon the occurrence of a change in control, and restrictive covenants pursuant to which the employees have agreed to refrain from competing with the Company or soliciting the Company's employees or clients for a period following the employee's termination of employment.

(b) Legal Proceedings

The Company is not currently involved in any significant claims or legal actions that, in the opinion of management, will have a material adverse impact on the Company.

(c) Vendor Purchase Agreements

In May 2016, the Company signed a prime vendor agreement with AmerisourceBergen Drug Corporation ("AmerisourceBergen"). The agreement was not renewed upon expiration in April 2019, but the Company continues to purchase from AmerisourceBergen from time-to-time on a purchase order basis. Pursuant to the terms of a security agreement entered into in connection with the prime vendor agreement, AmerisourceBergen held a subordinated security interest in all of the Company's assets. The subordinated security interest was released in the fourth quarter of 2020.

On March 29, 2019, the Company entered into an Affiliated Pharmacy Agreement and Pharmaceutical Program Supply Agreement (the "Prior Thrifty Drug Agreements") with Thrifty Drug Stores, Inc. ("Thrifty Drug") to replace the prime vendor agreement with AmerisourceBergen. On July 1, 2020, the Company entered into a new Affiliated Pharmacy Agreement and Pharmaceutical Program Supply Agreement with Thrifty Drug (the "Thrifty Drug Agreements") to replace the Prior Thrifty Drug Agreements, which, among other things, extended the Company's agreement with Thrifty Drug through September 30, 2023. Pursuant to the terms of the Thrifty Drug Agreements, the Company has agreed to purchase not less than 98% of the Company's total prescription product requirements from Thrifty Drug. The Company commenced purchasing prescription products under the Prior Thrifty Drug Agreements in May 2019 and has continued to do so under the Thrifty Drug Agreements beginning in July 2020. Both the Prior Thrifty Drug Agreements and the Thrifty Drug Agreements authorize Thrifty Drug to hold a security interest in all of the products purchased by the Company under the respective agreements.

As of December 31, 2020, the Company had $1,985 due to Thrifty Drug as a result of prescription drug purchases. As of December 31, 2019, the Company had $2,465 due to AmerisourceBergen and Thrifty Drug as a result of prescription drug purchases.

In December 2019, the Company entered into an updated agreement with its data aggregation partner related to the Company's pharmacy cost management services. The agreement was effective January 1, 2020 with a three-year term expiring December 31, 2022 and commits the Company to a monthly minimum purchase obligation of $30.

19. Retirement Plan

The Company has established a 401(k) plan that qualifies as a defined contribution plan under Section 401 of the Internal Revenue Code. The Company's contributions to this plan are based on a percentage of eligible employees' plan year earnings, as defined. The Company made matching contributions to participants' accounts totaling $2,732, $2,242, and $1,643 during the years ended December 31, 2020, 2019, and 2018, respectively.

20. Segment Reporting

The Company operates its business through two segments. The Company's chief operating decision maker ("CODM"), the Chief Executive Officer, allocates resources and assesses performance based upon financial information at the reportable segment level. Substantially all revenues are generated and substantially all tangible assets are held in the U.S. The Company classifies its operations into two reportable segments as follows:

CareVention HealthCare primarily provides services to PACE organizations that include medication fulfillment pharmacy services and PACE solutions such as medication safety services, pharmacy benefit management solutions, and health plan management services.

MedWise HealthCare clients include health plans, pharmacies, and non-PACE healthcare providers. Services provided to these clients include medication safety services and software subscription solutions, which identify individuals with high medication-related risk, improve patient communication and engagement, and allow for documentation of clinical interventions. These services optimize medication therapy, improve adherence, and enable precision dosing.

Shared services primarily consist of unallocated corporate sales and marketing expenses and general and administrative expenses associated with the management and administration of the Company's business objectives.

The CODM uses revenue in accordance with U.S. GAAP and Adjusted EBITDA as the relevant segment performance measures to evaluate the performance of the segments and allocate resources.

Adjusted EBITDA is a segment performance financial measure that offers a useful view of the overall operation of the Company's businesses and may be different than similarly-titled segment performance financial measures used by other companies.

(Amounts in thousands, except share and per share data)

Adjusted EBITDA consists of net loss plus certain other expenses, which includes interest expense, income tax benefit, depreciation and amortization, change in fair value of acquisition-related contingent consideration expense, intangible asset impairment charge, severance expense incurred in 2020 in connection with the Company's reorganization, severance expense related to the termination of two members of senior management in 2018, acquisition-related expense, and stock-based compensation related expense. The Company considers acquisition-related expense to include nonrecurring direct transaction and integration costs, severance, and the impact of purchase accounting adjustments related to the fair value of acquired deferred revenue.

Management considers revenue and Adjusted EBITDA to be the appropriate metric to evaluate and compare the ongoing operating performance of the Company's segments on a consistent basis across reporting periods as they eliminate the effect of items which are not indicative of each segment's core operating performance.

The following tables present the Company's segment information:

	CareVention HealthCare	MedWise HealthCare	Consolidated
Revenue:			
Year Ended December 31, 2020			
Product revenue	$ 158,692	$ 901	$ 159,593
Service revenue			
PACE solutions	47,577	—	47,577
Medication safety services	—	49,863	49,863
Software subscription and services	—	40,186	40,186
Total service revenue	47,577	90,049	137,626
Total revenue	$ 206,269	$ 90,950	$ 297,219
Year Ended December 31, 2019			
Product revenue	$ 137,130	$ —	$ 137,130
Service revenue			
PACE solutions	45,908	—	45,908
Medication safety services	—	69,917	69,917
Software subscription and services	—	31,752	31,752
Total service revenue	45,908	101,669	147,577
Total revenue	$ 183,038	$ 101,669	$ 284,707
Year Ended December 31, 2018			
Product revenue	$ 112,760	$ —	$ 112,760
Service revenue			
PACE solutions	25,448	—	25,448
Medication safety services	—	60,956	60,956
Software subscription and services	—	5,106	5,106
Total service revenue	25,448	66,062	91,510
Total revenue	$ 138,208	$ 66,062	$ 204,270

(Amounts in thousands, except share and per share data)

	CareVention HealthCare	MedWise HealthCare	Shared Services	Consolidated
Year Ended December 31, 2020				
Adjusted EBITDA (loss)	$ 50,400	$ 9,280	$ (37,905)	$ 21,775
Year Ended December 31, 2019				
Adjusted EBITDA (loss)	$ 47,491	$ 18,276	$ (27,846)	$ 37,921
Year Ended December 31, 2018				
Adjusted EBITDA (loss)	$ 33,804	$ 13,806	$ (18,289)	$ 29,321

The following table presents the Company's reconciliation of the segments' total Adjusted EBITDA to net loss as presented in the consolidated statements of operations:

	Year Ended December 31,		
	2020	2019	2018
Reconciliation of net loss to Adjusted EBITDA			
Net loss	$ (80,966)	$ (32,436)	$ (47,269)
Add:			
Interest expense, net	20,743	15,986	906
Income tax benefit	(5,168)	(16,199)	(3,376)
Depreciation and amortization	45,040	34,276	16,802
Change in fair value of acquisition-related contingent consideration expense	2,613	3,816	49,468
Intangible asset impairment charge	5,040	—	—
Severance expense	873	—	390
Acquisition-related expense	1,045	5,200	1,901
Stock-based compensation related expense	32,555	27,278	10,499
Adjusted EBITDA	$ 21,775	$ 37,921	$ 29,321

Asset information by segment is not a key measure of performance used by the CODM. Accordingly, the Company has not disclosed asset information by segment.

Schedule II—Valuation and Qualifying Accounts (in thousands)

Description	Balance at Beginning of Period	Additions Charged to Costs and Expenses	Deductions	Acquisition	Balance at End of Period
Allowance for doubtful accounts:					
Year Ended December 31, 2020	$ 386	$ 126	$ (315)	$ 27	$ 224
Year Ended December 31, 2019	$ 528	$ 745	$ (916)	$ 29	$ 386
Year Ended December 31, 2018	$ 63	$ 362	$ —	$ 103	$ 528

Description	Balance at Beginning of Period	Allowance Recorded on Current Year Losses	Release of Allowance on Losses Expired or Revalued	Acquisition	Change In Foreign Exchange Rate	Balance at End of Period
Deferred tax asset valuation allowance:						
Year Ended December 31, 2020	$ 3,161	$ 19,877	$ —	$ —	$ 140	$ 23,178
Year Ended December 31, 2019	$ 1,436	$ 1,424	$ —	$ 301	$ —	$ 3,161
Year Ended December 31, 2018	$ 1,338	$ 659	$ (561)	$ —	$ —	$ 1,436

Exhibit 21.1

Tabula Rasa HealthCare, Inc. Subsidiaries

The following are the Company's subsidiaries as of December 31, 2020 and the states or jurisdictions in which they are organized; provided, however, the names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of December 31, 2020, a "significant subsidiary" as that term is defined in Rule 1-02(w) of Regulation S-X under the Securities Exchange Act of 1934, as amended.

NAME	JURISDICTION OF ORGANIZATION OR INCORPORATION
Tabula Rasa HealthCare Group, Inc.	Delaware
DM Acquisition Pty Ltd	Australia
DoseMe Holdings Pty Ltd	Australia
DoseMe Pty Ltd	Australia
Personica, LLC	Delaware
TRHC TPA, LLC	Wisconsin
PersonifilRx, LLC	Wisconsin

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Tabula Rasa HealthCare, Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-236821, 333-230046, 333-223658, 333-216674 and 333-214025) on Form S-8 of Tabula Rasa HealthCare, Inc. of our reports dated February 26, 2021, with respect to the consolidated balance sheets of Tabula Rasa HealthCare, Inc. as of December 31, 2020 and 2019, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – valuation and qualifying accounts (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2020, which reports appear in the December 31, 2020 annual report on Form 10-K of Tabula Rasa HealthCare, Inc.

Our report on the consolidated financial statements refers to a change in the accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leases (Topic 842)* and ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*.

Our report dated February 26, 2021, on the effectiveness of internal control over financial reporting as of December 31, 2020, contains an explanatory paragraph that states that the Company acquired Personica, LLC during 2020, and management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2020, Personica, LLC's internal control over financial reporting associated with approximately 14% of total assets and approximately 1% of total revenue included in the consolidated financial statements of the Company as of and for the year ended December 31, 2020. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of Personica, LLC.

/s/ KPMG LLP

Philadelphia, Pennsylvania
February 26, 2021

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Calvin H. Knowlton, certify that:

1. I have reviewed this Annual Report on Form 10-K of Tabula Rasa HealthCare, Inc.;

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

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

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

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

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: February 26, 2021

/s/ DR. CALVIN H. KNOWLTON
Dr. Calvin H. Knowlton
Chief Executive Officer
Principal Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Brian W. Adams, certify that:

1. I have reviewed this Annual Report on Form 10-K of Tabula Rasa HealthCare, Inc.;

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

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

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

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

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

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

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

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

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

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

Date: February 26, 2021

/s/ BRIAN W. ADAMS
Brian W. Adams
Chief Financial Officer
Principal Financial Officer

Exhibit 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

In connection with the Annual Report of Tabula Rasa HealthCare, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Calvin H. Knowlton, Chief Executive Officer of the Company, and I, Brian W. Adams, Chief Financial Officer of the Company, each hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or Section 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.

Date: February 26, 2021

By: /s/ DR. CALVIN H. KNOWLTON
Name: Dr. Calvin H. Knowlton
Title: Chief Executive Officer
(Principal Executive Officer)

Date: February 26, 2021

By: /s/ BRIAN W. ADAMS
Name: Brian W. Adams
Title: Chief Financial Officer
(Principal Financial Officer)

* This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Tabula Rasa HealthCare, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing