

Growth and Investor Interest in Digital Behavioral Health Solutions



Addiction has become a major public health focus over the last decade as the substance abuse crisis continues to cost over USD 740 billion a year in lost workplace productivity, healthcare expenses and crime-related costs.¹ The amount of awareness, funding, legislation and treatment centers has steadily increased, and significant investments in behavioral health treatment centers have been made by private equity firms. Despite growing awareness, the majority of those individuals affected by substance abuse disorders remain untreated and underserved. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), there are approximately 20 million Americans with a substance abuse disorder yet only 11% of those receive treatment annually.² High treatment costs, the ineffectiveness of traditional treatment methods and the stigma of substance abuse disorders have historically created barriers for many seeking help. To address these issues, the substance abuse treatment industry and its investors are turning towards innovative new addiction treatment technologies to change the way addiction is diagnosed and treated.

Traditional methods of treatment, including 12-step programs and anti-craving medications such as Naltrexone and Suboxone, have been in the market for decades and remain largely unchanged. Efforts in destigmatizing mental illness and substance abuse have grown due to increased education and awareness of mental health and tighter privacy requirements. Patients are finding it acceptable and are encouraged to seek help and treatment. Addiction affects people in unique ways, but the incumbent 12-step program is a “one size fits all” treatment method that has variable efficacy. The failure to create holistic, bespoke treatment methods has contributed to readmission rates between 18-26% for patients with substance-abuse disorders.³

Medication-assisted treatment (MAT) can be incorporated with a 12-step program to achieve better results. However, MAT is not a cure and certain medications, such as opiate addiction drugs Methadone and Buprenorphine, are highly addictive themselves. The limited number of physicians and therapists specializing in addiction treatment and the high cost of MAT drugs hinders most Americans' ability to afford addiction treatment services. A one-month inpatient detox program can cost USD 12,000-40,000 and the subsequent monthly cost for a sober living environment typically ranges between USD 1,500-2,500 per month.⁴ Outpatient treatment with three months of behavioral therapy is estimated to cost a total of USD 5,000, and the cost of individual addiction medications range from USD 6,000-14,000 per year.^{5,6} Additionally, outpatient care requires patients to deal with temptations and triggers on their own and making medication regimes can be difficult to follow. As a result, the addiction treatment

¹ <https://americanaddictioncenters.org/rehab-guide/addiction-statistics>

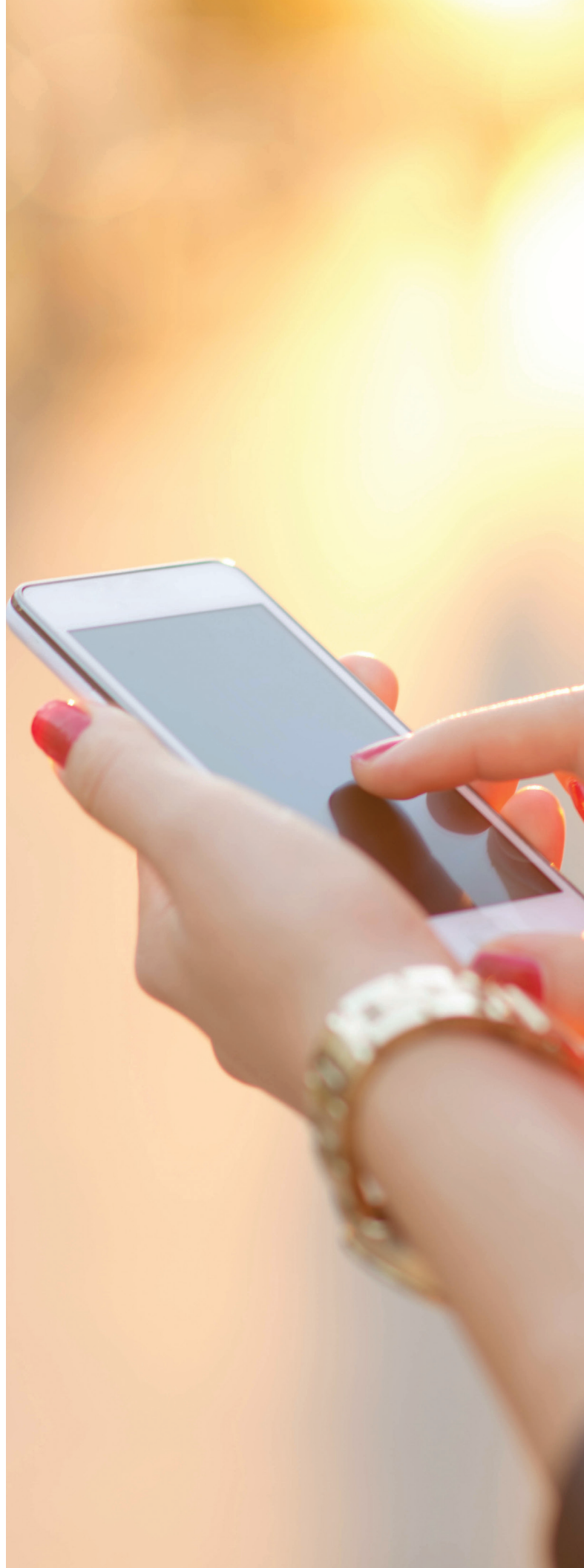
² <https://www.samhsa.gov/data/sites/default/files/NSDUH-DR-FFR2-2016/NSDUH-DR-FFR2-2016.pdf>

³ <https://ps.psychiatryonline.org/doi/pdf/10.1176/appi.ps.201600339>

⁴ <https://americanaddictioncenters.org/blog/what-does-it-cost>

⁵ <https://www.addictioncenter.com/rehab-questions/cost-of-drug-and-alcohol-treatment/>

⁶ <https://www.drugabuse.gov/publications/research-reports/medications-to-treat-opioid-addiction/how-much-does-opioid-treatment-cost>



industry is extending beyond traditional methods of 12-step programs and MAT. Advancements in technology and genetic testing are the new frontier for addiction treatment and may help clinicians better understand the biological factors and patterns related to substance abuse and to more accurately monitor and assist patients during treatment. This can help providers develop better treatment solutions for patients and improve patient adherence to treatment programs.

Digital Therapeutics (DTx) is a fast-growing segment of the mobile health market that seeks to supplement or replace traditional clinical therapy with software and evidence-based treatment. DTx offerings include sensory stimuli, medication and regimen tracking through wearable technology, disorder prevention and diagnosis. Through the aggregation of patient data into a single portal or platform, providers can analyze patient responses and treatment effectiveness to provide higher quality and more personalized care. A survey conducted by PwC revealed that 54% of consumers would likely test a DTx app or online platform to treat their medical condition.⁷ By shifting treatment delivery to mobile devices, DTx provides a private method for patients to support their own treatment and may help addiction treatment professionals to penetrate a demographic that is unlikely to seek treatment at a traditional clinic. Innovative applications can be significantly more cost effective than introducing new pharmaceutical drugs to the addiction market and with the use of machine learning, application treatment methods can be scaled quickly and reach more

patients without the need for additional therapists and clinicians. Paired with traditional methods, DTx allows clinical health providers to treat and monitor a higher volume of patients, as well as provide customized and comprehensive treatment plans and significantly reduce the cost of care.

Innovative new applications that utilize machine learning, virtual reality and wearable technology have paved the way for growth and investor interest in digital behavioral health solutions. Through Q1 of 2020, digital behavioral health companies raised USD 3.1 billion across 107 deals, with six companies raising rounds of USD 100 million or more.⁸ The increase in funding has helped companies create extensive product development pipelines and unique treatment strategies that solve the complex issues affecting traditional behavioral health treatment. Some of these innovative digital behavioral health solutions include:

- Limbix is a digital health company that manufactures virtual reality (VR) headsets specifically tailored for patients with mental health or substance abuse disorders. While immersed in a VR experience, patients can resist temptations, confront fears or relax in a safe and stress-free environment. Limbix has received early venture funding from NextGen Venture Partners, Storm Ventures, Maverick Ventures, Plug and Play Tech Center and a consortium of other venture capital investors.⁹

⁷ <https://www.pwc.com/us/en/industries/health-industries/top-health-industry-issues/digital-therapeutics-and-connected-care.html>

⁸ <https://rockhealth.com/reports/q3-2019-digital-health-funding-moderates-after-particularly-strong-first-half/>

⁹ <https://my.pitchbook.com/profile/169047-19/company/profile#deal-history>



- RMDY Health created a platform to guide patients through the entire care process, allowing for medication and progress tracking through wearable devices, one-on-one coaching, a patient engagement community and connectivity with behavioral health providers and electronic health records. RMDY Health was acquired by OptimizeRX (Nasdaq: OPRX) for USD 48 million in October 2019.¹⁰
- BACtrack offers a wrist-worn sensor that continuously tracks alcohol levels and connects to an application and cloud-based web portal. This allows users to track and understand how to improve/stabilize their alcohol intake and provides early warning signals to care givers. The company received USD 200,000 in grant funding from the National Institute of Health.¹¹
- The University of California San Diego has developed a prototype injectable biosensor that allows for continuous and long-term tracking of alcohol use.⁹ This technology will give clinicians essential data and create greater transparency, increasing the effectiveness of treatments. The data from this device may help with addiction recovery time and more.

As more digital behavioral health companies receive funding and move past early-stage development, digital applications and technology will likely become a viable solution for substance abuse treatment.

Along with development in artificial intelligence (AI), digital behavioral health applications are in the early stages of adoption and usage but demonstrating promising results for increases in care coordination and a reduction in readmission and relapse rates in substance-abuse patients. The National Institute on Drug Abuse conducted a study on patients with substance abuse disorders and found that “digital therapeutics more than doubled the rate of abstinence compared with standard, face-to-face counseling.”¹² Additionally, Pear Therapeutics, a digital behavioral health company that has developed two FDA approved prescription digital therapeutic applications, reSET and reSET-O, to treat substance abuse and opioid use disorders, has exhibited success through its digital therapeutic applications. The effectiveness of reSET-O was tested in a clinical trial that showed that

reSET-O had an overall retention rate of 82.4% through 12 weeks of treatment compared with a 68.4% retention for patients using traditional treatment.¹³ The early success of digital therapeutics to improve substance abuse patient outcomes while achieving FDA approvals have proven that digital treatment delivery is a feasible solution for providers and is expected to be adopted in the substance-abuse treatment industry.

Although in its infancy, technology and research are being gathered for the development of genetic testing to better identify genes that correlate to substance abuse. Scientists estimate that a person’s genetics account for 40-60% of their risk of substance abuse.¹⁴ Recently, researchers at the University of Indiana have determined genetic susceptibility to alcohol abuse with greater accuracy based on a panel of 11 genes.¹⁵ This research concluded that the results are effective as a statistical probability tool for assessing risks of substance abuse across a population. Among the discoveries, it was found that the A1 allele of the dopamine receptor gene DRD2 occurs more often in people with alcohol/cocaine addiction.¹⁵ Genetic testing is not ready to replace a comprehensive clinical assessment with an addiction professional and likely will never provide the entire clinical picture for a patient. However, the increase in understanding and data provided by genetic testing will begin to more fully support the risk indicators, diagnosis and development of substance abuse treatment programs for patients.

While technology is unlikely to provide the final panacea for substance abuse, it will likely become a more integrated part of overall diagnosis and treatment. As technology and research advances in genetic testing for substance abuse, providers will be able to better utilize data and results to personalize and treatment plans for individual patients more accurately than ever before. Advancements in digital application and devices will help providers more accurately monitor patients in real time and support patients in treatment program adherence. According to Nora Volkow, Director of the National Institute of Drug Abuse, understanding the complex interactions between the factors involved in drug abuse and addiction is critical to effective prevention and treatment. These combined advancements will benefit providers and patients with the goal of improving outcomes and lowering cost.

¹⁰ <https://my.pitchbook.com/profile/228812-14/company/profile#deal-history>

¹¹ <https://my.pitchbook.com/profile/266111-02/company/profile#deal-history>

¹² <https://www.drugabuse.gov/news-events/nida-notes/2015/11/digital-addiction-therapies-affirm-promise-in-replication-large-trial>

¹³ <https://www.fda.gov/news-events/press-announcements/fda-clears-mobile-medical-app-help-those-opioid-use-disorder-stay-recovery-programs>

¹⁴ <https://health.usnews.com/health-care/for-better/articles/2017-06-14/genetic-testing-for-addiction-5-things-to-know>

¹⁵ <https://www.apa.org/monitor/2008/06/genes-addict>

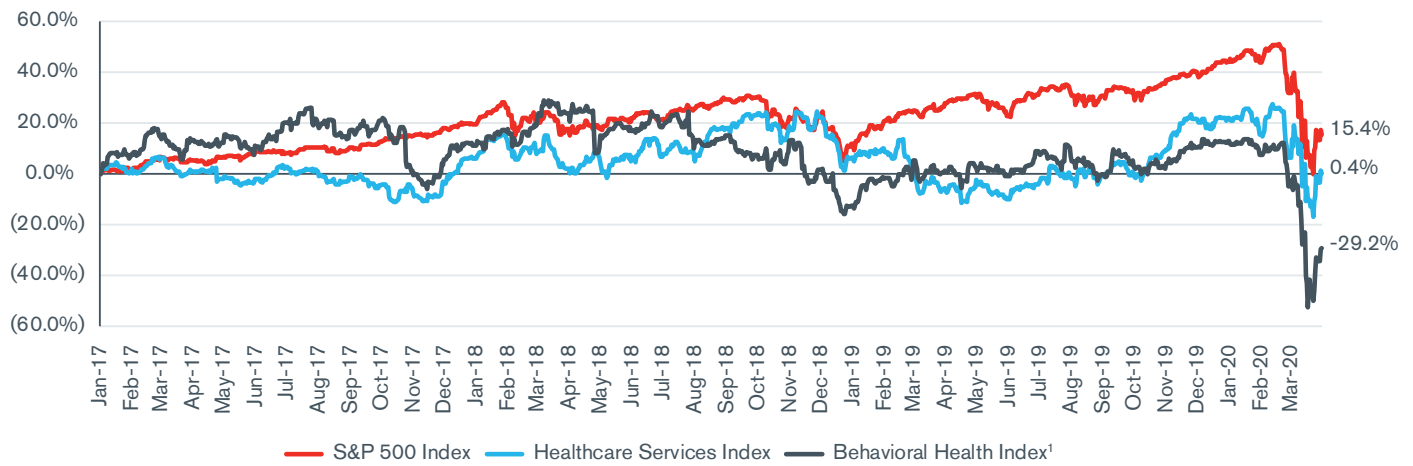
Exhibit 1: U.S.-Based PE-Backed Addiction Treatment Companies

Investment Date	Addiction Treatment Company	Business Description	Financial Sponsor Ownership
Feb-20	Netalytics	Developer of behavioral health EMR and practice management software	Prairie Capital
Jan-20	Evolve Treatment Centers	Provider of adolescent behavioral health services	Galen Partners
Nov-19	Research Centers of America	Research center for vaccine and therapeutic development for behavioral health disorders	Webster Equity Partners
Jul-19	Averhealth	Addiction treatment programs	Five Arrows Capital Partners, Rothschild & Co
Jun-19	BayMark Health Services	Medication-assisted treatment to patients for recovery from opioid use disorder	BPEA Private Equity, Webster Equity Partners
Jun-19	Beacon Health Options	Mental health and substance use disorder management and programs for autism and depression	Bain Capital, Diamond Castle Holdings
May-19	MAP Health Management	Provider of telehealth services and treatment support programs for substance use disorders and treatments	Aetna, Triton Pacific Capital Partners
Apr-19	SUN Behavioral Health	Operator of freestanding psychiatric hospitals	HealthInvest Equity Partners, LLR Partners, NewSpring Capital, Petra Capital Partners, SV Health Investors
Apr-19	Sunrise Treatment Center	Addiction treatment services	Bridges Fund Management
Apr-19	Paradigm Treatment Centers	Provider of treatment for anxiety, depression, eating disorders, grief and trauma	Pine Tree Equity Partners
Mar-19	Clinical and Laboratory Services Joint venture	Clinical and laboratory services to help providers identify and prevent opioid and substance misuse	HealthTrackRx, Marshall Health, Mountain Health Network
Mar-19	Promises Behavioral Health	Provider of mental health treatment services and psychiatric services	BlueMountain Capital Management
Sep-18	City Line Behavioral Healthcare	Addiction treatment services	Fulcrum Equity Partners
Sep-18	Kolmac Outpatient Recovery Centers	Addiction treatment programs	WindRose Health Investors
Sep-18	Ideal Option	Addiction treatment programs	Varsity Healthcare Partners
May-18	Turning Point Centers	Drug and alcohol treatment center	InTandem Capital Partners
Oct-17	BrightView	Outpatient addiction medicine services	Shore Capital Partners
Oct-17	Delphi Behavioral Health Group	Addiction treatment	The Halifax Group
Oct-17	Summit Behavioral Healthcare	Addiction treatment and behavioral health services	FFL Partners, Lee Equity Partners
Aug-17	Experience Wellness Centers	Addiction treatment and counseling centers	Council Capital
Jun-17	Bradford Health Services	Addiction treatment services	Centre Partners, Yukon Partners
Mar-17	The Well Recovery Center	Drug addiction and alcoholism detox center	CDK Ventures

Exhibit 1: U.S.-Based PE-Backed Addiction Treatment Companies (continued)

Investment Date	Addiction Treatment Company	Business Description	Financial Sponsor Ownership
Jan-17	Ridgeview Institute	Addiction and mental health treatment	US HealthVest
Dec-16	Lakeview Health	Drug and alcohol rehabilitation services	The Riverside Company
Oct-16	Infinity Malibu	Addiction rehabilitation services	New State Capital Partners
Aug-16	Pinnacle Treatment Centers	Drug addiction treatment services	Golub Capital, Linden Capital Partners, Prospect Capital
May-16	Constellation Behavioral Health	Rehabilitation programs and addiction treatments	New MainStream Capital
Mar-16	Selfrefind	Medication assisted treatment center for opioid addiction	Frist Cressey Ventures, Health Velocity Capital, Heritage Group, South Central
Jan-16	Calyx Recovery	Addiction treatment	Generation Partners
Dec-15	LifeStance Health	Treatment services for addiction, substance abuse and eating disorders	Silversmith Capital Partners, Summit Partners
Dec-15	Meridian Behavioral Health	Addiction treatment services	Audax Group
Sep-15	Monte Nido Holdings	Treatment for eating disorders and exercise addiction	Levine Leichtman Capital Partners
Jun-15	Sunspire Health (Alitacare)	Addiction treatment services	Kohlberg & Company
Jan-15	Crossroads Treatment Centers	Treatment services for opiate dependence	GMB Mezzanine Capital, Revelstoke Capital Partners
Jan-15	Odyssey Behavioral Healthcare	Specialty behavioral health and addictive disease rehabilitation and treatment	Nautic Partners
Jan-15	Turnbridge	Clinical therapy system for clients with substance abuse	North Castle Partners
Dec-14	Recovery Centers of America	Addiction treatment services	VC Consortium
Aug-14	Pyramid Healthcare	Behavioral health and substance abuse treatment services	Clearview Capital
Aug-14	Recovery Ways	Addiction treatment services	Chicago Pacific Founders
May-14	Addiction Campuses	Drug and alcohol rehab programs	Summit Partners
Jan-14	Aegis Treatment Centers	Opiate recovery services	Housatonic Partners, The Operand Group

Exhibit 2: Behavioral Health Index Year-to-Date Performance



Source: S&P Capital IQ as of March 31, 2020

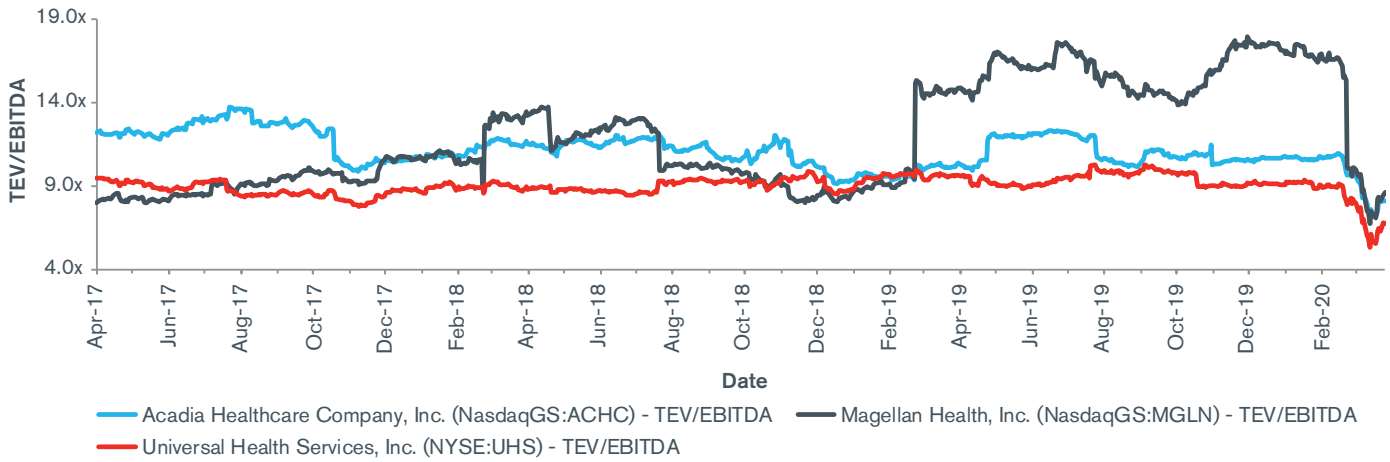
1. Includes: Acadia Healthcare, Magellan Health and Universal Health Services

Exhibit 3: Selected Publicly Traded Companies

	Stock Price 31-Mar-20	Enterprise Value					Enterprise Value								
		% of 52 Wk. High	Enter- prise Value	Revenue Growth			EBITDA Margin			Revenue			EBITDA		
				CY19	CY20P	CY21P	CY19	CY20P	CY21P	CY19	CY20P	CY21P	CY19	CY20P	CY21P
Contract Research Organizations															
Acadia Healthcare Company, Inc.	\$18.35	51.8%	\$5,269	3.2%	6.0%	5.5%	18.8%	18.5%	18.4%	1.7x	1.6x	1.5x	9.0x	8.6x	8.2x
Magellan Health, Inc.	\$48.11	59.4%	\$1,735	(2.0%)	0.7%	3.7%	3.8%	3.4%	3.9%	0.2x	0.2x	0.2x	6.4x	7.0x	6.0x
Universal Health Services, Inc.	\$99.08	62.8%	\$12,922	5.5%	4.7%	5.4%	15.8%	15.4%	15.5%	1.1x	1.1x	1.0x	7.2x	7.1x	6.6x
Median		59.4%	\$5,269	3.2%	4.7%	5.4%	15.8%	15.4%	15.5%	1.1x	1.1x	1.0x	7.2x	7.1x	6.6x
Mean		58.0%	\$6,642	2.2%	3.8%	4.9%	12.8%	12.5%	12.6%	1.0x	1.0x	0.9x	7.5x	7.6x	7.0x

Source: S&P Capital IQ

Exhibit 4: Public Comp EBITDA Multiples



Source: S&P Capital IQ as of March 31, 2020

Exhibit 5: Healthcare Transactions and Median Multiples

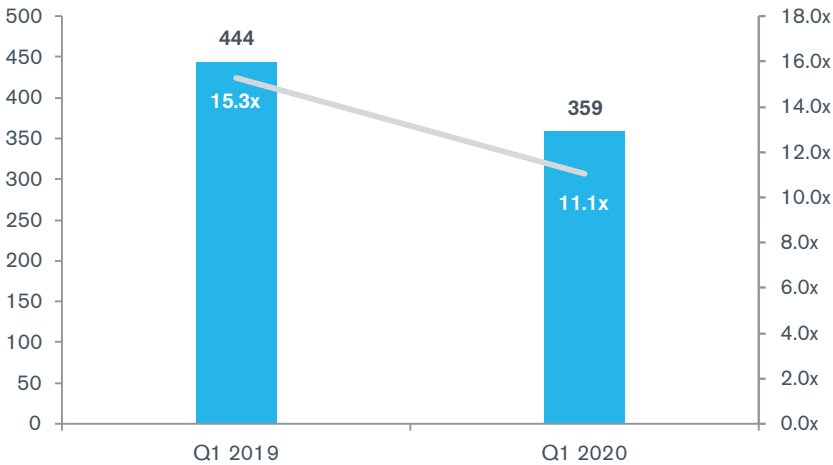
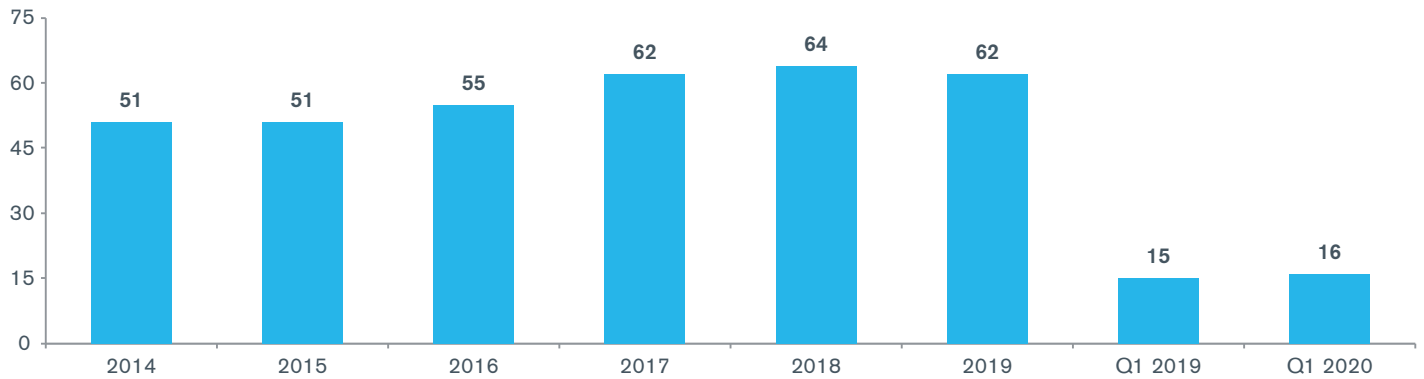


Exhibit 6: 2014-2020 Behavioral Health M&A Activity



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