Monthly Newsletter

The Healthtech Industry

DISRUPTION + HEALTH: JANUARY 2024

If anyone thought that 2024 was going to follow any sort of status quo, they were sorely mistaken. We are entering a new chapter of providing solutions for categories that need to championed, from more equitable solutions to women’s health, rare & orphan diseases, and discovering new treatments for ailments that have not seen innovation in therapeutics in some time. With new pharmaceutical partnerships and the rise of AI providing expedient results, we are in a new dawn of innovation, challenges and disruption.

The end of 2023 gave us a sneak peak into what is in store, but we have entered an intense race with many hurdles. For example, the purchase of Karuna Therapeutics by Bristol Myers Squibb could allow patients with schizophrenia and Alzhhiemer’s Disease Psychosis to achieve new successes that haven’t been seen in years. And to think that this molecule was in a storage room at Eli Lilly’s headquarters…

Not all innovation occurs on the bench of a biochemist: M&A has seen an uptick, fueled by fierce competition, new demands & cost increases driving by global inflation. From new launches that address key issues, such as wearables that guide people’s everyday biometrics pattier into the development of new women's health solutions, disruption means ensuring we are improving peoples’ lives. However, challenges are on the rise as well.

Disruption can be helpful, but can also cause hindrance. From the impending patient cliff, to funding shortfalls to the highest rise in pharmaceutical bankruptcies in 5 years, fiscal hardships are on the rise. Legal challenges to safety and production, even for legacy brands, are seeing an uptick. 2024 has also seen a surge of global unrest that has impacted shipping, sourcing & production of these much-needed health care solutions.

As we explore these trends across moments of disruption, it is imperative that we keep a pulse on shifts, what unmet needs will come into focus, and where we can find new opportunities.

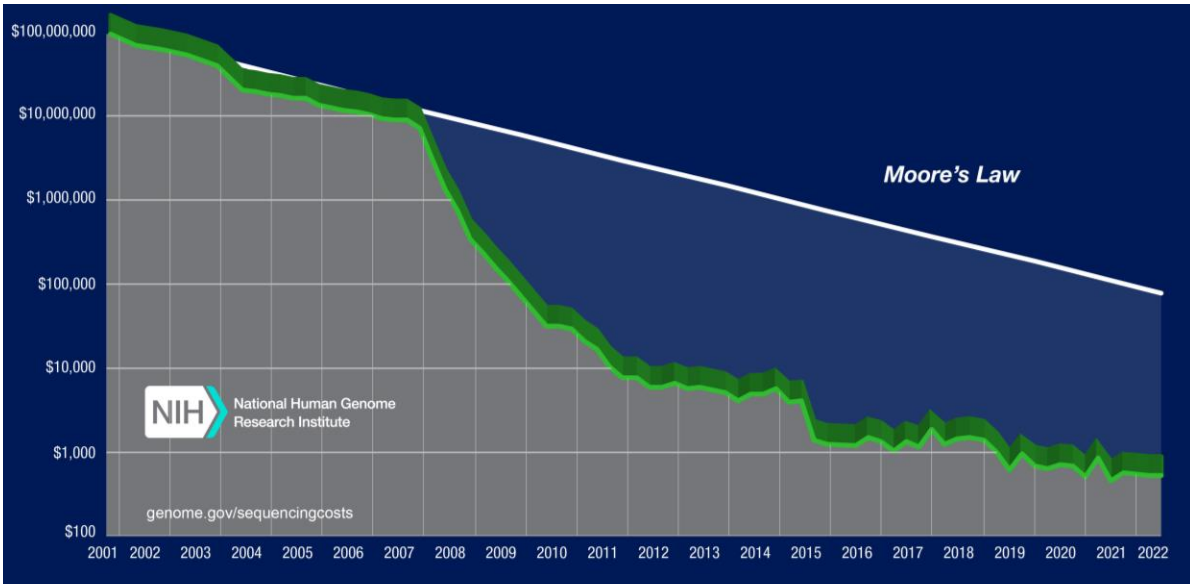
Thank you for reading!

NEXT GENERATION SEQUENCING (NGS) CONTINUES TO ADVANCE GENOMICS AND PRECISION MEDICINE. ILLUMINA (ILMN) IS THE LEADER.

Key takeaway: *Next generation sequencing (NGS) is a revolutionary technological breakthrough that continues to reduce the cost of genome sequencing while increasing throughput, and creating opportunities for better disease diagnosis, and personalized drug development. As sequencing technologies advance, investors should focus on established players like Illumina (ILMN) and Thermo Fisher Scientific (TMO) to benefit from this disruption.*

Next Generation Sequencing offers transformative benefits across healthcare, research, and biotechnology sectors. Next generation sequencing (NGS), also known as massively parallel sequencing, is a revolutionary technology that allows for the rapid and cost-effective sequencing of DNA and RNA. Unlike its predecessor, Sanger sequencing, which reads strands one at a time, NGS reads millions of strands simultaneously, offering a dramatic increase in speed and throughput. At the heart of this method is the ability to read the sequence of nucleotides (the building blocks of DNA and RNA) at a highly accelerated pace and with great precision, by automating and miniaturizing the DNA sequencing process, allowing for the rapid and accurate analysis of complex genetic information. Rapid advancements in sequencing over the past two decades have led to sharp reduction in the cost of genome sequencing.

Chart 1: Sequencing Cost per Human Genome



Source: Intro-act, NIH, National Human Genome Research Institute

Our research shows that advancements in NGS have had a profound impact on fields like genomics, personalized medicine, and drug discovery. Some of these benefits are:

- **Increased speed and efficiency**: NGS technology enables the sequencing of millions of DNA strands simultaneously. This parallel sequencing significantly reduces the time required to sequence entire genomes, from years or months to just a few days, enhancing productivity in research and clinical settings.
- **Cost reduction**: By virtue of its efficiency and scale, NGS has dramatically decreased the cost of genomic sequencing. This cost reduction has made large-scale genomic studies more feasible, democratizing access to genomic data and encouraging a broader range of research initiatives.

- **Enhanced precision and flexibility**: NGS offers unparalleled precision in detecting genetic variations, including single nucleotide polymorphisms, insertions, deletions, and structural variants. Its flexibility across various applications, from whole-genome and targeted sequencing to epigenomics and metagenomics, supports diverse research and clinical objectives.

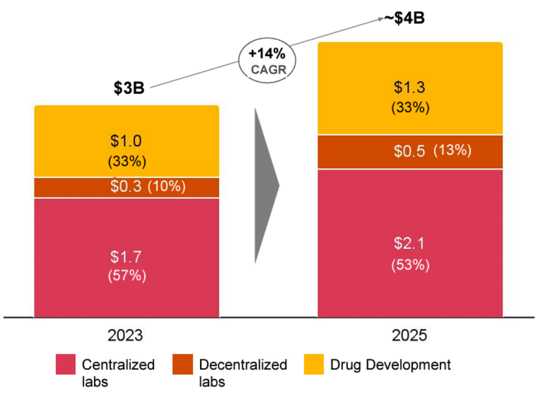
- **Facilitation of personalized medicine**: NGS plays a pivotal role in the advancement of personalized medicine, wherein treatments can be tailored to the genetic makeup of individual patients. It enables the identification of genetic mutations responsible for diseases, informing the development of targeted therapies that are more effective and have fewer side effects.

- **Improved disease diagnosis and risk assessment**: The technology's ability to rapidly sequence and analyze genetic material aids in the early diagnosis of genetic disorders, infectious diseases, and cancer. It also enhances risk assessment for hereditary diseases, supporting preventive healthcare strategies.

- **Advancements in drug discovery and development**: NGS aids in the identification of genetic markers and pathways involved in diseases, guiding the development of novel therapeutics. It accelerates the drug discovery process and improves the chances of success in clinical trials by enabling the selection of suitable candidates based on their genetic profiles.

NGS has been made possible by simultaneous advancement in multiple technological domains and significant R&D investments. The advent and progress of NGS has been significantly enabled by advancements in various technological domains, particularly in information technology (IT) and related fields. The development of NGS technologies has been symbiotic with progress in several key areas such as microfluidics and nanotechnology; optics and imaging technologies; data storage and management; computational power and algorithms; machine learning and artificial intelligence; and synthetic biology. These technological advancements have collectively contributed to the rapid development and widespread adoption of NGS. They have not only made sequencing faster and more affordable but have also expanded the potential applications of genomic sequencing in research, medicine, and biotechnology. We believe that the continued evolution of IT and biotechnology promises to further enhance the capabilities and applications of NGS, driving new discoveries and innovations in the life sciences. According to PwC, the NGS market for oncology in U.S. alone, was ~$3 billion in 2023, and is expected to reach ~$4 billion by 2025, growing at a CAGR of 14%. This growth will be contributed by centralized and decentralized labs, as well as drug development, but will continue to be dominated by centralized labs, which will command more than 50% of the market.

Chart 2: U.S. NGS Oncology Market – Rapid Growth



*Source: Intro-act, PwC, *Market sizes for centralized and decentralized are limited to tests for therapy selection*

We believe that as NGS technology advances, large established players like Illumina (ILMN) are among those best placed to benefit. (See company spotlight below.) Thermo Fisher Scientific (TMO) is another name that should be on investors' radar.

Illumina, Inc. (NASDAQ: ILMN) is a global leader in genomics and its technological advancements have propelled it to the forefront of next generation sequencing, with a comprehensive portfolio that includes sequencing and array-based solutions for genetic and genomic analysis. Founded in April 1998 and headquartered in San Diego, California, Illumina has revolutionized genomic analysis across research, clinical, and applied markets. Its products cater to a wide range of applications within the life sciences, oncology, reproductive health, agriculture, and emerging segments. The company's focus on innovation is evident in its consistent development of new sequencing and array technologies that empower the genomics research community worldwide. Illumina operates on a global scale, with a significant presence in major markets across North America, Europe, Asia-Pacific, and Latin America. The company's operations are segmented into two main areas: Core Illumina (providing sequencing- and array-based solutions for genetic and genomic analysis) and GRAIL (focusing on cancer early detection tests). In December 2023, the company announced that it is divesting GRAIL, after a lengthy legal battle following the $8bn purchase of the company two years ago.

Chart 3: Illumina Sequencing Systems

Source: Intro-act, Company Factsheet

Illumina's leadership in NGS is underscored by its comprehensive ecosystem of sequencing solutions, extensive patent portfolio, and deep investment in research and development. Its dominance is further solidified through strategic partnerships and initiatives aimed at expanding the application of genomics in healthcare and beyond.

- **Announced the new PrimateAI-3D, an AI software to predict disease-causing genetic mutations in patients** which utilizes deep neural network architectures similar to ChatGPT and AlphaFold but is trained on genome sequences rather than human language.

- **In 2023, Illumina and Nashville Biosciences launched the Alliance for Genomic Discovery (AGD)** with Vanderbilt University, including AbbVie, Amgen, AstraZeneca, Bayer, and Merck as founding members, to expedite therapeutic development by sequencing 250,000 samples for drug discovery access. In January 2024, Bristol Myers Squibb (BMS), GSK, and Novo Nordisk joined AGD.

- **Partnered with Pillar Biosciences to globally distribute its oncology assays**. This partnership will enhance Illumina's cancer product range and advance oncology testing's efficiency, accuracy, and affordability, promoting wider access to tailored cancer treatments.

- **In January 2024, ILMN partnered with Janssen Research & Development, LLC** marking the inaugural venture into developing innovative multi-cancer research tool for detecting circulating tumor DNA (ctDNA) via whole-genome sequencing.

The company recently announced it 4Q23 and CY23 results, reporting a revenue of $1.12 billion for 4Q23, up 4% y/y, and a revenue of $4.5 billion for full year 2023, down 2% y/y. Non-GAAP EPS for 4Q23 remained at $0.14 which was equal to the EPS reported a year ago. For 2024, the company has guided for flat revenue and Core Illumina non-GAAP operating margin to be ~20%. While Illumina continues to move as quickly as possible to resolve GRAIL, the company is focusing its financial outlook on Core Illumina.

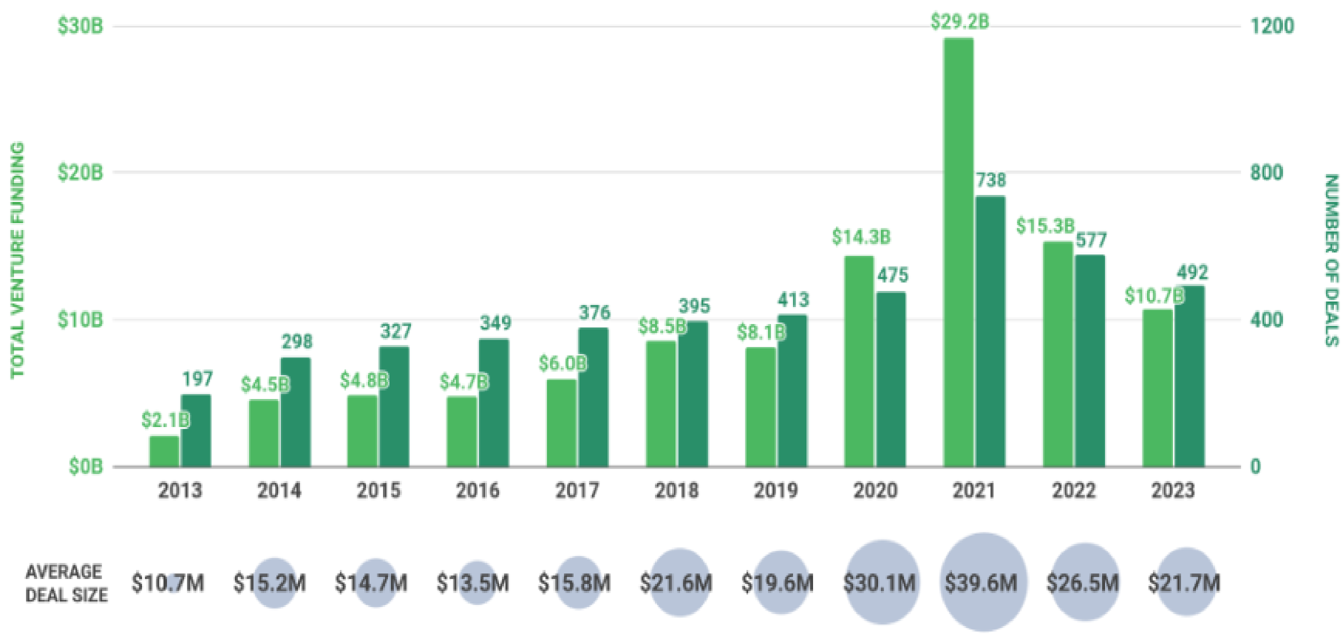
HEALTHTECH NEWS

INDUSTRY TRENDS

NVIDIA partners with Amgen to build generative AI models for drug discovery. NVIDIA unveiled healthcare advancements at the J P Morgan Healthcare Conference, highlighting a collaboration with Amgen to construct AI models. Amgen's AI platform, Freyja, will be deployed at deCODE genetics in Iceland, focusing on analyzing human datasets for drug targets and biomarker discovery. NVIDIA's DGX SuperPOD, equipped with 31 DGX X100 nodes and 248 H100 Tensor Core GPUs, will accelerate AI model training. Additionally, NVIDIA introduced BioNeMo's generative AI platform, now in beta, and shared its involvement with Amgen in developing software for enhanced medical imaging. Read More (Medical Device Network)

2023 year-end digital health funding: break on through to the other side. In 2023, venture funding for U.S.-based digital health startups hit a four-year low at $10.7B across 492 deals. Despite expectations of increased M&A activity and startup shutdowns, the market saw fewer closures. To survive, startups resorted to creative financing measures like series extensions, unlabeled rounds, and silent deals. The effects of these strategies will unfold in 2024, with startups facing challenges like lower valuations, potential exits, or closures. The public market may witness delistings, but strong performers could pave the way for new IPOs, contributing to a recalibrated digital health market. Read More (Rock Health)

Chart 4: U.S. Digital Health Funding and Deal Size (2013-2023)



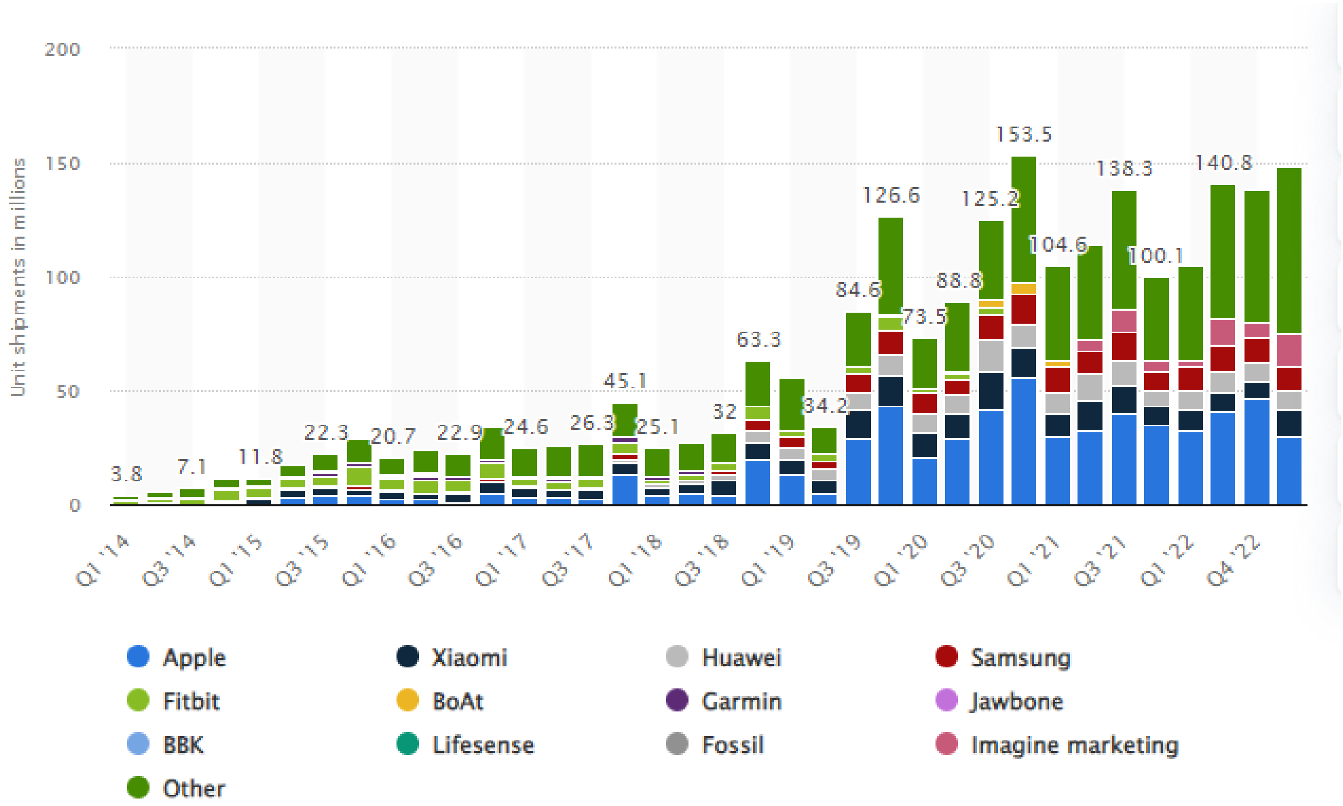
Source: Intro-act, Rock Health

JPM Healthcare Conference 2024 recap: key themes and emerging trends. The annual J.P. Morgan Healthcare Conference in San Francisco showcased a more optimistic tone this year, suggesting a potential inflection point in the healthcare sector. Here are the top five themes and trends as well as key IR takeaways: 1) investor engagement remains strong, with a shift towards in-person meetings, 2) Major tailwinds creates significant opportunities for healthcare, 3) near-term fundamentals are a key focus, 4) innovation continues and will always foster the most interest, 5) many wild cards still in play. Read More (Finn Partners)

What will 2024 mean for Next-Generation Sequencing (NGS) and Genomics? In 2022, next-generation sequencing (NGS) experienced a surge in innovations, making it the best year since 2006. The demand for sequencing grew, driven by various omics technologies and clinical applications. As we enter 2024, experts predict trends in genomics, focusing on Illumina's potential rebound despite challenges. New short-read entrants and international competition emerge, challenging established players. Users face challenges in transitioning to new NGS instruments, necessitating trust and a reliable reagent stream. Emerging companies seek to provide added value, potentially disrupting the market. [Read More](#) (GEN News)

Wearable technology market gains ground, 3 stocks in focus. The wearable market, encompassing smartwatches, fitness trackers, and smart glasses, has surged, with approximately 150 million wearables shipped globally in Q3 2023. Beyond basic health tracking, wearables offer lucrative investment opportunities. Abbott Laboratories (ABT), Medtronic (MDT), and Dexcom (DXCM) are highlighted as promising stocks due to their significant progress in healthcare wearables. The aftermath of the pandemic has intensified focus on individual health monitoring, making wearable technology an integral part of healthcare. The industry is poised for growth, driven by advanced features, AI integration, and a projected 15% CAGR up to 2030 in the medical wearable technology market. [Read More](#) (Yahoo Finance)

Chart 5: Wearables Unit Worldwide Shipments by Vendor from 1Q 2014 to 3Q 2023



Source: Intro-act, Yahoo! Finance, Statista

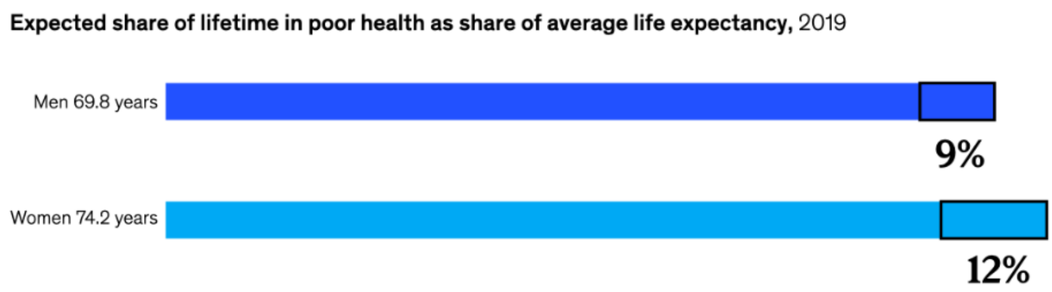
Cancer drug discovery may accelerate as many overlooked targets are prioritized. Scientists have identified 370 potential drug targets for cancer treatment across 27 types, including breast, lung, and ovarian cancers. By analyzing functional and genomic data from 930 cancer cell lines, researchers used machine learning to prioritize targets and link them to patient tumors. The study, published in Cancer Cell, aims to create a comprehensive Cancer Dependency Map, advancing smarter and more effective cancer treatments. With precision drugs targeting specific genetic mutations, the research addresses the high failure rate and inefficiency in current drug development for cancer. [Read More](#) (GEN News)

Healthcare bankruptcies reached five-year peak in 2023, report finds. Healthcare bankruptcies surged in 2023, with 79 Chapter 11 filings for companies with over $10 million liabilities, three times more than 2021. The report by Gibbins Advisors cites factors like high interest rates, rising costs, and pressure from payers. Notable bankruptcies included Envision Healthcare, American Physician Partners, Rite Aid, and Pear Therapeutics. Large filings over $100 million rose to 28, predominantly in senior care and pharmaceutical sectors. Hospital bankruptcies, reaching 12, reflected increased distress, especially for rural and standalone hospitals, with ongoing challenges expected in 2024. Read More (Healthcare Dive)

ACA enrollment for 2024 reaches record high. A record-breaking 20.4 million Americans have enrolled in Affordable Care Act (ACA) plans during the current open enrollment period, marking the third consecutive year of ACA gains. Over 3.7 million are new to ACA exchanges, constituting nearly a fifth of total sign-ups. The surge in enrollments is attributed to increased federal subsidies and Medicaid redeterminations. The ACA has become a focal point in the 2024 presidential election, with President Biden emphasizing his achievements while Republican frontrunner Donald Trump pledges to repeal and replace the law if elected. Read More (Yahoo Finance)

New report highlights $1 trillion potential of closing women's health gap. The McKinsey Health Institute and World Economic Forum Centre for Health and Healthcare released groundbreaking research at Davos, revealing that women spend 25% more time in poor health than men. Titled "Closing the Women's Health Gap: A $1 Trillion Opportunity," the report outlines actions to address this gap, stating that closing it could reduce women's time in poor health by two-thirds, adding $1 trillion to the economy annually by 2040. The research led to the launch of the World Economic Forum's Global Alliance for Women's Health, aiming to catalyze actions and investments for healthier futures for women worldwide. Read More (McKinsey)

Chart 6: Women are Expected to Spend 25% More Time in Poor Health Than Men



Source: Intro-act, McKinsey, WHO

Organon launches Bacterial Vaginosis treatment XACIATO in the US: Organon, a leader in global healthcare with a focus on women's health, has announced the US-wide availability of XACIATO (clindamycin phosphate) vaginal gel 2%, a prescription treatment for bacterial vaginosis (BV) in females aged 12 and above. BV, prevalent in approximately 21 million US women, particularly affects non-Hispanic Black and Latin American communities, leading to symptoms like odor and discharge and significantly impacting emotional well-being. XACIATO, developed in response to the specific needs of women with BV, offers a single-dose, easily applied gel that ensures sustained release of clindamycin. Read More (FemTech Insider)

White House unveils new actions to protect contraception, emergency abortion access. The White House announced measures to enhance access to contraception, emergency abortion services at hospitals, and abortion medication, alongside President Biden's meeting with the reproductive rights task force and physicians from states with abortion bans. This move coincides with Vice President Harris's nationwide tour to advocate for abortion rights, leveraging the issue's momentum for the 2024 election. The initiatives mark the 51st anniversary of Roe v. Wade, emphasizing the administration's commitment to reproductive freedom amid state-level restrictions. Read More (The Hill)

Billing for patient messages to clinicians is increasing, study finds. Billing for patient messages to providers surged during the COVID-19 pandemic, peaking initially as health systems transitioned to virtual care. Following a decline, it steadily rose in mid-2021, with over 470 healthcare organizations billing at least 50 e-visits in Q3 2022—a 40% YoY increase. This trend indicates a growing recognition of e-visits as a sustainable revenue source. The shift to virtual care, while beneficial, led to increased clinician workload due to a surge in electronic messages. Charging for messages is contentious, potentially discouraging patient communication. The study found varying billing patterns based on visit duration and diagnoses. Read More (Healthcare Dive)

Growing AI adoption for fall prediction in Singapore and other AI integrations across APAC. Singapore's Nanyang Polytechnic (NYP) expands its AI-based fall prediction tool, co-developed with Longway AI Technologies, using a 3D convolutional neural network. Trained on 200+ hours of human activity videos, the system detects unsteady gaits, piloted in healthcare facilities and undergoing trials at senior homes. Konkuk University Hospital collaborates with Neurophet for AI-driven Alzheimer's research, enhancing diagnosis using Neurophet AQUA and SCALE PET solutions. Read More (Healthcare IT News)

Big pharma is at a crossroads, as J&J, Merck and others prepare to lose heaps of revenue from blockbuster drugs. Major pharmaceutical firms like Bristol Myers Squibb, Merck, and Johnson & Johnson are bracing for significant financial challenges as patents on key drugs expire by 2030, exposing them to competition from generics. This scenario, known as the "patent cliff," typically results in reduced revenues for the original drug manufacturers but lower costs for consumers who benefit from cheaper alternatives. Despite this, some companies are strategically preparing to mitigate these losses by enhancing their drug development pipelines and forming strategic alliances. The industry faces a collective risk of losing $180 billion in sales due to patent expirations, with varying impacts depending on the company's reliance on the expiring drugs and the nature of the treatments involved. Read More (CNBC)

Patent Cliffs. The amount of revenue hit from the loss of exclusivity of major pharmaceutical patents is about to accelerate after a few benign years. This likely explains the pick-up in M&A of SMID biotechs at the end of last year and into this year at the JPM conference. Read More (Snippet Finance)

Chart 7: 10 Developed Countries Impact of Brand Losses of Exclusivity 2019-2028, $Bn

Source: Intro-act, Rock Health

Quest, Fitbit take first step in combining wearables and diagnostics to improve metabolic health. Fitbit, owned by Google, is partnering with Quest Diagnostics for a pilot study named WEAR-ME (Wearables for Metabolic Health). The study aims to explore how the combination of Fitbit's wearable devices and Quest's laboratory testing can enhance metabolic health understanding. Approximately 1,500 Fitbit users will share three months' data, including blood test results, to analyze links between wearable usage and metabolic health. The collaboration seeks to uncover insights into how wearables can improve health and potentially prevent metabolic diseases by tracking diet, exercise, and sleep. Read More (Fierce Healthcare)

Top home health trends for 2024. In 2023, despite declining COVID-19 influence, home health providers faced ongoing challenges. Anticipated rate cuts from Centers for Medicare & Medicaid Services (CMS) and increased Medicare Advantage (MA) penetration pose hurdles. Major providers may be owned by payers, affecting the industry. The fee-for-service model is fading, prompting the need for operational adjustments to withstand MA rates. Payers like UnitedHealth Group and Humana's involvement in home health sparks mixed reactions. Lessening prior-authorization requirements and accelerated consolidation, including "passive acquisitions," are expected. Read More (Home Healthcare News)

Home health care industry sees demand rising in India's smaller cities. India's home health care industry, projected to reach $8.8 billion in 2023, is expanding into smaller cities due to reduced service costs and expanded insurance coverage. Factors like an aging population, growing middle class, lifestyle diseases, public-private partnerships, and digital technology adoption contribute to its growth. Out-of-hospital care focuses on services not requiring super-specialists, making it relevant beyond metros. Home health care aims to decrease out-of-pocket expenses, offering a cost-effective alternative to hospitals, and is expected to be a $21.3 billion market by 2027, per NITI Aayog's report. Read More (Business Standard)

Mesh wearables meld microsensors and LoRa smarts. Researchers at the University of Arizona have developed a discreet wearable mesh health monitor, departing from traditional "box-and-strap" designs. The device, created using 3D printing and thermoplastic polyurethane, measures heart rate and body temperature. It features long-range, low-power data transmission, wireless power charging, and a compact design ideal for inconspicuous remote health monitoring in isolated areas. Read More (IEEE Spectrum)

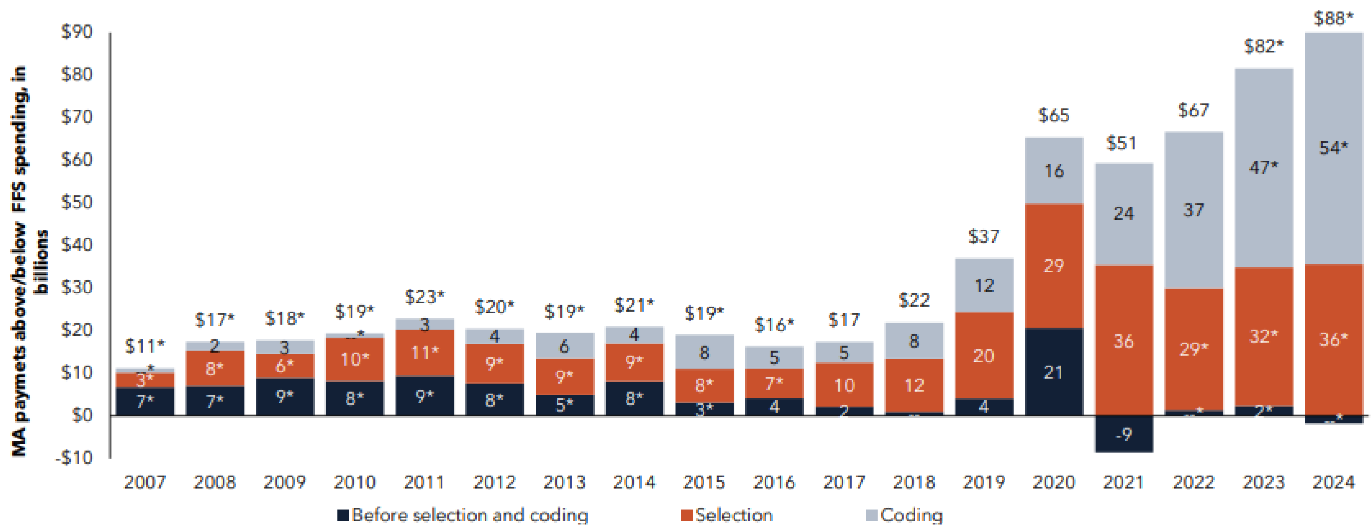
Robotic surgery unit to be launched at Regional Cancer Centre. Kerala is set to introduce robotic surgery for cancer treatment at the Regional Cancer Centre (RCC), marking a significant development in the state's healthcare. The government-funded robotic surgery unit at RCC, inaugurated by Chief Minister Pinarayi Vijayan, will enhance cancer treatment accessibility. This initiative, supported by the Rebuild Kerala Initiative, aims to make high-tech cancer diagnosis and treatment more widely available. Robotic surgery, also planned for the Malabar Cancer Centre, promises reduced patient pain, quicker recovery, and minimized bleeding during procedures. Additionally, a Hyperthermic Intraperitoneal Chemotherapy (HIPEC) mechanism and automated clinical lab tracking are introduced, further advancing cancer care. Read More (The Hindu)

China doubles down on smart medicine. Hong Kong Baptist University (HKBU) and China Resources Research Institute are collaborating on the CR-BU Joint Innovation Centre for Smart Chinese Medicine. The center focuses on developing a chronic disease management system that tracks patients' medical journeys, facilitates follow-up care, and provides extensive medical histories to practitioners. The system aims to accelerate scientific discoveries through data analysis. The joint research contributes to China's efforts in smart medicine standardization and internationalization, aligning with the government's focus on smart hospital development and annual R&D expenditure growth. Other areas of research include AI, big data, and integration with the Internet. Read More (Healthcare IT News)

Movano's smart ring is the rare CES health gadget that will actually ship. Movano's Evie smart ring, showcased at CES, distinguishes itself in health tracking by prioritizing women's needs. Designed with an open gap accommodating finger swelling, the ring considers factors like temperature and hormonal changes. The wearable has a case for protection and offers a battery life of four days. The companion app includes period tracking and mood logging, with an AI framework for insights. Movano aims for FDA clearance, bridging the gap between wellness and medical devices. Priced at $269, the Evie Ring is available for iOS users with shipping starting this month. Read More (The Verge)

Medicare Advantage spending to outstrip traditional medicare by $88b this year: MedPAC. MedPAC reveals that the federal government may overpay Medicare Advantage (MA) plans by $88 billion this year compared to traditional Medicare spending. The data highlights how MA attracts healthier individuals, resulting in lower costs and higher reimbursements. During a heated meeting, members debated the efficacy of MA, with some criticizing its flaws. MedPAC's analysis suggests overpayments to MA plans have reached $350 billion since 2020, raising concerns about seniors receiving adequate care. Despite growing evidence of overpayments, major MA payers resist regulatory changes, emphasizing the program's profitability for insurers. Read More (Healthcare Dive)

Chart 8: Medicare Advantage Payments FFS Spending Projected (2007-2024)



*Source: Intro-act, MedPAC *Specified Values Used Projected Data*

Scientists clone the first rhesus monkey using a new method. Indonesia's Robotic Telesurgery Center, a collaborative project with Iran, is expanding to connect the western and eastern islands, covering a 3,500-kilometer distance. This initiative aims to enhance telemedicine, offering quality health services to remote communities. The Ministry of Health seeks Iran's assistance in establishing robotic telesurgery to reduce patient travel, improve surgical accuracy, and minimize recovery periods. The project, entering its fourth year, plans technology transfer and local production with state-owned enterprises. Similar advancements occurred in Singapore and Japan, showcasing the global progression of robotic telesurgery. Read More (Phy.org)

Long-term care hospitals can't afford to treat their sickest medicare patients, AHA says. The American Hospital Association (AHA) warns that changes in Medicare reimbursement policies for long-term care hospitals (LTCH) are causing substantial financial losses and jeopardizing patient access to care. The high-cost outlier policy's "fixed-loss amount" rose 55% from $38,518 in FY 2023 to $59,873 in FY 2024. AHA predicts a further 17% increase to $70,117 in FY 2025, potentially leading to the contraction of LTCH services. AHA urges policymakers to revert to the pre-FY 2022 methodology, tying the fixed-loss amount to the market basket, for stability in reimbursements. Read More (Fierce Healthcare)

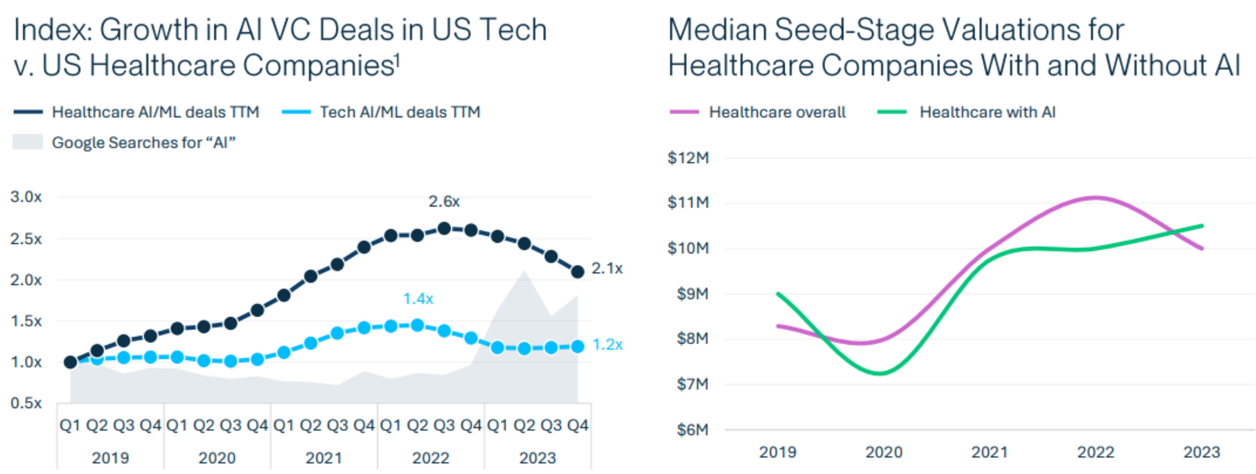
Veterans Health Administration employs far less administrative staff than the private health sector, study finds. The Veterans Health Administration (VHA) operates 171 medical centers and 1,100 outpatient sites, caring for 9 million veterans. A study in JAMA Network Open reveals that the VHA is more efficient than the private sector, employing 30% fewer administrative staff. Applying VHA staffing patterns to the private sector could lead to a nationwide reduction of 900,000 administrative roles. The study suggests the VHA's simplified payment system eliminates the need for staff in non-clinical roles. Read More (Fierce Healthcare)

Intermountain-owned physician group to close if no buyer is found by March 29. Saltzer Health, an Intermountain-owned facility in Idaho, will close on March 29 if no buyer is found, citing ongoing financial challenges in the healthcare sector. In negotiations with potential buyers, Saltzer is optimistic about a sale, and if successful, employees may have the opportunity to continue with the new organization. Facing financial pressures exacerbated by the pandemic, Saltzer will work to ensure continuity of care for its 100,000 affected patients. Intermountain Health acquired Saltzer in 2020, employing 80 physicians and serving 102,000 patients annually at eight locations. Read More (Healthcare Finance)

AI IN HEALTHCARE

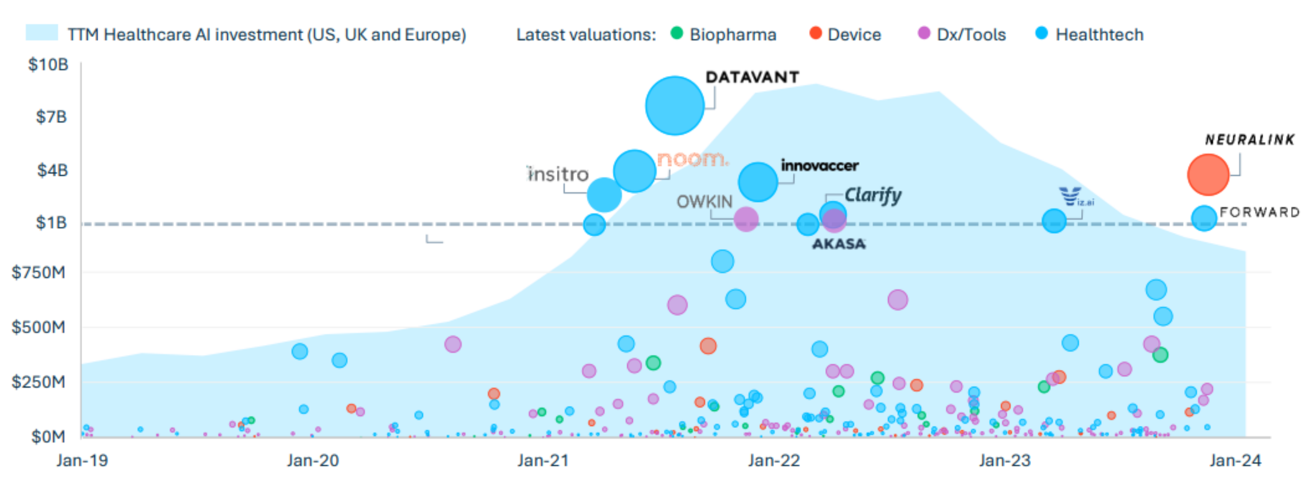
VC deals for healthcare AI have jumped 2.1x since 2019, a rate nearly double the increase for AI in tech overall. According to a report by SVB, doctors are already using AI to monitor patients' vital signs at home, capture notes during appointments and to predict patient outcomes. Enabling these capabilities is a growing contingent of healthcare and life sciences companies delivering AI solutions to optimize the medical field. VC deals for healthcare AI have jumped 2.1x since 2019, a rate nearly double the increase for AI in tech overall. About 15% of healthcare companies receiving VC funding in the last year have incorporated AI and machine-learning technology into their products. Seed-stage valuations now favor healthcare companies using AI over those that don't. But this technology is far from bulletproof. Studies have shown racial bias in predictions and called into question the accuracy and efficacy of diagnostic models. In response, new federal standards are being considered. One proposal calls for "nutrition labels" to measure the validity and fairness of AI models. Read More (SVB)

Chart 9: AI in Healthcare – VC Trends



Source: Intro-act, PitchBook, SVB analysis

Chart 10: VC Investment in Healthcare AI Companies and Latest Valuations



Source: Intro-act, PitchBook, SVB analysis

New AI improves predictions of guide RNA efficiency in CRISPRi. Scientists are improving CRISPRi, a gene-silencing tool, using a machine learning approach that integrates data from multiple genome-wide screens. CRISPRi, which blocks gene expression without modifying DNA, has lacked design rules. Researchers developed a mixed-effect machine learning model, disentangling guide RNA efficacy from gene impact, offering better predictions of CRISPRi performance. Gene-specific characteristics were found to influence guide RNA depletion, and combining data from various screens enhanced prediction accuracy. Read More (GEN News)

Revolutionizing ER care: the integration of AI and clinical decision support systems. The integration of Artificial Intelligence (AI) and clinical decision support systems in the emergency department (ER) holds promise for revolutionizing healthcare. Spearheaded by experts like Andrew Taylor, the technology aims to improve patient outcomes through real-time data analysis. Applications include triage, diagnosis, and risk assessment, emphasizing a harmonious blend of AI with human-centric care. Success hinges on clinician acceptance, infrastructure development, and addressing ethical concerns. Read More (Medriva)

Nuance AI copilot now fully embedded in Epic EHRNuance announces general availability of DAX copilot embedded in Epic. Nuance Communications, now a Microsoft Company, has launched Nuance Dragon Ambient eXperience Copilot (DAX Copilot), integrated into Epic's electronic health record (EHR). This AI-driven system automates clinical documentation during patient exams, reducing administrative tasks and allowing physicians to focus on care. Developed in collaboration with Microsoft and Epic, the solution securely drafts clinical notes, leading to improved efficiency, reduced burnout, and enhanced patient care experiences. Read More (PR Newswire)

HIMSSCast: how Karmanos Cancer Institute uses AI to find high-risk breast cancer. The Karmanos Cancer Institute in Detroit employs artificial intelligence (AI) to enhance breast cancer risk assessment. Dr. Eric Brown, a surgical oncologist, highlights the urgency of identifying high-risk patients early. With 1 in 8 women facing a risk of breast cancer, early detection significantly improves survival rates. Karmanos uses Volpara's AI-driven risk assessment during mammograms, providing five-year and lifetime risk scores. Read More (Healthcare IT News)

Mitotic counting reimagined: when AI meets the microscope. The shift to digital pathology in breast cancer diagnosis has revolutionized mitotic counting, a crucial aspect of disease staging. Traditional methods are labor-intensive and prone to errors, leading to discrepancies among pathologists. The lack of standardization in microscopes further impacts consistency. The integration of artificial intelligence (AI) with digital pathology enhances precision and efficiency, standardizing hotspot identification and automating mitotic counting. Read More (Medcity News)

Elevance Health wants to use AI to simplify and personalize healthcare. Here's how the insurance giant is doing it. At CES, traditionally spotlighting consumer tech giants, Elevance Health took center stage, emphasizing AI's role in healthcare. CEO Gail Boudreaux discussed leveraging technology to enhance healthcare's proactive, predictive, and personalized aspects. The health insurance giant, serving 117 million people, aims to embed AI in various sectors, prioritizing a 'people-first' approach. Chief AI Officer Shawn Wang highlighted simplifying healthcare for stakeholders, emphasizing the potential of AI and digital tech to streamline processes and enhance user experiences, a focus evident in their member app, Sydney. Read More (Fierce Healthcare)

Eisai harnesses wearable data for AI-led Alzheimer's prediction. Japanese pharmaceutical company Eisai, in collaboration with Oita University, has developed a groundbreaking AI model using data from wearable devices to predict Alzheimer's disease. The study collected biological and lifestyle data from 122 individuals aged 65 and older, integrating physical activity, sleep, heart rate, and more. The AI model, combining three machine learning technologies, successfully predicted amyloid-beta protein accumulation in the brain, a significant Alzheimer's biomarker. Read More (Mobi Health News)

DRUG & DEVICE APPROVALS

Butterfly Network announces FDA clearance of its next-generation handheld ultrasound system, Butterfly iQ3. Digital health company Butterfly Network, Inc. (NYSE: BFLY) has received FDA clearance for its third-generation handheld point-of-care ultrasound system, Butterfly iQ3. The semiconductor-based device boasts an ergonomic design and twice the data processing speed for enhanced image resolution, sensitivity, and penetration. Butterfly's CEO, Joseph DeVivo, highlights the revolutionary impact, with over 145,000 customers already recognizing the value of their chip-based ultrasound technology. DeVivo looks forward to unveiling advanced imaging capabilities at the 42nd Annual J.P. Morgan Healthcare Conference, anticipating iQ3's U.S. commercial launch in the current quarter. Read More (Butterfly Networks)

Chart 11: Snapshot of IQ3

Source: Intro-act, Butterfly Network, Investor Presentation

US FDA approves Vertex/CRISPR gene therapy for an inherited blood disorder. The U.S. FDA has granted approval to Vertex Pharmaceuticals and CRISPR Therapeutics for their gene therapy, Casgevy, to treat transfusion-dependent beta thalassemia (TDT) in patients aged 12 and older. Casgevy, based on CRISPR gene editing technology, was previously approved for sickle cell disease. The therapy, priced at $2.2 million, is set for an early release this year. Analysts anticipate a gradual launch with estimated peak sales of $400 million. Casgevy marks the first CRISPR-based treatment for TDT in the U.S., competing with bluebird bio's Zynteglo, priced at $2.8 million. Read More (Reuters)

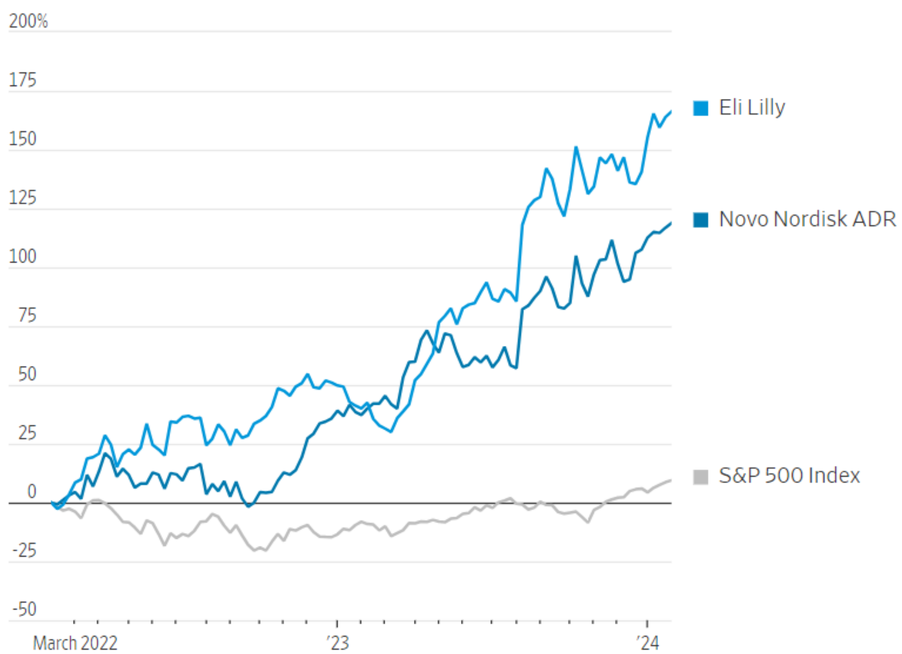
FDA grants De Novo clearance for ultrasound-based liver tumor ablation software. The FDA has granted De Novo clearance for BioTraceIO, an ultrasound-based software by Techsomed, providing enhanced post-op estimates of tissue response after liver tumor ablation. Utilizing a unique algorithm, the software analyzes real-time ultrasound images and ablation device parameters to offer clinicians immediate visual estimates of liver tumor ablation. A multicenter study showed superior results compared to post-op contrast-enhanced computed tomography. Dr. Nami Azar, a radiology professor, acknowledges BioTraceIO's potential to advance liver ablation procedures, offering enhanced visualization and continuous monitoring using cost-efficient ultrasound. Read More (Diagnostic Imaging)

FDA clears non-invasive AI device for skin cancer detection. DermaSensor's AI-powered tool for skin cancer assessment, including melanoma, has received FDA clearance. The spectroscopy technology aids non-invasive evaluation of suspicious lesions, reducing reliance on subjective judgment. In a study of 1000+ patients, the tool showed 96% sensitivity in detecting 224 skin cancers, with a 97% benign reading possibility. Notably, the device performed consistently across different skin types, offering potential benefits in skin cancer detection. A companion study reported a significant reduction in missed skin cancers, enhancing physicians' accuracy and confidence in evaluating lesions. Read More (Cancer Network News)

COMPANY NEWS

Why obesity drug coverage doesn't matter (yet) for Lilly and Novo. Nearly every employer in the country is now grappling with how—and whether—to pay for new weight loss drugs. Needless to say, such decisions are highly important to patients struggling with obesity. But for Eli Lilly and Novo Nordisk, it actually doesn't matter, for now, from a financial perspective. They are selling every injection they can make. It won't change anytime soon. The supply constraints of the two drugs and Lilly's Zepbound mean it could take years for there to be enough supply to meet demand around the developed world. Both companies are investing heavily to increase manufacturing. Novo in November announced that it will spend about $2.3 billion to expand a production facility in France and more than $6 billion to expand manufacturing capacity in Denmark. Lilly recently announced a $2.5 billion investment to expand its manufacturing site in Germany and has pledged more than $11 billion in manufacturing investments in the past three years. Read More (Wall Street Journal)

Chart 12: GLP-1 Manufacturers' Outperformance



Source: Intro-act, Wall Street Journal, FactSet

After announcing two multi-billion dollar deals in December, Bristol Myers expects to launch 16 new products through 2030. Bristol Myers Squibb CEO Christopher Boerner announced plans to incorporate 16 new products into the company's portfolio by the decade's end. Emphasizing enrichment through internal pipeline advancement, strategic business development, and partnerships, Boerner highlighted a focus on licensing and bolt-on purchases over large acquisitions. Recent multi-billion dollar deals include the $14 billion acquisition of Karuna Therapeutics for an innovative antipsychotic medicine and the $4.1 billion buyout of RayzeBio to strengthen the cancer drug sector. Read More (Reuters)

CMR Surgical reports record surgical robot installations to end 2023, plans 2024 product launches. Cambridge-based CMR Surgical closed 2023 with a record number of Versius surgical robot installations, reporting a 50% increase in its global install base from 2022. Over 17,000 surgical procedures were performed, representing a growth of more than 60%. The company plans to launch advanced technologies in 2024, focusing on vision, instrumentation, and digital enhancements. Read More (Mass Device)

Monogram Health and Blue Cross Blue Shield of Arizona partner to improve chronic kidney disease outcomes. Blue Cross Blue Shield of Arizona (AZ Blue) has announced a strategic partnership with Monogram Health, a leading provider of in-home care and management services for chronic and end-stage kidney disease. This collaboration aims to utilize Monogram's in-home care network to enhance the quality of care for AZ Blue members. Through this initiative, AZ Blue commits to delivering personalized care and innovative services to improve patient experiences and health outcomes. Monogram Health will take full financial responsibility for certain AZ Blue members, offering them specialized clinical and support services. Read More (Press Release)

Eli Lilly launches Telehealth Platform to sell certain drugs directly to consumers. Eli Lilly introduces LillyDirect, a digital platform selling prescription drugs like Zepbound for conditions such as diabetes, obesity, and migraines, bypassing traditional pharmacies. The platform connects patients with telehealth providers for prescriptions and offers home delivery. Zepbound, priced over $1,000, lacks discounts and may pose access challenges. Lilly warns against using its drugs for cosmetic weight loss and cautions against unauthorized compounded tirzepatide products. Read More (Pharmexec.com)

Caregility helps transform inpatient care with new AI-enhanced telehealth systems. Caregility introduces innovative telehealth edge devices for inpatient care, including the APS200 Duo, a dual-camera system with onboard edge computing and a dedicated graphics engine, and the second-gen APS100 Pro. These devices offer advanced audio and video capabilities, facilitating virtual clinical interactions and AI-driven patient monitoring. Key features include dual HD cameras, 40x power zoom, night vision, and integration with EMRs and connected devices. Read More (Business Wire)

Home healthcare company, NeoHealth, launches in the UAE, set to transform the industry. NeoHealth, a new home healthcare company, has launched in the UAE, offering personalized medical and personal care at home. With 30 years of industry experience and advanced technology, NeoHealth provides continuity of care, flexible services, and a team of licensed nurses for clinical, postoperative, elderly, newborn, and home testing services. Prioritizing a comfortable environment, NeoHealth values staff like family, emphasizing personality and experience in hiring. Read More (Zawya)

Lilly gene therapy finding puts focus on hearing loss treatment pipeline. An 11-year-old boy named Aissam Dam, born deaf, regained his hearing within a month of receiving an experimental gene therapy called AK-OTOF-101, developed by Eli Lilly. This therapy targets otoferlin, a gene crucial for transmitting sound signals in the inner ear. The success highlights gene therapy's potential for addressing inherited hearing loss, with Lilly planning to present full data at a medical conference in February. Read More (Biopharma Dive)

Novartis automates new radioligand therapy production plant. Novartis emphasizes the crucial role of automated manufacturing and supply chain systems in its new U.S. radioligand therapy facility in Indianapolis. FDA approval for Pluvicto, a prostate cancer treatment, is expected to boost supply significantly. Radioligand therapies, using a ligand and radioisotope to target and destroy cancer cells, require complex and time-sensitive production. Novartis has automated operations at the Indianapolis facility, leveraging experience from previous sites, with plans for fully automated lines to optimize production capacity. Read More (GEN News)

Gene therapy biotech Jaguar spins out manufacturing company. Advanced Medicine Partners, a new company spun out from Jaguar Gene Therapy, specializes in manufacturing complex medicines like cell and gene therapies. Backed by investors including Deerfield Management and Arch Venture Partners, it provides manufacturing support to Jaguar and other Deerfield-backed firms. The company, based in North Carolina, focuses on overcoming challenges in producing cell and gene therapies, leveraging its expertise with adeno-associated viruses. Read More (Biopharma Dive)

Genentech signs nanoparticle deal worth up to $644m with GenEdit. Roche's Genentech has entered a collaboration with GenEdit to utilize the latter's non-viral NanoGalaxy platform for gene therapy delivery in autoimmune diseases. Genentech will pay $15m upfront, with the potential for an additional $629m based on milestones. The collaboration aims to develop hydrophilic nanoparticles for nucleic acid-based medicines targeting autoimmune indications. Read More (Pharmaceutical Technology)

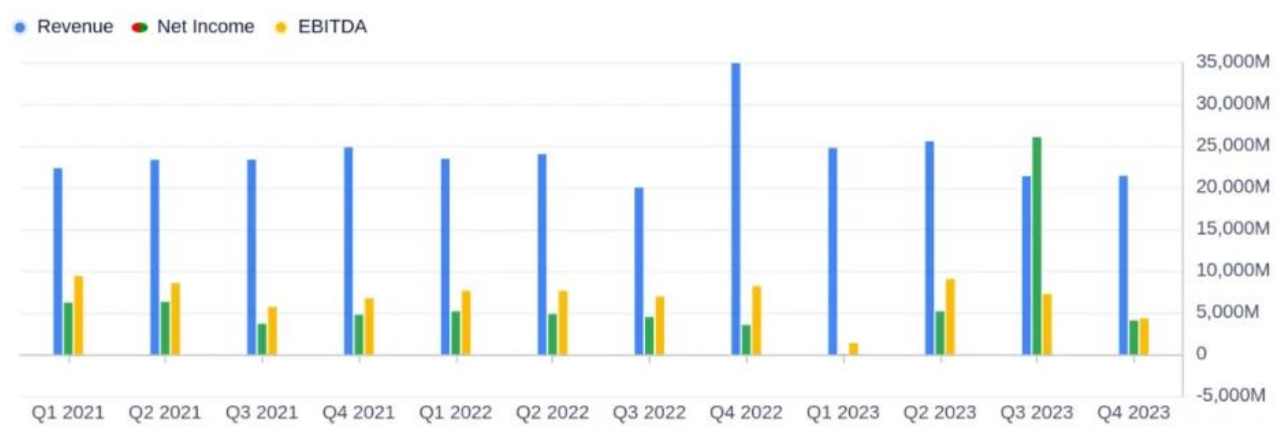
Smart wearables leader Zepp Health unveils the Amazfit Helio Ring for optimum athletic performance at CES 2024. Zepp Health Corporation introduced groundbreaking additions to its smart wearables at CES. The Amazfit Helio Ring, a unique smart ring, focuses on aiding athletes in recovery, providing comprehensive mental and physical data. Paired with the Zepp App, it generates a daily Readiness score for informed decision-making. The Zepp Clarity Pixie hearing aids represent a leap in technology, offering seamless auditory experiences for mild to moderate hearing impairment. Read More (Business Wire)

EARNINGS

Elevance Health sees higher revenue, lower profits in Q4. Elevance Health reported a 9% increase in Q4 2022 revenues, reaching $39.9 billion, but faced a 16.5% YoY profit decline to $949 million. The growth was attributed to higher premium revenue from Medicaid and Medicare Advantage. Despite the profit decrease, the company exceeded Wall Street expectations. Elevance's president, Gail Boudreaux, highlighted Affordable Care Act plans covering all counties in its 14 Blue states. With a focus on optimization, the company aims for margin recovery and improvement in commercial and Medicare businesses. Membership rose to 47.5 million, a 4.8% YoY increase, driven by Medicaid and Medicare Advantage growth. Read More (Healthcare Finance)

Johnson & Johnson narrowly tops quarterly estimates as pharmaceutical, MedTech sales jump. Johnson & Johnson (J&J) reported Q4 earnings of $2.29 per share, slightly surpassing Wall Street estimates. The pharmaceutical giant posted $21.40 billion in sales, up 7.3% YoY. Full-year 2024 guidance anticipates sales of $87.8 billion to $88.6 billion and adjusted earnings of $10.55 to $10.75 per share. J&J is focusing on its medical devices and pharmaceutical divisions for growth. The pharmaceutical segment saw 4.2% YoY growth, driven by products like Darzalex and Stelara. The medical devices business, bolstered by acquisitions, anticipates consistent operational sales growth throughout 2024. J&J will soon enter price negotiations for Stelara and Xarelto with Medicare. Concerns linger over talc-related lawsuits. Read More (CNBC)

Chart 13: Quarterly Performance – Johnson & Johnson



Source: Intro-act, Yahoo! Finance, Guru Focus

Health insurer Humana warns of hit to 2025 profit, shares sink. Health insurer Humana (HUM.N) faces an "unprecedented" surge in medical costs, impacting 2024 earnings and jeopardizing its 2025 profit target. Shares dropped 13% as the company cited increased medical expenses in 2023, especially in Q4, with older adults seeking overdue procedures. Focused on Medicare Advantage plans, Humana attributes challenges to regulatory shifts and surging medical costs. Analysts, including Michael Wiederhorn, question whether these issues are specific to Humana or indicative of an industry-wide problem. Other insurers like UnitedHealth and Elevance maintain expenses are on track with expectations. Read More (Reuters)

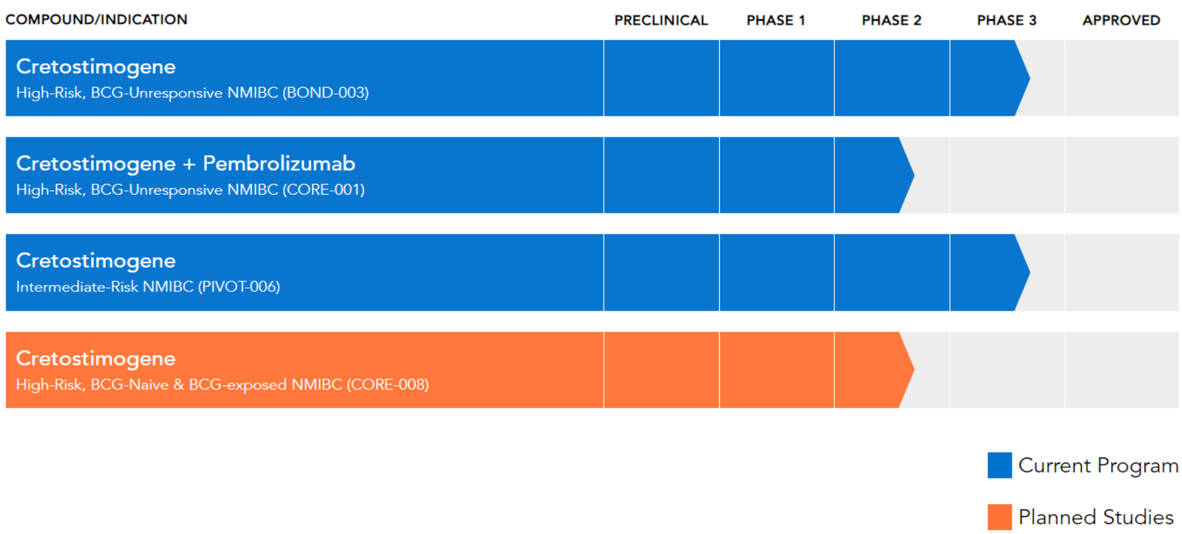
CAPITAL MARKETS

Gilead-backed biotech Kyverna's shares surge over 50% in stellar debut. Shares of Kyverna Therapeutics (KYTX) jumped 55.7% in their market debut, giving the biotech company that is backed by Gilead Sciences (GILD), a market capitalization of $1.4 billion. Kyverna sold 14.5 million shares priced at $22 per share, raising $319 million in an upsized offering. It is a clinical-stage biopharmaceutical company focused on developing cell therapies for patients suffering from autoimmune diseases. It was founded in 2018. The company will use the proceeds from the offering for clinical development of its lead product candidate, KYV-101, a CAR T-cell therapy for the treatment of autoimmune diseases related to rheumatology and neurology. Read More (Reuters)

Moderna, Bayer-backed startup Metagenomi files for US IPO. Genetic medicines firm Metagenomi Technologies, supported by Bayer Healthcare and Moderna, filed for a U.S. IPO, joining companies eyeing a 2024 listing amid a recent stock rally. Founded in 2018 by UC Berkeley scientists, Metagenomi focuses on genetic disease therapies, with revenue from collaborations, including one with Moderna. For the nine months ending Sept. 30, collaboration revenue tripled to $32.36 million, but losses increased to $48.96 million. The company seeks a Nasdaq listing under "MGX," with J.P. Morgan, Wells Fargo, and Jefferies as underwriters, following a previous private funding round of $275 million. Read More (Reuters)

CG Oncology prices larger-than-expected $380m IPO in hopeful sign for biotech. Cancer drug developer CG Oncology exceeded expectations in its IPO, raising $380 million by selling 20 million shares at $19 each, signaling a positive turn for the struggling biotech sector. This marks the sector's first IPO of 2024, potentially initiating an early IPO surge. Biotech has faced challenges with IPOs recently, but CG's success, with a drug in Phase 3 testing, reflects a trend favoring companies in later stages of drug development, contrasting with the previous emphasis on new technologies driving IPOs. Read More (Biopharma Dive)

Chart 14: Product Pipeline – CG Oncology



Source: Intro-act, CG Oncology

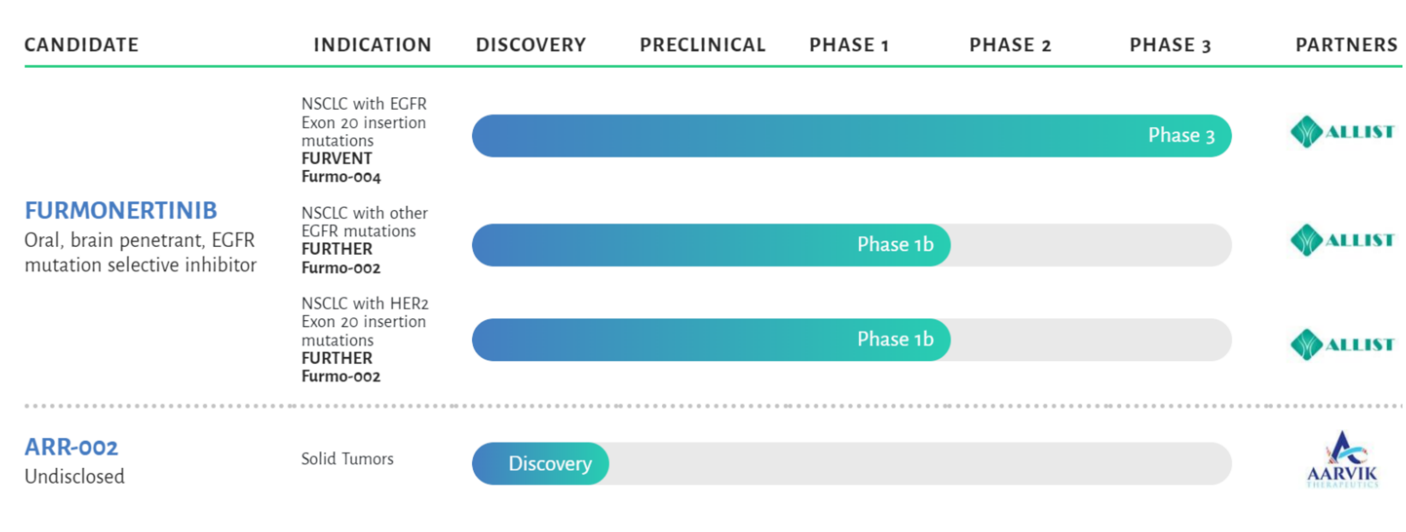
Medi Assist Healthcare Services raises Rs 351.5 crore from anchor investors ahead of IPO. Medi Assist Healthcare Services, a third-party insurance administrator, secured Rs 351.5 crore from anchor investors for its upcoming IPO, allocating 84.08 lakh equity shares at Rs 418 per share. The Rs 1,172-crore IPO, taking place from January 15 to 17, consists solely of an Offer For Sale (OFS), with 2.8 crore equity shares offered by promoters and existing investors. The price band for the IPO is set at Rs 397-418 per share. Read More (Good Returns)

Fractyl Health targets up to $762m valuation in US IPO. Healthcare company Fractyl Health is aiming for a $762 million market valuation in its U.S. IPO, backed by Mithril Capital and General Catalyst. With plans to raise $132 million by selling around 7 million shares priced between $16 and $18 each, the Lexington-based firm focuses on developing "disease-modifying" therapies for metabolic diseases like type-2 diabetes and obesity. Their drug, Revita, targeting type 2 diabetes, is in the enrollment stage, expecting top-line data in Q4 2024, while Rejuva PGTx, in preclinical stages, shows promise in glycemic control and weight reduction compared to competitors. Read More (Reuters)

Goldman Sachs raises $650m for life sciences investments. Goldman Sachs Asset Management successfully closed its $650 million West Street Life Sciences I fund, surpassing its initial target. This fund, one of the largest first-time private life sciences growth funds, focuses on growth-oriented private equity investments in early to mid-stage therapeutic firms, life sciences diagnostic and tools companies. The goal is to invest in and develop the next generation of leading life sciences companies. The funds came from a diverse group of global investors, including commitments from Goldman Sachs employees. The fund has already allocated $90 million to companies like Nested Therapeutics and MOMA Therapeutics. Read More (BioProcess International)

Cancer drugmaker ArriVent follows on CG's heels with $175m IPO. Biopharmaceutical company ArriVent successfully raised $175 million in its recent IPO, exceeding projections and marking the second biotech IPO this year. The funds will primarily support the development of furmonertinib, an experimental lung cancer drug in Phase 3 trials, with results expected in 2025. The IPO trend reflects growing investor interest in biotechs with advanced testing medications, following a multiyear pullback. ArriVent differentiates itself with a pill-form drug targeting DNA insertions in EGFR, potentially standing out in the competitive lung cancer medicine market. The company also collaborates on antibody-drug conjugates, though this work is still preclinical. Trading begins on Nasdaq under "AVBP" on Friday. Read More (Biopharma Dive)

Chart 15: Product Pipeline – Arrivent



Source: Intro-act, Arrivent

BrightSpring Health Services files to go public for the second time. BrightSpring Health Services has officially filed for an initial public offering (IPO) after initially planning to go public in 2021. The Louisville-based provider of home- and community-based services, backed by KKR, aims to list on the Nasdaq with the stock ticker BTSG. In its recent filing, the company highlighted its experience in caring for must-serve populations, reducing costs through non-institutional care settings, and estimated a total addressable market opportunity exceeding $1.0 trillion. The filing also showcased the company's financial performance, with revenues of $6.45 billion in the nine months ending Sept. 30, 2023, and emphasized the growing need for home-based care services. Read More (Home Healthcare News)

Immatics to raise $175m in public offering. ASDAQ-listed Immatics is set to raise $175m in a public offering, offering 15,925,000 ordinary shares at $11.00 per share, with an additional 2,388,750 shares for underwriters. The offering is slated to close on January 22. In a significant collaboration with Moderna, Immatics secured a $120m upfront deal, potentially reaching $1.7bn in milestone payments for mRNA-enabled T cell engaging receptor (TCER) molecules for cancer vaccines. The biotech, focused on TCR-based immunotherapies for solid tumors, reported $184.3m in 2022 revenue, anticipating financial stability until 2026. Read More (Pharmaceutical Technology)

Leavitt Equity Partners closes $180 million fund III, surpassing $150 million target. Leavitt Equity Partners (LEP) has successfully closed its third fund, Leavitt Equity Partners III (LEP III), raising over $180 million, surpassing the initial target of $150 million. The Managing Partner, Taylor Leavitt, expressed delight in the strong support from both existing and new investors. LEP III focuses on investing in lower-middle-market healthcare companies, emphasizing services, care models, and technologies that enhance healthcare value through lower costs, improved quality, and better access. Dorsey & Whitney provided legal advisory services for the formation of LEP III. Read More (Business Wire)

Live tumor imaging company Elephas garners $55M. Elephas, an oncology diagnostics platform, has raised $55 million in Series C funding, totaling $116.5 million. Led by Venture Investors Health Fund and the State of Wisconsin Investment Board, the round included participation from existing investors. Elephas focuses on predicting immunotherapy response through metabolic imaging, analyzing tumor architecture and tailoring treatment. The platform aims to address a crucial need in immunotherapy response prediction. Immunotherapy, while increasingly used, competes with traditional cancer treatments. Elephas' funding will advance its diagnostic era for immunotherapy, improving access and outcomes. Read More (Mobihealth News)

Chart 16: Clinical Trials of Elephas

Source: Intro-act, Elephas Website

Icotec ag raises $30 million from MVM Partners to finance its growth. Icotec ag, a leading spinal tumor implant innovator, has achieved a significant milestone by forming a strategic partnership with global venture capital firm MVM Partners. Known for its FDA-approved BlackArmor® carbon/PEEK products, icotec plans to use the investment to expand research and development, targeting underserved areas such as spinal infections and osteoporosis. Read More (Orthospine News)

Artisight nets $42m series B for smart hospital platform. AI platform Artisight, specializing in hospital workflow optimization, secured a $42 million Series B funding round led by NVIDIA and other existing investors. The Chicago-based company, not disclosing the lead investor, focuses on IoT sensors combined with deep learning for virtual nursing, computer vision, voice recognition, and more. With 11 health systems as clients, Artisight aims to expand to 50 and beyond. President Stephanie Lahr emphasizes a focus on scalability and growth, acknowledging the challenge of healthcare budget constraints and the importance of a consolidated approach amid myriad solutions. Read More (Axios)

Forta raises $55m to help parents look after their autistic kids. Forta Health, a healthcare startup, secured substantial funding to democratize healthcare access using artificial intelligence (AI) tools. Focused on addressing the shortage of professionals for conditions like autism, Alzheimer's, and chronic diseases, Forta employs AI, including large language models, to customize treatment plans. While initially concentrating on autism treatment, Forta emphasizes a personalized, trauma-informed approach, distinguishing itself from traditional Applied Behavioral Analysis methods. Read More (TechCrunch)

M&A

Pfizer seals $43 billion Seagen acquisition, elevating cancer treatment standards. Pfizer successfully concluded the purchase of Seagen Inc., a global biotech firm specializing in ADC technology for cancer treatment, with an enterprise value of $43 billion. The move strengthens Pfizer's oncology portfolio, incorporating Seagen's leading ADC medications. The merger expands Pfizer's oncology pipeline, with plans to advance Seagen's ADC technology. This significant transaction reflects the growing interest in ADC therapies, positioning Pfizer at the forefront of the industry. Simultaneously, Pfizer pursues a $3.5 billion cost-cutting initiative, expecting Seagen's products to contribute $10 billion in annual revenue by 2030. Read More (Chemanalyst)

Wegovy maker inks $16.5 billion deal to boost weight-loss drug supply. Novo Holdings, affiliated with Danish pharmaceutical leader Novo Nordisk, is set to acquire New Jersey-based Catalent for approximately $16.5 billion, a move aimed at enhancing the production capabilities for Wegovy, an anti-obesity medication experiencing significant demand surges. Unlike Ozempic, another Novo Nordisk product approved solely for diabetes, Wegovy is approved for broader weight loss purposes, leading to supply challenges. The acquisition price indicates a notable premium over recent trading prices, reflecting the strategic importance of the deal. This acquisition, supported by Elliott Management, also includes the purchase of three Catalent fill-finish sites by Novo Nordisk, part of efforts to bolster supply chains for its high-demand products. Read More (Axios)

Johnson & Johnson to acquire Ambrx, advancing next generation antibody drug conjugates to transform the treatment of cancer. Johnson & Johnson (J&J) is set to acquire Ambrx Biopharma for approximately $2.0 billion, enhancing its oncology therapeutics. Ambrx's proprietary synthetic biology technology focuses on developing next-gen antibody drug conjugates (ADCs) for various cancer indications. J&J aims to utilize Ambrx's ADC platform to create targeted therapies, particularly for metastatic castration-resistant prostate cancer. The merger, subject to shareholder approval, is expected to conclude in H1 2024, strengthening J&J's position in precision biologics and addressing unmet needs in cancer treatment. Read More (Yahoo Finance)

Axonics Announces Definitive Agreement to be Acquired by Boston Scientific. Axonics, Inc. (Nasdaq: AXNX) is set to be acquired by Boston Scientific Corporation (NYSE: BSX) for $71 per share, totaling an equity value of approximately $3.7 billion. The deal, approved unanimously by both companies' boards, is expected to conclude in H1 2024, pending stockholder and regulatory approvals. Axonics, a global medical technology firm, specializes in sacral neuromodulation systems and urethral bulking hydrogel for bladder and bowel dysfunction. Read More (Business Wire)

Mayo Clinic taps AI start-up to unlock data. Mayo Clinic has partnered with Cerebras Systems to develop artificial intelligence (AI) models using decades of anonymized medical records. Cerebras will provide both hardware and software services, with the AI eventually accessible on the Mayo Clinic Platform. Leveraging generative AI and machine learning, the models aim to create patient record summaries and analyze medical data. While Mayo Clinic embraces AI to enhance patient outcomes, leaders emphasize that AI won't make decisions or replace doctors, citing the importance of empathy and transparency in healthcare. Read More (Healthcare IT News)

REGULATORY UPDATES

FDA issues a critical safety communication on syringes manufactured in China. A potential supply chain disruption of critical medical devices is looming, as the FDA issues a safety communication about Chinese-manufactured syringes posing quality concerns. The FDA warns of malfunctions, including leaks and breakages, affecting the syringes' ability to deliver accurate doses. Most US brands source syringes from China, and recalls cover over 45 million disposable syringes. The ISO standards, while providing guidelines, may not ensure absolute safety. Healthcare facilities are advised to inspect supplies, consider alternatives, and report issues, anticipating potential shortages and cost increases. Read More (Pharmacy Practice News)

FDA authorizes Florida’s drug importation program. The U.S. FDA has approved Florida’s Agency for Health Care Administration’s drug importation program, allowing the state to import certain prescription drugs from Canada. This move, in line with President Biden’s directive to promote competition and reduce costs, follows section 804 of the FD&C Act. Florida's program, authorized for two years, involves drug testing, relabeling, and quarterly reporting. The FDA will oversee compliance to ensure consumer safety, cost savings, and adherence to regulations, emphasizing the commitment to effective importation programs. States and tribes can submit proposals for FDA review under section 804. Read More (FDA)

FTC bars data broker from selling sensitive location information, like clinic visits. The Federal Trade Commission (FTC) settled with data broker Outlogic, formerly known as X-Mode Social, in a groundbreaking agreement, banning the company from sharing sensitive information. The FTC accused Outlogic of selling raw location data that could track visits to places like medical clinics without proper safeguards or user consent. The data, not anonymized, could reveal personal details, leading to concerns about privacy. Read More (Healthcare Dive)

HHS publishes updated provider conscience rule, rolls back Trump-era policy. The HHS Office of Civil Rights has updated guidance on healthcare providers' conscience rights, aiming to balance religious freedom and patient access to care. The revision reverses a 2019 Trump-era policy, emphasizing protection against discrimination while respecting providers' religious objections. The rule removes a 2019 certification requirement but maintains the obligation to notify employees of their rights. Critics, including the AHA and National Women’s Law Center, support the changes, emphasizing patient health over personal beliefs. Read More (Healthcare Dive)

MHRA releases a roadmap of future UK medical device regulation. The UK Medicines and Healthcare products Regulatory Agency (MHRA) has outlined a 'roadmap' for medical device regulation, prioritizing patient safety. The plan aims to establish a new regulatory framework by 2025, focusing on transformative technologies like implantable devices, healthcare AI, and diagnostics. The regulations also aim for international harmonization, responsive patient-centered requirements, and improvements in post-market surveillance. Read More (Medtech Intelligence)

Australia’s 10-year digital health pipeline: an examination and discussion. Australia's Digital Health Plan outlines a 10-year strategy for a robust digital health infrastructure, committing AUD 500 million. Priorities include improving access to health records, enhancing telehealth services, and bolstering digital health literacy. Interoperability and cybersecurity are crucial elements, aiming to streamline communication between healthcare systems while safeguarding patient data. The plan promises benefits like better patient access to health records and improved service delivery for healthcare providers. Read More (Medriva)

Minimum wage increase starts for Nevada's home healthcare workers. Around 13,000 home healthcare workers in Nevada are celebrating a financial victory with the implementation of a new $16 minimum wage, a result of legislation passed during the 2023 session. SEIU 1107, the state's largest healthcare union, advocated for the increase from $11, aiming to alleviate financial struggles for workers like Regina Brown-Ross, who believe the raise will enhance client care. The pay hike is expected to make a career in home care more appealing, addressing the projected need for 5,300 more personal care aides by 2026. The increase was part of a broader deal that raised the state's Medicaid reimbursement rates for home health services from $17 to $25 per hour. Read More (Nevada Public Radio)

CMS finalizes rule tightening prior authorization turnaround for insurers. The CMS has established new deadlines for health insurers, requiring them to decide on urgent prior authorization requests within 72 hours and non-urgent ones within seven days, starting in 2026. Payers must provide specific reasons for denials to aid resubmission or appeal. The rule aims to address concerns about prior authorization delays contributing to health issues and death. Payers must also implement standardized APIs by January 2027, enabling automated processes. Read More (Healthcare Dive)

NIH entity seeks proposals for advanced mobile hospital. The Advanced Research Projects Agency for Health (ARPA-H) is launching PARADIGM, a program aimed at delivering acute care in rural areas through a versatile mobile health platform. To address healthcare disparities, ARPA-H plans to develop rugged electric vehicles equipped with advanced medical devices. The program aims to pioneer point-of-care diagnostics, seamless data exchange, and real-time guidance for medical tasks. Once developed, health systems will test these platforms nationwide. ARPA-H envisions PARADIGM revolutionizing access to advanced hospital-level care in rural communities. Read More (Healthcare IT News)

FDA, CMS issue joint letter supporting increased oversight of lab-developed tests. The FDA and CMS jointly announced plans to enhance federal oversight of lab-developed tests (LDTs), aligning them with the regulatory framework for in vitro diagnostics by 2028. Initially considered lower-risk due to their simplicity and small-scale production, LDTs' evolving complexity and broader commercial presence necessitate increased scrutiny. In September, the FDA proposed a phased regulatory approach to address these changes, highlighting the need for comprehensive oversight to ensure the safety and efficacy of LDTs in the evolving landscape. Read More (Fierce Healthcare)

Senators reintroduce bill to ease telemental healthcare access. A bipartisan group of U.S. Senators, including Ben Cardin (D-MD) and Bill Cassidy (R-LA), has reintroduced the Telemental Health Care Access Act. The bill aims to eliminate the six-month in-person requirement for Medicare beneficiaries seeking mental healthcare services through telehealth. Advocates, including the American Nurses Association and the American Psychiatric Association, support the bill, emphasizing the importance of telehealth in addressing mental health disparities. Despite an overall decline in telehealth utilization since the COVID-19 pandemic peak, mental health services continue to rely heavily on virtual platforms, showcasing their ongoing significance. Read More (mHealthIntelligence)

FDA permits IRB informed consent waivers for minimal risk clinical trials. The U.S. FDA has implemented a final rule, effective from January 22, 2024, allowing exceptions from informed consent requirements for minimal-risk clinical investigations. This rule, mirroring a 2018 proposal, enables research deemed minimal-risk, provided safeguards protect subjects. Notably, it codifies criteria for identifiable private information or biospecimens. FDA Commissioner Dr. Robert M. Califf highlights benefits for minimal-risk research, emphasizing practicality. The final rule introduces organizational and editorial changes for clarity and consistency with the "Common Rule," also adding criteria and acknowledging the responsibility of investigators in obtaining consent. Read More (JD Supra)

Blue Cross Blue Shield of Massachusetts delays controversial anesthesia policy. Blue Cross Blue Shield of Massachusetts has postponed a controversial policy set to limit coverage for monitored anesthesia care during certain endoscopic procedures. Originally scheduled for January 1, the policy faced criticism for potential negative impacts on patient care and screenings. The health plan cited confusion about sedation options and aims to ensure members receive appropriate care. The delay follows discussions with medical associations, and the insurer plans to provide 90 days' notice before potential enforcement. Read More (Fierce Healthcare)

HHS releases new voluntary performance goals to enhance cybersecurity across the health sector and gateway for cybersecurity resources. The U.S. Department of Health and Human Services (HHS) is introducing voluntary healthcare-specific cybersecurity performance goals (CPGs) and a new website to aid Health Care and Public Health (HPH) organizations in implementing robust cybersecurity practices. The CPGs, outlined in the HHS Health Care Sector Cybersecurity concept paper, aim to enhance the sector's resilience against cyber threats, improve response capabilities, and minimize risks. Read More (HHS)

US FDA seeks 'boxed warning' for CAR-T cancer therapies. The U.S. health regulator has requested drugmakers, including Gilead Sciences, Johnson & Johnson, and Novartis, to add a serious warning about the risk of T-cell malignancies on the labels of their cancer therapies using CAR-T technology. The FDA cited reports of patients developing T-cell blood cancer after CAR-T treatments. Novartis and J&J agreed to update prescribing information for Kymriah and Carvykti. Read More (Reuters)

LEGAL

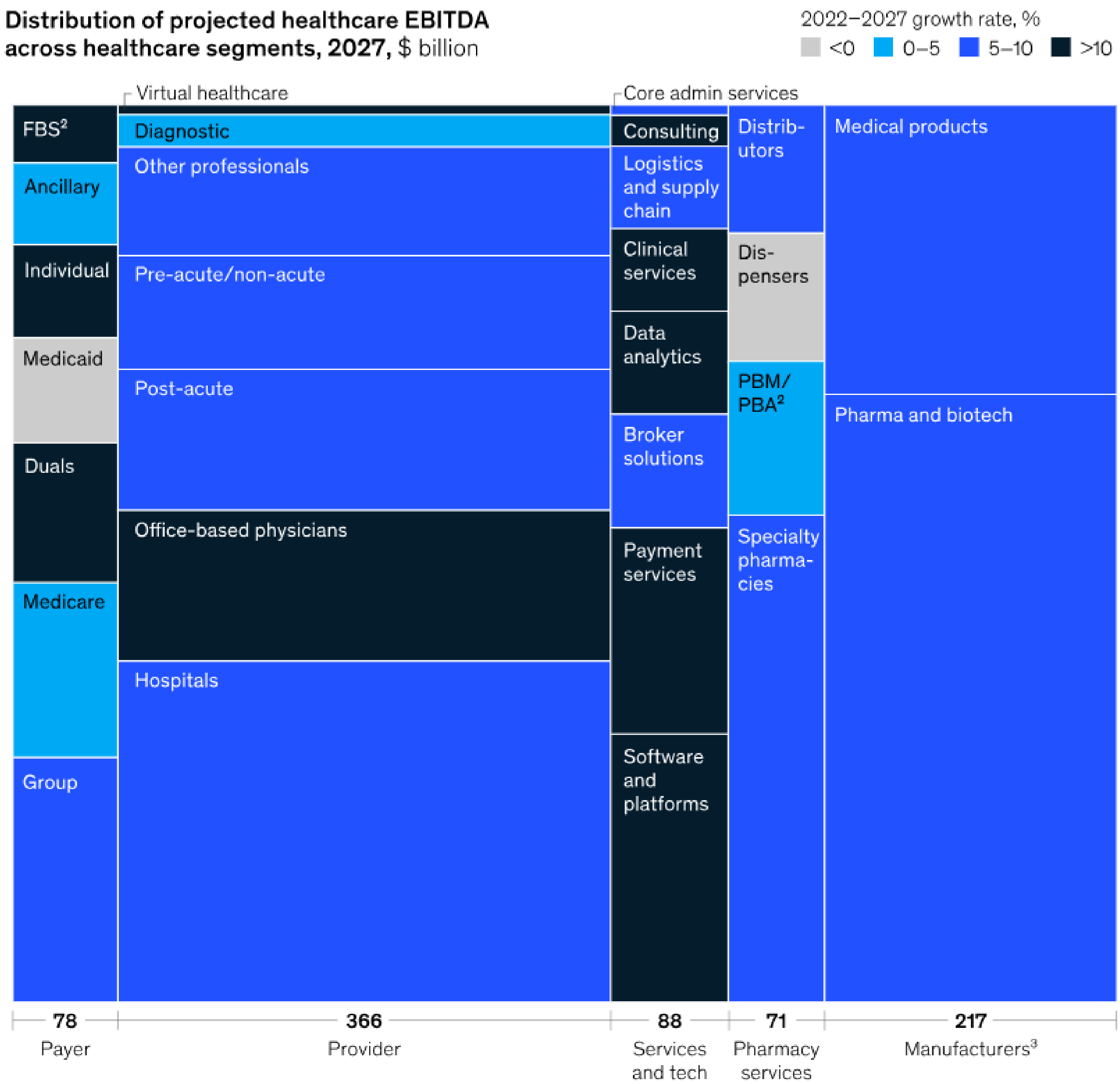
Walgreens to pay Humana $360M to settle drug pricing dispute. Walgreens has agreed to pay Humana $360 million to settle a long-standing lawsuit accusing the pharmacy chain of overcharging for prescription drugs for over a decade. The dispute began in 2019 when Humana claimed Walgreens inflated reimbursement claims, leading to a $642 million award in private arbitration. Walgreens, denying wrongdoing, sued to overturn the award in 2022. Despite calling the award a "miscarriage of justice," Walgreens settled for $360 million, with $150 million paid in December, as the legal battles took a toll on the company's financial health amid other costly settlements. Read More (Healthcare Dive)

Natera owes Ravgen $57 million in genetic-testing case, Texas jury says. Genetic-testing company Natera has been ordered to pay $57 million in damages to Maryland biotech firm Ravgen by a Texas jury. The decision stems from Natera's Panorama prenatal screening tests allegedly infringing on Ravgen's patent rights in cell-free DNA testing technology. Despite Natera's assurance that the verdict won't impact its services, Ravgen sees it as a recognition of its foundational technology. Read More (Reuters)

Johnson & Johnson to settle talc baby powder investigation, will reportedly pay $700 million. Johnson & Johnson has tentatively settled with over 40 states over allegations of misleading patients about the safety of its talc baby powder. The $700 million settlement does not resolve the numerous cancer-related lawsuits pending trial. The company has faced financial and reputational challenges over the safety of its talc-based products. J&J previously attempted bankruptcy to address talc liabilities but faced rejections. The company ceased global sales of talc-based baby powder in the past year. Read More (CNBC)

HEALTHTECH CHART OF THE MONTH

Chart 17: Projected Healthcare EBITDA Across Healthcare Segments



Source: Intro-act, McKinsey Profit Pool Model

Note: Preliminary. 1: FBS=Fixed Benefit and Supplemental: PBM/PBA= Pharmacy Benefit Administrator / Pharmacy Benefit Manager. 2: Growth Rate Could be in the Range of 4-6%

HEALTHTECH CAPITAL MARKET ACTION (JANUARY 2024)

IPO Activity

Company	Stock Exchange	Offer Date	Gross Proceeds ($m)
FibroBiologics	Nasdaq	31-Jan-24	-
ArriVent Biopharma	Nasdaq	26-Jan-24	175
BrightSpring Health Services	Nasdaq	26-Jan-24	693
CG Oncology	Nasdaq	25-Jan-24	380
Medi Assist Healthcare Services	NSE, India	23-Jan-24	-
Fractyl Health, Inc.	Nasdaq	2-Feb-24	110
Alto Neuroscience, Inc.	NYSE	2-Feb-24	148
Kyverna Therapeutics, Inc.	Nasdaq	8 -Feb-24	319
Telomir Pharmaceuticals, Inc.	Nasdaq	9-Feb-24	7
Metagenomi, Inc.	Nasdaq	9-Feb-24	94

Source: Intro-act, FactSet

M&A Activity (January 2024)

Target	Target Industry	Target Country	Acquirer	Deal Size ($m)	Announcement Date
Saint Luke's Health System	Hospitals and Health Care	United States	BJC HealthCare	-	2-Jan-24
LumiraDx's	Hospitals and Health Care	United Kingdom	Roche	350	2-Jan-24
ENFOR	Services for Renewable Energy	Denmark	Danfoss	-	3-Jan-24
Paragon Healthcare	Hospitals and Health Care	United States	Elevance Health	-	4-Jan-24
SanReno Therapeutics	Biotechnology Research	China	Novartis		5-Jan-24
Ambrx	Biotechnology Research	United States	Johnson & Johnson	2,000	8-Jan-24
Axonics	Medical Equipment Manufacturing	United States	Boston Scientific	-	8-Jan-24
Harpoon Therapeutics	Pharmaceutical Manufacturing	United States	Merck	-	8-Jan-24
Calypso Biotech	Biotechnology Research	Netherlands	Novartis	250	8-Jan-24
Aiolos Bio	Biotechnology Research	United States	GSK	1,000	9-Jan-24
Physiocare Home Health	Home healthcare	United States	Fortis Health	-	11-Jan-24
Care Hospice	Hospitals and Health Care	United States	Fortis Health	-	11-Jan-24
Elder Bridge	Hospitals and Health Care	United States	PurposeCare	-	16-Jan-24
Michiana Home Care	Hospitals and Health Care	United States	PurposeCare	-	16-Jan-24

Queen City Skilled Care	Hospitals and Health Care	United States	PurposeCare	-	16-Jan-24
Bright.md	IT Services and IT Consulting	United States	98point6 Technologies	-	16-Jan-24
Cured	Technology, Information and Internet	United States	Innovaccer	-	16-Jan-24
Summa Health	Hospitals and Health Care	United States	General Catalyst	-	17-Jan-24
Taro	Pharmaceutical Manufacturing	United States	Sun Pharma	348	18-Jan-24
Lucentis biosimilar Cimerli (Coherus BioSciences)	Biotechnology Research	United States	Sandoz	170	22-Jan-24
Inhibrx, Inc.	Biotechnology Research	United States	Sanofi	-	23-Jan-24
Superior Hospice and Superior Home Health	Hospitals and Health Care	United States	Legacy Care Partners Inc	-	23-Jan-24
Orchard Therapeutics	Biotechnology Research	United Kingdom	Kyowa Kirin Co., Ltd.	477.6	25-Jan-24
Seagen Inc	Biotechnology Research	United States	Pfizer	43,000	29-Jan-24

Source: Intro-act, FactSet

PE/ VC Funding Activity (January 2024)

Company	Funding Round	Fund raised ($m)	Investors	Date
Sidley	Series A	100.0	Novo Holdings, OrbiMed, and F-Prime Capital, Sofinnova Investments, Catalio Capital Management, Marshall Wace, Forge Life Science Partners, Blackbird BioVentures, CJNV BioVenture, BioTrack Capital	4-Jan-24
Nalu		65.0	Novo Holdings, Aperture Venture Partners, Gilde Healthcare, MVM Partners, Pura Vida.	4-Jan-24
LEM Surgical	Series B	21.6	-	5-Jan-24
Leavitt Equity Partners II	-	180.0	-	5-Jan-24
Nabla	Series B	24.0	Cathay Innovation, ZEBOX Ventures	5-Jan-24
Goldman Sachs	-	650.0	-	5-Jan-24
CureBay	Series A1	7.5	Elevar Equity	6-Jan-24
Care Continuity	Series A-3	10.0	Empactful Capital & Viewside Capital Partners, Flat Creek Capital, Loop 289 Limited Partners.	8-Jan-24
Vita Health	Series A	22.5	LFE Capital, CVS Health Ventures, Athyrium Capital Management, Flare Capital Partners, Connecticut Innovations, CU Healthcare Innovation Fund, HopeLab	10-Jan-24
Neocis	-	20.0	Intuitive Ventures, DFJ Growth, Mithril Capital Management, Norwest Venture Partners, Vivo Capital, Section 32, surgical robotics pioneer Fred Moll	10-Jan-24
Health In Her HUE	Seed	3.0	Seae Ventures, Johnson & Johnson Impact Ventures, Morgan Stanley Inclusive Ventures Lab, Genius Guild, HBCU Founders Fund, Stanford Impact Fund	12-Jan-24
Comanche Biopharma	Series B	75.0	NEA, Atlas Venture, GV, F-Prime Capital, Lilly Asia Ventures, Longview Healthcare Ventures.	17-Jan-24
Tr1x		75.0	-	17-Jan-24
Artisight	Series B	42.0	NVIDIA	19-Jan-24
Rune Labs	-	12.0	Nexus NeuroTech Ventures, Eclipse, DigiTx Partners, Moment Ventures, TruVenturo GmbH	19-Jan-24
Parallel Learning	Series A	6.1	-	19-Jan-24
Harbor Health		95.5	Health 2047 Capital Partners, Lemhi Ventures, Martin Ventures	22-Jan-24
Turquoise Health	Series B	30.0	Adams Street Partners, Andreessen Horowitz, BoxGroup, Yosemite	23-Jan-24
Ansel	-	20.0	Portage, Two Sigma Ventures, Brewer Lane Ventures, SixThirty Ventures, Plug and Play Ventures, Digitalis Ventures, Symphony AI, Operator Partners, Morgan Creek Capital Management	23-Jan-24
Forta	-	55.0	-	24-Jan-24
Elephas	Series C	55.0	Venture Investors Health Fund, State of Wisconsin Investment Board, Northpond Ventures, Moore Strategic Ventures, WARF Ventures, Tao Invest, Sands Capital, ARCH Ventures	24-Jan-24
CardioSignal	Series A	10.0	DigiTx Partners, Sandwater, Maki.vc.	24-Jan-24
Isaac Health		5.7	Meridian Street Capital, B Capital, Primetime Partners, Co-Found Partners, VU Venture Partners, AirAngels.	25-Jan-24
Acorai AB	Seed	4.5	-	26-Jan-24

Sano Genetics	-	11.4	Plural, MMC Ventures, Episode 1, Seedcamp	29-Jan-24

Source: Intro-act, FactSet

FDA CLINICAL TRIALS TRACKER

S. No	Symbol	Company	NCT ID	Completion Date	Title
1	ARQT	Arcutis Biotherapeutics, Inc.	NCT04286607	26-01-2024	Open-Label Extension Trial of PDE4 Inhibition with Roflumilast for the Management of Plaque Psoriasis
2	NVAX	Novavax, Inc.	NCT05875701	12-01-2024	Phase 3 Study of Novavax Vaccine(s) as Booster Dose After mRNA Vaccines
3	CHHE	China Health Industries Holdings, Inc.	NCT05159947	10-01-2024	SPT-07A Injection in Patients with Acute Ischemic Stroke (AIS): A Phase III Clinical Trial
4	ALVR	AlloVir, Inc.	NCT05179057	01-01-2024	Posoleucel (ALVR105) for the Treatment of Adenovirus Infection in Pediatric and Adult Participants Receiving Standard of Care Following Allogeneic Hematopoietic Cell Transplantation
5	CING	Cingulate Inc.	NCT05286762	01-01-2024	Phase 3 Efficacy and Safety Fixed-Dose Study in Pediatrics (6-17) With ADHD Using CTx-1301
6	CING	Cingulate Inc.	NCT05924594	01-01-2024	Phase 3 Efficacy and Safety Laboratory Classroom Study in Pediatrics (6-12) With ADHD Using CTx-1301
7	MRNS	Marinus Pharmaceuticals, Inc.	NCT05323734	01-01-2024	Adjunctive GNX Treatment Compared with Placebo in Children and Adults With TSC-related Epilepsy
8	AVTX	Avalo Therapeutics, Inc.	NCT05462587	31-12-2023	A Study to Evaluate Efficacy and Safety of AVTX-803 in Patients with Leukocyte Adhesion Deficiency Type II
9	AVTX	Avalo Therapeutics, Inc.	NCT05754450	31-12-2023	An Extension Study Assessing the Safety and Efficacy of AVTX-803 in Subjects with Leukocyte Adhesion Deficiency Type II

10	FGEN	FibroGen, Inc.	NCT03941093	31-12-2023	Evaluation of Efficacy and Safety of Neoadjuvant Treatment with Pamrevlumab in Combination With Chemotherapy (Either Gemcitabine Plus Nab-paclitaxel or FOLFIRINOX) in Participants With Locally Advanced Pancreatic Cancer
11	PHASQ	PhaseBio Pharmaceuticals, Inc.	NCT04286438	31-12-2023	Bentracimab (PB2452) in Ticagrelor-treated Patients with Uncontrolled Major or Life-Threatening Bleeding or Requiring Urgent Surgery or Invasive Procedure
12	SYRS	Syros Pharmaceuticals, Inc.	NCT04797780	31-12-2023	Tamibarotene Plus Azacitidine in Participants with Newly Diagnosed RARA-positive Higher-Risk Myelodysplastic Syndrome
13	PRFX	PainReform Ltd.	NCT05773846	30-12-2023	A Study to Evaluate Analgesic Efficacy and Safety of PRF-110 for Post-surgical Pain
14	RVPH	Reviva Pharmaceuticals Holdings, Inc.	NCT05184335	20-12-2023	Safety and Efficacy of Brilaroxazine (RP5063) in Schizophrenia
15	ANVS	Annovis Bio, Inc.	NCT05357989	04-12-2023	A Double-blind Study to Investigate Efficacy and Safety of Buntanetap Compared with Placebo in Participants With Early PD
16	ANGO	AngioDynamics, Inc.	NCT03899636	01-12-2023	A Pivotal Study of Safety and Effectiveness of NanoKnife IRE for Stage 3 Pancreatic Cancer
17	APLT	Applied Therapeutics, Inc.	NCT04083339	01-12-2023	Safety and Efficacy of AT-001 in Patients with Diabetic Cardiomyopathy
18	BFRI	Biofrontera Inc.	NCT03573401	01-12-2023	Study to Evaluate the Safety and Efficacy of BF-200 ALA (AmeluzÂ®) and BF-RhodoLEDÂ® in the Treatment of Superficial Basal Cell Carcinoma (sBCC) With Photodynamic Therapy (PDT).

19	CYTH	Cyclo Therapeutics, Inc.	NCT04860960	01-12-2023	Phase 3 Study to Evaluate Intravenous Trappsol(R) Cyclo(TM) in Pediatric and Adult Patients With Niemann-Pick Disease Type C1
20	EQ	Equillium, Inc.	NCT05263999	01-12-2023	A Study of Itolizumab in Combination with Corticosteroids for the First-Line Treatment of Acute Graft Versus Host Disease (EQUATOR)
21	RDHL	RedHill Biopharma Ltd.	NCT04616924	01-12-2023	RHB-204 for the Treatment of Pulmonary Mycobacterium Avium Complex Disease
22	VNDA	Vanda Pharmaceuticals Inc.	NCT04028492	01-12-2023	Evaluating the Safety and Efficacy of Tradipitant vs. Placebo in Idiopathic and Diabetic Gastroparesis
23	CHHE	China Health Industries Holdings, Inc.	NCT03790800	23-11-2023	Intensive Ambulance-delivered Blood Pressure Reduction in Hyper-Acute Stroke Trial
24	TNXP	Tonix Pharmaceuticals Holding Corp.	NCT05273749	14-11-2023	A Phase 3 Study to Evaluate the Efficacy and Safety of TNX-102 SL Taken Daily in Patients with Fibromyalgia
25	AKTX	Akari Therapeutics, Plc	NCT04784455	01-11-2023	Nomacopan (rVA576) in Transplant Associated Thrombotic Microangiopathy
26	ITRM	Iterum Therapeutics plc	NCT05584657	01-11-2023	Oral Sulopenem Versus Amoxicillin/Clavulanate for Uncomplicated Urinary Tract Infection in Adult Women

Source: Intro-act, FDA Tracker. Note: The tracker displays Phase 3 trials with primary completion dates within the last 3 months for companies with a market cap less than $1 billion.

For More Information Visit - *[Trial Tracker – FDA Tracker]*

EU CLINICAL TRIALS TRACKER – TOP 25 SPONSORS

S. No	Sponsor Name	Trials on EUCTR	Trials due to report results	% Reported	Trials with inconsistent data
1	Novartis	1544	973	99.90%	328
2	GlaxoSmithKline	1197	724	100.00%	368
3	Pfizer	908	571	99.60%	230
4	Merck Sharp & Dohme (MSD)	866	505	100.00%	209
5	Astrazeneca	748	414	97.80%	130
6	Roche	806	412	98.80%	186
7	Sanofi S.A.	762	392	100.00%	287
8	Johnson & Johnson	589	332	99.70%	138
9	Eli Lilly	490	319	99.40%	77
10	Boehringer Ingelheim	400	311	100.00%	51
11	Medical University of Vienna	452	280	93.60%	35
12	Bayer	345	247	100.00%	60
13	Bristol-Myers Squibb	410	218	100.00%	103
14	Amgen Inc	308	199	100.00%	63

15	KU Leuven	274	191	95.30%	7
16	Novo Nordisk	283	182	100.00%	49
17	Gilead Sciences Inc	269	171	100.00%	64
18	Charité-Universitätsmedizin Berlin	213	162	99.40%	8
19	Takeda	259	152	100.00%	63
20	Rigshospitalet	267	151	51.70%	24
21	Abbvie	271	133	99.20%	61
22	Aarhus University	224	126	66.70%	16
23	UCB	238	123	100.00%	91
24	Merck KGaA	179	123	100.00%	33
25	Servier Laboratories	154	116	100.00%	22

Source: Intro-act, EU Trials Tracker. Note: The companies are ranked on the basis of the highest number of trials due to report results.

For More Information Visit - *EU Trials Tracker*

NOVEL DRUG APPROVALS BY FDA – LAST SIX MONTHS

S. No	Drug Name	Active Ingredient	Approval Date	FDA-approved use on approval date
1	Zelsuvmi	berdazimer	1/5/2024	To treat molluscum contagiosum
2	Wainua	eplontersen	12/21/2023	To treat polyneuropathy of hereditary transthyretin-mediated amyloidosis
3	Filsuvez	birch triterpenes	12/18/2023	To treat wounds associated with dystrophic and junctional epidermolysis bullosa
4	Fabhalta	iptacopan	12/5/2023	To treat paroxysmal nocturnal hemoglobinuria
5	Ogsiveo	nirogacestat	11/27/2023	To treat adults with progressing desmoid tumors who require systemic treatment
6	Truqap	capivasertib	11/16/2023	To treat breast cancer that meets certain disease criteria
7	Ryzneuta	efbemalenograstim alfa-vuxw	11/16/2023	To treat neutropenia
8	Augtyro	repotrectinib	11/15/2023	To treat ROS1-positive non-small cell lung cancer
9	Defencath	taurolidine, heparin	11/15/2023	To reduce the incidence of catheter-related bloodstream infections in adults with kidney failure receiving chronic hemodialysis through a central venous catheter
10	Fruzaqla	fruquintinib	11/8/2023	To treat refractory, metastatic colorectal cancer
11	Loqtorzi	toripalimab-tpzi	10/27/2023	To treat recurrent or metastatic nasopharyngeal carcinoma when used together with or following other therapies
12	Omvoh	mirikizumab-mrkz	10/26/2023	To treat ulcerative colitis
13	Agamree	vamorolone	10/26/2023	To treat Duchenne muscular dystrophy
14	Bimzelx	bimekizumab	10/17/2023	To treat moderate to severe plaque psoriasis in adults who are candidates for systemic therapy or phototherapy
15	Zilbrysq	zilucoplan	10/17/2023	To treat generalized myasthenia gravis in adults who are anti-acetylcholine receptor (AChR) antibody positive
16	Velsipity	etrasimod	10/12/2023	To treat moderately to severely active ulcerative colitis in adults

17	Rivfloza	nedosiran	9/29/2023	To lower urinary oxalate levels in patients 9 years and older with primary hyperoxaluria type 1 and relatively preserved kidney function
18	Pombiliti	cipaglucosidase alfa-atga	9/28/2023	To treat late-onset Pompe disease
19	Exxua	gepirone	9/22/2023	To treat major depressive disorder
20	Ojjaara	momelotinib	9/15/2023	To treat intermediate or high-risk myelofibrosis in adults with anemia
21	Aphexda	motixafortide	9/8/2023	To use with filgrastim (G-CSF) to mobilize hematopoietic stem cells to the peripheral blood for collection and subsequent autologous transplantation in patients with multiple myeloma
22	Veopoz	pozelimab-bbfg	8/18/2023	To treat patients 1 year old and older with CD55-deficient protein-losing enteropathy (PLE), also known as CHAPLE disease
23	Sohonos	palovarotene	8/16/2023	To reduce the volume of new heterotopic ossification in adults and pediatric patients (aged 8 years and older for females and 10 years and older for males) with fibrodysplasia ossificans progressiva
24	Elrexfio	elranatamab-bcmm	8/14/2023	To treat adults with relapsed or refractory multiple myeloma who have received at least four prior lines of therapy
25	Talvey	talquetamab-tgvs	8/9/2023	To treat adults with relapsed or refractory multiple myeloma who have received at least four prior therapies
26	Izervay	avacincaptad pegol	8/4/2023	To treat geographic atrophy secondary to age-related macular degeneration
27	Zurzuvae	zuranolone	8/4/2023	To treat postpartum depression Press Release

Source: Intro-act, FDA

*Note *The listed "FDA-approved use" on this website is for presentation purposes only. To see the FDA-approved conditions of use [e.g., indication(s), population(s), dosing regimen(s)] for each of these products, see the most recent A-approved Prescribing Information (click on the Drug Name).*

MEDICAL DEVICES APPROVALS BY FDA – LAST SIX MONTHS

S. No	Device Name	Category	Date
1	RHA 3 dermal filler - P170002/S030	Dermal Filler	10/27/2023
2	OncomineTM Dx Target Test - P160045/S025	Lab Test	09/29/2023
3	CRCdx(R) RAS Mutation Detection Kit - P220005	Lab Test	09/29/2023
4	LimFlowTM System	Stent	09-11-2023
5	Boston Scientific Cardiac Cryoablation System and Accessories, consisting of: POLARx Cryoablation Ballon Catheter, POLARx FIT Cryoablation Ballon Catheter, SMARTFREEZE Cryoablation System Console - P220032	Catheter	08-08-2023

Source: Intro-act, FDA

HEALTHTECH INSTITUTIONAL INVESTOR LEAGUE

Chart 18: Healthtech Institutional Owners League (Current)

Rank	Institution Name	Invested in Healthtech ($)	Q/Q Change ($)	#Healthtech Positions	% of Instit Ownership
1	The Vanguard Group, Inc.	1,055,567,600,709	(65,503,641,376)	429	11.2%
2	BlackRock Fund Advisors	602,286,481,048	(33,732,508,560)	417	6.4%
3	SSgA Funds Management	470,434,377,057	(37,383,495,811)	436	5.0%
4	Fidelity Mgt & Research Co.	262,564,213,754	(16,318,266,547)	335	2.8%
5	Geode Capital Management	241,610,778,067	(9,292,687,232)	445	2.6%
6	T. Rowe Price Associates, Inc. (Investment Management)	195,764,161,911	(17,464,517,955)	230	2.1%
7	Wellington Mgt Co. LLP	162,791,725,403	(6,010,210,618)	218	1.7%
8	Berkshire Hathaway (Inv Mgt)	160,165,207,234	(21,106,703,572)	2	1.7%
9	Capital Research & Management Co. (World Investors)	149,885,278,835	(3,169,529,354)	108	1.6%
10	JPMorgan Inv Mgt, Inc.	114,215,620,877	(6,106,255,183)	344	1.2%
11	Northern Trust Investments, Inc.(Investment Management)	114,164,574,543	(3,812,259,596)	408	1.2%
12	Capital Research & Management Co. (Global Investors)	100,052,568,397	(1,743,770,870)	73	1.1%
13	BlackRock Advisors (UK) Ltd.	97,823,457,301	(2,883,602,113)	364	1.0%
14	BlackRock Inv Mgt (UK) Ltd.	94,575,191,558	(13,102,326,926)	349	1.0%
15	Capital Research & Mgt Co. (International Investors)	86,229,701,155	(5,014,976,858)	64	0.9%
16	Charles Schwab Inv Mgt, Inc.	83,396,743,597	(3,205,784,615)	392	0.9%
17	Morgan Stanley Smith Barney LLC (Investment Management)	70,701,474,027	(1,979,648,536)	293	0.8%
18	Massachusetts Financial Services Co.	68,068,638,275	(4,892,606,106)	106	0.7%
19	AllianceBernstein LP	66,052,417,467	(3,911,293,363)	350	0.7%
20	Legal & General Inv Mgt Ltd.	64,349,209,899	(3,065,197,553)	360	0.7%
21	Goldman Sachs Asset Mgt LP	58,844,620,340	(2,275,394,308)	355	0.6%
22	Dimensional Fund Advisors LP	53,892,793,274	(2,576,219,995)	357	0.6%
23	Parametric Portfolio Associates LLC	51,390,763,838	(3,188,457,560)	327	0.5%
24	Columbia Management Investment Advisers LLC	51,248,269,025	(3,513,072,875)	276	0.5%
25	Managed Account Advisors	48,892,844,772	(1,521,188,999)	194	0.5%
	OTHERS	**4,867,629,372,375**	**(288,609,096,348)**	**197,250**	**51.8%**
	TOTAL	**9,392,598,014,062**	**(561,382,778,677)**	**204,477**	**100%**

Source: Intro-act, 13F Filings

Chart 19: Top 25 Healthtech Buyers (Q/Q)

Rank	Institution Name	Invested in Healthtech ($)	Q/Q Change ($)	#Healthtech Positions	% of Instit Ownership
1	Union Investment Privatfonds GmbH	20,363,298,475	8,230,033,759	76	0.2%
2	State Street Global Advisors Ltd.	15,880,186,174	5,709,349,320	354	0.2%
3	JPMorgan Private Wealth Advisors LLC	6,900,247,527	4,860,723,917	120	0.1%
4	Comerica Bank (Investment Management Texas)	3,852,034,231	3,848,119,664	202	0.0%
5	Wealth Enhancement Advisory Services LLC	3,506,232,444	3,162,804,843	117	0.0%
6	UBS Asset Management (UK) Ltd.	28,849,141,459	2,414,769,245	349	0.3%
7	Harris Associates LP	10,292,272,957	2,374,937,276	32	0.1%
8	PNC Bank, NA (Investment Management)	42,351,993,966	2,365,495,464	219	0.5%
9	Envestnet Asset Management, Inc.	16,598,039,223	2,108,145,803	195	0.2%
10	DZ PRIVATBANK SA	23,230,282,775	1,996,603,156	98	0.2%
11	Barclays Capital Securities Ltd.	8,238,232,733	1,803,842,014	109	0.1%
12	Circle Wealth Management LLC	1,710,676,010	1,646,916,944	22	0.0%
13	PineStone Asset Management, Inc.	2,289,034,098	1,566,706,832	9	0.0%
14	National Bank Financial, Inc.	5,829,782,006	1,512,668,003	138	0.1%
15	QRG Capital Management, Inc.	1,492,874,832	1,492,874,832	94	0.0%
16	Goldman Sachs & Co. LLC (Private Banking)	10,683,186,443	1,435,591,229	257	0.1%
17	Qube Research & Technologies Ltd.	5,198,647,213	1,408,407,698	185	0.1%
18	Osaic Wealth, Inc. (Investment Management)	1,932,140,816	1,376,523,566	224	0.0%
19	Netwealth Investments Ltd.	1,332,236,240	1,332,236,240	5	0.0%
20	Citadel Advisors LLC	12,081,972,129	1,287,953,066	205	0.1%
21	TIAA-CREF Individual & Institutional Services LLC	1,166,681,251	1,166,681,251	55	0.0%
22	Citadel Securities LLC	2,785,691,147	1,131,921,181	251	0.0%
23	BofA Securities, Inc.	3,316,974,197	1,003,872,082	271	0.0%
24	Rathbones Investment Management Ltd.	4,990,917,912	867,090,615	61	0.1%
25	Walleye Capital LLC	1,223,585,954	824,332,188	154	0.0%

Source: Intro-act, 13F Filings

Chart 20: Top 25 Healthtech Sellers (Q/Q)

Rank	Institution Name	Invested in Healthtech ($)	Q/Q Change ($)	#Healthtech Positions	% of Instit Ownership
1	The Vanguard Group, Inc.	1,055,567,600,709	(65,503,641,376)	429	11.2%
2	SSgA Funds Management, Inc.	470,434,377,057	(37,383,495,811)	436	5.0%
3	BlackRock Fund Advisors	602,286,481,048	(33,732,508,560)	417	6.4%
4	Berkshire Hathaway, Inc. (Investment Management)	160,165,207,234	(21,106,703,572)	2	1.7%
5	T. Rowe Price Associates, Inc. (Investment Management)	195,764,161,911	(17,464,517,955)	230	2.1%
6	Fidelity Management & Research Co. LLC	262,564,213,754	(16,318,266,547)	335	2.8%
7	BlackRock Investment Management (UK) Ltd.	94,575,191,558	(13,102,326,926)	349	1.0%
8	Geode Capital Management LLC	241,610,778,067	(9,292,687,232)	445	2.6%
9	Schweizerische Nationalbank (Investment Portfolio)	36,133,215,534	(6,887,466,926)	221	0.4%
10	Dodge & Cox	31,140,057,524	(6,386,829,171)	44	0.3%
11	JPMorgan Investment Management, Inc.	114,215,620,877	(6,106,255,183)	344	1.2%
12	Wellington Management Co. LLP	162,791,725,403	(6,010,210,618)	218	1.7%
13	Fundsmith LLP	11,191,399,545	(5,156,034,434)	9	0.1%
14	Capital Research & Management Co. (International Investors)	86,229,701,155	(5,014,976,858)	64	0.9%
15	Legal & General Investment Management America, Inc.	20,314,689,140	(4,938,460,700)	293	0.2%
16	Massachusetts Financial Services Co.	68,068,638,275	(4,892,606,106)	106	0.7%
17	Bank of America, NA (Private Banking)	27,044,163,001	(4,889,837,278)	279	0.3%
18	Mellon Investments Corp.	46,816,435,825	(4,664,336,833)	368	0.5%
19	E Fund Management Co., Ltd.	617,629,945	(4,611,207,134)	86	0.0%
20	Invesco Advisers, Inc.	36,213,970,294	(4,209,068,230)	291	0.4%
21	TCI Fund Management Ltd.	1,616,292,933	(4,073,093,146)	1	0.0%
22	Jennison Associates LLC	28,748,924,318	(3,942,950,444)	77	0.3%
23	State Board of Administration of Florida Retirement System	11,758,283,966	(3,927,901,255)	219	0.1%
24	AllianceBernstein LP	66,052,417,467	(3,911,293,363)	350	0.7%
25	Baillie Gifford & Co.	21,129,232,475	(3,871,775,400)	75	0.2%

Source: Intro-act, 13F Filings

ETF SPOTLIGHT

ARK Genomic Revolution ETF (ARKG)

Closing Price ($)	CUSIP	Expense Ratio	Inception
30.44	00214Q302	0.75	10/31/2014

AUM ($ million)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
2,06,68,48,147.49	60950000	(20,62,89,400.00)	(20,62,89,400.00)

Fund Description

ARKG is an actively managed Exchange Traded Fund (ETF) with the primary objective of achieving long-term capital growth. The fund invests, under normal circumstances, at least 80% of its assets in both domestic and foreign equity securities. These securities belong to companies spanning various sectors such as health care, information technology, materials, energy, and consumer discretionary, aligning with the fund's investment theme of the genomics revolution. The companies within ARKG focus on and are poised to benefit significantly from incorporating genomics-related technological and scientific advancements into their business, with a concentration on issuers in the healthcare sector, including those in the biotechnology industry.

ETF Returns Annualized (As of 12/31/2023)

1 Year	3 Year	5 Year	Since Inception
16.21%	-29.27%	7.37	6.44%

ETF Returns Cumulative (As of 12/31/2023)

1 Month	3 Month	YTD	Since Inception
18.30%	17.81%	16.21%	77.27%

Top 10 Holdings (updated as of 2/10/24)

Holdings	% Allocation	Market Value
EXACT SCIENCES CORP	7.22%	$129,249,244.30
CRISPR THERAPEUTICS AG	6.90%	$123,511,236.40
TWIST BIOSCIENCE CORP	5.69%	$101,923,908.20
RECURSION PHARMACEUTICALS-A	4.94%	$88,485,170.40
TELADOC HEALTH INC	4.44%	$79,487,033.86
ACCOLADE INC	4.44%	$79,420,610.28
PACIFIC BIOSCIENCES OF CALIF	4.31%	$77,145,605.25
IONIS PHARMACEUTICALS INC	4.25%	$76,005,985.44
SCHRODINGER INC	4.07%	$72,836,214.40
ARCTURUS THERAPEUTICS HOLDIN	3.81%	$68,126,392.96

Source: Intro-act, FactSet

For more information on ARKF visit: https://ark-funds.com/funds/arkg/

iShares Global Healthcare ETF (IXJ)

Closing Price ($)	CUSIP	Expense Ratio	Inception
90.24	464287325	0.42	11/13/2001

AUM ($ million)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
4,11,78,11,526.27	45000000	(13,62,90,715.00)	(13,62,90,715.00)

Fund Description

The objective of this investment is to replicate the performance of the S&P Global 1200 Health Care Index™. Typically, the fund allocates a minimum of 80% of its assets to the component securities of its underlying index and investments with economic traits closely resembling those of the said securities. Additionally, it may allocate up to 20% of its assets to specific futures, options, and swap contracts, along with cash and cash equivalents. The index evaluates the performance of companies within the healthcare sector deemed significant to global markets by the index provider.

ETF Returns Annualized (As of 12/31/2023)

1 Year	3 Year	5 Year	Since Inception
3.49%	5.63%	10.34%	7.48%

ETF Returns Cumulative (As of 12/31/2023)

YTD	1 Month	3 Months	Since Inception
3.49%	4.28%	5.94%	393.65%

Top 10 Holdings (updated as of 2/10/24)

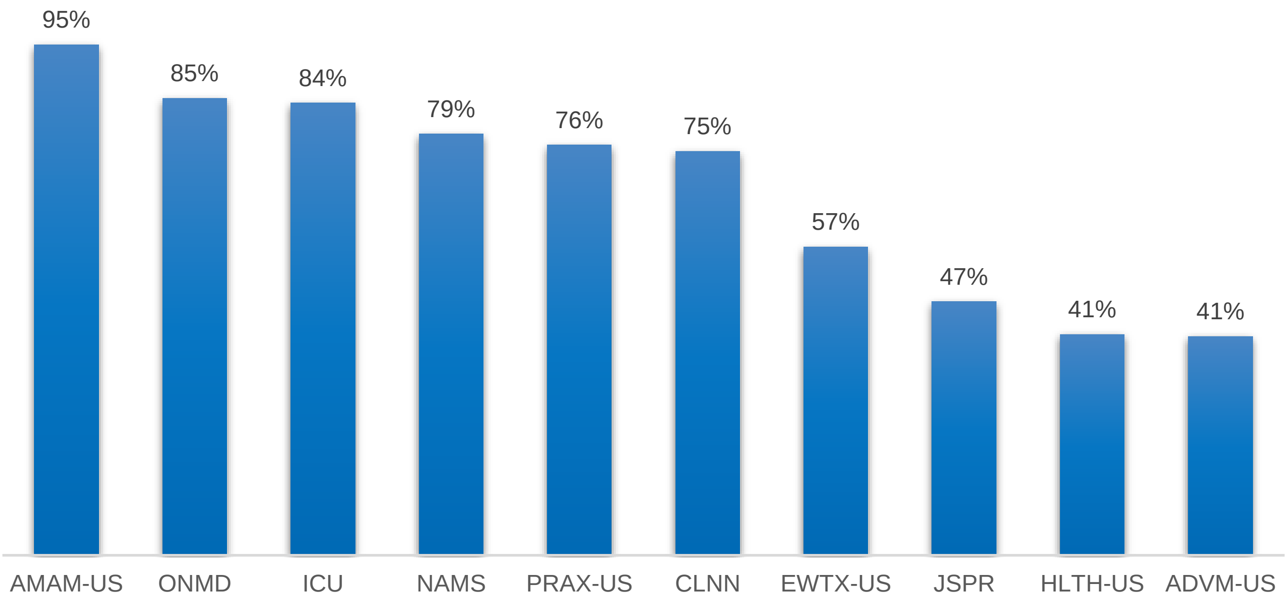
Holdings	% Allocation	Market Value
ELI LILLY	7.94	$ 321,754,797.76
UNITEDHEALTH GROUP INC	6.51	$ 263,827,094.48
NOVO NORDISK CLASS B	5.14	$ 208,054,826.81
JOHNSON & JOHNSON	5.1	$ 206,484,754.00
MERCK & CO INC	4.34	$ 175,951,309.71
ABBVIE INC	4.18	$ 169,247,234.31
THERMO FISHER SCIENTIFIC INC	2.88	$ 116,740,201.68
NOVARTIS AG	2.82	$ 114,320,165.59
ABBOTT LABORATORIES	2.64	$ 107,002,104.46
ASTRAZENECA PLC	2.6	$ 105,252,976.65

Source: Intro-act, FactSet

For more information visit: https://www.ishares.com/us/products/239744/ishares-global-healthcare-etf

GAINERS AND LOSERS – HEALTHTECH STOCKS

Chart 21: Top 10 M/M Healthtech Gainers (Jan 2024)

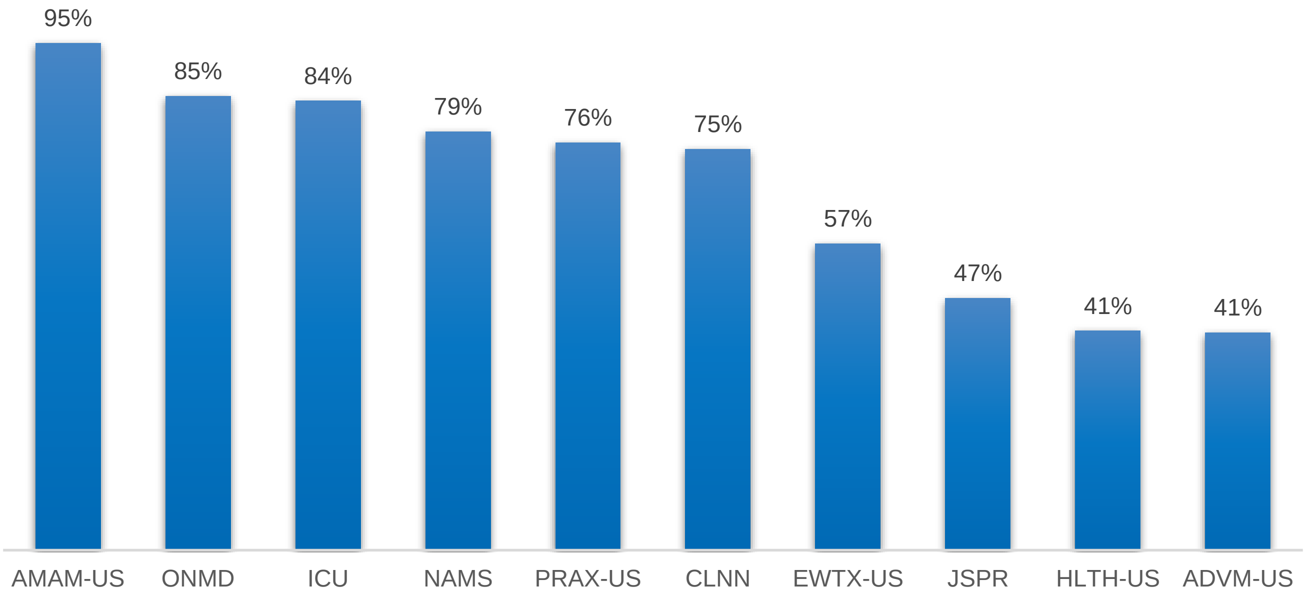


Source: Intro-act, FactSet. Data as of January 30, 2024.

Chart 22: Top 10 M/M Healthtech Losers (Jan 2024)

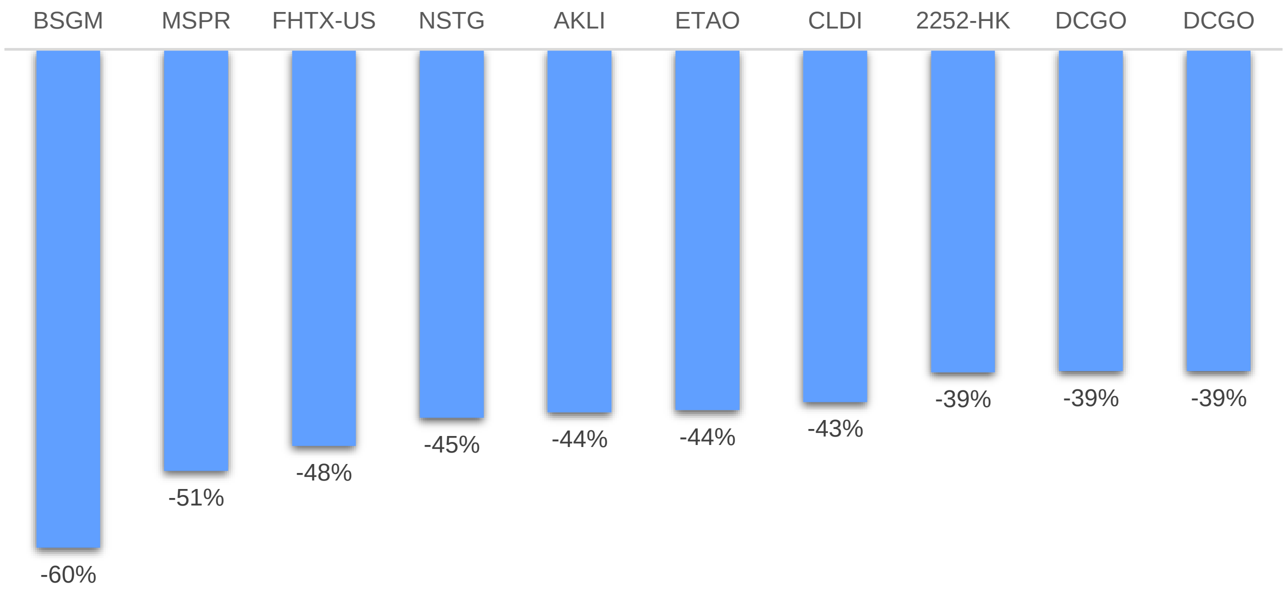
Source: Intro-act, FactSet. Data as of January 30, 2024.

Chart 23: Top 10 YTD Healthtech Gainers



Source: Intro-act, FactSet. YTD Data as of January 30, 2024.

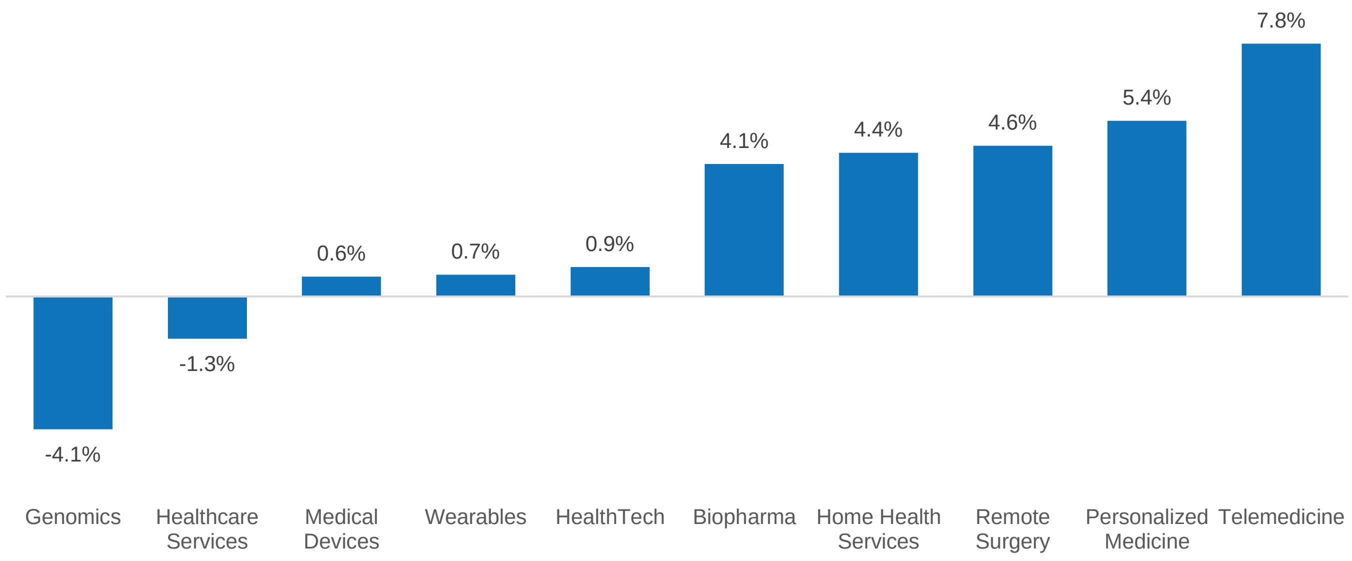
Chart 24: Top 10 YTD Healthtech Losers



Source: Intro-act, FactSet. YTD Data as of January 30, 2024.

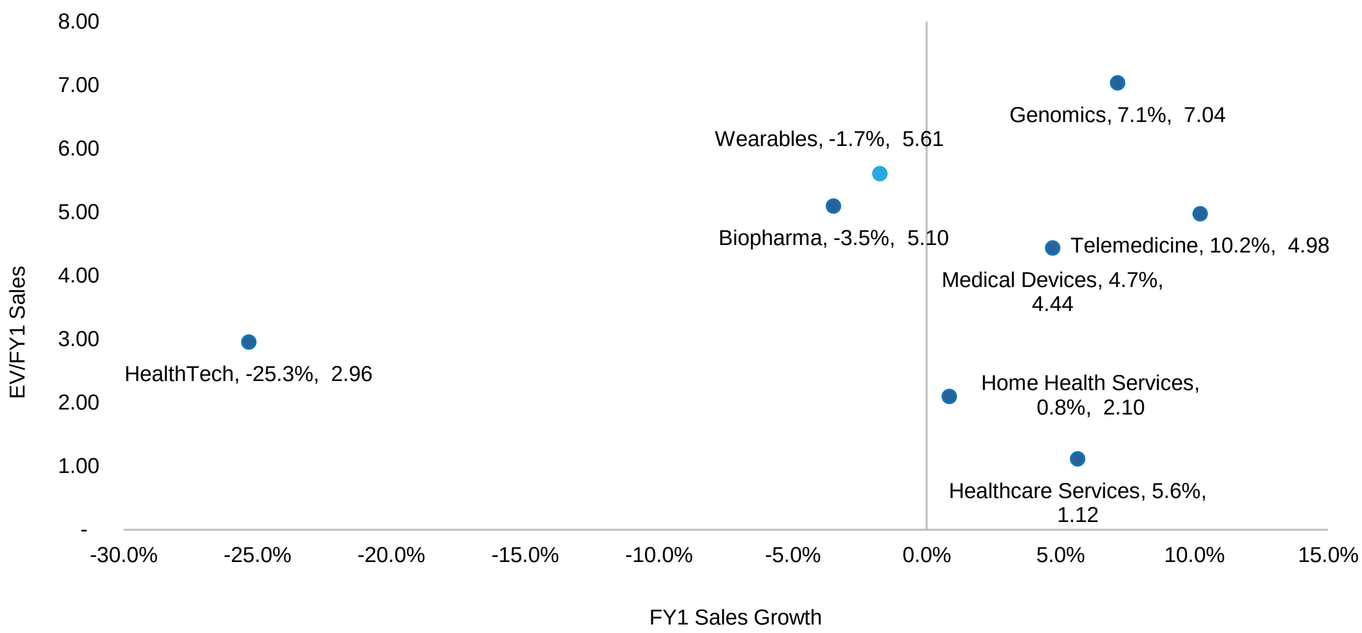
SEGMENT RETURN AND VALUATION

Chart 25: YTD Stock Price Returns by Segment



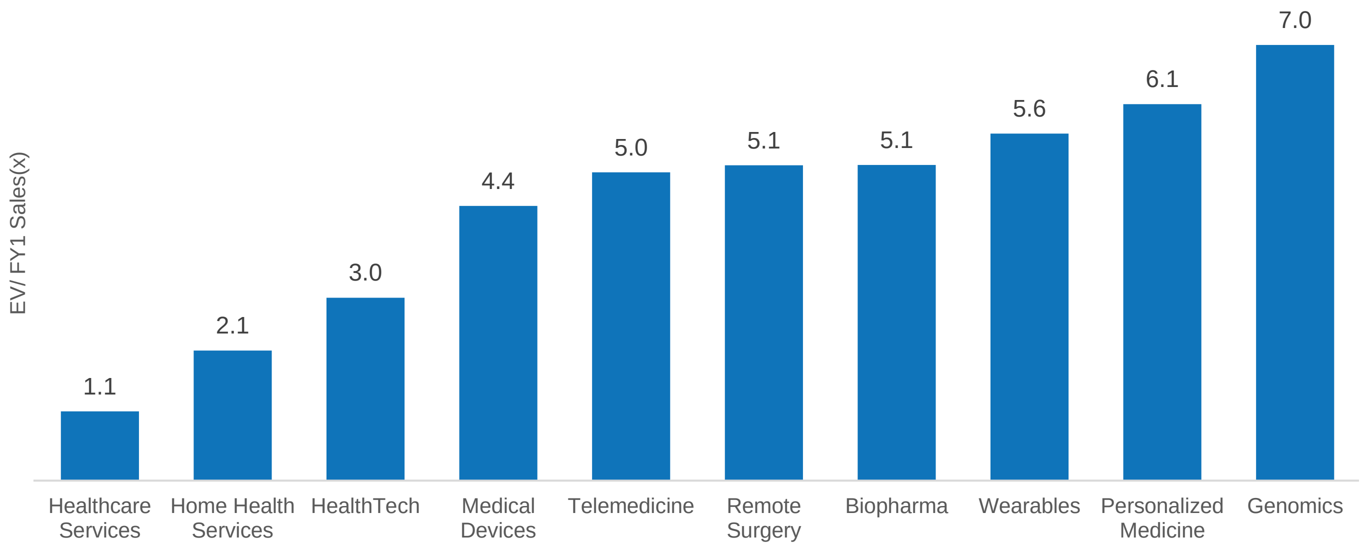
Source: Intro-act, FactSet. YTD Data as of January 30, 2024.

Chart 26: Healthtech Industry Growth and Valuation by Segment



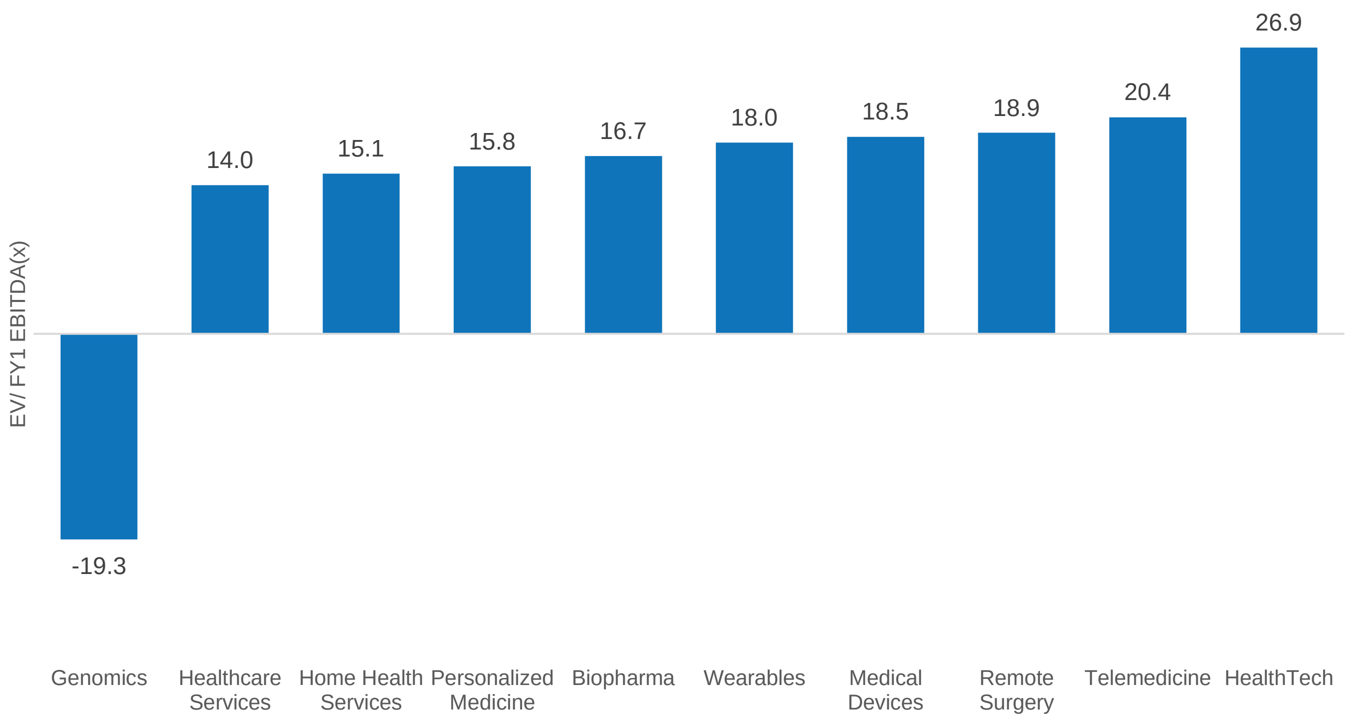
Source: Intro-act, FactSet. Data as of January 30, 2024.

Chart 27: EV/ FY1 Sales Multiple by Segment



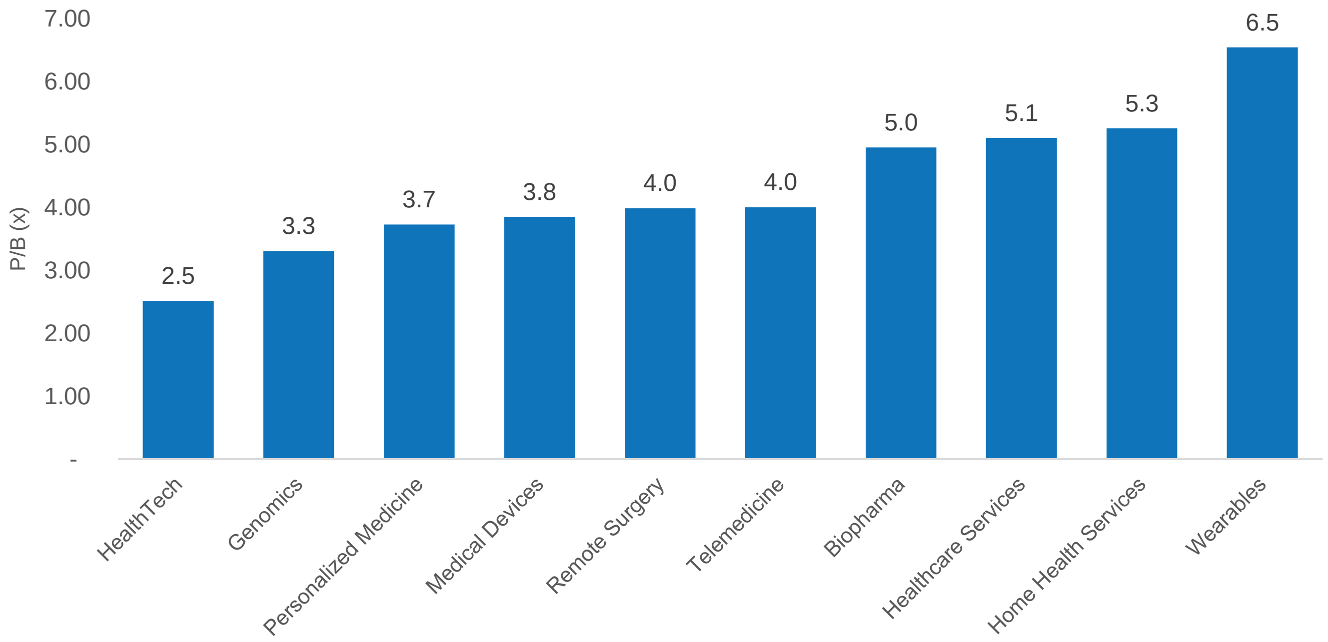
Source: Intro-act, FactSet. Data as of January 30, 2024.

Chart 28: EV/ FY1 EBITDA Multiple by Segment



Source: Intro-act, FactSet. Data as of January 30, 2024.

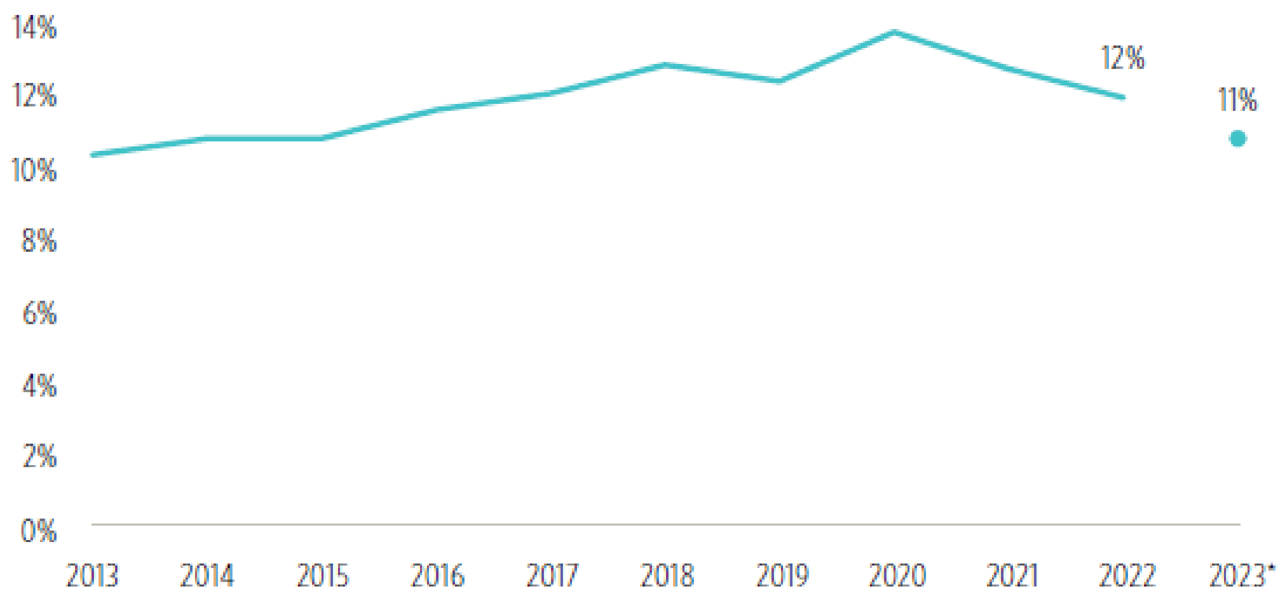
Chart 29: Price-to-Book Multiple by Segment



Source: Intro-act, FactSet. Data as of January 30, 2024.

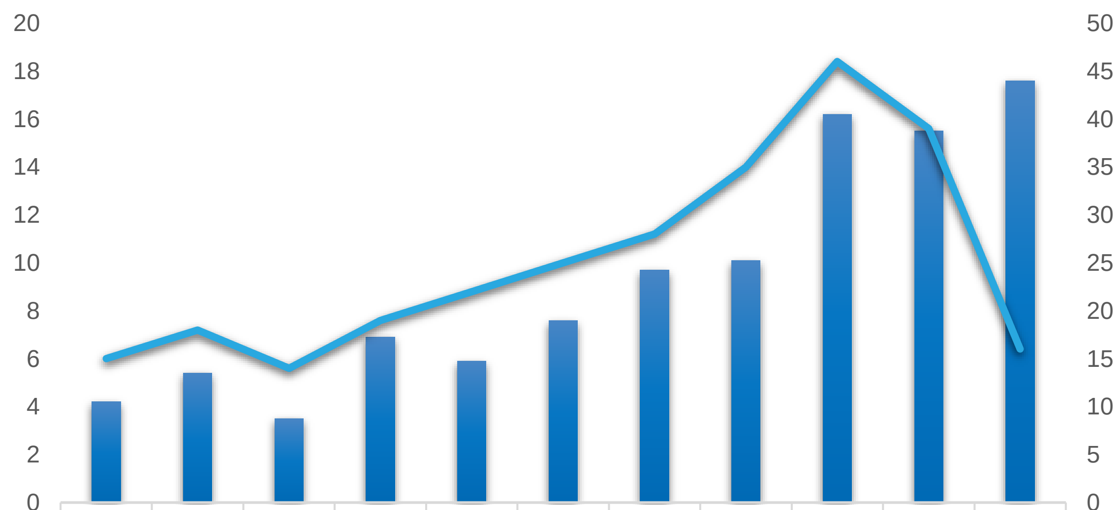
HEALTHTECH CAPITAL MARKET TRENDS

Chart 30: Healthcare PE Deals as a Share of All PE Deal Count



*Source: Intro-act, PitchBook, *As of September 30, 2023.*

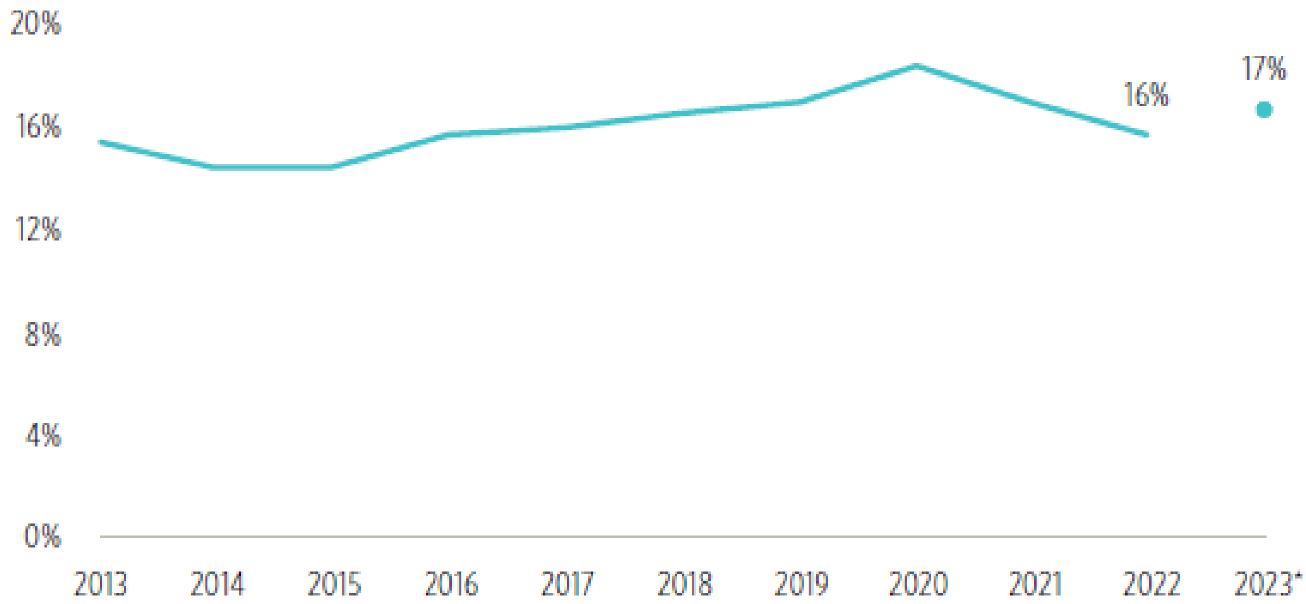
Chart 31: Healthcare Specialist PE Fundraising Activity



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Capital Raised $B	4.2	5.4	3.5	6.9	5.9	7.6	9.7	10.1	16.2	15.5	17.6
Fund Count	15	18	14	19	22	25	28	35	46	39	16

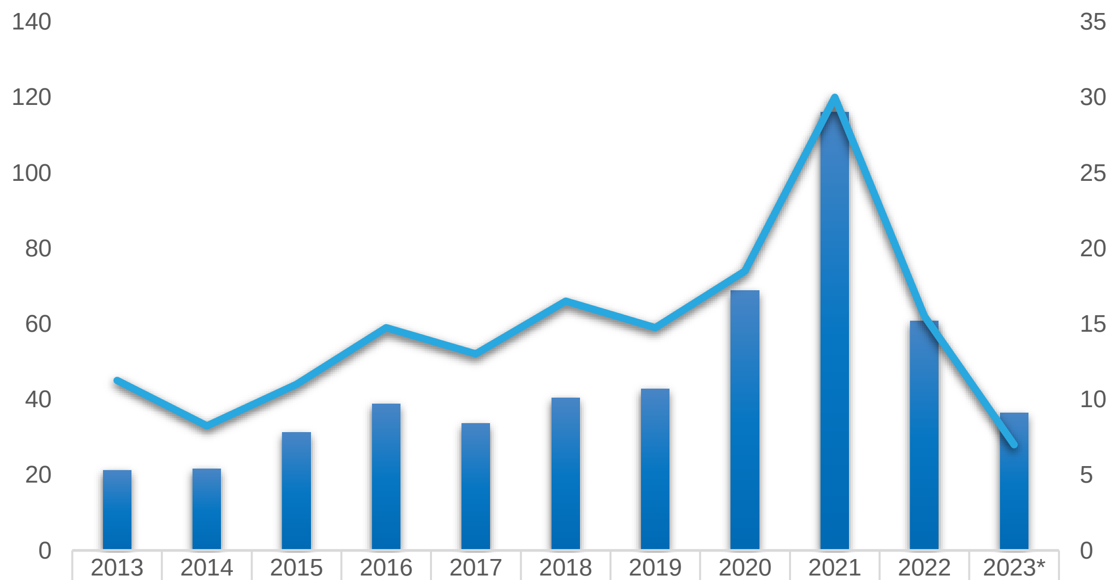
*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 32: Healthcare VC Deals as a Share of All VC Deal Count



*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 33: Life Sciences Specialist VC Fundraising Activity

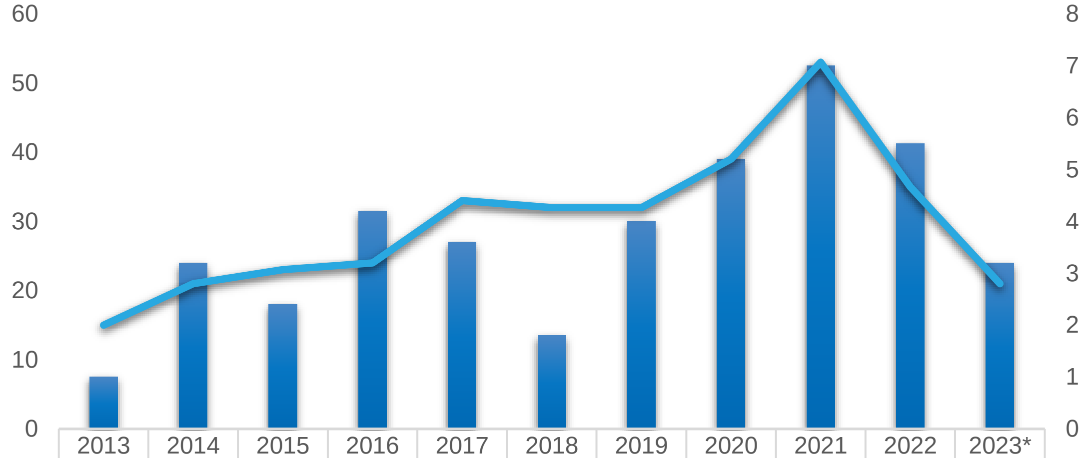


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Capital Raised $B	5.3	5.4	7.8	9.7	8.4	10.1	10.7	17.2	29	15.2	9.1
Fund Count	45	33	44	59	52	66	59	74	120	62	28

Capital Raised $B   Fund Count

*Source: Intro-act, PitchBook, *As of September 30, 2023.*

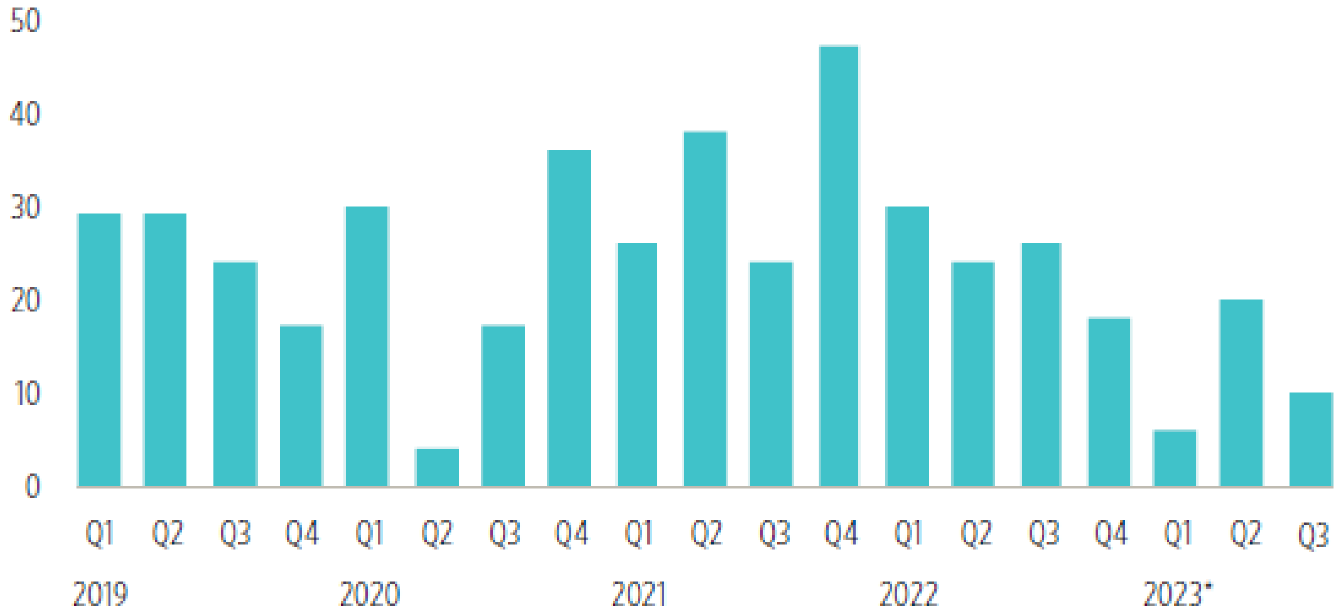
Chart 34: Other Healthcare Specialist VC Fundraising Activity



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Capital Raised $B	1	3.2	2.4	4.2	3.6	1.8	4	5.2	7	5.5	3.2
Fund Count	15	21	23	24	33	32	32	39	53	35	21

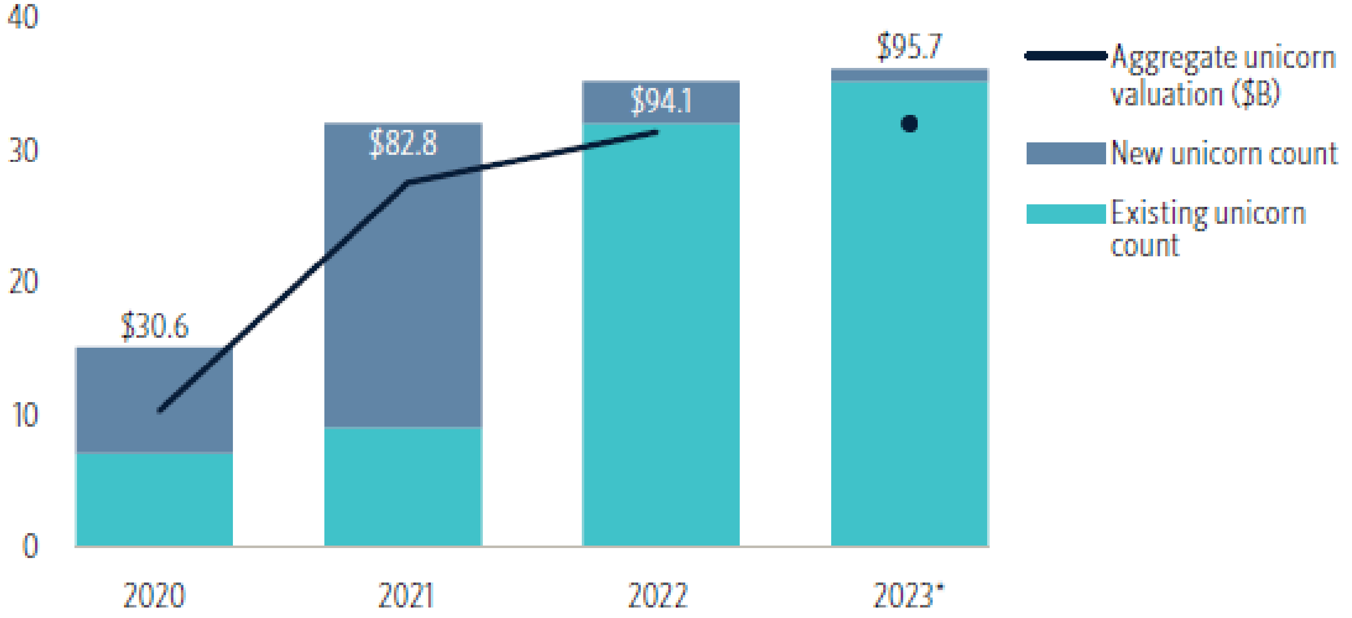
*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 35: Healthcare Services PE Platform Buyout Count by Quarter



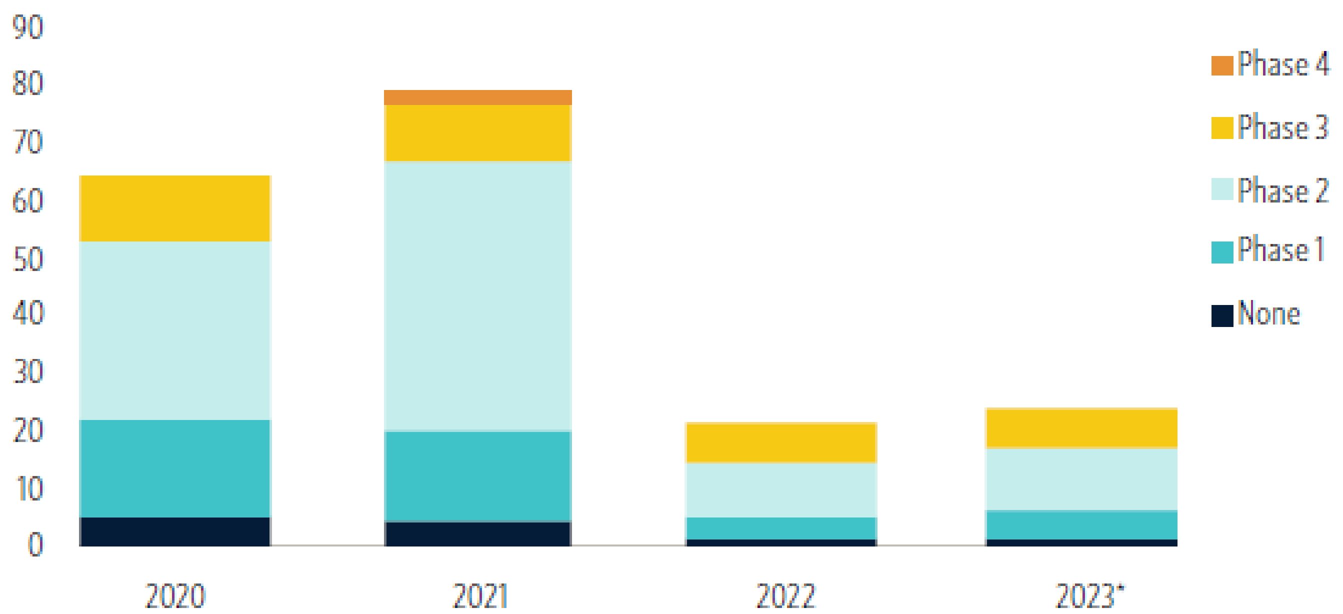
*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 36: Digital Health VC Unicorn Activity



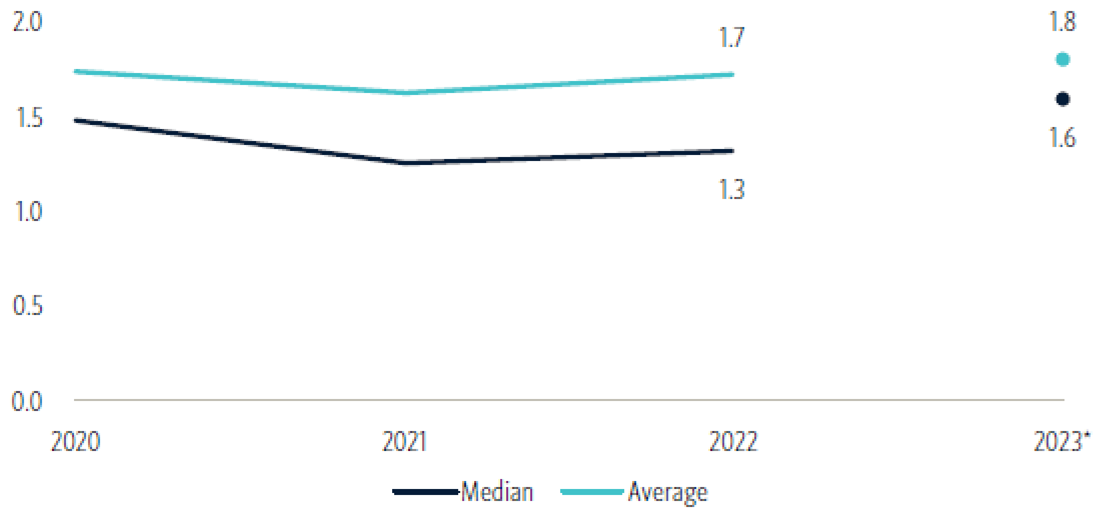
*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 37: Biopharma VC IPO Count by Highest Clinical Trial Phase Reached



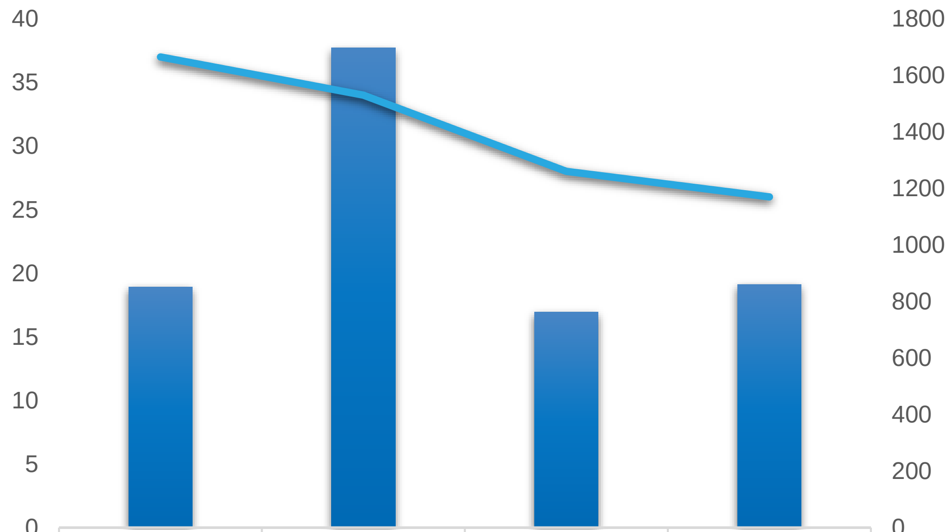
Note: Determined as the Highest Phase of a Trial that Started Prior to the Round Closing.
Data Combines Trials Between Phases to the Highest Phase.
*Source: Intro-act, PitchBook, *As of September 30, 2023*

Chart 38: Median and Average Time (Years) Since Last Biopharma VC Round



*Source: Intro-act, PitchBook, *As of September 30, 2023.*

Chart 39: Surgical Robotics VC Deal Activity



	2020	2021	2022	2023*
Deal Value $B	850.9	1696.7	761.9	860.1
Deal Count	37	34	28	26

Deal Value $B　Deal Count

*Source: Intro-act, FT Partners, PitchBook, *As of September 30, 2023.*

Chart 40: Select AI Biotech VC Investors*

Investor	Last Closed Fund	Last Closed Fund Size ($M)	Last Closed Fund Date
ARCH Venture Partners	ARCH Venture XII	2,975.0	June 29, 2022
Lux Capital	Lux Ventures VIII	1,150.0	April 13, 2023
Qiming Venture Partners	Qiming Venture RMB VII	939.6	May 18, 2023
Felicis	Felicis Ventures IX	825.0	March 2, 2023
DCVC	DCVC V	725.0	September 18, 2019
General Catalyst	Health Assurance II	670.0	July 20, 2022
Innovation Endeavors	Innovation Endeavors V	600.0	October 13, 2023
Khosla Ventures	Khosla Ventures Opportunity I	557.4	December 22, 2021
S32	Section 32 5	525.0	October 5, 2023
F-Prime Capital	F-Prime Capital Partners Life Sciences VIII	500.0	February 8, 2023

*Source: Intro-act, Pitchbook, *As of December 12, 2023.*

HEALTHTECH SPAC ACTION

Chart 41: Healthtech SPACs (Searching)

S. No	SPAC Name	Ticker	Trust Value ($ Mn)	IPO Date	Completion Date
1	Aimei Health Technology Co., Ltd.	AFJK	69	12/01/23	06/01/25
2	ARYA Sciences Acquisition Corp IV	ARYD	150	02/25/21	03/02/24
3	Cactus Acquisition Corp. 1 Ltd	CCTS	126	10/28/21	11/02/24
4	Future Health ESG Corp.	FHLT	200	09/09/21	12/31/23
5	Healthcare AI Acquisition Corp.	HAIA	216	12/09/21	12/14/24
6	HH&L Acquisition Co.	HHLA	414	02/04/21	02/09/24
7	PepperLime Health Acquisition Corp	PEPL	170	10/14/21	04/19/24
8	Valuence Merger Corp. I	VMCA	220	02/28/22	11/28/23

Source: Intro-act, Boardroom Alpha

Chart 42: Healthtech SPACs (Business Combination Agreement Announced)

S. No	SPAC Name	Ticker	Target Company	EV ($ Mn)	Expected Closing
1	Atlantic Coastal Acquisition Corp. II	ACAB	Abpro Corp	725	1Q24
2	Aimfinity Investment Corp. I	AIMA	Docter Inc	60	1Q24
3	Altitude Acquisition Corp.	ALTU	Picard Medical	480	1Q24
4	ASPAC I Acquisition Corp.	ASCA	NewGen Group	50	2Q24
5	Achari Ventures Holdings Corp. I	AVHI	VASO CORP	176	1Q24
6	Berenson Acquisition Corp. I	BACA	Custom Health, Inc	185	3Q24
7	Bellevue Life Sciences Acquisition Corp.	BLAC	OSR Holdings Co., Ltd.	-	1Q24
8	BlueRiver Acquisition Corp	BLUA	Spinal Stabilization Technologies, LLC	300	1Q24
9	Denali Capital Acquisition Corp.	DECA	Longevity Biomedical	236	3Q24
10	Digital Health Acquisition Corp.	DHAC	VSee Health	110	3Q24
11	Financial Strategies Acquisition Corp.	FXCO	Austin Biosciences	166	4Q23
12	Swiftmerge Acquisition Corp.	IVCP	HDL THERAPEUTICS, INC.	130	4Q23
13	Semper Paratus Acquisition Corp	LGST	Tevogen Bio	1,200	3Q24

14	Mars Acquisition Corp.	MARX	ScanTech Identification Beam Systems	150	3Q24
15	Nocturne Acquisition Corporation	MBTC	Cognos Therapeutics Inc	120	3Q23
16	Newcourt Acquisition Corp	NCAC	Psyence Group, Inc.	50	1Q24
17	OceanTech Acquisitions I Corp.	OTEC	Regentis Biomaterials Ltd	95	2Q24
18	Phoenix Biotech Acquisition Corp.	PBAX	CERo Therapeutics, Inc.	145	1Q24
19	Pono Capital Two, Inc.	PTWO	SBC Medical Group	1,200	3Q24
20	PowerUp Acquisition Corp.	PWUP	Visiox Pharmaceuticals	-	2Q24
21	Redwoods Acquisition Corp.	RWOD	ANEW Medical	94	2Q24
22	Sagaliam Acquisition Corp	SAGA	Biogenysis, Inc. and Virogentics Inc.	-	4Q23
23	TenX Keane Acquisition	TENK	Citius Oncology	675	2Q24
24	10X Capital Venture Acquisition Corp. III	VCXB	Addimmune	500	1Q24
25	ExcelFin Acquisition Corp.	XFIN	Baird Medical	370	2Q24

Source: Intro-act, Boardroom Alpha

Chart 43: Healthtech SPACs (Closed Deals Since January 2022)

S. No	SPAC Name	Ticker (Old)	DE-SPAC	Ticker	Closing Date
1	Petra Acquisition Inc	PAIC	Revelation Biosciences, Inc	REVB	11-Jan-22
2	Capstar Special Purpose Acquisition Corp.	CPSR	Gelesis Inc	GLS	13-Jan-22
3	Healthcare Capital Corp.	HCCC	ALPHA TAU MEDICAL LTD	DRTS	7-Mar-22
4	HELIX ACQUISITION CORP	HLXA	MoonLake Immunotherapeutics AG	MLTX	5-Apr-22
5	Artisan Acquisition Corp.	ARTA	Prenetics Global Ltd	PRE	18-May-22
6	OTR Acquisition Corp	OTRA	Comera Life Sciences Holdings Inc	CMRA	19-May-22
7	Lionheart Acquisition Corporation II	LCAP	MSP Recovery	MSPR	23-May-22
8	Haymaker Acquisition Corp. III	HYAC	Biote	BTMD	26-May-22
9	Dynamics Special Purpose Corp.	DYNS	SENTI BIOSCIENCES, INC.	SNTI	8-Jun-22
10	Oaktree Acquisition Corp II	OACB	ALVOTECH	ALVO	7-Jun-23
11	Social Capital Suvretta Holdings Corp. III	DNAC	ProKidney	PROK	12-Jul-22
12	Social Capital Suvretta Holdings Corp. I	DNAA	Akili Interactive Labs, Inc.	AKLI	19-Aug-22
13	Mana Capital Acquisition Corp.	MAAQ	Cardio Diagnostics Inc.	CDIO	25-Oct-22

14	LMF Acquisition Opportunities, Inc.	LMAO	SeaStar Medical, Inc.	ICU	28-Oct-22
15	Bull Horn Holdings Corp	BHSE	Coeptis Therapeutics Inc.	COEP	31-Oct-22
16	Avista Public Acquisition Corp. II	AHPA	OmniAb, Inc.	OABI	1-Nov-22
17	Vickers Vantage Corp. I	VCKA	Scilex Holding Company	SCLX	10-Nov-22
18	8i Acquisition 2 Corp.	LAX	EUDA Health	EUDA	17-Nov-22
19	Frazier Lifesciences Acquisition Corporation	FLAC	NewAmsterdam Pharma Holding B.V.	NAMS	22-Nov-22
20	Lakeshore Acquisition I Corp.	LAAA	ProSomnus	OSA	6-Dec-22
21	Larkspur Health Acquisition Corp.	LSPR	Zyversa Therapeutics, Inc.	ZVSA	12-Dec-22
22	Health Sciences Acquisitions Corporation 2	HSAQ	Orchestra BioMed, Inc.	OBIO	26-Jan-23
23	Aesther Healthcare Acquisition Corp.	AEHA	Ocean Biomedical Holdings, Inc.	AEHA	15-Feb-23
24	Mountain Crest Acquisition Corp. III	MCAE	ETAO International Group	ETAO	17-Feb-23
25	European Biotech Acquisition Corp.	EBAC	OCULIS HOLDING AG	OCS	2-Mar-23
26	Maxpro Capital Acquisition Corp.	JMAC	Apollomics Inc.	APLM	29-Mar-23
27	Priveterra Acquisition Corp.	PMGM	AEON Biopharma, Inc.	AEON	24-Jul-23
28	Compute Health Acquisition Corp.	CPUH	Allurion Technologies, Inc.	ALUR	1-Aug-23
29	MedTech Acquisition Corporation	MTAC	TriSalus Life Sciences, Inc.	TLSI	10-Aug-23

30	First Light Acquisition Group, Inc.	FLAG	Calidi Biotherapeutics	CLDI	12-Sep-23
31	Rosecliff Acquisition Corp I	RCLF	Spectral MD, Inc.	MDAI	12-Sep-23
32	Digital Transformation Opportunities Corp.	DTOC	The American Oncology Network	AONC	20-Sep-23
33	Murphy Canyon Acquisition Corp.	MURF	Conduit Pharmaceuticals Limited	CDT	21-Sep-23
34	Anzu Special Acquisition Corp I	ANZU	Envoy Medical Corp	COCH	29-Sep-23
35	Graf Acquisition Corp. IV	GFOR	NKGen Biotech, Inc.	NKGN	29-Sep-23
36	Data Knights Acquisition Corp.	DKDCA	OneMedNet Corp	ONMD	7-Nov-23

Source: Intro-act, Boardroom Alpha

HEALTHTECH EVENTS CALENDAR

S. No.	Event	Place	Dates
1	9th World Conference on Applied Microbiology and Beneficial Microbes	Rome, Italy	15-Feb to 16-Feb-2024
2	11th International Conference on Interventional Cardiology	Rome, Italy	15-Feb to 16-Feb-2024
3	11th International Conference on Nutrition and Growth (N&G)	Lisbon, Portugal	15-Feb to 17-Feb-2024
4	14th International Conference and Exhibition on Cell & Gene Therapy	London, United Kingdom	19-Feb to 20-Feb-2024
5	6th International Conference on Nursing & Healthcare	Dubai, United Arab Emirates	19-Feb to 20-Feb-2024
6	International Conference on Oncology and Cancer Research	Amsterdam, Netherlands	19-Feb to 22-Feb-2024
7	Health 2.0 Conference	Dubai, United Arab Emirates	20-Feb to 22-Feb-2024
8	2024 Health Leadership Conference	Arizona, United States	21-Feb to 23-Feb-2024
9	17th International Conference on Health Informatics (HEALTHINF 2024)	Roma, Italy	21-Feb to 23-Feb-2024
10	13th International Conference on Epidemiology and Public Health	Zurich, Switzerland	22-Feb to 23-Feb-2024
11	6th World Summit on Women`s Health and Cancer Awareness	Barcelona, United Kingdom	22-Feb to 23-Feb-2024
12	National Healthcare CNO Summit	Texas, United States	22-Feb to 24-Feb-2024
13	Healthcare Analytics Summit (HAS 2024)	Utah, United States	27-Feb to 29-Feb-2024
14	UCSF 17th International Conference Neonatal and Childhood Pulmonary Vascular Disease 2024	California, United States	29-Feb to 02-Mar-2024
15	28th Annual International Congress on Hematologic Malignancies 2024	Florida, United States	29-Feb to 03-Mar-2024
16	9th International Conference on Neurological Disorders and Stroke	Paris, France	11-Mar to 12-Mar-2024
17	Global Meet on Nursing & Healthcare (GMNH 2024)	Florence, Italy	11-Mar to 13-Mar-2024
18	HiMSS 24 - The Healthcare Information and Management Systems Society Conference 2024	Florida, United States	11-Mar to 15-Mar-2024
19	Health 2.0 Conference	Nevada, United States	18-Mar to 20-Mar-2024
20	WIRED Health	London, United Kingdom	19-Mar-2024
21	21st Orphan Drugs & Rare Diseases Global Congress 2024 Americas	California, United States	21-Mar to 22-Mar-2024
22	International Pharmaceutical Business Expo (iPharma Expo 2024)	California, United States	21-Mar to 22-Mar-2024
23	Synthetic Biology US 2023	Massachusetts, United States	21-Mar to 22-Mar-2024
24	7th Gene Therapy for Rare Disorders	Massachusetts, United States	25-Mar to 28-Mar-2024
25	Cell & Gene Therapy at Pharma USA	Philadelphia, United States	26-Mar to 28-Mar-2024
26	6th International Conference on Digital Health	London, United Kingdom	27-Mar to 28-Mar-2024
27	7th International Conference on Medicine and Surgery	Dubai, United Arab Emirates	28-Mar to 29-Mar-2024

Source: Intro-act, Multiple Web Sources

HEALTHTECH COMP TABLE

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Genomics				138,998	130,853			-4%	17,360	18,599	7.0 x	(7,489)	(6,763)	-19.3 x		3.3 x
1	Illumina, Inc.	ILMN-US	146.7	23,299	24,638	63%	-39%	5%	4,584	4,465	5.5 x	354	495	49.8 x	37.33	3.9 x
2	BioMarin Pharmaceutical	BMRN-US	91.8	17,288	17,249	28%	-17%	-5%	2,096	2,412	7.2 x	315	340	50.8 x	26.00	3.5 x
3	Bio-Techne Corporation	TECH-US	72.8	11,510	11,911	24%	-29%	-6%	1,137	1,174	10.1 x	442	424	28.1 x	12.62	5.8 x
4	Legend Biotech	LEGN	55.8	10,142	9,038	39%	-23%	-7%	117	297	30.4 x	(470)	(420)	-	7.37	7.6 x
5	Natera, Inc.	NTRA-US	66.4	7,979	7,485	4%	-44%	6%	820	1,070	7.0 x	(524)	(423)	-	6.59	10.1 x
6	Ionis Pharmaceuticals	IONS-US	52.0	7,462	7,201	5%	-37%	3%	587	640	11.3 x	(387)	(415)	-	2.20	23.6 x
7	CRISPR Therapeutics	CRSP-US	65.8	5,225	3,727	17%	-43%	5%	1	308	12.1 x	(604)	(302)	-	21.75	3.0 x
8	Blueprint Medicines	BPMC-US	85.1	5,170	5,231	11%	-56%	-8%	204	244	21.5 x	(513)	(474)	-	3.34	25.5 x
9	10x Genomics	TXG	45.3	4,713	5,090	40%	-25%	-19%	516	616	8.3 x	(125)	(223)	-	6.30	7.2 x
10	Ultragenyx Pharmaceutical	RARE	46.0	3,776	4,285	20%	-31%	-4%	363	429	10.0 x	(648)	(553)	-	0.44	104.7 x
11	Arrowhead Pharmaceuticals	ARWR-US	34.4	3,696	3,691	23%	-40%	12%	241	150	24.7 x	(167)	(384)	-	2.53	13.6 x
12	Genscript	1548-HK	1.7	3,695	2,601	120%	-4%	-31%	626	848	3.1 x	(315)	(336)	-	0.65	2.7 x
13	Krystal Biotech	KRYS-US	119.1	3,359	2,805	12%	-41%	-4%	0	38	74.2 x	(143)	(126)	-	26.81	4.4 x
14	Xiamen Amoytop	688278-CN	7.2	2,934	2,848	15%	-41%	-2%	222	293	9.7 x	65	85	33.5 x	0.59	12.3 x

15	Rocket Pharmaceuticals	RCKT-US	29.1	2,626	2,214	12%	-49%	-3%	0	0	-	(211)	(266)	-	6.00	4.9 x
16	Intellia Therapeutics	NTLA-US	26.2	2,345	1,608	81%	-13%	-14%	52	51	31.5 x	(423)	(486)	-	11.64	2.2 x
17	Beam Therapeutics	BEAM-US	28.3	2,306	1,464	79%	-40%	4%	61	79	18.5 x	(280)	(403)	-	9.81	2.9 x
18	Ginkgo Bioworks	DNA-US	1.4	2,186	2,049	89%	-17%	-20%	478	259	7.9 x	(486)	(457)	-	0.68	2.0 x
19	NeoGenomics, Inc.	NEO-US	16.4	2,090	2,294	29%	-33%	1%	510	589	3.9 x	(48)	(3)	-	7.44	2.2 x
20	Pacific Biosciences	PACB-US	7.4	1,979	2,147	97%	-22%	-25%	128	199	10.8 x	(297)	(299)	-	2.96	2.5 x
21	Genus	GNS-GB	28.8	1,899	2,124	31%	-19%	5%	861	905	2.3 x	139	148	14.3 x	11.18	2.6 x
22	Myriad Genetics	MYGN-US	22.7	1,868	1,983	7%	-39%	19%	678	751	2.6 x	(43)	17	119.5 x	8.32	2.7 x
23	Takara Bio	4974-JP	8.6	1,040	793	59%	-12%	-3%	578	334	2.4 x	184	55	14.4 x	6.59	1.3 x
24	Verve Therapeutics	VERV-US	12.0	942	533	106%	-31%	-14%	2	8	70.8 x	(156)	(226)	-	7.22	1.7 x
25	Novogene Co.	688315-CN	2.3	937	818	171%	6%	-32%	280	296	2.8 x	49	49	16.7 x	0.73	3.1 x
26	Fulgent Genetics	FLGT-US	26.2	778	331	68%	-12%	-9%	619	278	1.2 x	260	6	52.2 x	41.91	0.6 x
27	Prime Medicine	PRME-US	7.5	729	581	187%	-26%	-15%	0	4	130.7 x	(115)	(182)	-	1.99	3.8 x
28	Silence Therapeutics	SLN	18.9	679	659	6%	-76%	1%	21	36	18.6 x	(60)	(58)	-	0.63	29.9 x
29	Castle Biosciences	CSTL-US	24.7	665	449	20%	-63%	14%	137	210	2.1 x	(51)	(36)	-	14.35	1.7 x
30	Editas Medicine	EDIT-US	7.6	623	308	56%	-20%	-25%	20	22	14.0 x	(212)	(173)	-	4.41	1.7 x
31	Allogene Therapeutics	ALLO-US	3.5	596	227	138%	-37%	10%	0	0	1,793.1 x	(326)	(305)	-	3.47	1.0 x
32	OraSure Technologies	OSUR-US	7.8	574	364	8%	-44%	-5%	387	404	0.9 x	39	83	4.4 x	5.51	1.4 x
33	REGENXBIO Inc.	RGNX-US	13.0	571	359	95%	-4%	-28%	113	122	2.9 x	(245)	(198)	-	8.25	1.6 x

34	**Anavex Life Sciences**	**AVXL-US**	6.8	554	403	77%	-27%	-27%	0	9	42.9 x	-	-	-	1.73	3.9 x
35	**Voyager Therapeutics**	**VYGR**	7.6	351	119	89%	-20%	-10%	41	180	0.7 x	(45)	98	1.2 x	4.01	1.9 x
36	**SOPHiA GENETICS**	**SOPH-US**	4.4	287	173	32%	-52%	-6%	48	62	2.8 x	(77)	(59)	-	2.43	1.8 x
37	**uniQure N.V.**	**QURE-US**	6.0	286	149	284%	-9%	-12%	106	21	7.2 x	(135)	(201)	-	5.62	1.1 x
38	**Stoke Therapeutics**	**STOK-US**	5.3	235	23	166%	-36%	0%	12	10	2.5 x	(95)	(104)	-	3.91	1.3 x
39	**bluebird bio**	**BLUE-US**	1.1	218	338	504%	-9%	-18%	4	40	8.4 x	(300)	(266)	-	2.08	0.5 x
40	**Biodesix, Inc.**	**BDSX-US**	2.0	181	212	27%	-49%	9%	38	50	4.2 x	(47)	(37)	-	(0.02)	-122.2 x
41	**ProQR Therapeutics**	**PRQR-US**	2.1	169	64	84%	-47%	6%	5	18	3.5 x	(73)	(37)	-	0.60	3.5 x
42	**Devyser Diagnostics**	**DVYSR-SE**	8.3	134	115	14%	-36%	5%	12	16	7.1 x	(4)	(4)	-	2.43	3.4 x
43	**Generation Bio**	**GBIO-US**	1.9	126	(86)	287%	-55%	15%	0	4	-20.9 x	(141)	(127)	-	3.52	0.5 x
44	**Jasper Therapeutics**	**JSPR**	11.2	125	24	95%	-64%	42%	0	0	-	(50)	-	-	8.49	1.3 x
45	**Kinnate Biopharma**	**KNTE-US**	2.4	114	(50)	238%	-57%	2%	0	0	-	(118)	(118)	-	3.66	0.7 x
46	**Adverum Biotechnologies**	**ADVM-US**	1.1	108	67	119%	-43%	42%	0	4	18.5 x	(157)	(132)	-	1.02	1.1 x
47	**GeneDx Holdings**	**WGS**	4.1	105	65	341%	-71%	48%	235	193	0.3 x	(335)	(111)	-	9.83	0.4 x
48	**Sema4**	**SMFR**	4.1	105	65	341%	-71%	48%	235	193	0.3 x	(335)	(111)	-	9.83	0.4 x
49	**Bionano Genomics**	**BNGO-US**	1.3	49	(5)	1503%	-9%	-33%	28	36	-0.1 x	(122)	(210)	-	3.37	0.4 x
50	**Precision BioSciences**	**DTIL**	0.4	47	(51)	238%	-29%	5%	25	53	-1.0 x	(93)	(46)	-	0.25	1.5 x
51	**Singular Genomics**	**OMIC**	0.5	37	(77)	500%	-38%	9%	1	3	-29.6 x	(89)	(96)	-	2.71	0.2 x
52	**Freeline Therapeutics**	**FRLN**	6.4	28	2	55%	-67%	0%	0	1	4.0 x	(95)	(67)	-	6.89	0.9 x

53	**SENTI BIOSCIENCES, INC.**	**SNTI**	0.5	21	19	347%	-43%	-28%	4	-	-	(69)	-	-	1.86	0.3 x
54	**NanoString Technologies**	**NSTG**	0.4	21	171	2965%	-16%	-42%	127	177	1.0 x	(109)	(88)	-	(1.05)	-0.4 x
55	**Genprex**	**GNPX**	0.3	16	4	590%	-30%	18%	-	-	-	-	-	-	0.21	1.3 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
HealthTech				103,939	89,601			1%	40,589	30,308	3.0 x	14,802	3,328	26.9 x		2.5 x
56	Veeva Systems	VEEV-US	213.4	34,364	30,479	6%	-25%	11%	2,155	2,354	12.9 x	827	853	35.7 x	27.21	7.8 x
57	BioNTech	BNTX	95.8	23,276	8,693	54%	-8%	-7%	18,663	4,479	1.9 x	13,764	1,105	7.9 x	88.48	1.1 x
58	R1 RCM,	RCM-US	10.5	4,386	6,036	79%	-15%	-1%	1,806	2,261	2.7 x	426	608	9.9 x	6.55	1.6 x
59	Engagesmart, Inc.	ESMT-US	23.1	3,880	3,532	0%	-33%	1%	304	380	9.3 x	49	73	48.5 x	5.02	4.6 x
60	Evolent Health	EVH-US	30.5	3,503	4,124	20%	-23%	-8%	1,352	1,950	2.1 x	106	195	21.1 x	9.68	3.1 x
61	Sectra AB	SECT.B-SE	18.4	3,340	3,512	4%	-43%	4%	218	277	12.7 x	51	61	57.3 x	0.69	26.7 x
62	Certara, Inc.	CERT-US	16.5	2,637	2,668	51%	-28%	-6%	336	353	7.6 x	120	123	21.7 x	6.58	2.5 x
63	Privia Health	PRVA-US	21.6	2,544	2,269	40%	-9%	-6%	1,357	1,644	1.4 x	61	73	31.1 x	4.62	4.7 x
64	Oscar Health	OSCR-US	13.1	2,505	1,870	0%	-75%	43%	3,871	5,883	0.3 x	(462)	(54)	-	4.07	3.2 x
65	Alphatec Holdings	ATEC-US	16.7	2,272	2,711	15%	-48%	10%	351	475	5.7 x	(28)	3	928.8 x	(0.36)	-46.5 x
66	Peloton Interactive	PTON	6.1	2,092	3,807	192%	-30%	0%	2,800	2,739	1.4 x	(209)	(40)	-	(1.03)	-5.9 x
67	Schrodinger, Inc.	SDGR-US	28.3	1,776	1,661	110%	-27%	-21%	181	221	7.5 x	(142)	(164)	-	7.83	3.6 x
68	Omnicell, Inc.	OMCL-US	34.9	1,589	1,738	121%	-18%	-7%	1,297	1,144	1.5 x	193	130	13.3 x	26.12	1.3 x
69	Phreesia, Inc.	PHR-US	26.4	1,468	1,379	52%	-54%	14%	281	355	3.9 x	(92)	(39)	-	4.76	5.5 x
70	Model N	MODN-US	28.1	1,095	1,085	53%	-25%	4%	249	262	4.1 x	43	49	22.0 x	2.98	9.4 x
71	Definitive Healthcare	DH-US	9.4	1,089	1,393	50%	-41%	-6%	223	252	5.5 x	64	74	18.8 x	7.42	1.3 x
72	NEXUS AG	NXU-DE	62.2	1,074	1,084	12%	-25%	-3%	221	255	4.3 x	47	55	19.7 x	15.89	3.9 x

73	Autolus Therapeutics	AUTL	6.1	1,068	864	21%	-74%	-5%	6	2	457.0 x	(169)	(168)	-	0.87	7.0 x
74	Veradigm, Inc.	MDRX-US	9.7	1,055	780	88%	-10%	-8%	613	627	1.2 x	168	141	5.5 x	10.77	0.9 x
75	B-Soft Co.	300451-CN	0.6	999	881	165%	2%	-30%	223	244	3.6 x	21	47	18.7 x	0.43	1.5 x
76	Accolade, Inc.	ACCD-US	12.8	987	999	33%	-50%	6%	363	413	2.4 x	(37)	(8)	-	5.65	2.3 x
77	Craneware Plc	CRW-GB	26.6	939	937	1%	-50%	20%	174	185	5.1 x	55	58	16.3 x	9.40	2.8 x
78	Equasnes	EQS-FR	56.7	860	854	66%	-1%	-15%	231	241	3.5 x	74	77	11.1 x	14.31	4.0 x
79	HealthStream, Inc.	HSTM-US	27.0	819	768	3%	-24%	0%	267	280	2.7 x	53	61	12.6 x	11.19	2.4 x
80	Simulations Plus	SLP-US	39.7	793	680	33%	-18%	-11%	60	67	10.1 x	21	22	31.5 x	8.63	4.6 x
81	Health Catalyst	HCAT-US	10.8	619	521	47%	-39%	16%	276	294	1.8 x	(2)	11	45.5 x	6.70	1.6 x
82	Sharecare, Inc.	SHCR-US	1.1	402	334	138%	-33%	6%	442	455	0.7 x	16	24	13.9 x	1.28	0.9 x
83	OptimizeRx Corporation	OPRX-US	14.6	266	202	37%	-53%	2%	62	70	2.9 x	5	3	57.9 x	6.31	2.3 x
84	Cegedim SA	CGM-FR	17.9	251	546	43%	-5%	-7%	605	664	0.8 x	105	121	4.5 x	22.53	0.8 x
85	RaySearch Laboratories	RAY.B-SE	8.9	236	322	9%	-42%	-1%	81	97	3.3 x	33	39	8.3 x	2.05	4.3 x
86	Augmedix, Inc.	AUGX-US	4.7	223	195	34%	-71%	-8%	31	45	4.4 x	(19)	(15)	-	0.02	263.2 x
87	Quantum-Si Incorporated	QSI-US	1.8	213	(11)	123%	-36%	-13%	0	1	-11.3 x	(101)	(95)	-	2.06	0.8 x
88	Computer Programs	CPSI-US	10.5	152	298	202%	-12%	-7%	327	339	0.9 x	56	48	6.2 x	15.67	0.7 x
89	Allurion Technologies, Inc.	ALUR	3.1	148	151	250%	-16%	-16%	-	-	-	-	-	-	2.37	1.3 x
90	Nordhealth AS	NORDH-NO	2.6	118	180	15%	-32%	7%	33	39	4.6 x	(6)	1	286.9 x	1.22	2.1 x
91	Mach7 Technologies	M7T-AU	0.5	111	93	42%	-25%	-14%	19	20	4.7 x	1	(1)	-	0.17	2.7 x
92	MedAdvisor Limited	MDR-AU	0.2	105	104	13%	-47%	30%	64	74	1.4 x	(2)	4	27.3 x	0.08	2.5 x

93	Aiforia Technologies	AIFORIA-FI	4.0	103	88	43%	-17%	3%	2	3	30.1 x	(9)	(10)	-	0.99	4.0 x
94	FORIAN INC.	FORA-US	2.6	81	57	107%	-30%	-10%	28	21	2.8 x	(3)	1	52.1 x	0.82	3.2 x
95	Omda AS	OMDA-NO	3.3	69	103	72%	-25%	-8%	36	40	2.6 x	3	6	17.2 x	0.53	6.3 x
96	ContextVision AB	CONTX-NO	0.8	63	57	18%	-28%	7%	11	13	4.5 x	5	5	10.8 x	0.11	7.7 x
97	DarioHealth Corp.	DRIO-US	2.2	59	44	182%	-68%	25%	28	21	2.1 x	(41)	(32)	-	2.50	0.9 x
98	Owlet Baby	OWLT	5.8	49	53	30%	-56%	9%	69	54	1.0 x	(68)	(16)	-	(3.73)	-1.5 x
99	Alcidion Group	ALC-AU	0.0	47	39	225%	4%	-32%	26	30	1.3 x	(1)	1	76.4 x	0.05	0.7 x
100	Spectral AI	MDAI	2.7	43	38	636%	-28%	8%	-	18	2.1 x	-	-	-	0.09	28.6 x
101	Beachbody Company	BODY	9.9	40	1,369	352%	-36%	37%	692	521	2.6 x	(23)	(14)	-	22.56	0.4 x
102	EUDA Health	EUDA	1.6	38	41	122%	-72%	8%	-	-	-	-	-	-	(0.23)	-6.7 x
103	Science 37	SNCE	5.7	34	(22)	143%	-34%	6%	70	58	-0.4 x	(63)	(32)	-	8.69	0.7 x
104	Akili Interactive	AKLI	0.3	21	(50)	709%	-8%	-44%	0	2	-27.0 x	(79)	(55)	-	0.88	0.3 x
105	CloudMD Software	DOC-CA	0.1	18	26	188%	-7%	-8%	84	70	0.4 x	(8)	(1)	-	0.24	0.2 x
106	iCoreConnect	ICCT	1.7	15	19	1147%	-45%	34%	-	-	-	-	-	-	0.76	2.2 x
107	Xybion Digital	XYBN-CA	0.3	1	(5)	380%	-31%	-3%	-	16	-0.3 x	-	-	-	5.65	0.1 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Home Health Services				**75,705**	**107,480**			**4%**	**50,733**	**51,161**	**2.1 x**	**6,404**	**7,129**	**15.1 x**		**5.3 x**
108	**Clorox Company**	**CLX**	144.7	17,953	20,806	23%	-21%	1%	7,389	7,023	3.0 x	1,168	1,075	19.3 x	(0.30)	-485 x
109	**DaVita Inc.**	**DVA-US**	108.3	9,889	22,087	8%	-34%	3%	11,610	12,007	1.8 x	2,095	2,384	9.3 x	13.13	8.3 x
110	**Chemed Corp.**	**CHE**	596.9	8,991	8,971	2%	-18%	2%	2,135	2,265	4.0 x	452	465	19.3 x	67.92	8.8 x
111	**AptarGroup, Inc.**	**ATR**	132.3	8,700	9,772	1%	-18%	7%	3,322	3,485	2.8 x	617	691	14.1 x	33.43	4.0 x
112	**Encompass Health**	**EHC-US**	71.6	7,177	10,553	1%	-29%	7%	4,349	4,792	2.2 x	819	951	11.1 x	15.57	4.6 x
113	**Bright Horizons**	**BFAM**	101.0	5,848	7,655	1%	-29%	7%	2,020	2,395	3.2 x	310	344	22.2 x	20.17	5.0 x
114	**Option Care**	**OPCH**	31.6	5,604	6,385	13%	-23%	-6%	3,945	4,266	1.5 x	343	422	15.1 x	8.13	3.9 x
115	**Amedisys, Inc.**	**AMED-US**	95.2	3,108	3,558	11%	-27%	0%	2,233	2,231	1.6 x	262	247	14.4 x	31.87	3.0 x
116	**BrightSpring Health**	**BTSG**	10.6	1,808	3,870	15%	-1%	-	-	-	-	-	-	-	3.69	2.9 x
117	**Addus HomeCare**	**ADUS-US**	89.0	1,442	1,580	29%	-13%	-4%	950	1,057	1.5 x	100	118	13.4 x	42.21	2.1 x
118	**AdaptHealth Corp.**	**AHCO**	7.4	1,004	3,258	212%	-13%	1%	2,971	3,167	1.0 x	594	636	5.1 x	12.97	0.6 x
119	**Adaptive Biotechnologies**	**ADPT-US**	4.1	598	458	151%	-37%	-16%	185	173	2.6 x	(127)	(120)	-	2.50	1.7 x
120	**Enhabit Inc**	**EHAB**	10.5	525	1,140	59%	-32%	1%	1,083	1,046	1.1 x	159	95	12.0 x	13.51	0.8 x
121	**Aveanna Healthcare**	**AVAH**	2.5	480	1,775	19%	-66%	-6%	1,788	1,881	0.9 x	129	136	13.0 x	(0.55)	-4.5 x
122	**Clover Health**	**CLOV**	1.0	396	188	65%	-28%	4%	3,477	1,997	0.1 x	(299)	(66)	-	0.67	1.5 x
123	**Ambulnz, Inc.**	**DCGO**	3.6	378	350	197%	-24%	-35%	441	619	0.6 x	41	52	6.7 x	2.77	1.3 x

124	Humacyte, Inc.	HUMA	3.3	344	263	69%	-41%	17%	2	0	5,264.6 x	-	-	-	0.36	9.3 x
125	Orchestra BioMed, Inc.	OBIO	7.8	277	180	202%	-45%	-15%	3	3	54.1 x	-	(52)	-	2.23	3.5 x
126	Scilex Holding Company	SCLX	1.7	270	393	888%	-47%	-16%	-	45	8.8 x	-	-	-	(1.73)	-1.0 x
127	ALPHA TAU MEDICAL LTD	DRTS	3.1	218	134	53%	-14%	4%	0	0	-	(31)	(35)	-	1.29	2.4 x
128	InfuSystems Holdings	INFU	9.8	207	243	17%	-32%	-7%	110	124	2.0 x	21	21	11.6 x	2.43	4.0 x
129	The Oncology Institute	TOI	2.2	160	190	22%	-85%	6%	252	321	0.6 x	(24)	(26)	-	0.97	2.2 x
130	P3 Health Partners	PIII	1.2	139	517	360%	-42%	-14%	1,050	1,223	0.4 x	(128)	(46)	-	1.65	0.7 x
131	CareRx Corporation	CRRX-CA	1.2	67	139	70%	-31%	-5%	277	277	0.5 x	23	21	6.6 x	1.03	1.1 x
132	Cardio Diagnostics Inc.	CDIO	2.0	41	40	321%	-92%	-19%	0	0	289.9 x	-	-	-	0.17	11.6 x
133	Cue Health	HLTH-US	0.2	35	(27)	1129%	-29%	41%	483	70	-0.4 x	(129)	(220)	-	2.52	0.1 x
134	ATI Physical Therapy	ATIP	6.5	27	991	288%	-10%	5%	636	694	1.4 x	7	35	28.3 x	(23.37)	-0.3 x
135	MSP Recovery	MSPR	1.2	18	2,012	2359%	-15%	-46%	23	-	-	-	-	-	20.67	0.1 x

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Personalized Medicine				369,563	419,428			5%	72,975	69,004	6.1 x	31,883	26,621	15.8 x		3.7 x
136	AbbVie Inc.	ABBV-US	163.9	289,389	336,881	2%	-20%	6%	58,054	54,049	6.2 x	30,109	25,425	13.2 x	6.85	23.9 x
137	Biogen Inc.	BIIB-US	247.5	35,865	41,288	29%	-11%	-4%	10,173	9,929	4.2 x	3,718	2,923	14.1 x	99.96	2.5 x
138	Exact Sciences	EXAS-US	66.9	12,092	13,932	51%	-13%	-10%	2,084	2,483	5.6 x	(148)	203	68.8 x	17.26	3.9 x
139	MGI Tech	688114-CN	9.3	3,870	3,236	97%	-5%	812%	614	444	7.3 x	68	24	133.3 x	3.11	3.0 x
140	Amicus Therapeutics	FOLD-US	13.0	3,803	3,977	12%	-25%	-9%	329	399	10.0 x	(181)	(53)	-	0.46	28.3 x
141	Springworks Therapeutics	SWTX-US	44.6	3,214	2,799	0%	-60%	22%	0	1	3,278.0 x	(280)	(333)	-	6.31	7.1 x
142	IDEAYA Biosciences	IDYA-US	44.2	3,121	2,654	0%	-70%	24%	51	28	93.9 x	(61)	(127)	-	8.67	5.1 x
143	Rhythm Pharmaceuticals	RYTM-US	45.0	2,658	2,464	12%	-66%	-2%	24	79	31.2 x	(178)	(181)	-	3.34	13.5 x
144	Twist Bioscience	TWST-US	34.8	2,009	1,767	14%	-67%	-6%	245	290	6.1 x	(185)	(142)	-	10.83	3.2 x
145	Anhui Anke Biotech	300009-CN	1.2	1,994	1,810	50%	0%	-15%	339	406	4.5 x	130	156	11.6 x	0.30	3.9 x
146	Kymera Therapeutics	KYMR-US	32.6	1,935	1,658	22%	-71%	28%	47	73	22.8 x	(145)	(173)	-	7.13	4.6 x
147	Ambrx Biopharma,	AMAM-US	27.8	1,759	1,534	1%	-95%	95%	7	2	868.0 x	(75)	(83)	-	4.05	6.9 x
148	Gemini Therapeutics	GMTX	65.2	1,574	1,206	6%	-72%	13%	0	0	-	(47)	(81)	-	14.87	4.4 x
149	Edgewise Therapeutics	EWTX-US	17.5	1,496	1,212	0%	-71%	60%	0	0	-	(70)	(109)	-	4.58	3.8 x
150	Allscripts Healthcare	MDRX	9.7	1,055	780	88%	-10%	-8%	613	627	1.2 x	168	141	5.5 x	10.77	0.9 x
151	Fusion Pharmaceuticals	FUSN	11.5	833	693	1%	-80%	20%	1	2	314.8 x	(87)	(105)	-	2.73	4.2 x

152	Exscientia Plc	EXAI	6.2	757	344	87%	-32%	-5%	33	46	7.6 x	(174)	(190)	-	3.84	1.6 x
153	ORIC Pharmaceuticals	ORIC-US	11.7	639	414	0%	-65%	27%	0	0	-	(89)	(108)	-	4.54	2.6 x
154	Praxis Precision Med.	PRAX-US	40.7	358	260	89%	-71%	83%	0	2	136.8 x	(215)	(124)	-	10.12	4.0 x
155	Tenaya Therapeutics	TNYA-US	4.8	328	218	68%	-65%	48%	0	0	-	(117)	(124)	-	2.42	2.0 x
156	Monte Rosa	GLUE-US	5.9	294	162	50%	-59%	4%	0	3	47.8 x	(107)	(112)	-	3.69	1.6 x
157	INmune Bio	INMB	13.2	237	208	3%	-55%	17%	0	0	1,474.8 x	-	-	-	2.49	5.3 x
158	Foghorn Therapeutics	FHTX-US	3.8	158	(54)	166%	-24%	-42%	19	32	-1.7 x	(107)	(109)	-	(1.36)	-2.8 x
159	Personalis, Inc.	PSNL-US	1.5	75	2	182%	-42%	-27%	65	73	0.0 x	(103)	(96)	-	3.08	0.5 x
160	Prenetics Global Ltd	PRE	4.7	49	(19)	414%	-18%	-20%	276	36	-0.5 x	58	-	-	18.67	0.3 x

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Remote Surgery				550,641	612,281			5%	113,123	120,243	5.1 x	30,302	32,379	18.9 x		4.0 x
161	Intuitive Surgical,	ISRG-US	379.2	133,491	127,100	1%	-41%	12%	7,124	8,008	15.9 x	2,792	3,084	41.2 x	35.62	10.6 x
162	Stryker Corporation	SYK-US	314.5	119,491	130,744	1%	-21%	5%	18,449	20,285	6.4 x	4,768	5,333	24.5 x	47.13	6.7 x
163	Medtronic	MDT-US	87.4	116,265	133,798	5%	-21%	6%	31,227	32,068	4.2 x	9,315	9,158	14.6 x	38.69	2.3 x
164	Becton, Dickinson	BDX-US	237.9	68,868	83,789	21%	-4%	-2%	19,372	20,207	4.1 x	5,306	5,549	15.1 x	88.84	2.7 x
165	Siemens Healthineers	SHL-DE	56.5	63,705	78,963	13%	-16%	-2%	23,212	24,553	3.2 x	4,402	5,027	15.7 x	17.90	3.2 x
166	Zimmer Biomet	ZBH-US	122.9	25,688	30,885	21%	-17%	1%	6,940	7,382	4.2 x	2,301	2,527	12.2 x	59.86	2.1 x
167	Smith & Nephew	SN-GB	14.0	12,259	15,064	18%	-23%	2%	5,215	5,546	2.7 x	1,331	1,376	10.9 x	6.03	2.3 x
168	Globus Medical,	GMED-US	54.5	6,292	7,569	47%	-20%	2%	1,023	1,559	4.9 x	338	474	16.0 x	29.78	1.8 x
169	PROCEPT BioRobotics	PRCT-US	48.4	2,446	2,236	2%	-49%	16%	75	134	16.6 x	(68)	(81)	-	5.93	8.2 x
170	Shanghai MicroPort	2252-HK	1.6	1,547	1,540	177%	3%	-39%	3	-	-	(116)	-	-	0.14	11.8 x
171	Accuray Incorporated	ARAY-US	2.9	278	405	50%	-17%	1%	448	463	0.9 x	24	28	14.5 x	0.53	5.4 x
172	Stereotaxis, Inc.	STXS-US	2.1	171	160	29%	-37%	21%	28	30	5.4 x	(11)	(14)	-	0.23	9.2 x
173	Asensus Surgical	ASXC	0.3	72	44	334%	-25%	-15%	7	9	5.2 x	-	-	-	0.18	1.5 x
174	Vicarious Surgical	RBOT	0.4	69	(17)	700%	-55%	21%	0	0	-	(80)	(81)	-	0.62	0.7 x

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Telemedicine				3,420,653	3,436,896			8%	626,480	690,475	5.0 x	149,142	168,665	20.4 x		4.0 x
175	Microsoft	MSFT	409.7	3,045,146	3,006,876	0%	-41%	9%	211,915	243,259	12.4 x	103,406	123,238	24.4 x	29.70	13.8 x
176	Cisco Systems	CSCO	52.3	212,479	197,271	11%	-13%	4%	56,998	54,550	3.6 x	20,128	19,620	10.1 x	11.17	4.7 x
177	CVS Health	CVS	73.5	94,561	158,546	23%	-12%	-7%	322,467	354,017	0.4 x	20,206	19,663	8.1 x	57.76	1.3 x
178	Philips Healthcare	PHG	21.5	19,668	27,437	13%	-31%	-7%	19,620	20,730	1.3 x	3,880	3,309	8.3 x	14.66	1.5 x
179	Zoom	ZM	68.9	17,769	14,564	24%	-15%	-4%	4,393	4,510	3.2 x	1,641	1,869	7.8 x	24.36	2.8 x
180	Grab Holdings	GRAB	3.2	12,141	8,531	21%	-18%	-4%	1,433	2,348	3.6 x	(793)	(26)	-	1.63	2.0 x
181	Doximity, Inc.	DOCS-US	29.2	3,447	4,708	38%	-32%	4%	419	467	10.1 x	184	214	22.0 x	4.62	6.3 x
182	Teladoc, Inc.	TDOC-US	20.6	3,409	3,961	67%	-27%	-4%	2,407	2,613	1.5 x	247	325	12.2 x	13.86	1.5 x
183	LifeStance Health	LFST-US	6.6	2,495	2,939	46%	-30%	-16%	860	1,038	2.8 x	53	58	50.9 x	3.84	1.7 x
184	Hims & Hers	HIMS-US	9.0	1,837	1,704	37%	-37%	1%	527	871	2.0 x	(16)	44	38.5 x	1.55	5.8 x
185	JMDC, Inc.	4483-JP	26.8	1,751	1,733	70%	-6%	-11%	207	224	7.7 x	57	70	24.8 x	7.46	3.6 x
186	Terveystalo Oyj	TTALO-FI	8.6	1,086	1,715	9%	-20%	0%	1,344	1,392	1.2 x	186	211	8.1 x	5.04	1.7 x
187	Medley, Inc.	4480-JP	31.4	1,028	923	32%	-19%	2%	106	137	6.7 x	14	22	41.9 x	3.83	8.2 x
188	InnovAge Holding	INNV-US	5.6	764	752	45%	-10%	-6%	688	756	1.0 x	(1)	15	50.3 x	2.11	2.7 x
189	WELL Health	WELL-CA	2.9	694	1,018	53%	-14%	-1%	414	567	1.8 x	76	84	12.1 x	2.35	1.2 x

190	GoodRx	GDRX	6.5	597	2,540	45%	-36%	-4%	767	751	3.4 x	213	214	11.9 x	2.21	2.9 x
191	Talkspace, Inc.	TALK-US	2.4	401	276	10%	-76%	-6%	120	146	1.9 x	(59)	(16)	-	0.70	3.4 x
192	DocGo, Inc.	DCGO-US	3.6	378	350	197%	-24%	-35%	441	619	0.6 x	41	52	6.7 x	2.77	1.3 x
193	American Well	AMWL-US	1.2	293	(57)	272%	-20%	-23%	277	259	-0.2 x	(175)	(169)	-	1.75	0.7 x
194	23andMe Holding	ME-US	0.8	241	193	287%	-21%	-16%	299	245	0.8 x	(161)	(174)	-	1.31	0.6 x
195	LifeMD, Inc.	LFMD-US	5.9	230	237	55%	-81%	-29%	119	148	1.6 x	(15)	10	24.0 x	(0.37)	-16.1 x
196	Vitalhub Corp.	VHI-CA	3.3	140	119	6%	-48%	8%	29	39	3.0 x	7	9	12.6 x	1.39	2.4 x
197	CareMax, Inc.	CMAX-US	0.4	44	475	1150%	-23%	-22%	631	788	0.6 x	22	23	20.5 x	4.68	0.1 x
198	Reliq Health	RHT-CA	0.2	31	31	206%	-9%	-8%	-	-	-	-	-	-	0.05	3.2 x
199	ETAO International Group	ETAO	0.2	24	54	5011%	-40%	-48%	-	-	-	-	-	-	(0.16)	-1.5 x

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Wearables				**4,341,145**	**5,311,326**			**1%**	**964,383**	**947,547**	**5.6 x**	**306,799**	**295,396**	**18.0 x**		**6.5 x**
200	**Apple**	**AAPL**	191.7	2,964,509	3,026,885	4%	-26%	0%	383,285	395,500	7.7 x	126,292	133,165	22.7 x	4.00	48.0 x
201	**Alphabet**	**GOOGL**	153.5	908,472	1,830,842	0%	-42%	10%	282,836	306,237	6.0 x	110,155	122,556	14.9 x	21.78	7.0 x
202	**Samsung Electronics**	**005930-KR**	55.6	332,064	323,857	10%	-20%	-9%	245,356	194,543	1.7 x	66,390	34,144	9.5 x	40.43	1.4 x
203	**DexCom, Inc.**	**DXCM-US**	124.3	48,007	47,486	12%	-40%	0%	2,910	3,602	13.2 x	651	935	50.8 x	5.87	21.2 x
204	**Xiaomi Corporation**	**1810-HK**	1.7	33,853	30,628	32%	-24%	-17%	40,688	38,055	0.8 x	1,528	2,870	10.7 x	0.88	1.9 x
205	**Garmin**	**GRMN**	125.2	23,953	22,368	3%	-26%	-3%	4,860	5,159	4.3 x	1,193	1,205	18.6 x	33.18	3.8 x
206	**Axon Enterprise**	**AAXN**	254.7	19,088	18,607	3%	-34%	-1%	1,190	1,552	12.0 x	232	325	57.2 x	20.30	12.5 x
207	**Universal Display**	**OLED**	179.6	8,507	8,042	8%	-30%	-6%	617	578	13.9 x	311	261	30.8 x	29.19	6.2 x
208	**Tandem Diabetes**	**TNDM-US**	23.4	1,524	1,444	97%	-41%	-21%	801	764	1.9 x	53	(1)	-	4.82	4.9 x
209	**GoPro, Inc.**	**GPRO**	3.2	405	410	104%	-25%	-7%	1,094	1,025	0.4 x	93	(26)	-	3.68	0.9 x
210	**Augmedix, Inc.**	**AUGX**	4.7	223	195	34%	-71%	-8%	31	45	4.4 x	(19)	(15)	-	0.02	263.2 x
211	**Catapult Group**	**CAT-AU**	0.8	209	211	17%	-51%	-11%	84	101	2.1 x	(4)	13	16.7 x	0.33	2.5 x
212	**QuickLogic**	**QUIK**	12.8	178	175	24%	-61%	-8%	16	21	8.3 x	(1)	3	62.6 x	1.01	12.7 x
213	**Vuzix**	**VUZI**	1.8	112	75	242%	-11%	-15%	12	13	5.6 x	(25)	(24)	-	1.51	1.2 x
214	**Zepp Health**	**ZEPP**	1.3	41	102	66%	-26%	-9%	603	354	0.3 x	(51)	(14)	-	6.27	0.2 x

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Medical Devices				1,128,584	1,197,581			1%	257,698	269,823	4.4 x	63,876	64,581	18.5 x		3.8 x
215	Abbott Laboratories	ABT-US	113.5	196,956	205,650	2%	-21%	3%	40,109	41,978	4.9 x	10,234	10,818	19.0 x	21.59	5.3 x
216	Boston Scientific	BSX-US	61.3	89,818	98,285	0%	-26%	6%	12,682	14,113	7.0 x	3,590	4,068	24.2 x	12.89	4.8 x
217	Edwards Lifesciences	EW-US	74.6	45,227	44,123	27%	-19%	-2%	5,382	5,969	7.4 x	1,938	1,908	23.1 x	10.98	6.8 x
218	Shenzhen Mindray	300760-CN	37.3	45,215	42,481	40%	-7%	-9%	4,383	4,960	8.6 x	1,610	1,857	22.9 x	4.29	8.7 x
219	HOYA CORPORATION	7741-JP	126.3	44,323	40,978	4%	-28%	2%	5,365	5,149	8.0 x	1,945	1,795	22.8 x	17.89	7.1 x
220	Alcon AG	ALC-CH	76.5	38,227	41,680	12%	-16%	0%	8,654	9,419	4.4 x	1,924	2,310	18.0 x	44.41	1.7 x
221	GE Healthcare	GEHC-US	74.4	33,861	41,874	18%	-16%	-4%	18,341	19,424	2.2 x	3,261	3,495	12.0 x	15.66	4.7 x
222	ResMed Inc.	RMD-US	191.2	28,128	29,309	27%	-31%	11%	4,223	4,633	6.3 x	1,343	1,533	19.1 x	30.47	6.3 x
223	West Pharmaceutical	WST-US	370.3	27,398	26,807	12%	-30%	5%	2,887	2,958	9.1 x	885	833	32.2 x	38.76	9.6 x
224	Terumo Corporation	4543-JP	33.5	25,057	25,252	6%	-26%	3%	6,009	6,005	4.2 x	1,389	1,428	17.7 x	12.01	2.8 x
225	Straumann Holding	STMN-CH	156.2	24,902	25,005	9%	-31%	-3%	2,507	2,789	9.0 x	779	849	29.5 x	14.12	11.1 x
226	Coloplast A/S	COLO.B-DK	113.3	23,812	28,099	30%	-13%	1%	3,520	3,958	7.1 x	1,141	1,271	22.1 x	11.41	9.9 x
227	Sartorius Stedim	DIM-FR	246.7	22,745	26,690	56%	-31%	-7%	3,015	3,234	8.3 x	819	993	26.9 x	31.10	7.9 x
228	Align Technology,	ALGN-US	270.4	20,709	19,552	53%	-35%	-1%	3,735	3,835	5.1 x	919	943	20.7 x	49.64	5.4 x
229	Baxter International	BAX-US	39.1	19,826	31,028	28%	-21%	1%	15,113	14,741	2.1 x	3,605	3,018	10.3 x	15.97	2.4 x

230	Koninklijke Philips	PHIA-NL	21.6	19,727	27,496	13%	-31%	-6%	19,620	20,647	1.3 x	3,880	3,311	8.3 x	14.66	1.5 x
231	Sonova Holding	SOON-CH	321.4	19,162	21,000	4%	-29%	-1%	4,172	4,276	4.9 x	1,132	1,119	18.8 x	42.05	7.6 x
232	Cooper Companies	COO-US	378.1	18,727	21,429	6%	-20%	0%	3,593	3,857	5.6 x	1,027	1,166	18.4 x	152.54	2.5 x
233	Olympus Corp.	7733-JP	14.6	18,426	16,598	34%	-16%	4%	6,478	6,357	2.6 x	1,859	1,175	14.1 x	4.81	3.0 x
234	Hologic, Inc.	HOLX-US	75.0	17,599	17,781	17%	-15%	5%	4,030	3,987	4.5 x	1,298	1,331	13.4 x	20.76	3.6 x
235	Insulet Corporation	PODD-US	199.4	13,921	14,656	68%	-37%	-8%	1,305	1,648	8.9 x	225	283	51.9 x	8.70	22.9 x
236	Revvity, Inc.	RVTY-US	110.1	13,585	16,169	32%	-28%	1%	3,313	2,732	5.9 x	1,336	837	19.3 x	62.38	1.8 x
237	Cochlear Limited	COH-AU	198.7	13,012	12,777	4%	-28%	-3%	1,270	1,447	8.8 x	308	373	34.3 x	18.17	10.9 x
238	bioMerieux SA	BIM-FR	108.8	12,877	12,941	6%	-18%	-2%	3,787	3,975	3.3 x	925	887	14.6 x	33.92	3.2 x
239	Teleflex Incorporated	TFX-US	247.0	11,608	12,876	12%	-28%	-1%	2,791	2,969	4.3 x	819	853	15.1 x	91.80	2.7 x
240	Sysmex Corporation	6869-JP	53.4	11,193	10,886	38%	-16%	-4%	3,034	3,070	3.5 x	777	791	13.8 x	14.22	3.8 x
241	Shanghai United	688271-CN	18.9	11,175	13,995	54%	-26%	1018%	1,342	1,617	8.7 x	299	299	46.8 x	3.08	6.1 x
242	Demant A/S	DEMANT-DK	45.6	10,212	11,823	2%	-39%	7%	2,831	3,247	3.6 x	626	785	15.1 x	5.97	7.6 x
243	QIAGEN NV	QGEN-US	45.1	9,986	10,762	16%	-21%	-2%	2,142	1,960	5.5 x	797	675	16.0 x	16.69	2.7 x
244	Penumbra, Inc.	PEN-US	255.7	9,870	9,850	36%	-29%	2%	847	1,061	9.3 x	37	122	80.6 x	28.63	8.9 x
245	Carl Zeiss	AFX-DE	107.1	9,579	9,874	45%	-29%	-2%	2,253	2,422	4.1 x	467	464	21.3 x	26.67	4.0 x
246	Imeik Technology	300896-CN	39.4	8,528	7,989	142%	-7%	-5%	278	405	19.7 x	205	296	27.0 x	4.24	9.3 x
247	Fisher & Paykel	FPH-NZ	14.5	8,485	8,637	19%	-19%	-3%	955	1,052	8.2 x	260	284	30.4 x	1.91	7.6 x
248	Shockwave Medical	SWAV-US	227.8	8,407	8,254	39%	-31%	20%	490	727	11.4 x	143	170	48.5 x	16.30	14.0 x

249	Bio-Rad Laboratories	BIO-US	330.0	7,941	9,260	54%	-21%	2%	2,802	2,676	3.5 x	668	531	17.4 x	288.77	1.1 x
250	Shenzhen New	300832-CN	9.7	7,644	7,199	14%	-26%	-12%	443	548	13.1 x	221	261	27.5 x	1.27	7.6 x
251	DENTSPLY SIRONA	XRAY-US	35.4	7,504	9,314	22%	-26%	0%	3,922	3,920	2.4 x	761	683	13.6 x	15.93	2.2 x
252	Masimo Corporation	MASI-US	130.3	6,883	7,755	52%	-42%	11%	2,036	2,042	3.8 x	445	382	20.3 x	24.16	5.4 x
253	Inspire Medical	INSP-US	216.6	6,395	5,956	52%	-43%	6%	408	619	9.6 x	6	25	240.5 x	18.51	11.7 x
254	Convatec Group	CTEC-GB	3.1	6,331	7,672	3%	-23%	0%	2,073	2,142	3.6 x	485	521	14.7 x	0.80	3.9 x
255	SCHOTT Pharma	1SXP-DE	36.1	5,432		6%	-21%	-3%	976	1,061	-	260	284	-		-
256	Getinge AB	GETI.B-SE	21.3	5,426	5,977	25%	-25%	-4%	2,715	2,960	2.0 x	553	566	10.6 x	11.56	1.8 x
257	Asahi Intecc	7747-JP	19.2	5,205	5,070	13%	-17%	-6%	621	696	7.3 x	178	211	24.0 x	3.53	5.4 x
258	DiaSorin S.p.A.	DIA-IT	92.9	5,199	5,918	46%	-8%	-5%	1,436	1,239	4.8 x	521	403	14.7 x	31.01	3.0 x
259	QuidelOrtho Corporation	QDEL-US	71.5	4,780	7,256	38%	-20%	-3%	4,051	3,052	2.4 x	1,331	800	9.1 x	74.35	1.0 x
260	Merit Medical	MMSI-US	80.3	4,635	4,930	7%	-22%	6%	1,151	1,253	3.9 x	218	259	19.0 x	21.30	3.8 x
261	Glaukos Corporation	GKOS-US	94.2	4,595	4,678	0%	-53%	18%	283	313	14.9 x	(50)	(58)	-	9.80	9.6 x
262	Jiangsu Yuyue	002223-CN	4.5	4,244	3,775	16%	-6%	-6%	1,025	1,170	3.2 x	253	343	11.0 x	1.64	2.8 x
263	Envista Holdings	NVST-US	24.5	4,203	5,016	77%	-18%	2%	2,569	2,557	2.0 x	517	469	10.7 x	25.06	1.0 x
264	Giant Biogene	2367-HK	4.2	4,170	3,709	79%	-14%	-6%	343	473	7.8 x	170	220	16.9 x	0.50	8.4 x
265	Haemonetics Corporation	HAE-US	81.3	4,127	4,539	17%	-9%	-5%	1,169	1,270	3.6 x	280	354	12.8 x	17.61	4.6 x
266	Ambu A/S	AMBU.B-DK	17.1	4,028	4,626	2%	-46%	11%	685	761	6.1 x	87	120	38.7 x	3.00	5.7 x
267	Sichuan Kelun	002422-CN	3.3	3,957	5,517	44%	1%	-20%	2,761	2,999	1.8 x	507	560	9.8 x	1.81	1.8 x

268	Autobio Diagnostics	603658-CN	6.7	3,925	4,005	58%	-16%	-16%	645	637	6.3 x	242	248	16.1 x	1.99	3.4 x
269	iRhythm Technologies	IRTC-US	121.2	3,714	3,687	16%	-42%	13%	411	490	7.5 x	(11)	(1)	-	7.18	16.9 x
270	Lantheus Holdings	LNTH-US	54.0	3,697	3,700	87%	-7%	-13%	935	1,280	2.9 x	436	585	6.3 x	10.01	5.4 x
271	APT Medical	688617-CN	54.4	3,634	3,488	8%	-26%	-1%	177	232	15.1 x	69	88	39.7 x	3.75	14.5 x
272	Axonics, Inc.	AXNX-US	68.2	3,456	3,114	2%	-30%	10%	274	364	8.6 x	(53)	45	69.6 x	12.05	5.7 x
273	Inari Medical	NARI-US	58.0	3,339	3,019	24%	-18%	-11%	383	493	6.1 x	(23)	1	3,985.3 x	7.86	7.4 x
274	Enovis Corporation	ENOV-US	61.0	3,332	3,767	9%	-29%	9%	1,563	1,698	2.2 x	236	267	14.1 x	63.04	1.0 x
275	Integra LifeSciences	IART-US	41.9	3,274	4,688	45%	-20%	-4%	1,558	1,544	3.0 x	424	374	12.5 x	19.96	2.1 x
276	Shandong Weigao	1066-HK	0.7	3,137	2,959	164%	-2%	-29%	1,982	1,931	1.5 x	578	520	5.7 x	0.67	1.0 x
277	iRay Technology	688301-CN	30.3	3,086	2,987	67%	-12%	-34%	226	266	11.2 x	93	104	28.6 x	5.71	5.3 x
278	Medacta Group	MOVE-CH	153.5	3,070	3,248	1%	-32%	3%	465	558	5.8 x	126	151	21.5 x	17.33	8.9 x
279	Lepu Medical	300003-CN	1.9	3,059	3,718	92%	-4%	-16%	1,533	1,236	3.0 x	476	394	9.4 x	1.22	1.6 x
280	CONMED Corporation	CNMD-US	95.0	2,921	3,903	46%	-7%	-13%	1,045	1,250	3.1 x	187	239	16.3 x	25.90	3.7 x
281	Guardant Health	GH-US	24.0	2,914	3,118	71%	-14%	-11%	450	558	5.6 x	(403)	(390)	-	1.94	12.4 x
282	TransMedics Group	TMDX-US	88.7	2,895	2,984	12%	-59%	12%	93	228	13.1 x	(18)	(20)	-	3.87	22.9 x
283	Winner Medical	300888-CN	4.8	2,829	2,133	70%	-2%	-8%	1,641	1,276	1.7 x	341	409	5.2 x	3.16	1.5 x
284	Elekta AB	EKTA.B-SE	7.5	2,773	3,321	16%	-15%	-8%	1,559	1,776	1.9 x	248	333	10.0 x	2.69	2.8 x
285	LivaNova Plc	LIVN-US	50.5	2,718	2,807	19%	-20%	-2%	1,022	1,132	2.5 x	173	202	13.9 x	22.75	2.2 x
286	RadNet, Inc.	RDNT	38.1	2,587	3,961	3%	-48%	10%	1,430	1,606	2.5 x	192	233	17.0 x	9.12	4.2 x

287	Telix Pharmaceuticals	TLX-AU	7.7	2,486	2,407	12%	-49%	12%	108	331	7.3 x	(52)	45	53.8 x	0.16	47.1 x
288	ICU Medical	ICUI-US	96.1	2,320	3,836	121%	-19%	-4%	2,226	2,200	1.7 x	359	375	10.2 x	86.93	1.1 x
289	Ovctek China	300595-CN	2.5	2,262	2,040	128%	1%	-21%	222	236	8.6 x	122	119	17.1 x	0.67	3.8 x
290	Vitrolife AB	VITR-SE	16.5	2,229	2,355	59%	-32%	-15%	313	335	7.0 x	102	108	21.8 x	12.77	1.3 x
291	Sonoscape Medical	300633-CN	5.1	2,181	1,962	74%	1%	-24%	256	302	6.5 x	61	82	24.1 x	1.00	5.1 x
292	Eyebright Medical	688050-CN	20.1	2,117	2,067	78%	1%	-17%	84	120	17.3 x	48	60	34.2 x	2.78	7.2 x
293	Jafron Biomedical	300529-CN	2.5	2,058	1,892	107%	-3%	-17%	363	286	6.6 x	161	97	19.4 x	0.56	4.6 x
294	Ansell Limited	ANN-AU	16.1	2,030	2,366	27%	-18%	-5%	1,655	1,671	1.4 x	276	253	9.4 x	13.02	1.2 x
295	InMode Ltd.	INMD-US	24.3	2,020	1,348	99%	-23%	9%	454	490	2.7 x	232	220	6.1 x	8.69	2.8 x
296	Hartalega Holdings	5168-MY	0.6	1,991	1,669	13%	-46%	-1%	541	433	3.9 x	(17)	39	42.3 x	0.29	2.0 x
297	Micro-Tech (Nanjing)	688029-CN	10.5	1,963	1,803	40%	-8%	-23%	286	333	5.4 x	51	74	24.3 x	2.64	4.0 x
298	NovoCure Limited	NVCR-US	15.5	1,655	1,322	519%	-30%	4%	538	509	2.6 x	28	(101)	-	3.69	4.2 x
299	Top Glove	7113-MY	0.2	1,595	1,726	41%	-25%	2%	479	692	2.5 x	(35)	63	27.4 x	0.13	1.5 x
300	Nakanishi Inc.	7716-JP	16.6	1,565	1,258	55%	-6%	8%	371	402	3.1 x	132	124	10.1 x	9.65	1.7 x
301	CLASSYS, Inc.	214150-KR	23.4	1,513	1,456	43%	-40%	-19%	109	138	10.6 x	56	73	20.0 x	3.28	7.1 x
302	STAAR Surgical	STAA-US	30.7	1,499	1,346	166%	-12%	-2%	284	322	4.2 x	64	47	28.8 x	7.76	4.0 x
303	Lunit, Inc.	328130-KR	47.2	1,356	1,156	108%	-72%	-14%	11	21	54.1 x	(36)	(26)	-	1.52	31.1 x
304	Butterfly Networks	BFLY	1.1	193	97	201%	-29%	-1%	73	65	1.5 x	(140)	(71)	-	1.24	0.9 x
305	Hyperfine, Inc.	HYPR	1.1	62	(8)	201%	-24%	-3%	7	12	-0.7 x	(62)	(55)	-	1.31	0.8 x

306	**SeaStar Medical, Inc.**	**ICU**	0.8	46	46	602%	-81%	149%	-	-	-	-	-	-	(0.58)	-1.4 x
307	**OneMedNet Corp**	**ONMD**	1.4	44	13	886%	-69%	2275%	-	-	-	-	-	-	2.62	0.5 x
308	**Envoy Medical Corp**	**COCH**	1.3	25	8	830%	-41%	-30%	-	0	28.1 x	-	-	-	0.24	5.1 x
309	**BioSig Technologies**	**BSGM**	0.2	19	20	664%	-8%	-55%	0	0	197.6 x	-	-	-	(0.01)	-14.8 x
310	**Rapid Dose Therapeutics**	**DOSE-CA**	0.1	12	14	67%	-54%	-5%	-	-	-	-	-	-	(0.03)	-4.2 x
311	**Intelligent Bio Solutions**	**INBS**	3.1	5	6	8181%	-27%	-23%	1	4	1.3 x	-	-	-	0.58	5.4 x

			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance: % to High	% to Low	% YTD	Sales: FY0	FY1	EV/Sales	EBITDA: FY0	FY1	EV/ EBITDA	Book Value: Book/ Share	P/ Book
Biopharma				4,264,640	4,693,459			4%	954,111	920,947	5.1 x	341,967	280,843	16.7 x		5.0 x
312	Eli Lilly	LLY-US	645.0	612,303	630,064	0%	-52%	11%	28,541	33,653	18.7 x	9,074	8,368	75.3 x	11.81	54.6 x
313	Johnson & Johnson	JNJ-US	159.4	383,624	390,034	10%	-9%	2%	85,159	88,252	4.4 x	32,267	33,435	11.7 x	29.59	5.4 x
314	Novo Nordisk	NOVO.B-DK	108.4	372,464	480,648	1%	-39%	6%	25,975	33,196	14.5 x	12,036	15,858	30.3 x	3.10	35.0 x
315	Merck & Co.	MRK-US	121.3	307,326	333,427	0%	-18%	11%	59,283	59,972	5.6 x	24,552	8,923	37.4 x	16.27	7.5 x
316	Novartis AG	NOVN-CH	107.2	244,226	226,335	1%	-25%	22%	50,545	46,926	4.8 x	17,892	17,825	12.7 x	20.18	5.3 x
317	AstraZeneca	AZN-GB	134.7	208,880	232,365	14%	-9%	0%	44,351	45,812	5.1 x	12,898	15,912	14.6 x	25.07	5.4 x
318	Roche Holding	ROG-CH	285.6	200,651	252,356	13%	-11%	0%	69,562	68,811	3.7 x	27,039	25,997	9.7 x	39.45	7.2 x
319	Amgen Inc.	AMGN-US	313.5	167,752	193,479	0%	-32%	9%	26,323	28,121	6.9 x	16,040	15,560	12.4 x	14.31	21.9 x
320	Pfizer Inc.	PFE-US	27.5	155,163	174,848	62%	-6%	-5%	100,330	58,778	3.0 x	42,739	10,528	16.6 x	17.17	1.6 x
321	Sanofi	SAN-FR	100.0	126,472	139,950	16%	-15%	2%	49,281	48,876	2.9 x	16,201	15,596	9.0 x	64.11	1.6 x
322	Vertex Pharmaceuticals	VRTX-US	435.8	112,303	101,114	2%	-35%	7%	8,931	9,865	10.2 x	4,855	4,581	22.1 x	64.05	6.8 x
323	Regeneron Pharmaceuticals	REGN-US	955.8	102,394	96,921	0%	-28%	9%	12,173	12,941	7.5 x	6,013	5,415	17.9 x	228.90	4.2 x
324	Bristol-Myers Squibb	BMY-US	49.9	101,473	133,065	51%	-3%	-3%	46,159	44,710	3.0 x	23,831	20,672	6.4 x	14.25	3.5 x
325	Gilead Sciences,	GILD-US	79.1	98,525	115,460	11%	-8%	-2%	27,281	27,099	4.3 x	12,952	12,147	9.5 x	17.89	4.4 x
326	CSL Limited	CSL-AU	195.6	94,506	107,224	12%	-26%	0%	13,310	14,649	7.3 x	4,116	4,903	21.9 x	33.55	5.8 x
327	GSK Plc	GSK-GB	19.7	80,899	96,782	3%	-16%	7%	36,143	37,897	2.6 x	11,342	12,713	7.6 x	4.13	4.8 x

328	**Chugai Pharmaceutical**	**4519-JP**	36.4	61,057	55,738	15%	-34%	-2%	9,615	7,611	7.3 x	4,111	3,143	17.7 x	6.62	5.5 x
329	**Daiichi Sankyo**	**4568-JP**	29.5	57,393	53,244	25%	-19%	9%	9,532	10,564	5.0 x	1,401	1,526	34.9 x	5.90	5.0 x
330	**Takeda Pharmaceutical**	**4502-JP**	29.2	46,226	75,062	18%	-10%	2%	29,766	27,211	2.8 x	9,108	7,310	10.3 x	31.97	0.9 x
331	**Moderna, Inc.**	**MRNA-US**	104.8	39,974	33,856	85%	-40%	5%	19,263	6,465	5.2 x	9,744	(4,719)	-	35.31	3.0 x
332	**Sun Pharmaceutical**	**524715-IN**	16.5	39,581	38,433	4%	-32%	9%	5,294	5,820	6.6 x	1,415	1,563	24.6 x	3.00	5.5 x
333	**Haleon plc.**	**HLN-GB**	4.1	37,776	49,844	8%	-10%	0%	12,980	14,327	3.5 x	3,244	3,600	13.8 x	2.27	1.8 x
334	**Jiangsu Hengrui**	**600276-CN**	5.4	34,373	31,972	36%	-6%	-15%	3,088	3,274	9.8 x	557	701	45.6 x	0.88	6.1 x
335	**Bayer Aktiengesellschaft**	**BAYN-DE**	32.8	32,197	75,369	116%	0%	-12%	53,809	51,382	1.5 x	14,331	11,941	6.3 x	37.53	0.9 x
336	**Celltrion, Inc.**	**068270-KR**	134.5	29,309	29,773	38%	-28%	-14%	1,762	1,753	17.0 x	665	759	39.2 x	23.83	5.6 x
337	**Alnylam Pharmaceuticals**	**ALNY-US**	181.0	22,709	22,967	30%	-18%	-5%	1,037	1,821	12.6 x	(704)	(263)	-	(1.32)	-136.9 x
338	**argenx SE**	**ARGX-BE**	376.0	22,257	20,272	46%	-21%	-1%	445	1,191	17.0 x	(651)	(321)	-	51.72	7.3 x
339	**Otsuka Holdings**	**4578-JP**	39.1	21,815	19,272	6%	-28%	7%	13,086	13,418	1.4 x	1,935	2,503	7.7 x	32.45	1.2 x
340	**Astellas Pharma**	**4503-JP**	11.6	20,992	25,196	46%	-4%	-2%	11,153	10,747	2.3 x	2,226	1,880	13.4 x	6.49	1.8 x
341	**Genmab A/S**	**GMAB-DK**	281.8	18,622	14,614	54%	-3%	-11%	2,078	2,373	6.2 x	922	819	17.8 x	70.59	4.0 x
342	**UCB S.A.**	**UCB-BE**	93.0	18,084	20,300	4%	-25%	9%	5,863	5,617	3.6 x	1,339	1,304	15.6 x	52.65	1.8 x
343	**BeiGene, Ltd.**	**6160-HK**	12.0	14,895	13,672	77%	-4%	-15%	1,416	2,420	5.7 x	(1,733)	(1,003)	-	2.79	4.3 x
344	**Shionogi &**	**4507-JP**	47.8	14,702	12,451	7%	-15%	5%	3,174	2,951	4.2 x	1,249	1,144	10.9 x	29.45	1.6 x
345	**Viatris Inc.**	**VTRS-US**	11.9	14,252	31,493	5%	-26%	10%	16,263	15,469	2.0 x	5,777	5,193	6.1 x	17.09	0.7 x
346	**Eisai Co.,**	**4523-JP**	47.5	14,096	12,805	70%	-2%	-2%	5,468	4,998	2.6 x	608	616	20.8 x	21.29	2.2 x

347	Neurocrine Biosciences	NBIX-US	142.2	13,973	13,152	1%	-37%	8%	1,489	1,890	7.0 x	266	281	46.8 x	20.39	7.0 x
348	Incyte Corporation	INCY-US	60.5	13,552	10,074	42%	-17%	-4%	3,395	3,687	2.7 x	763	806	12.5 x	22.01	2.7 x
349	Teva Pharmaceutical	TEVA-IL	11.7	13,159	31,790	4%	-39%	10%	14,925	15,791	2.0 x	4,598	4,584	6.9 x	6.54	1.8 x
350	Royalty Pharma	RPRX-US	29.1	13,041	21,677	35%	-11%	3%	2,789	2,967	7.3 x	2,567	2,731	7.9 x	13.77	2.1 x
351	Cipla Limited	500087-IN	15.8	12,788	12,160	8%	-35%	6%	2,822	3,100	3.9 x	612	756	16.1 x	3.70	4.3 x
352	Karuna Therapeutics	KRTX-US	313.9	11,896	10,570	2%	-50%	-1%	11	2	6,891.5 x	(282)	(466)	-	35.06	9.0 x
353	Dr. Reddy's	500124-IN	70.3	11,728	11,045	3%	-26%	1%	2,995	3,287	3.4 x	775	920	12.0 x	18.27	3.8 x
354	Recordati Industria	REC-IT	54.6	11,422	12,853	3%	-27%	3%	1,970	2,248	5.7 x	715	816	15.7 x	9.25	5.9 x
355	Sarepta Therapeutics,	SRPT-US	120.5	11,272	10,910	33%	-54%	25%	933	1,229	8.9 x	(499)	(166)	-	8.17	14.7 x
356	United Therapeutics	UTHR-US	216.9	10,193	8,118	22%	-6%	-1%	1,936	2,289	3.5 x	1,041	1,231	6.6 x	121.58	1.8 x
357	Mankind Pharma	543904-IN	24.7	9,911	9,677	10%	-39%	4%	1,058	1,208	8.0 x	232	297	32.6 x	2.53	9.8 x
358	Swedish Orphan	SOBI-SE	28.0	9,904	11,369	2%	-37%	10%	1,771	2,102	5.4 x	604	717	15.9 x	10.07	2.8 x
359	Ipsen SA	IPN-FR	115.0	9,639	9,795	21%	-10%	-2%	3,256	3,492	2.8 x	1,328	1,190	8.2 x	45.51	2.5 x
360	Beijing Wantai	603392-CN	7.6	9,586	8,893	94%	-28%	-28%	1,627	942	9.4 x	800	454	19.6 x	1.48	5.1 x
361	Hansoh Pharmaceutical	3692-HK	1.6	9,263	6,647	44%	-23%	-23%	1,363	1,404	4.7 x	460	484	13.7 x	0.56	2.8 x
362	Ono Pharmaceutical	4528-JP	17.8	9,203	7,665	27%	-5%	8%	3,327	3,438	2.2 x	1,215	1,300	5.9 x	11.52	1.5 x
363	CSPC Pharmaceutical	1093-HK	0.7	8,926	7,511	61%	-11%	-19%	4,490	4,434	1.7 x	1,180	1,183	6.3 x	0.37	2.0 x
364	Roivant Sciences	ROIV-US	10.3	8,296	7,758	28%	-36%	-8%	61	160	48.3 x	(1,202)	(972)	-	1.18	8.7 x
365	ImmunoGen, Inc.	IMGN-US	29.4	8,219	7,723	2%	-88%	-1%	109	374	20.6 x	(219)	(23)	-	2.11	13.9 x

366	Jazz Pharmaceuticals	JAZZ-US	127.4	8,020	12,228	25%	-13%	4%	3,659	3,835	3.2 x	1,526	1,725	7.1 x	55.44	2.3 x
367	Apellis Pharmaceuticals	APLS-US	65.4	7,745	7,741	45%	-70%	9%	75	388	19.9 x	(594)	(495)	-	1.96	33.3 x
368	Cerevel Therapeutics	CERE-US	42.0	7,622	7,418	2%	-53%	-1%	0	0	-	(354)	(417)	-	1.73	24.2 x
369	Exelixis, Inc.	EXEL-US	21.9	6,807	5,895	11%	-26%	-9%	1,611	1,833	3.2 x	201	231	25.5 x	7.55	2.9 x
370	Intra-Cellular Therapies	ITCI-US	69.9	6,723	6,246	6%	-40%	-2%	250	468	13.3 x	(263)	(179)	-	6.24	11.2 x
371	Innovent Biologics	1801-HK	4.1	6,594	5,896	56%	-14%	-26%	662	820	7.2 x	(348)	(163)	-	0.97	4.2 x
372	BridgeBio Pharma	BBIO-US	37.8	6,583	7,772	17%	-77%	-6%	78	13	615.8 x	(509)	(538)	-	(6.93)	-5.5 x
373	Immunovant, Inc.	IMVT-US	39.3	5,688	5,419	16%	-64%	-7%	0	0	-	(218)	(251)	-	1.92	20.5 x
374	SK Biopharmaceuticals	326030-KR	68.8	5,388	5,347	17%	-36%	-12%	266	372	14.4 x	(17)	50	107.3 x	2.83	24.3 x
375	Bausch + Lomb	BLCO-US	14.5	5,101	9,272	51%	-3%	-15%	3,768	4,077	2.3 x	720	729	12.7 x	19.43	0.7 x
376	Revolution Medicines	RVMD-US	28.9	4,730	3,980	23%	-47%	1%	35	13	310.1 x	(256)	(427)	-	7.65	3.8 x
377	Alkermes Public	ALKS-US	28.3	4,724	4,220	19%	-22%	2%	1,112	1,649	2.6 x	(85)	367	11.5 x	8.13	3.5 x
378	Halozyme Therapeutics	HALO-US	34.4	4,545	5,592	56%	-13%	-7%	660	832	6.7 x	360	431	13.0 x	1.89	18.2 x
379	Madrigal Pharmaceuticals	MDGL-US	227.0	4,481	4,366	42%	-47%	-2%	0	0	-	(292)	(382)	-	1.20	188.7 x
380	Nuvalent, Inc.	NUVL-US	78.0	4,459	4,470	4%	-70%	6%	0	0	-	(86)	(144)	-	6.93	11.3 x
381	Akeso Inc.	9926-HK	5.1	4,278	3,860	32%	-24%	-14%	121	650	5.9 x	(185)	300	12.9 x	0.85	6.0 x
382	ALVOTECH	ALVO	15.3	4,076	5,022	3%	-56%	33%	85	85	58.8 x	(244)	(206)	-	(2.47)	-6.2 x
383	Insmed Incorporated	INSM-US	28.2	4,030	4,598	14%	-43%	-9%	245	304	15.1 x	(442)	(679)	-	(2.02)	-13.9 x
384	Walvax Biotechnology	300142-CN	2.4	3,772	3,648	154%	3%	-27%	739	609	6.0 x	207	186	19.7 x	0.84	2.9 x

385	MoonLake Immunotherapeutics	MLTX	58.2	3,487	3,056	10%	-81%	-4%	0	0	-	-	(61)	-	7.93	7.3 x
386	Arcellx, Inc.	ACLX-US	64.4	3,135	2,803	2%	-59%	16%	0	68	41.5 x	(190)	(117)	-	5.47	11.8 x
387	Shenzhen Kangtai	300601-CN	3.0	2,627	3,536	93%	3%	-22%	458	523	6.8 x	75	216	16.4 x	1.21	2.5 x
388	Mirati Therapeutics,	MRTX-US	58.7	2,315		10%	-53%	-44%	12	60	-	(711)	(640)	-	13.50	4.3 x
389	Betta Pharmaceuticals	300558-CN	5.5	2,308	2,556	98%	2%	-24%	345	390	6.6 x	95	111	23.0 x	1.77	3.1 x
390	Zai Lab	9688-HK	2.2	2,194	1,379	111%	-6%	-19%	215	267	5.2 x	(402)	(344)	-	0.91	2.4 x
391	NewAmsterdam Pharma	NAMS	20.3	1,674	1,255	30%	-72%	82%	106	13	93.6 x	-	(235)	-	5.61	3.6 x
392	Tango Therapeutics	TNGX	12.4	1,264	942	5%	-80%	25%	25	39	24.2 x	(109)	(106)	-	2.72	4.6 x
393	IMMATICS NV	IMTX	11.6	1,170	825	13%	-49%	10%	186	56	14.6 x	37	(108)	-	3.10	3.8 x
394	OmniAb, Inc.	OABI	6.3	732	662	7%	-50%	2%	59	38	17.5 x	(4)	(39)	-	2.79	2.3 x
395	OCULIS HOLDING AG	OCS	13.5	493	377	8%	-53%	20%	1	1	419.7 x	(48)	(81)	-	3.15	4.3 x
396	PROCAPS GROUP SA	PROC	4.1	460	731	64%	-52%	0%	410	424	1.7 x	68	97	7.6 x	0.35	11.6 x
397	Nuvation Bio Inc.	NUVB	1.7	381	(232)	46%	-45%	15%	0	0	-	-	-	-	2.79	0.6 x
398	AEON Biopharma, Inc.	AEON	8.5	317	301	72%	-60%	18%	-	-	-	-	-	-	(1.64)	-5.2 x
399	TriSalus Life Sciences, Inc.	TLSI	9.0	238	241	80%	-63%	7%	-	18	13.2 x	-	-	-	(0.49)	-18.3 x
400	Conduit Pharmaceuticals	CDT	3.2	233	233	694%	-70%	-31%	-	-	-	-	-	-	2.73	1.2 x
401	Reviva Pharmaceuticals, Inc.	RVPH	4.1	115	111	124%	-15%	-20%	0	0	-	-	-	-	(0.41)	-10.0 x
402	ProKidney	PROK	1.5	99	1,227	859%	-24%	-17%	0	0	-	(113)	(158)	-	(17.74)	-0.1 x
403	Carmell Therapeutics Corp.	CTCX	3.6	84	84	267%	-53%	-5%	-	-	-	-	-	-	7.90	0.5 x

404	Apollomics Inc.	APLM	0.8	73	(47)	5920%	-32%	1077%	4	2	-27.5 x	(44)	(41)	-	8.69	0.1 x
405	Celularity Inc.	CELU	0.3	69	130	231%	-50%	29%	18	-	-	-	-	-	0.16	2.0 x
406	Clene Nanomedicine, Inc.	CLNN	0.5	66	30	287%	-51%	74%	0	1	54.1 x	(48)	(41)	-	0.17	3.1 x
407	The American Oncology	AONC	6.0	57	57	561%	-20%	2%	-	-	-	-	-	-	0.83	7.2 x
408	SAB Biotherapeutics	SABS	6.0	55	57	142%	-39%	-13%	24	1	44.2 x	-	-	-	2.92	2.1 x
409	NKGen Biotech, Inc.	NKGN	2.3	49	60	470%	-1%	-18%	-	-	-	-	-	-	(0.35)	-6.4 x
410	Estrella Biopharma, Inc.	ESLA	1.3	44	45	2540%	-26%	13%	-	-	-	-	-	-	2.97	0.4 x
411	YS Biopharma	YS	0.4	39	80	4336%	-9%	-19%	97	81	1.0 x	(14)	-	-	7.58	0.1 x
412	Dyadic International	DYAI	1.3	39	31	79%	-10%	-17%	3	3	10.0 x	-	-	-	0.27	5.0 x
413	NeuroRx, Inc.	NRXP	0.4	33	35	229%	-44%	-15%	0	0	-	-	-	-	(0.07)	-5.3 x
414	FSD Pharma	HUGE	0.8	33	12	149%	-4%	89%	-	-	-	-	-	-	0.38	2.2 x
415	Calidi Biotherapeutics	CLDI	0.9	32	31	1432%	-6%	-40%	-	0	-	-	-	-	(0.03)	-29.2 x
416	EFFECTOR THERAPEUTICS	EFTR	11.7	30	32	216%	-28%	0%	4	0	-	(32)	-	-	(1.59)	-7.4 x
417	Vincera Pharma Inc.	VINC	1.2	27	8	57%	-51%	5%	0	0	-	-	-	-	0.74	1.7 x
418	Ocean Biomedical	AEHA	0.6	20	30	4354%	-11%	-10%	0	-	-	(19)	-	-	(0.25)	-2.4 x
419	Coeptis Therapeutics	COEP	0.6	20	19	278%	-13%	-26%	0	0	-	1	-	-	0.15	3.8 x
420	Surrozen, Inc.	SRZN	7.9	16	(23)	162%	-43%	-16%	13	0	-	(42)	-	-	22.34	0.4 x

			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance: % to High	% to Low	% YTD	Sales: FY0	FY1	EV/Sales	EBITDA: FY0	FY1	EV/ EBITDA	Book Value: Book/ Share	P/ Book
Healthcare Services				2,268,956	2,623,752			-1%	2,220,406	2,345,776	1.1 x	186,391	187,433	14.0 x		5.1 x
421	UnitedHealth Group	UNH-US	504.5	466,662	500,602	10%	-12%	-4%	371,622	401,044	1.2 x	36,825	40,341	12.4 x	91.34	5.5 x
422	Thermo Fisher	TMO-US	557.8	215,507	244,766	7%	-25%	5%	44,915	42,749	5.7 x	11,954	10,822	22.6 x	117.32	4.8 x
423	Danaher Corporation	DHR-US	233.9	172,857	183,748	17%	-22%	1%	23,890	24,095	7.6 x	8,404	7,931	23.2 x	70.93	3.3 x
424	Elevance Health	ELV-US	486.5	114,315	129,223	5%	-15%	3%	170,209	172,980	0.7 x	11,220	12,528	10.3 x	163.57	3.0 x
425	Zoetis Inc.	ZTS-US	192.8	88,499	93,486	5%	-22%	-2%	8,080	8,523	11.0 x	3,380	3,654	25.6 x	11.05	17.4 x
426	Cigna Group	CI-US	298.9	87,458	110,176	7%	-20%	0%	180,642	193,081	0.6 x	11,205	12,000	9.2 x	155.78	1.9 x
427	HCA Healthcare,	HCA-US	286.7	76,746	119,708	6%	-25%	6%	60,233	64,154	1.9 x	12,067	12,391	9.7 x	(9.21)	-31.1 x
428	McKesson Corporation	MCK-US	486.5	64,730	69,885	2%	-32%	5%	276,711	305,354	0.2 x	5,217	5,267	13.3 x	(13.74)	-35.4 x
429	Humana Inc.	HUM-US	365.9	45,051	41,686	48%	-6%	-20%	106,374	111,367	0.4 x	4,703	4,316	9.7 x	137.67	2.7 x
430	IDEXX Laboratories	IDXX-US	532.1	44,188	44,997	7%	-30%	-4%	3,367	3,649	12.3 x	1,018	1,215	37.0 x	15.62	34.1 x
431	SAMSUNG BIOLOGICS	207940-KR	616.1	43,853	44,161	10%	-20%	4%	2,765	3,227	13.7 x	1,146	1,255	35.2 x	104.14	5.9 x
432	Cencora, Inc.	COR-US	218.4	43,574	46,923	1%	-32%	6%	262,173	284,227	0.2 x	4,296	4,026	11.7 x	2.60	84.0 x
433	IQVIA Holdings	IQV-US	218.0	39,789	52,305	11%	-23%	-6%	14,410	14,904	3.5 x	3,346	3,567	14.7 x	31.81	6.9 x
434	Centene Corporation	CNC-US	74.1	39,563	40,601	8%	-18%	0%	144,547	150,814	0.3 x	5,613	5,271	7.7 x	47.32	1.6 x
435	Agilent Technologies	A-US	132.8	38,920	40,229	18%	-27%	-4%	6,826	6,733	6.0 x	2,028	2,009	20.0 x	20.01	6.6 x
436	Lonza Group	LONN-CH	497.0	37,010	37,841	33%	-32%	19%	7,782	7,548	5.0 x	2,250	2,105	18.0 x	164.85	3.0 x

437	Dr. Sulaiman	4013-SA	76.4	26,749	27,490	7%	-22%	1%	2,218	2,568	10.7 x	550	655	42.0 x	4.87	15.7 x
438	Mettler-Toledo International	MTD-US	1,227.5	26,616	28,655	32%	-24%	1%	3,920	3,815	7.5 x	1,245	1,244	23.0 x	(4.88)	-251.4 x
439	Cardinal Health	CAH-US	106.3	26,195	27,020	2%	-36%	5%	205,012	226,522	0.1 x	2,313	2,852	9.5 x	(14.13)	-7.5 x
440	ICON plc	ICLR-US	267.8	22,050	25,898	8%	-32%	-5%	7,741	8,144	3.2 x	1,479	1,678	15.4 x	108.82	2.5 x
441	STERIS plc	STE-US	216.7	21,409	24,840	17%	-20%	-1%	4,958	5,438	4.6 x	1,437	1,494	16.6 x	62.54	3.5 x
442	Molina Healthcare	MOH-US	354.7	20,678	17,491	10%	-28%	-2%	31,974	33,320	0.5 x	1,588	1,844	9.5 x	66.88	5.3 x
443	Laboratory Corp.	LH	227.1	19,284	24,906	14%	-14%	0%	14,877	12,145	2.1 x	2,903	2,116	11.8 x	92.73	2.4 x
444	Laboratory Corporation	LH-US	227.1	19,284	24,906	14%	-14%	0%	14,877	12,145	2.1 x	2,903	2,116	11.8 x	92.73	2.4 x
445	Waters Corporation	WAT-US	324.4	19,178	21,433	7%	-29%	-1%	2,972	2,953	7.3 x	1,029	1,050	20.4 x	15.32	21.2 x
446	Zhangzhou Pientzehuang	600436-CN	30.6	18,444	18,301	60%	-5%	-10%	1,269	1,417	12.9 x	431	503	36.4 x	3.04	10.1 x
447	AIER Eye Hospital	300015-CN	1.8	17,149	16,730	114%	1%	-17%	2,328	2,883	5.8 x	693	807	20.7 x	0.29	6.4 x
448	Fresenius SE	FRE-DE	28.7	16,185	41,716	16%	-14%	-6%	43,631	24,279	1.7 x	7,202	3,818	10.9 x	39.69	0.7 x
449	Avantor, Inc.	AVTR-US	23.1	15,597	20,987	9%	-28%	1%	7,512	6,945	3.0 x	1,571	1,299	16.2 x	7.54	3.1 x
450	Quest Diagnostics	DGX-US	129.3	14,542	19,425	16%	-8%	-6%	9,883	9,216	2.1 x	2,076	1,870	10.4 x	57.37	2.3 x
451	Sartorius AG	SRT3-DE	337.3	12,630	29,165	50%	-33%	0%	3,695	3,947	7.4 x	1,028	1,175	24.8 x	33.38	10.1 x
452	Rede D'Or	RDOR3-BR	5.5	12,555	13,895	45%	-32%	-6%	4,385	9,748	1.4 x	1,017	1,372	10.1 x	2.08	2.6 x
453	Wuxi Biologics	2269-HK	2.9	12,178	11,865	222%	-3%	-25%	2,236	2,382	5.0 x	863	837	14.2 x	1.23	2.3 x
454	Bangkok Dusit	BDMS-TH	0.8	12,173	12,544	21%	-9%	-6%	2,647	2,793	4.5 x	642	669	18.7 x	0.17	4.6 x
455	Eurofins Scientific	ERF-FR	60.4	11,657	15,598	28%	-21%	-7%	7,163	7,041	2.2 x	1,510	1,397	11.2 x	22.99	2.6 x

456	Charles River	CRL-US	224.6	11,519	14,307	17%	-28%	-5%	3,976	4,107	3.5 x	990	1,017	14.1 x	64.45	3.5 x
457	Fresenius Medical	FME-DE	38.8	11,381	24,985	43%	-17%	-7%	20,555	20,972	1.2 x	3,818	3,500	7.1 x	52.73	0.7 x
458	Divi's Laboratories	532488-IN	42.7	11,335	10,901	15%	-22%	-9%	940	958	11.4 x	288	283	38.5 x	5.74	7.4 x
459	Yunnan Baiyao	000538-CN	6.7	11,318	9,966	29%	-3%	-2%	5,310	5,572	1.8 x	558	752	13.3 x	3.15	2.1 x
460	IHH Healthcare	5225-MY	1.3	11,274	13,467	11%	-5%	-2%	4,009	4,202	3.2 x	908	945	14.2 x	0.69	1.9 x
461	Apollo Hospitals	508869-IN	75.8	10,905	11,366	1%	-35%	11%	2,007	2,313	4.9 x	248	296	38.3 x	5.44	13.9 x
462	Repligen Corporation	RGEN-US	192.2	10,731	10,521	6%	-43%	7%	802	638	16.5 x	247	133	79.1 x	35.65	5.4 x
463	Bruker Corporation	BRKR-US	73.1	10,123	11,015	16%	-26%	0%	2,531	2,916	3.8 x	567	611	18.0 x	8.29	8.8 x
464	Sonic Healthcare	SHL-AU	21.2	10,120	11,776	17%	-15%	-3%	5,246	5,783	2.0 x	1,097	1,117	10.5 x	11.21	1.9 x
465	Henry Schein	HSIC-US	75.2	9,775	13,346	19%	-20%	-1%	12,647	12,374	1.1 x	1,156	1,014	13.2 x	28.10	2.7 x
466	Universal Health	UHS-US	156.9	9,747	16,234	2%	-28%	3%	13,399	14,243	1.1 x	1,662	1,733	9.4 x	88.85	1.8 x
467	Catalent, Inc	CTLT-US	53.6	9,688	14,436	39%	-41%	19%	4,276	4,379	3.3 x	714	723	20.0 x	21.28	2.5 x
468	Medpace Holdings	MEDP-US	301.4	9,246	9,315	5%	-45%	-2%	1,460	1,886	4.9 x	308	358	26.0 x	15.35	19.6 x
469	Chongqing Zhifei	300122-CN	6.4	9,116	15,599	68%	-11%	-26%	5,568	6,936	2.2 x	1,355	1,538	10.1 x	1.76	3.6 x
470	Chemed Corporation	CHE-US	596.9	8,991	8,971	2%	-18%	2%	2,135	2,265	4.0 x	452	465	19.3 x	67.92	8.8 x
471	Max Healthcare	543220-IN	8.9	8,610	8,474	9%	-43%	7%	716	828	10.2 x	190	221	38.4 x	0.97	9.1 x
472	Tenet Healthcare	THC-US	83.6	8,487	26,192	2%	-40%	11%	19,174	20,437	1.3 x	3,469	3,426	7.6 x	14.42	5.8 x
473	Shimadzu Corporation	7701-JP	27.8	8,232	7,189	19%	-16%	0%	3,587	3,454	2.1 x	637	619	11.6 x	10.91	2.5 x
474	Acadia Healthcare	ACHC-US	84.9	7,832	9,339	3%	-22%	9%	2,610	2,914	3.2 x	615	668	14.0 x	29.74	2.9 x

475	Ramsay Health	RHC-AU	33.1	7,602	15,657	44%	-10%	-7%	9,892	10,819	1.4 x	1,291	1,426	11.0 x	11.67	2.8 x
476	Elanco Animal	ELAN-US	15.2	7,486	13,026	5%	-48%	2%	4,418	4,385	3.0 x	1,023	990	13.2 x	12.45	1.2 x
477	China Resources	000999-CN	7.5	7,407	7,530	33%	-26%	8%	2,625	3,598	2.1 x	496	582	12.9 x	2.67	2.8 x
478	Amplifon SpA	AMP-IT	32.3	7,317	8,756	22%	-20%	-6%	2,261	2,458	3.6 x	561	589	14.9 x	5.24	6.2 x
479	Huadong Medicine	000963-CN	4.1	7,255	7,358	84%	4%	-29%	5,483	5,787	1.3 x	570	615	12.0 x	1.64	2.5 x
480	Ensign Group,	ENSG-US	116.5	6,578	7,988	2%	-27%	4%	3,025	3,724	2.1 x	384	425	18.8 x	25.88	4.5 x
481	Mouwasat Medical	4002-SA	31.4	6,272	6,489	18%	-24%	5%	621	709	9.2 x	227	273	23.8 x	4.13	7.6 x
482	Hapvida Participacoes	HAPV3-BR	0.8	5,944	7,673	42%	-52%	-14%	4,592	5,566	1.4 x	417	561	13.7 x	1.35	0.6 x
483	Dechra Pharmaceuticals	DPH-GB	49.0	5,583	6,130	9%	-39%	0%	930	1,076	5.7 x	249	-	-	8.45	5.8 x
484	Bumrungrad Hospital	BH-TH	6.8	5,405	5,173	11%	-13%	5%	609	715	7.2 x	203	263	19.7 x	0.80	8.5 x
485	Bachem Holding	BANB-CH	66.9	5,014	4,690	77%	-7%	-13%	565	639	7.3 x	171	183	25.7 x	19.83	3.4 x
486	Tecan Group	TECN-CH	387.6	4,955	4,939	20%	-28%	-5%	1,253	1,266	3.9 x	245	248	19.9 x	124.89	3.1 x
487	Shijiazhuang Yiling	002603-CN	2.9	4,898	4,997	66%	-1%	-10%	1,811	1,477	3.4 x	452	323	15.5 x	1.00	2.9 x
488	Ypsomed Holding	YPSN-CH	358.3	4,891	5,066	1%	-47%	0%	562	672	7.5 x	163	223	22.8 x	50.01	7.2 x
489	Dong-E-E-Jiao Co.	000423-CN	7.5	4,840	3,783	7%	-19%	8%	594	667	5.7 x	149	180	21.0 x	2.27	3.3 x
490	Siegfried Holding	SFZN-CH	1,006.0	4,495	4,853	3%	-33%	4%	1,322	1,475	3.3 x	308	306	15.9 x	202.93	5.0 x
491	Sotera Health	SHC-US	15.0	4,245	6,319	29%	-18%	-11%	1,004	1,039	6.1 x	506	523	12.1 x	1.34	11.2 x
492	Hubei Jumpcan	600566-CN	4.3	3,936	2,696	14%	-22%	-3%	1,309	1,320	2.0 x	397	439	6.1 x	1.92	2.2 x
493	Gland Pharma	543245-IN	22.6	3,730	3,515	9%	-54%	-2%	438	671	5.2 x	126	167	21.1 x	6.06	3.7 x

494	**SK bioscience**	**302440-KR**	48.4	3,716	2,825	41%	-12%	-13%	363	252	11.2 x	111	6	460.3 x	17.42	2.8 x
495	**WuXi AppTec**	**2359-HK**	7.2	2,789	20,343	96%	-7%	-28%	5,725	5,587	3.6 x	1,703	1,921	10.6 x	2.40	3.0 x
496	**Chongqing Taiji**	**600129-CN**	5.0	2,758	3,193	95%	-5%	-24%	2,045	2,359	1.4 x	159	220	14.5 x	0.97	5.1 x
497	**biote Corp.**	**BTMD-US**	4.0	136	156	106%	-9%	-19%	165	187	0.8 x	50	55	2.8 x	(1.14)	-3.5 x

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