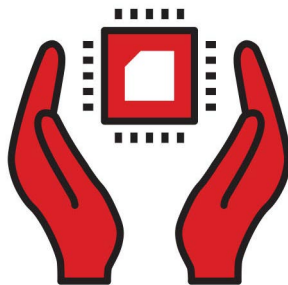


AI Tech Company Partners with Roche FOR CLINICAL TRIAL WORK

► *Trend Watch: Adoption of AI in Pharma Continues to Grow*

Sensyne Health signed its second successive partnership with a major pharmaceutical company at the end of 2019 when it agreed to collaborate with Roche to focus on identifying patient populations in one disease area and assessing and collating anonymized patient data with anonymized electronic patient record (EHR) information to support clinical trial planning. Sensyne takes anonymized patient information, including genomic sequencing data and real-world evidence gathered from digital therapeutics and vital sign trackers to help design clinical studies and fuel drug discovery research.



Earlier in the year, Sensyne signed a deal with Bayer to sift through patient data from the U.K. National Health Service to mine it for insights using its AI platforms and apply the findings to its cardiovascular disease pipeline. Bayer paid \$6.1 million for the first two years of the collaboration, which includes options for later expansion.

These partnerships mark the increasing partnerships between leading pharmaceutical companies and AI companies.

CVS Health Announces Precision Medicine PROGRAM FOR ONCOLOGY

CVS Health has launched Transform Oncology Care, a precision medicine program that uses genomics at the point-of-prescribing to help patients start on the best treatment faster.

The program will also match eligible patients to clinical trials, improving patient outcomes and reducing overall costs at every point of the cancer care journey.

CVS is joining with Tempus, a technology company advancing precision medicine through the practical application of artificial intelligence in healthcare. For patients diagnosed with late-stage cancers, a web-based provider portal built into the e-prescribing workflow informs oncologists about the availability of Tempus's broad-panel sequencing tests at diagnosis.

CVS says it is the first company to make the latest in precision medicine accessible to more patients and further empower informed treatment decision-making based on a patient's genetic profile to give them the best chance for successful treatment and improved quality-of-life.

Payers can also adopt value-based contracts that employ providers to deliver high-quality care and reduce costs. Transform Oncology Care will leverage CVS Health's integrated systems and connected data to help identify patients who might benefit from preventive or screening services.

Transform Oncology Care marks another step forward in the journey to integrate precision medicine and genomics with routine clinical care.

Other major payers have started including precision medicine treatments in their plans as well. In 2018, Harvard Pilgrim Healthcare announced that it would be covering the costs of prenatal genetic testing for women with average-risk pregnancies. With more health plans supporting genetic testing and precision medicine, the use of these strategies will likely grow across the care continuum.

Journal Study Evaluates Success of Automated Machine Learning System TO PREVENT MEDICATION PRESCRIBING ERRORS

A study published in the January 2020 issue of The Joint Commission Journal on Quality and Patient Safety used retrospective data to evaluate the ability of a machine learning system — a platform that applies and automates advanced machine learning algorithms — to identify and prevent medication prescribing errors not previously identified by and programmed into the existing CDS system.

In the study, "Using a Machine Learning System to Identify and Prevent Medication Prescribing Errors: A Clinical and Cost Analysis Evaluation," alerts were generated retrospectively by a machine learning system using existing outpatient data from Brigham and Women's Hospital and Massachusetts General Hospital in Boston from 2009 through 2013.

The study analyzed whether the system generated clinically valid alerts and its estimated cost savings associated with potentially prevented adverse events. These alerts were compared to alerts in the CDS system, using a random sample of 300 alerts selected for medical record review.

Findings showed a total of 10,668 alerts during the five-year period. Overall, 68.2% of the alerts would not have been generated by the existing CDS system. According to the study, 92% of the random sample of the chart-reviewed alerts were accurate based on structured data available in the record, and 80% were clinically valid. The estimated cost of adverse events potentially prevented in an outpatient setting was more than \$60 per drug alert and \$1.3 million when extrapolating the study's findings to the full patient population.

Proscia and Johns Hopkins Team Up TO HELP PATHOLOGISTS

Philadelphia-based digital startup Proscia has teamed up with Johns Hopkins School of Medicine to develop applications that incorporate AI into pathology.

The platform helps pathologists scan samples faster and evaluate those that need a scientist's attention, versus those with negative results. With AI, the technology can learn what to scan for, find areas in need of attention, and flag them for the pathologist.

Founded in 2014, Proscia has primarily focused

on finding more efficient ways to treat cancer but has also pivoted to work on other specialties. The company's target market right now is Europe and the Middle East because those areas are at least two years ahead of the U.S. in terms of digital pathology options.

According to a study from London's Royal College of Pathologists, only 3% of U.K. pathology labs have enough pathologists.

The company plans to eventually move to the U.S. market where it hopes to pitch insurance companies to reimburse it for the reads, similar to the way pathologists are paid today. The company was also named to the CB Insights Digital Health 150 list of the most promising digital health start-ups.





SAVE THE DATE



PharmaVOICE is excited to announce the sixth annual **PharmaVOICE 100 Celebration** – an event that convenes the most influential and inspirational leaders from across all sectors of the life-sciences industry. PharmaVOICE's positioning allows us to bring together these inspirational leaders in a unique format allowing for much-needed collaboration through sharing ideas, insights, and business perspectives, while enjoying the opportunity to expand personal and professional networks.

Thursday, September 10th

The Lighthouse
at Chelsea Piers
Pier 61, Chelsea Piers
New York, NY 10011



WHO INSPIRES YOU?
WE WANT TO KNOW!

The PharmaVOICE 100 are leaders in research and development, marketing, technology, creativity, strategy, medicine, etc. They positively impact their peers, their colleagues, their companies, their communities, as well as the industry at large through their actions.

The PharmaVOICE 100 set industry trends, their passion and conviction create opportunities out of obstacles. They are innovative and have the ability to think outside-the-box. They develop breakthrough strategies, products, and services. They are known for pioneering new paths and lifting their companies to new heights. They also take the time to mentor the next generation of industry leaders.

NOMINATE SOMEONE WHO INSPIRES YOU!

Deadline: April 1st

www.pharmavoices.com/100



AI in Healthcare Market WORTH \$31.3 BILLION BY 2025

The global artificial intelligence in healthcare market size is expected to reach \$31.3 billion by 2025, growing at a CAGR of 41.5% over the forecast period, according to a new report by Grand View Research, Inc. The rising demand to reduce healthcare costs, increasing adoption of precision medicine, growing importance of big data in healthcare, and declining hardware costs are some factors propelling adoption of AI technology in healthcare industry. Moreover, the rise in potential applications of AI-based tools in medical care and growth in venture capital investments are anticipated to aid growth over the forecast period.

Key findings from the report:

- ▶ In 2018, software solutions held the largest revenue share owing to the development of

AI-based software solutions for the healthcare sector.

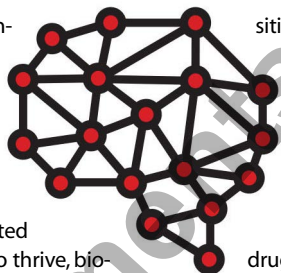
- ▶ Clinical trials held the largest revenue share in 2018, and this can be attributed to the growing focus of pharmaceutical companies on incorporating AI in automation of clinical trial processes.
- ▶ North America held the largest revenue share, owing to high adoption of healthcare IT solutions in the region and availability of well-established healthcare infrastructure.
- ▶ Asia Pacific is expected to exhibit the fastest CAGR over the forecast period, owing to growing AI-based start-ups, improving healthcare IT infrastructure, and increasing adoption of advanced technologies.
- ▶ Some key players are IBM Corporation; NVIDIA Corporation, Nuance Communications, Inc.; Microsoft; Intel Corporation; and DeepMind Technologies Limited.

Deloitte Study: INTELLIGENT DRUG DISCOVERY POWERED BY AI

Deloitte has launched a report, Intelligent drug discovery: Powered by AI, that explores the rise of disruptive AI for drug discovery companies and the challenges and opportunities for biopharma in using AI technologies to help find new, more precise, and targeted treatments. The study reports that to thrive, biopharma companies need strong AI divisions and a strategy for acquiring or collaborating with the best AI start-ups. Leaders with digital knowledge will likely need to integrate new strategies into research units. Agility and effective communication between departments with interdisciplinary skills in both business and technology will be a strategic asset.

AI and other innovative technologies that use data from multiple sources can enable more precise, targeted treatments that will help shift the health ecosystem toward a future where medicine is personalized, predictive, preventative, and participatory. This will also lead to new, more efficient, and effective models of care. Over the next decade, these shifts will have a significant impact on treatments and on patient outcomes, particularly in areas of unmet need.

As the number of compounds identified using AI increases, drugs capable of treating specific pathologies will likely become available. This tran-



sition could open a new future for the health industry, as a higher level of knowledge on disease mechanisms increases the number of treatments available and, in many cases, cures diseases that have not previously had effective treatments.

By 2030, an increasing proportion of drug discovery will be done in silico and in collaboration with academia. The timings from screening to preclinical testing will likely be reduced to a few months, and new potential drug candidates could be identified at increasingly lower costs.

Significant advances in the techniques used for drug discovery will evolve to provide the framework for precision medicine to become mainstream. Over the next decade, patients can expect these developments to have a significant impact on the effectiveness of their treatment options and on disease outcomes.

In other Deloitte news, Nitin Mittal, principal, Deloitte Consulting, is the winner of the first artificial intelligence Innovator of the Year award from AI Business. Mr. Mittal was recognized for his work in serving as a trusted advisor for clients implementing large scale data programs; use of advanced analytics and AI to drive insights; and advising organizations to make strategic choices and transform ahead of disruption.

GSK Recruits AI Specialists, DEVELOPING GENOMICS LAB

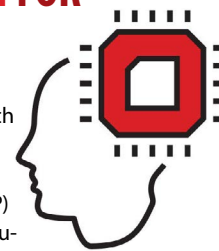
GSK is bringing at least 80 AI researchers and engineers onboard to ramp up its use of AI in 2020. The AI team will be spread across London, Heidelberg, San Francisco, Philadelphia, and Boston. A news report in the Guardian noted that competition for AI professionals is fierce. Among those to be hired will be researchers qualified at Ph.D. or master's level who will be working on AI drug development projects in London under a new fellows program. AI will be used to help find treatments for conditions such as cancer and autoimmune diseases, including rheumatoid arthritis. The main base of GSK's AI team will be next to a new laboratory focused on functional genomics in San Francisco that the drugmaker is building in partnership with the University of California. The AI drive is part of a shake-up of GSK initiated by Chief Executive Emma Walmsley.

Oracle Develops Patient Matching Platform FOR CLINICAL TRIALS

To explore better ways to match patients with the right trials, Oracle Health Sciences participated in The Opportunity Project (TOP) Technology Sprint: Creating the Future of Health. TOP is a 12-week technology development sprint that brings together technology developers, communities, and government to solve problems using open data. Oracle participated for the second straight year.

This year Oracle's entry builds on the last technology sprint by leveraging open datasets to explore more deeply the applications of machine learning (ML) and AI. In addition, it demonstrates how features for prospective trial recruitment will work with appropriate identity protection.

Oracle's submission creates a platform that might enable connecting patients and clinical staff through intuitive interfaces that provide data at the point of care. A graphical interface would allow physicians to track a patient's care journey and would indicate which clinical trial options are available. It applies AI to standardize data from clinical trial requirement forms to specify eligibility criteria. Patients can keep their identifying information from being shared, while allowing only their de-identified clinical data to be made available so they can receive information about new programs, clinical studies or therapies that may be of value to their care.



7th Annual

PATIENTS AS PARTNERS US

March 16-17, 2020 • Hilton Philadelphia at Penn's Landing, Philadelphia, PA

Demonstrating How Patient Engagement and Involvement Gets Done

2020 CO-CHAIRS



Jamie Troil Goldfarb
Cancer Veteran and Advocate



Marilyn Metcalf, PhD
GSK



Pablo Graiver
IQVIA

2020 KEYNOTES



Chip Bell, PhD
Customer Service Guru



Joanne Waldstreicher, MD
Johnson & Johnson



Darryl Sleep, MD
Amgen



Jeff Borghoff
Alzheimer's Patient Advocate

FEATURED BENEFITS

- Network with **350+ attendees**
- Gain input and experience from **80+ speakers** from pharma, biotech, academia, patients, advocacy, regulatory and non-profit
- **6+ hours** of networking to strengthen existing relationships with peers and forge new connections.

USE THE CODE
PVCE 15
FOR A
15% DISCOUNT

Learn more at: patientsaspartners.org