Monitoring the Digital Health Trends of 2019

Spoiler Alert: The Top Trend Is Not A Technology

May 2019

Over the last few years at Omnicom Health Group, we’ve tracked digital trends that have been shaping the healthcare space. The top digital trends that we monitor are ones that influence outcomes for patients and healthcare organizations. During the first half of 2019, we have seen evidence of 5 trends that are impacting healthcare delivery and marketing communications. But what may surprise you is that the number one trend is not a technology, but rather a principle.

1. Data Privacy 2.0
2. Artificial Intelligence
3. Digital Therapeutics
4. Wearables
5. Integrated Approaches to Medicine

To help keep you better informed, we have included references and links in all 5 areas.
The European Union’s General Data Protection Regulation (GDPR) laws went into effect in 2018 and have already started to have a global effect on data collection and management practices. The shift is evident as we’ve seen that users of data—not just owners of data—have become responsible for breaches. Data privacy and protection are receiving unprecedented scrutiny, and patients and healthcare brands are becoming acutely sensitive to how data is used in communications and marketing. As compliance of the law kicks into high gear in 2019, global companies are seeing value in data protection strategies that comply with regulations and retain consumers’ trust in protecting their data in the digital world. The key principles enshrined in the GDPR offer opportunities for healthcare and allied organizations to care for patients’ privacy and enhance brand loyalty and advocacy.

A hospital in Portugal was penalized by the Comissão Nacional de Protecção de Dados (CNPD) for failing to restrict access to patient data stored in its patient management system. Baden-Württemberg Data Protection Authority, the supervisory authority in Germany, penalized chat platform Knuddles.de for failure to secure the personal information of EU residents after a breach exposed email addresses of 800,000 users and usernames and passwords of more than 1.8 million users.

According to the 2018 Verizon Data Breach Report, one quarter of breach victims are healthcare organizations, which indicates that breach of patient data is a very present threat. However, an important consideration is the balancing of competing interests of data privacy and data sharing, and how it shapes policy. While the benefits of data privacy regulations such as the EU’s GDPR and the US’s Health Insurance Portability and Accountability Act of 1996 (HIPAA) are evident, there is a vast amount of data that holds potential for researchers to improve care or provide insights into diseases.
Further Reading

Data Protection 2.0

How GDPR Will Affect Privacy and Security Standards in US Health Care

Patients and Privacy: GDPR Compliance for Healthcare Organizations

Five Ways GDPR Will Change Healthcare

How Data Privacy Builds Patient Trust

First Hospital GDPR Violation Penalty Issued
Artificial intelligence (AI) has been named one of our trends for several years in a row. Due to continuous advances in technology, as well as its proliferation in healthcare, we don’t anticipate that changing any time soon. AI is now a necessary layer in the architecture of most new technologies from wearables to chatbots. While traditional AI platforms sit on the cloud and rely on collection of data, an optimized alternative is emerging in the form of ‘AI at the edge’ in which machine learning will take place in the immediate vicinity of the user by way of their own device or a home hub.

Three main areas we recognize as showing significant promise are:
1. Enterprise applications
2. Drug discovery and development
3. Neurotechnology and brain-machine interface

AI is enabling electronic health record (EHR) systems to process clinical notes through natural language processing (NLP) and provide enhanced diagnosis with AI-powered imaging and predictive algorithms. Olive, a healthcare software company, built robotic process automation (RPA) algorithms to integrate with EHR systems in order to automate tedious provider workflows.

Machine learning is being explored by several pharmaceutical companies for quicker, cheaper, and more effective drug discovery. GlaxoSmithKline (GSK) is one of many pharma companies that have invested in leveraging AI to aid drug discovery. In partnership with Exscientia, GSK is working on discovering preclinical candidate molecules in various therapeutic areas.

AI in neurotechnology incorporates artificial intelligence into neural-interfacing medical devices and finds applications in advanced prosthetics and bioelectronic medicine. Paradromics, Inc, a California-based startup, develops brain-machine interfaces for data transmission between brain and machines for the treatment of neurodegenerative diseases.
Further Reading

Decentralized AI Has the Potential to Uplift the Online Economy

Using AI to Improve Electronic Health Records

New AI Imaging Tool to Accelerate Critical Patient Diagnoses

Brain and Machines

How Artificial Intelligence is Changing Drug Discovery

Pharma Companies Using AI in Drug Discovery

Olive AI

Exscientia

Paradromics
3 Digital Therapeutics

A digital therapeutic (DTx) is a software-based intervention that is used to supplement or replace clinical therapy. Setting it apart from digital health and wellness solutions is the fact that these solutions are FDA-approved therapies with evidence-based outcomes.

DTx will impact healthcare primarily in 2 ways: (1) by complementing existing therapies (extending the value of traditional pharmaceutical treatments through companion software that provides adherence management and personalized treatment recommendations), and (2) by reducing the need for—or entirely replacing—traditional therapies.

Both of these approaches will affect how providers deliver care, patients receive care, and payers invest in care. The immediate areas of focus for DTx are in therapeutic areas that are not adequately addressed by the healthcare systems we have in place today. For example, chronic health issues such as in neurology and psychiatry, which can be addressed with cognitive-behavioral therapy.

Innovation in this area is still in its early stages with development being driven by startups. Wider adoption by pharmaceutical companies is likely to occur once these solutions are proven to be effective in the market, and once the incentives for providers and payers are aligned.

Abbott Laboratories received FDA clearance for Libre, a diabetes management digital therapeutic that comes with a companion mobile app. Libre is a continuous glucose monitor that allows users to scan their sensors against the app on their smartphone to record glucose readings.
Further Reading

Digital Therapeutics: Preparing to Takeoff

Exploring the Potential of Digital Therapeutics

Digital Therapeutics Get First Clearance

Combining Technology and Evidence-based Medicine to Transform Personalized Patient Care

FDA Grants Digital Therapeutic for Alzheimer’s Symptoms Breakthrough Device Designation
Growing out of the consumer wearables boom, we're seeing a prospering market for medical wearables emerge. Evolving beyond purely lifestyle functionality, the category has seen a shift toward focusing on more serious healthcare utilities and implications, such as monitoring drug interactions. Aside from the usual suspects (Apple and Fitbit), we've seen new players like Garmin drive innovation in the medical wearables space, exploring health and activity tracking for clinical trials and remote patient monitoring.

The perception of wearables is rapidly shifting, moving from a category of sensor-laden trackers to a more power-efficient, interconnected network of monitors that work in tandem. Furthermore, the application of AI and machine learning layers onto wearable devices will only continue to enhance and compliment both traditional and digital therapeutics.

With the incidence of breast cancer high worldwide, Cyrcadia Health is developing iTBra, a set of patches worn as bra inserts that monitor circadian metabolic changes in heat that correlate to accelerated cellular activity common in breast tumors. The data sent to the wearer's mobile device can easily be shared with physicians and could lower the number of biopsies that occur each year.

Atrial fibrillation is a common but serious heart rhythm disorder and is linked to a heightened risk of stroke. KardiaMobile and KardiaBand transform an expensive electrocardiogram test into a simple test done by wearables. The device indicates if the user's heartbeat is normal or if they may be experiencing atrial fibrillation. The band version works in sync with the heart rate sensor on the Apple Watch and alerts users if it senses irregularity.

TempTraq, an FDA-cleared baby wearable that can also be worn by adults, is a 48-hour single use, stick-on patch worn under the arm. The temperature monitoring device is able to provide continuous, real-time feedback to a mobile device, and alerts the user when their numbers exceed normal range.
Further Reading

Continuous Glucose Monitoring With Freestyle Libre

How Fitbit Is Trying to Transform Itself and Healthcare

Insurance, Wearables, and the Future of Healthcare

7 Wearables That Go Beyond…

Cyrcadia Health

AliveCor

TempTraq
Integrated Approaches to Medicine

We observed the growth of two integrated medicine innovations that are transforming patient care: telemedicine in addressing population health challenges, and precision medicine targeted at an individual patient.

Telemedicine is the use of a combination of connected electronic tools to provide long-distance clinical health care and administration. Telemedicine has been growing over the last several years due to growing costs of in-person care, declining reimbursement, and an aging population. Rapid advances in artificial intelligence, as well as its application in wearables and digital therapeutics, will only accelerate the growth of telemedicine as a seamless care delivery network.

The Centers for Medicare and Medicaid Services (CMS) is expanding the space for reimbursable telemedicine services so that eligible patients are not limited to specific rural areas. Such major changes to CMS reimbursement are likely to spur growth in adoption. MDLive, a Florida-based telemedicine provider, is partnering with health systems nationwide to provide telehealth services by virtually connecting patients with providers through mobile devices.

Precision medicine aims to customize treatments to individuals using tools such as pharmacogenomics. While it is still a recent development, it is a rapidly growing field with more than 200 drugs that have labels with information on pharmacogenomic biomarkers. Precision medicine in the long-term will allow doctors to use patients’ genetic and other molecular information as part of routine medical care. It would help predict which treatments will work best for individual patients and lead to a better understanding of the mechanisms by which diseases occur.

Treatments designed to target specific genetic changes in an individual patient’s cancer are being tested in precision medicine clinical trials. In late 2018, the FDA approved the marketing of 23andMe’s reports on pharmacogenetics. This is expected to assess whether the genetics will affect an individual’s ability to metabolize certain drugs. Commercially, Nestle is taking this concept into personalized nutrition using a blend of artificial intelligence and DNA testing to provide personalized wellness and diet recommendations.
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Conclusion

The increasing amount of real-world evidence, specifically around improved patient outcomes and healthcare professional engagement, has advanced the adoption and continued innovation of digital health trends such as digital therapeutics and wearables. But data privacy, the least technologic trend on our list, will have the most profound influence on the future of digital health, the associated collection and use of healthcare data generated by devices, and the advancement of the delivery of medicine. Moreover, data privacy laws will impact the way AI technologies can be applied in order to continuously learn from population healthcare data. Certainly, all of the trends are transforming healthcare communications. We can’t wait to see what the next round of innovation will yield. We welcome your feedback and thoughts.

A special thank you to Omnicom Health Group contributors Harrison & Star, CDM London, and CDM Princeton.

Want to know more?

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