Appnovation

Using Data Analytics for Better Health Decisions

Anton Morrison,

Vice President, User Experience, Appnovation

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About
The Author

Anton Morrison

VP, Experience Design
antonm@appnovation.com

Anton has been creating effective digital experiences and strategies for some of the world's most recognizable brands for over 20+ years. His expertise runs seamlessly through design strategy, user experience, with an excellent track record of effective client relationships.

Connect with Anton on LinkedIn
https://www.linkedin.com/in/anton-morrison-6aa772a6/

Working with life sciences and healthcare organizations, applying user experience design principles to data analytics, complemented by a multi-pronged digital strategy has been found to improve financial performance, operational efficiencies and the customer experience.

The Current State of Healthcare Decisioning: What's the Problem?

The current state of healthcare decision-making is like reaching into a big black box, closing your eyes, and hoping you pull out what you need.

The current set of tools in the market don't always make it easy or intuitive for healthcare professionals to access the facts and figures they need to make informed decisions. This holds true no matter where in the world they practice. In an environment of rising healthcare costs, the healthcare sector is endeavouring to do more with less, while still achieving positive patient outcomes. For this reason and more, healthcare technology professionals are looking to improve healthcare information systems, so that doctors and clinicians can access high-quality, easily understood and actionable data.

The traditional decision-making process has often left physicians and other providers in the dark when it came to getting the answers they needed. In some cases, practitioners even came to expect their data management systems would deliver sub-par information. Identifying and collecting key data from essential data points is the first step in data analytics and integration. While the healthcare and life sciences sectors are getting better every day at identifying and integrating essential data points for better healthcare delivery, there is still a long way to go.

Unfortunately, medical practitioners don't always have the data points they require, nor can they easily retrieve what they need. The World Health Organization has said the same thing, citing such things as mishandled data, data duplication and missed disease-prevention opportunities as among the key reasons for skyrocketing healthcare costs[1].

Without the right information, professionals are unable to provide the very best care for those who put their lives in their hands — creating a precarious situation for everyone. Those who want to do better are frustrated — limited by their available toolkit and unable to provide the answers patients expect. At the same time, people are spending more money than ever before on healthcare that some might consider inadequate.

According to Deloitte's 2020 Global Healthcare Outlook report, healthcare's financial, strategic and digital challenges are increasing [2]. In Appnovation's experience working with life sciences and healthcare organizations, applying user experience design principles to data analytics, complemented by a multi-pronged digital strategy has been found to improve financial performance, operational efficiencies and the customer experience.

1 https://lifesciences.ieee.org/article-archive/better-health-care-through-data/
2 https://www2.deloitte.com/content/dam/Deloitte/cz/Documents/life-sciences-health-care/2020-global-health-care-outlook.pdf

Essential Healthcare Data Points

Comprehensive Medical Records

Effective Patient Monitoring Tools

Accurate Risk Scores

Impactability Calculations

Meaningful Outcomes Data

Source: https://proskriptive.com/good-data-makes-it-easier-for-healthcare-providers-to-do-the-right-thing/

Healthcare's Financial & Digital Challenges

Financial operations and performance improvement

Health systems are working to achieve financial sustainability by reducing the cost to deliver and finance high-quality and effective care for patients.

Digital transformation and interoperability

Exponential advances and inoperability in digital technologies are helping cinicians deliver healthcare services in ways that consumers prefer to recieve them.

Source: Deloitte 2020 Global Healthcare Outlook Report, https://documents.deloitte.com/insights/2020globalhealthcareoutlook

Leveraging Data Analytics to Make Better Decisions

Many experts agree the medical field could reduce hospital costs by better using big data analytics. Mining specific information collected from electronic health records, insurance claims, prescription orders, clinical studies, government reports and laboratory results could save money by making it easier to identify tailored preventative and predictive care measures for patients. Added to this are new, innovative tools that measure and monitor patient health. Fitbit, Life Alert ® and the Holter monitor were among the first wave of healthcare data applications. However, today's healthcare apps are moving away from retroactive reporting towards interventions and predictive capability, and the data-related value at stake is over $300 billion, according to McKinsey & Company[3]. For everyone involved, advances in data collection are good news. Now, the question becomes, how do we streamline the many pockets of data that exist to gain a clearer picture of a patient's overall health needs?

One of the best examples of leveraging predictive analytics and data analytics for better patient outcomes is the recent announcement by DeepMind and Google Health. These two organizations have developed a new artificial intelligence (AI) system to help doctors detect breast cancer early. The researchers trained an algorithm on mammogram images from female patients in the US and UK, and it performed better than human radiologists. The results were published in Nature on Wednesday, January 3, 2020[4]. With results like these, it's clear an ounce of prevention is worth a pound of cure.

"The CDC has found that 75 percent of the nation's healthcare spending goes towards chronic diseases that are avoidable through preventative care, costing the economy $260 billion dollars annually[5].

By focusing more on preventative care, healthcare organizations add payers can lower their spending on treatment for chronic diseases. That's where data analytics comes into the picture.

3 https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-big-data-revolution-in-us-health-care
4 https://deepmind.com/research/publications/International-evaluation-of-an-artificial-intelligence-system-to-identify-breast-cancer-in-screening-mammography
5 https://healthpayerintelligence.com/news/how-preventive-healthcare-services-reduce-spending-for-payers

Top US Healthcare Apps by Type of Data/Analytic Capability
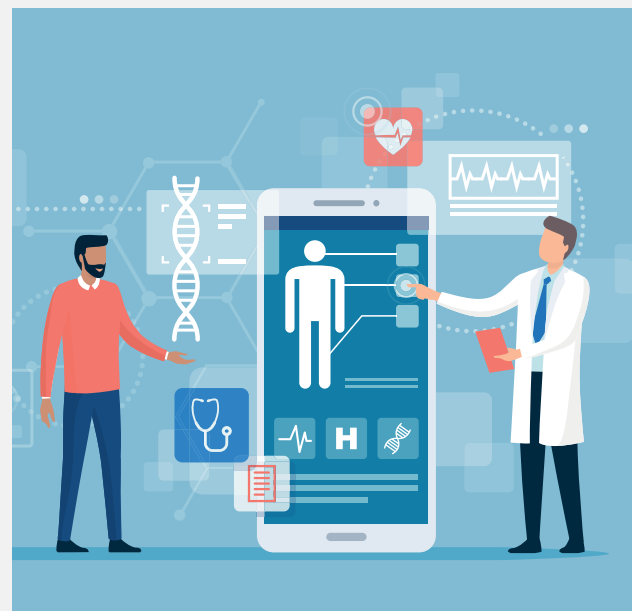

33% Retrospective Insight

23% Direct Intervention

19% Predictive Power

25% Data Management

Source: McKinsey & Company https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-big-data-revolution-in-us-health-care

"
This portal obtained more than 18,000 sign-ups and tangibly helped improve patient engagement and outcomes.
"

Better Quality Data: Good for Everyone Involved

Better Personalized Care

A health revolution is happening, thanks in part to patient advocacy and the emergence of more patient-generated health data.

The growing popularity of mobile health tools (wearables, apps and mobile devices, for example) is giving patients more autonomy, control and flexibility than ever before. They can now access their health records remotely and even communicate with their provider directly using these platforms and devices. Such levels of patient engagement can often reduce patient revisits and improve overall quality of care. That's because professionals have more and better information to work with.

Take the case of a Toronto-based health network that set up an innovative patient portal. This portal obtained more than 18,000 sign-ups and tangibly helped improve patient engagement and outcomes[6]. With such unprecedented cases of patient involvement, practitioners are benefitting. An article in the New England Journal of Medicine (NEJM) noted that healthcare professionals "make better health care decisions [when they have] the best available information… making it easy to do the right thing"[7].

Many other healthcare establishments and clinics say that customer experience is their main priority. Their comments prove how critical the patient-provider relationship is. According to the Deloitte Centre for Health Solutions, customer experience is even more important than cost control or process improvement[8].

What Drives Investment in Healthcare Analytics?

Improve member/customer experience	56%
Improve medical costs/affordability	49%
Reduce operating costs/inefficiencies	44%
Pursue financial profitability and revenue growth opportunities	44%

Source: Deloitte Center for Health Solutions 2017 US Health Plan Analytics Survey

9 https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-analytics-to-improve-outcomes-and-reduce-cost.pdf

6 https://www.dapasoft.com/interoperability-healthcare-helps-patients-improve-quality-care/

7 https://proskriptive.com/good-data-makes-it-easier-for-healthcare-providers-to-do-the-right-thing/

8 https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-analytics-to-improve-outcomes-and-reduce-cost.pdf
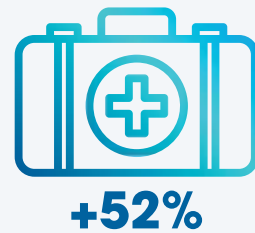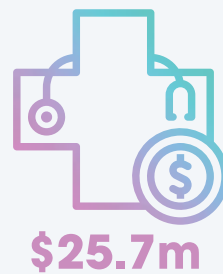
Snapshot of Cost Savings

Improving patient care and saving money has a lot to do with foreseeing possible outcomes. Predictive analytics generate detailed and real-time information for professionals so that they can make more informed choices and draw more reasoned conclusions. A 2019 survey by the Society of Actuaries found that 60% of executives use Predictive Analytics, AND 60% of those who use Predictive Analytics think it will save them more than 15% in costs over the next five years[10].

Using Predictive Analytics can:

Achieve supply chain efficiencies, sometimes as much $25 million[11].

+52%

Achieve supply chain efficiencies, currently the second highest operational costs for hospitals[12].

$25.7m

More Choices for Patients

For patients, the growth of a data-driven approach to healthcare offers another big benefit: patients have more choice in where they go to seek help. With more data, patients can identify things like the highest-rated providers, or search for the clinics best suited to treat their specific health issues. For providers, the availability of information is a self-improvement tool, giving them insight into their performance, along with improvement opportunities in healthcare delivery and patient service[13].

The Now and the Future: Data Driven Healthcare

What to Consider: Five Key Concepts and Renewed Values

In 2013, McKinsey created a value framework for healthcare stakeholders as a way to organize all the advantages that big data insights can provide, while still prioritizing patient outcomes over cost-savings.

These five pathways and guidelines help healthcare professionals identify the right tools when helping their patients:

Big Data Value

The following are the five key concepts, developed by McKinsey.[14]

Right Living	Right Care	Right Provider	Right Value	Right Innovation

Using these five key concepts, healthcare professionals can more easily evaluate which analytic tools or data management system best address their needs based on this value framework.

Innovation in Action

Clients such as Sutter Health, NantHealth and others have worked together with Appnovation to improve healthcare delivery and patient outcomes. Through an integrated technology system, doctors, hospitals, and health plans can now deliver evidence-based care that is more coordinated, collaborative and personalized[15].

Here at Appnovation, we have worked successfully with many health sciences clients on data management and analytics. One such project was with a major pharmaceutical company on an innovative new patient app. Anticoagulants are currently under-prescribed to atrial fibrillation (AFib) patients, which could increase stroke risk. Appnovation and our pharma client joined forces to develop a solution to empower patients through data analytics. The resulting app is a shared decision-making mobile platform, helpful to both patients and clinicians. It helps patients build their understanding of stroke risk caused by an irregular heartbeat brought on by AFib (rather than a heart valve irregularities).

This is just one of the many examples of what Appnovation has accomplished with our healthcare clients – and our work continues to grow in this area. By creating the best set of healthcare data analytics tools, we aim to touch as many lives as possible.

10 https://www.soa.org/globalassets/assets/Files/programs/predictive-analytics/2019-health-care-trend.pdf

11 https://healthitanalytics.com/news/top-4-big-data-analytics-strategies-to-reduce-hospital-readmissions

12 https://guidehouse.com/news/corporate-news/2019/supply-chain-analysis-2019

13 https://www.53.com/content/fifth-third/en/commercial-banking/resource-center/executive-insights/data-analytics-reducing-healthcare-costs.html

14 https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-big-data-revolution-in-us-health-care

15 https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-big-data-revolution-in-us-health-care

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Appnovation is a global full-service digital consultancy.

We help businesses advance and inspire, create positive transformation, and champion digital innovation. Our expertise and knowledge is your expertise and knowledge: At Appnovation, we seamlessly integrate strategy, user experience, development, deployment, training and support.
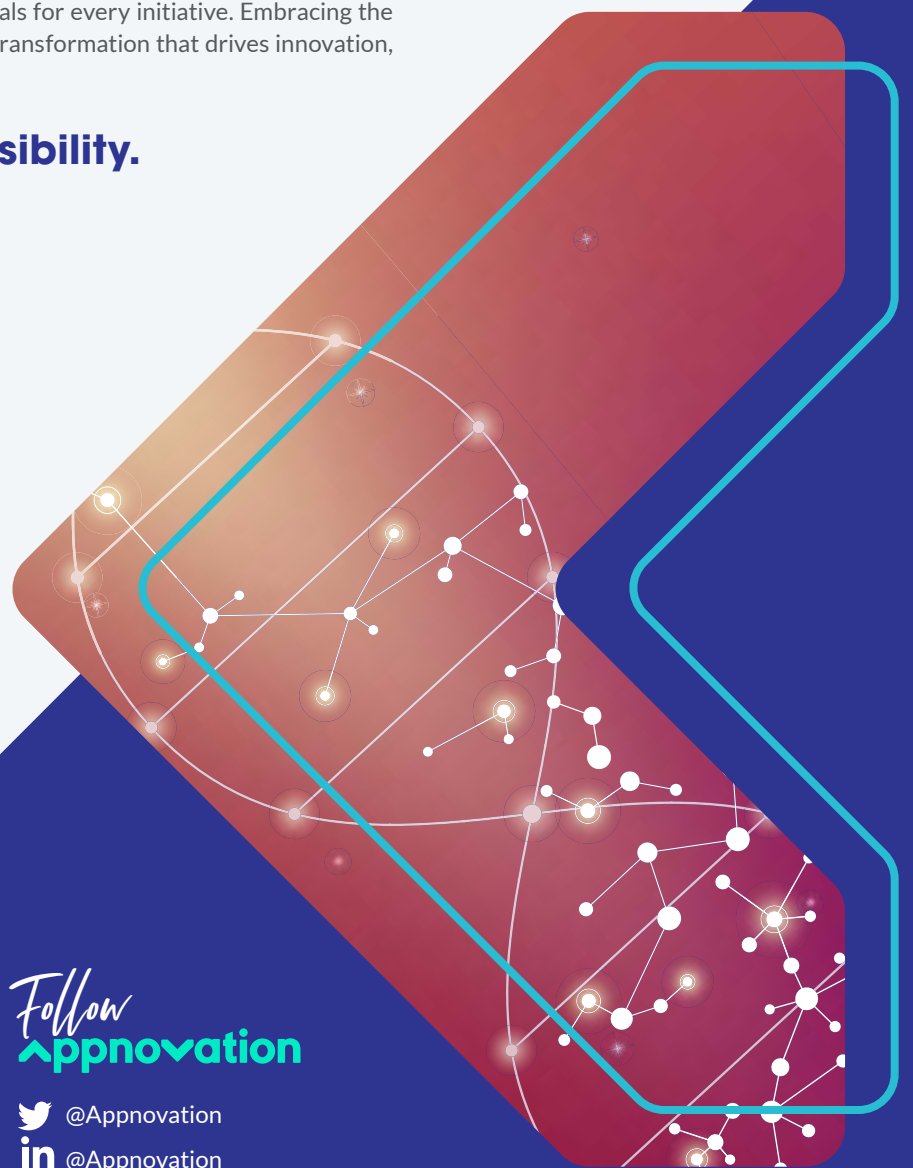
We create breakthrough digital solutions by engaging and collaborating with our clients to understand the individual creative challenges and goals for every initiative. Embracing the power of technology, our global team deliver digital transformation that drives innovation, growth and ultimately business value.

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