



# 4 Fundamental Ways Data Is Changing the Face of Healthcare



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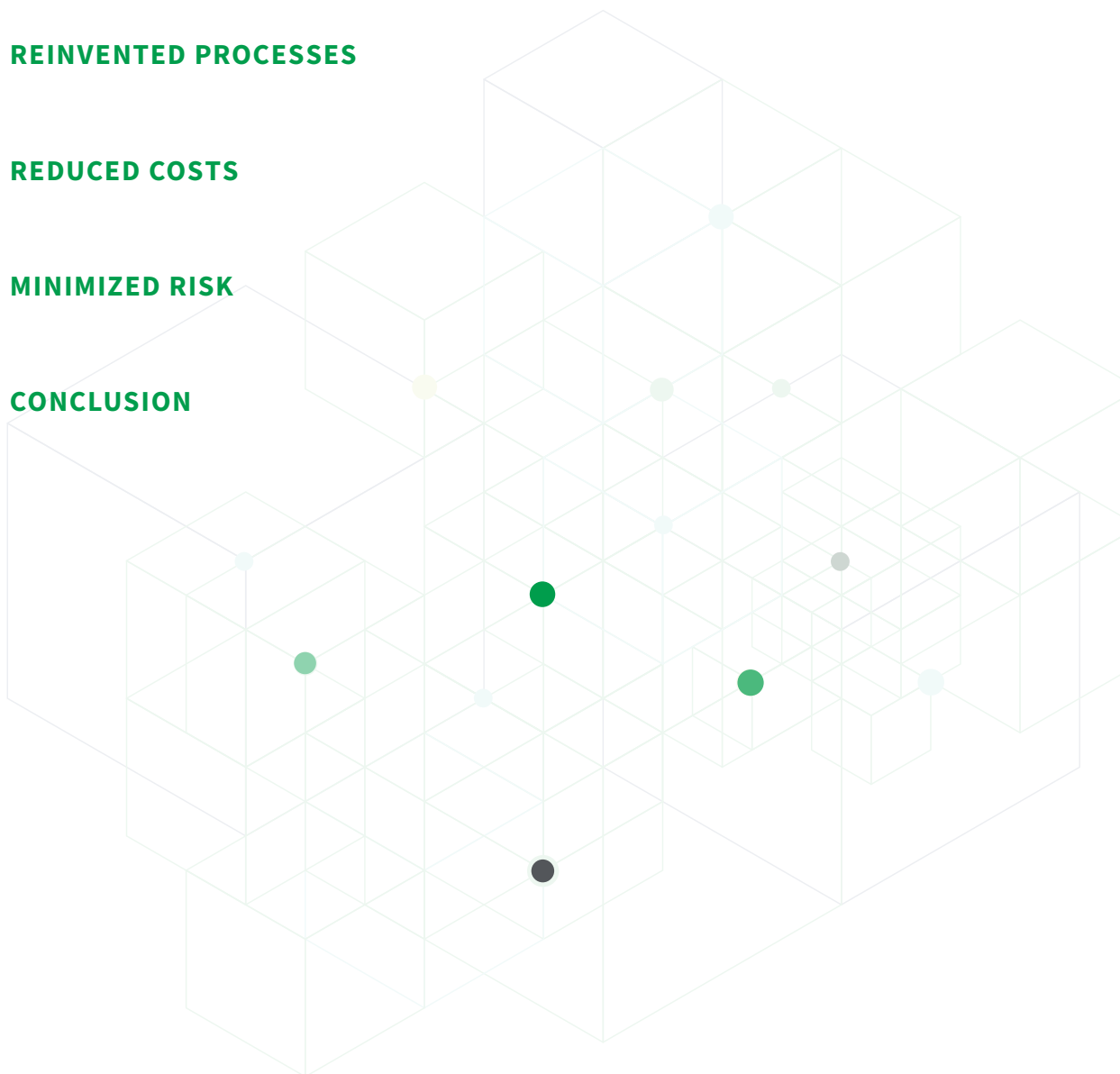
**IMPROVED PATIENT OUTCOMES**

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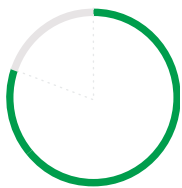
# Introduction

## The promise of data is tremendous. Where are the real results?

It's no secret that the volume of healthcare data is growing exponentially every year. Estimated annual increases are as high as 48%.<sup>1</sup>

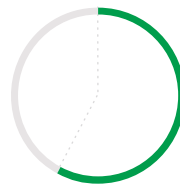
That growth can feel like a deluge, but it also represents massive – and unprecedented – opportunity. Understanding clinical variation. Improving patient outcomes. Reducing costs. Organizations around the world are adopting analytics with the goal of transforming both operations and care.

It's working:<sup>2</sup>



**82%**

of U.S. healthcare organizations using analytics are seeing clinical benefits, including improved patient care.



**54%**

of U.S. healthcare organizations are realizing improved financial reporting capabilities.

It's not surprising that the global healthcare data analytics segment is projected to increase to **\$34.27 billion** by 2022.<sup>3</sup>

So where do data-driven insights have the most impact in healthcare organizations? And what types of benefits can you expect to see?

**“The rate of change in terms of how quickly we are digitizing data in the health space is astounding. And when you start to combine that data with things like human resources, supply chain, characteristics of clinics and hospitals, provider training, reimbursement schemes, it just gets bigger.”**

**Stefano Bertozzi**

Dean Emeritus, UC Berkeley School of Public Health<sup>4</sup>

# How is data impacting healthcare?

**Every company is now a data company.**

*Forbes'* David Kirkpatrick famously claimed that “Now every company is a software company.”<sup>5</sup> The same thing has become true of data: Now every company – including every healthcare organization – is a data company. That’s because analytical insights have become an essential driver of more efficient operations and a higher quality of care.

The impacts of data-driven transformation in healthcare range broadly, but they tend to fall within four main categories:



**Improved  
Patient Outcomes**



**Reinvented Clinical  
and Operational  
Processes**



**Reduced Costs**



**Minimized Risk**

“**Qlik has transformed our care  
by empowering our people.**”

**DIRECTOR, OUTCOMES & IMPACT SERVICE, TEXAS CHILDREN'S HOSPITAL**



# Improved Patient Outcomes

**Drive better care and increase satisfaction with positive experiences.**

In the digital era, healthcare consumers are more informed and more empowered than ever. In this environment, healthcare organizations need accurate, up-to-the-minute data that improves their ability to care for patients.

What drives patient satisfaction – and reimbursement? Outcomes. Organizations that have a realtime window into performance gain a big advantage, with the ability to monitor, modify, and accelerate care.

Healthcare organizations are using analytics to:



#### Reduce clinical variation

- Identifying and stopping ineffective practices while reinforcing best practices
- Creating repeatable success with common procedures



#### Track and prevent readmission

- Identify patients at risk for readmission
- Track care coordination
- Monitor performance of post-acute care providers



#### Drive preventative care

Embedding social determinants of health, individual behavior patterns, and genetics data into the EHR, empowering providers to:

- Stratify risk
- Flag vulnerable patients
- Intervene earlier with personalized care
- Prevent admissions

Thanks to analytics, Australia's Lady Cilento Children's Hospital can predict patients' **estimated length of stay with an accuracy of 85%** (+/- 1 day), far exceeding other predictive models.

“**There's a new boss in U.S. healthcare: the consumer. The research paints a clear picture of a population displeased with its overall healthcare experience — and with rising expectations for transparency, value, and customer service.**”<sup>6</sup>

Strategy&  
The Birth of the Healthcare Consumer

# Reinvented Processes

## Optimize the administration and delivery of care for greater efficiency and improved outcomes.

Healthcare organizations face formidable challenges – including escalating costs, a lack of interoperability, data overload, and the pressure to improve patient care while reducing costs. To compete, they have to optimize clinical and operational decision-making. They're doing both with data analytics.

### Healthcare organizations are using analytics to reinvent clinical and operational processes, including:



#### Boosting performance

- Empowering executives to clearly see the relationships among critical financial, clinical, and operational data points



#### Improving throughput

- Optimizing the use of surgery suites and imaging resources
- Streamlining emergency department patient flow



#### Managing staffing and physical resources

- Tying together HR, staffing, and clinical systems to prevent shortages or overages
- Gaining real-time visibility into OR and ED flow, optimizing capacity and performance



#### Streamlining the pharmacy supply chain

- Monitoring and optimizing ordering through the pharmacy supply chain with understanding into how medications and supplies are being prescribed and used

The Australian state of New South Wales combined clinical, costing, and social determinants of health data into a single analytical application, identifying high-risk patient groups and variations in clinical care. In the process, they improved patient outcomes and **saved \$500+ million AUD.**

Australia's Melbourne Health analyzed the rate and incidence of patient falls, discovering that most occurred during shift handovers, break times, and patient meal times. They used this insight to change their shift patterns, **reducing the incidence of patient falls by 40%.**

“Qlik has helped us improve patient outcomes in orthopedic surgeries by being able to easily compare the practices and outcomes across several surgeons . . . reducing our costs, improving the patient experience, and improving our orthopedic program overall.”

#### Mark Miller

Senior Programmer/Analyst, Rockford Memorial Hospital

# Reduced Costs

## Uncover opportunities to reduce costs and get paid more efficiently.

Every healthcare organization has to contend with the pressure to reduce costs while improving patient care. It's a complex equation, and the stakes are high. And with the volume of available data increasing all the time, the task can feel overwhelming, if not impossible.

Fortunately, modern data analytics platforms are a perfect fit for this challenge. In fact, quickly surfacing relationships within giant and disparate data sets is exactly where today's best BI solutions excel.

### Healthcare organizations are leveraging analytics to reduce costs by:



#### Informing more efficient care

- Gaining an accurate, complete, and timely view into the performance of healthcare delivery services
- Informing the most appropriate care transition plan and post-acute care path to reduce care-coordination costs
- Guiding providers to deliver the right care at the right time, significantly decreasing costs associated with poor patient engagement and no-shows



#### Managing the workforce

- Tracking performance and improving efficiency across functional areas like Accounting, HR, and IT



#### Optimizing billing

- Reduce coding complexity and optimizing the EHR to enable a faster route to reimbursement



#### Streamlining the supply chain

- Gaining visibility into the medical supply and medication supply chain to proactively optimize order timing and quantity

After performing a clinical variation review on new pacemaker patients, an Australian hospital standardized care, seeing **increased dedicated OR time, decreased patient wait time, decreased length of stay, and \$100,000 additional revenue per procedure.**

“I've never presented to the executive team a more complete picture of multiple business cases with such an overwhelming response to a technology investment. [Qlik got a] truly remarkable response from the CFO and SVP of Finance!”

**Dr. Binu Mathew**

VP of Medical Intelligence and Analytics, Mercy

# Minimized Risk

**Get insight into patients, operations, and care to make smarter decisions around risk.**

Thanks to data, you can see more deeply into your patients – and your organization – than ever before. With that visibility, you gain power to minimize risk.

Healthcare organizations are leveraging analytics to minimize risk by:



#### Identifying and closing care gaps

- Combining data sources and building risk models that help identify chronically ill patients who aren't compliant with protocol and medications



#### Minimizing readmission

- Monitoring the performance of post-acute care providers to ensure best practices and reduce readmissions



#### Managing staff levels

- Monitoring and maintaining optimal staff levels to avoid patient safety risk and associated penalties



#### Managing the ED

- Optimizing the throughput of the ED so that all patients get seen and, where necessary, admitted in a timely manner

A U.S. health system stratified pneumonia into clinically significant groups and increased collaboration among providers to achieve a **21% reduction in pneumonia readmissions**, a **4.5% decrease in length of stay**, and a **36% decrease in mortality rates** for pneumonia patients.

“**The dashboard is easy to understand and use. It allows a clear, real-time update at any given time – from unscheduled care through to the provision and adjustment of appropriate workforce and resources to meet demand.**”

**Dr. Stephen Gulliford**

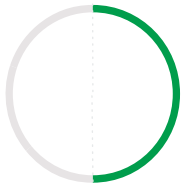
Accident & Emergency Consultant, Wrightington, Wigan, and Leigh NHS Trust



# Conclusion

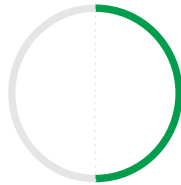
## Reaping the Rewards of Data Analytics: Get Set Up for Success

In most organizations undergoing Digital Transformation, technology is changing faster than culture.<sup>7</sup>



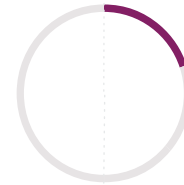
**50+%**

of enterprises already have data analytics, mobile technology, and private clouds.



**50+%**

of enterprises are researching or piloting AI, machine learning, and IoT for use in the next year.



**19%**

of enterprises have fully implemented a workforce strategy.

Data literacy is at the heart of the issue. In Gartner's 3rd annual CDO survey, "poor data literacy" was cited as the second-highest internal roadblock (35%) to success, second only to "cultural challenges to accepting change" (40%).<sup>8</sup> Clearly, a top priority for CDOs everywhere is creating a culture of data fluency, where workers understand data and use analytics to drive Digital Transformation.

What's the next step in your journey toward reaping the rewards of Data-Driven Digital Transformation? Whether it involves expanding data literacy, extending your use of analytics into new areas, or working toward any of the outcomes covered in this report, we can help.

**Start here →**

<sup>1</sup>The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things," EMC Digital Universe with Research and Analysis by IDC, April 2014.

<sup>2</sup>[http://www.cdwnewsroom.com/wp-content/uploads/2016/01/CDW\\_Healthcare-Analytics-PR-Report\\_FINAL.pdf](http://www.cdwnewsroom.com/wp-content/uploads/2016/01/CDW_Healthcare-Analytics-PR-Report_FINAL.pdf)

<sup>3</sup><https://www.inc.com/drew-hendricks/3-ways-big-data-and-analytics-are-making-big-changes-in-healthcare.html>

<sup>4</sup><https://www.inc.com/drew-hendricks/3-ways-big-data-and-analytics-are-making-big-changes-in-healthcare.html>

<sup>5</sup><https://www.forbes.com/sites/teconomy/2011/11/30/now-every-company-is-a-software-company/#1f17b6caf3b1>

<sup>6</sup><https://www.strategyand.pwc.com/media/file/The-birth-of-the-healthcare-consumer.pdf>

<sup>7</sup>IDG: 2018 State of Digital Business Transformation

<sup>8</sup>Gartner, Survey Analysis: Third Gartner CDO Survey — How Chief Data Officers Are Driving Business Impact, Logan, Valerie A., et. al., 30 November 2017.

## ABOUT QLIK

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Qlik's vision is a data-literate world, one where everyone can use data to improve decision-making and solve their most challenging problems. Only Qlik offers end-to-end, real-time data integration and analytics solutions that help organizations access and transform all their data into value. Qlik helps companies lead with data to see more deeply into customer behavior, reinvent business processes, discover new revenue streams, and balance risk and reward. Qlik does business in more than 100 countries and serves over 50,000 customers around the world.



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