# Data Evolution in the Cloud

## Healthcare's data urgency

### Better treatments, care and patient outcomes

The covid-19 pandemic has brought data sharing into sharp focus across healthcare and life-sciences organisations. The exchange of covid-related data between researchers, clinicians and government bodies has led to significant breakthroughs in tracking the spread of the virus, treating patients, and informing lockdown and social-distancing policies designed to keep citizens safe.

Even prior to this public-health crisis, however, data was already powering a huge range of vital activities in this sector, including medical research, drug discovery, clinical care and

the efficient delivery of services by clinics, hospitals and insurance providers. Meanwhile, smart, connected medical devices for patient monitoring and equipment tracking and the rise of new data sources, such as "omics" data (genomics, for example), have been coming online quickly. A recent study estimates that global digital health revenues—derived from precision medicine, telehealth/remote monitoring, online pharmacies, wearable devices and so on—will rise from US$350bn in 2019 to US$600bn in 2024.[1] The importance of data in all this cannot be overstated.

SPONSORED BY  ❄ snowflake®

---

[1] "Healthtech in the fast lane: What is fueling investor excitement?", McKinsey, December 2020.

The future data landscape is the focus of a recent survey, conducted by The Economist Intelligence Unit and sponsored by Snowflake, of 914 global executives across eight industries, including 116 from the healthcare and life-sciences sector (referred to simply as "healthcare" in this report). It finds that the sector is most likely to cite data and analytics as a critical factor for success over the next three years (by 46%, versus a survey average of 34%). Respondents in this industry view the top opportunity from data as developing or improving new products or services (35% versus a survey average of 29%). Next comes increasing customer/client satisfaction and experience (34%) and then revenue/profit growth (30%).

# 46%

of respondents from the healthcare sector cite data and analytics as a critical factor for success over the next three years.

**Figure 1: Biggest opportunities from utilising data-driven insights**
(Healthcare industry responses; %. Respondents could select more than one option)

Developing or improving new products or services
35

Increasing customer/client satisfaction and experience
34

Revenue/profit growth
30

Improving digital capabilities
28

Expanding customer base
28

Gaining market share
25

Raising employee productivity
25

Mitigating risks
21

Increasing efficiency of marketing spend
19

Improving external brand image
17

Attracting top talent
11

Decreasing time-to-market of products or services
11

Source: The Economist Intelligence Unit

## Unlocking health insights safely through data sharing

Data sharing is hugely important in healthcare, as the business of researching and promoting public health and delivering quality care to patients is shared across a wide range of both private and public organisations. Healthcare respondents are more likely than the survey average to purchase data from government bodies (37% versus 31%) and non-government/non-profit organisations (34% versus 33%), as well as to accept data from them without payment. They are also more likely to sell data to these organisations, too.
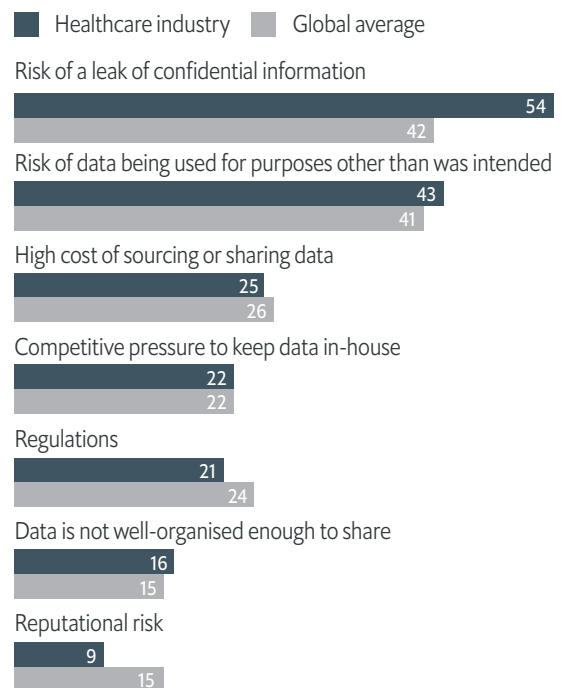
Given the sensitive nature of medical records, however, it is no surprise that data governance features high on this sector's list of concerns when it comes to data sharing. Healthcare respondents cite a potential leak of confidential information as their top barrier to sourcing and sharing data with third parties and score well above the survey average in this respect (54% versus 42%). They also report above-average concerns around the risk of data being used for purposes for which it was not intended (43% versus 41%).

However, as a sector long accustomed to working within strict regulatory frameworks and establishing strong mechanisms for data governance, healthcare is less challenged than other sectors by regulations. In the US, for example, regulators have published a long list of technical safeguards for organisations storing protected health-related information, focusing on transmission, security, authentication protocols and required controls over access, integrity and auditing.[2] Similarly, the European Union recognises health-related data as a special category and sets out specific safeguards for how it may be used and shared.[3]

Only 21% of healthcare respondents see regulation as a barrier to sharing with third parties (versus a survey average of 24%). But the focus on compliance will continue, with 28% of healthcare respondents saying that boosting their ability to deal with data-related regulation will be a top priority for their organisation over the next three years (versus a survey average of 25%).

**Figure 2: What is the biggest challenge to organisations in your industry with regard to sourcing data from and sharing data with external parties?**
(% of respondents; more than one option could be selected)

■ Healthcare industry    ■ Global average

Risk of a leak of confidential information
54
42

Risk of data being used for purposes other than was intended
43
41

High cost of sourcing or sharing data
25
26

Competitive pressure to keep data in-house
22
22

Regulations
21
24

Data is not well-organised enough to share
16
15

Reputational risk
9
15

Source: The Economist Intelligence Unit

---

2  "Summary of the HIPAA Security Rule", US Department of Health & Human Services, July 2013.
3  "Health data and data privacy: challenges for data processors under the GDPR", Taylor Wessing, June 2016.

## More data access for medical staff

One overriding goal stands out for healthcare: getting data into the hands of staff, so they can make data-driven decisions at the point of patient need. Respondents from this sector are the most likely in the survey to say that increasing employee capabilities around data is a top priority for the next three years (35% versus a survey average of 30%). Likewise, they are among the most likely to say that granting staff access to data analytics tools is a top priority (22% versus 18%).
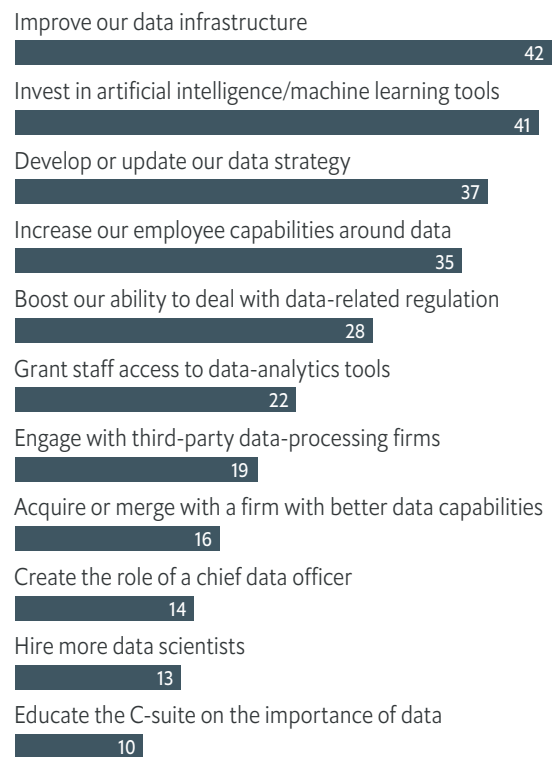
In some areas, machines will increasingly take the strain. Although the sector lags behind the survey average in its current use of artificial intelligence and machine learning (AI/ML), 41% cite investment in these tools as a priority for the next three years (versus a survey average of 38%), making this the second-highest priority for the industry, after improving data infrastructure.

This could result in important advances, particularly when it comes to dealing with a backlog of cases resulting from restricted access to healthcare during the pandemic. In the UK, for example, the National Health Service breast-screening service is trialling Mia, an AI/ML-based tool developed by start-up Kheiron Medical Technologies. Usually, two human radiologists are required to independently review results and decide if a woman needs to be recalled for further assessment.

But early results from these trials show that replacing one of these radiologists with Mia produces almost exactly the same results in terms of recall rates and cancer detection.[4]

**Figure 3: Top priorities to enhance data capabilities in the next three years**
(Healthcare industry responses; %)

Improve our data infrastructure
42

Invest in artificial intelligence/machine learning tools
41

Develop or update our data strategy
37

Increase our employee capabilities around data
35

Boost our ability to deal with data-related regulation
28

Grant staff access to data-analytics tools
22

Engage with third-party data-processing firms
19

Acquire or merge with a firm with better data capabilities
16

Create the role of a chief data officer
14

Hire more data scientists
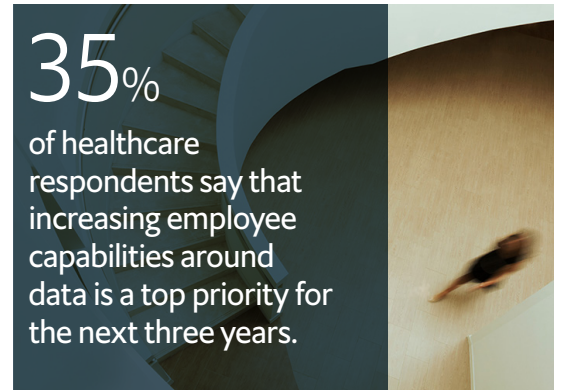13

Educate the C-suite on the importance of data
10

Source: The Economist Intelligence Unit

---

4 "New results show Mia, Kheiron's breast screening AI, could help solve the breast cancer screening workforce crisis and Covid backlog", Kheiron Medical Technologies, November 30th 2020.

## Hope in the data

In an historically difficult year for healthcare worldwide, the prospect of more data-driven medical interventions is a beacon of hope. Equipped with more data, from more varied sources, and better ways of analysing it, executives in the sector are rapidly moving towards more effective treatments and better patient outcomes, while simultaneously achieving new efficiencies in how time, skills and budgets are used.



35% of healthcare respondents say that increasing employee capabilities around data is a top priority for the next three years.

While every effort has been taken to verify the accuracy of this information, The Economist Intelligence Unit Ltd. cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out in this report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor.