Opinion:

Lead Healthcare's Digital Future with Data Management — Or Risk Falling Behind

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Effective data management is essential for healthcare organisations to minimise costs, stay competitive, and support emerging technologies like AI and IoT. By prioritising the capture, storage, and analysis of data, healthcare leaders can optimise resource utilisation and support value-based, high-quality patient care.

Healthcare is generating data at tremendous rates, with volumes doubling every two years.[1]

Despite this surge, a significant portion remains unseen and unused. For example, despite clinical registries, which collect information relating to diagnosis and care processes across healthcare institutions, only 10% of healthcare executives receive registry reports and only 50% of clinicians use registry data to drive quality improvement.[2] This highlights the gap between data generation and its effective use in healthcare decision-making.

WHY SHOULD YOU CARE ABOUT DATA MANAGEMENT?

"Improved data management correlates to enhanced patient outcomes and reduced healthcare costs and is essential in transitioning to a value-based healthcare system and personalised medicine."

Inefficient data management results in spiraling costs associated with regulatory non-compliance, data fragmentation, and an increase in operational costs.[3]

Examples of how healthcare oganisations are already delivering value from their data:

Assisting with the transition to value-based healthcare:
Determining and increasing value requires significant data analytics to identify, measure and improve patient outcomes.

Cost optimisation:
Data can be used to improve resource efficiency, staffing levels, billing and revenue cycle management, and supply chain optimisation. For example, claim data analysis was used to demonstrate the cost-effectiveness of non-invasive telemedical intervention.[4]

Quality Improvement initiatives and a reduction in errors:
Collection of quality data allows identification of improvement areas in patient care, resource allocation and processes. For example, clinical registries share data regarding quality of care and benchmarking between healthcare organisations, with well-documented benefits.[5]

Healthcare market and population trends:
Data can be used to provide information on population trends within a healthcare facility and emerging diseases and trends within the healthcare market.

Clinical decision support:
An improvement in healthcare delivery by enhancing medical decisions with targeted clinical information or patient information that has grown in popularity with increasing healthcare digitalisation. However, poor data quality from non-integrated/interoperable systems or lack of data standards can lead to manual work arounds and compromise the quality of the decision support.[5]

Personalised medicine:
Utilisation of data analytics on detailed patient data and specific health information allows the tailoring of treatments.

MAIN CONSIDERATIONS OF DATA MANAGEMENT IN HEALTHCARE

Most leaders are aware that they need to use their data and drive their business using "data-driven insights". But what does this practically mean and what steps do leaders need to take to achieve this? Evolving towards becoming a data-driven organisation is not as simple as choosing a data platform or software. With more data management platforms on the market and the increasing interest in data management, it is essential for leaders in healthcare to understand the complexity of these projects.

Four critical areas to focus on in a healthcare data project:

1 Variety of data formats

Healthcare organisations manage diverse data from various sources, including structured data like lab results and unstructured data such as visit notes and discharge summaries. The challenge in data strategy arises from differing formats and communication standards, highlighting the importance of interoperability and integration, since the lack of these qualities between medical systems is a well-documented barrier to data-driven projects.

2 Volume

Choosing the right storage solution is crucial for organisational growth, allowing data management projects to focus on the data itself rather than the IT system architecture. Databases must be scalable, integrated with the organisation's infrastructure, and support various data sources and structures.

3 Data governance

The use of health data often leads to significant public distrust, especially when private institutions are involved in data sharing. Building trust requires addressing issues related to data privacy, security, and cybersecurity, while ensuring compliance with current laws and regulations.[6]

4 Value

The final consideration and arguably the most important. Once data is securely stored and managed, organisations can focus on extracting value from data to drive organisational decisions and improve quality of care. Analysis and critic of data is an important aspect and principles such as FAIR for data should be considered to improve the accessibility and usability of data collected.[7,8]

KEY STEPS TO CONSIDER FOR DATA MANAGEMENT PROJECTS

The challenges surrounding effective and compliant data management can be overwhelming. Even when considering the areas above, many digital transformation and data management projects do not deliver the results hoped for.

These are the most crucial steps for success:

1

Digital maturation velocity:
Before data management can be considered, the current rate of digitalisation needs to be assessed. Digitalisation is often the first step in creating an environment which allows proper information extraction so that the best data can be used.

2

Define use cases:
Knowledge of use cases can help align business objectives with your data management project. Use cases may include rejection of claims due to mismatched provider data, or the identification, measurement and improvement of outcomes in transitioning to value-based care.

3

Building capacity:
Data management is not an IT project, and an assessment must be made as to whether an organisation has the right people with the right skills to carry out data management strategies. In healthcare, data management teams need to include data managers, IT, clinical staff and business owners. It may be necessary to hire external candidates with the required knowledge in the initial pro-

ject and organise a systemic program of knowledge transfer to upskill internal teams.

4

Due diligence regarding data governance maturity:
A data protection and governance maturity assessment which includes privacy and protection should be performed to assess the readiness of an organisation to undertake a data management project in compliance to local regulations.

5

Developing and automating a data management Plan (DMP):
A DMP bridges the gap between specific data management projects and high-level data governance frameworks and acts as a "blueprint" to manage specific data sets throughout the data lifecycle. Systemwide DMPs can be automated to streamline data rules. Automation includes data collection, storage, access control and sharing procedures, ensuring consistency and reducing human error.[9]

CONCLUSION

Effective data management has the potential to significantly transform healthcare organisations by enabling more informed decision-making, improving patient outcomes, and reducing operational costs.

By strategically addressing the key considerations such as data variety, volume, governance, and value, organisations can better harness the power of their data. Successful data management not only optimises resources but also supports the transition to value-based care and personalised medicine.

It also helps in ensuring compliance with regulations, building trust with the public, and overcoming technical barriers like interoperability.

Contact me if you would like to know more about making your data management more effective.

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Anna Reynolds is the Healthcare Lead at Arcondis, specialising in the integration of digital health technologies and devices within the healthcare industry. With a strong focus on global healthcare trends, Anna brings extensive experience in navigating regulatory frameworks, optimising patient outcomes, and driving innovation in health systems

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