

REAL-TIME DATA AND IT – IN THE HEALTHCARE SECTOR

Nowadays, IT makes it possible to automate lots of heavy manual processes. Often, it takes a long time to access data from systems, often employees have only a small amount of insight into the systems, and most often they have little or no expertise regarding the system architecture. If someone is in an organization where new questions are asked daily and the employee does not know which data to use to find the right answer, this is a waste of resources. Making the best possible use of big data requires a management decision. Investment should be made in effective IT systems and personnel with the relevant IT skills.

A hospital is an organization a state of continuous changes. But a lot of the changes are not carried out without evaluating or monitoring the impact on patients. Modern IT systems allow new changes to document these consequences here and now. This means that real time benchmarking of the correct actions and decisions can at should be done, so that management and personnel have ongoing knowledge and whether the changes are having the expected consequences for the patients that was wanted, when the decision was taken.

We shouldn't just be collecting data simply because we can or should or because it is required for a specific research project. Data is the source of the analytical organization, for the individualized treatment of patients, and the value-based healthcare system.

To succeed with Datadriven Management in the healthcare sector, the main focus should be on the following four areas.

- Public use of data
- Use of data within the healthcare sector
- Research, innovation, and public/private sector collaboration
- Security and transparency

The healthcare system needs to take advantage of the fact that data is available in a variety of places today and ensure it accesses all the health data that many individuals collect every day via apps, smart watches, and other tecknology devices.



Data-driven management requires investment in effective IT systems and personnel with right IT skills

To much of the data used for assessment and planning is data from the past. Processes involving quality assurance, analysis, and interpretation have often taken so long that current situation was not always apparent to for example the clinician when needed.

Article from "Data driven management in healthcare – inspiration for a change", published by SAS Institute, 2017. Read the entire report here: www.sas.com/nordic/healthcarereport



It should not be like that. Hospitals today can access data in real time. This means though that it is wanted and invested in. The techniques are in place.

The fundamental challenge with regard to basic IT systems is that output has frequently not been considered. There is often a disconnect between those creating management systems and those purchasing basic IT systems. When purchasing new IT systems, there is naturally a focus on price during the tendering process, and in order to save money components relating to output are often not selected.

What needs should be supported by real-time data? It is an important question, because not all data is equally necessary. Real-time data can support processes where the most value is created for the least possible effort. Smart utilization of real-time data can increase productivity in a hospital.

Real-time data is relevant for ensuring optimal patient care where it is necessary to correct some treatment along the way.

The result of initiatives in the health service often become available weeks or months after their introduction. Thus evaluation of their actual effect becomes difficult, impossible, or maybe irrelevant, and the opportunity to review them is lost. Specific examples are looked at in the following section.

Lack of Data at the Time of Decision-making

The trend is that patients' hospital stays are becoming shorter, and patients often leave the hospital before data enrichment has taken place. Therefore, there is a risk that the wrong decisions are made for the patient due to lack of access to relevant data at the time of making the decision. This could have potentially serious consequences for the health or life of the patient.

Methods of analysis have been developed so that based on raw data, information can be presented in the same way as clinicians are used to get other management-type information.

When patients Do Not Attend (DNA) for treatment

A big problem for the healthcare sector is when patients do not attend for planned treatment. It is expensive and is a problem that can and should be solved. One solution could be the use of data. By analyzing the data on DNAs more closely, it may be possible to predict which patients are most likely not to turn up. The first step could be to create a patient group in relation to the risk of DNA, and then to prepare predictable models that tells something about the DNAs at a particular hospital and the particular department.

Compliance with Guaranteed Hospital Waiting Times

In most of the Nordic countries, there is legislation governing how long patients should wait. Hospitals must comply with the maximum waiting times for life-threatening conditions including certain cancer packages. By systematizing data, it is possible to establish an alert system, so that departments are warned if patients have not received appointments within certain time limits.

Quick and Easy Access to Relevant Patient Data

The use of patient data is an important prerequisite for high quality in a country's health sector. Therefore, there should be guidelines that ensure that the use of data is possible with the requisite security to provide

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Big data is important and nice to have access to, but only if we put data into action!



treatment of the highest quality and safety for a population.

Registration and the use of patient data is a very valuable tool just as research based on data is essential for creating new knowledge about, among other things, diseases, types of treatment, and the side effects of medicines.

If health professionals and the patient have access to the patient's health record and also share the same data even if this involves different health authorities, e.g. hospital personnel can view medicines prescribed by the family doctor, then relevant information is available when it is required. The use of data is a prerequisite for being able to offer patients the best treatment.

How Does Society Best Utilize Large Amounts of Data

Digitalization is currently one of the most important drivers of technology and in many ways is helping to change our society and everyday lives with more digital services and smart solutions. This applies to almost all areas from agriculture to the finance sector, from the media to healthcare. Digitalization generates

large amounts of data, and Big Data gives rise to new and vast development potential. For this to be successful, the development of skills and cooperation structures between many sectors and institutions is necessary. The digital infrastructure needs to be strengthened and there should be a readiness to utilize the potential that technology offers.

The question is what is required to ensure the development of data-driven management and data as integrated decision support in the health service?

This is not just about the introduction of technology or digitalization; it means understanding that Big Data facilitates the conversion of large amounts of health data to knowledge. This provides the opportunity to use data to set particular objectives and also to follow up and adjust them.

Data supports both development and execution. Both aspects are important for an efficient organization.

Welfare technology is the key to welfare in the future. In recent years, the public sector has focused on and gained experience that means that IT and new technology are being used more intensively to modernize and

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make the public service in, for example, elementary schools, nursing homes, and the health service more efficient. Good service does not necessitate a physical meeting. In many cases, digital solutions or new technology can provide a more modern and efficient service.

High Quality in the Health Service's IT Departments

The healthcare sector tends not to focus on quality in the IT departments in the same way that there is a focus on clinical treatment. This is a mistake as inexperienced IT departments are expensive and lead to inappropriate solutions or a lack of appropriate solutions.

The hospital managers should ensure that the required skills are in place, and there should be ongoing education for IT personnel. Analytics expertise is an essential skill if the analyzing organization is to become a reality. Data analysts should be able to solve even complex problems with access to and knowledge of the available information/data, regardless of whether the data is structured or unstructured. The personnel should be trained so that they can solve problems using data-driven techniques and handle Big Data and assess data quality. Finally, it is important that IT personnel are able to communicate with managers, doctors, etc.

Release Data

We produce incredible amounts of data. If data is used correctly, it has the potential to revolutionize modern business management.

If the full potential of big data is to be realized, managers must be prepared to experiment. No one really

knows where the most useful results are. Therefore, it is rarely useful to make careful plans for Big Data analysis. The most surprising results appear when people have the courage to release data.

Collecting data that no one uses is pointless. And there is no point in using data that is unsuitable or out of date and which just does not answer the questions that have been asked. Furthermore, there is no point in collecting incomplete data. However, there is a duty to use data and information that has been collected, and ensure that what is supplied is real-time data where this can make a difference.

At the end of the day, this is about improving medical conditions and better quality of life for a long life. This is how we can use health data if we are innovative in the way, we think and act.

Health data can highlight both the quality and effect of treatment. If real-time data is valid and easily available, it can be an ongoing part of patient treatment, all while becoming a key management tool. Finally, data is essential for research. Data handling should be carried out safely and in a transparent manner. This is what people today demand.

If there is a global agreement to work to the same standards, this will be particularly advantageous for patients, because it will be possible to share larger amounts of knowledge. SAS Institute has well-developed analysis tools and much experience of handling large amounts of data and well placed to handle health and patient data defined in a global standard set of rules from, for example, the International Consortium for Health Outcomes Measurement (ICHOM)¹.

¹ <http://www.ichom.org>

