

Connected Patients in Light of Big Data

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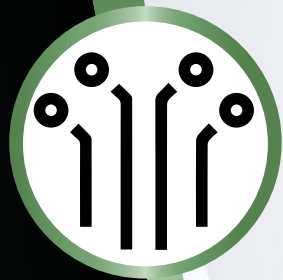
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Successful Digitalisation Pathways



The Main Challenges of Digitising Medical Facilities and How to Overcome Them

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An overview of the challenges and strategies for successful implementation of modern IT systems in medical facilities.



Key Points

- Hospital Information Systems (HIS) are designed to improve and digitise therapeutic and diagnostic processes.
- There are two types of medical systems that can be implemented: central systems and peripheral systems.
- Effective health IT systems improve the verification of data and increase the control, safety and effectiveness of patient treatment.
- Solution providers should ensure current updates and perform a security audit and detailed analysis of the implemented system to detect potential threats.

Changing laws. New regulations coming into force. Increasing demand from patients. These and many other factors make keeping medical records an ever greater challenge. For this reason, comprehensive IT systems implemented in medical facilities can help. However, will the implementation of a modern IT system in a medical facility not cause problems? We analyse this issue in this article.

Why Do We Need HIS Systems?

On the market of medical systems, there are many solutions that can be implemented in healthcare facilities. Their aim is to improve and digitise processes that have long been associated with carrying out therapeutic and diagnostic processes. Medical systems can be implemented as:

- Central systems, which are a kind of IT centre of a medical facility – HIS-class (hospital information system) systems.
- Peripheral systems – supporting the work of, for example, laboratory staff, radiological laboratories or central sterilisation room.

The main task of all these solutions is to relieve staff of the need to complete documentation manually, and to verify deficiencies on an ongoing basis. **Comprehensively completed medical documentation is the key to having full, up-to-date and consistent knowledge of the health of individual patients.** HIS-class systems often offer

functionalities that aggregate the most important information in one place, to avoid the need for tedious searching of documentation. The IT system has all the information, which improves the ongoing verification of data, but most importantly allows you to increase the control, safety and effectiveness of patient treatment.

Introduction of a New Routine or the Fight Against Habit

Unfortunately, **the implementation of an IT system is an action that we can, in a sense, compare to a double-edged weapon.** Streamlining and relieving staff is achieved only after engaging pre-implementation analysis, stabilisation of the implemented system and conducting a number of training sessions for staff at various levels. Unfortunately, the habit of filling out paper documentation or using another system is often among the difficulties faced not only by the management of the computerised facility, but also by the IT team. It is their duty to provide ongoing support for medical staff in the challenge of breaking deeply embedded routines. Humans are creatures of habit, and this fact must be faced in the process of modernising the work of a medical facility.

Outdated IT Infrastructure

Another often unexpected challenge that we encounter during



the digitisation of the work of a medical facility is the **need to ensure sufficient parameters of computer equipment**. The hardware resources of the facility (the parameters of the server and the computers available in the wards or in the offices) may turn out to be insufficient, and in extreme cases there may be no such equipment at all. Then, at the stage of planning digitisation, it is necessary to reserve the budget needed for expansion or purchase of new equipment in order to ensure full efficiency and comfort at work. Probably all practitioners will agree that there is nothing worse than a “stuck” system that slows down work and makes everyone frustrated. One of the jokes widespread among IT staff says: “If you want to know the temperament of a person, sit them in front of a computer with a slow Internet connection” – and there is a lot of truth in it. Probably everyone has at least once become angry at a non-working printer or a slow computer. The reasons for slowing the work down may be insufficient hardware resources or simply an inefficient Internet connection.

Elderly Staff and Digital Competencies

When considering the challenges of digitisation, it is also worth mentioning the average age of medical staff. **The ageing society is reflected not only among patients, but also among the staff who have to take care of them.** Of course, from year to year there is another wave of doctors, who can be safely classified as generation Y or even Z – that is, having grown up in the world of digital technologies. For such people, the implementation of the system in general or its replacement is not a major problem. It can even be safely said that these are people who often support suppliers and have a real impact on the development of new functionalities. Unfortunately, not all generations grew up in such conditions, and the majority of employees are still of generations that did not carry a laptop for computer science in their schoolbag. They have invaluable knowledge and many years of experience, so are a treasure of the medical facility. Yet, preparing to work in a new IT system is not easy for them. It often requires more attention from the trainers and the IT department. We know from experience that, in many cases, they are ambitious people who want to prove that they can rise to the challenges of the digital age, which undoubtedly improves the training process.

Software Deployment and Update Time

It is worth noting that the selected system should be available in the latest technology. The purchase of an IT system is a considerable expense, so it should be a purchase for years and allow long-term updates to the latest version. A good solution is also to choose a web application, which covers the requirements of responsiveness. These two elements allow you to:

- Use the HIS system on any operating system.

- Launch the application from anywhere via a VPN connection.
- Use the application on any device – desktop computer, personal laptop or even mobile phone.
- Shorten and streamline the processes of installing and updating the system.

Cybersecurity and Privacy of Sensitive Data

It is impossible to avoid the issue of data security when choosing a medical digitisation solution. The processing of highly sensitive data (medical data related to the personal information of individual patients) requires special security measures, in particular at a time of increasing cyber-attacks. During meetings with software providers, it is worth asking about the methods they follow to ensure the necessary security of their software. The methods that IT systems can offer for this purpose can be divided into two categories:

- In the context of control of the work of medical personnel.
- In the context of data leakage.

A solution that will allow you to ensure security in the context of data leakage will provide the necessary antivirus systems on the server infrastructure and computers available to staff. It is also worth making sure that the company offering the solution provides current updates, and it is good practice to perform a security audit and detailed analysis of the implemented system, which will allow you to detect potential threats. **Neither time nor money should be scrimped on where security is concerned.** Let's pay special attention to this.

Although the challenges posed by digitisation of the medical institution are many, the added value of such a process makes addressing them worthwhile. System selection, pre-implementation analysis, inventory of paths and documentation, implementation and training are complex and time-consuming processes. Many examples show, however, that **an efficient IT system and good knowledge of how to use it improve everyday work, reduce the number of paper documents generated, and save space that would otherwise be** allocated to archiving documentation. Complete medical documentation also allows you to avoid unfounded claims from patients. Such solutions give ongoing control of the status of medical services, verification of settlements with payers, and thus - **ongoing financial** control.

Let's return to the question from the beginning of the article – will the implementation of a modern IT system in a medical facility not cause many problems? With the right preparation and partner – no! It is worth preparing for the digitisation of the facility, in financial and substantive terms. Taking the appropriate steps will undoubtedly improve the entire process and ultimately help you go **smoothly through the individual stages** of implementation. This will guarantee satisfaction with the facility's work in the digital era. ■



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