

Rage against the machine:

How bad IT systems undermine nurses' work – and what to do about it

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SUMMARY

Every day, a nurse spends over an hour struggling with computers and IT systems instead of caring for their patients. Unnecessary clicking, copying and re-documenting, navigating and searching, dealing with crashing systems — this is not only frustrating and un motivating, but it endangers patients' safety, too.

What could healthcare providers do to fix the issue? To find out, we asked the nurses – something that is rarely done. Based on our research, these are the most common issues nurses around Europe struggle with:

- Fragmented systems landscape and insufficient communication are the biggest problems that lead to issues for both caretakers and patients.
- Problems regarding systems and tools cause a great deal of extra work and compromise patient safety.
- One fourth of the surveyed nurses feel that patient safety is endangered every week due to poorly facilitated systems.
- The systems are not designed for end users or for making care work smoother and more efficient.
- Short-term solutions and specific problem areas are targeted rather than comprehensive entities.
- By fixing usability problems, a nurse could use over 1 hour per workday for more purposeful and productive work.

In this report, we dig deep into the wants and needs of nurses. Understanding the end user of healthcare systems is crucial to help professionals focus on what they do best: caring for the people.

HOW OFTEN IN YOUR DAY-TO-DAY DO YOU ENCOUNTER PROBLEMS RELATED TO IT SYSTEMS THAT COMPROMISE PATIENT SAFETY?

Each week, 1 out of 4 nurses encounters an IT system-related problem that endangers patient safety.

INTRODUCTION TO REAKTOR HEALTH'S STUDY

Nurses are under a lot of pressure in today's work, dealing with the lack of resources, lack of competent workers, strikes, etc. As nurses spend an increasing amount of time using digital systems, and a diminishing amount on actual physical care, the importance of functional technology is emphasized. The COVID-19 pandemic has increased the use of and need for functioning digital systems for both patients and healthcare workers. As nurses report having days with only 20 percent or less of actual physical patient care, it's clear that systems used in healthcare should facilitate the work increasingly. Many organizations have only now started to realize the importance of these facilitating systems. How could these systems support the actual care work of healthcare professionals?

The focus of this study was to examine the current state of nurses' attitudes towards tools and systems used in their daily work, as well as to identify possible facilitators and problem areas. We surveyed 22 nurses working in different areas of healthcare around Europe.

WHAT WE FOUND OUT

The fragmented system landscape, poor communication, and non-intuitive UI are the biggest problems of digital systems in nurses' daily work. These issues can affect both patient and nurse safety. Hospitals lose resources on unnecessary tasks due to digital systems not being fit for nursing work. This does not only affect the efficiency and fluency of nurses' daily work but how the nurses feel about their job.

Nurses do not feel listened to when new systems are being developed for them. In order to really facilitate nurses' work, these needs and wishes have to be taken into consideration when building systems for healthcare.

Four main issues:

This is what the IT system landscape looks like to nurses

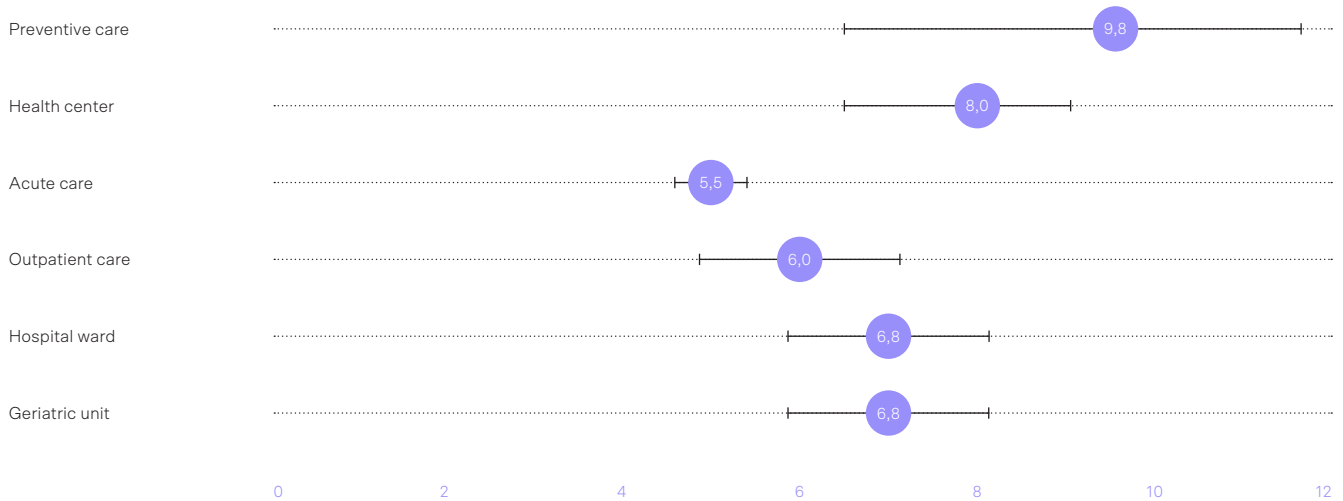
1. SYSTEM OVERLOAD

One of the biggest problems in nurses' daily work is the large number of different systems they have to deal with. The fragmented structure of the systems is challenging and time consuming.

Nurses reported using on an average over seven different systems or tools (ranging from 4 up to 12 different systems) during a typical workday.

How many different systems and tools do you need to use in your everyday work?

“To be honest, it feels ridiculous that there are so many systems that you have to follow and maintain, and communicate through so many lanes.”
— Preventive care, Finland



A nurse working in acute care was even unsure how many systems there were in use:

“I don't have any idea how many systems there are.... but there are a lot of different (systems and tools).”
— Acute care, Finland

One nurse said that the large number of systems is the biggest problem: “...The work is fragmented and (you have to) transition from one program to another and each program works with its own logic.”
— Preventive care, Finland

Nurses have to jump back and forth between systems and fill in the information into different places:

“The fact that it (the information) is in different systems brings a big challenge to this”
— Preventive care, Finland

Many of the interviewed nurses found it cumbersome that different professions within their departments, as well as in different hospitals or wards, use different systems. This means it's hard to holistically treat patients and to work effortlessly with other professions. In practice, nurses have to read from several different systems in order to get an overview of prior care and patients' situations. This isn't always possible, as many nurses don't have access to the other professions' systems, which makes it even more challenging.

Doctors and other professions often use different systems than nurses. Lacking communication between these systems leads nurses to re-documenting or copy-pasting the doctors' or other professions' notes to other systems. As they might not have access to the same systems, they have to call the doctor and ask them to document it in their systems or to orally report the documented notes.

Navigating between different platforms and searching for relevant information was also reported as a substantial problem. Nurses found it hard to get an overview of a patient. As information is spread out across different systems and not updated or transferred to the right places, nurses are afraid they'll miss something important. One ward had tackled this problem by having physical paper notes where they summarize the most important information regarding the patient and the patient's care, as it's so hard to find it in the systems.

2. LACK OF COMMUNICATION

In addition to there being too many systems in use, the systems don't communicate with each other. Patients have often been treated at other departments or organizations but their information isn't transferred to the new place.

This complicates work as nurses can't compare test results, measurements, and documentation or check previous treatment.

"That the different patient journals did not communicate with each other was highly irritating [...] (even though we knew that there was information in other systems) we could not do anything about it or see if there had been any progress." (Outpatient care, Sweden)

Messaging with colleagues or patients is often fragmented, and different departments use different messaging channels or tools to communicate. Some nurses found it hard to keep track of all the different channels. Some messages have to be checked and dealt with within a 2-hour window, which was reported to be stressful. Many patient messaging systems don't have any notification functionalities which makes them even harder to manage. This can also lead to messages from patients being missed and the patient's care becoming unnecessarily prolonged.

Jumping between systems is time-consuming and increases everyone's workload. It also increases the risk of mistakes.

"That is the difficult part when you don't get any notification or similar and then it also throws you out (logs out) every so often (if you are inactive in that system). So you don't have any idea what (messages) there are or what (messages) have come in until you log back in. [...] that's hard and it's something that you forget from time to time and then (messages) can pile up [...] So they are quite hard to follow when they are in a totally different program and you have to constantly log in, so that's cumbersome."

— Health center, Finland

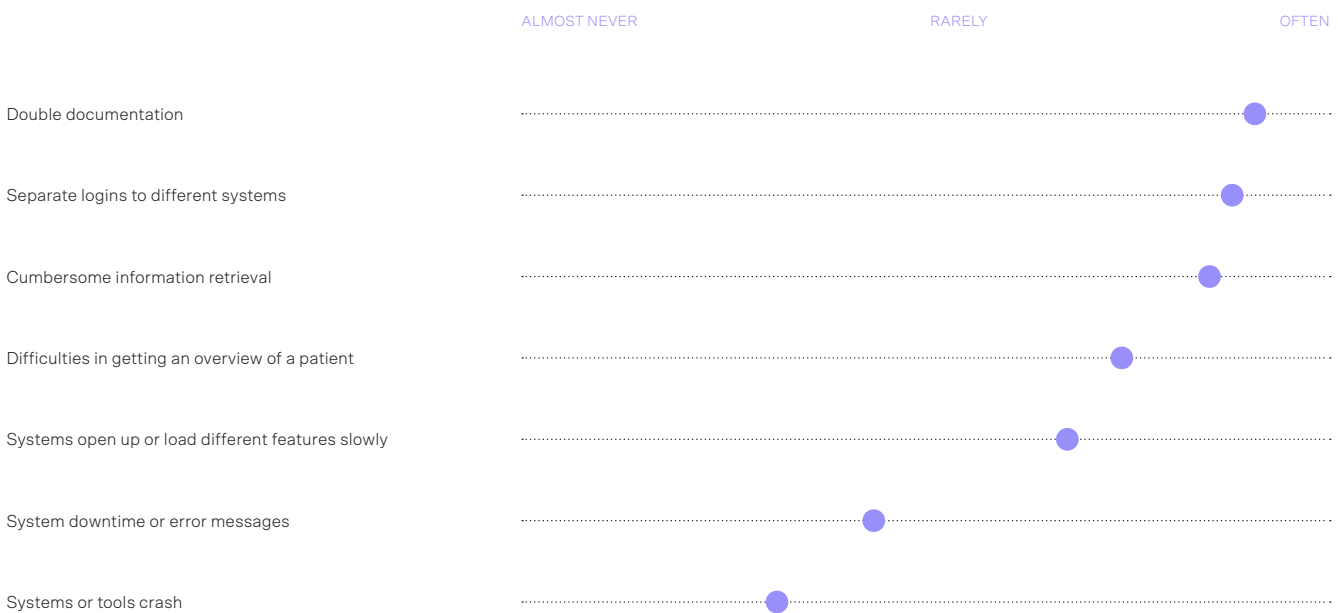
"To be honest, it feels ridiculous that there are so many systems that you have to follow and maintain, and communicate through so many lanes."

— Preventive care, Finland

How commonly do the following hinder your nursing work?

"The fact that the information does not flow (between different systems)... and that it is in different systems brings a big challenge to our work."

— Preventive care, Finland



3. BAD UI: NURSES USE SYSTEMS DESIGNED FOR DATA GATHERING, NOT FOR SAVING LIVES

According to the nurses, older systems often have more usability problems, such as long loading time and downtime, than newer ones. Older systems were also mentioned to have plain and bad UI. Poor usability and lack of intuitiveness and logic of the UI were mentioned by many of the participants of our survey.

Poor usability was, however, not only a problem among the older systems but with new systems as well. The biggest problem is the number of clicks it takes to fulfill a task. Nurses spend a lot of time trying to keep up with numerous different tabs and pages. Many tabs were mentioned to be futile for the actual work or task at hand, and a lot of the systems don't let the nurses continue unless the required questions or tabs were dealt with. On the other hand, in one major patient journal, patients' vital information can be deleted by anyone with only one click without any double checking.

Many participants mentioned that systems did not inform what was needed of the nurse in order to proceed or for the information to be saved to the right section. This can lead to tabs being clicked wrongly or not at all, and thus information being saved in the wrong places. Some nurses also reported information being moved to other folders in the systems after updates.

Search functions were often mentioned to be lacking or even missing. Nurses think that a working search function would be vital for a good and comprehensive overview of a patient and the patient's treatment. Today, systems are seldom clear in indicating where information could be found and where information needs to be saved.

"You can tell that these systems are built by someone who doesn't do the actual work as they don't serve us workers (and our needs) as they are too complicated and are not user friendly [...] too many clicks, you can't progress logically and you have to remember to do a lot of stuff (yourself)."

— Preventive care, Finland

4. THE BOOMING PAPER INDUSTRY AND ENDLESS PHONE CALLS

Bad IT systems increase the need for paper. And the more paper is used, the more nurses need to double document. Paper document use is also linked to a higher frequency of incidents endangering patient safety.

Healthcare workers use paper documents when they are, for instance, transferring patients to a hospital or vice versa. This could risk patient safety in itself as there is no control over who reads the patient information. Papers can also easily get lost and they are not updated as often as systems online. One nurse working at a geriatric unit had to double check each time if another ward had received the paper documents as they were often lost during transport.

At some wards, papers have to be printed and archived in separate folders. EKGs, lab results, questionnaires, etc. have to be printed out, filled in, or brought to a doctor to be examined, to then again be either archived, scanned into the patient journal, or filled in manually into the systems. One hospital ward was also reported to use a paper medication list for the patients. All nurses use the same sheets of paper and write down changes to previous medications. This leads to misunderstandings and uncertainty that can cause big issues to patient safety.

Bad systems also lead to increased phone use. Some nurses said that they're on the phone for an average of 6 hours or more per day, either tending to patients' issues or consulting with doctors or nurses. Nurses' work is often interrupted with calls which can compromise patient safety.

“There is very little time for the patient when you think about it. It's not many hours that are left for the patient, it's mostly by the computer.”

— Health center, Finland

Many nurses said that documenting vital parameters is one of the biggest everyday challenges. When checking vital parameters, most nurses wrote down the measurements on paper or their gloves and then went to the computer to type them into the system. At some wards, this had to be done several times a day. As some nurses were responsible for an entire ward, this could take up a considerable amount of time. Nurses reported that they sometimes have only 20 percent or less of their workday dedicated to actual physical patient care.

The nurses' experience: A glimpse behind the scenes

A deep-dive into how the nurses really feel about the failing IT systems.

RAGE AGAINST THE MACHINE

Irritation, frustration, and anger were the most commonly described feelings that issues with IT systems caused. Other sentiments that emerged were rage, stress, and an overwhelming feeling. Some nurses feel uncertain when they don't not have all the information regarding the patient. They are also scared for their own safety if they don't have any previous knowledge of a patient.

Nurses feel that they can't do their work properly and that problems with systems further complicate the situation. Putting energy into figuring out the system, fixing it, or just waiting for it to start working is exhausting.

"Even though it is not due to you, it creates a feeling of failure when you are late from the next appointment (due to systems not working or information not available) and you get upset for the previous (patient) that their information is not available even though it should. So of course it's concerning (if needed information is not available)."

— Preventive care, Finland

"Rage. I feel like punching through the wall. When you want to do it properly and effectively and then the system is not working and not saving stuff or similar, of course that irritates."

— Preventive care, Finland

"Discomfort. A wish to find a new job outside healthcare."

— Outpatient care, Sweden

"Frustration. If there are a lot of things that need to be sorted out, it easily causes a lot of stress when time is spent on looking for information."

— Preventive care, Finland

Many nurses said that getting to know the systems takes a lot of time and they feel uncertain using them. One nurse told that even after two years she didn't fully know how to navigate the applications.

One nurse summarized it this way: "You just have to adapt in this profession (in order to manage) and you (have to) learn the systems even though you would think it was bad."

— Hospital ward, Norway

Some nurses expect there to be problems with the systems already at the start of their shift. A nurse working in acute care was surprised if there was no mention of system problems when getting the oral report from the previous shift:

"You already expect problems to happen. It's rather that you expect that something is wrong than not. It's not like everything happens every shift but something does usually happen... Let's put it this way: when I get the morning report they include it in the report that (the used systems) worked without problems and that surprises you. I react more to that as I expect that something is going to lag (or not work)."

— Acute care, Finland

THE NURSES DON'T FEEL HEARD

Despite dissatisfaction towards IT systems, there's a silver lining. Nurses told us that carrying out tasks electronically instead of manually or over the phone is a good thing. IT systems also increase nurses' access to information.

The interviewed nurses said that they enjoy the work itself. They found their co-workers, patients, actual care work, and meaningfulness of work most valuable.

They just wished they had more time for all that instead of struggling with computers. As one nurse declared: "You could have done something smarter with that time...I could use that time to better the quality of life of those living at home".

— Home care, Norway

IT systems should support professionals' work best as possible – but reality is different

Everyday, nurses waste **1 hour and 4 minutes** on previously mentioned extra tasks caused by poorly integrated systems with poor usability

84 percent of the nurses stated that they rarely or almost never feel that their needs are heard to develop and improve the digital systems used. Simultaneously, they are the end users of these systems, spending 60 percent of their time on average using them. One nurse felt that the work they do is not appreciated or understood at the organisations' higher levels:

"No (I don't feel my work is appreciated outside my team). The motivation to help us down here doesn't exist up there because they don't have anything to do with us or the care. They don't know at all how it is down here for us who do the actual physical work."

— Acute care, Finland

Do you think nurses' needs are being listened to when improving digital systems and streamlining nursing work?

84%
Believe nurses' needs are listened to rarely or almost never

"I feel frustrated as nurses should not need to adapt to specific systems and change their way of working, but have nurses' needs and wishes as the starting point instead when developing new systems. You feel undervalued when your wishes are being ignored."
— Preventive care, Finland

16%
Believe nurses' needs are listened to often

"They (IT professionals) are rather fast in solving pressing problems where you need immediate help, but it often takes a very long time before smaller irritating things are fixed."
— Health center, Finland

The nurses' wishlist

If the nurses could fix just one thing about the current IT landscape, it would be cutting down on the amount of systems they have to use. The possibility to access different data through one system could streamline their work significantly.

Other things that could improve the usability of IT systems in healthcare, according to nurses:

- Smoother data transferring between different systems and professions
- Simple, clear and color-coded UI to make navigation and finding information easier
- Better search functions and filtering possibilities
- A simpler way of getting an overview of the patient's situation
- Solutions for remote work: video consultation and other methods to decrease the need to move back and forth between different locations
- Tablets and phones with applications that are easy to use

Some nurses have already used systems with aforementioned features and they've felt an improvement in their daily work. This goes to show that listening to the needs of the end users can result in better systems.

Gathering data and facilitating care work don't rule each other out. Designing user-friendly, intuitive and clear systems that support care work can help to easily and reliably gather data that would otherwise be lost. By upgrading nurses' and other healthcare professionals' digital systems, the overall care and well-being of both professionals and patients would improve.

About Reaktor Health

Reaktor Health helps healthcare service providers in Europe to develop tailored digital solutions that fundamentally transform the way the service providers interact with their patients and the services they offer. Our success with our clients is based on what we call EMR unbundling – creating value-generating solutions, such as a digital clinic, using a scalable and modular architecture that caters to the needs of a modern healthcare provider. Reaktor was established in 2000, employs 700+ digital professionals, and has offices in New York, Helsinki, Tokyo, Amsterdam, and Lisbon.

How the study was conducted

22 nurses working in different areas of healthcare in Finland, Sweden, Norway, Denmark and the UK participated in this study. The data was gathered primarily through one-to-one interviews. 3 participants answered the questions through a questionnaire. A follow-up questionnaire was sent out to the participants after the interviews with questions regarding the most common problem areas regarding digital systems in healthcare. The nurses worked or had recently worked with patients in their day-to-day work and used some tools or digital systems during their work day.