

CRITICAL TECHNOLOGY FOR CRITICAL CARE

THE STATE OF MOBILITY IN HEALTHCARE

HOW THE GLOBAL HEALTHCARE SECTOR CAN EMBRACE
MOBILE TECHNOLOGY TO IMPROVE PATIENT CARE

WELCOME



Data is revolutionizing healthcare. We have heard it said so often that it seems almost commonplace. But that makes it no less true. Using data-based treatments, clinicians can detect symptoms earlier, tailor treatments to the patient, track progress with greater accuracy – and much more.

Clinicians can only realize these benefits if the data available to them is complete, accurate and continuously up-to-date. For this to happen, frontline staff must have the right devices and the right systems in place. These devices must interface seamlessly with each other, so that no matter who is collecting the data, on what device, or using whichever operating system platform, the data must be quickly available to all authorized and relevant systems and users.

But is this happening? To answer this question, SOTI conducted a survey of frontline healthcare professionals across seven countries to find out how effectively they work with devices, data and patient-information systems. And, how satisfied they were with the experience.

The results are thought-provoking. Although the use of devices and patient-information systems is widespread, the necessary integration is often lacking. The research revealed a range of different areas in which, with often modest investments, providers can improve the services they provide and the outcomes those services deliver for patients.

SOTI's research also demonstrated a high level of enthusiasm among frontline healthcare professionals for greater investment in technology platforms and mobile apps which will help them serve patients better, spending more time on patient care and less on manual data collection and processing.

We know you will find this report useful as you work to improve patient care in today's mobile age.

Shash Anand, VP of Product Strategy, SOTI

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COVID-19 AND HEALTHCARE TECHNOLOGY

A third of respondents told the researchers that their employer had introduced new systems and technologies to help cope with the global pandemic.

Close to 20% said that existing systems had been unable to cope. And over half said that COVID-19 had significantly impacted the systems and technologies they use at work.

One recent study of hospital administrators found that on average, 80% of new spending, much of it on new technology, was directed at combating the virus.¹ These new technologies must now be seamlessly integrated at speed, if they are to deliver the immediate and long-term value expected of them.



HOW CLINICIANS WORK TODAY

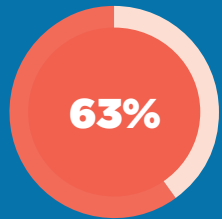
The first goal of SOTI's research was to find out how frontline healthcare workers collect, share, access and use patient information today. We wanted to know what devices they are using, how well those devices support their relevant tasks, and whether they are well integrated with each other and with the patient-information systems.

The first thing to note is that most staff have access to at least one connected mobile device. Over 70% of respondents said that their employer had provided them with a mobile device or a computer. Best equipped were staff in Australia and Sweden, with 78% in both countries saying their employer supplied them with a device. Least likely to be digitally enabled were staff in Canada (62%) and Germany (61%).

However, healthcare workers confirmed when initially collecting data from patients, before inputting the data into their systems, between 26% and 39% (depending on the market) say they are still using paper, pens and manual processes. Less than a quarter say they access general medical information through their mobile device. While just 18% use their device to access patient-specific data such as test results.



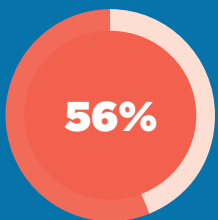
1. <https://www.cowen.com/insights/covid-19-medical-technology-spending/>



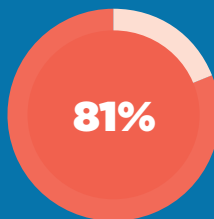
Mobile device/system failure every week



Respondents spent five hours a week fixing technical problems



Frontline worker's time is spent accessing and updating patient records



Had issues with systems they used to care for patients



Don't have access to tech support or apps to fix their devices

Other significant findings include:

- 63% of respondents said they experience mobile device or system failure every week.
- On average, respondents spent five hours a week fixing technical problems.
- 56% of a frontline worker's time is spent accessing and updating patient records.
- 81% said they sometimes had issues with systems they used to care for patients.
- 50% don't have access to tech support or apps to fix their devices.

Between 32% and 40% said that the information for any given patient was not all available in a single place. 42% said that data and patient-information systems were not well integrated. Additionally, 70% said that the online systems they use do not run on their mobile device.

LESS THAN THE SUM OF ITS PARTS

The picture that emerges is of a system which, due to a lack of integration, is not fulfilling the potential of what is possible with existing devices and platforms.

Often staff have mobile devices, but use them only to stay in touch with head office, for instance in the case of care workers in the field. The systems they use are not seamlessly integrated and, partially in consequence, are unreliable, something which requires staff to perform a significant amount of troubleshooting, taking them away from their core tasks.

A recent study of U.S. paediatric care in 225 hospitals found that, on average, these hospitals had 63 nurses each.² If each of these nurses wastes five hours fixing technical issues a week, the time lost is significant. To put this into context, the hospital (and patients) loses 315 hours of clinical care for every week of the year. That is the equivalent of almost eight full-time nurses working 40 hours a week. It is not difficult to imagine the difference the hospital could make to their patients' lives, and to its running costs, if it could somehow reclaim those hours.

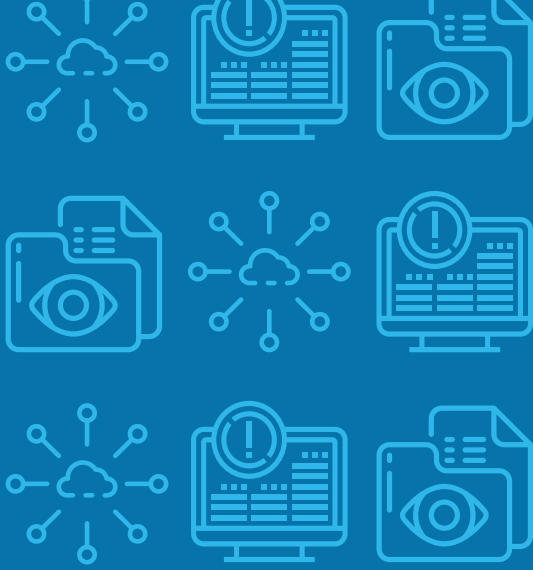
At anytime, recovering those lost hours would be a significant boost to any healthcare institution. In 2020, the U.S. economy is set to shrink by 3.5%³, the European economy by 8.3%⁴ and the Australian economy by 6%.⁵ With the extra workloads and likely budget constraints caused by the pandemic, finding ways to eliminate inefficiencies could be vital to ensuring that the provider can continue to deliver the required level of care to service users.

2. <https://qualitysafety.bmj.com/content/22/9/735>

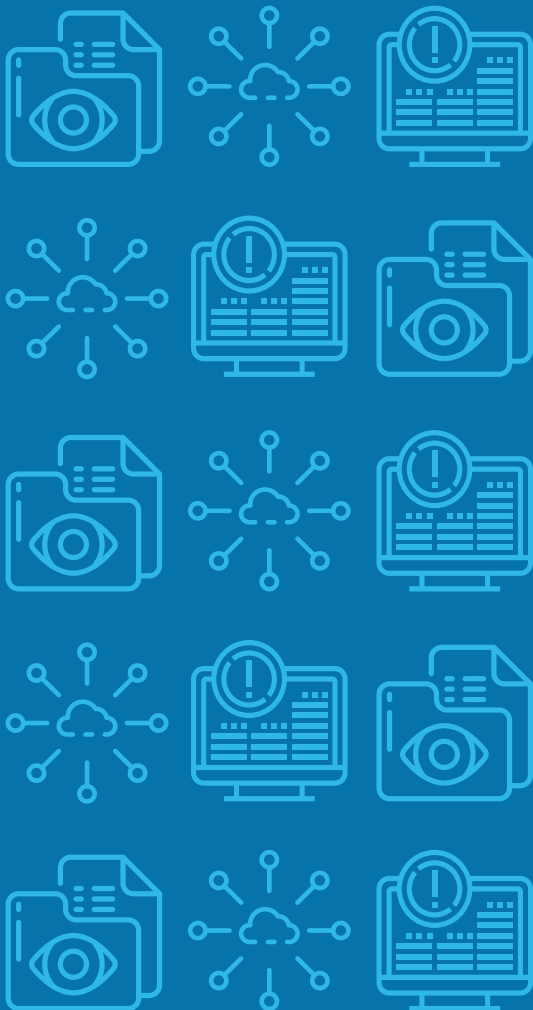
3. <https://www.conference-board.org/research/us-forecast>

4. <https://www.statista.com/statistics/1102546/coronavirus-european-gdp-growth>

5. <https://www.rba.gov.au/publications/smp/2020/aug/economic-outlook.html>



Perhaps more worrying still, only 76% agreed that patient data was secure when they accessed it from their work device. According to a 2020 study by IBM⁶, the global average total cost of a data breach is \$3.86 USD million.



ACCESS TO DATA

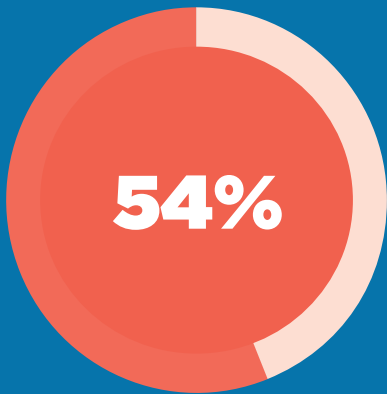
Using systems that are not properly integrated (e.g. systems that don't automatically share updated information such as medical records across all platforms) to manage all mobile devices, data and processes, causes pain points across all aspects of the patient care experience, clearly signalling the need for a mobile-first approach that leverages new technology investments. For example, not allowing the clinician to enter data at the point of contact with the patient, wastes time and increases the chance of manual error. This comes across most clearly when 34% of clinicians said they do not have access to all the information they need to provide patient care.

At best, this has the potential to waste time, and make it more difficult to achieve the best possible outcome for every patient. At worst, not having the right information at hand, particularly in an emergency, could lead to a clinical error and inefficient care.

Perhaps more worrying still, only 76% agreed that patient data was secure when they accessed it from their work device. According to a 2020 study by IBM⁶, the global average total cost of a data breach is \$3.86 USD million. In addition to that, the study found that nearly 40% of the average total cost of a breach accounted for lost business, these costs include; lost revenue due to system downtime, increase in customer turnover and an increase cost of acquiring new business due to diminished reputation. Now, looking specifically at the healthcare sector, the study found that the average cost of a data breach more than doubles to \$7.13 USD million. Equating to the highest average industry cost for such breaches. When you consider the amount of money, sensitive patient data and reputational risks at stake, you start to appreciate the size of the problem.



6. <https://www.ibm.com/uk-en/security/data-breach>



54% SAY THAT USING THE TECH THEIR EMPLOYER PROVIDES WASTES TIME THEY COULD BE SPENDING WITH PATIENTS.



THE NEED FOR AN INTEGRATED APPROACH TO SKILLS

Another area explored by the survey was knowledge and skills. When asked if their employer had provided its employees with suitable data security training, only 56% answered that they do. Again, this exposes healthcare providers and their patients to substantial security risks.

54% say that using the technology their employer provides wastes time they could be spending with patients. And, just half have immediate access to either in-person or app-based support to help them resolve technical issues.

Again, while it is encouraging that so many frontline professionals in healthcare have access to technology, the picture that emerges is one of skill gaps and a lack of support. Either one on its own might be sustainable, even if sub-optimal. Both together have the potential to impede effectiveness, security and compliance.

“It’s hard to see how frontline staff can be productive if many of them do not have the knowledge they need to use the devices their employer has given them,” says Shash Anand, VP of Product Strategy, SOTI. “And, without timely support, it is very hard for them to overcome this lack of knowledge and its consequences, without detracting from the quality of care provided to patients.”





**2.7
million**

IN OUR RESEARCH, WE FOUND THAT JUST 15% DO NOT FEEL THEIR DEVICES ARE PROPERLY PROTECTED AGAINST MALWARE AND CYBERATTACKS. IF YOU APPLY THIS TO THE NUMBER OF HEALTHCARE PROFESSIONALS THERE ARE IN THE U.S., 2.7 MILLION PEOPLE ARE POTENTIALLY WORKING ON AN INSECURE SYSTEM.



SECURITY AND COMPLIANCE

Asked what concerns, if any, they had about the patient record systems, 81% of respondents were concerned about the security of those records.

Over a third of respondents said they worried that patient records would be stolen or compromised in a cyberattack. A substantial minority, 24%, also said that they do not have confidence that the devices they currently use are adequately protected against malware or unauthorized intrusion.

These responses are particularly concerning when we consider some of the survey's other findings. For instance, 50% of respondents not having access to immediate help and technical support heightens the risk that potential security breaches may go unaddressed or even unnoticed.

Similarly, that 44% say they do not have adequate data security, which would be cause for concern in any context. In the context of a network and systems which may not be properly secured against cybercrime, and whose users do not have access to timely support, that concern is significantly heightened.

THE COST OF SECURITY - FINANCIAL, TRUST AND REPUTATION

The potential losses incurred by an organization are not just financial, there is also a considerable loss of patient trust and reputation. For example, in the United States there are 18 million healthcare professionals.⁷

In our research, we found that just 15% do not feel their devices are properly protected against malware and cyberattacks. If you apply this to the number of healthcare professionals there are in the U.S., 2.7 million people are potentially working on an insecure system.

Every one of those staff will process many hundreds of patient records during the year. Apply the combination of these factors described above to every major market, and the potential risk to patient records are significant.

7. <https://www.cdc.gov/niosh/topics/healthcare/default.html>

HEALTHCARE AND THE ADOPTION OF INNOVATIVE MOBILE TECHNOLOGY

The market for healthcare-related mobile innovation, including Internet of Things (IoT) devices, is forecasted to grow from a global value of \$72.5 USD billion in 2020 to \$188.2 USD billion by 2025 – that’s a compounded growth rate of 21% a year.⁸ In practical terms, this means that mobile devices (smartphones, tablets, smartwatches and more) will become increasingly common in hospitals, outpatient care and other clinical settings.

Recent examples of how innovative technologies can be used in healthcare include:

- A wearable device which monitors the vital signs of cancer patients, allowing staff to intervene to prevent discomfort.⁹
- Continuous glucose monitoring devices which alert diabetics as soon as their insulin levels are too high or low.¹⁰
- IoT devices worn by elderly patients in their own homes, which alert remote care staff if that patient falls.¹¹
- Non-invasive ingestible sensors that sit in the patient’s gut, monitor the diffusion of a selected drug and alert clinicians if medicine is being taken improperly.¹²

Even from these few examples, it’s clear that mobile technology has the potential to improve patient care and the quality of outcomes. But we cannot take this for granted. For it to happen, healthcare providers must be able to continuously capture, secure and process the often-vast amounts of data that connected devices produce.

On this front, the results of the survey are mixed. There are encouraging, albeit early, signs that healthcare providers are adopting IoT, with 22% of respondents saying they already use these devices and another 22% saying their employer expects to introduce them soon.

But as we have seen earlier in the report, a significant proportion of respondents reported problems with their patient-information and mobile systems. These included a lack of confidence in security, lack of data training and poor integration of different systems and devices.

These problems are disruptive enough in today’s settings. Add IoT devices into the mix, and you greatly increase both the chance of failure and of data loss. One recent study predicts that the volume of medical data present in IoT-enabled environments will double every 73 days.¹³

Only by ensuring that this data is secure, high quality, properly integrated into all relevant systems and available to everyone who needs it, can providers realize the massive potential benefits of the IoT revolution.

8. <https://www.prnewswire.com/news-releases/the-global-internet-of-things-iot-in-healthcare-market-size-to-grow-at-a-cagr-of-21-0-301105579.html>

9. <https://www.cancertherapyadvisor.com/home/news/conference-coverage/american-society-of-clinical-oncology-asco/asco-2018/cycore-system-may-improve-radiotherapy-associated-symptoms-in-head-and-neck-cancer>

10. <https://www.niddk.nih.gov/health-information/diabetes/overview/managing-diabetes/continuous-glucose-monitoring>

11. <https://360.here.com/smart-seniors-how-the-iot-is-keeping-elders-out-of-care-home>

12. <https://www.wired.com/story/this-digital-pill-prototype-uses-bacteria-to-sense-stomach-bleeding>

13. <https://www.forbes.com/sites/insights-intelai/2019/02/11/the-hospital-will-see-you-now>



THE FUTURE OF CONNECTED, DATA-DRIVEN HEALTHCARE

Through SOTI's research, it is clear that healthcare professionals throughout the world value the responsiveness and intelligence that mobile and data-driven technologies bring to patient care. Over half (55%) of respondents think that investing more in such technologies would help save lives. And 65% believe greater digital transformation is vital to prepare for future health crises.

Often, however, staff feel they do not have the skills they need to make the most of this technology; something reflected in the lack of access to training apps (50%) and the number of respondents saying they did not have access to the data security training they needed.

This lack of necessary skills comes in the context of a technology skill gap that is likely to make recruiting for skills extremely challenging, no matter where in the world a provider operates. In Europe, for instance, even before COVID-19 accelerated digital transformation across the economy, 58% of businesses were already having difficulty filling data and technology roles.¹⁴

It might seem that the healthcare sector is stuck between a rock and a hard place. Everyone from senior leadership right through to the frontline recognizes the importance of data, mobile technologies and intelligent patient-information systems. But the lack of budgets, the skills shortage and other factors make it extremely hard to realize the potential of these technologies.

This challenge is not insurmountable. For many providers, the key to moving their organization toward a data-driven and digitally enabled future is to work with an expert partner able to supply the required skills, technology, data expertise and device-agnostic integration.

By working with the right partner, healthcare providers can get near instant access to market-leading technologies, without prohibitive upfront costs. They can work with specialists who can integrate both corporately owned and employee devices securely with the relevant platforms, to enable seamless and continuous data sharing. And they can free up their own IT department to concentrate on mission-critical support, rather than dealing with platform issues.

14. <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20200221-1>



METHODOLOGY

To obtain the data it needed for the survey, SOTI interviewed 475 participants including homecare workers, nurses and other healthcare professionals across seven countries worldwide. All respondents were over 18 and worked for one of fifty major healthcare providers.



CONCLUSION

With the right expertise, the right technology and the right approach to integration, data will enable a transformation of global healthcare.

But often, current approaches to data collection, storage and sharing do not support best practices or enable providers to achieve the benefits that data-based technologies have the potential to deliver. Overcoming these limitations has, in the past, been challenging because it involved significant upfront costs and the investment of labour.

With the right partner, healthcare providers can enjoy quick and affordable access to the integrated patient-information systems and expertise they need. Working with market-leading experts, they can provide their patients with all the benefits of data-driven medicine, while at the same time controlling costs and ensuring compliance.

SOTI is a market leader that helps healthcare organizations transform their outdated processes, manage the full lifecycle of their mobile and IoT devices, diagnose and troubleshoot device issues in real-time and resolve problems in minutes. Empower your care providers by leveraging industry-leading mobile technology that can benefit your healthcare organization to perform more efficiently, respond faster and deliver exceptional patient care.

Find out how SOTI can help you accelerate your digital transformation and give your practitioners access to the best integrated mobile technology solutions designed for critical patient care.

Start your free SOTI ONE Platform trial today:

soti.net/mobicontrol/trial



ABOUT SOTI

SOTI is a proven leader at creating innovative solutions that reduce the cost and complexity of business-critical mobility and the IoT. Thousands of companies around the world depend on us to secure, manage and support their mobile operations.

Our two decades of success has built strong partnerships with leading mobile platform providers and device manufacturers. These relationships give us unparalleled insight into new technology and industry trends before they happen.

A proven innovator, SOTI has a clear vision, laser focus and a commitment to R&D that has made us the market leader at delivering exciting, new business mobility solutions. SOTI helps businesses take mobility to endless possibilities.



HOW SOTI CAN HELP HEALTHCARE PROVIDERS

SOTI uses its expertise, its technology and its data capabilities to help leading healthcare providers around the world achieve better patient outcomes and control costs with the SOTI ONE Platform. Ways in which SOTI can help you include:

- **Security:** Lockdown your managed devices anytime, anywhere, to maintain security, compliance and protect sensitive data.
- **Personalization:** SOTI works with you to develop and implement an end-to-end management solution to meet all your business-critical mobility requirements.
- **Ease of Deployment:** Use the SOTI ONE Platform's rich enrollment capabilities to rapidly deploy devices, content and apps.
- **Asset Tracking:** Your workers are constantly on the move, and so are their mobile devices. Visibility into where these assets are, and what they are doing, can improve your operations.
- **Integration:** Secures and manages all mobile and IoT devices and operating systems (OS) – even when you're working with employees' own devices as part of your mobility strategy.

TO LEARN MORE:

For additional information on how SOTI provides critical technology for critical care, visit soti.net/healthcare.

To learn more about the SOTI ONE Platform, visit soti.net/one.

You can also contact us anytime with your questions, or arrange a free demo at soti.net/about/contact-us.

SOTI is a proven innovator and industry leader for simplifying business mobility and IoT solutions by making them smarter, faster and more reliable. SOTI helps businesses around the world take mobility to endless possibilities.

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