2024

The State of Knowledge Management in Hospitals

Contents

Executive summary

In today's United States hospitals, finding the right medical knowledge in a timely manner is often a matter of life and death. As doctors and nurses juggle dozens of concurrent cases, improvements in the ability to reliably deliver appropriate care at scale can have a massive impact on human lives.

To that end, C8 Health conducted a national survey of medical professionals to better understand the current state of knowledge management in American hospitals. While hospitals have made progress in how they manage patient data through Electronic Medical Record systems, the clinical knowledge that providers require for care delivery is still dispersed between multiple systems, siloed, and disconnected from clinical workflows. Effective knowledge management systems have flourished in the enterprise world over the past decade. Still, hospitals have lagged behind due to their unique needs and differences pertaining to the user interface, workflows, and architecture of these systems.

Effective knowledge management is critical for delivering a high standard of care. When hospitals employ ineffective systems or inconsistent best practices, the results can be both harmful for patients and wasteful for the institutions. The survey results suggest that in today's hospitals, there is substantial room for improvement:

~1/2 of respondents reported having witnessed less-than-ideal care as a result of poor knowledge access.

13/100 of these incidents resulted in patient injury or death, with the number skyrocketing to one in three among healthcare professionals working in critical care.

Patients and their families are not the only people who feel the effects of poor knowledge management. More than half of doctors and nurses surveyed have had to extend their workdays as a result of their current processes. This figure rises to nearly 80% for emergency room clinicians. Overworked providers are especially susceptible to burnout, which can lead to poor patient care, medical errors, and high rates of staff turnover.

The human cost of suboptimal knowledge management can be severe, for both healthcare providers and their patients. To better serve medical workers and the people whom they treat, hospitals must deploy modern technology based solutions for effective knowledge management.

The survey results suggested three major areas for improvement: document management, search functionality, and interdepartmental accessibility. Healthcare providers must have streamlined access to their clinical resources, need to be updated on changes in guidance, and share resources with specialists from other departments. A knowledge management system with these features could not only ease the burden on overworked healthcare employees, but potentially save patients' lives.

01

Methodology

C8 Health ran a survey of U.S. hospital workers between February and May of 2024. 398 medical professionals, equally distributed across five specialties, took the survey. These included:

| **Anesthesia & Critical Care** | **Pediatrics** | **Emergency Room (ER)** | **Intensive Care Unit (ICU)** |

The respondents worked in a variety of hospital types, including teaching hospitals, large academic centers, community hospitals, and military hospitals. Hospital size ranged from "below 100 beds" to "more than 500 beds."

The professionals surveyed also represented a wide variety of disciplines. The breakdown was as follows:

28% REGISTERED NURSES

26% DOCTORS/PHYSICIANS

16% ADMINISTRATORS/MANAGERS

8% NURSE PRACTITIONERS

6% CRNAs

6% TRAINEES

10% OTHER (e.g. assistants, technicians, therapists)

After filtering for viability, the survey asked 16 questions about the knowledge management systems in the respondents' hospitals. These included queries about ease of access, trustworthiness of sources, time spent looking for information, and overall satisfaction with the systems in place.

02

The importance of knowledge management in United States hospitals

A good knowledge management system is vital in a hospital setting. Healthcare is a complicated field, from both functional and regulatory standpoints. Doctors, nurses, administrators, and other workers need to look up information constantly, whether it's how to perform a complex procedure, or what kind of paperwork they need to file for legal compliance. Healthcare is also multidisciplinary, so departments need to share information to coordinate care of patients who often require treatment from providers from multiple specialties.

Looking up guidelines and protocols quickly and accurately helps providers work more effectively and keep in line with institutional best practices. That, in turn, helps patients receive better and consistent care. Conversely, when providers struggle to access clinical resources, they often turn to external resources that have not been vetted by their institutions. The result is unstandardized care that is dangerous and wasteful.

These are not hypothetical scenarios. Respondents to C8's survey provided tangible evidence of ineffective access to clinical resources, which resulted in longer hours and less effective patient care. These observations came primarily from workers who accessed the systems multiple times per day.

> " When providers struggle to access clinical resources, they have to spend more time grappling with unintuitive systems, and less time treating patients."

03

Ineffective systems and inconsistent documentation

Respondents who consulted departmental guidelines and protocols once per day, or less, were generally happy with the results. However, as frequency of access increased, so did dissatisfaction. Many of the professionals with positive sentiments didn't actually have to consult departmental knowledge on a regular basis. Conversely, those with more experience using the system had largely negative things to say about the experience.

NEGATIVE SENTIMENT AMONG POWER USERS

Of the professionals surveyed, more than three-quarters (79%) of them rated their knowledge management access as "effective." However, more than half of respondents (58%) accessed their systems, on average, fewer than once per day.

On the other side of the spectrum, more than one-third of respondents (43%) accessed clinical resources at least five times per week. Within that group, one-quarter of professionals (24%) did not find their existing knowledge management systems to be effective.

> **The providers who rely on clinical resources the most tend to trust these systems the least."**
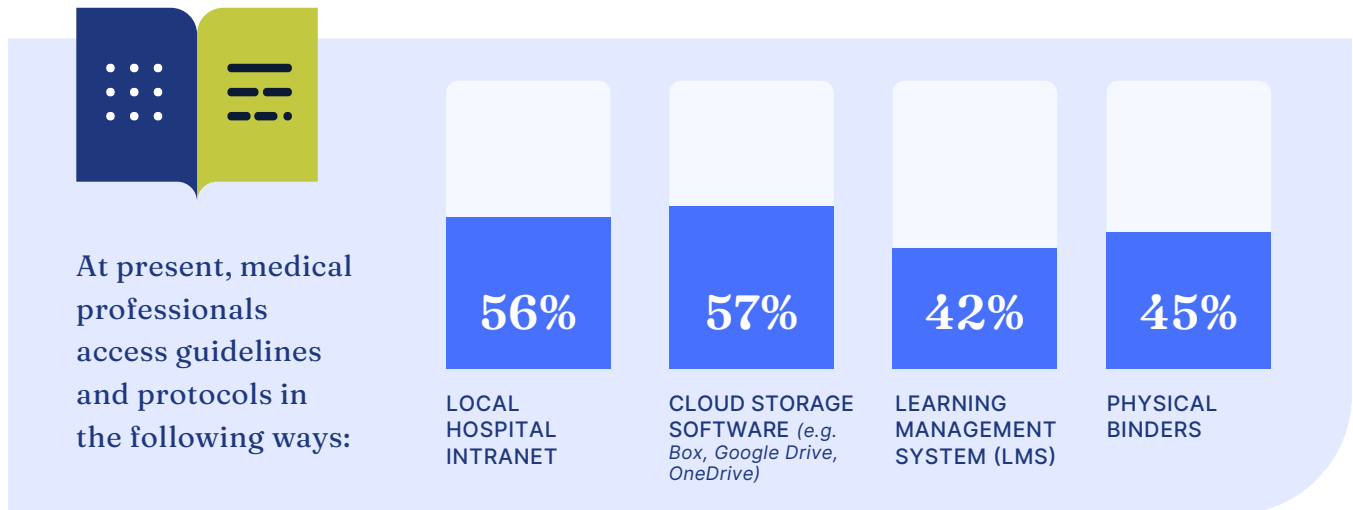
53%

of high-volume consumers of clinical resources do not find their systems to be effective.

In fact, the more frequently respondents interfaced with knowledge management systems, the more negative their sentiment became. Among professionals who accessed these systems more than 20 times per week, more than half of them (53%) did not find their systems effective.

Even when providers can find the information they need, it can take a long time to do so. More than half of respondents (57%) spent between 10 and 20 minutes each day looking up their departments' guidelines and protocols for various procedures. On average, that amounts to 65 hours per person, per year — more than a week's worth of work. About one in 10 workers (12%) had to dedicate even more time to information retrieval, averaging more than 30 minutes per day.

INFORMATION RETRIEVAL

Healthcare providers in hospitals must navigate a variety of disparate knowledge-sharing systems. Some of these systems are paper-based, which means that information takes more time to find, access, and share. Furthermore, information may show up in many different locations, rather than a single, definitive source. Dispersing this data among multiple, disconnected systems creates knowledge silos, which can lead to inefficiencies in care.

At present, medical professionals access guidelines and protocols in the following ways:

56%	57%	42%	45%
LOCAL HOSPITAL INTRANET	CLOUD STORAGE SOFTWARE *(e.g. Box, Google Drive, OneDrive)*	LEARNING MANAGEMENT SYSTEM (LMS)	PHYSICAL BINDERS

Access styles also varied considerably by profession. More than two-thirds of physicians (69%), for example, still relied primarily on physical binders. Two-thirds of administrators (66%) and half of registered nurses (49%), on the other hand, tended toward cloud storage software. Of the professions surveyed, only CRNAs (46%) seemed to prefer using a hospital's intranet.

The respondents also needed to access a variety of different resources on a regular basis:

› Local guidelines, protocols, policies, and procedures
› National and/or international guidelines
› Educational materials
› Checklists
› How-to videos

Not every protocol is available in every format. There is no way, for example, to access a how-to video in a physical binder. Furthermore, even if the desired information exists, there is often no clear way to find it.

Medical professionals currently spend a great deal of time on information retrieval. Moreover, providers tend to encounter more problems — not fewer — the more they use these resources for their practice.

> "
> Even if the desired information exists, there is often no clear way to find it."

The importance of search functionality

A competent search engine is at the forefront of any modern knowledge management system. With good search functionality, providers can find the information they're looking for right away. Without good search functionality, providers struggle to find what they need, and lose valuable time that they could instead spend treating patients. This is inconvenient in everyday appointments, and potentially life-threatening in emergency situations.

Almost one-third (29%) of respondents reported that their digital knowledge management system did not possess a clear search function. For new hospital employees, the situation was even less favorable. Four-fifths (79%) of trainees reported knowledge management systems with unclear or nonexistent search functionality.

Even when search features were available, they did not always work properly. Only one-fifth (21%) of respondents were able to find what they were looking for 100% of the time.

"
Half of hospital administrators and trainees reported antiquated knowledge management solutions."

1/5 Only one in five knowledge-management users find what they're looking for 100% of the time.

50% of hospital administrators consider their knowledge management solutions to be outdated.

Among the professionals surveyed, more than one-quarter of them (26%) believed that their hospitals' knowledge management systems were "outdated." Among two groups in particular, though, the numbers were much higher. Half of hospital administrators and trainees (50%) also reported antiquated knowledge management solutions.

05

Collaboration between departments

Interdepartmental knowledge management also presented an opportunity for improvement. Almost one-quarter (23%) of respondents did not have any official access to guidelines and protocols outside of their own departments.

This shortcoming affected more than one-third of professionals in:

- ANESTHESIA & CRITICAL CARE
- PEDIATRICS
- OBSTETRICS & GYNECOLOGY

37%

35%

33%
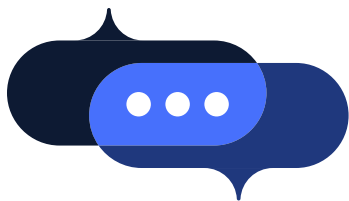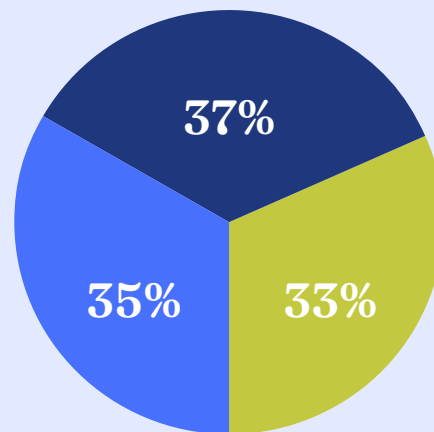
Collaboration across departments is particularly important in healthcare. Multiple providers often treat the same patients, so communicating that patient's needs across teams is paramount. A provider who can access interdepartmental guidelines and protocols may develop a more holistic view of a patient and their conditions. Conversely, a provider who can access guidelines from only a single department may not diagnose or treat a patient as effectively.

Taken collectively, these findings suggest that hospitals do not disseminate data as effectively as they could. To address these issues, administrators should standardize documentation, improve search functionality, and modernize digital databases. They should also implement technical solutions that integrate clinical resources into daily workflows, and provide relevant information at the point of care. Doing so could help streamline clinical operations and improve patient outcomes.

06

Consequences of inefficient knowledge management

Inefficient knowledge management can cause harm for both the patients and the professionals who treat them. The consequences usually involve delayed treatment or longer workdays. However, lack of access to clinical resources can and do escalate into life-and-death situations in a significant number of cases.

PATIENT INJURY AND DEATH

Suboptimal treatment as a result of poor hospital knowledge management is distressingly common. Almost half of respondents (46%) reported that they had witnessed less-than-ideal patient care as a direct result of poor information access. In most cases (41%), the ineffective care manifested as a delay in patient treatment. Respondents also reported unsatisfactory responses from patients (24%) and waste in hospital resources (20%).

However, the most striking statistic was that in 13 out of every 100 cases (13%), a lack of access to clinical resources translated into patient injury or death. Among Anesthesia & Critical Care workers, that number jumped to 31% — just shy of one-third of cases. It is no exaggeration to say that inefficient knowledge management can have harmful, or even fatal, consequences.

BURNOUT RISK

Poor access to clinical resources also has negative effects on the healthcare professionals who have to grapple with them. More than half of respondents (52%) had to extend their workdays specifically to search for clinical resources. For ER workers, the number was even more dramatic, with almost three-quarters (72%) of respondents having to work late.

Medical professionals are especially susceptible to burnout, which occurs when they face constant stress at work without an adequate support system. Hospitals can provide many resources to help providers, including reduction of the burden with bureaucracy and antiquated IT systems. Streamlining access to knowledge leaves providers more time for patients — and for themselves.

> "It is no exaggeration to say that inefficient knowledge management can have harmful, or even fatal, consequences."

72%

of ER workers have had to extend their workdays due to insufficient knowledge management systems

LOST TIME AND LOST MONEY

Longer work days can have profound psychological ramifications on hospital workers, but there is also a monetary cost. According to our survey, the average time spent interfacing with a knowledge management system was 20 minutes per session, four times per week. Based on statistics from the United States Bureau of Labor, the average hourly wage for a healthcare worker is about $40 per hour. That means that hospitals spend about $2,770 per employee, per year, specifically to look up guidelines and protocols. The overall expenditure could be tens of thousands of dollars for smaller hospitals, and millions of dollars for larger ones.

> "Hospitals spend about $2,770 per employee, per year, specifically to look up guidelines and protocols."

In short, being unable to access guidelines and protocols in a timely and effective manner has a human cost. Providers must work longer hours to compensate for inefficient systems, which can lead to stress and burnout, to say nothing of wasted time and money. Patients may receive substandard care, which, in extreme cases, could lead to injury or death. While improving knowledge management systems cannot completely eradicate these occurrences, it can mitigate a known source of risk.

The Cost of Outdated Knowledge Management

The average hospital worker spends more than

65 hours

per year navigating knowledge management systems

Hospitals currently spend an average of

$2,770

per employee, per year to look up protocols and guidelines

1/4

professionals do not have any official access to interdepartmental guidelines and protocols

~1/2

of providers had witnessed less-than-ideal care as a result of poor knowledge management, with 13 out of every 100 cases leading to patient injury or death

Conclusion

Inefficient hospital knowledge management systems have led directly to overworked providers and substandard levels of care. And yet, most providers (79%) believe that their knowledge management systems are ready for the next five years of advances in healthcare technology. Providers may simply have grown accustomed to the inefficiencies in their systems, unaware that better technology can streamline and simplify the process. Even so, some significant subgroups see difficulties ahead.

One-third of trainees (33%), for example, do not feel that their systems will keep pace with new knowledge over the next five years, and almost one-quarter of CRNAs (23%) and registered nurses (23%) agree with them. These providers rely on knowledge management systems to deal directly with patients in time-sensitive situations.

Providers in Anesthesia & Critical care are particularly skeptical about the future. More than a third of them (41%) did not believe their systems would perform well over the next five years. Remember that Anesthesia & Critical Care workers were one of the groups that had the most intimate familiarity with knowledge management systems, often accessing them more than 20 times per week.

However, improving the state of knowledge management in hospitals is not an insoluble challenge. Based on the survey results, a few valuable insights suggest themselves. Hospitals should implement comprehensive electronic knowledge management systems, rather than stocking documents in document repositories or in physical binders. These systems should offer:

› Robust document management

› Intuitive search features

› Interdepartmental access

› Operational parity across computers and smartphones

› Integrate clinical resources in existing workflows

> " Hospitals should implement comprehensive electronic knowledge management systems, rather than stocking documents in document repositories or in physical binders."

The potential benefits extend to both medical professionals and patients. Hospital employees could be much more productive — spending less time rooting around for information, and more time treating patients. They could also leave work on time more often, leading to better psychological health and less incidence of burnout. Patients could receive better care, leading to speedier treatment and less risk of injury or death. With more effective providers and better patient outcomes, hospitals also stand to save money.

Perhaps the most important change knowledge management can bring about is in clinical workflows. Instead of clinicians searching for guidelines and protocols, an efficient system could incorporate the information they need into their existing routines, as

soon as they need it. This would represent a paradigm shift in the current practice of medicine — instead of relying on clinicians to search for knowledge, having a system that can proactively push relevant resources, when they are needed, to the point of service.

Overall, only about half (53%) of the professionals surveyed rated their current knowledge management systems as "very effective." With the right technology, the right expertise, and the right mindset, that could change for the better over the next few years. Better systems could benefit providers, who would enjoy better quality of life and less risk of burnout, as well as patients, who would receive optimal care. Modernized knowledge management protocols could save time, money, and, most importantly, lives.

ABOUT C8 HEALTH

C8 Health is a clinical resource management platform for healthcare providers. It brings clinical resources together and streamlines access to them. By managing and integrating this knowledge into existing workflows, C8 Health creates new operational efficiencies that save time and enhance care delivery.

With C8 Health, healthcare teams get a single, trusted cloud-based platform to centralize clinical resources, disseminate them efficiently, and access them quickly from any device. It empowers teams to make quick decisions, gain alignment, and provide efficient and high-quality patient care.

Contact us to book a demo with C8 Health today.

C8 Health

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