



2020-2030 | Reimagining Healthcare IT for the Next Decade

Improving the
Physician Experience
and Patient Outcomes

 PatientKeeper®

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At the dawn of this new decade, it's now been more than 10 years since the passage of the HITECH Act.

With an eye on stimulating an economy still in the throes of the Great Recession, the U.S. federal government designated more than \$19 billion of the \$787 billion American Recovery and Reinvestment Act to expedite the implementation of electronic health records and encourage overall investment in healthcare IT.

If you're reading this book, it's pretty likely you know how that went.

While the changing of the calendar this January has spurred many "Best of the '10s" lists, most retrospectives of the post-HITECH decade have been, to be charitable, rather unkind. They primarily address HITECH's missed opportunities — usability challenges, interoperability hassles, implementation delays, and workflow detours. Reports of a physician

burnout epidemic were attributed in large part to the unwieldy technology that providers were forced to adopt. This isn't how it was supposed to be, right?

Yet it wasn't all bad. "EHR 1.0," as IDC Health Insights labeled the first-generation systems installed to capture HITECH incentives, provided a foundation and framework for innovations such as electronic prescribing, clinical decision support and predictive analytics. We're collecting data that can be the basis for better outcomes, today and tomorrow.

So where do we go from here?



PatientKeeper has created this book to outline our vision for the future, setting a course that highlights the significant, yet still untapped, potential of the EHR, with compelling benefits for the entire care delivery chain, from practitioner to patient. We'll walk through an upcoming decade of possibilities that includes:

- New data-driven approaches that leverage the clinical information being captured in order to improve patient outcomes and reduce physician burnout.
- Optimized care team communication to tighten the connections between physicians, nurses, and ancillary staff to produce better patient outcomes while delivering efficiencies to all parties.
- Better interoperability to facilitate greater collaboration and inspire new opportunities for concepts like telemedicine to help alleviate growing physician shortages.

In many ways, the hard part is done — EHRs are here to stay. It's time to continue moving forward, toward what IDC calls “EHR 2.0,” and make them better.



For many of our hospital clients, a key goal in 2020 is to improve physician satisfaction. The physician burnout problem is real, and well-managed healthcare provider organizations are extremely sensitive to its causes. Cumbersome, intrusive technology — particularly EHRs — is one, which is why so many organizations are evaluating and implementing EHR optimization solutions to improve physician workflow and clinicians' user experience. The success of improving physician satisfaction will be measured in various ways, including higher patient satisfaction scores, improved quality of care, and reduced medical staff turnover.”

Christopher Maiona, M.D., SFHM,

Chief Medical Officer,
PatientKeeper, Inc.

I. Enhancing the use of EHR data

The EHR is supposed to be the system that provides a single source of truth about a patient's medical history, current diagnoses, and treatment. A healthcare organization's EHR system is filled with millions of data points that serve as a system of record for the clinical and administrative staff; however, given today's spotty health IT system interoperability, any given patient's record may be incomplete. And the EHR, while storing the patient's information electronically and thus providing easier access to it, creates an administrative headache for the clinicians that must use it.

Looking ahead to the next era of the EHR and healthcare IT, we will see a major shift in how patient data is leveraged to improve the clinician's experience and clinical results. Rather than simply storing data, next-generation EHRs will empower clinicians to put that data to use in the service of patient care. And with better (and ultimately ubiquitous) health IT interoperability, there will be greater confidence in the completeness of the "truth" provided by the EHR.

For instance, when managed effectively, the data in the EHR can enable clinicians to choose the appropriate medications and dosages for patients, or indicate based on various factors the patient's risk for illness. Further down the line, consider the possibility of collecting patient data from wearable devices such as smartwatches and fitness trackers – but only if its accuracy can be verified. (Such inputs should be tracked separately from data entered by medical professionals.) Ideally, physicians would be able to tailor treatment using a combination of known medical history, real-time data, and their professional expertise.

Rethinking how the data within the EHR is used can also impact how physicians interact with the platforms and ultimately reduce burnout. In 2019, the issue of physician burnout was brought to the forefront, with numerous studies pointing to the EHR as a leading factor, and Harvard T.H. Chan School of Public Health, the Harvard Global Health Institute, the Massachusetts Medical Society, and the Massachusetts Health and Hospital Association (MHA) [declaring burnout a public health crisis](#). As the EHR evolves into a data-driven platform, it can also provide a more seamless, user friendly experience for the physician to alleviate the administrative burden that comes with inputting data into the system.



Burnout is a state of physical, emotional, and/or mental distress that may cause emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment. At work, this may translate to a reduced accomplishment and loss of personal identity. [A 2018 survey](#) revealed that 78 percent of physicians said they experience some symptoms of professional burnout.

In the first iteration of the EHR, a physician saw the same patient information regardless of area of practice, the disease state of the patient, or whether his or her patient was new or existing; and chances were the record was missing a lot of information, such as images, real-time vitals, and progress notes (before they were transcribed). Generic and/or incomplete presentation of information led to the inability to find data and respond to test or lab results, delayed orders, and ultimately, fractured a provider's train of thought.

As we look ahead to the next generation of health IT, a well-optimized EHR will take the existing data and present it in a way that is consistent with a physician’s thought process and workflow, enabling him or her to act on information quickly and accurately. Rather than a system of record, the platform will be a “system of engagement,” one that’s specifically designed to offer an instinctive user experience. What’s more, as the platform learns more about the physician workflow and more data is inputted into the system, physicians will be presented with more accurate alerts and prompts, streamlining EHR usage while improving the patient and physician experience.

Consequences of Burnout



Medical errors

Physicians who reported at least one symptom of burnout were more than [twice as likely](#) to report having committed a serious medical error within the preceding three months



Mental health

Physicians dealing with burnout are [more likely](#) to experience depression, anxiety, exhaustion, and even suicide



Economic impact

Burnout is [costing](#) the American healthcare system an estimated \$4.6 billion each year

While the EHR has been the scapegoat for many of the issues within the healthcare system, it can be optimized and reimaged as a powerful tool to harness data to drive operational and clinical efficiency across the healthcare spectrum.

II. Driving physician communication

While physicians' workflow and administrative struggles with EHRs have been well-documented, clinical communication is an area of focus that has been widely neglected by the healthcare community.

Until recently, face-to-face communication between physicians and clinical staff in hospitals was commonplace. Scheduled or unscheduled, physicians were able to share their clinical perspectives and expertise in an encouraging environment.

Today, that sort of interaction is a rarity.

While technology has improved workflow and peer-to-peer communications in most professions, it has damaged such interactions within healthcare to the point where day-to-day tasks can be challenging. Physicians are flooded with constant EHR alerts and notifications that lock them to their screens, isolating them and creating a siloed approach to patient care. Patients often report feeling disconnected from their provider during an appointment because of the amount of time that the provider spends on the computer, and they also report feeling as though members of their care team are not communicating.

The importance of communication with other physicians and clinical staff to deliver optimal patient care cannot be overstated. In a collaborative care setting, physicians and clinicians are able to work within their area of expertise with knowledge of what other specialties are working on, creating consistent and seamless patient care — and a more fulfilling and satisfying professional experience for clinicians.

Of course, technology cannot be rolled backward, and physicians must adapt to new forms of communication as best they can. But, the clinical experience should be top-of-mind when designing new healthcare technology.

While much has been said about how the EHR can enhance communication between physicians and their patients, communication among clinical staff cannot be overlooked. The next generation of healthcare IT solutions should balance both goals, with features that make it easy for physicians to collaborate, share knowledge, and ultimately provide better patient care and outcomes while building community among healthcare professionals.



In other professions, technology has made day-to-day tasks easier to accomplish and cross-functional communication smoother. My physician colleagues and I, while concerned about the current state of play in healthcare, are optimistic that technology will help to improve patient care and foster more communication and collaboration for us, as well. I look forward to secure video chat as a way to meld technology and face-to-face communication, representing the best of both worlds.”

Christopher Maiona, M.D., SFHM,

Chief Medical Officer,
PatientKeeper, Inc.

III. Empowering HIT professionals

When the HITECH Act passed in 2009, healthcare IT professionals were tasked with the significant challenge of integrating new technology into a highly regulated and complex environment. Since then, as they have managed the technical side of EHR implementation, they have also had a front-row seat to see how the technology has negatively impacted their clinician colleagues.

Across most industries, IT teams are the unsung heroes of their business. They are answering frantic requests, working to limit network downtime, and keeping critical data secure. In the healthcare environment, the added element of patient care takes that high-stress environment to another level.

In the last decade, physicians have been forced to work with systems with poor user experiences and interfaces that don't map to their workflow. One report estimates that for every hour physicians provide direct patient care, they spend nearly [two additional hours](#) on corresponding EHR data entry.

Regardless of a hospital's underlying transactional and clinical information systems, physicians appreciate a consistent, intuitive, and holistic IT user experience, in which the most meaningful patient information – for that patient, in that moment – is presented in a comprehensible way; and related applications for interpreting and/or acting on that patient information are readily accessible and consistent with a physician's normal workflow.



While the healthcare industry has made great progress in digitizing health records, it has yet to translate digitization into meaningful value and workflow efficiencies for clinicians. The resulting user frustration is putting a huge strain on patient care teams and healthcare IT teams. The advent of a more flexible, versatile system of engagement for clinicians, to complement the EHR system of record, promises to dramatically improve the user experience, foster greater clinical collaboration, and place IT squarely at the center of the care team.”

Sally Buta,

Chief Technology Officer and Co-Founder,
PatientKeeper, Inc.

To better meet the needs of both the clinical and IT staff, healthcare technology providers must deliver more customizable solutions that allow IT to better address physician requests in an efficient way. Rather than having to fill out a ticket or contact their vendor, HIT teams should be armed with flexible technology that allows them to configure dashboards and user interfaces that meet the specialty and workflow specific needs of the providers within their organization.

These customized dashboards should take into consideration the different individuals within the care setting and how they will want to see data to best suit their needs and align with their train of thought. The capability to embed and organize various tiles and widgets into a personalized clinician dashboard — the preferred interface in a well-optimized “system of engagement” for clinicians — can empower IT to make the EHR work for the physician.

For instance, a clinician in the ICU may want a one-screen, comprehensive view of the patient with component windows highlighting ventilator settings in one, antibiotics parsed out of the set of medication orders in another, respiratory therapy notes segregated from other ancillary notes, and a window highlighting serum studies for the past 48 hours. Whereas a



cardiologist might prefer windows for vitals, telemetry strips, cardiac enzymes, and auto-populated FHIR-based apps for risk stratification calculators. A rounding pediatrician may wish to have windows highlighting growth charts and vaccination histories readily visible.

Not only does this approach instantly enhance the EHR and provide the physicians with greater peace of mind and time to do their jobs — care for patients — but it also puts the HIT team front-and-center, enabling them to take greater control over the technology to best meet the needs of their colleagues. In the end, everyone’s goal is to make the EHR as simple to use as a stethoscope.

IV. Overcoming interoperability challenges

There has been significant progress relating to the interoperability of technology in healthcare, however it has been largely limited to internal advancement within health systems. The ability to effectively share meaningful data and information between external providers and their networks is still largely nonexistent nationwide.

This reality is reflected in a [2019 survey](#) of 100 reputable healthcare leaders by the Center for Connected Medicine. Conducted by HIMSS Media, it revealed the following:



91% of respondents say that their organizations are investing in interoperability initiatives



69% of leaders report enjoying success in effectively sharing data within their organization

However, when it comes to sharing data with other health systems, only 37 percent of respondents reported success.

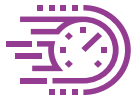
The greatest potential of healthcare technology will only be seen when we connect unaffiliated health systems and industry partners — not just affiliated departments and service lines. Healthcare industry stakeholders have been working toward this goal, developing guidelines such as the Trusted Exchange Framework and Common Agreement (TEFCA), which aims to enable a nationwide exchange of electronic health information across disparate healthcare systems while encouraging the adoption of direct messaging across healthcare information networks. As with most industry-wide initiatives, the process has been slow to make real progress.

Beyond cost savings, interoperability will also:



Improve Patient Safety and Outcomes

Unified physician portals provide caregivers with one single environment to work with patient information from various health systems. For example, if you suffer a major medical emergency away from your hometown hospital, the local ER provider can pull up your medical history based off of your name and date of birth. Within seconds, he or she sees critically important medical information, like surgery histories. Rather than spending precious time trying to hypothesize what is happening to your body (especially if you are unconscious), the medical team rapidly moves along to caring for you. In an interoperable environment, if that provider has questions, he or she can then securely message or video conference with the patient's past provider to glean more information that may impact the care plan.



Save Time and Increase Efficiency

Even in non-life-threatening situations, the ability to share information saves immense time that care team members traditionally spend trying to input accurate information. Medication reconciliation technology allows physicians to view a medication list and allergies for their patients, providing a medication history report at the point of care. Ideally, patients would have access to an electronic portal that allows them to download this data at discharge to a patient medical record on their phone, so they could then supply it to their PCP, pharmacist, or ED provider in an emergency. Patients no longer would have to suffer the annoyance of listing all their medications, trying to remember what dosage they take at what times, etc. Data is not missed or inaccurate, and caregivers and patients save time.



Drive Innovation

The federal government continues to introduce legislation that encourages or requires the healthcare industry to more widely share large amounts of HIPAA-compliant, clean healthcare data in an effort to spur innovation and solutions. It goes without saying that for this to be possible, healthcare organizations need to be consistent in how they record and share data.

The healthcare industry has made progress in making interoperability a priority. Now, we must ensure that we stop working in silos and begin working together to create the healthcare delivery system that we all desire.

V. Addressing the looming physician shortage

Facing a volatile healthcare environment and increasing demands from both patients and leadership, more physicians have been leaving the profession. [The United States is expected to see a shortage of nearly 122,000 physicians by 2032.](#) This issue is poised to continue making headlines into the next decade, with healthcare leaders looking for new solutions to address the shortage while making changes to engage and encourage the next generation of physicians.

Healthcare IT has a major opportunity to provide innovative solutions to face these inevitable challenges of supply and demand. One possibility is the use of artificial intelligence (AI). AI applications in healthcare have been discussed at length, most commonly focused on how it can transform specialized areas such as radiology and pathology. [One study published by Nature Medicine](#) in May 2019 highlighted a Google algorithm that outperformed six radiologists to determine if patients had lung cancer.

While these applications will have an impact, AI can deliver broader, more significant value in primary care, healthcare's frontline. Patients rely on primary care for routine checkups, referrals, and treating both chronic and acute illnesses. Emerging telemedicine and AI technologies could reduce patient wait times, overcrowding in health systems, and unnecessary ER and primary care visits.

In China and other countries that are already experiencing severe physician shortages, AI and telemedicine are making a big impact. Ping An Good Doctor is one example — the Chinese health tech company launched health clinics where consumers can step into a booth and chat with an AI-powered doctor about their symptoms. As the AI doctor compiles medical history and suggests a diagnosis plan, it passes the patient off to an in-house clinical team who can unlock a smart medical cabinet for patients to secure their medication after consultation. Solutions such as Ping An provide a stop-gap to the physician shortage crisis, helping to ensure more patients can be seen per day.

While AI holds great promise, there are, of course, ethical considerations in using the technology in the healthcare setting. For example, healthcare leaders must take into account patient data and privacy within AI systems, and how reliant clinical teams should be on the output of AI platforms. As new solutions are developed and deployed, researchers, policymakers, and healthcare leaders should be prepared to address these difficult and complex aspects of the technology.

Assuming these ethical issues are taken into consideration to the satisfaction of both patients and providers, in the coming decade, AI and telemedicine holds the potential to empower healthcare IT to make a real impact to the physician shortage facing the U.S. healthcare system and its patients. Looking beyond diagnostic applications, these technologies are poised to become more mainstream in the coming years as the population ages and healthcare leaders implement new solutions to meet patients where they are.



What's Next

Looking to the decade ahead, healthcare has to address a series of critical challenges — reducing physician burnout, improving interoperability between healthcare systems, and solving a potential physician shortage — but there is promise that these problems can be solved, or at least mitigated, through innovative health IT solutions.

There is untapped potential within current EHR solutions that, if properly addressed, could unlock greater efficiencies to improve patient outcomes, physician well-being, and the overall vitality of our healthcare system.

As a provider of EHR optimization solutions, PatientKeeper is committed to working together with clinicians, IT professionals, and healthcare leaders to provide technology solutions that meet the unique needs of the provider community while empowering IT professionals with the tools to drive organizational efficiency and maximize resources.

Our hope is that in the next decade and beyond, the healthcare industry will look more closely at the possibilities and potential of technology within care settings, and how we can help clinicians reclaim their love for the profession and ultimately enhance patient satisfaction and outcomes.

About PatientKeeper, Inc.

PatientKeeper's EHR optimization software solutions streamline clinician workflow, improve care team collaboration, and fill functional gaps in existing hospital EHR systems. With PatientKeeper as the "system of engagement" complementing the EHR, clinicians can easily access and act on all their patient information from PCs, smartphones and tablets. PatientKeeper has more than 70,000 active users today. For more information about PatientKeeper, visit www.patientkeeper.com or call (781) 373-6100.