



THE REIMAGINED EHR

**Thoughtfully Designed with
Physicians and Providers in Mind**



Electronic health record (EHR) systems were introduced to the health care ecosystem to streamline document workflows and make sharing of patient information easier. However, it's no secret that EHR systems have fallen short of their promise—leading to clinician stress and burnout and less time for interaction with patients.

In a recent JAMA survey, more than half of the issues associated with clinician stress and burnout stemmed from inefficient EHR systems.

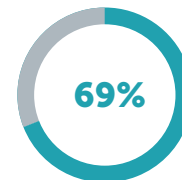
EHR design and use issues—such as information overload, excessive data entry, note bloat, an inability to navigate the system quickly and a fear of missing something—were listed as some of the primary reasons for “high clinician stress.”¹

Similar research done for Stanford Medicine corroborated that physicians feel that improving the EHR user interface and enabling greater interoperability could help their clinical effectiveness and make using EHRs less painful.

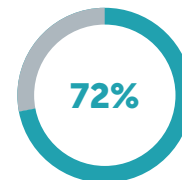
“Insights that could lead to better patient care or new medical discoveries remain buried within piles of disconnected data,” noted Dr. Lloyd Minor, dean of the Stanford University School of Medicine, when discussing the current state of EHRs.²

Given the challenges EHRs present to physician well-being and to better patient care, it's time to reimagine the EHR. This playbook will examine how a new and improved EHR design and user interface can help:

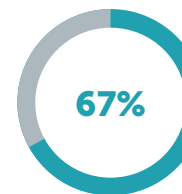
- Reduce the documentation burden.
- Improve clinical effectiveness.
- Increase professional satisfaction and reduce clinician burnout.



69% of PCPs believe an EHR takes valuable time away from patients.



72% of PCPs say they would like to see the EHR user interface improved to eliminate inefficiencies and reduce screen time.



67% of PCPs believe the focus of EHR system improvements for the next decade should be on solving interoperability deficiencies.

Source: Stanford Medicine.

Current EHR Interface and Usability Issues

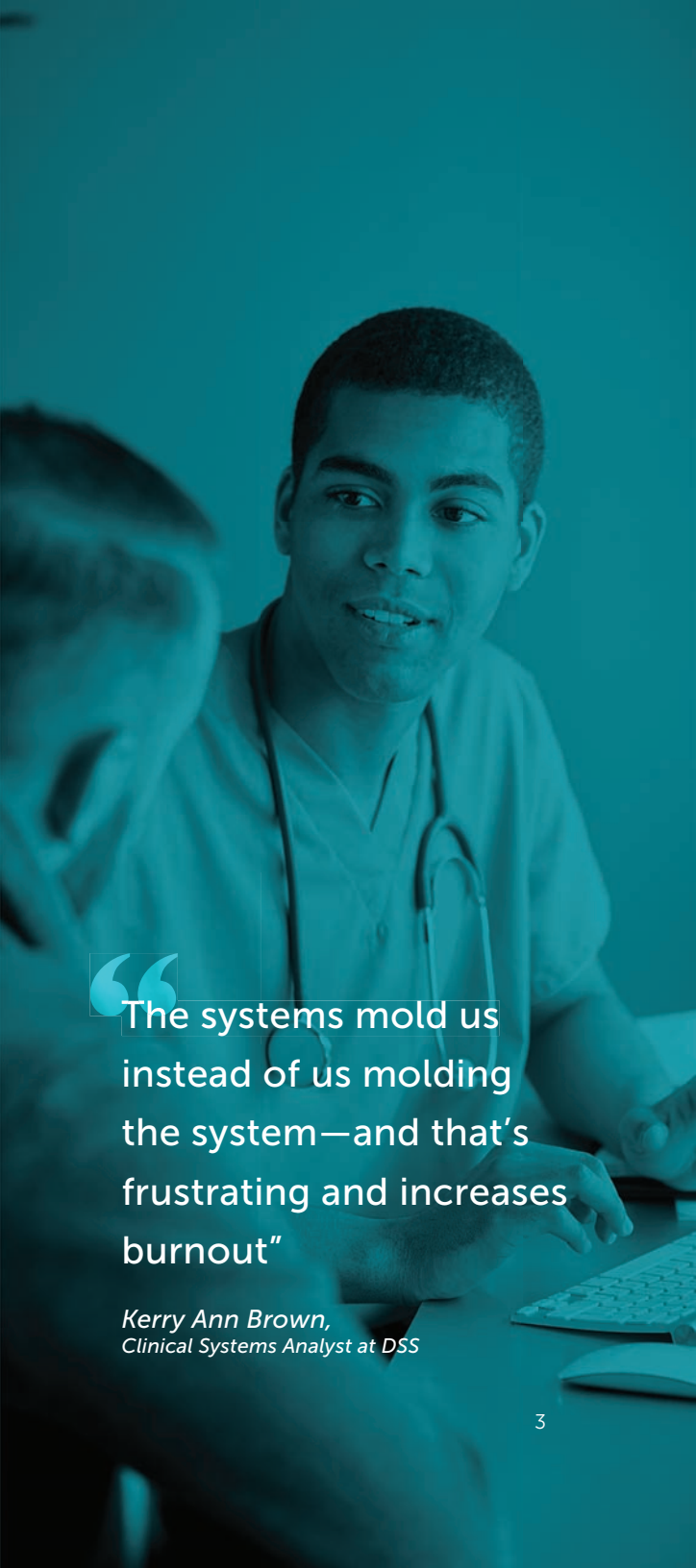
EHRs are intended to improve access to health care data, and most do offer this advantage by making information digitally available and searchable. However, because EHRs historically have been designed with revenue capture as the primary purpose, provider usability and patient care has not been at the forefront of EHR design and development decisions. As a result, most EHRs lack an intuitive user interface or have usability issues that make documentation cumbersome—reducing clinicians' available time for patient caregiving.

According to Stanford Medicine, primary care physicians (PCPs) reported spending a disproportionate amount of time per patient visit interacting with EHR systems, and many feel that EHRs compete with their patients for already limited time and attention. On average, during a 20-minute patient visit, PCPs reported spending 12 minutes interacting with the patient, 8 minutes interacting with the EHR system and an additional 11 minutes

of EHR interaction once the patient visit had concluded.³ Not surprisingly, only 11% of patients and 14% of PCPs report having an adequate amount of time together.⁴

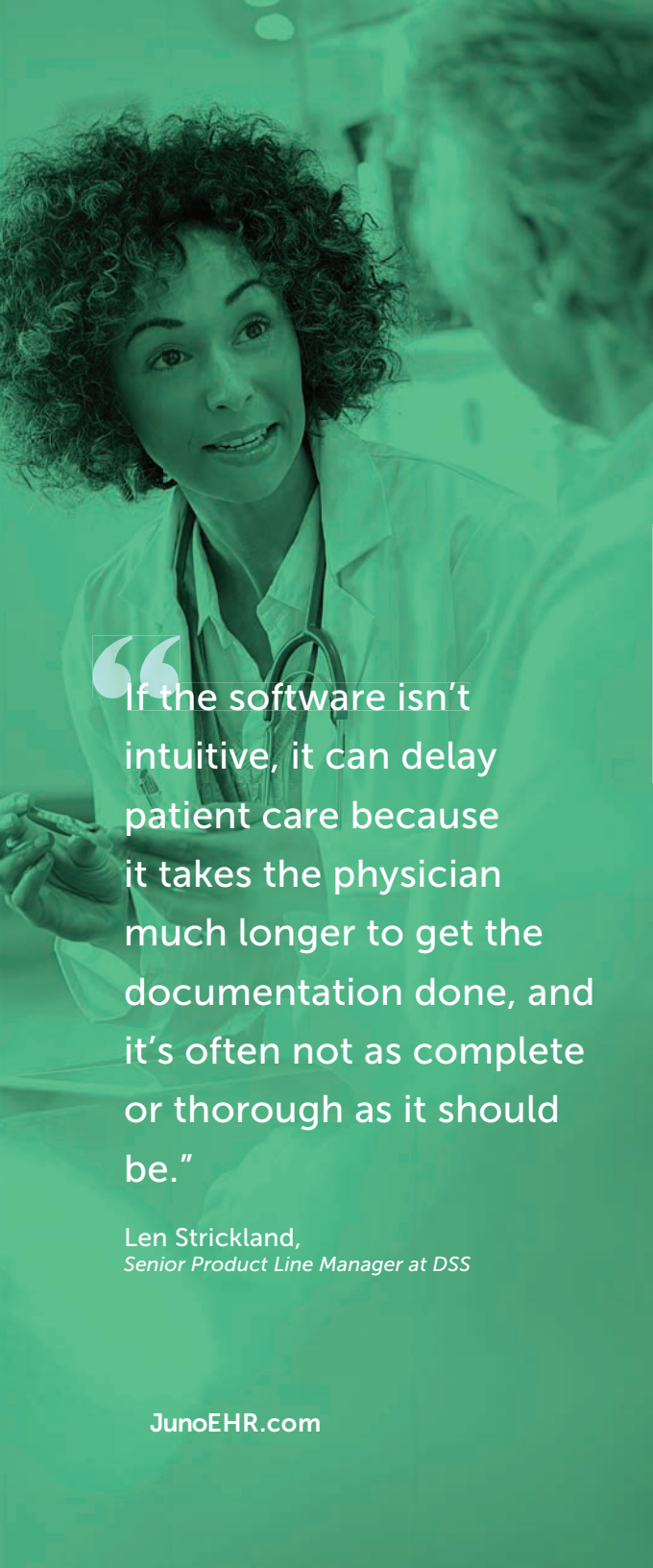
“While having an EHR makes access to information easier, the process of documenting is often harder,” said Kerry Ann Brown, a Clinical Systems Analyst at DSS, who is an experienced emergency department nurse. “The systems mold us instead of us molding the system—and that’s frustrating and increases burnout.”

Many EHRs also make documenting more time-consuming than it needs to be, leaving providers looking for a better way. “It’s still pervasive in the industry for EHRs to create more computer interaction than necessary, with more clicks to get the job done than needed,” said Len Strickland, Senior Product Line Manager at DSS, who spent the first half of his career in emergency departments and trauma centers as a staff nurse and director.



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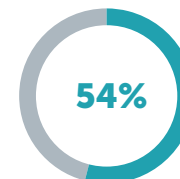
Len Strickland,
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Poorly designed user interfaces that aren’t intuitive also create issues that affect physicians’ stress levels and patient well-being. “If the software isn’t intuitive, it can delay patient care because it takes the physician much longer to get the documentation done, and documentation is often not as complete or thorough as it should be,” Strickland said.

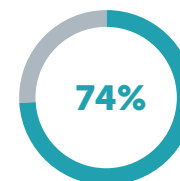
Brown concurred, noting that having to enter subjective information via checkboxes can be frustrating. “If you don’t see the checkbox for what you think needs to be documented and you write it in the comments section instead, the benefit of discrete data is lost,” she said. This issue increases the likelihood of missing something critical because relevant information is often hard to find unless a provider sifts through all of the comments for pertinent information that may impact patient outcomes.

Having an intuitive Clinical Decision Support (CDS) tool is another area where many EHRs fall short. While a CDS can improve patient care by prompting clinicians to think about clinical decisions in high-risk areas, this is only true if the tool is effective. If a CDS is constantly interrupting a clinician’s workflow

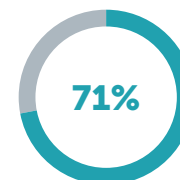
in unhelpful ways, “it starts to be like Charlie Brown’s teacher,” Brown said. “Blah, blah, blah ... you just start to ignore it.”



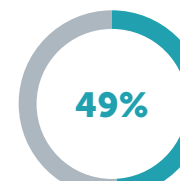
54% of PCPs believe using EHRs detracts from their professional satisfaction.



74% of PCPs say EHRs have increased the number of hours they work daily.



71% of PCPs believe that EHRs have greatly contributed to physician burnout.



49% believe that using EHRs detracts from their clinical effectiveness.⁵

Source: Stanford Medicine.

EHR Interoperability Challenges

Another issue with EHRs is the ability of one system to communicate with another. Sometimes, even the same EHR system doesn't communicate well between departments.

"I've had instances where the nurse in the inpatient department can't see the information I'm seeing in the ER, even though we're all on the same system," Brown said.

The proprietary architecture of many EHR systems has created an environment in which each vendor is using a different method to represent patient data, different coding formats and different terminology, making sharing

information between systems—or even among different versions of the same system—difficult.

"I've seen software where one skill level, such as a unit clerk, and another skill level, such as a nurse, looks and feels quite different, like it's not even developed by the same company," Strickland said. He also noted that he's seen a similar issue depend on what department someone is working in. "A surgeon may be in a surgical unit one day and a Post Anesthesia Care Unit (PACU) the next—to use a tool that performs differently from one clinical area to another creates an added and unnecessary burden."



The problem is further exacerbated when passing patient information from one health system to another. In a report by the Office of the National Coordinator for Health Information Technology, health systems indicated they rarely or never used patient health information received electronically from providers or sources outside their health system because of the following issues:

- **55%** said it was too difficult to integrate the information into their EHR.
- **47%** said the information was not always available when needed.
- **31%** said the information wasn't presented in a useful format.⁶


Often, because of interoperability issues, passing patient information from one EHR system to another must be done manually instead.

“Even though it’s a digital age, we are still killing trees to transfer patients,” Brown said. “If you’re transferring a patient from a midlevel hospital to a tertiary care center, instead of sending the patient data electronically, you still have to send a book with documents of the patient’s information. The nurse has to read through the pages and reenter the information and verify with the patient to make sure the data is correct. This takes away time that could be spent attending to patient needs.”



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We do not want to go backward. We believe that computing is essential to the future of medicine. We simply want all EMRs to live up to their promise of improving care and making patient information readily available."

Drs. John Levinson, Bruce H. Price and Vikas Saini⁷

Reimagining the EHR for Better Physician and Patient Well-Being

Reimagining the EHR to be designed and developed with an interface that is intuitive and user-friendly, reduces documentation burdens, and improves patient care and physician well-being must start with a design that is developed in consultation with health care professionals who have expertise in the way clinicians and health care organizations work.

An intuitive, user-friendly EHR should make the screen more relevant to the end user by eliminating unnecessary information from the screen view and by streamlining workflow and navigation to reduce clicks.

For instance, Juno EHR, a new EHR system now on the market, has been designed and developed through a team approach—with architects, developers, and senior clinicians actively working to identify requirements, design workflows and drive development

decisions throughout the entire product lifecycle. Thus, design decisions are thoughtful of not only meeting revenue capture requirements but of creating an EHR that is user friendly for clinicians.

"A lot of time has also been spent to make sure that our software is as intuitive as possible and requires as few clicks as possible to get thorough documentation completed," said Strickland.

Any "reimagined EHR" should also include a common patient framework, which means that no matter what department or role, the system maintains a consistent look and feel so that it's easy for clinicians to use whether they're working in another department or role within the organization. This reduces the implementation and training burden for providers, driving down costs and improving speed to value.

To help relieve the documentation burden, an EHR should also provide flexibility to define and link fields to code sets to meet the unique needs of an organization's workflows. For instance, by allowing code sets to be added on the fly without having to go through a change request with the vendor, health organizations can more easily customize code sets to their needs. In turn, saving clinicians time because they can have the ICD 10 codes they need already mapped in the EHR. Additionally, having the appropriate codes already in the system eliminates the need for coders to apply coding manually, which is what usually happens when a clinician can't find the appropriate code.

Finally, a more intuitive and user-friendly EHR should include a CDS tool that is intuitive to

what clinicians need rather than interrupting their workflow. "A good CDS would alert you, for instance, when a physician clicks discharge, that a piece of data is missing, such as the interpretation of a CAT scan, rather than constantly issuing notifications as the clinician is actively documenting," Brown said.

From a technical perspective, an EHR with a thoughtful architecture that includes open-technology, FHIR APIs and a cloud-based infrastructure can better address the interoperability challenges that current EHRs face. The use of open-technology and FHIR APIs can also allow organizations to keep best of breed systems such as their lab system or revenue cycle system, while still being able to switch to a new, more user-friendly EHR.

"FHIR APIs are a health care-specific standards framework and the latest in an array of communication tools to help with interoperability issues," Strickland said.

"Any EHR that promotes interoperability should include FHIR APIs."

A cloud-based, open-architecture EHR with the flexibility of on- and off-premise options and robust cybersecurity also provides greater value to health care organizations by increasing access, interoperability, and scalability of the EHR system. This ensures that health care organizations and professionals have the right information wherever and whenever they need it so that they can deliver the best patient care possible with as little effort as possible.





The Path Forward

Physician stress and burnout aren't only caused by the increasing use of EHR systems. Other factors, such as a chaotic work environment and a lack of control over workload, significantly increase the odds of burnout for physicians and clinicians. While these areas need to be addressed as well through organizational change management, a better-designed EHR system remains an important step in beginning to reduce the overall stress and burnout physicians feel.

Sources

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2. "Doctors Call for Overhaul of Electronic Health Records," Stanford Medicine, June 4, 2018.
3. Ibid.
4. "2017 Patient Survey Report for the Physicians Foundation," Regina Corso Consulting, June 2017.
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6. Yuriy Pylypchuk, PhD; Christian Johnson, MPH; JaWanna Henry, MPH; Diana Ciricean, MS, "Variation in Interoperability among U.S. Non-federal Acute Care Hospitals in 2017," The Office of the National Coordinator for Health Information Technology, ONC Data Brief No. 42, November 2018.
7. Drs. John Levinson, Bruce H. Price and Vikas Saini, "Death by a Thousand Clicks: Leading Boston Doctors Decry Electronic Medical Records," WBUR.org, May 12, 2017.



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DEVELOPED
BY DSS, INC.

About DSS, Inc.

With over 25 years of experience, DSS is a healthcare technology company that empowers providers to perform at their best and give patients the level of care they deserve. Juno EHR is thoughtfully designed by experienced healthcare professionals to deliver on the promise of modern EHR technology.

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