HIMSS EHR Usability Pain Point Survey Results

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Physician Webinar Series #7
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• More information www.himss.org/physician or contact Lauren Kaderabek lkaderabek@himss.org
**Moderator & Speakers**

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President, Quality Health Care Advisory Group  
Chair, HIMSS Physician Committee

David Schlossman, M.D., Ph.D., FACP, MMI, CPHIMS  
Oncologist/Informaticist, Missouri Cancer Associates

Robert M. Schumacher, Ph.D.  
Executive Vice President, GfK UX
Dr. Schlossman is a Board Certified Medical Oncologist with 30 years' experience caring for patients with a wide variety of cancers and blood diseases. Recent Master’s Degree and Board Certification in Medical Informatics. Special interest in overcoming the usability and interoperability barriers which discourage physicians from adopting HIT and prevent HIT from reaching its full potential.

Currently serves on the HIMSS Physician Committee and HIMSS HIT Usability Task Force. Chair, HIMSS Physician Community Usability Workgroup.
Robert M. Schumacher, PhD, is the Executive Vice President of GfK UX and outgoing chair of the HIMSS Usability Community. Bob was lead author on NIST’s guidance on EHR usability – NIST IRs 7804 and 7742.

Bob has a doctorate in experimental and cognitive psychology and is a recognized expert in User Experience Research and Design.
HIMSS Physician Committee
EHR Usability Workgroup

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HITETECH Effect on EHR Adoption

Adoption of basic EHR systems by office-based physicians increased 21% between 2012 and 2013.

Figure 1. Percentage of office-based physicians with EHR systems: United States, 2001–2013

Healthcare Providers’ User Experience

• Products not developed with provider-patient workflow in mind

• Information not formatted to fit physician cognitive models or support clinical decision making

• Extra steps added in common clinical tasks
• Increased cognitive and physical workload in clinical practice
Unintended Negative Consequences

- Time consuming data entry with decreased physician efficiency and productivity
- Decreased time and attention available to devote to each patient
- Less fulfilling work content, performing tasks far below level of training
- Misuse of template notes with degradation of clinical documentation
- Clinician fatigue and workarounds
  - Increased risk of adverse events
Why EHR Usability Matters: Workforce Issues

- Shortage of doctors by 2020: **90,000+**
- Shortage of primary care physicians: **45,000+**
- Shortage of surgeons and specialists: **46,000+**
- Physicians likely to retire by 2020: **250,000+**
- Americans entering the healthcare system in 2014 and beyond via HEXs under the ACA: **32 million**
- Aging US population with increasing healthcare needs

Why EHR Usability Matters: Meaningful Use

The AMA, finding increasing physician frustration with an overly prescriptive Meaningful Use program that forces physicians to use poorly functioning technology, recently stated:

“Unless significant changes are made to both the current program and future stages, we believe that:

• More physicians will drop-out of the MU Program;
• Patients will face disruptions and inefficiency in their care, as existing EHRs are unable to migrate data or facilitate more coordinated care;
• Thousands of physicians will incur financial penalties that hinder future technology purchases and limit resources dedicated to advancing care; and
• Outcomes-based delivery models, which require data driven approaches, will be jeopardized.”

James L. Mandara, M.D., EVP and CEO, American Medical Association
Why EHR Usability Matters: Care Quality

• Physicians are more satisfied when they feel they are delivering high quality care and meeting their patients’ needs.

• Physician satisfaction is not a perfect indicator of care quality, but dissatisfaction arising from factors physicians perceive as compromising the quality of care may serve as indicators of dysfunction in the care delivery system.

• Poor EHR usability and regulations which divert physicians’ attention away from patients to tasks which do not require physician level training are targets for interventions which can improve both the quality of care and the professional satisfaction of doctors.

A Pain Point Survey: Concepts

• Internet based survey conducted February 1 to March 31, 2014
• Distributed to working physicians who regularly use EHRs, seeking their expertise to identify specific characteristics of EHR function and interfaces which most disrupt workflow, increase the difficulty of clinical decision making, and increase the effort required to accomplish common clinical tasks and maintain care quality
• A total of 342 valid responses were received and will be covered in the following analysis.
• Participants were self selected and may not be representative of the general population of physicians in the US
• Respondents did represent a broad spectrum of specialties, practice sizes, practice settings, and locations
• Common themes emerged allowing us to form exploratory hypotheses regarding what problems with EHR functioning were felt most poignantly across multiple practice situations
Low Response Rate: Competing Priorities

- Decreased efficiency (fewer patients per hour, longer workdays)
- New physician compensation models (bundled payments, pay for performance, ACO’s)
- Declining reimbursements and practice financial problems
- Increased regulatory burden (PQRS, Meaningful Use)
- Rapid expansion of the biomedical knowledge base
- Increased continuing education and examination requirements to maintain board certification
Low Response Rate: Complaint Fatigue

“None of the pain points developed in that meeting have been fixed. I came into work on my day off to attend this meeting (unpaid time) just for the hope of improving my work environment and improving my ability to rapidly and effectively service mine and [Hospital’s] patients. I will not be attending any more meetings on improving [EHR Product]”

“End-users (physicians) have been IGNORED when tweaks requested. After implementation of system; the company providing the EHR assumed that if it worked, no matter how clunky, it was good enough”

“No one seems to care or listen…A ‘for show only’ interest in an evaluation of the system followed by…well…nothing. This survey will have zero impact, just as all of the physician feedback over the years has had no real impact.”

“The current system has many clear problems, but it seems that the priority is preparing for meaningful use rather than fixing the day to day problems that plague physician work flow.”

“I have always been active in this area but frequently feel like I am hitting my head against a wall trying to get what should be simple changes.”
Respondent Profiles
Q: What is your primary specialty or subspecialty?
Q: Please specify the environment in which you are evaluating EHR usability.
Q: What size is your physician practice/department?
Q: How long have you been using your primary EHR?
Q: What is your level of proficiency with your EHR system?
Q: Was your EHR designed specifically for your specialty?
Physician participation in organizations’ EHR selection

Q: Did the physicians at your organization participate in the process of selecting your EHR?
Meaningful Use Attestation

- Not Sure: 27%
- Will not participate: 9%
- Stage 1 and do NOT plan to attest to Stage 2: 2%
- Stage 1 and plan to attest to Stage 2: 51%
- Stage 1 Attestation: 9%
- Plan to attest to Stage 1: 3%
Quality Metrics Reported from EHR Data

- Meaningful Use: 25%
- CMS Core Quality Measures: 21%
- Physician Quality Reporting System: 17%
- Private Insurance: 7%
- Accountable Care Organizations: 7%
- Surgical Care Improvement Program: 5%
- Specialty Society Quality Programs: 3%
- Medicare Advantage Stars Program: 2%
EHR Usability Pain Point Survey

Methods and Results
Definitions

• EHR (Electronic Health Record): all electronic systems designed to document, store, and retrieve medical information.

• CPOE (Computerized Provider Order entry): providers directly entering and managing orders in an electronic system.

• CDS (Clinical Decision Support): all electronic systems to provide clinicians with intelligently filtered scientific knowledge and patient specific information to facilitate decision-making at the point of care.

• Usability: the speed, accuracy, and perceived effort involved in accomplishing clinical tasks.

• Pain Point: a problem or barrier which slows or prevents a physician from accomplishing a patient care task.
Methods

• For each of several common EHR functionalities, respondents were asked to select their three most serious pain points from a list of several options.

• Respondents were invited to answer four qualitative free text questions regarding:
  • Additional pain points not specified in the selection lists.
  • Positive impacts of the EHR on physician workflow, efficiency, and satisfaction.
  • Negative impacts of the EHR on physician workflow, efficiency, and satisfaction.
  • Ways that healthcare organizations can better incorporate clinician needs and viewpoints into the selection and management of their EHRs.
Survey Results

The Good

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Benefits of EHRs

• Better access, especially accessing patient information remotely. No lost charts.
• Better legibility and sometimes better organization
• Multiple users can access the same record simultaneously
• Improved compliance with evidence based guidelines
• Most still believe IT will be indispensable for improving care quality, improving population health, and controlling the unsustainable growth in costs
Respondent Comments

“The EMR is far superior to the paper chart pre-EMR world. Speed -- no waiting for charts.”

“Clarity --- my handwriting alone would likely have caused many deaths.”

“Portability -- I have checked on my patients from 4 continents.”

“Data availability is improved in availability and clinical utility.”

“Better documentation. Documents are legible to all.”
Survey Results

The Bad

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Reviewing Clinical Data (Top 5)

- Multiple clicks: 24%
- Data placement/presentation: 17%
- Hidden information: 17%
- Lack of customization: 11%
- Difficulty seeing trends: 11%
Respondent Comments

“Overall, too many clicks to accomplish what should be simple tasks.”

“I shouldn't have to click five times (with a 0.5-1.5 second delay each time I click) to do accomplish one step in the things I have to do.”

“Extremely difficult navigation, i.e., having to close fields to view others, jumping in / out of modules.”

“Screen layouts are cluttered and have much "wasted" space.”

“Arranging data to see trends over time is slow and requires multiple” clicks.

“Related data needed to make a decision is often spread among multiple screens or organized incorrectly if on a single screen.”

“I need a clean uncluttered workspace that has 25 places to click and not 132 places to click on a single screen (that 132 number is accurate...I counted how many different places there were to click on one [Vendor] screen once).”
Clinical Decision Support (Top 5)

- Alerts inappropriate to situation: 24%
- Inability to filter alerts: 17%
- Cannot customize alerts: 12%
- Repeat alert messages being overridden: 12%
- Alert timing disrupts workflow: 10%
“Lack of customization of CDS parameters leads to alert fatigue and failure to seek out potentially useful CDS where it is hidden, such that this feature in the EHR is more a burden than a help.”

“Alert fatigue, alert fatigue, alert fatigue!!! The formulary service vendors have not created usable databases.”

“CDS alerts are simply wrong too often.”

“Alerts and warnings are not helpful and generally are ignored, resulting in time lost and, potentially, useful or safety information being lost.”

“The system indiscriminately vomits 30 or more (yes!!! 30!!!) screens of data about [expletive] community acquired pneumonia. All I want to do is find the currently recommended antibiotic.”
Physician Documentation (Top 5)

- Multiple clicks required: 19%
- Templates may affect data quality: 13%
- Structured documents do not match thought process: 12%
- Context & reasoning difficult to communicate: 12%
- Document the same information in multiple places: 10%
Respondent Comments

“The templated and populated items in notes are cumbersome and create a lot of irrelevant junk that says nothing about what is actually going on with the patient and what actually occurred at the visit. Contributes to documentation output that is difficult to read, is repetitive, and in which important current information tends to be buried among computer generated junk text.”

“And EHR generated notes are useless--I used to get 10 times the amount of info from a 3 sentence handwritten nurses note than I get from the current 6 pages of gobbledy-goop. The nurses' notes used to the first thing I read on getting to the floor; now I don't bother to look at them.”

“Each document looks like it was written by a fourth year medical student or a physician who doesn't actually see patients and stopped learning clinical skills at the 4th year level.”

“My final notes are an embarrassment, the relevant data is mixed with garbage. It is like looking for a diamond ring in a cat litter box. You know there is something good there but you really need to want it to sift through the pages of irrelevance.”
Computerized Provider Order Entry

- Physician required to personally enter orders (no scribe) - 18%
- Multiple layers of confirmation dialogues risks exiting before order input is complete - 14%
- Inability to easily compare physician orders and nursing care plans - 12%
- Inability to track flow of orders over time - 12%
- Duplicate or conflicting order alerts are absent or inaccurate - 10%
- Ambiguous/non-standard terminology - 9%
- System does not delete original order for cleanup when it is modified - 8%
- System loses input data if user exits ordering module before all confirmation dialogues are complete - 7%
Respondent Comments

“Prescriptions are difficult to write and have no default dosing options”

“The time it takes to enter orders is easily 5-10 times longer than "pre EHR".”

“I cannot change an order, like change a CT from without contrast to with contrast, I have to cancel and start a whole NEW order, and maybe forget something.”

“EHR, especially CPOE, have allowed clerks & nurses to delegate upwards to physicians since they claim that physicians have to type in orders personally to prevent errors.”

“Ordering labs and imaging causes confusion because test desired is not listed in system and cannot order it correctly. Requires multiple interventions, i.e. radiology calls clinic, clinic sends me a clarification, I return the clarification and it must be send back to radiology.”
Provider to Provider Communication

- Electronic data exchange with external providers difficult or unavailable: 34%
- Tools for messaging other providers are difficult to use: 21%
- Flow of orders is difficult to manage/view: 19%
- Lack of population health documentation: 14%
Respondent Comments

“Provider to provider collaboration - screw the EMR; it just mucks up the message. I'll see the doc in the hallway, or call him”

“Structured notes from other providers provide almost no useful clinical data. I usually get a 5-page note that might have two lines of physician thought.”

“Communication and hand offs are worse due to scattered information buried in disparate parts of the chart cluttered up with documentation purely for regulations.”

“The implementation of the EHR has actually decreased communication between the hospital staff, and ultimately in my opinion decreased patient safety.”
Provider to Patient Communication

- Diverts attention from the patient and her medical problem: 27%
- Loss of nonverbal cues and emotional connection with the patient: 24%
- Secure electronic communication creates additional work and regulatory burden: 20%

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Respondent Comments

“We spend 90% of our patient care time sitting in front of a computer (remember that when we take care of your family) It tremendously impacts our ability to see patients.”

“Face to face encounters with a patient, with a computer in the room, are insulting to the patient and embarrassing to a caring physician.”

“This is the end of the traditional doctor-patient relationship that I have known in the past. I have not run "on time" since implementation of our office EMR. OB/GYN is too personal of a field to have a scribe follow me from room to room.”

“I am always having to apologize for running late. I find it difficult to keep the thread of the patient's problem, testing, diagnosis, labs, etc.”

“I spend more time with a computer than I do with patients. I should not be the most expensive data entry clerk in the hospital.”
Technology-Related Challenges

- Inability to exchange data with other EHR's: 23%
- Slow response times: 15%
- Frequent system failures/downtime: 12%
- Inability to support mobile computing devices: 10%
- Difficulty backing out of incorrect selections: 9%
Overall satisfaction with EHR

41% Satisfied (Highly, Very & Moderately)

59% Not Satisfied (Moderately, Slightly & Very)
Survey Results

The Ugly

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Many Customers Plan to Change EMRs

As providers learn from their initial implementations and develop a better idea of what works and what doesn’t, a notable number are looking to invest in a second round of technology that better meets their needs. “We estimate a quarter to a third of customers would like to switch EMRs and may look into replacing their current vendor,” said Crandall. “The main reasons for dissatisfaction with the system they have includes lack of key features, a cumbersome and complex interface, poor EHR usability, and bad hardware.”

EHR Intelligence.com reporting on a new Kalorama Information white paper, May 30, 2014
A Sentinel Event in Clinical Informatics?

Number of Hospitals Certified for MU Stage 2: Four
Will the other 4996 need hardship exemptions?

“Stage 2 has basically co-opted the entire agenda of CIOs [and other health IT leaders] for the last 18 months. My prediction: 20 percent will attest to Stage 2 on time; 80% won’t, and there will be huge numbers leaving the program.”

John Halamka, M.D., M.S.
CIO, Beth Israel Deaconess Medical Center
Professor of Medicine, Harvard Medical School
Chair, New England Healthcare Exchange Network
Vice Chair, Health IT Standards Committee
A Way Forward

• Huge investment in the installed EHR base dictates that improvements in UX will be evolutionary, not radical

• Good will, rational thinking, and physician complaints are not sufficient to drive EHR UX improvement

• What can get the job done
  – Educate health systems about the total costs (direct and indirect) of neglecting UX issues and the importance of including practicing clinicians in purchasing decisions
  – Tools and buyer’s guides to educate and inform practitioners and health systems in consistent, evidence-based methods of assessing UX and driving improvements through their purchasing and implementation decisions
  – A wider perspective, higher profile stand by federal regulators, requiring testing early and often in EHR development, utilizing impartial practicing physicians, and posting reports clear of technical jargon and easily understood by the consumer
A Role for HIMSS

• As a cause-based not-for-profit, HIMSS focuses on providing practical input from membership, which represents viewpoints from across the healthcare community.

• Survey results provide opportunities for collaboration among like minded groups on usability issues to educate health systems, providers and regulators.

• Guidance for clinician-vendor collaboration on comprehensive transparent reporting of usability and safety issues and on creating better formative mechanisms for early testing and iterative design.
Specific Opportunities

• Provide tools and templates to make EHR usability testing accessible to the busy private practitioners and community hospitals who provide 80% of the healthcare in the US
  – Consistent standardized scenarios and task lists
  – Prebuilt test patient documentation
  – Semi-automated systems for usability testing
• Acquire reproducible quantitative data, establish performance benchmarks, and make usability concerns more objective
• Utilize the HIMSS Usability Maturity Model to help healthcare organizations better integrate EHR usability into their evolution to fully electronic records and systems
Ideas for Meaningful Use Reform

• Consider Stage 3 Delay
• Flexible thresholds to earn incentives and avoid penalties
• Eliminate requirements physicians cannot control
• Align multiple quality control programs
• Require evidence based program requirements and linked to tested and high-performing standards
• Do not promulgate requirements without verified implementation guides
• Transition to a merit based incentive program that enables organizations to evolve at their own pace and leaves room to re-establish the normal cycles of iterative development and improvement which we have lost

Ideas from the American Medical Association, RAND Corporation, and Dr. John Halamka
The clinical systems of today are great advances from what were available a decade ago but are still imperfect. Progress depends on further research, a vibrant vendor community that collaborates well with academia to enhance features such as interoperability and usability, and highly trained applied informaticians, many of whom are also practicing clinicians.

Sharing Leads to Success
Who believes organizations set out to deliver bad experiences?

If we don’t set out to make things hard-to-use…

Why are so many things hard-to-use?
Maybe it is because designing good experiences is hard...
Programmers and designers don’t wake up and say:
‘I’m think I’m gonna make things a little harder for those pesky users today.’
But, yet those who design and build bear a responsibility to those who experience…
We either have too little time, too few resources, or just plan ignorance to make it better…
Plus there is often a conflation of features and usability
Objective: Make things that are useful and usable

Knowing the features is not enough. You have to **know how to put those features together** to build the overall user experience.
Improvements in EHR UX will be evolutionary – if not glacial – due to heavy investment in installed base.
“Goodwill”, rational thinking, and physician complaints are necessary but not sufficient to drive UX improvement.
What gets the job done?

‘Shame’ in the public square
What *can* get the job done?

- Educate buyers / health systems about the direct and indirect costs of poor UX, and importance of including practicing clinicians in purchasing decisions. Seek cooperation from key organizations, e.g., HIMSS, AMA, etc.

- Provide simple, effective, *and public* measures about UX so buyers can compare.

- Adopt *user-centered design methods* within vendor and health system development organizations. UCD is good business. Assemble the right team!

- Push federal partners to act on the common knowledge of the impact of poor EHR usability: go beyond patient safety – adopt a process-based certification approach to usability (i.e., certify process not outcome), audit and enforce ACBs to do better work under current program, and produce a public facing easy-to-interpret summary of usability certification by vendors.
Questions and Comments??
Continuing Education Credit

• This program has been designated for 1 hour of CAHIMS Credit

• This program has been designated for 1 hour of CPHIMS Credit

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