“Reducing Clinician Burden” Project

Health Level Seven (HL7) Electronic Health Record Work Group (EHR WG)

22 February 2021
“[Clinicians know] how best to care for their patients but [are] blocked from doing so by systemic barriers related to the business side of health care.”

– Washington Post: “Too many tests, too little time: Doctors say they face ‘moral injury’ because of a business model that interferes with patient care” – 1 February 2020
“3 out of 4 physicians believe that EHRs increase practice costs, outweighing any efficiency savings” – Deloitte Survey of US Physicians, 2016

“7 out of 10 physicians think that EHRs reduce their productivity” – Deloitte

“4 in 10 primary care physicians (40%) believe there are more challenges with EHRs than benefits” – Stanford Medicine/Harris Poll, 2018

“7 out of 10 physicians (71%) agree that EHRs greatly contribute to physician burnout” – Stanford/Harris

“6 out of 10 physicians (59%) think EHRs need a complete overhaul” – Stanford/Harris

“Only 8% say the primary value of their EHR is clinically related” – Stanford/Harris

“[Physicians express that EHR] systems had detracted from professional satisfaction (54%) as well as from their clinical effectiveness (49%)” – Stanford/Harris

“Almost 40 percent of surveyed outpatient providers are looking to replace their EHR and other IT tools with solutions that offer better ease of use, more functionality and increased interoperability with other IT systems” – Health Data Management - Why EHRs are flawed, and how they can be fixed, 13 Jun 2019
"No other industry... has been under a universal mandate to adopt a new technology before its effects are fully understood, and before the technology has reached a level of usability that is acceptable to its core users.” — New England Journal of Medicine, Transitional Chaos or Enduring Harm? The EHR and the Disruption of Medicine, 22 Oct 2015

"Many clinicians know what they want — but haven't been asked... Our biggest mistake lies not in adopting clunky systems but in dismissing the concerns of the people who must use them." — Ibid.

“Few physicians and nurses were involved in the decision-making process of which EHR to implement in their workplace. Of physician participants, 66 percent said they had no input, 28 percent had input... Of nurse and [advanced practice nurse/APRN] participants, 80 percent said they had no input, 18 percent had input...” — Becker's Healthcare - [Survey finds] Nearly half of physicians think EHRs have decreased quality of care, 1 May 2019

"Of the physician and nurse/APRN participants who had input in choosing their workplace's EHR system, just 2 percent said the system they wanted was chosen." — Ibid.
“Although the original intent behind the design of EHRs was to facilitate patient management and care, the technology largely has been co-opted for other purposes.

- “Payers see the EHR as the source of billing documentation.
- “Health care enterprises see it as a tool for enforcing compliance with organizational directives...
- “Public health entities see it as a way to use clinicians to collect their data at drastically reduced costs.
- “Measurement entities see the EHR as a way to automate the collection of measure data, reducing their reliance on chart abstraction.
- “Governmental entities see it as a way to observe and enforce compliance with regulations.

“All these impositions on EHR systems have created distractions from their potential value in supporting care delivery... The ability of these systems to support care delivery will not improve unless physicians and others who deliver care insist that the functions needed by clinicians and their patients take priority over non-clinical requirements.”

— American College of Physicians, Putting Patients First by Reducing Administrative Tasks... 2 May 2017 [Emphasis added]
### Mandate of External Entities

<table>
<thead>
<tr>
<th>WHAT – Mandate</th>
<th>Mandate of External Entities</th>
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<tbody>
<tr>
<td>Law</td>
<td>Legislative bodies</td>
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<tr>
<td>Regulation</td>
<td>Federal, state, regional agencies</td>
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<tr>
<td>Claims, payment policy</td>
<td>Public and private payers</td>
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<tr>
<td>Public health reporting policy</td>
<td>Public health agencies</td>
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<tr>
<td>Accreditation, licensing policy</td>
<td>Accreditation, licensing bodies</td>
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<tr>
<td>Quality/performance measurement/reporting</td>
<td>Various entities</td>
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<td>Practice guidelines</td>
<td>Professional societies and others</td>
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<tr>
<td>HIT standards</td>
<td>HIT standards development organizations</td>
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<tr>
<td>Software developers</td>
<td>HIT standards development organizations</td>
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<tr>
<td>Organizational practice/policy</td>
<td>Administration/CEO/COO/CIO...</td>
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<td>Software procurement practice/policy</td>
<td>Administration/CEO/COO/CIO...</td>
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<td>Financial, billing practice/policy</td>
<td>Finance/CFO</td>
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<td>Unit practice/policy</td>
<td>Department, service, specialty</td>
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<td>Software management, support, implementation practice/policy</td>
<td>Information technology (IT)/CIO/CMIO</td>
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<td>HIM practice/policy</td>
<td>Health information management (HIM)</td>
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<td>Privacy, security practice/policy</td>
<td>Security management/CISO</td>
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### Mandate of Internal Entities

Weighing Considerable Burden and Constraint on...

# Reducing Clinician Burden

## Defining Terms

<table>
<thead>
<tr>
<th>Reducing (reduce)</th>
<th>Clinician</th>
<th>Burden</th>
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<tbody>
<tr>
<td>• “To bring down, as in extent, amount, or degree; diminish”, and “To gain control of... [to] conquer”, and “To simplify the form of... without changing the value”, also “To restore... to a normal condition or position” – The Free Dictionary</td>
<td>• “A health professional whose practice is based on direct observation and treatment of a patient” – Mosby’s Medical Dictionary</td>
<td>• “A source of great worry or stress”, and “[Something that] cause[s] difficulty [or] distress”, also “To load or overload” – The Free Dictionary</td>
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<tr>
<td>• “To lower in... intensity” – Dictionary.com</td>
<td>• “An expert clinical practitioner and teacher” – Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health</td>
<td>• “Something that is carried, [as in a] duty [or] responsibility”, also “Something oppressive or worrisome” – Merriam-Webster Dictionary</td>
</tr>
<tr>
<td>• “To narrow down”, also “To bring to a specified state or condition” – Merriam-Webster</td>
<td>• “A health professional, such as a physician, psychologist, or nurse, who is directly involved in patient care” – American Heritage Medical Dictionary</td>
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Reducing Clinician Burden

Defining Terms

<table>
<thead>
<tr>
<th>Clinician Burden</th>
<th>Anything that hinders patient care, either directly or indirectly, such as:</th>
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<tbody>
<tr>
<td></td>
<td>1) Undue cost or loss of revenue,</td>
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<td></td>
<td>2) Undue time,</td>
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<td>3) Undue effort,</td>
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<td>4) Undue complexity of workflow,</td>
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<td>5) Undue cognitive burden,</td>
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<td>6) Uncertain quality/reliability of data/record content,</td>
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<td>7) Anything that contributes to burnout, lack of productivity, inefficiency, etc.,</td>
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<td></td>
<td>8) Anything that gets in the way of a productive clinician-patient relationship.</td>
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-- Peter Goldschmidt, modified
Average characters per ambulatory progress note in U.S. and international health systems.

Source: Annals of Internal Medicine – Physician Burnout in the Electronic Health Record Era: Are We Ignoring the Real Cause? N Lance Downing MD, David W Bates MD MSc, Christopher A Longhurst MD MS, 8 May 2018
Burden Can Lead to Burnout

- “Physician burnout’ has skyrocketed to the top of the agenda in medicine. A 2018 Merritt Hawkins survey found a staggering 78% of doctors suffered symptoms of burnout, and [recently] the Harvard School of Public Health and other institutions deemed it a ‘public health crisis.’”

From: Physician stress and burnout: the impact of health information technology
What Contributes Most to Burnout?

- Too many bureaucratic tasks (e.g., charting, paperwork): 55%
- Spending too many hours at work: 33%
- Lack of respect from administrators, employers, colleagues, or staff: 32%
- Increasing computerization of practice (EHRs): 30%
- Insufficient compensation, reimbursement: 29%
- Lack of control, autonomy: 24%
- Feeling like a cog in a wheel: 22%
- Decreasing reimbursements: 19%
- Lack of respect from patients: 17%
- Government regulations: 16%
- Other: 7%

15 Jan 2020
“Reducing Clinician Burden” Project is an ongoing activity of the HL7 EHR Work Group

We are open and collaborative – oriented to US and international interests

Our primary focus is clinician burden including time & data quality burdens associated with:
- Use/engagement of EHR/HIT systems
- Capture, exchange and use of health information

We are considering, in particular, these aspects of burden:
- Clinical practice – at the point of care
- Regulatory, accreditation, administrative, payor, public health mandates
- EHR/HIT system design, functionality, usability and implementation
- Data quality and usability

We have undertaken an extensive review of reference sources to document the substance, impact and extent of clinician burden
- Trade publications, professional society journals, articles, studies, personal experience...
Our continuing work is focused on root causes in each RCB topic area (not just limited to EHR system functionality and usability issues – although that is important)
- What is the problem and its source?
- Why did it happen?
- What will be done to prevent it from happening (now and in the future)?
- Who (stakeholder(s)) might best address burden?

We have developed a White Paper: “Reducing Clinician Burden by Improving Electronic Health Record Usability and Support for Clinical Workflow”, led by David Schlossman MD

We have evaluated burden related aspects of US Core Data for Interoperability (USCDI).

We have assessed burden related aspects of the International Patient Summary (IPS), promoted by ISO TC215, HL7, CEN TC215 and IHE.

We are seeking success stories specifically addressing burden reduction and burnout in provider organizations
We have initiated a task group effort, with experienced clinicians, to focus on burden reduction opportunities related to medication list management and reconciliation. We anticipate parallel opportunities for problem list management and curation.

We have completed a ballot of the HL7 International Community seeking input, insight and guidance on workable strategies for reducing clinician burden.

We anticipate that our analysis will influence future objectives of HL7, ISO TC215 and other standards development efforts.

Our goal is not to boil the ocean, but rather to understand the substance, extent and impact of the burden, to recognize root causes and to identify success stories.
Reducing Clinician Burden – Breaking It Down

Topics/Categories

1) Clinician Burden – In General
2) Patient Safety (and Clinical Integrity)
3) Administrative tasks
4) Data entry requirements
5) Data entry scribes and proxies
6) Clinical documentation: quality and usability
7) Prior authorization, coverage verification, eligibility tasks
8) Provider/patient face to face interaction
9) Provider/patient communication
10) Care coordination, team-based care
11) Clinical work flow
12) Disease management, care and treatment plans
13) Clinical decision support, medical logic, artificial intelligence
14) Alerts, reminders, notifications, inbox management
15) Information overflow
16) Transitions of care
17) Health information exchange, claimed “interoperability”
18) Medical/personal device integration
19) Orders for equipment and supplies
20) Support for payment, claims and reimbursement
21) Support for cost review
22) Support for measures: administrative, operations, quality, performance, productivity, cost, utilization
23) Support for public and population health
24) Legal aspects and risks
25) User training, user proficiency
26) Common function, information and process models
27) Software development and improvement priorities, end-user feedback
28) Product transparency
29) Product modularity
30) Lock-in, data liquidity, switching costs
31) Financial burden
32) Security
33) Professional credentialing
34) Identity matching and management
35) Data quality and integrity
36) Process integrity
37) List Management: problems, medications, immunizations, allergies, surgeries, interventions and procedures

Blue = RCB Focus Teams Formed
Green = HL7 Da Vinci Accelerator Project

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22 February 2021
Reducing Clinician Burden Project

Focus Teams

- Clinical documentation, quality and usability
  - Lead: Dr. Lisa Masson (lisa.masson@cshs.org)

- Clinical decision support, medical logic, artificial intelligence
  Alerts, reminders, notifications, inbox management
  Information overload
  - Lead: Dr. James McClay (jmcclay@unmc.edu)

- Clinical workflow
  - Lead: Dr. David Schlossman (dschloss39@gmail.com)

- Legal aspects and risks
  - Lead: Dr. Barry Newman (barrynewman@earthlink.net)

- System lock-in, data liquidity, switching costs
  - Lead: Dr. Michael Brody (mbrody@tldsystems.com)

- State of data content quality
  Medication list management and reconciliation
  - Lead: Dr. Reed Gelzer (r.gelzer@trustworthyehr.com)
Reducing Clinician Burden
Success Stories

1. **Reducing Clinician Burden: Cardiovascular Procedure Reporting at Duke**
   James Tcheng MD, Duke University

2. **"Home for Dinner" - Reducing After Hours Documentation with Focused Training**
   Greta Branford MD, University of Michigan

3. **Benefits of SNOMED CT from a clinical perspective, The Rotherham experience**
   Monica Jones, NHS Rotherham Foundation Trust (UK)

4. **Getting Time Back in Your Day! Implementing a Multi-Faceted Approach to Optimizing Epic in the Ambulatory Setting**
   Jeff Tokazewski MD, Carole Rosen, Shane Thomas, University of Pennsylvania

5. **Well-Being Playbook, A Guide for Hospital and Health System Leaders**
   Elisa Arespacochaga, American Hospital Association
6. **Understanding the Impact of the EHR on Physician Burnout and Wellness**  
Christopher Sharp MD, Lindsay Stevens MD, Stanford University/Stanford Health Care

7. **SPRINT – An Organizational Strategy that Increases Satisfaction, Improves Teamwork and Reduces Burnout**  
Amber Sieja MD, University of Colorado School of Medicine, UCHealth

8. **Addressing EHR-related burnout at the Centre for Addiction and Mental Health (CAMH), Toronto, Ontario, Canada**  
Gillian Strudwick RN PhD FAMIA, Tania Tajirian MD CCFP FCFP DTMPH, Brian Lo MHI

[More to come...]
Reducing Clinician Burden
Work in Progress – White Paper

- DRAFT Reducing Clinician Burden White Paper
  - “Reducing Clinician Burden by Improving Electronic Health Record Usability and Support for Clinical Workflow”
  - Draws from RCB Clinical Workflow and Clinical Documentation Focus Team efforts
  - Lead: David Schlossman MD PhD FACP MS CPHIMS
  - Primary contributors: Lisa Masson MD, James Tcheng MD, Luann Whittenburg RN PhD and Barry Newman MD
  - With input from Frank Opelka MD, James Sorace MD and Gary Dickinson FHL7
  - Please review and offer comments and suggestions
Reducing Clinician Burden
Recent Perspectives and Presentations

- Denise St. Clair PhD – US CMS Office of Burden Reduction and Health Informatics – 21 September
  - Interoperability and Burden Reduction - Emerging Opportunities for Collaborative Care
- Frank Opelka MD – American College of Surgeons – 21 September
  - Reducing Clinical Burden thru Knowledge Engineering - Curating Clinical Knowledge
- Joel Buchanan MD – University of Wisconsin at Madison – 21 September
  - Problem Concept Maps: An Ontology to Facilitate Auto-Summarization of Electronic Health Information
- Lincoln Weed – Problem-Oriented Health Record (POHR) – 17 August
  - The POHR and a Pathway to Reducing Clinician Burden
- Dr Ryan Mullins – Personal Perspective on Burden Reduction – 20 July
  - The Health IT Vendor’s Perspective – Lessons learned as a physician working for a health IT vendor
- Dr Viet Nguyen – HL7 Da Vinci Project (Provider/Payer Exchange) – 18 May
  - Da Vinci Project Overview (Provider/Payer Exchange)
  - Da Vinci Project Calendar
- Dr Reed Gelzer – Data Quality, Integrity and Reliability – 4 May/1 June
  - Data Quality and Clinician Burden - Overview, Examples, and Basic Recommendations
Reducing Clinician Burden
New ISO TC215 WG1 Work Item

- ISO TC215 – Health Informatics, formed in 1999
  - Chair: Michael Glickman (US)
- Working Group 1 – Frameworks, Models and Architectures
  - Convenor: Björn-Erik Erlandsson (Sweden)
- ISO 4419 – Work Item focused on Reducing Clinician Burden
  - Targeted as an Informative Technical Report
- Candidate Deliverable: RCB Root Cause Analysis
  - Developed in Collaboration with HL7 RCB Project Team
  - With US and International Input
  - Will be advanced from HL7 to ISO under Partnership Standards Development Organization (PSDO) Agreement (currently being formalized)
  - Ultimately – Published by HL7 and ISO
Reducing Clinician Burden Project

Key Standards Focused on Burden Reduction

- HL7 Da Vinci Project – Provider ←→ Payer Communication
  - Coverage Requirements Discovery (published)
  - Documentation Templates and Rules (in ballot)
  - Pre Authorization Support (in ballot)

- HL7 EHR System Usability Functional Profile
  - Functions and Conformance Criteria to Enhance System Usability
  - Ready for publication – November 2020

- ISO/HL7 10781 EHR System Functional Model, Release 3
  - In early design/development stage
Reducing Clinician Burden Project

Materials

- Project Documents – Project Website
  - https://wiki.hl7.org/Reducing_Clinician_Burden
  - Project Overview, Presentations
  - Analysis Worksheets
  - Reference Sources
  - Success Stories
Teleconferences, Monday at 3PM ET (US/Canada)

- [https://global.gotomeeting.com/meeting/join/798931918](https://global.gotomeeting.com/meeting/join/798931918)

- Meeting 2nd and 4th Mondays each month
  8 and 22 March, 3-4PM US ET
  12 and 26 April, 3-4PM US ET
Reducing Clinician Burden Project

Contacts

RCB Project Co-Facilitators:
- Gary Dickinson FHL7: gary.dickinson@ehr-standards.com
  EHR Standards Consulting
- David Schlossman MD PhD FACP MS CPHIMS: dschloss39@gmail.com
  MedInfoDoc LLC

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  TLD Systems
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  Medical Networks LLC
- John Ritter FHL7: johnritter1@verizon.net
- Pele Yu MD: pele.yu@archildrens.org
  Arkansas Children’s Hospital/University of Arkansas
Reducing Clinician Burden Project

US Federal Government Initiatives

- **US Office of National Coordination for Health Information Technology** – FINAL "Strategy on Reducing Burden Relating to the Use of Health IT and EHRs", including Findings, Strategies and Recommendations
  - Published 21 Feb 2020

- **US Centers for Medicare and Medicaid Services** – Initiative to Reduce Provider and Clinician Burden and Improve Patient Outcomes
  - Announced 23 Jun 2020

- Also – Your burden reduction suggestions may be directed to:
  - US Centers for Medicare/Medicaid Services (CMS)
    reducingproviderburden@cms.hhs.gov
Reducing Clinician Burden Project
Responses to COVID-19 Pandemic

- (US) Centers for Medicare and Medicaid Services (CMS) - Waivers and COVID-19 Response, Online Presentation, 7 April 2020
- (US) CMS Announces Relief for Clinicians, Providers, Hospitals and Facilities Participating in Quality Reporting Programs in Response to COVID-19, 22 Mar 2020
- (US) CMS - COVID-19 Disaster Response Toolkit, 7 April 2020
- Logica COVID-19 Interoperability Project, 4 Apr 2020
- Logica COVID-19 FHIR Implementation Guide, 4 Apr 2020
Reducing Clinician Burden Project

RCB Analysis Worksheet – Tabs

1. Burden (Columns B-F)
   B. Clinician Burden – Excerpts from reference sources and personal experience – organized by burden topic area (1-37 as above)
   C. Recommendations – Excerpts from reference sources and personal experience
   D. Reference(s) – Sources by number
   E. Targeted Recommendations – refined from our reference (and other) sources
   F. RCB Proposals and Successful Solutions – from Success Stories, proposed regulations and other sources

2. Burnout (Columns B-F)
   B. Clinician Burnout (sometimes the Result of Clinician Burden) – Excerpts from reference sources and personal experience – organized by burden topic area (1-37 as above)
   C. Recommendations – Excerpts from reference sources and personal experience
   D. Reference(s) – Sources by number
   E. Targeted Recommendations – refined from our reference (and other) sources
   F. RCB Proposals and Successful Solutions – from Success Stories, proposed regulations and other sources

3. Topic Index – Topics 1-37 – with links to the Burden Tab

4. Time Burden – Excerpts from reference sources and personal experience
### Reducing Clinician Burden Project

**RCB Analysis Worksheet – Tabs**

- **5. Data Quality Burden** – Excerpts from reference sources and extrapolated issues
- **6. Clinician Stories** – First person accounts from front-line clinicians
- **7. Root Causes** – DRAFT in progress analysis – organized by burden topic (1-37 as above) (Columns A-D)
  - **B. Topic**
  - **C. What’s the Problem?** Clinician Burden - requirements/obligations beyond essentials of safe and effective clinical practice
  - **D. Why did it Happen?**
  - **E. What will be done to prevent it from happening (now and in the future)?**
- **8. Cause Matrix**
- **9. RCB “Comment Only” Ballot Responses**
- **10. Terms** – Reducing, Clinician, Burden
- **11. References** – Enumerated list of Reference Sources and Personal Commenters
- **12. Leads** – RCB Project Co-Facilitators and EHR WG Co-Chairs
- **13. Acknowledgements** – Reviewers and Contributors

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