HL7 Guidance: Reducing Clinician Burden, Release 1

September 2020

HL7 Comment-Only Ballot

Sponsored by:
Electronic Health Records Work Group

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Logical Observation Identifiers Names & Codes (LOINC)	Regenstrief Institute
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Health Level Seven (HL7) – Electronic Health Record Work Group
Reducing Clinician Burden Project

Comment Only Ballot – September 2020
[Please offer your comments in the Table on Page 7 of this document, not the spreadsheet on the ballot website.]

Objective: To Gain Input and Guidance from the HL7 International Community on Workable Strategies for Clinician Burden Reduction

Statements regarding Burden

- "[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 Feb 2020
- "Rather than an electronic ecosystem of information, the nation's thousands of EHRs largely remain a sprawling, disconnected patchwork." – Fortune Magazine/Kaiser Health News - Death by a Thousand Clicks: Where Electronic Health Records Went Wrong, 18 Mar 2019
- "Across vendors, there is variation in data formats (technical interoperability), lack of shared meaning (semantic interoperability), and unusable delivery to physicians, further limiting interoperability. Lack of health IT standards, conformance testing, validation, and transparency continues to hinder seamless information exchange." – Journal of the American Medical Informatics Association - The complex case of EHRs: examining the factors impacting the EHR user experience, 2 Apr 2019
- "Despite significant investments in technology, physicians do not always have access to patient records that originated in another clinic or hospital, or even from within their organization, which creates frustration, delays in care, and patient safety risks." – Ibid.
- "Poorly functioning, time-consuming, and inadequate information systems have emerged as one of the most stressing factors in physicians' work." – BMC Health Services Research, Finnish physicians' stress related to information systems keeps increasing: A longitudinal three wave survey study (Finland), 17 Oct 2017
- "[Exchange brings] in information with different structure and organization, further confounding efforts to understand the information." – Journal of the American Board of Family Medicine, Physician Information Needs and Electronic Health Records (EHRs): Time to Reengineer the Clinic Note, May/Jun 2015
- "When information is shared, it is not always relevant, appropriate, or helpful, or may not be what the physician needs to ensure high-quality care." – American College of Physicians, Putting Patients First by Reducing Administrative Tasks in Health Care, 2 May 2017
- "[There is insufficient support for] data exchange standards that ensure data exchanged between EHRs is accurate, timely and resistant to errors." – American Medical Association, Improving Care: Priorities to Improve Electronic Health Record Usability, 2014
- "Many physicians believe that much of the therapeutic value of a doctor visit is in the interactions... but EHRs have 'literally taken the doctor from facing the patient to facing the computer'." – Scientific American - Electronic Health Records Need a Shot in the Arm, 1 Feb 2020
- "When EHRs are implemented, the culture is often such that physicians feel if they articulate hazards associated with the EHR they are at risk of being pigeonholed as resistors, technology laggards or not supportive of the direction that the organization was going... Over the years that caused a lot of moral stress for physicians and there was a feeling that their leaders didn't always have their backs with respect to the tools needed to safely care for patients." – American Medical Association - How to create better EHR usability to enhance physicians' lives, 16 Jul 2020

Statements regarding Time Burden

- "During an average clinical visit, U.S. physicians spent 44% of computer-facing time on documentation and only 24% on patient communication." – Annals of Internal Medicine, Physician Burnout in the Electronic Health Record Era: Are We Ignoring the Real Cause?, 8 May 2018
- "There is data that shows for every hour physicians are directly with a patient, they are spending two hours doing administrative work. Many physicians are spending one to two hours at home working in the EHR - known as pajama time." – Physicians Practice, Reducing Clinician Burnout in Five EHR-Related Areas, 9 Mar 2018
- "A 2016 study... estimated that an average-size medical practice spends 785.2 hours ($40,069 per physician, $15.4 billion per year in the aggregate) reporting on quality measures that do little to help improve care or assist patients with treatment decisions." – Health Affairs, Patient-Centered, Value-Based Health Care Is Incompatible with the Current Climate of Excessive Regulation, 3 Oct 2018
- "According to the American Medical Association, the problem of physician burnout is impacting about 50 percent of practicing doctors, and EHRs are squarely to blame, given that for every hour physicians spend on direct patient care they spend two hours on EHR data entry and other administrative tasks." – Health Data Management, AMA president calls for end to electronic health record abuse, 14 Nov 2018
- "Surveys of clinicians suggest that records systems take up at least 33 percent of their time, and 49 percent of their time is spent doing what they perceive to be clerical work." – Health Data Management - EHR Modifications, Data Analysis become Tools to Fight Doc Burnout, 17 Oct 2019

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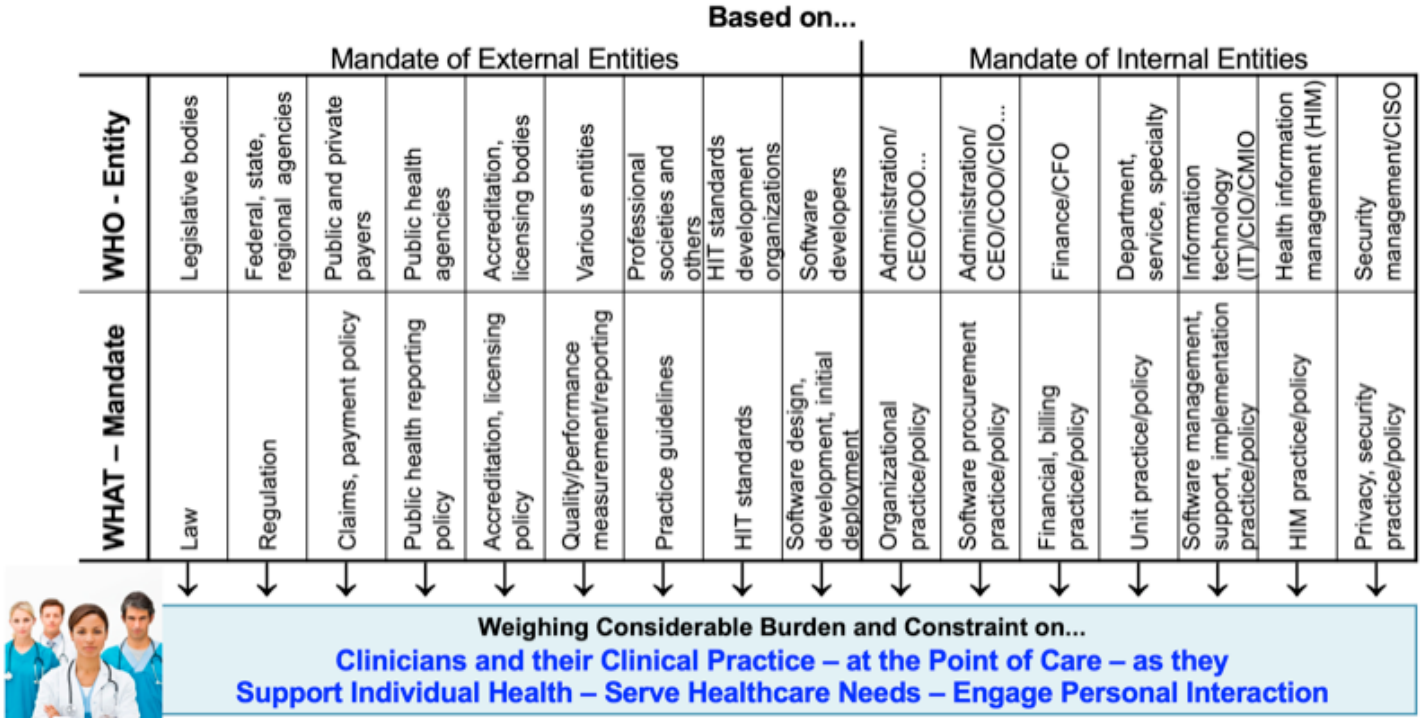
Surveys say...

- "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
- "A recent... report revealed that 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

Noting that EHRs are often Co-Opted for other Purposes

EHRs patient care and care management priorities are displaced and degraded 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... 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
- "Burdensome administrative tasks [are] those that 'have a negative effect on quality and patient care, that unnecessarily question the judgment of physicians and other clinicians, and/or that increase costs.' These could include tasks that are mandated to be performed by the physician but could safely be delegated to trained and supervised staff. Many of these incremental administrative tasks are requested by external entities, including government regulators, payers, and oversight entities. In addition, many do not require the unique skill set of a physician and thus are inappropriately consuming physician resources." – Journal of the American Medical Informatics Association - The complex case of EHRs: examining the factors impacting the EHR user experience, 2 Apr 2019



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Noting that Few Clinicians are actually Involved in the EHR Decision or Usability Testing

- "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.
- "It is not uncommon for there to be no clinician or physician participation in the usability testing of vendor products." – Journal of the American Medical Informatics Association - The complex case of EHRs: examining the factors impacting the EHR user experience, 2 Apr 2019

Noting that Clinician 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.'" – Fortune and Kaiser Health News – Death by a Thousand Clicks: Where Electronic Health Records Went Wrong" – 18 Mar 2019
- "Something's gone terribly wrong. Doctors are among the most technology-avid people in society; computerization has simplified tasks in many industries. Yet somehow we've reached a point where people in the medical profession actively, viscerally, volubly hate their computers." – The New Yorker/Annals of Medicine, Why Doctors Hate Their Computers, 12 Nov 2018
- "The growth in poorly designed digital health records and quality metrics has required that physicians spend more and more time on tasks that don't directly benefit patients, contributing to a growing epidemic of physician burnout." – Thrive Global, Here's Why Physician Burnout is Officially "A Public Health Crisis", 31 Jan 2019
- "Physician burnout is a public health crisis, an assessment that has been echoed by... both major medical journals and... the lay press. A primary impact of burnout is on physicians' mental health, but it is clear that one can't have a high performing health care system if physicians working within it are not well. Therefore, the true impact of burnout is the impact it will have on the health and well-being of the American public." – Massachusetts Medical Society, Massachusetts Health and Hospital Association, Harvard T.H. Chan School of Public Health, Harvard Global Health Institute - A Crisis in Health Care: A Call to Action on Physician Burnout, 18 Nov 2018
- "The impact of burnout limited to physicians and their employers. Patients do not like being cared for by physicians who are experiencing symptoms of burnout, which is significantly correlated with reduced patient satisfaction in the primary care context. Evidence further suggests that burnout is associated with increasing medical errors." – Ibid.

Our Project – Overview

- Is open and collaborative – oriented to US and international interests
- Has its primary focus on *clinician burden including time & data quality burdens* associated with:
  - Use/engagement of EHR/HIT systems
  - Capture, exchange and use of health information
- Considers:
  - 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
- Has undertaken an extensive review of reference sources *to document the substance, impact and extent of clinician burden*
  - Now >120 reference sources
  - Including trade publications, professional society journals, articles, studies, personal experience...
- Continues work to identify root causes in each RCB topic area – not 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?
- Has developed a White Paper: *"Reducing Clinician Burden by Improving Electronic Health Record Usability and Support for Clinical Workflow"*

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- *Looks for success stories specifically addressing burden reduction and burnout*
- Anticipates influence on future objectives of HL7, ISO TC215 and other standards development efforts to address clinician burden (and its effect on burnout)

Our Objectives

In general order of priority:

- EHR WG Standards Development: To understand what the HL7 EHR Work Group could do to address clinician burden (sometimes leading to burnout). This is a vital objective in context of our development plan for ISO/HL7 10781 Electronic Health Record System Functional Model (EHR-S FM), Release 3.
- HL7 Standards Development: To understand what HL7 – across all WGs and standards development projects – might do to address clinician burden/burnout. The Da Vinci Project has a number of use cases and efforts underway that will be beneficial from the standpoint of facilitating real-time provider/payer communication. Other WGs and projects might consider additional strategies in context of reducing burden/burnout.
- ISO TC215 Standards Development: To understand what ISO TC215 – across its WGs and subcommittees – might do to address clinician burden/burnout. This will motivate efforts to update ISO/HL7 10781 EHR-S FM but also from the companion project – ISO 4419 (Reducing Clinician Burden – currently an ISO TC215 Preliminary Work Item).
- Health Industry Stakeholders – To understand what key health industry stakeholders – Providers (both individual and organizational), Regulators, Payers, Accreditation Bodies, Public Health Agencies, Professional Societies, Software Developers and others – might do to address burden.

Our Analysis – Clinician Burden Topic Areas

As the RCB analysis progressed, we identified the following topic areas:

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

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Our Analysis – Worksheet (Draft in Progress)

Via the Worksheet we organized our analysis, showing input, contributions and findings. The Worksheet is structured in Tabs 1-12 (from left to right), some with Columns (as noted):

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
5. Data Quality Burden – Excerpts from reference sources, with extrapolations
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 B-E)
   B. Topic
   C. What's the Problem? Clinician Burden – requirements/obligations beyond those essential for 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. Terms – Reducing, Clinician, Burden
10. References – Enumerated list of Reference Sources and Personal Commenters
11. Leads – RCB Project Co-Facilitators and EHR WG Co-Chairs
12. Acknowledgements – Reviewers and Contributors

Success Stories

As the project continues, we have been fortunate to get excellent presentations from a numer of organizations who have demonstrated success in addressing clinician burden and related burnout. Here's the current list (with links):

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

[More to come...]

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Additional Information, Presentations, Links and Project Materials

- RCB Project Wiki
- RCB DRAFT White Paper: Reducing Clinician Burden by Improving Electronic Health Record Usability and Support for Clinical Workflow, David Schlossman MD PhD, Lisa Masson MD, James Tcheng MD, Luann Whittenburg RN PhD, Barry Newman MD, Gary Dickinson FHL7, released 1 Jun 2020
- ONC 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 Unveils Major Organizational Change to Reduce Provider and Clinician Burden and Improve Patient Outcomes, published 23 Jun 2020
- Payment Reform in the Era of Advanced Diagnostics, Artificial Intelligence and Machine Learning, James Sorace MD MS, presented 3 Aug 2020
- Examining the Health IT Vendor's Perspective – Lessons learned as a physician working for a health IT vendor, Ryan Mullins MD CPE, presented 20 Jul 2020
- HL7 Da Vinci Project Overview (focused on Provider/Payer Exchange), Viet Nguyen MD, presented 18 May 2020
- Data Quality and Clinician Burden - Overview, Examples, and Basic Recommendations, Reed Gelzer MD, presented 4 May and 1 Jun 2020
- Exploring FHIR to Reduce Burden for Quality Measurement, Floyd Eisenberg MD PhD, presented 20 Apr 2020

Seeking Input and Guidance – Our Questions for You

We welcome your input via this open ballot and welcome your participation as we continue our review and analysis of clinician burden and burnout. The RCB Project Team meets on the 1st and 3rd Mondays of each month at 3PM ET US. See the RCB Project Wiki for additional information and project materials.

→→→ Questions follow on the next page.

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Our Questions	Your Input and Guidance...
1. HL7 is a key HIT standards developer for data/record exchange, vocabulary, system functionality, data protection... What should HL7 do to address clinician burden/burnout? Be specific. a. Who – HL7 Work Group(s) to be engaged b. What – Standards (new/existing) to be developed/ updated c. What – Burden topic(s) to be addressed d. How – To tackle those burden/burnout topics	
2. HL7 specifications are integral to trusted health information exchange between key health/healthcare stakeholders in many parts of the world today – but these Standards are largely invisible to front-line clinicians in their daily practice. Should HL7 be more than a shadow in the background? a. What can/should HL7 do to become a visible presence in health data/record management (manifest to clinicians and all end users)? b. Is there an HL7 branding and "seal/badge of confidence" opportunity here? E.g., wherein HL7 acts to ensure *truth* (accuracy, authenticity, fidelity...) and *trust* (assurance, accountability, traceability...) in health data/record content/context? c. Should HL7 Standards be oriented to manage health data/record content/context from end-to-end? i. Throughout its lifespan? Point of origination to point of use? Point of origination to ultimate point of archival, deletion or destruction? ii. Through its journey from source to use – conveyed across one or more points of exchange?	
3. What should other SDOs (e.g., ISO TC215, CEN TC251, SNOMED, LOINC) do to address clinician burden and burnout?	
4. What might be the best way to engage front-line (and directly-impacted) clinicians in developing standards-based solutions to reduce burden?	
5. What should other key stakeholders do to address clinician burden and burnout? Such as... a. Providers: small and large? b. Regulators: US CMS, ONC, FDA, others? c. Payers: public and private? d. Accreditation bodies? e. Public health agencies: CDC, others? f. Professional societies? g. Software developers?	
6. Are there other reference sources the RCB Project Team should review?	
7. Are there other burden topics we should consider?	
8. Are there other organizations with burden reduction success stories we should invite to share their experience, findings and recommendations?	

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