“Reducing Clinician Burden”
Project Overview

Health Level Seven (HL7)
Electronic Health Record Work Group (EHR WG)
18 September 2019
Quantifying the EHR Burden

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
Reducing Clinician Burden

Stakeholders

<table>
<thead>
<tr>
<th>WHAT – Burden Targeted</th>
<th>WHO – Might Best Address Burden</th>
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<tbody>
<tr>
<td>In Clinical Practice – At Point of Care</td>
<td>Providers, Clinical Professional Societies</td>
</tr>
<tr>
<td>In System/Software Design</td>
<td>EHR/HIT System Developers/Vendors</td>
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<tr>
<td>In System/Software Implementation</td>
<td>EHR/HIT System Implementers, Providers</td>
</tr>
<tr>
<td>In Health Informatics Standards, e.g.</td>
<td></td>
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<tr>
<td>• EHR System Functional Model/Profiles</td>
<td>Standards Developers/Profilers:</td>
</tr>
<tr>
<td>• Messages (HL7 v.2x), Documents (HL7 CDA), Resources (HL7 FHIR)</td>
<td>• HL7, DICOM, IHE, ISO TC215, NCPDP,</td>
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<tr>
<td>• Implementation Guides (C-CDA, IPS)</td>
<td>• ASC X12N, SNOMED...</td>
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<tr>
<td>• Vocabulary</td>
<td>Standards Coordinating Bodies</td>
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<tr>
<td>In Regulation, Policies</td>
<td>• Joint Initiative Council</td>
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<td>In Claims, Payment Policies</td>
<td>Government, Accreditation Agencies</td>
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<td>Public and Private Payers</td>
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18 September 2019

HL7 EHR WG - "Reducing Clinician Burden" Project
### Reducing Clinician Burden

#### Defining Terms (DRAFT)

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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</table>
| Reducing (reduce) | “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  
| | “To lower in... intensity” – Dictionary.com  
| | “To narrow down”, also “To bring to a specified state or condition” – Merriam-Webster |
| Clinician | “A health professional whose practice is based on direct observation and treatment of a patient” – Mosby’s Medical Dictionary  
| | “An expert clinical practitioner and teacher” – Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health  
| | “A health professional, such as a physician, psychologist, or nurse, who is directly involved in patient care” – American Heritage Medical Dictionary |
| Burden | “A source of great worry or stress”, and “[Something that] cause[s] difficulty [or] distress”, also “To load or overload” – The Free Dictionary  
| | “Something that is carried, [as in a] duty [or] responsibility”, also “Something oppressive or worrisome” – Merriam-Webster Dictionary |
Reducing Clinician Burden
Defining Terms (DRAFT)

<table>
<thead>
<tr>
<th>Clinician Burden</th>
<th>Anything that hinders patient care, either directly or indirectly [such as]:</th>
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</thead>
<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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<tr>
<td></td>
<td>3) Undue effort,</td>
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<td></td>
<td>4) Undue complexity of workflow,</td>
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<td></td>
<td>5) Undue cognitive burden,</td>
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<td></td>
<td>6) [Uncertain quality/reliability of data/record content,]</td>
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<td></td>
<td>7) Anything that contributes to burnout, lack of productivity, inefficiency, etc.,</td>
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<tr>
<td></td>
<td>8) Anything that gets in the way of a productive clinician-patient relationship.</td>
</tr>
</tbody>
</table>

-- Peter Goldschmidt
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
Reducing Clinician Burden

Burden Sometimes leads 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 in January [2019] the Harvard School of Public Health and other institutions deemed it a ‘public health crisis.’”

**SPOK CLINICIAN BURNOUT SURVEY RESULTS AT-A-GLANCE**

- **92%**
  - A public health crisis
  - 92% of clinicians called burnout “a public health crisis.”

- **90%**
  - Contributing factors
  - 90% of clinicians believe increased and ineffective technology contributes to risk of clinician burnout.

- **95%**
  - EHR usability and change
  - 95% of clinicians believe improving electronic health record usability will be at least somewhat helpful, with 27% reporting it will be “extremely helpful.”

- **65%**
  - Seeking help
  - 65% of clinicians say they are prevented from seeking help for symptoms of burnout because their organization lacks institutional attention and resources.

Source: SPOK - Clinician Burnout in Healthcare
<table>
<thead>
<tr>
<th>Interventions</th>
<th>Percent of organizations implementing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support proactive mental health treatment and support</td>
<td>30%</td>
</tr>
<tr>
<td>Improve EHR usability</td>
<td>20%</td>
</tr>
<tr>
<td>Appoint an executive-level chief wellness officer</td>
<td>13%</td>
</tr>
<tr>
<td>None of the recommended strategies</td>
<td>40%</td>
</tr>
<tr>
<td>Self-care strategies (not recommended by Crisis in Healthcare paper)</td>
<td>34%</td>
</tr>
</tbody>
</table>

Source: SPOK - Clinician Burnout in Healthcare
From: Physician stress and burnout: the impact of health information technology
From: Physician stress and burnout: the impact of health information technology
Reducing Clinician Burden Project

Overview

- Is a formal project of the HL7 EHR Work Group
- Has an extensive list of active participants, contributors and followers
- Is oriented to both US and international interests
- Has undertaken an extensive review of reference sources to document the substance and extent of clinician burden
- Continues work to identify root causes in each RCB topic area (not just EHR system functionality and usability issues - although that is important)
- Is looking for success stories specifically addressing burden reduction
- Intends to use our findings as part of the foundation (and springboard) for EHR-S FM Release 3
- Will influence future directions for HL7 (beyond the EHR WG, e.g., Da Vinci), JIC, ISO TC215, SNOMED and other standards development efforts
Reducing Clinician Burden Project

Assessing the Burden

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

• Considering:
  • Clinical practice – at the point of care
  • Regulatory, accreditation, administrative, payor mandates
  • EHR/HIT system design, functionality, usability and implementation
  • Data quality and usability

• Gather details from many reference sources:
  • Trade publications, professional society journals, articles, studies, personal experience

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

Topics/Categories

1.1) Clinician Burden – In General
1.2) Clinician Burnout – Sometimes the Result
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 overload
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
34.1) Identity matching
34.2) Identity and credential management
35) Data quality and integrity
36) Process integrity
37.1) Problem list
37.2) Medication list
37.3) Allergy list
37.4) Immunization list
37.5) Surgery, intervention and procedure list
Reducing Clinician Burden

Project Plan

- As we progressed...
  - Ongoing environmental scan – to document burdens
  - Engaged focus teams to address burden topics
  - Focused on root causes
    - 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?
  - Have burden(s) already been tackled?
    - Are there RCB proposals and/or success stories that can be referenced?
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
  • Leads: Dr. Reed Gelzer (r.gelzer@trustworthyehr.com)
Reducing Clinician Burden

Success Stories

1. **Duke Heart Business Unit – Procedure Reporting**  
   James Tcheng MD, Duke University

2. **Burnout: How EHR Usability Improves Efficiency & Satisfaction**  
   Greta Branford MD, University of Michigan (presented 15 April 2019)

3. **Benefits of SNOMED CT from a clinical perspective, The Rotherham experience**  
   Monica Jones, NHS Rotherham Foundation Trust (UK) (presented 1 July 2019)

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 (presented 15 July 2019)

5. **Well-Being Playbook, A Guide for Hospital and Health System Leaders**  
   Elisa Arespacochaga, American Hospital Association (scheduled for 19 August)

[more to come...]
2019 USE CASE INVENTORY & STATUS

- Data Exchange for Quality Measures
- Coverage Requirements Discovery
- Documentation Templates and Coverage Rules
- Health Record Exchange: Framework/Library
- Clinical Data Exchange
- Prior-Authorization Support
- Payer Data Exchange
- Payer Data Exchange: Provider Network
- Payer Data Exchange: Formulary
- Alerts/Notifications: Transitions in Care; ER admit/discharge
- Payer Coverage Decision Exchange
- Gaps in Care & Information
- Health Record Exchange: Patient Data Exchange
- Patient Cost Transparency
- Risk Based Contract Member Identification
- Performing Laboratory Reporting
- Chronic Illness Documentation for Risk Adjustment

PROJECT PROCESS
Define requirements (technical, business and testing)
- Create Implementation Guide
- Create and test Reference Implementation (prove the guide works)
- Pilot the solution
- Deploy the solution

Source: HL7
Reducing Clinician Burden Project

HL7 Standards Focused on Burden

• Da Vinci Project – Provider ↔ Payer Communication

• EHR System Usability Functional Profile
  • Functions and Conformance Criteria to Enhance System Usability
  • Passed ballot, preparing for publication

• EHR System Functional Model, Release 3
  • In early design/development stage
Reducing Clinician Burden Project

Materials

- Project Documents – Project Wiki
  - Project Overview, Presentations
  - DRAFT RCB Analysis Worksheet
  - Reference Sources
Reducing Clinician Burden Project

Schedule

• Bimonthly teleconferences, Monday at 3PM ET (US)
  • 1st and 3rd Mondays each month
    7/21 October, 4/18 November
  • [https://global.gotomeeting.com/meeting/join/798931918](https://global.gotomeeting.com/meeting/join/798931918)

• Face-to-Face
  • HL7 September Working Group Meeting: Atlanta, Georgia, USA
  • Wednesday, 18 September 2019, 1:45 – 4:30 PM ET (US/Canada)
Reducing Clinician Burden Project

Contacts

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  Apprio Inc
• Mark Janczewski MD: mark.janczewski@gmail.com
  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

Comments to US Federal Government

• Comments may also be directed to:
  • US Centers for Medicare/Medicaid Services (CMS)
    reducingproviderburden@cms.hhs.gov
Reducing Clinician Burden Project

Outreach + Expressed Interest

- Standards Developers
  - Joint Initiative Council (JIC), comprising HL7, ISO TC215 (HIT/International), CEN TC251 (HIT/Europe), DICOM (Diagnostic Imaging), CDISC (Clinical Research), GS1 (IDs/Labeling), SNOMED (Clinical Vocabulary), IHE (Standards Profiling)

- International Healthcare Community
  - Australia, Canada, Chile, Finland, Italy, Netherlands, New Zealand, Norway, Poland, Sweden, United Kingdom

- Government
  - US Centers for Medicare and Medicaid Services (CMS)
  - US Office of National Coordinator for HIT (ONC)
  - US National Institutes of Health (NIH)
  - US Veterans Administration (VA)
  - UK National Health Service (NHS)

- Accreditation Bodies
  - Joint Commission

- Clinical Professional Societies
  - American College of Physicians (ACP)
  - American College of Surgeons (ACS)
  - American Medical Informatics Association (AMIA)
  - American Nurses Association (ANA)

- Providers
  - Adventist Health, Beth Isreal/Deaconess, Cedars-Sinai Medical Center, Duke University, Intermountain Healthcare, Kaiser Permanente, Loma Linda University, Mayo, Sutter Health, University of Arkansas, University of Nebraska, University of Michigan, University of Pennsylvania, US Veterans Administration

- Payers
  - UnitedHealth Group

- EHR/HIT System Developers
  - CentriHealth, Cerner, Epic, TLD Systems

- Consortia
  - Health Record Banking Alliance
  - Health Services Platform Consortia
  - Clinical Information Interoperability Council
Reducing Clinician Burden Project

Analysis Worksheet – Tabs

1. Burdens
2. Time Burdens
3. Data Quality Burdens
4. Clinician Stories
5. Terms: Reducing, Clinician, Burden
6. Root Causes
7. Reference Sources
8. Leads: EHR WG Co-Chairs
9. Acknowledgements: Reviewers + Contributors
10. RCB Topics
Reducing Clinician Burden Project

Analysis Worksheet

First Tab – Burdens - Columns

B) Clinician Burdens (the current situation) – Raw Input
C) Recommendations – Raw Input
D) Reference Sources
E) Targeted RCB Recommendation(s) – refined from our reference (and other) sources
F) RCB Proposals and Successful Solutions