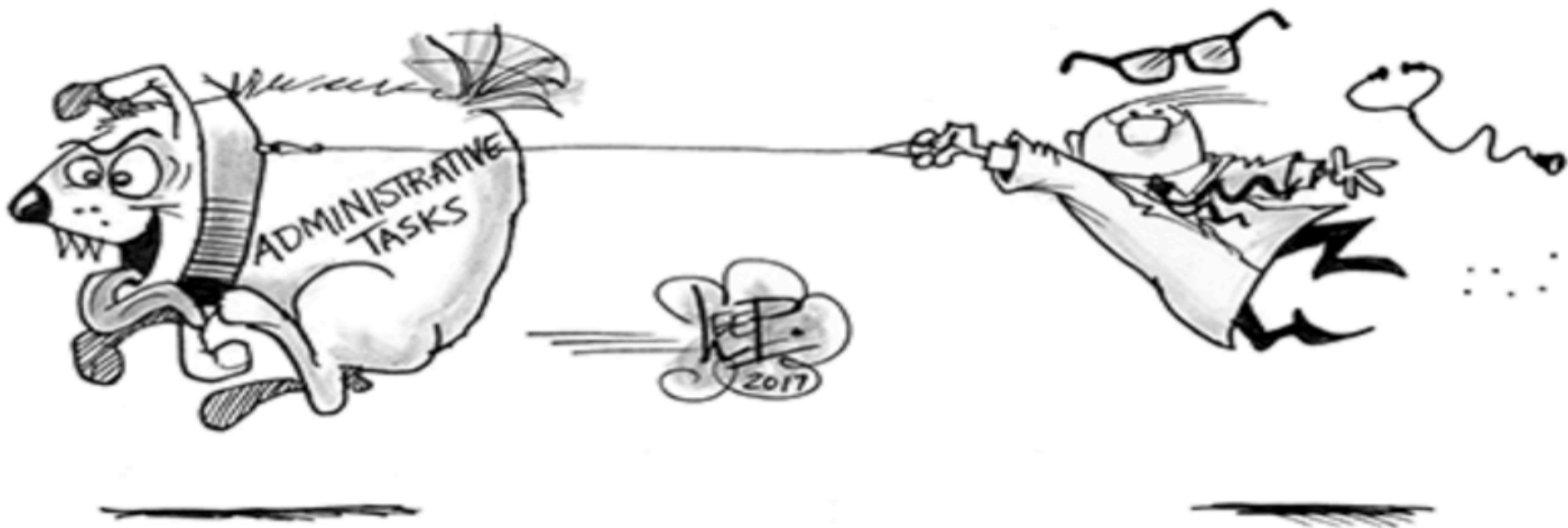


# “Reducing Clinician Burden” Project Overview

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

WHAT – Burden Targeted	WHO – Might Best Address Burden	With Engaged Clinicians
In Clinical Practice – At Point of Care	Providers, Clinical Professional Societies	
In System/Software Design	EHR/HIT System Developers/Vendors	
In System/Software Implementation	EHR/HIT System Implementers, Providers	
In Health Informatics Standards, e.g. <ul style="list-style-type: none"> <li>• EHR System Functional Model/Profiles</li> <li>• Messages (HL7 v.2x), Documents (HL7 CDA), Resources (HL7 FHIR)</li> <li>• Implementation Guides (C-CDA, IPS)</li> <li>• Vocabulary</li> </ul>	Standards Developers/Profilers: <ul style="list-style-type: none"> <li>• <a href="#">HL7</a>, DICOM, IHE, ISO TC215, NCPDP, ASC X12N, SNOMED...</li> </ul> Standards Coordinating Bodies <ul style="list-style-type: none"> <li>• Joint Initiative Council</li> </ul>	
In Regulation, Policies	Government, Accreditation Agencies	
In Claims, Payment Policies	Public and Private Payers	

## Reducing Clinician Burden

# Defining Terms (DRAFT)

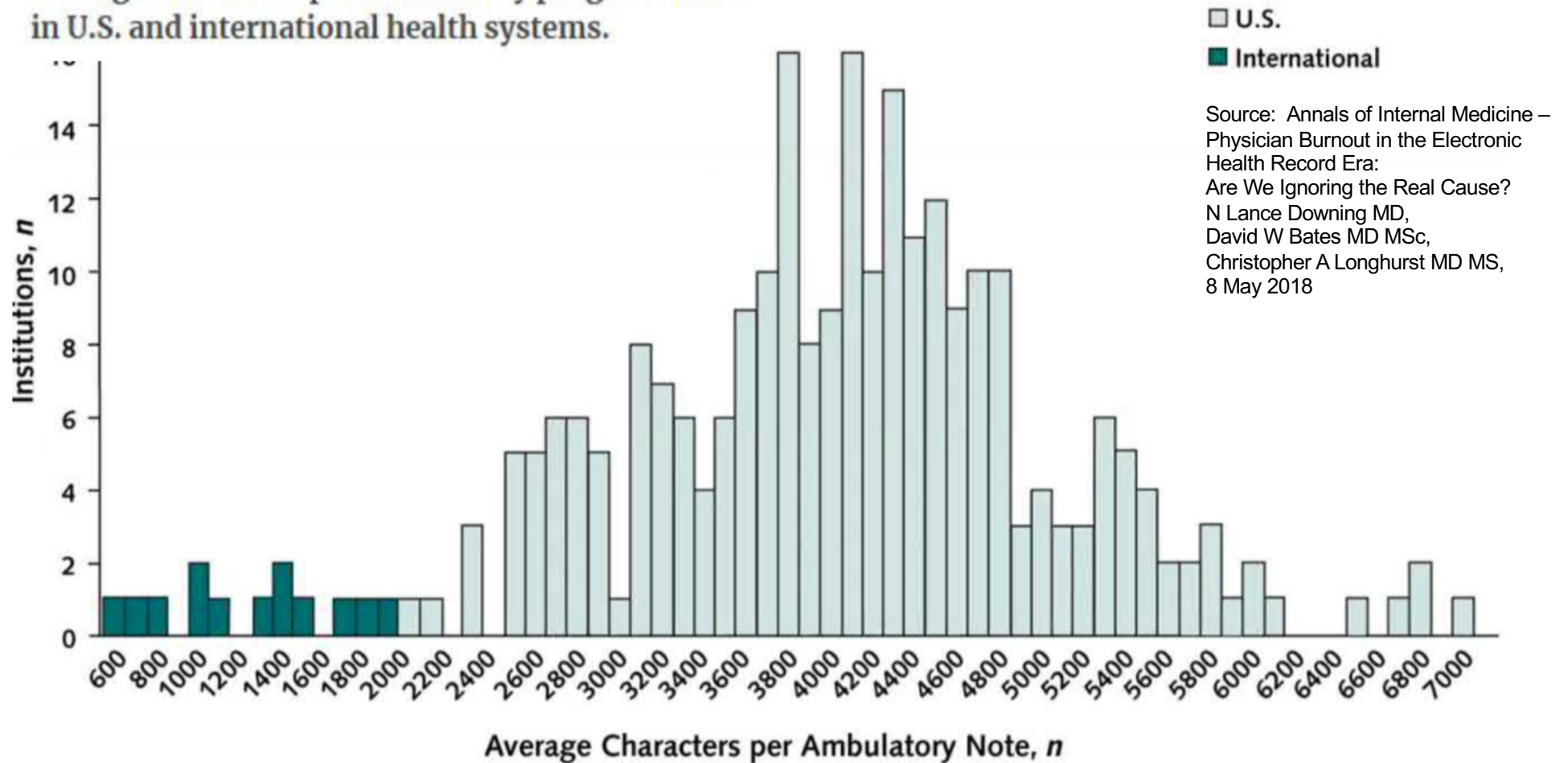
Reducing (reduce)	<ul style="list-style-type: none"><li>• “To bring down, as in extent, amount, or degree; diminish”, and “To gain control of... [to] conquer”, and “To simplify the form of... without changing the value”, also “To restore... to a normal condition or position” – The Free Dictionary</li><li>• “To lower in... intensity” – Dictionary.com</li><li>• “To narrow down”, also “To bring to a specified state or condition” – Merriam-Webster</li></ul>
Clinician	<ul style="list-style-type: none"><li>• “A health professional whose practice is based on direct observation and treatment of a patient” – Mosby's Medical Dictionary</li><li>• “An expert clinical practitioner and teacher” – Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health</li><li>• “A health professional, such as a physician, psychologist, or nurse, who is directly involved in patient care” – American Heritage Medical Dictionary</li></ul>
Burden	<ul style="list-style-type: none"><li>• “A source of great worry or stress”, and “[Something that] cause[s] difficulty [or] distress”, also “To load or overload” – The Free Dictionary</li><li>• “Something that is carried, [as in a] duty [or] responsibility”, also “Something oppressive or worrisome” – Merriam-Webster Dictionary</li></ul>

## Reducing Clinician Burden

# Defining Terms (DRAFT)

Clinician Burden	<p>Anything that hinders patient care, either directly or indirectly [such as]:</p> <ol style="list-style-type: none"><li>1) Undue cost or loss of revenue,</li><li>2) Undue time,</li><li>3) Undue effort,</li><li>4) Undue complexity of workflow,</li><li>5) Undue cognitive burden,</li><li>6) [Uncertain quality/reliability of data/record content,]</li><li>7) Anything that contributes to burnout, lack of productivity, inefficiency, etc.,</li><li>8) Anything that gets in the way of a productive clinician-patient relationship.</li></ol> <p>-- Peter Goldschmidt</p>
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## Average characters per ambulatory progress note in U.S. and international health systems.







# 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.’”
- [Fortune and Kaiser Health News: “Death by a Thousand Clicks: Where Electronic Health Records Went Wrong”, Erika Fry and Fred Schulte, published 18 Mar 2019](#)

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



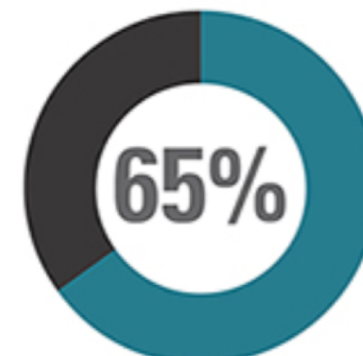
**A public health crisis**  
92% of clinicians called burnout "a public health crisis."



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

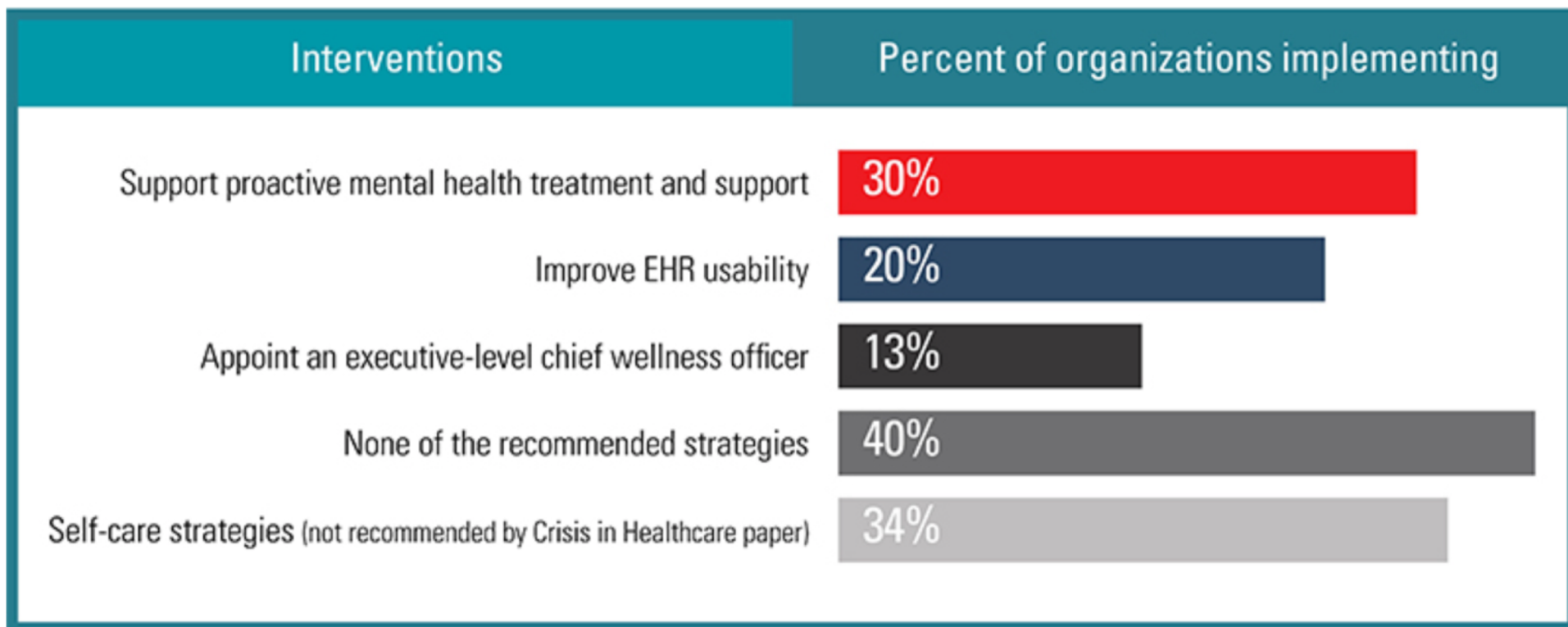


**EHR usability and change**  
95% of clinicians believe improving electronic health record usability will be at least somewhat helpful, with 27% reporting it will be "extremely helpful."

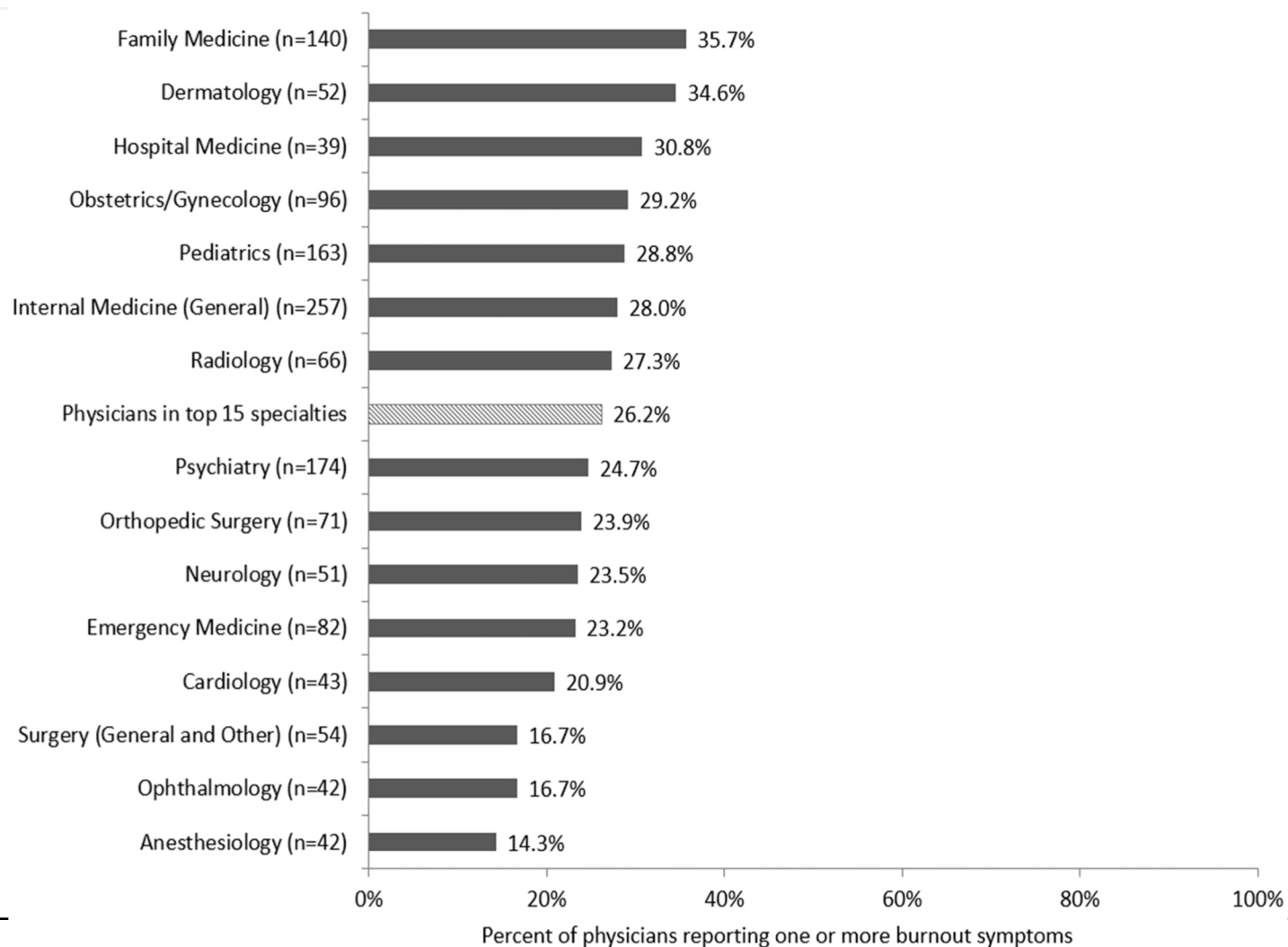


**Seeking help**  
65% of clinicians say they are prevented from seeking help for symptoms of burnout because their organization lacks institutional attention and resources.

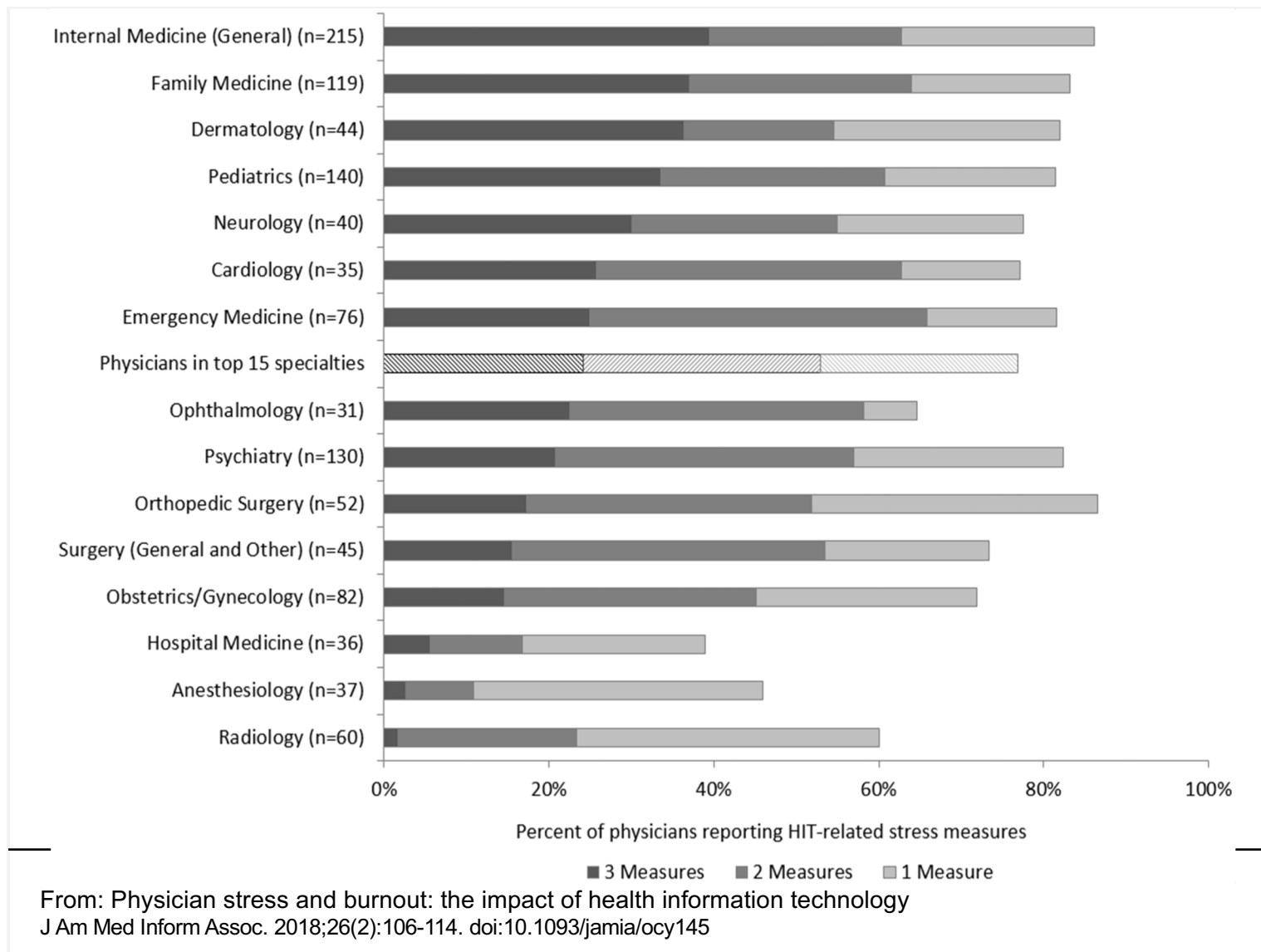
Source: SPOK - Clinician Burnout in Healthcare



Source: SPOK - Clinician Burnout in Healthcare



From: Physician stress and burnout: the impact of health information technology  
J Am Med Inform Assoc. 2018;26(2):106-114. doi:10.1093/jamia/ocy145







## 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                                    | 14) Alerts, reminders, notifications, inbox management  | 27) Software development and improvement priorities, end-user feedback |
| 1.2) Clinician Burnout – Sometimes the Result                         | 15) Information overload  | 28) Product transparency   |
| 2) Patient Safety (and Clinical Integrity)                            | 16) Transitions of care   | 29) Product modularity   |
| 3) Administrative tasks   | 17) Health information exchange, claimed “interoperability”   | 30) Lock-in, data liquidity, switching costs                           |
| 4) Data entry requirements  | 18) Medical/personal device integration   | 31) Financial burden   |
| 5) Data entry scribes and proxies                                     | 19) Orders for equipment and supplies   | 32) Security   |
| 6) Clinical documentation: quality and usability                      | 20) Support for payment, claims and reimbursement   | 33) Professional credentialing   |
| 7) Prior authorization, coverage verification, eligibility tasks      | 21) Support for cost review   | 34.1) Identity matching  |
| 8) Provider/patient face to face interaction                          | 22) Support for measures: administrative, operations, quality, performance, productivity, cost, utilization | 34.2) Identity and credential management                               |
| 9) Provider/patient communication                                     | 23) Support for public and population health  | 35) Data quality and integrity   |
| 10) Care coordination, team-based care                                | 24) Legal aspects and risks   | 36) Process integrity  |
| 11) Clinical work flow  | 25) User training, user proficiency   | 37.1) Problem list   |
| 12) Disease management, care and treatment plans                      | 26) Common function, information and process models   | 37.2) Medication list  |
| 13) Clinical decision support, medical logic, artificial intelligence |   | 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@csbs.org](mailto:lisa.masson@csbs.org))
- Clinical decision support, medical logic, artificial intelligence + Alerts, reminders, notifications, inbox management + Information overload
  - Lead: Dr. James McClay ([jmccclay@unmc.edu](mailto:jmccclay@unmc.edu))
- Clinical workflow
  - Lead: Dr. David Schlossman ([dschloss39@gmail.com](mailto:dschloss39@gmail.com))
- Legal aspects and risks
  - Lead: Dr. Barry Newman ([barrynewman@earthlink.net](mailto:barrynewman@earthlink.net))
- System lock-in, data liquidity, switching costs
  - Lead: Dr. Michael Brody ([mbrody@tldsistemas.com](mailto:mbrody@tldsistemas.com))
- State of data content quality
  - Leads: Dr. Reed Gelzer ([r.gelzer@trustworthyehr.com](mailto:r.gelzer@trustworthyehr.com))

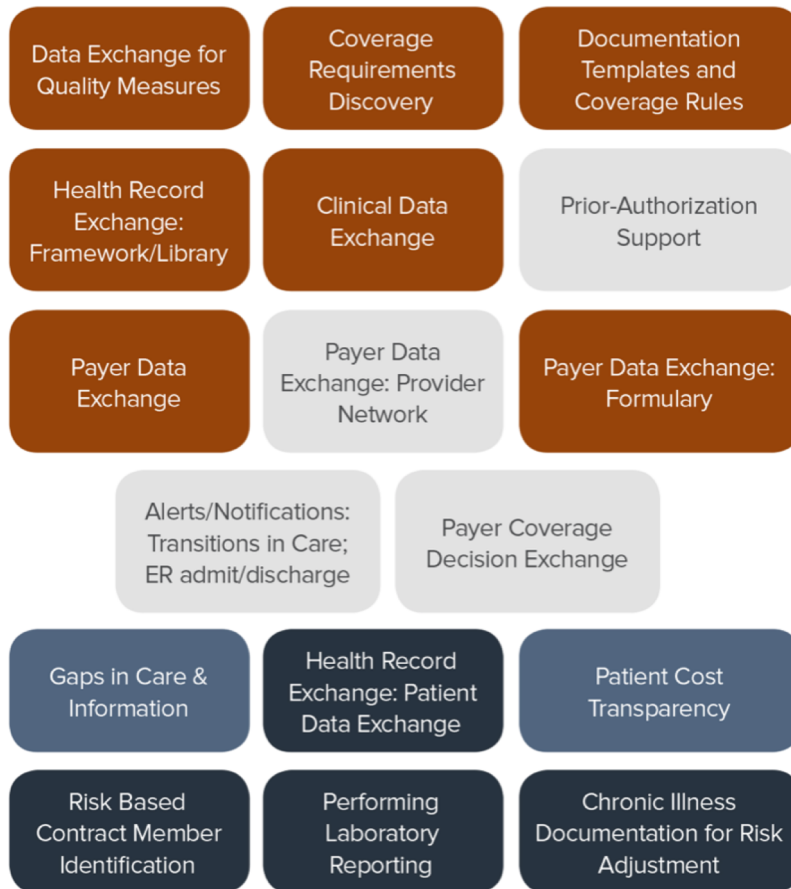


## Reducing Clinician Burden

# 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 Arespachochaga, American Hospital Association (scheduled for 19 August)
- [more to come...]

## 2019 USE CASE INVENTORY & STATUS



### 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

- In Ballot Process through HL7
- Targeted for September Ballot
- In Discovery targeted for HL7 January Ballot
- Use cases in discovery (some may be balloted in January 2020)

Source: HL7

Reducing Clinician Burden Project

# HL7 Standards Focused on Burden

- Da Vinci Project – Provider  $\leftrightarrow$  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
  - [http://bit.ly/reducing\\_burden](http://bit.ly/reducing_burden)
  - Project Overview, Presentations
  - DRAFT RCB Analysis Worksheet
  - Reference Sources
  - Success Stories: [http://bit.ly/RCB\\_success](http://bit.ly/RCB_success)

## 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>
- 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

### Co-Facilitators:

- Gary Dickinson FHL7: [gary.dickinson@ehr-standards.com](mailto:gary.dickinson@ehr-standards.com)  
EHR Standards Consulting
- David Schlossman MD PhD FACP MS CPHIMS: [dschloss39@gmail.com](mailto:dschloss39@gmail.com)  
MedInfoDoc LLC

### HL7 EHR WG Co-Chairs:

- Michael Brody DPM: [mbrody@tldsystems.com](mailto:mbrody@tldsystems.com)  
TLD Systems
- Stephen Hufnagel PhD: [stephen.hufnagel.hl7@gmail.com](mailto:stephen.hufnagel.hl7@gmail.com)  
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- John Ritter FHL7: [johnritter1@verizon.net](mailto:johnritter1@verizon.net)
- Pele Yu MD: [pele.yu@archildrens.org](mailto: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](mailto: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 Israel/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

# 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