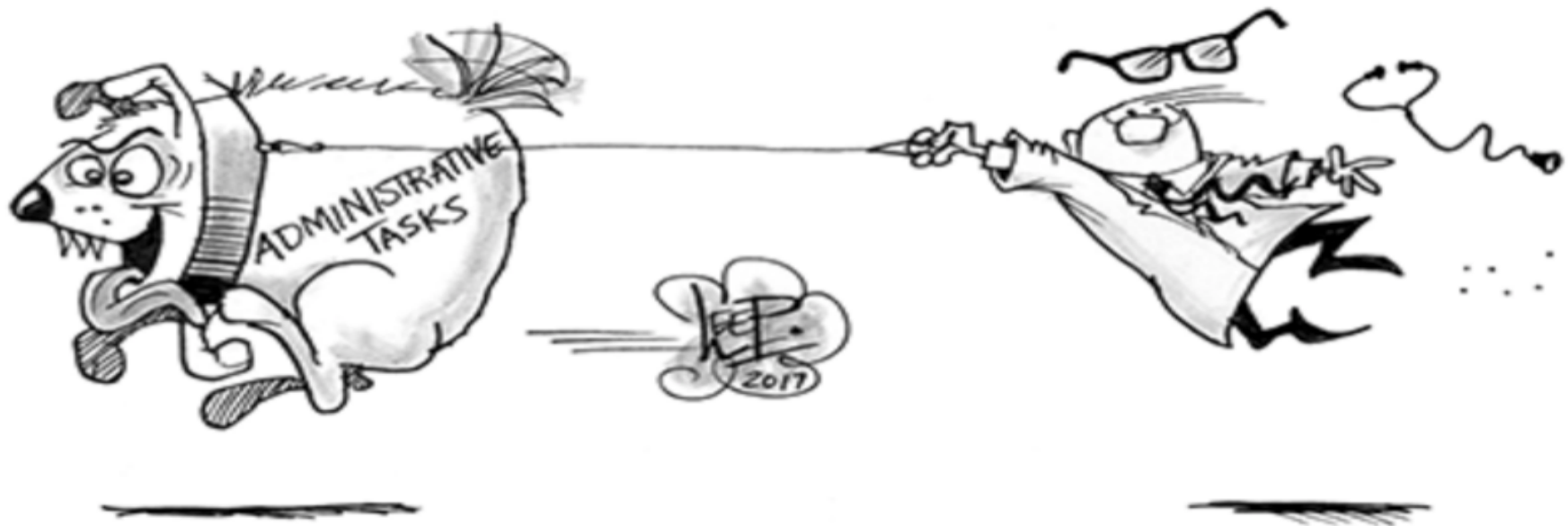


# “Reducing Clinician Burden” Project Overview

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

## Quantifying the EHR Burden

# Few Clinicians Involved in EHR Decision

- "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 [advance practice nurse] 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.



## Quantifying the EHR Burden

# EHRs Co-Opted for Other Purposes

- “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.
  - “The legal system sees the EHR as a statement of legal facts.
  - “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

## Reducing Clinician Burden Stakeholders

| WHAT – Burden Targeted                                                                                                                                                                                                                                                       | WHO – Might Best Address Burden                                                                                                                                                                                                                                                       | <a href="#">With Engaged Clinicians</a> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| 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>, <a href="#">ISO TC215</a>, DICOM, IHE, 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)

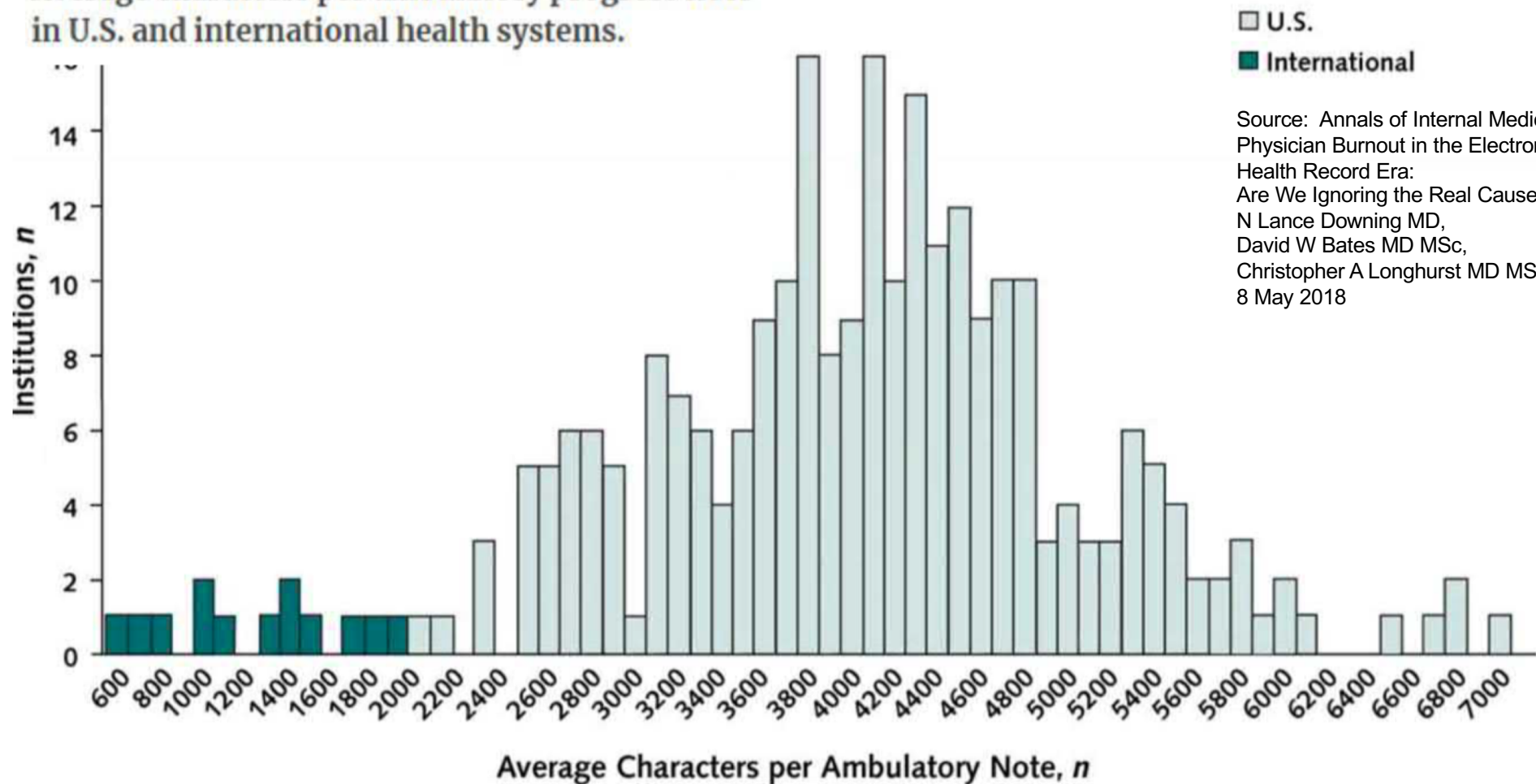
|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reducing<br>(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> |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Average characters per ambulatory progress note in U.S. and international health systems.





# 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 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.

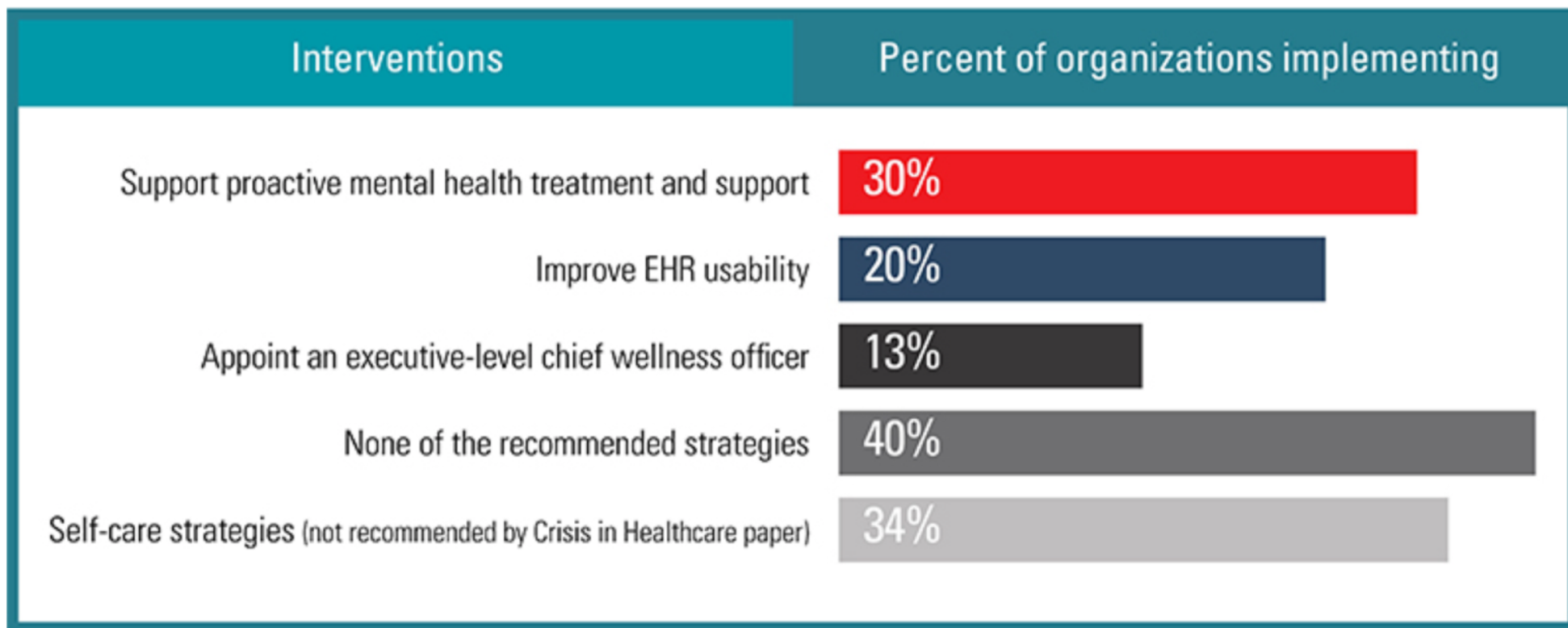


**EHR usability and change**  
95% of clinicians believe improving electronic health record usability will be at least somewhat helpful, with 27% reporting it will be "extremely helpful."

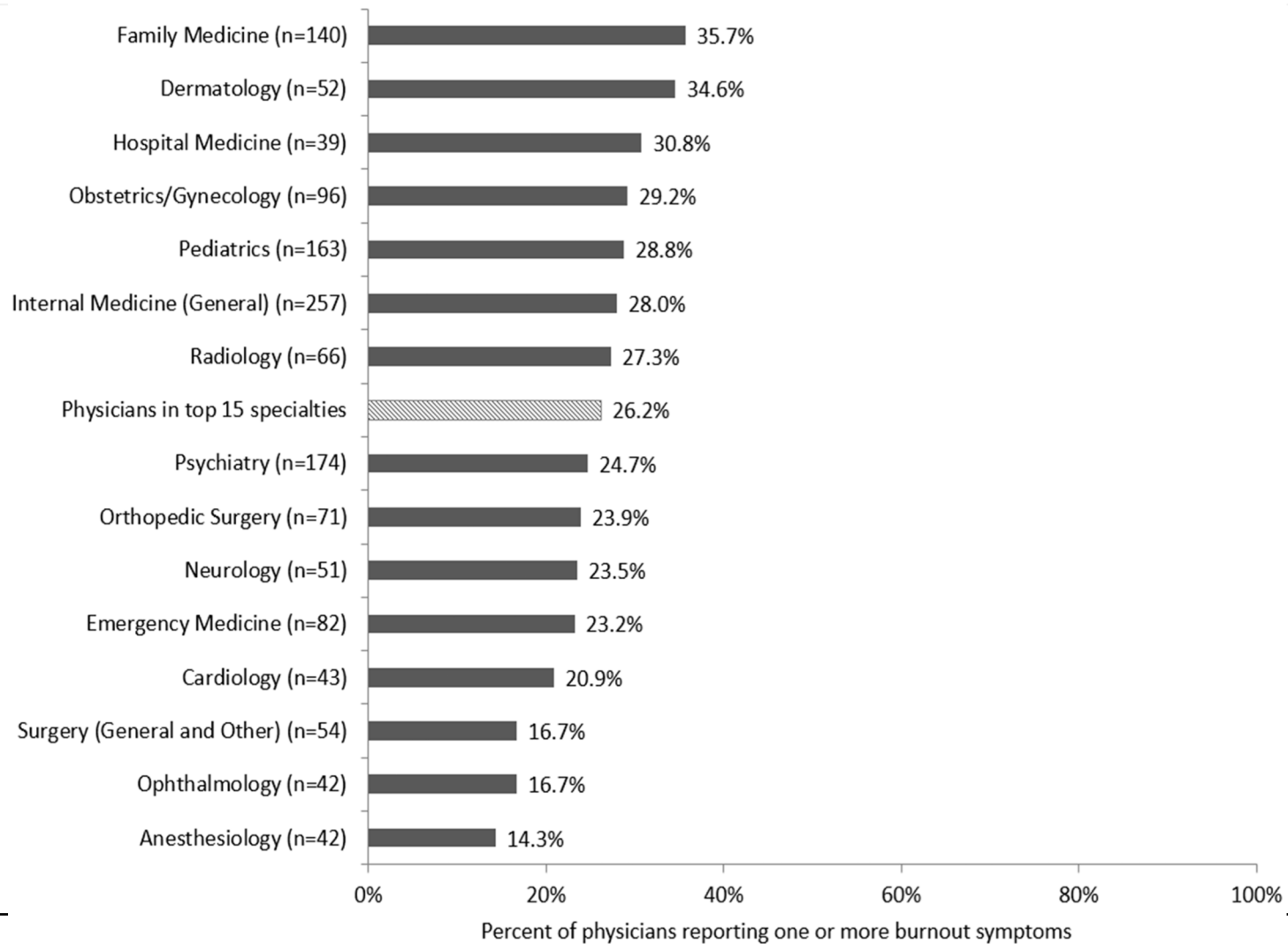


**Seeking help**  
65% of clinicians say they are prevented from seeking help for symptoms of burnout because their organization lacks institutional attention and resources.

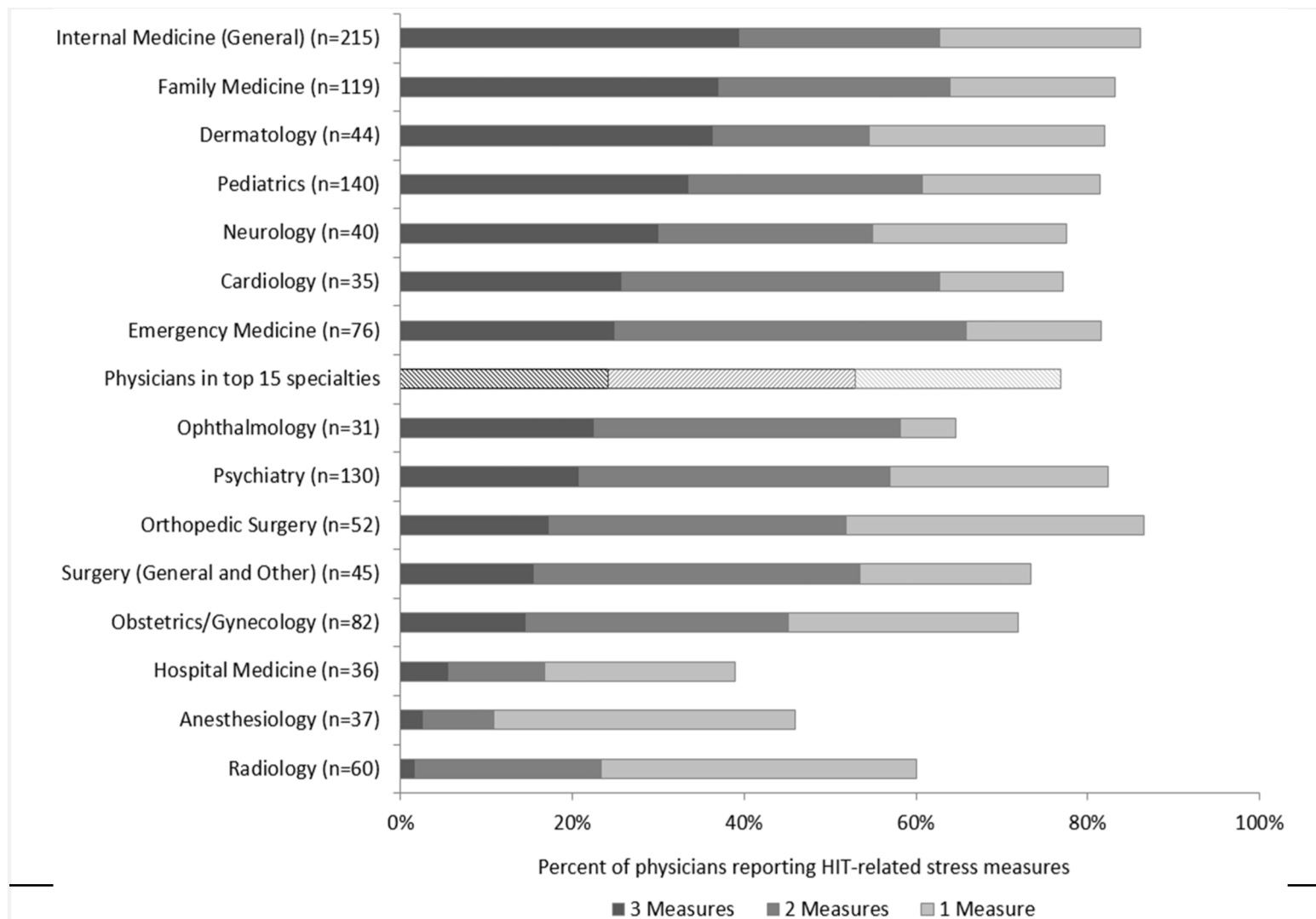
Source: SPOK - Clinician Burnout in Healthcare



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



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 J Am Med Inform Assoc. 2018;26(2):106-114. doi:10.1093/jamia/ocy145



## Reducing Clinician Burden Project

# Overview

- In 2018, “Reducing Clinician Burden” became a formal project of the HL7 EHR Work Group
- Is open and collaborative – oriented to US and international interests
- Our primary focus is on *clinician burden including time & 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
- Has 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

# Assessing the Burden

- 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?
- 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 R3*
- Will influence future directions for HL7 and other standards development efforts
- 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) Clinician Burden – In General                                      | management                                                                                                  | 27) Software development and improvement priorities, end-user feedback                                         |
| 2) Patient Safety (and Clinical Integrity)                            | 15) Information overload                                                                                    | 28) Product transparency                                                                                       |
| 3) Administrative tasks                                               | 16) Transitions of care                                                                                     | 29) Product modularity                                                                                         |
| 4) Data entry requirements                                            | 17) Health information exchange, claimed “interoperability”                                                 | 30) Lock-in, data liquidity, switching costs                                                                   |
| 5) Data entry scribes and proxies                                     | 18) Medical/personal device integration                                                                     | 31) Financial burden                                                                                           |
| 6) Clinical documentation: quality and usability                      | 19) Orders for equipment and supplies                                                                       | 32) Security                                                                                                   |
| 7) Prior authorization, coverage verification, eligibility tasks      | 20) Support for payment, claims and reimbursement                                                           | 33) Professional credentialing                                                                                 |
| 8) Provider/patient face to face interaction                          | 21) Support for cost review                                                                                 | 34) Identity matching and management                                                                           |
| 9) Provider/patient communication                                     | 22) Support for measures: administrative, operations, quality, performance, productivity, cost, utilization | 35) Data quality and integrity                                                                                 |
| 10) Care coordination, team-based care                                | 23) Support for public and population health                                                                | 36) Process integrity                                                                                          |
| 11) Clinical work flow                                                | 24) Legal aspects and risks                                                                                 | 37) List Management (problems, medications, immunizations, allergies, surgeries, interventions and procedures) |
| 12) Disease management, care and treatment plans                      | 25) User training, user proficiency                                                                         |                                                                                                                |
| 13) Clinical decision support, medical logic, artificial intelligence | 26) Common function, information and process models                                                         |                                                                                                                |
| 14) Alerts, reminders, notifications, inbox                           |                                                                                                             |                                                                                                                |

Blue = Focus Teams Formed

## Reducing Clinician Burden Project

# Focus Teams

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

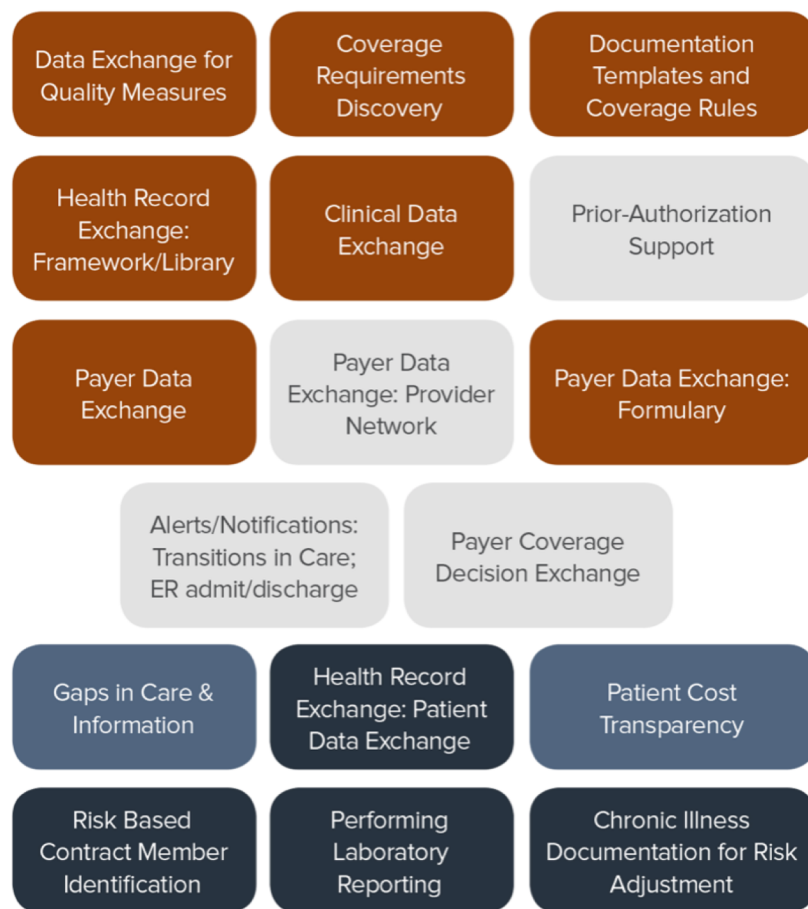


## Reducing Clinician Burden

# Success Stories

1. [Reducing Clinician Burden: Cardiovascular Procedure Reporting at Duke](#)  
James Tchong 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 Arespachoga, 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
- [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

# Standards Focused on Burden

- HL7 Da Vinci Project – Provider ↔ Payer Communication
  - Coverage Determination
  - Pre Authorization
- HL7 EHR System Usability Functional Profile
  - Functions and Conformance Criteria to Enhance System Usability
  - Passed ballot, preparing for publication
- ISO/HL7 10781 EHR System Functional Model, Release 3
  - In early design/development stage
- International Patient Summary
  - Joint between HL7, CEN TC251 (Europe) and ISO TC215

# International Outreach

- 1 November – Global Digital Health Summit – Seoul, Korea
- 4 November – ISO TC215 (Health Informatics) – Opening Plenary – Daegu, Korea
- 7 November – ISO TC215 Working Group 1 – Architecture, Frameworks and Models
  - Björn-Erik Erlandson, Convenor
  - Accepted “Reducing Clinicians Burden” as a Preliminary Work Item – Technical Report (Informative)

## Reducing Clinician Burden Project

# Materials

- Project Documents – Project Website
  - [http://bit.ly/reducing\\_burden](http://bit.ly/reducing_burden)
  - Project Overview, Presentations
  - DRAFT RCB Analysis Worksheet
  - Reference Sources
  - Success Stories

## Reducing Clinician Burden Project

# Schedule

- Bimonthly teleconferences, Monday at 3PM ET (US/Canada)
  - 1st and 3rd Mondays each month  
18 November, 2/16 December, 6//20 January 2020
  - <https://global.gotomeeting.com/meeting/join/798931918>
- Face-to-Face
  - February – Sydney Australia – HL7 Working Group Meeting

## Reducing Clinician Burden Project

# Contacts

### Co-Facilitators:

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

### HL7 EHR WG Co-Chairs:

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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

# Analysis Worksheet – Tabs

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

# 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