



Exploring Wellness and Vitality through Clinical Informatics

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No Financial Disclosures



Appreciation

- Dr. Rebecca Mishuris
- The Boston University Medical Group
Office of Equity, Vitality and Inclusion
- The Physician Wellness Academic
Consortium
- MMS/MHA Task Force on Physician
Burnout
- and many many others...

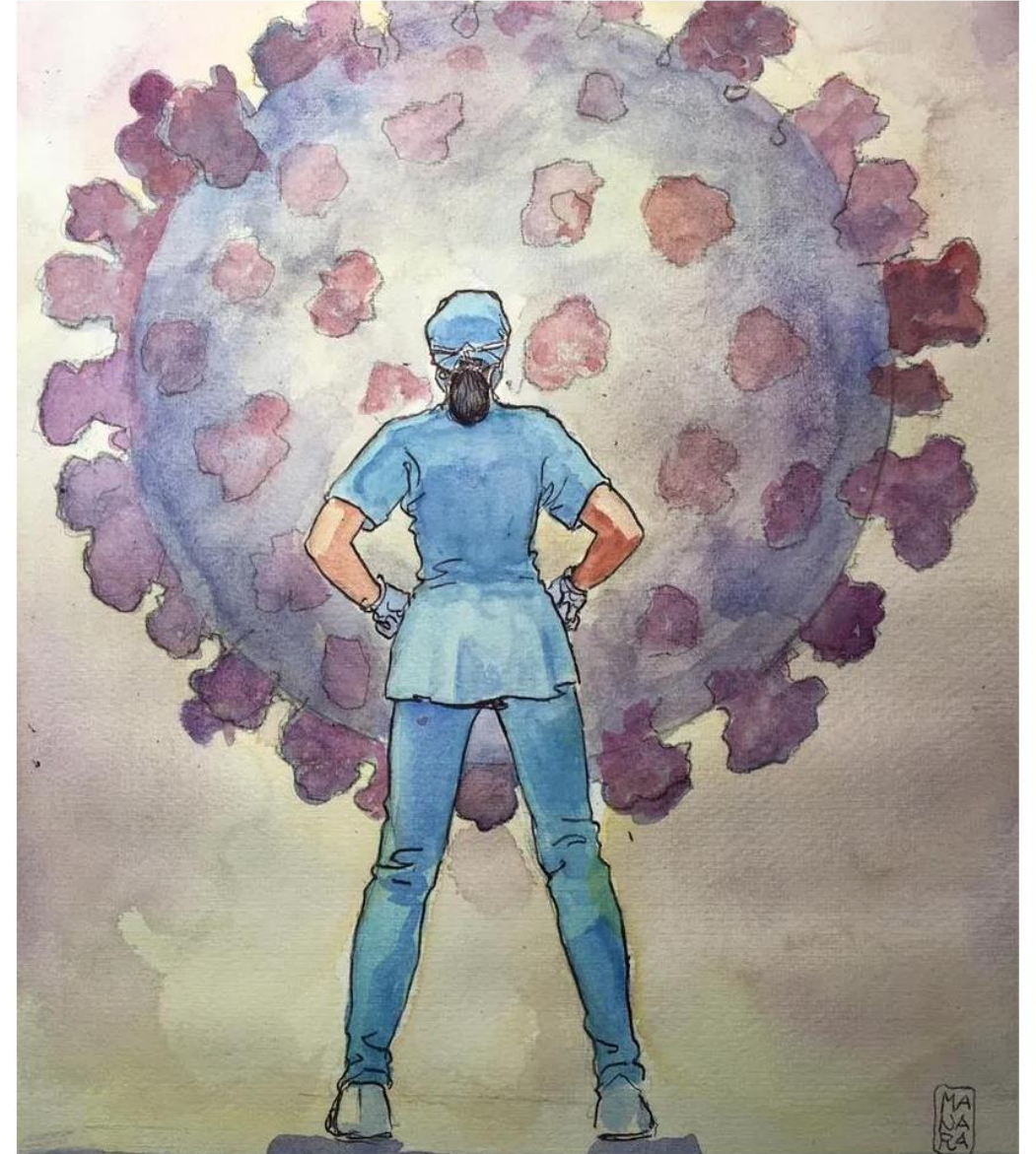


Learning Objectives

- Understand what clinician burnout is and why it is of special concern now
- Identify important drivers of burnout and well-being for clinicians
- Review how informatics can both contribute to and mitigate clinician burnout
- Identify promising practices for utilizing IT to improve clinician well-being
- Recognize opportunities for hope, growth and learning as a result of pandemic-related changes

*“We did not feel prepared to
be the heirs
of such a terrifying hour”*

*-Amanda Gorman
The Hill We Climb*



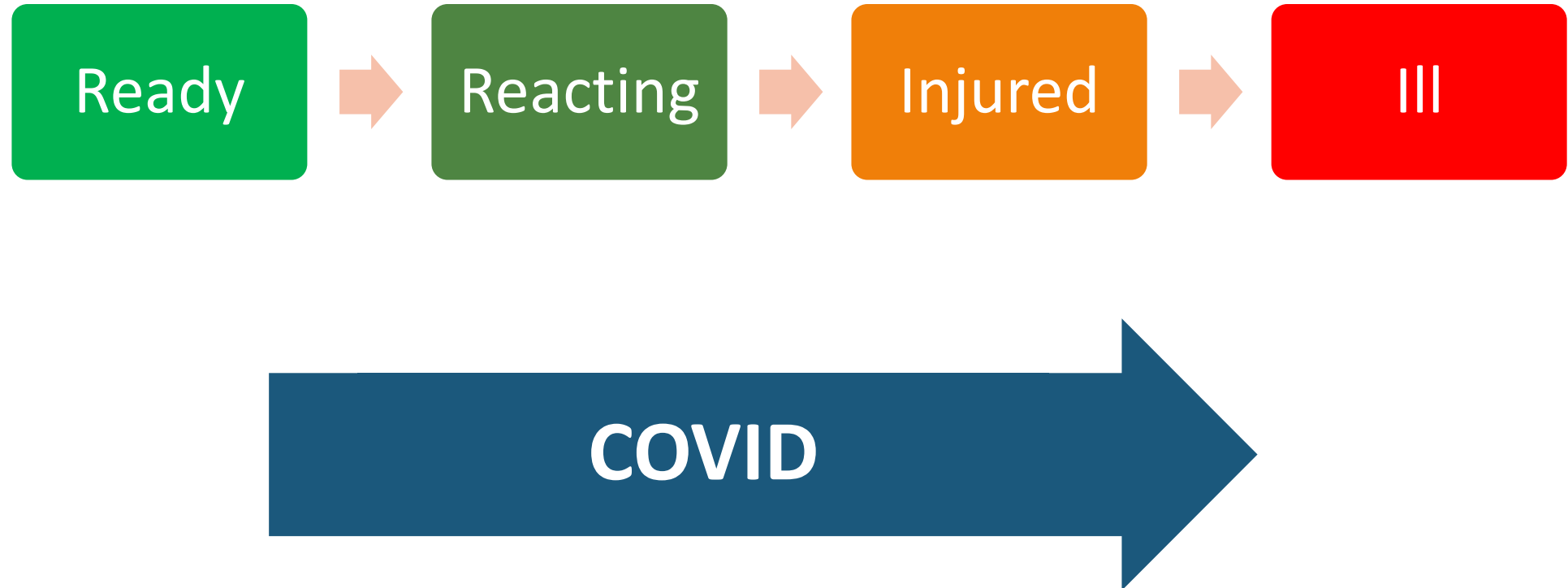
“It’s You Against Me, Now,” Milo Manara

What Clinicians Are Coping With with COVID

- Sicker patients
- Lack of coherent guidelines
- Staffing challenges
- Blurring of work/home boundaries
- Erosion of public trust
- Loss of positional authority as experts
- Moral distress, moral injury
- Fear for physical safety



Stress Continuum in Covid



Not Just COVID

School???



Same Storm, Different Boats?

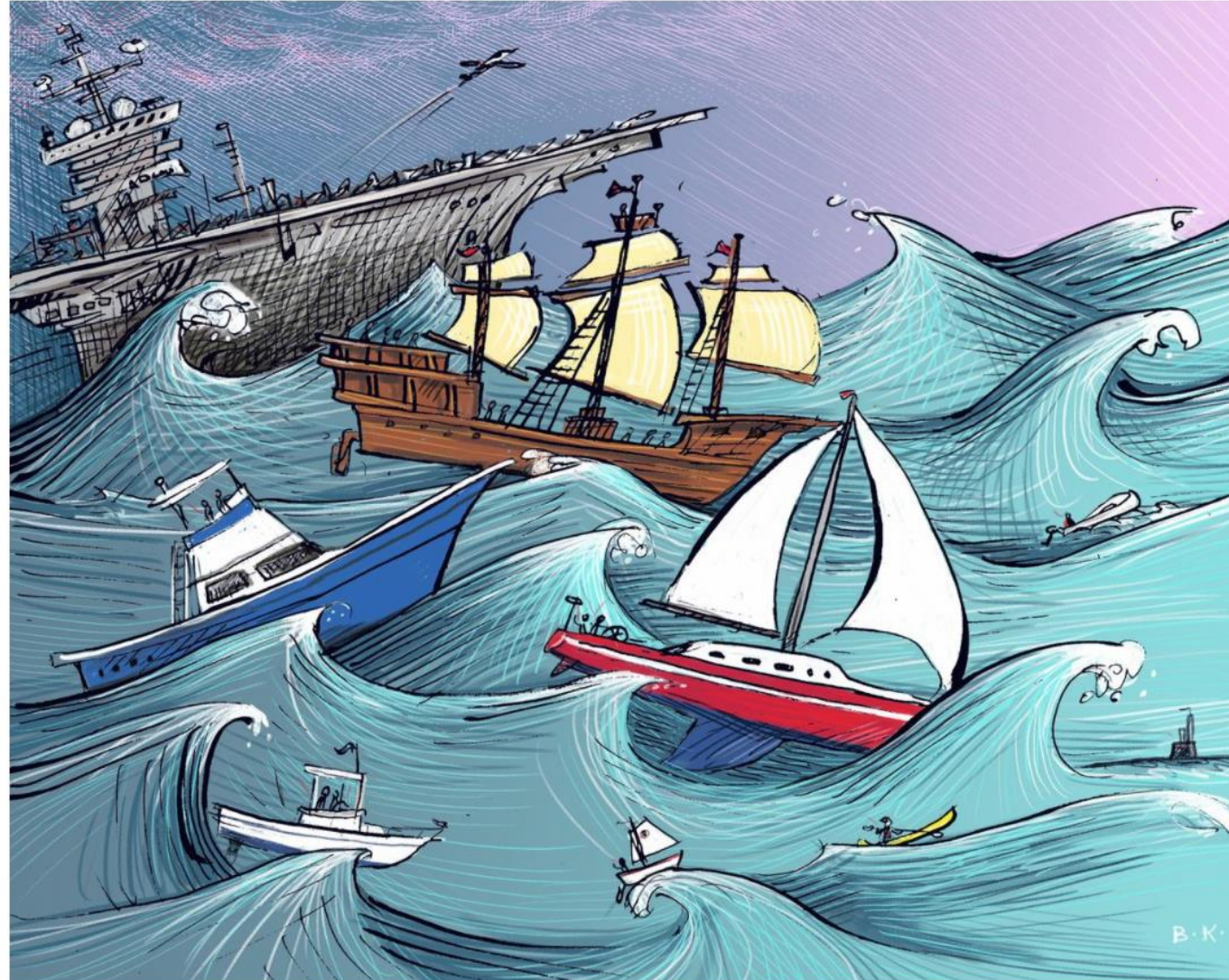
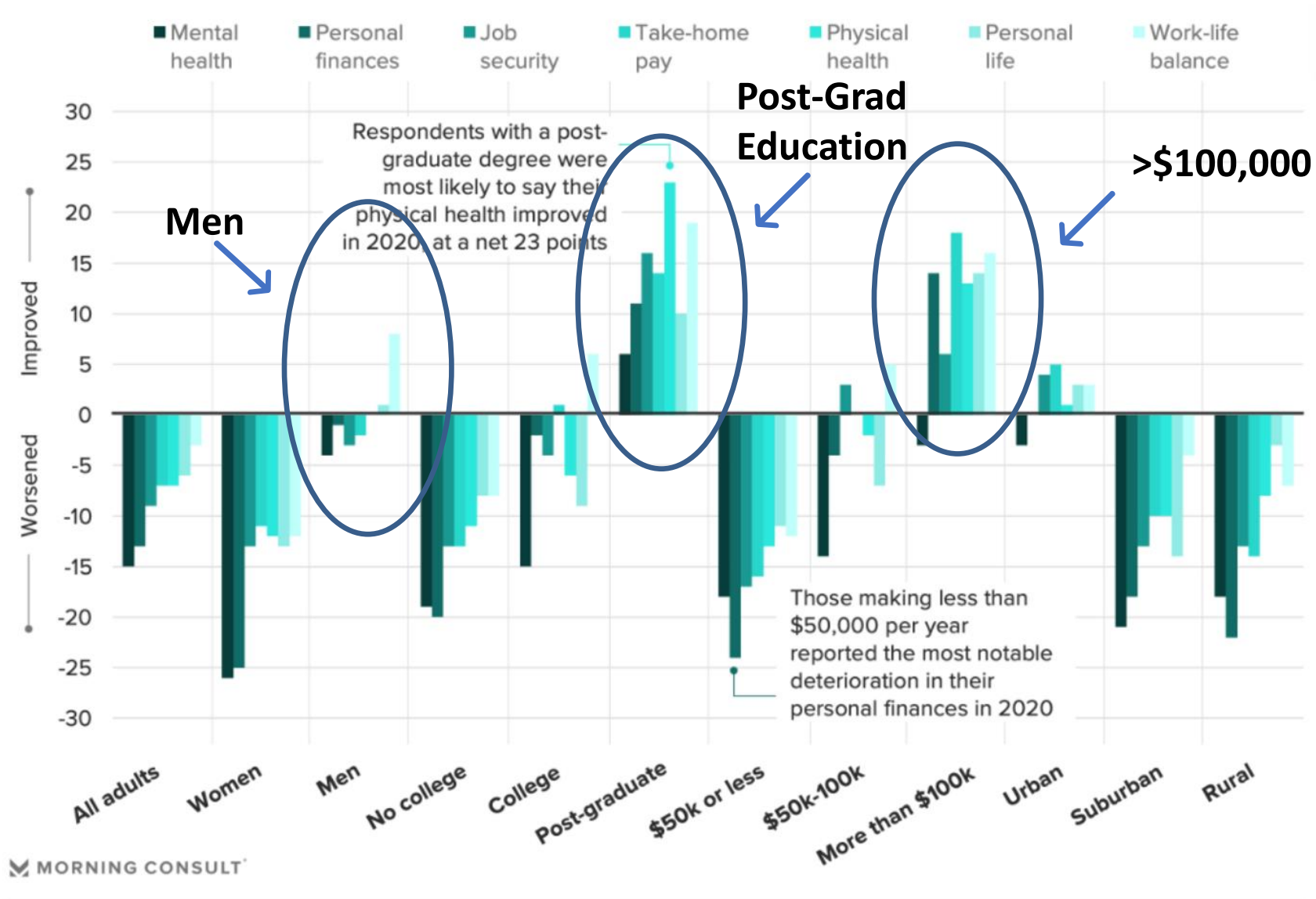


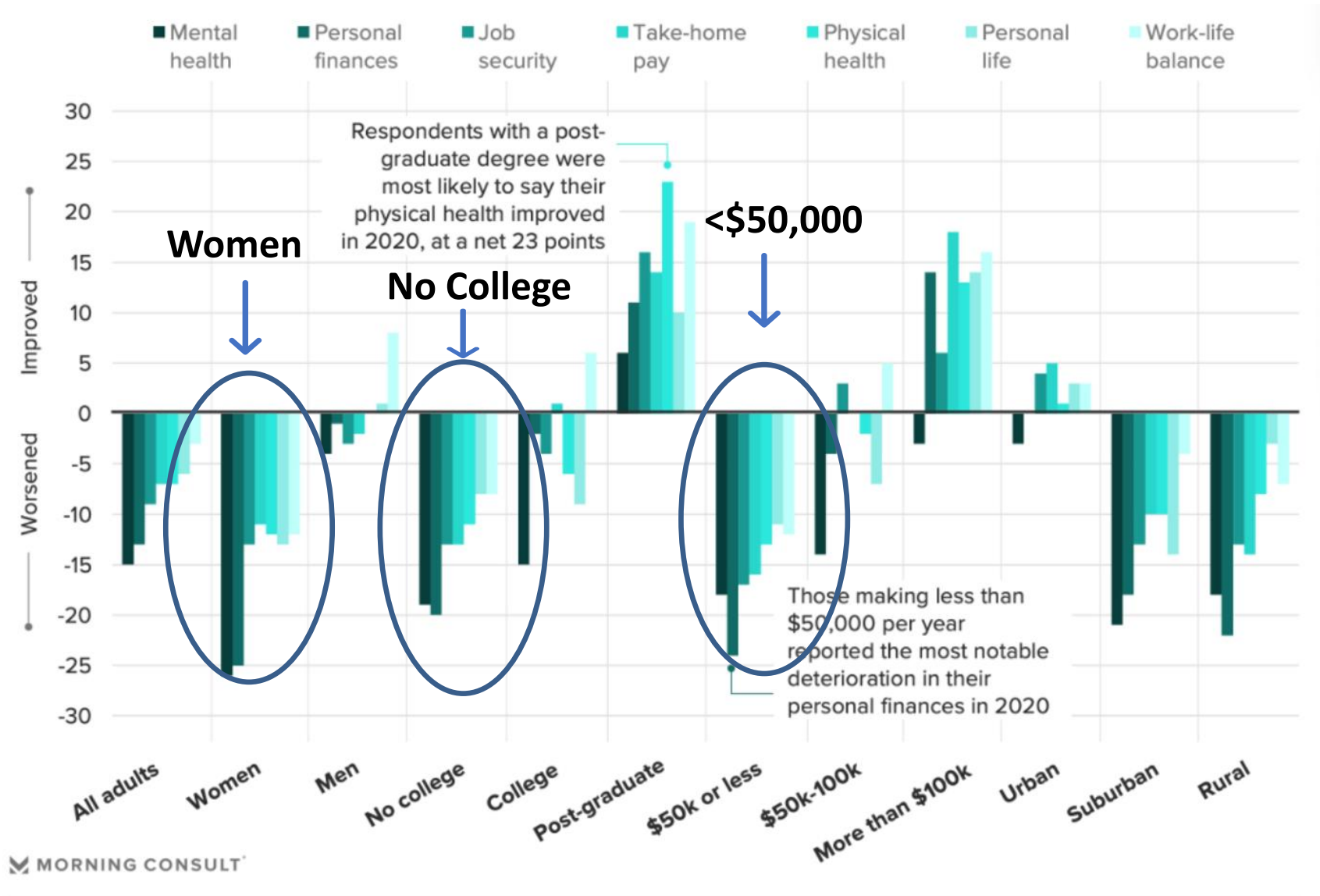
ILLUSTRATION: BARBARA KELLEY

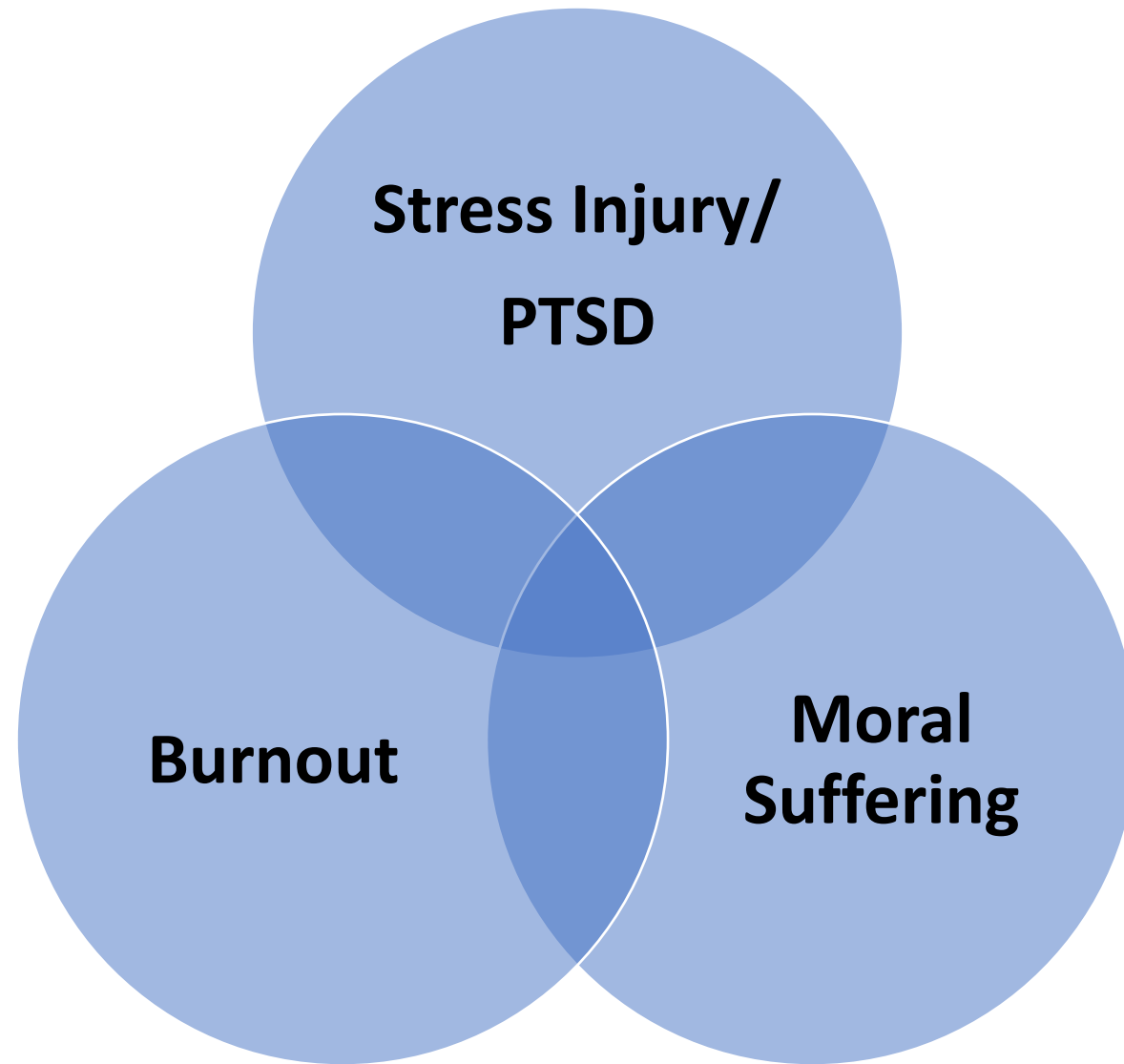


Healthier and Wealthier During Covid?



Healthier and Wealthier During Covid?





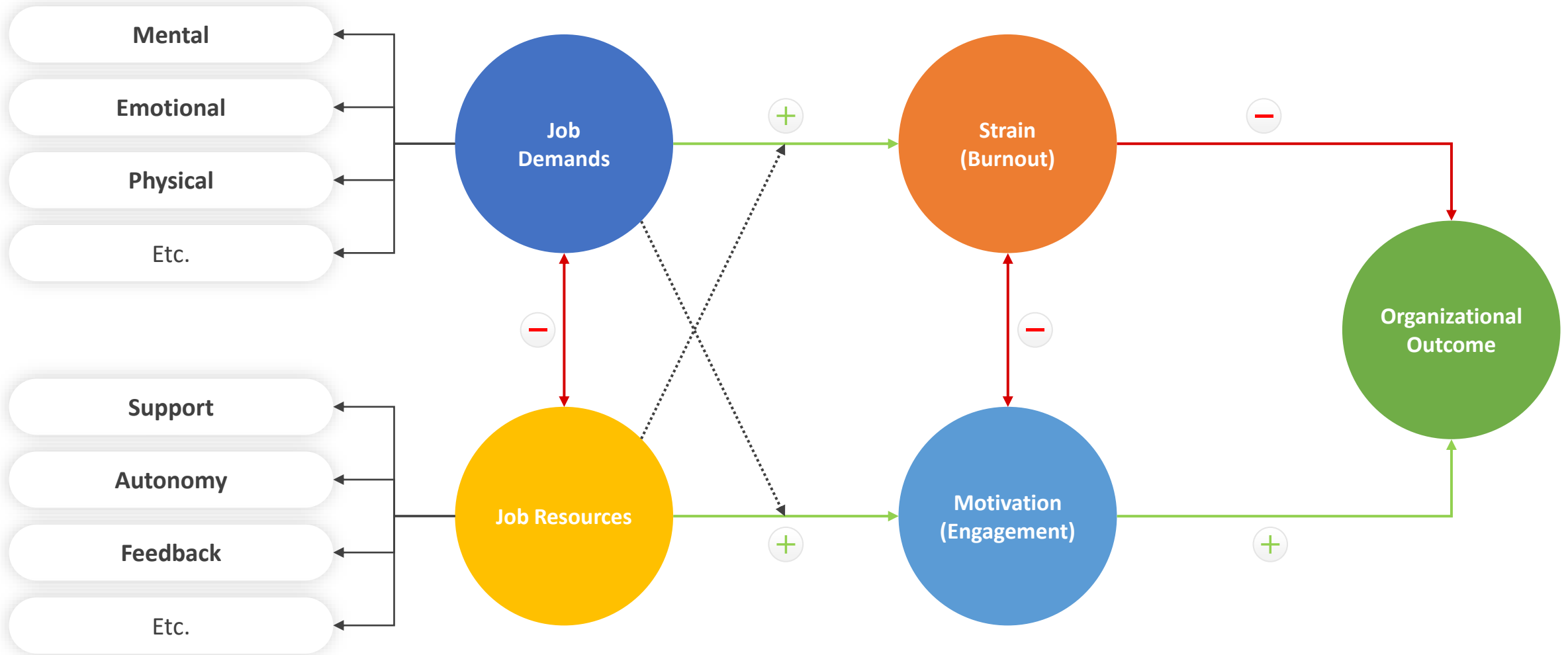
Definition of Burnout

A predictable response to chronic unresolved occupational stress where demands exceed resources, resulting in exhaustion, cynicism and a reduced sense of effectiveness

Burnout is *not* a personal failing, a result of weakness or a sign of mental illness

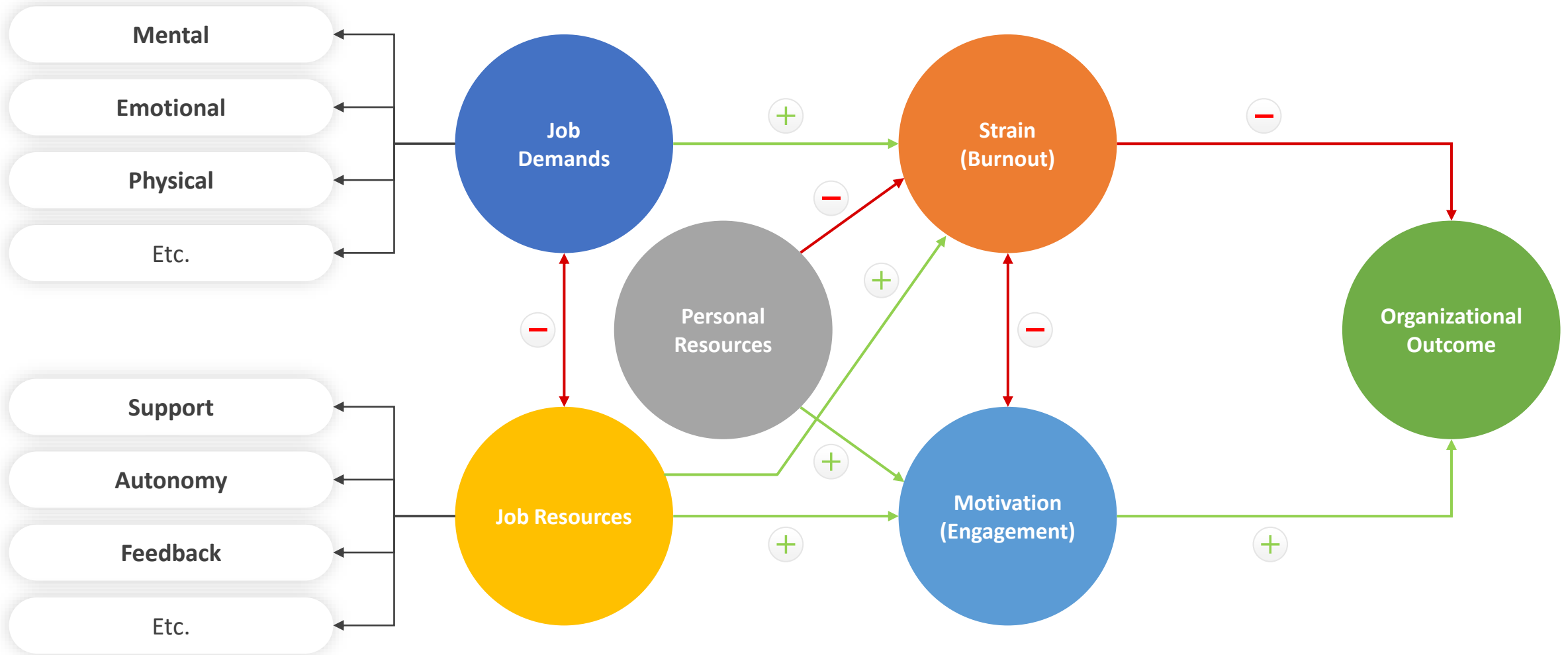
Job Demands-Resources Model (JD-R Model) of Burnout

Job Demands-Resources Model (JD-R Model)



Job Demands-Resources Model (JD-R Model)

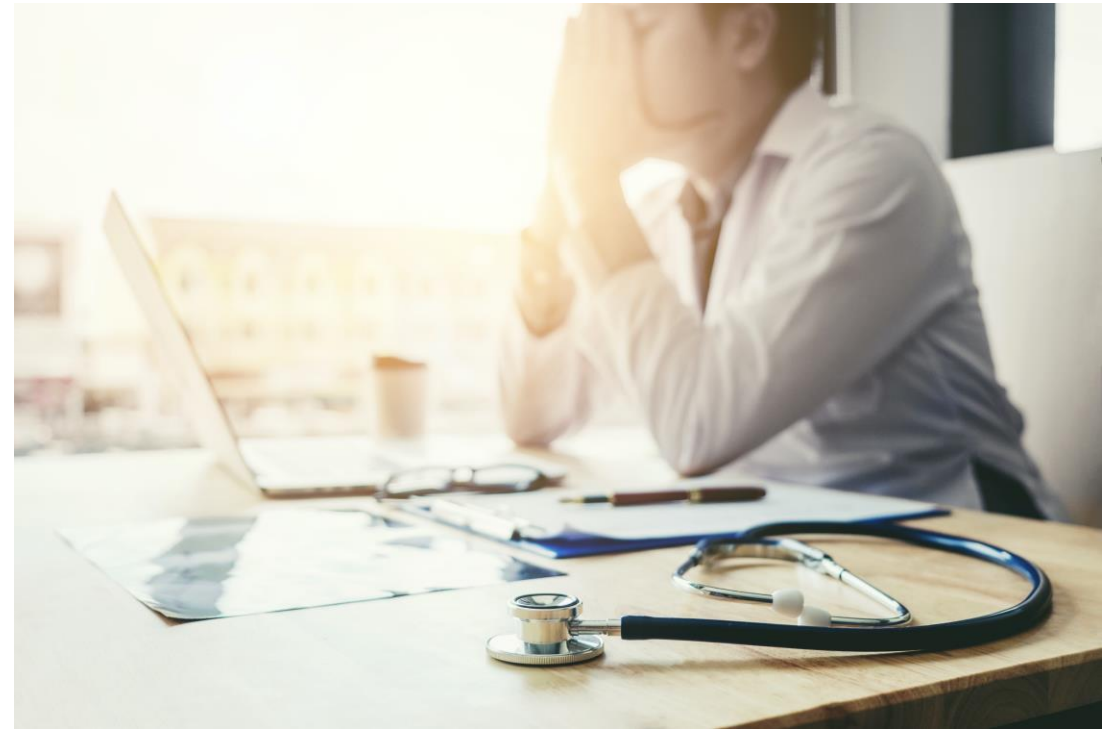
Job Demands-Resources Model (JD-R Model)





Symptoms of Burnout

- **Emotional exhaustion**
compassion fatigue,
withdrawal, depression
- **Cynicism**
depersonalization,
frustration, bitterness
- **Loss of a sense of
personal efficacy,**
feeling helpless, useless,
pointless or futile

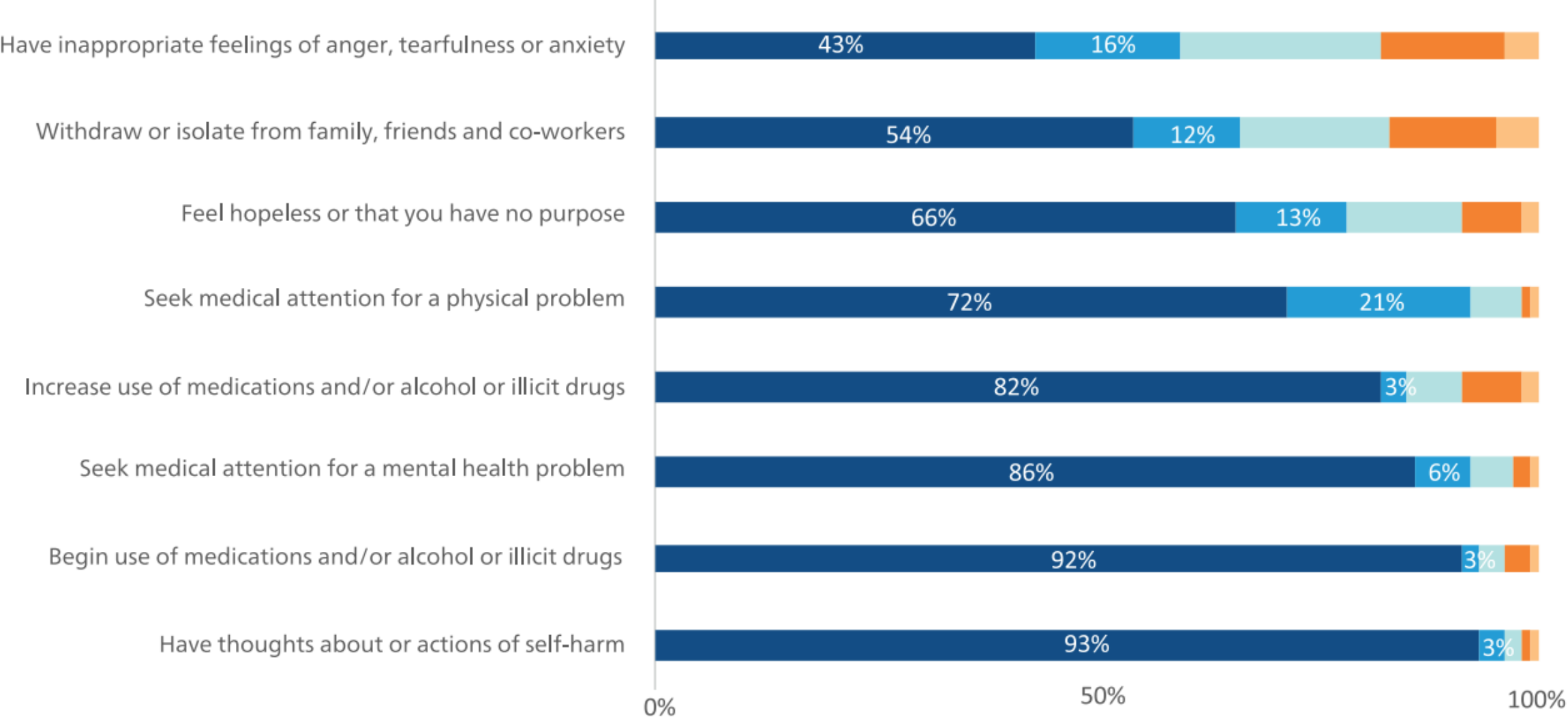


Special Concerns for Physicians



- Culture of invincibility
- Long hours, sleep deprivation, isolation
- Intense emotional demands
- Punitive reporting requirements
- High baseline rates of burnout, depression, anxiety, suicide
- Exodus from profession (even pre-covid)

Q4: How often have the effects of the COVID-19 pandemic on your practice or professional employment caused you to do any of the following?



What Are the Consequences of Clinician Burnout?

Impact of Burnout in Health Professionals

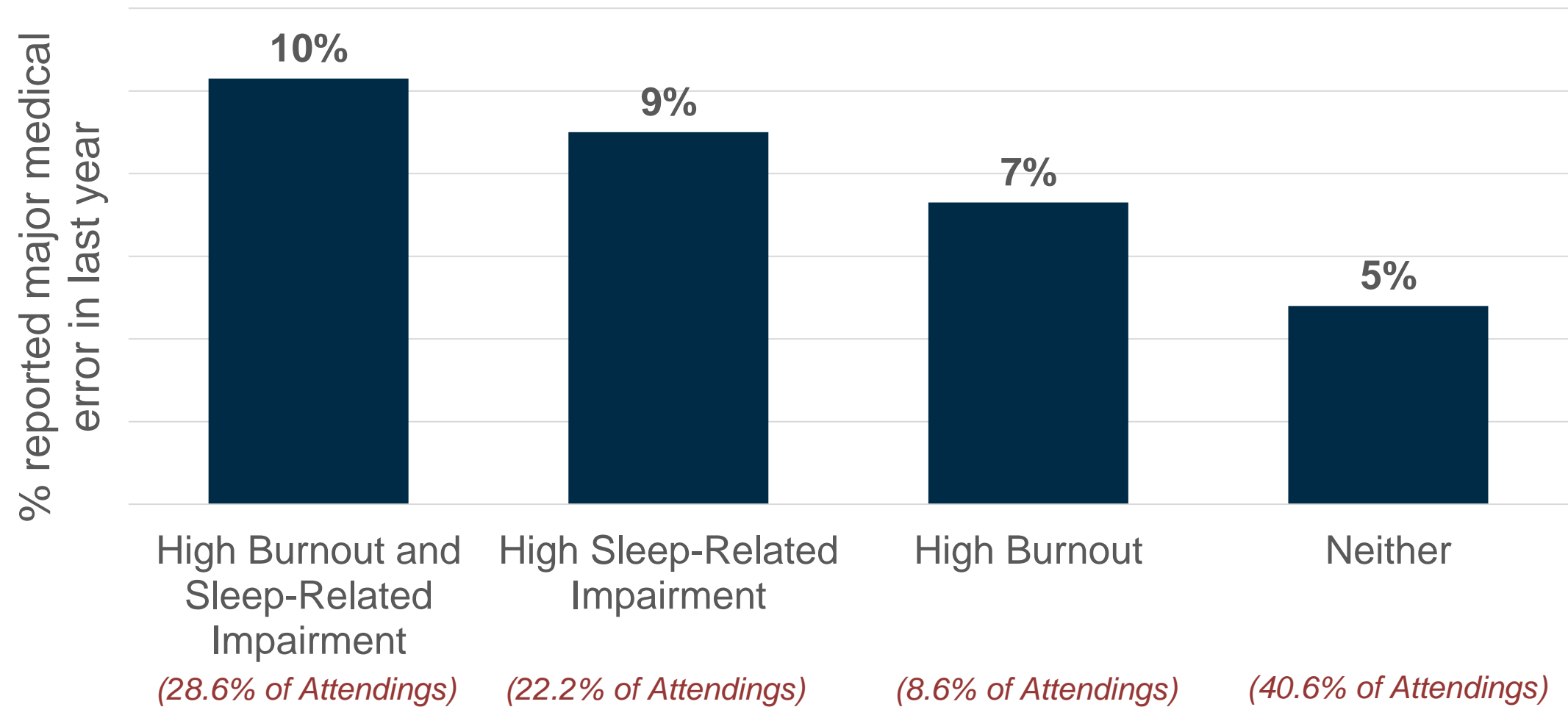
Quality and Safety	Financial	Humanitarian
Each 1 point increase in burnout correlates with a 3-10% increase in likelihood of physicians reporting medical errors	Replacement costs <u>per physician</u> between \$500,000 to \$1 million	Greater rates of dissatisfaction, divorce, substance mis-use, depression and ? suicide

Quality & Safety

- Burnout associated with
 - Major medical errors and major malpractice suits (surgeons)
 - Worse standardized patient mortality ratios (MDs and RNs in ICU)
 - Health care–associated infection (RNs)
 - Impaired interpersonal teamwork
 - Reduced professionalism (residents and early career)
- Clinicians with burnout: 44% higher odds of reporting elevated medical error rates (unpublished data)
 - $p < 0.005$ adjusted for age, self-identified race/gender, work hours

Burnout is Almost as Dangerous as Sleep Deprivation

(n = 4141)





It's Not Just Health Care Workers

- 2021 survey of 450 IT professionals found that 57% of women and 36% of men report feeling burned out at work this year as a result of the pandemic
- 2021 study of over 15,000 leaders found almost 60% feel “used up” at the end of the day

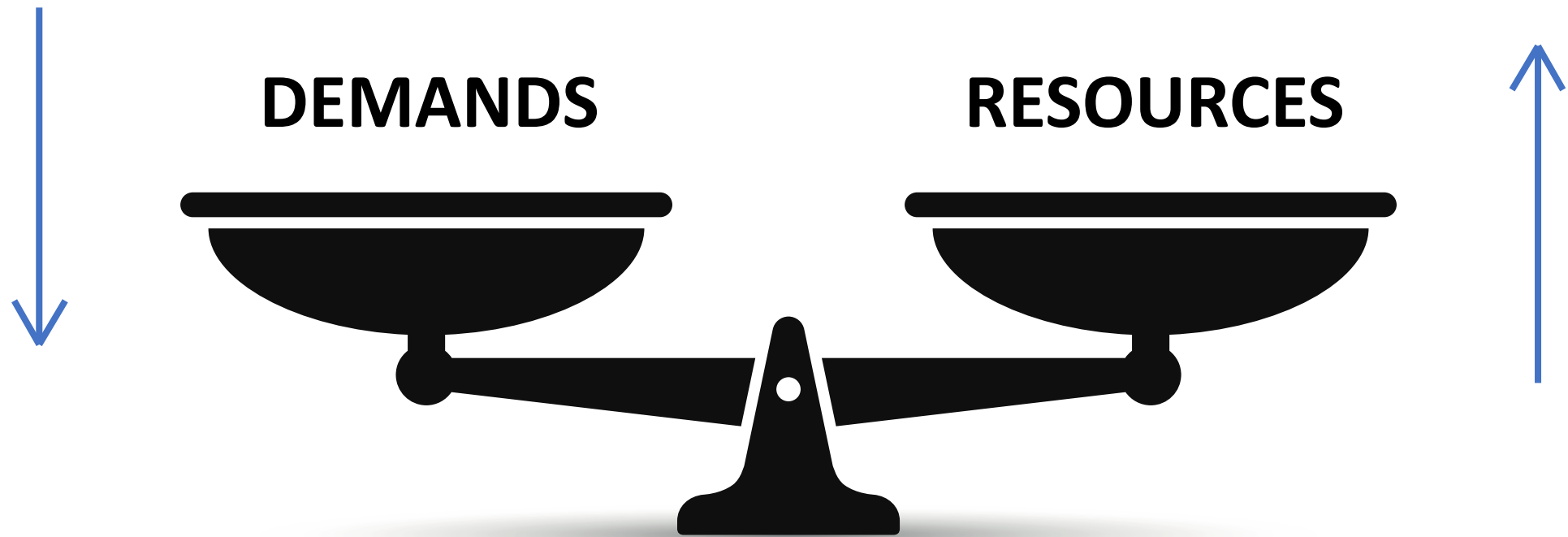


Photo credit: [news.com](#)

If You Are Stressed, You Are Not Alone

So- What Can We Do?





Roadmap: Stanford Model of Professional Fulfillment



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Workplace systems, processes, and practices that promote safety, quality, effectiveness, positive patient and colleague interactions, and work-life balance

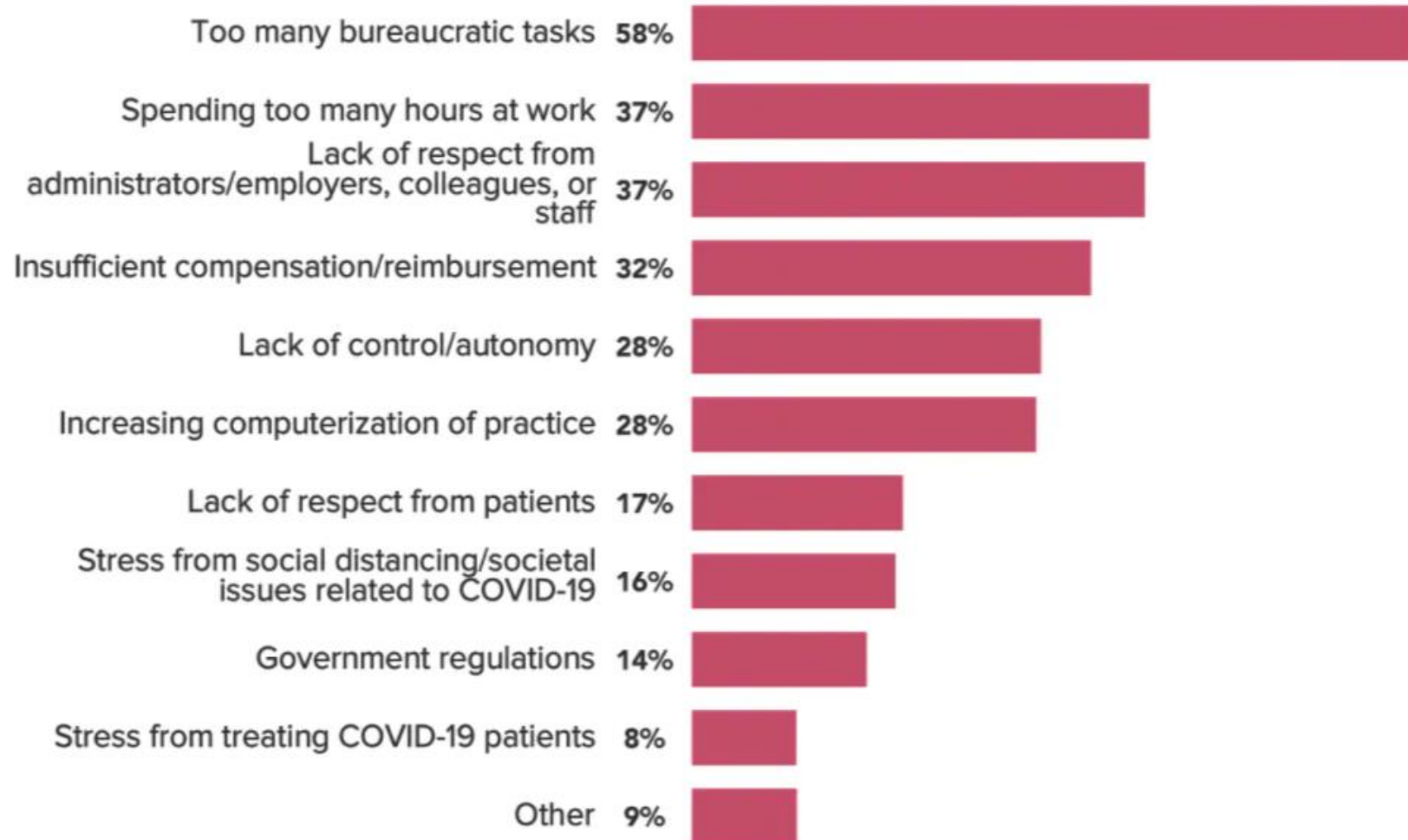


Workplace Efficiency of Practice

- Design of workspace for improved communication
- Practicing at top of licensure
- Realistic staffing and scheduling
- **Streamlining EHR and other IT interfaces**
- **Efficient communication methods**
- **Redesign of inefficient work**
- **Involvement of physicians in clinical processes/flows**
- **Teamwork**

Workplace Factors Cited as Primary Drivers of Burnout

What Contributes Most to Your Burnout?



Correlations with Burnout in Surveys

- Poor control over workload [OR = **8.24**, 95% CI 4.81, 14.11]
- Inefficient teamwork [OR = 7.61, 95% (CI 3.28, 17.67)]
- Insufficient documentation time [OR = 5.83, 95% (CI 3.35, 10.15)]
- Hectic-chaotic work atmosphere [OR = 3.49, 95% (CI 2.12, 5.74)]
- Poor value-alignment w/ leadership [OR = 3.27, 95% (CI 2.12, 5.74)]
- Excessive electronic medical record time at home [OR = 1.99, 95% CI (1.21, 3.27)]

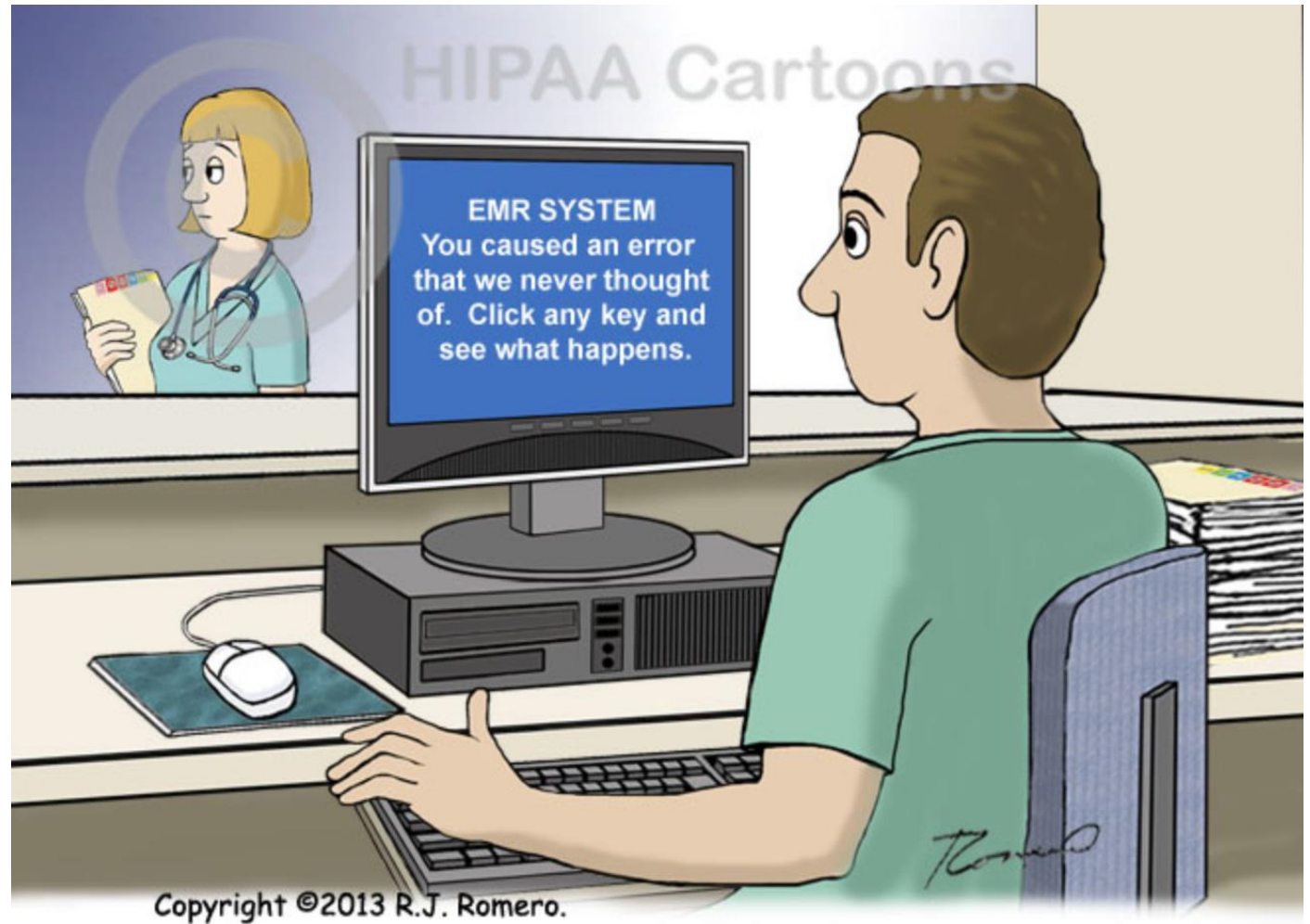
Can Clinicians Fix Their Own Burnout?



**“We don’t tell
construction
workers to grow
harder heads”**

-Tait Shanafelt MD

So-
What Role
Does
Informatics
Play in
Clinician
Burnout?





"Mind the Gap": Political and business decisions in healthcare continue to ignore the patient-physician relationship.

Clinicians Love to Hate Their EHR

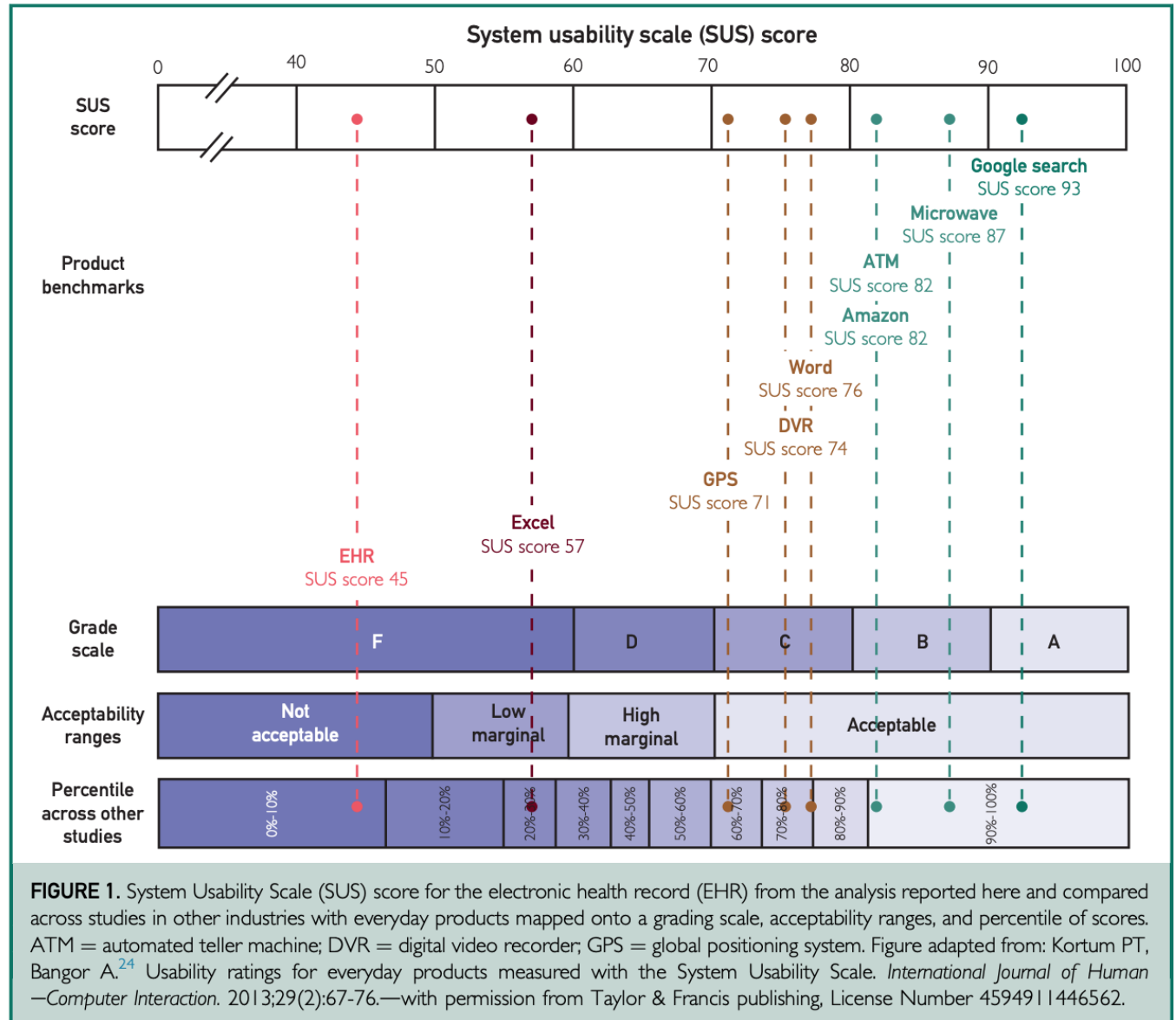


Documentation
burden

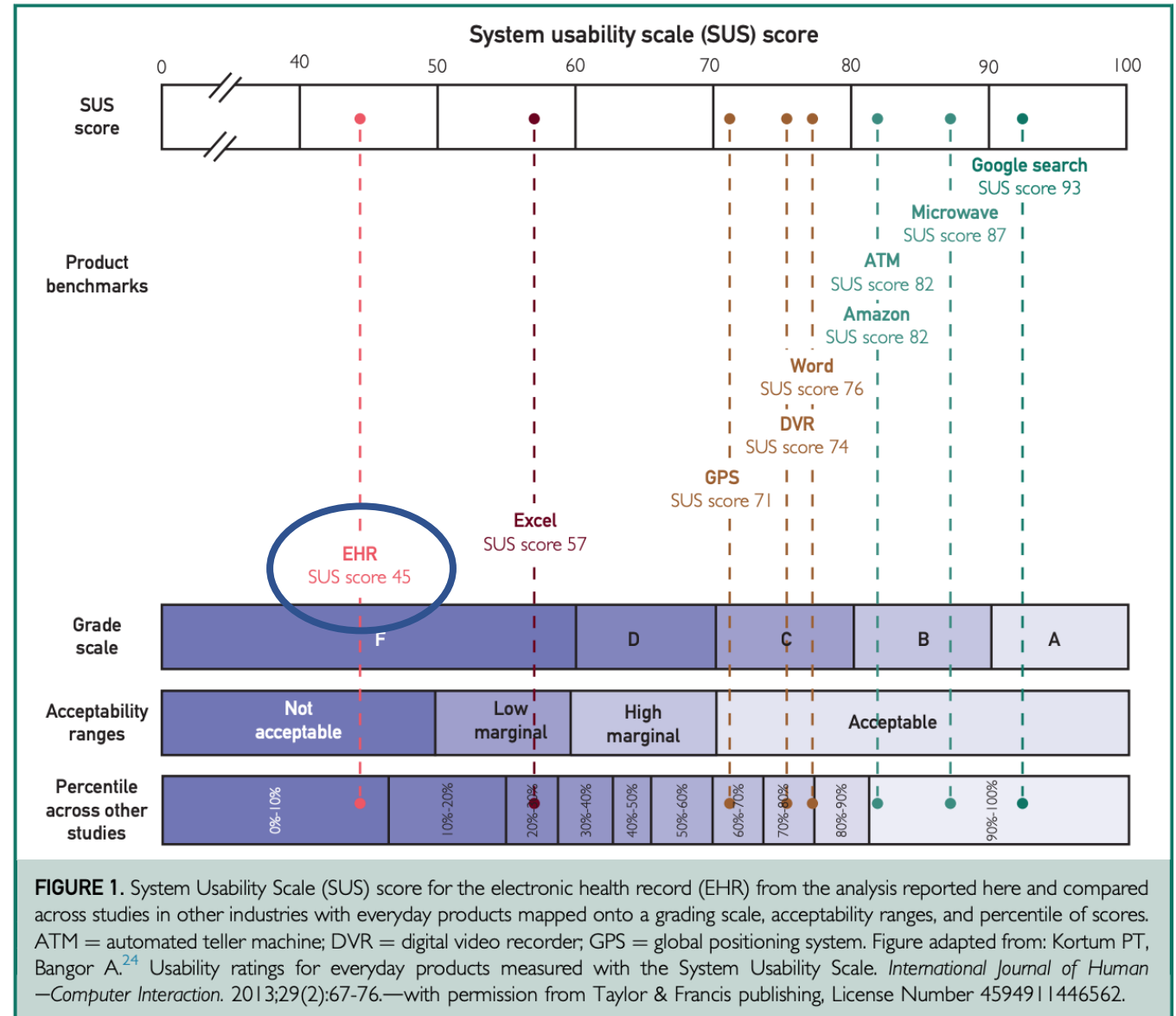
Inefficiency

Hours worked
outside of
work

Electronic Health Records Are Not Rated Especially “Usable”

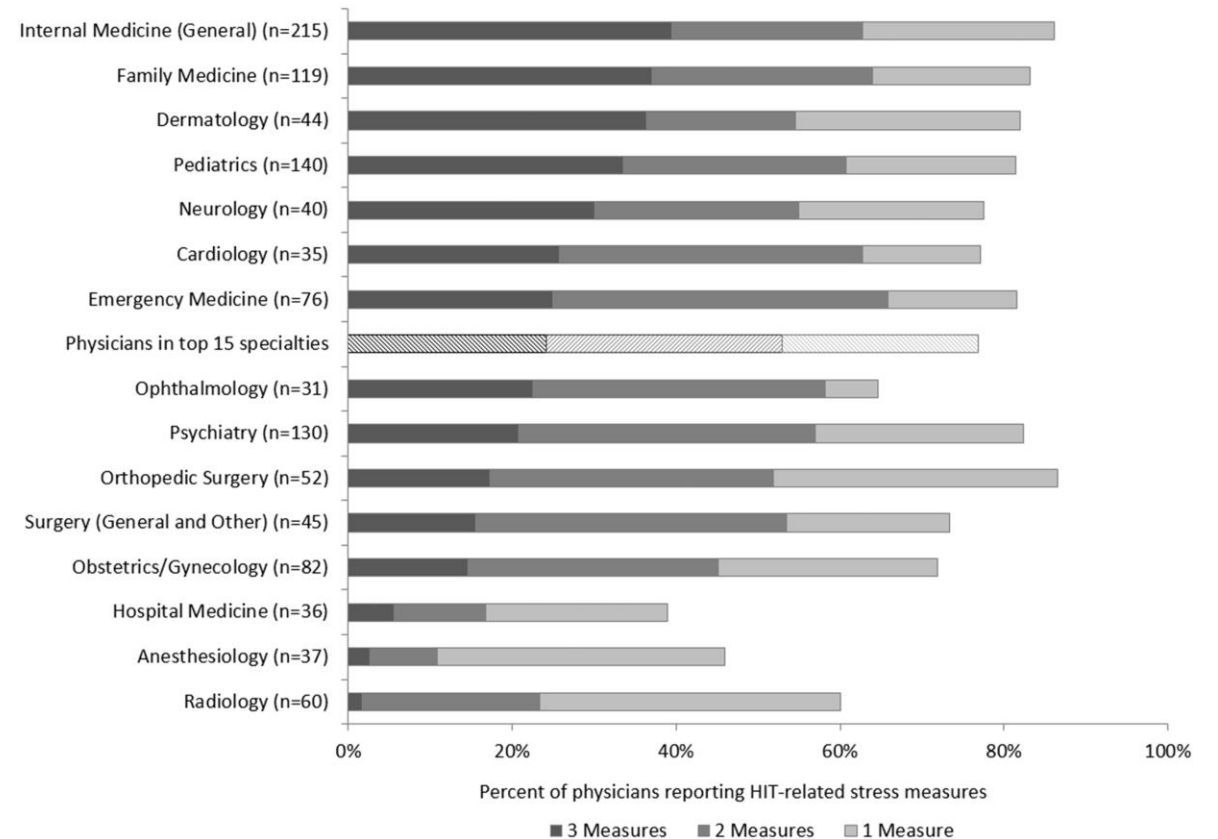


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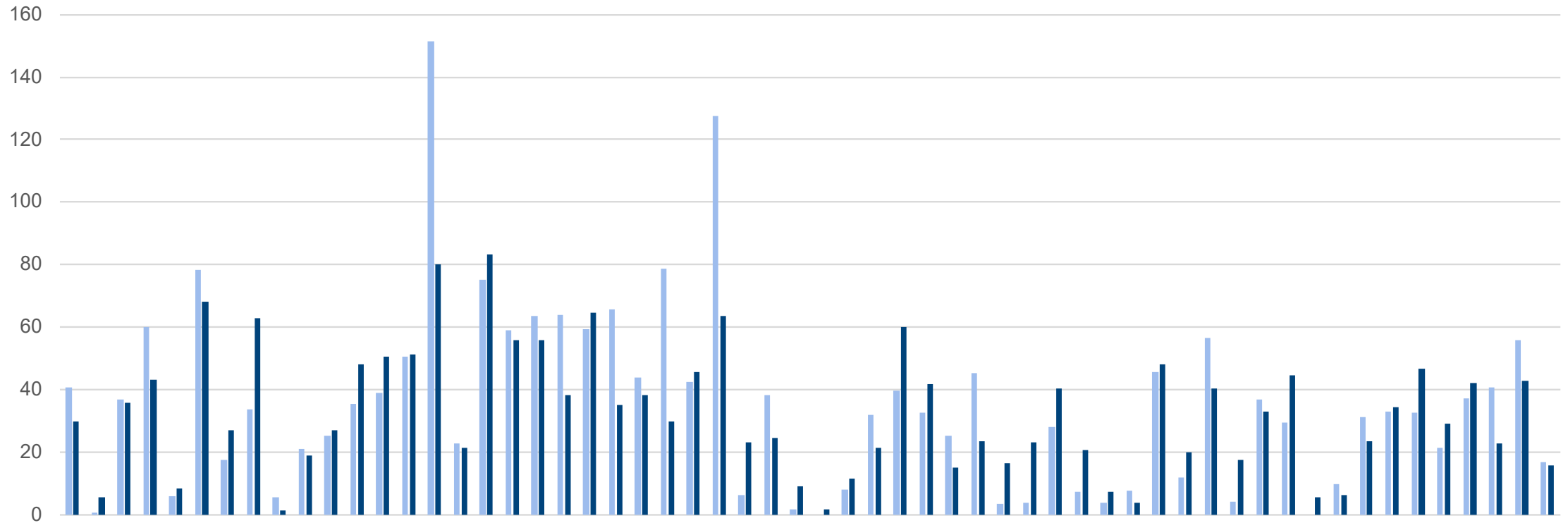


Health Information Technology (HIT)-Related Stress

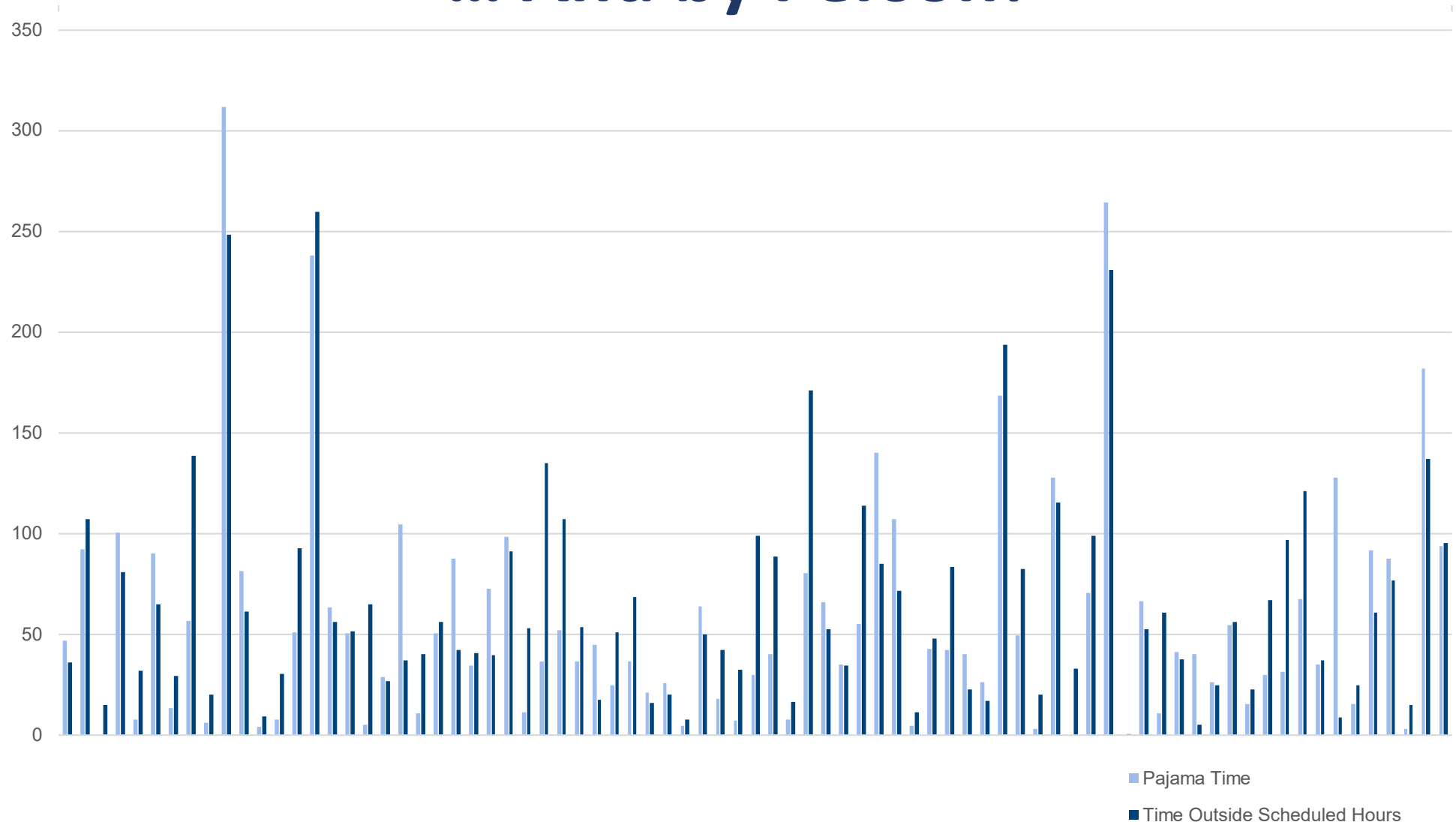
- Insufficient time for documentation
- Excessive time spent on EHR at home
- Using EHR adds to daily frustration



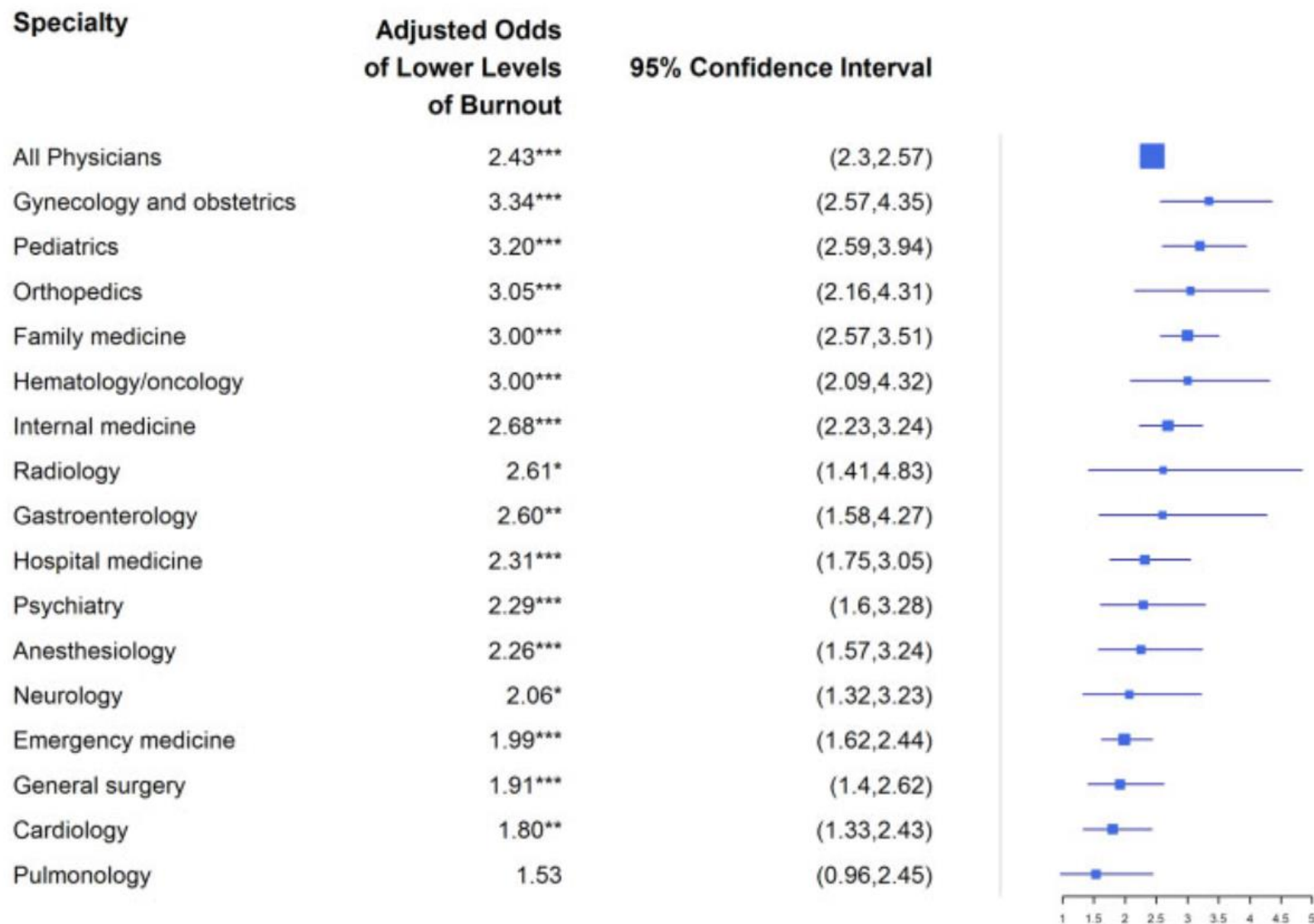
Work Outside of Work (“Pajama Time”) Varies by Specialty...



... And by Person!



After-Hours Charting Impacts Specialties Differently



But Is It Really the EHR's Fault???

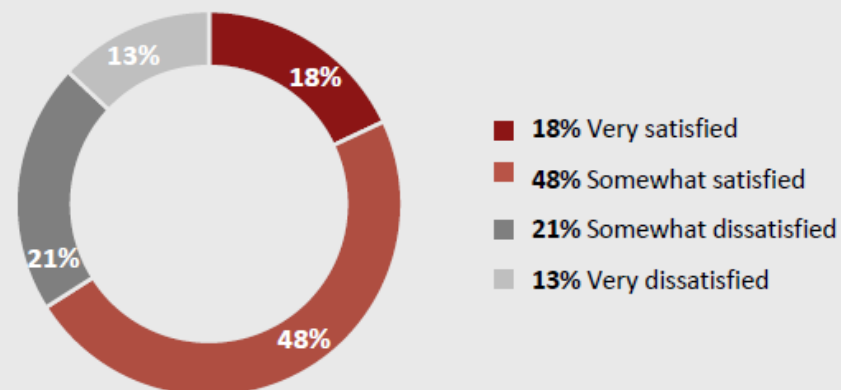
- EHR-related distress is complex and multifactorial
- However, recent literature suggests over-all work environment may play a bigger role (EHR only explains 1.3% of burnout variance in recent study)
- Yet EHR embodies administrative burdens, regulatory requirements and operational inefficiencies



Doctors see value in EHRs, but want substantial improvements.

Two-thirds of PCPs (66%) report that they are satisfied with their current EHR system.

However, only one in five (18%) are very satisfied.



Six in 10 agree that EHRs have led to improved patient care, both in general (63%), and within their practice (61%).



Despite 70% saying EHRs have improved over the last five years, more than half still agree that:

- ✓ EHRs need a complete overhaul (59%)
- ✓ Using an EHR detracts from their professional satisfaction (54%)

How Can Informatics Make a Difference?

Seven Things Informatics Can and Should Do:

- 1) Design for what is possible
- 2) Measure what we treasure
- 3) Ease documentation burdens and inefficiencies
- 4) Enhance teamwork
- 5) Promote equity and fairness
- 6) Support work/life harmony, boundaries
- 7) Advocate for change



1) Design for What is Possible





- Meaning, mission, purpose
- Connection and community
- Admiration and gratitude
- Excellence and mastery
- Curiosity, innovation
- Diversity, inclusion, respect

2) Measure What We Treasure

- Work after Work
- Click counts
- Teamwork
- Being present
- Fair pay
- Regulatory balance

IDEAS AND OPINIONS

Annals of Internal Medicine

Novel Metrics for Improving Professional Fulfillment

Yumi T. DiAngi, MD; Tzielan C. Lee, MD; Christine A. Sinsky, MD; Bryan D. Bohman, MD; and Christopher D. Sharp, MD

Measurement abounds. Indeed, many ambulatory care providers feel besieged by the financial, quality, and service metrics that pervade their professional lives. Relatively new to this landscape are measurements from the electronic health record (EHR), which include practice efficiency scores that create a window on the clinician's workflow. In this article, we propose a set of EHR-related metrics that provide further insight into the clinician experience.

The EHR, which was intended to improve patient care, has had the ironic and unintended consequence of impairing practice efficiency, largely because of poor design, a focus on regulatory reporting, and the burden placed on clinicians by data entry (1). These problems can be addressed with better designs, new technologies, and better use of other members of the clinical team, which would in turn improve provider satisfaction (2), particularly for front-line clinicians who are experiencing high levels of burnout.

Burned-out clinicians may provide suboptimal care, which is one of several reasons it should be prevented (3). In addition, other industries that have invested in employee fulfillment have seen benefits to customer satisfaction and profitability (4, 5). In a landscape where many physicians show signs of burnout (6), EHR-related metrics that value the provider's experience could measure new outcomes for clinical care.

NEW PRACTICE METRICS

New metrics are needed to measure EHR use. We propose the following 6 categories: Work After Work, Click Counts, Teamwork, Being Present, Fair Pay, and Regulatory Balance.

Work After Work

Work After Work captures the hours a clinician spends logged into the EHR during evenings, weekends, and vacations. This measure highlights one of the main work-life balance issues associated with EHR use (7).

Click Counts

Click Counts tracks the number of clicks per day or the number of clicks needed to accomplish common workflow tasks. This measure could guide local changes, such as badge login in place of keyboard login or identification of optimal pathways for high-volume tasks. Usability is a key criticism of the EHR, and this metric is an objective measure that could drive improvements by vendors, who might compete to offer products requiring the fewest clicks.

Teamwork

Teamwork-related measures track the ratio of staff-entered to physician-entered EHR tasks, such as prescriptions, documentation in visit notes, inbox messages, and orders. These metrics would identify how

well tasks are distributed to the appropriate care team roles.

Being Present

Being Present metrics capture rates of visits that include assistance with EHR documentation, order entry, and chart review. These measures emphasize the importance of the personal connection between the physician and the patient because these EHR tasks compete for physician attention during a visit.

Fair Pay

Fair Pay metrics track uncompensated EHR work, such as answering patient e-mails, providing medication refills, and managing patient-generated health data (8). These highlight EHR-related administrative work that creates value for patient care.

Regulatory Balance

Regulatory Balance measures pay-for-performance-related EHR clicks or billing-related EHR documentation. These call attention to the regulatory effect on practice captured in the EHR.

CONCLUSIONS

We measure what we value. Many of us value the intrinsically motivating aspects of patient care, which include trusting relationships between physicians and patients and time outside of work for clinicians to have personally fulfilling interests. If we truly value these aspects of care, as we claim, then we should measure them.

The novel EHR-related metrics we propose will help capture facilitators of and impediments to professional fulfillment. If our metrics work the way we hope, they can help us achieve our goal, which we call "joy in practice." A recent survey found disagreement between organizational leadership and practicing clinicians around professional goals such as this one (9). We believe that our metrics will identify the burdens of inefficient practice so administrators and clinicians can work together to improve professional fulfillment. Our metrics may also help researchers identify how EHR interaction affects care delivery and patient outcomes.

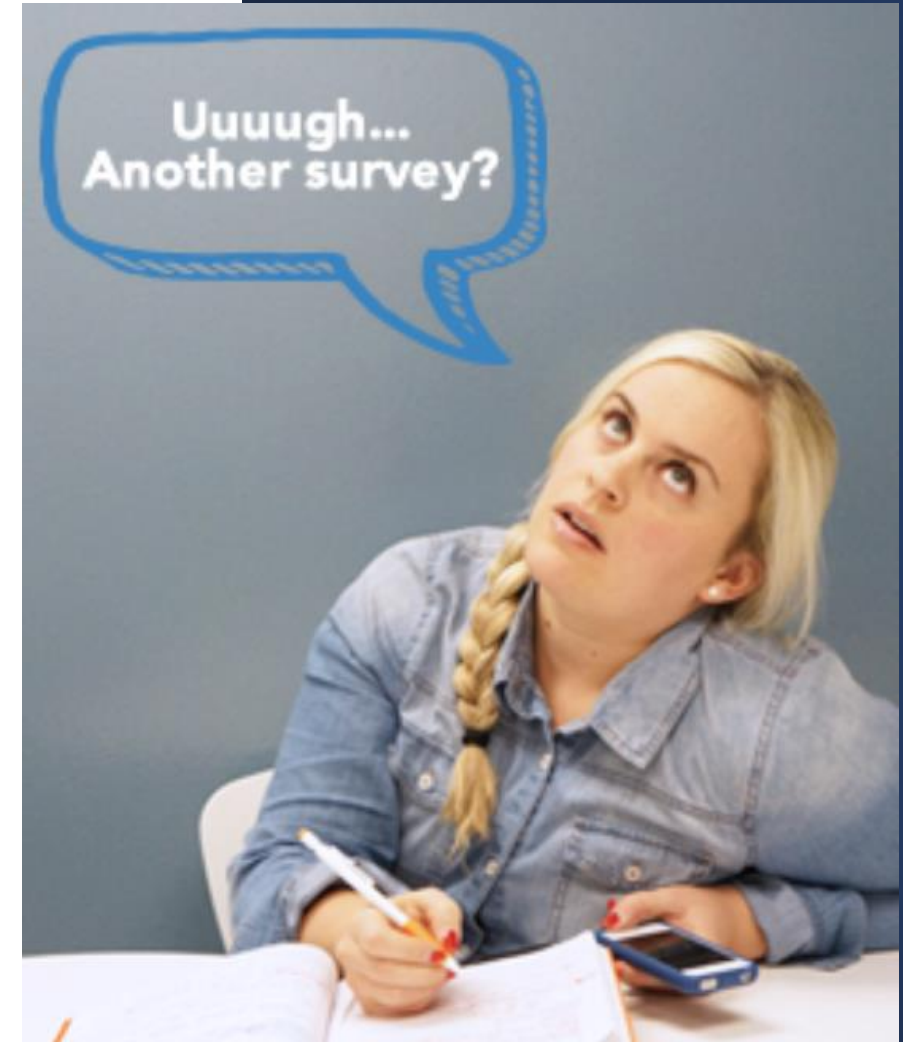
These metrics can improve our understanding of the work environment, which includes the EHR, and can be used as tools to improve workflow, teamwork, and regulatory relief. We think it is reasonable for clinicians to trust that these metrics will be used to improve the work culture rather than simply to increase productivity. To develop that trust, clinicians should take ownership of these metrics and lead the way in developing and implementing them. For example, a national advisory council of clinicians might propose new EHR metrics, prioritize them, and create guidelines to address issues of privacy and other concerns.

This article was published at Annals.org on 10 October 2017.

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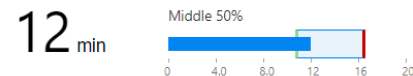
Also

- Develop intermediate measures to assess interventions (fewer surveys!)
- Provide balancing measures for unrelated initiatives
- Highlight common areas of dysfunction
- Identify promising practices
- Afford earlier warning for clinicians who need help
- ...Other applications of measurement science?



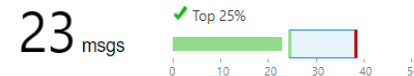
In Basket

Time in In Basket per Day



-0.1 min (7 days) 2.5 min per Appointment

Messages Received per Day



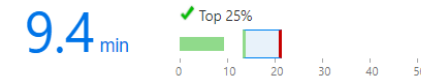
Top 3 Messages Received per Day

Type	Messages	Epic Community Physicians
Staff Message	2.9	0.9
IP Cosign Note	2.8	1.2
Results	2.7	5.8

Recommendations: Refill Protocols Remove Completed Messages Addendum Notifications

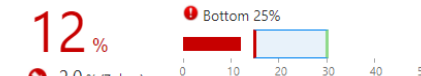
Orders

Time in Orders per Day



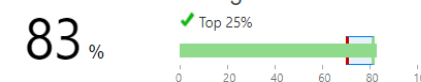
-0.1 min (7 days) 2.1 min per Appointment

Orders with Team Contributions

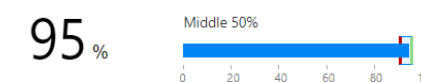


-2.0 % (7 days)

Orders with Unchanged Defaults



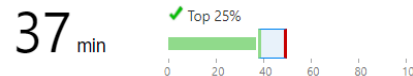
Orders from Pref List or SmartSet



Recommendations: Order Reauthentication E-Prescribe in Haiku Express Lanes

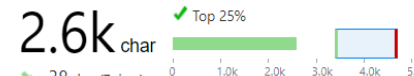
Notes & Letters

Time in Notes per Day



-0.5 min (7 days) 8.0 min per Appointment

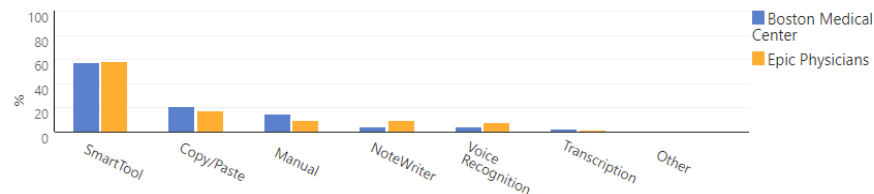
Documentation Length



-38 char (7 days)

Note Composition

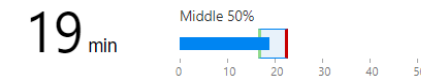
Note Composition



Recommendations: Patient Questionnaires NoteWriter Macros Haiku Photo Capture

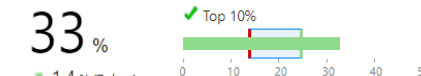
Clinical Review

Time in Clinical Review per Day



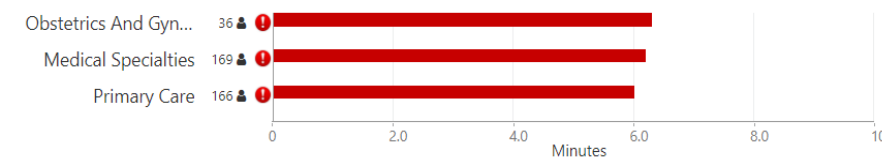
4.1 min per Appointment

Chart Search Usage



1.4 % (7 days)

Time in Clinical Review per Appointment by Specialty Grouping (Top 3)



Recommendations: Specialty SnapShot My Last Note in Reports Mark All as Reviewed

3) Ease Documentation Burden and Inefficiencies

- Improve usability
 - Human-centered design
 - Reduced cognitive load
 - Intuitive interfaces
 - Newer technologies (voice, remote scribe)
- Eliminate inefficiencies
 - De-implementation of unnecessary requirements
 - Getting Rid of Stupid Stuff
- Increase clinician competency



Evidence that Improving EHR Usability Matters

Physicians who agree that their organization has done a great job with EHR implementation, training, and support were twice as likely to report lower burnout scores compared to those who disagree (OR: 2.14, 95% CI: 2.01, 2.28) .¹

Physician who report ≤ 5 hours weekly of after-hours charting were twice as likely to report lower burnout scores compared to those charting ≥ 6 hours (aOR: 2.43, 95% CI: 2.30, 2.57)¹

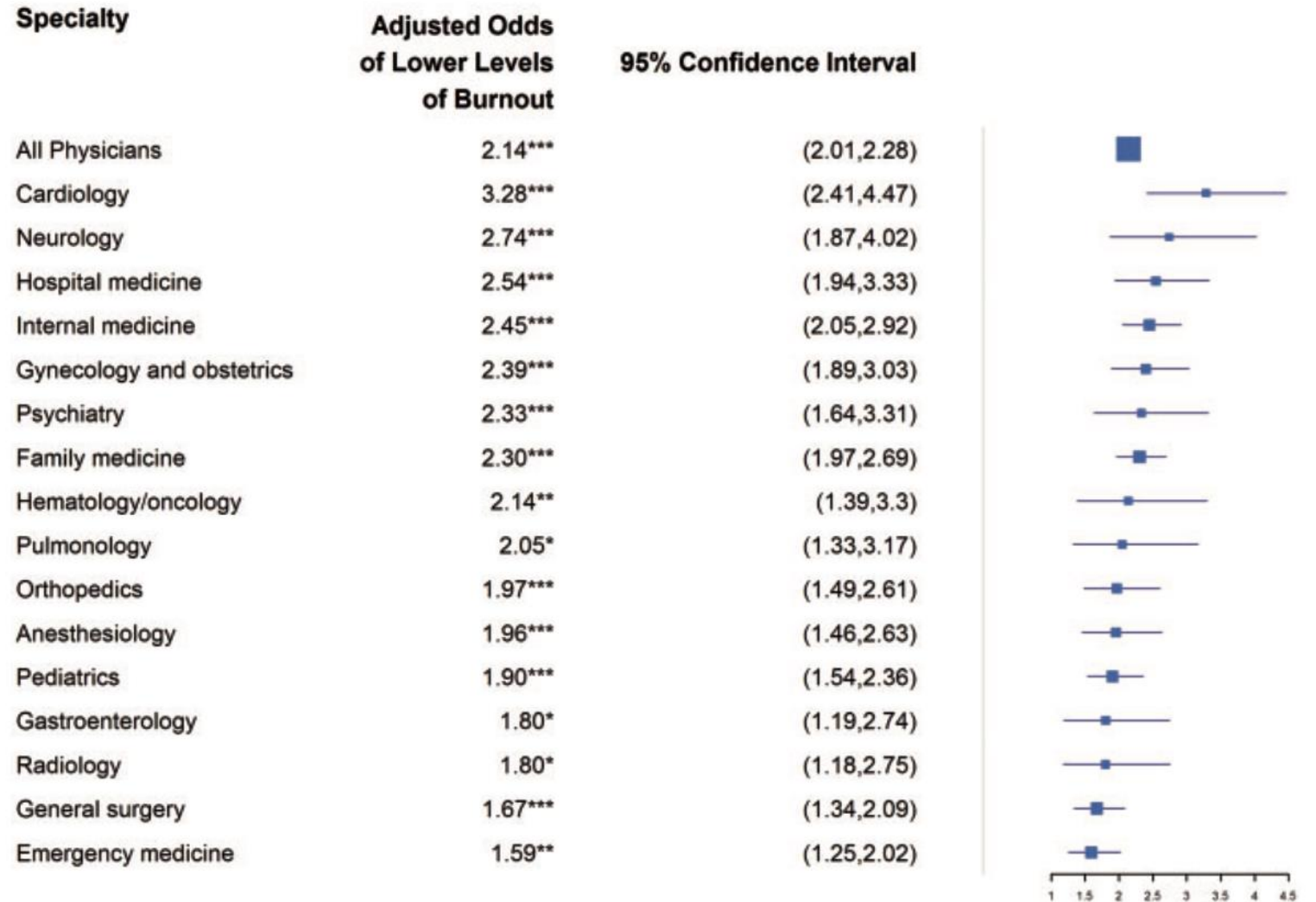
Satisfaction with EHR correlates with perceived work effort²... but does not necessarily correlate with time spent in EHR ³ (??)

1 H. C Eschenroeder, et al. Associations of physician burnout with organizational electronic health record support and after-hours charting, JAMIA 2021

2. Melnick et al Perceived Electronic Health Record Usability as a Predictor of Task Load and Burnout Among US Physicians: Mediation Analysis J Med Internet Res 2020

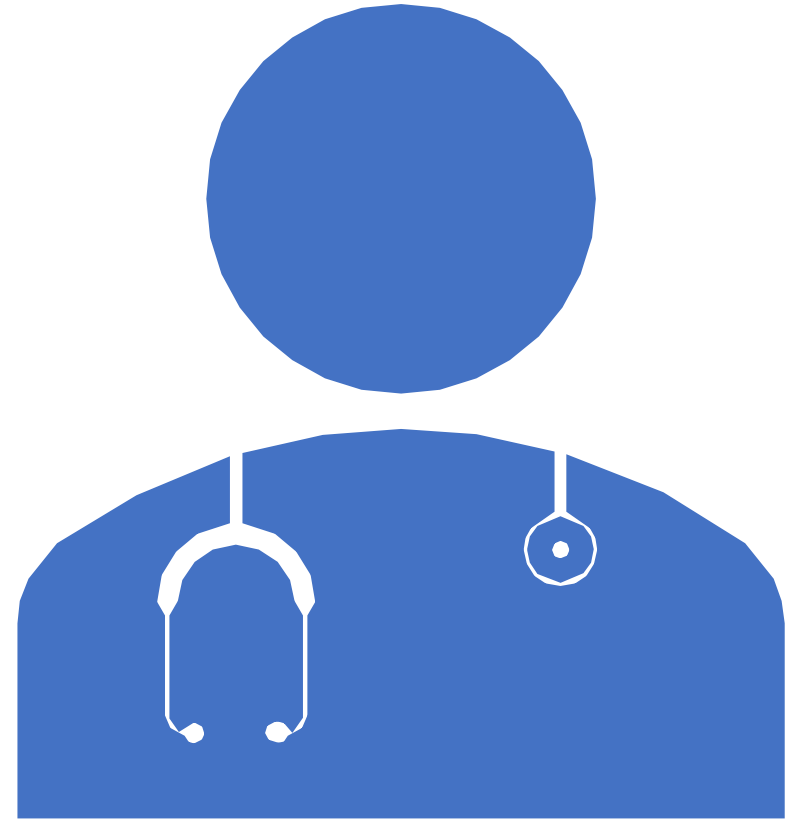
3 Lee et al, Electronic health record (EHR) training program identifies a new tool to quantify the EHR time burden and improves providers' perceived control over their workload in the EHR. JAMIA 2019.

“My organization has done a great job with EHR implementation, training, and support”

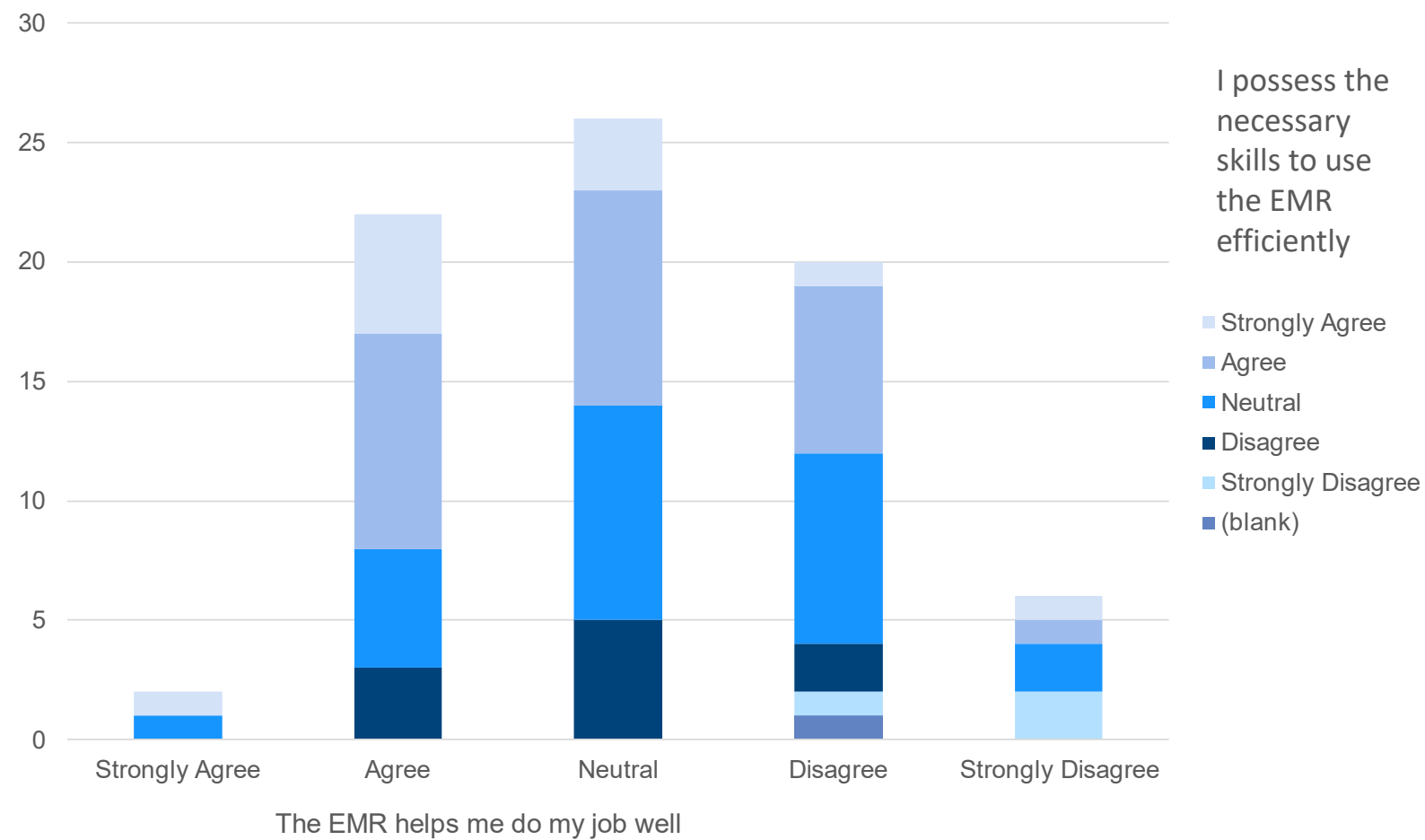


Organizations Can Help Improve Clinician Competency with EHRs

- Enhanced EHR training and personalization *can* improve clinician satisfaction with EHR and *may* reduce work outside of work
- But: people have minimal bandwidth to learn and change
- Initiatives must meet people where they are



Sense of EHR Competency and EHR Usefulness are Related



Promising Practice: Improvements in EHR Usability May Correlate with Less Burnout

"I feel burned out from my work."	One month pre-SPRINT	One month post-SPRINT
Providers	36%	27% (Δ -9%)
Staff	37%	30% (Δ -7%)

	One month pre-SPRINT	One month post-SPRINT	Net change
	"Agree or Strongly Agree"	"Agree or Strongly Agree"	
PROVIDERS: Our clinic has clear policies on how staff and providers can best use EPIC EHR together.	36%	72%	+36%
STAFF: Our clinic has clear policies on how staff and providers can best use EPIC EHR together.	58%	73%	+15%

Promising Practice: Implementing Dragon Reduced Time in Notes (But Not Documentation Length)

Progress Note Length

4.8k char

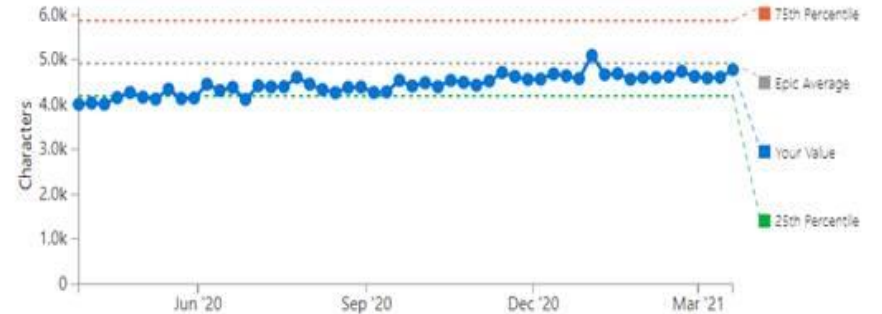
Middle 50%



📘 Metric Description

📄 Download Most Recent Data

📄 Download All Historical Data



Time in Notes per Appointment

8.1 min

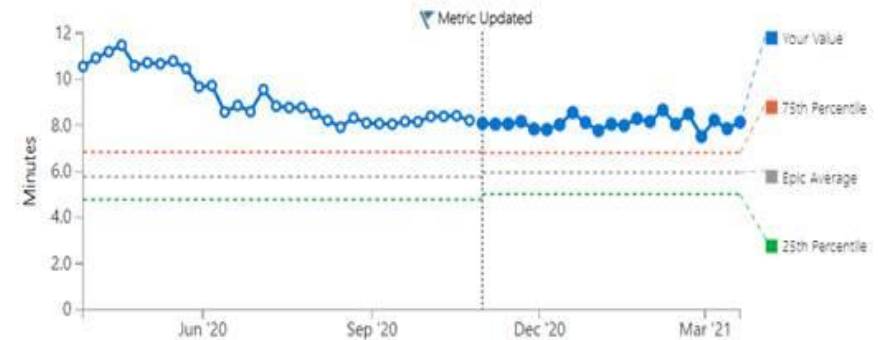
Bottom 10%



📘 Metric Description

📄 Download Most Recent Data

📄 Download All Historical Data



Eliminating Inefficiencies With AMA STEPS *forward*



| **STEPS***forward*[™]



De-implementation checklist

In an effort to [reduce unintended burdens](#) for clinicians, health system leaders can consider *de-implementing* processes or requirements that add little or no value to patients and their care teams. Physicians themselves are often in the best position to recognize these unnecessary burdens in their day-to-day practice. The following list includes potential de-implementation actions to consider. Learn more on how to reduce the unnecessary daily burdens for physicians and clinicians at stepsforward.org.

AMA Steps Forward- EHR

EHR

☐ Minimize alerts

- Retain only those alerts with evidence of a favorable cost-benefit ratio

☐ Simplify login

- Simplify and streamline login process, leveraging options like single sign-on, RFID proximity identification, bioidentification (fingerprint, facial recognition, etc.)

☐ Extend time before auto-logout

- Consider extending time for workstation auto-logout
- Consider customizing workstation location and the security level to use patterns of the specific user

☐ Decrease password-related burdens

- Consider extending the intervals for password reset requirements
- Help users create passwords that are both strong and easy to remember (i.e., by allowing special characters and spaces, and by allowing longer passwords that can be passphrases)
- Consider use of password keeper programs

☐ Reduce clicks and hard-stops in ordering

- Reduce requirements for input of excessive clinical data prior to ordering a test
- Eliminate requirements to fill fields attesting to possible pregnancy in males or women over 60 years old

☐ Eliminate requirements for password revalidation

- Identify ways to reduce unnecessary requirements for users to [re-enter username/password](#) when already signed in to EHR, to send prescriptions (Note: Organizations may choose to keep this requirement in place for opioid prescriptions.)

☐ Reduce note-bloat

- Reduce links imbedded in visit note documentation templates that automatically pull in data from other parts of EHR contributing to “note bloat,” but adding little if any true clinical value

☐ Reduce inbox notifications

- Stop sending notifications for tests ordered that do not yet have results or have test results *not* ordered by the physician in question
- Stop sending notifications for reports generated by the recipient of the notification
- Eliminate multiple notifications of the same test result or consultation note
- Consider auto-release of normal and abnormal test results to the patient-facing portal with imbedded or linked patient-friendly explanations

☐ Simplify order entry processes

- Optimize technology to auto-populate necessary discreet data fields if the information already exists in EHR (e.g., if medical assistant has completed a discreet field for “last menstrual period,” optimize your technology so no one has to reenter that data into the order for a pap smear)

AMA Steps Forward- Compliance

Compliance

- ☐ **Allow verbal orders in low-risk and in crisis situations as legally permitted**
- ☐ **Reduce signature requirements**
 - Eliminate signature requirements for forms that do not legally require a physician signature
 - Eliminate order requirements for low-risk activities that do not legally require a physician signature (ear wash, fingerstick glucose, oximetry)
 - Consider eliminating “challenge questions” to electronically sign orders when the user already logged in and actively using the EHR
- ☐ **Evaluate annual trainings and attestations**
 - Review current compliance training modules and consider removal of those that aren’t required by a regulatory agency or for which evidence of benefit is lacking
- ☐ **Reduce attestations required daily or every time one logs in**
 - Eliminate requirements as allowed by state or federal requirements (i.e., for privacy protection attestation) that occur on a daily or every-time-one-logs-in basis (i.e., consider whether or not an annual attestation is sufficient)



The NEW ENGLAND JOURNAL of MEDICINE

Perspective

NOVEMBER 8, 2018

Getting Rid of Stupid Stuff

Melinda Ashton, M.D.

Many health care organizations are searching for ways to engage employees and protect against burnout, and involvement in meaningful work has been reported to serve both func-

tions. According to Bailey and Madden, it is easy to damage employees' sense of meaningfulness by presenting them with pointless tasks that lead them to wonder, "Why am I bothering to do this?"¹ An increase in administrative tasks has resulted in less time for the activity that clinicians find most important: interacting with patients. Some commentators have recently suggested that it may not be the electronic health record (EHR) per se that leads to burnout, but rather the approach to documentation that has been adopted in the United States.²

Although my health system, like most in the United States, cannot magically eliminate the documentation required for billing and regulatory compliance,

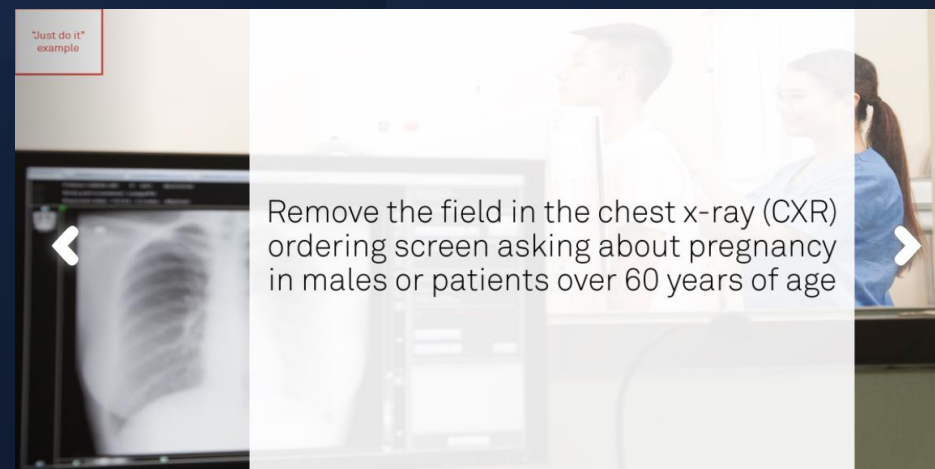
my colleagues and I had reason to believe that there might be some documentation tasks that could be eliminated. Our EHR was adopted more than 10 years ago, and since then we have made a number of additions and changes to meet various identified needs. We decided to see whether we could reduce some of the unintended burden imposed by our EHR and launched a program called "Getting Rid of Stupid Stuff." Starting in October 2017, we asked all employees to look at their daily documentation experience and nominate anything in the EHR that they thought was poorly designed, unnecessary, or just plain stupid. The first thought we shared as we kicked off this effort was, "Stupid is in the eye

of the beholder. Everything that we might now call stupid was thought to be a good idea at some point."

We thought we would probably receive nominations in three categories: documentation that was never meant to occur and would require little consideration to eliminate or fix; documentation that was needed but could be completed in a more efficient or effective way with newer tools or better understanding; and documentation that was required but for which clinicians did not understand the requirement or the tools available to them.

Since we kicked off the program, we have received nominations in all three categories. Some reports of unintended documentation requirements resulted in quick changes. In several cases, requirements were being applied to patients of different ages than originally planned. For example, we received a request from a nurse

Getting Rid of Stupid Stuff



5) Promote Equity and Fairness

Emerging data science is focused on racial equity and gender equity

Female Doctors Are Spending More Time With Patients, But Earning Less Money

By [Lindsay Carlton](#) | Updated on November 09, 2020

✓ [Fact checked by James Lacy](#)



Tom Werner / Getty Images

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Health informatics and health equity: improving our reach and impact FREE

Tiffany C Veinot ✉, Jessica S Ancker, Suzanne Bakken

Journal of the American Medical Informatics Association, Volume 26, Issue 8-9,
August/September 2019, Pages 689–695, <https://doi.org/10.1093/jamia/ocz132>

Published: 14 August 2019

ORIGINAL ARTICLE

Health Equity Beyond Data

*Health Care Worker Perceptions of Race, Ethnicity, and Language
Data Collection in Electronic Health Records*

Taylor M. Cruz, PhD and Sheridan A. Smith, BA

Med Care 2021 May 1;59(5):379-385.

6) Support Work/Life Harmony and Boundaries



HIT Can Promote Work/Life Harmony by Supporting Teamwork

- Designing for teams not individuals
- Job sharing, panel-sharing, schedule-sharing, cross-coverage
- Tasks versus roles
- Results versus schedules



Solving Telemedicine and Remote Work Challenges

- Communication, brainstorming, and problem-solving
- Knowledge sharing
- Socialization, camaraderie, and mentoring
- Performance evaluation and compensation
- Data security and regulation
- **Boundaries-setting**
- Measurement of impact on clinicians



7) Advocate for Change



HealthIT.gov

NEW: Health IT Feedback Portal

CONTACT EMAIL UPDATES

Official Website of The Office of the National Coordinator for Health Information Technology (ONC)

TOPICS | BLOG | NEWS | DATA | ABOUT ONC

Search

HealthIT.gov > Topics > Certification of Health IT > Certification Criteria > 2015 Edition > Safety-enhanced design

Certification of Health IT

About the Health IT Certification Program

Certification Process

Certification Criteria

2015 Edition Cures Update

2015 Edition

(Retired) 2014 Edition

2015 Edition Cures Update – Base Electronic Health Record (EHR) Definition

Standards Version Advancement Process (SVAP)

Conditions & Maintenance of Certification

Real World Testing

Certified Health IT Products List (CHPL)

Oversight and Surveillance

Certified Health IT Complaint Process

Certification Regulations

Program Resources

EHR Reporting Program

§170.315(g)(3) Safety-enhanced design

2015 Edition CCGs

2015 Edition Test Procedure

Updated on 06-15-2020

Resource Documents

Revision History

Regulation Text

Standard(s) Referenced

Certification Companion Guide: Safety-enhanced design

This Certification Companion Guide (CCG) is an informative document designed to assist with health IT product development. The CCG is not a substitute for the 2015 Edition final regulation. It extracts key portions of the rule's preamble and includes subsequent clarifying interpretations. To access the full context of regulatory intent please consult the 2015 Edition final rule or other included regulatory reference. The CCG is for public use and should not be sold or redistributed.

Link to Final Rule Preamble

Edition Comparison	Gap Certification Eligible	Base EHR Definition	In Scope for CEHRT Definition
Revised	No	Not Included	No

Certification Requirements

This certification criterion was adopted at § 170.315(g)(3), and is required for all developers seeking certification to § 170.315(a)(1) through (9), (a)(14), (b)(2) or (b)(3). There are no associated required privacy and security criterion for this certification criterion.

Technical Explanations and Clarifications

Applies to entire criterion

Clarifications:

- The application of user-centered design (UCD) during development and summative testing is limited to only those nine 2015 Edition certification criteria specified in this certification criterion and only for which certification is sought, namely [80 FR 62670]:
 - § 170.315 (a)(1) Computerized provider order entry (CPOE) – medications
 - § 170.315 (a)(2) Computerized provider order entry (CPOE) – laboratory
 - § 170.315 (a)(3) Computerized provider order entry (CPOE) – diagnostic imaging
 - § 170.315 (a)(4) Drug-drug, drug-allergy interaction checks for CPOE
 - § 170.315 (a)(5) Demographics
 - § 170.315 (a)(9) Clinical decision support
 - § 170.315 (a)(14) Implantable device list
 - § 170.315 (b)(2) Clinical information reconciliation and incorporation
 - § 170.315 (b)(3) Electronic prescribing

As a "Revised" certification criterion, this safety-enhanced design (SEEN) certification criterion is not gap certification eligible. For EHR

What three strategies have emerged during COVID that we should carry through on a permanent basis?



Future Directions:

- How can we wield the extraordinary power of informatics to better address the challenges health care workers are experiencing?
- How can we use what we learned during COVID to keep innovating and improving?



*We did not feel prepared to be the heirs
of such a terrifying hour*

*but within it we found the power
to author a new chapter
To offer hope and laughter to ourselves
So while once we asked,
how could we possibly prevail over
catastrophe?*

*Now we assert
How could catastrophe possibly prevail over us?*

-Amanda Gorman





Appendix: Mental Health Resources



suicidepreventionlifeline.org



GET HELP

LEARN

GET INVOLVED

PROVIDERS & PROFESSIONALS

National Suicide Prevention Lifeline

We can all help prevent suicide. The Lifeline provides 24/7, free and confidential support for people in distress, prevention and crisis resources for you or your loved ones, and best practices for professionals.



1-800-273-8255

Trauma-Informed Apps to Support Mindfulness and Self Care

- <https://www.ptsd.va.gov/appvid/mobile/index.asp>

Self-Help	Self-Help Apps			
These apps provide support and guidance in living with PTSD.				
	PTSD Coach	PTSD Family Coach	Mindfulness Coach	VetChange

Treatment Companions	Treatment Companions Apps			
These apps offer additional help for PTSD treatments.				
	CPT Coach	PE Coach	CBT-i Coach	ACT Coach

Related	Related Apps			
These apps help with related issues affecting people with PTSD.				
	COVID Coach	Couples Coach	Insomnia Coach	Mood Coach

Self-Assessment Tools



Self-Assessment

Evaluating Your Well-Being

Though the field of well-being is constantly evolving, research has repeatedly pointed to several measurable factors that play a crucial role for physicians and biomedical research scientists. To explore your own personal degree of well-being and which factors impact you most right now, take the tests in each section below.

Your responses and assessment results are for your use only — they are not saved and will remain confidential.

Jump To

- [Professional Fulfillment](#)
- [Burnout](#)
- [Self-Valuation / Self-Compassion](#)
- [Sleep-related impairment](#)
- [Impact of Work on Personal Relationships](#)