VETERANS HEALTH ADMINISTRATION

Welcome and Thank You for Attending

WRIISC-HOME 2024 WEBINAR SERIES PLANNING COMMITTEE
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VETERANS HEALTH ADMINISTRATION

WRIISC – HOME FY 2024 Webinar Presentation

Chronic Multisymptom Illness (CMI)/Gulf War Illness (GWI): Veteran care and the 2021 Clinical Practice Guideline

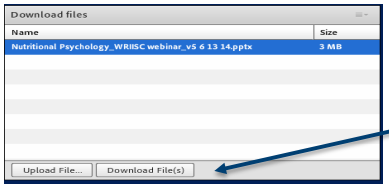
Presentation for: VA and Community Clinicians and Partners

Presented by: Robert D. Forsten, DO, MS, Senior Clinician and Psychiatry Consultant, DC WRIISC
Charles C. Engel MD, MPH, Co-Director, Advanced Research Fellowship on Learning Health Systems and Core Investigator, Seattle VA HSR&D COIN
Stephen C. Hunt MD, MPH, VA National Director, Post-Deployment Integrated Care Initiative

Date of Webinar: April 9, 2024

Tips and Pointers

- PowerPoint Presentation and handouts can be downloaded from Download Files Box.



1. Select material to be downloaded, now highlighted in blue.
2. Click on “Download File(s)” to download to your computer.

- Use Chat Box (at bottom) to ask questions.
- **1.0** contact hour is offered appropriately by ACCME, ACCME–NP, AAPA, ACPC, ANCC, APA, ASWB, CDR, NBCC, NYSED and JA IPCE to those attendees with 100% attendance.

Military Environmental Exposures (MEE) Certification Programs

https://www.acpm.org/Education-Events/Military-Environmental-Exposures-Certification

A Proud Partnership between the Dept of Veterans Affairs & American College of Preventive Medicine (ACPM)

Level 1 Certification & Advanced Level 2 Certification

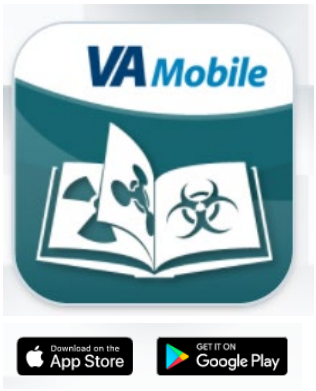
Now available to VA Clinicians via TMS; Community Clinicians via TRAIN

Why should VA health care professionals become certified in Military Environmental Exposures?

Over 42% of Veterans are concerned about military exposures.
Veterans expect VA health care professionals to know about military exposures.
VA health care professionals need tools to respond to military exposure concerns.

VA Mobile Exposure-Ed App

- For health care providers
- Search for military-related exposure information, as well as VA's programs and policies
- Get tips on communicating risk to patients
- Print or email tailored information for patients during or after the visit
- Locate VA facilities
- Available for free on Android and Apple devices
- Download at: https://mobile.va.gov/app/exposure-ed
- Comprehensive app details at: https://mobile.va.gov



LINKS:

- Download at: https://mobile.va.gov/app/exposure-ed
- Comprehensive app details at: https://mobile.va.gov

Military Exposures Clinical Briefs Series

2024 WRIISC-HOME Briefs Series
Every 4th Tuesday of each month
12pm – 12:30pm EST

Thirty (30)-minute knowledge-based, interview-style briefs that converse with specific occupational groups to offer providers quick, hands-on skills to complement the more detailed learning found in our WRIISC-HOME Webinar Series.

April 23, 2024: Brain Cancer Mortality Among Gulf War I Veterans Exposed to Explosions at Khamisiyah

May 28, 2024: VSignals Survey: Fostering Veteran Trust Around Military Environmental Exposures

Missed a session? Watch a previous Military Exposure Clinical Brief here!

Sign-up here to receive e-mails on WRIISC Educational Opportunities

U.S. Department of Veterans Affairs

Office of Patient Care Services
Health Outcomes Military Exposures
War Related Illness and Injury Study Center

U.S. Department of Veterans Affairs

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LINKS:

- May 28, 2024: VSignals Survey: Fostering Veteran Trust Around Military Environmental Exposures
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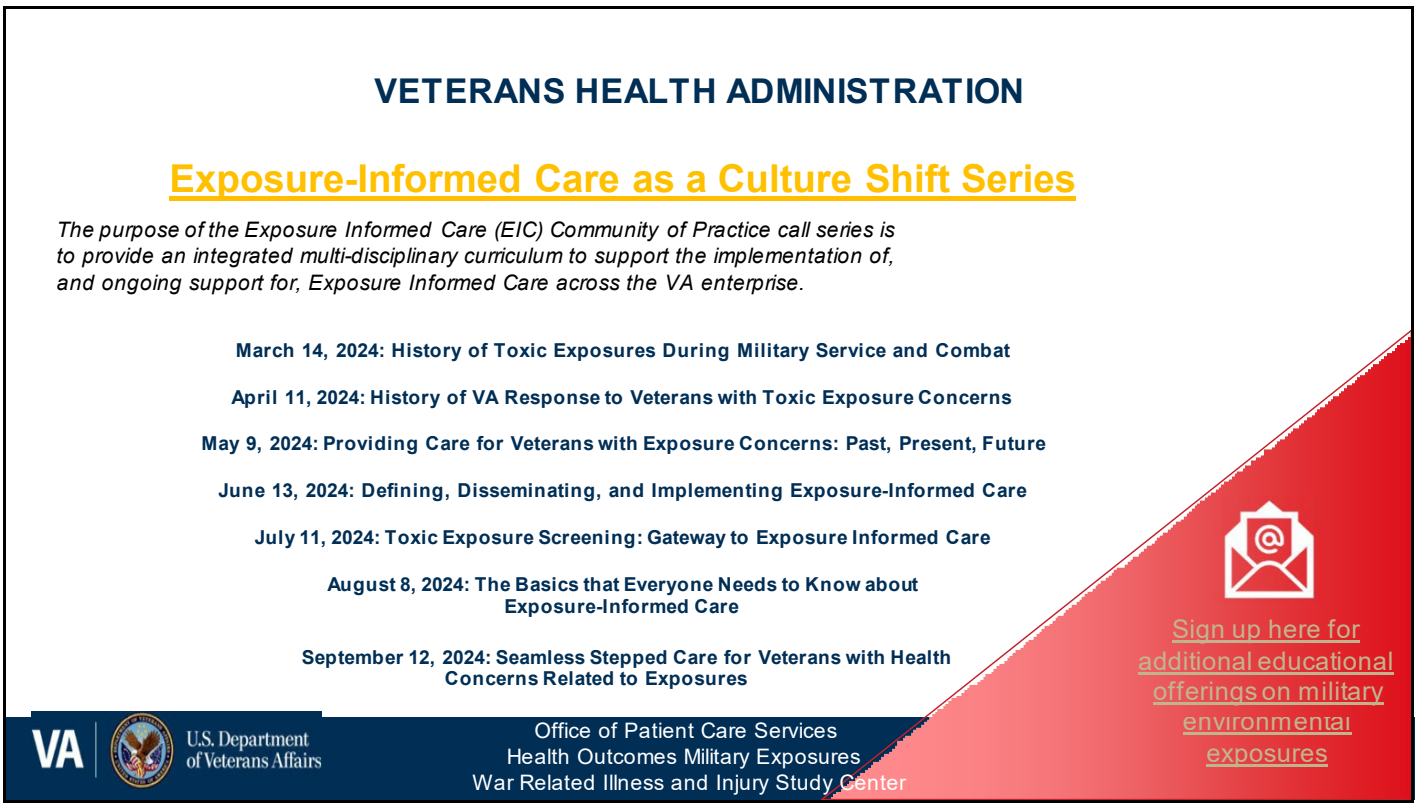

LINKS:

- Exposure-Informed Care as a Culture Shift Series
- Sign up here for additional educational offerings on military environmental exposures

WRIIISC-HOME FY24 Webinar Series

2024 Webinar Series - War Related Illness and Injury Study Center (va.gov)

Date	Webinar Title	Presenters
November 14, 2023	**WRIISC HOME Military Exposures and Care: Enhancing military culture competence to optimize veteran-centered care** (**Introductory**: Special Topics)	**Lucile Burgo-Black**, MD, FACP: Co-Director Post Deployment Integrated Care Initiative; **Stephen Hunt**, MD, MPH: Director, Post Deployment Integrated Care Initiative; **Andrea Kossoudji**, MS, MBA, RN, AMB-BC: Nurse Educator (detailed), NJ WRIISC
December 12, 2023	**WRIISC HOME Deployment and Risk of Suicide Among Vietnam-Era Veterans: Forty years follow-up** (**Advanced**: Cognitive & Psychological Health)	**Aaron Schneiderman**, Ph.D.: Director Epidemiology, HOME; **Julie Weitlauf**, Ph.D.: Clinical Psychologist, VA Palo Alto HS
January 9, 2024	**WRIISC HOME Examining the Impact of Military Environmental Exposures: Next steps for screening and treating** (**Introductory**: Exposures)	**John Barrett**, MD, MPH, MS, FAAFP, FACPM, FACOEM: Medical Director & Deputy Director, DC WRIISC; **Michelle Kennedy Prisco**, MSN, ANP-C: Deployment Health Clinician, Research & Educator, DC WRIISC
February 20, 2024	**WRIISC-HOME Clinical Guidance and Policies Related to PFAS Exposure in the Military** (**Introductory**: Exposures)	**Terra Vincent-Hall,** PhD: Senior Toxicologist, HOME
March 12, 2024	**WRIISC-HOME Understanding Deployment Related Respiratory Disease Workup** (**Intermediate**: Airborne Hazards)	**Silpa Krefft**, MD: Physician, National Jewish Health; **Anays Sotolongo**, MD: Co-Director AHBPCE, NJ WRIISC;
April 9, 2024	**WRIISC-HOME Chronic Multi-Symptom Illness (CMI)/Gulf War Illness (GWI): Veteran care and the 2021 Clinical Practice Guideline** (**Introductory**: CMI)	**Stephen C. Hunt**, MD, MPH: VA National Director, Post-Deployment Integrated Care Initative; **Robert Forsten**, DO: Senior Clinician and Psychiatry Consultant, DC WRIISC; **Charles C. Engel**, MD, MPH: Core Investigator, COIN-VA Puget Sound
April 30, 2024	**WRIISC HOME Sleep Management with Mild-Traumatic Brain Injury & Military Exposure Concerns** (**Introductory**: Cognitive & Psychological Health)	**J. Wesson Ashford**, MD, PhD (CA WRIISC, VA) **J. Kent Werner**, MD PhD CDR, MC, USN Assoc. Professor, Dept of Neurology (USUHS, DOD)
May 14, 2024	**WRIISC-HOME Situational Awareness of Anomalous Health Incidents (AHI) for Providers (Introductory**: Exposures)	**Robert Forsten**, DO: Senior Clinician and Psychiatry Consultant, DC WRIISC; **Louis M. French**, PhD, Neuropsychologist, Walter Reed National Military Medical Center, DC
June 11, 2024	**WRIISC-HOME The AHOBPR at 10 Years: Looking back, looking forward** (**Introductory**: Airborne Hazards)	**Michael Falvo**, PhD: Co-Director AHBPCE, NJ WRIISC[; **Nisha Jani**, PhD, MPH: Health Science Specialist, NJ WRIISC AHBPCE
July 9, 2024	**WRIISC-HOME Impact of Deployment-Related Exposures on Women's Health (Introductory**: Exposures)	**Maheen M. Adamson**, PhD, MHL (WRIISC-WOMEN), CA **Jennifer Jennings**, MD (WRIISC-WOMEN), CA
August 13, 2024	**WRIISC-HOME Radiation as a Military Exposure** (**Introductory**: Exposures)	**Danny McClung**, BS, RRPT, FHPS: Health Physicist and Radiological Consultant, HOME, **Peter Rumm**, MD, MPH, FACPM: Director, Policy Military Environmental Exposures, HOME; **Rudolph Tacoronti**, MD: Staff Physician, San Diego VA Health System
September 10, 2024	**WRIISC-HOME An Update on Yoga as a Treatment for Chronic Symptoms of Gulf War Illness** (**Introductory**: CMI)	**Peter Bayley**, PhD: Director of Research, CA WRIISC; **Louise Mahoney**, MS: Yoga Therapist and Co-investigator, CA WRIISC

LINKS

April 30, 2024	**WRIISC HOME Sleep Management with Mild-Traumatic Brain Injury & Military Exposure Concerns** (**Introductory**: Cognitive & Psychological Health)
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WRIISC-HOME TMS & TRAIN Collections:

Webinars, Podcasts and Briefs

COLLECTION 1: E-Learning

COLLECTION 2: Airborne Hazards

COLLECTION 3: Exposures

COLLECTION 4: Gulf War Illness

COLLECTION 5: Chronic Multi-symptom Illness

COLLECTION 6: Whole Health/Integrative Functional Medicine

COLLECTION 7: Cognitive & Psychological Health

COLLECTION 8: Special Topics

COLLECTION 9: Podcasts

COLLECTION 10: ME Clinical Briefs

WRIISC_ProviderEducationResources.pdf (va.gov)

LINKS
WRIISC_ProviderEducationResources.pdf (va.gov)

TODAY'S WRIISC TRAINING

PURPOSE:

- Increase provider knowledge of CMI and Gulf War associated Illnesses
- Expand best practices knowledge based on best available evidence-based practice guidelines.
- Address a specified curriculum request by providers/clinicians
- Support the need for higher learning and understanding of relationship between CMI and military exposures.

Presenter

Charles C. Engel MD, MPH

Dr. Engel is a VA Health Systems Research investigator at the Denver-Seattle Center for Innovation (COIN), codirector of the Seattle VA's Advanced Research Fellowship on Learning Health Systems, Adjunct Researcher for the RAND Corporation, and Professor of Psychiatry at the University of Washington. A retired Army Colonel and 1990-1991 Gulf War Veteran, Dr. Engel has focused for over 30 years on patient-centered health system strategies for improving quality of primary care for chronic health conditions after war, disasters, and suspected mass exposures.

An experienced health care researcher, Dr. Engel has led successful multisite randomized effectiveness trials and program evaluations, coauthored some 200 scholarly papers, delivere d invited presentations in 12 countries, testified twice before Congress, and served on the board of directors of the International Society for Traumatic Stress Studies.

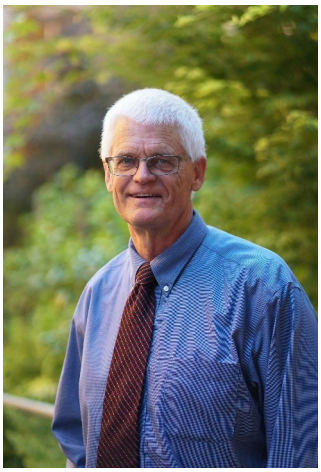
Presenter

Robert D. Forsten DO, MS

Dr. Robert Forsten joined the VA in October 2020 after retiring from the US Army with over 30 years of US military service. He transferred to the Washington DC VA War Related Illness and Injury Study Center (WRIISC) in November 2022. Dr. Forsten has held numerous O6 level commands and served in staff officer surgeon roles at the three- and four-star levels. He has deployed to Iraq, Afghanistan and in support of a U.S. Humanitarian mission. Dr. Forsten was also the Command Psychiatrist for US Army Special Operations for six years.

Dr. Forsten is a graduate of the US Army War College with a Master of Strategic Studies and is a diplomat of the American Board of Psychiatry and Neurology. In additio n to Chronic Multisymptom Illness, his scholarly interests include PTSD, TBI, Substance Use Disorders, and Sleep Disorders.

Presenter



Stephen C. Hunt MD, MPH

Throughout his three-decade career in VA, Dr. Hunt has been involved in clinical care, research, policy development, education and outreach related to health concerns of combat Veterans.

He has been the National Director of the VA Post-Deployment Integrated Care Initiative since 2007, providing leadership for the development and support of integrated post-deployment care services in VA medical centers enterprise-wide. He is currently the Physician Lead for the Office of Primary Care Legislative Action Team responsible for the Toxic Exposure Screen, a key feature of PACT Act Legislation.

Dr. Hunt is a Clinical Professor of Medicine at the University of Washington School of Medicine in the Occupational and Environmental Medicine Program where he has developed strategies for approaching Veterans' health care from the perspective of military service as an occupation and deployment/combat as an environment.

Facilitator

Ryan C. Brewster, PhD

Dr. Brewster is a Clinical Neuropsychologist and Neuropsychology Fellowship Director at the DC WRIISC. His responsibilities include supervising VA Advanced Fellows in neuropsychological assessment of Veterans with a wide range of complex neurocognitive and emotional concerns. Dr. Brewster joined the WRIISC in 2019 and supports its Education Mission by serving on the WRIISC-HOME Webinar Series Planning Committee and assisting presenters as a Webinar Facilitator. He completed a PhD in Clinical Psychology through the joint Clinical Psychology, Neuropsychology, and Cognitive Neuroscience programs at Georgia State University, a clinical internship in Adult Neuropsychology at the University of California-Los Angeles (UCLA) Semel Institute for Neuroscien ce and Human Behavior, and a two-year post-doctoral fellowship in Clinical Neuropsychology specializing in Traumatic Brain Injury/Rehabilitation at the West Los Angeles VAMC.

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Stephen C. Hunt MD, MPH, VA National Director, Post-Deployment Integrated Care Initiative

Date of Webinar: April 9, 2024

Faculty Disclaimers and Disclosures

Disclaimers: The views expressed in this webinar are those of the presenters and do not necessarily reflect those of the Department of Veterans Affairs, Department of Defense, the University of Washington, or any other institutions or government agencies.

Disclosures: Webinar faculty have no disclosures and report no conflicts of interest.

We Care For And About Veterans

We extend the greatest respect to all who are serving or have served in uniform on behalf of a grateful Nation. Your sacrifices and service to country keep every American safe and secure.

Slide 17: This slide speaks to our Veterans that kept our country safe while they served And our Servicemembers continue so today….**not only** keeping our nation safe but maintaining world security. And those of you working for the VA understand our number 1 mission is to care for our Veterans. Dr. Engel, Dr. Hunt, and I sincerely thank all of you who care for our Vets.

Faculty Acknowledgements

Many thanks to the following experts, whose ideas contributed greatly to Webinar content:

- J. Wesson Ashford MD, PhD
- Edward C. Shadiack III, DO, MPH
- Drew A. Helmer MD, MS
- Lisa M. McAndrew PhD
- Omowunmi Osinubi MD, MSc, MBA, FRCA, ABIHM

Level 2 Learning Objectives

After the webinar, attendees will be able to:

1. Define chronic multisymptom illness (CMI)
2. Describe CMI epidemiology and importance to patients and clinicians
3. Characterize symptom-based syndromes, their overlap, and how they relate to CMI
4. Explain clinical assessment and evidence-based non-pharmacologic and pharmacological treatments for CMI
5. Identify VA/DoD resources for Veterans with CMI

Slide 19: This presentation will provide you **acceptable**, evidence-based care for Veterans with CMI and help you develop comfort and effectiveness when caring for these patients.

Level 3 Learning Objectives

As a result of this learning, we expect in the long term that you will be able to apply practice into the field accordingly:

- Demonstrate proper assessment and use of the 2021 CMI Clinical Practice Guidelines in care of Veterans.
- Review the evidence supporting the DoD/VA 2021 Evidence based CMI Clinical Practice Guidelines
- Utilize VA resources that support providers who are seeing Veterans with Chronic Multi-symptom Illness (CMI) and Gulf War Illness: Primary Care and the DoD/VA 2021 Evidence based CMI Clinical Practice Guidelines

Slide 20: Our Level 3 Learning Objectives: This webinar will help you understand the relationship between Gulf War Illness and CMI, and making these diagnoses. CMI and GWI are common and we see it very frequently in the WRIISC as you do in the primary care setting.

Consider the Story of Retired Army SFC Smithers…

SFC Smithers, US Army Retired, is a 56-year-old woman who deployed to the 1991 Gulf War and again to Operation Iraqi Freedom in 2004. SFC Smithers reports she cannot "get a full diagnosis" even though she has seen multiple specialists. She has many questions related to various military exposures (anthrax vaccines, pyridostigmine bromide tablets, oil smoke, and burn pits). When asked for specifics, she says, "I was bombed so much…I really don't know."

The referring doctor notes the "Veteran requests further assessment/review of multisystem issues including endocrine, neurological, gastrointestinal, musculoskeletal, fatigue, chronic pain, vitamin deficiencies etc." On review of systems, she reports many symptoms including chronic pain in 3 of 4 quadrants, back pain, joint pain, debilitating fatigue, indigestion, and abdominal discomfort. "And I can't remember where I leave things," she adds. Past medical history includes hypertension, mild traumatic brain injury, type 2 diabetes, low vitamin D and B12 levels, and esophageal reflux.

Slide 21: Let's start with the clinical portrait of a veteran, SFC retired Smithers, with probable CMI. You have about 20 minutes with this patient before you are scheduled to see your next patient. What is your reaction to this patient and how might you proceed? As we discuss CMI, think about how you will approach the visit, pertinent questions for evaluation and later follow-up for continued care for Ms. Smithers.

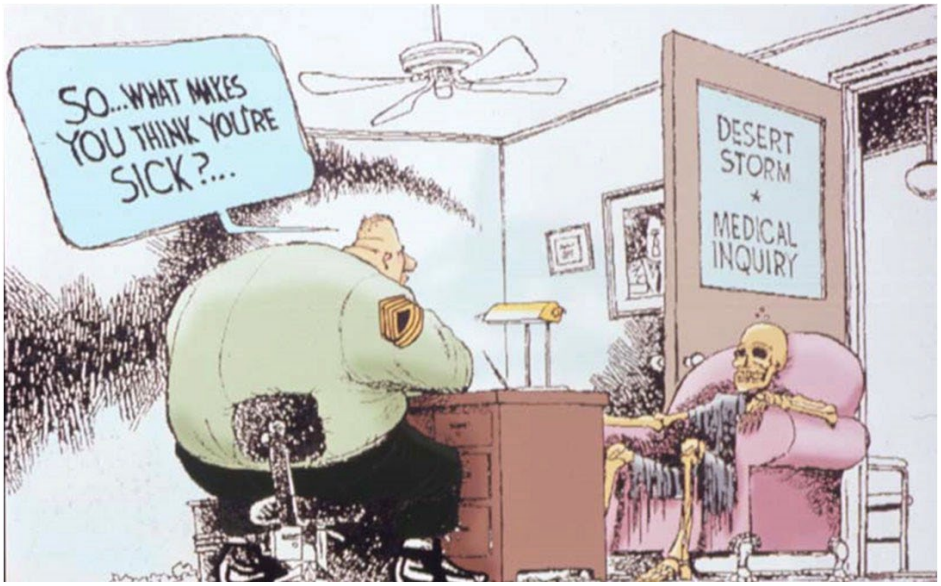
What's A Busy Primary Care Clinician to Do?

Creator: Mike Baldwin

"You're allergic to the environment. We've got to get you off the planet."

Slide 22: This slide is a tongue in cheek illustration of how clinicians often feel when they encounter patients with CMI (i.e., 'none of this makes much biomedical sense – how do I make this stop so I can keep up with my clinic schedule'). We greatly appreciate the challenge patients with CMI represent to VA Primary Care Clinicians and there's much at stake here: clinician workload and burnout, as well as the quality of life and proper compensation of those who have served in Uniform and their families.

How Affected Veterans Feel When Seeking Care



Source: Unknown

Slide 23: In a similar way, this slide shows a political cartoon published in the 1990s. The image conveys the way that many Veterans with CMI feel when they see a clinician. They feel ill, in pain, etc., but worry that their illness will be questioned; that the clinician seeing them will think their problem is not real or maybe even malingered for the purpose of obtaining benefits. Understandably, they feel a deep need for explanations, and probably have developed some explanations of their own. For a few, the fact that their doctor works for the government—even if not military per se—leaves them wondering if there's some kind of effort underway to deny the impact of their illness, and to deny them VA benefits.

What is Chronic Multisymptom Illness?

CMI is a *chronic symptom-based condition* defined as follows:[1]

- Individual reports of two or more persistent symptoms across two or more body systems:
  - Fatigue
  - Headache
  - Cognition (e.g., Attention & Concentration)
  - Pain
  - Arthralgias
  - Myalgias
  - Gastrointestinal Symptoms
- Symptoms have persisted or frequently recurred for at least 6 months
- Symptoms interfere with functioning (social, occupational, psychological)
- Symptoms are not better accounted for by disease(s), medication(s) or substance use disorder(s)

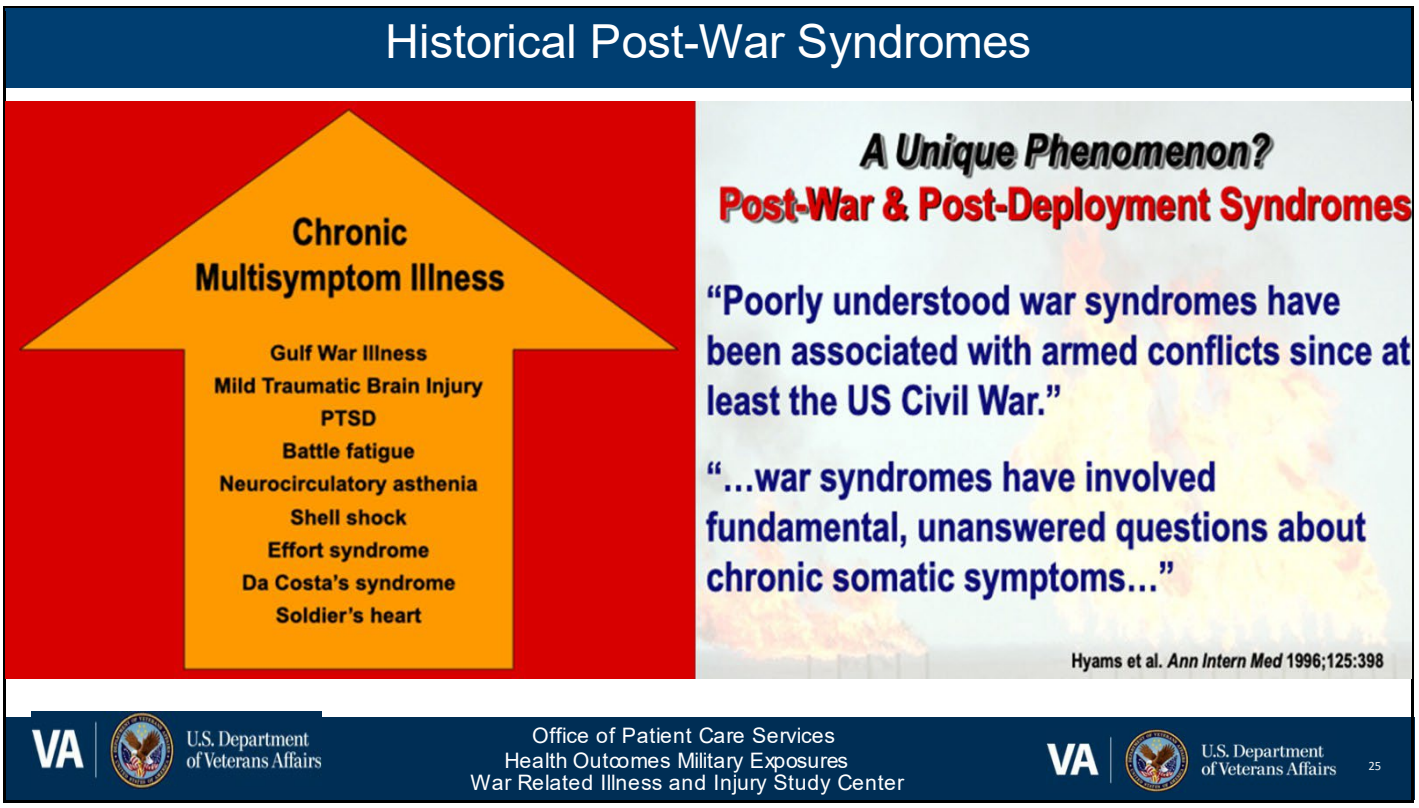
[1] Adapted from 2021 VA/DoD Clinical Practice Guideline on the Management of Chronic Multisymptom Illness

Slide 24: Here is a more formal definition of CMI, adapted from the 2021 VA/DoD Clinical Practice Guideline.

There are essentially 4 major components:

1. Presence of two or more symptoms across two or more body systems
2. Chronicity, defined as lasting six months or longer
3. Interference with function
4. Lack of another explanation

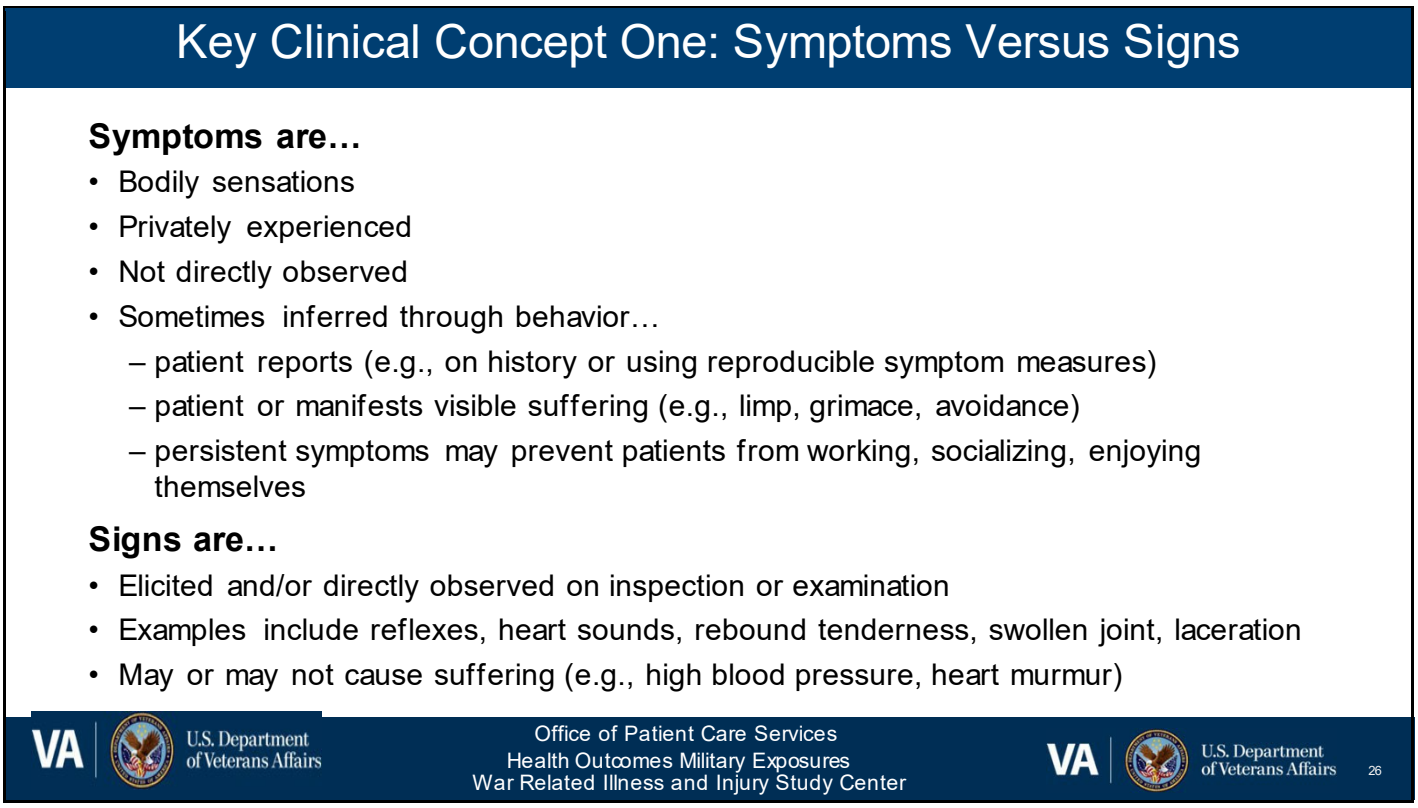
These criteria identify a group of Veterans with some important, shared characteristics.



Slide 25: Interestingly, there is a long and colorful history of CMI among those returning from war. Veterans with ominous, chronic symptoms across multiple body systems are literally an ancient problem, even dating back to c2100 BCE, when a poetic narrative from ancient Mesopotamia sometimes referred to as the "Epic of Gilgamesh" was recorded. The Epic of Gilgamesh is the story of an ancient and fearless warrior, who was eventually taken down by debilitating illness, grief, and other problems. The conclusion of Hyams and colleagues in 1996 that you see here remains applicable over 25 years and about half a billion dollars in US Government funded research. Many etiologic theories have accompanied these symptom syndromes, and many theories that have implicated a wide-range of low-level toxic battlefield exposures.

In short, it is clear to all of us that THE BATTLEFIELD IS ANYTHING BUT AN OSHA APPROVED WORKPLACE…!

PTSD is also mentioned in a story of the battle of Marathon by Herodotus over 2000 years ago in 5th century Greece (490 BC/BCE). However, PTSD is NOT the same as CMI.



Slide 26: In short, CMI is a category of illnesses that are comprised of multiple debilitating symptoms. This slide and the one that follows explains the important conceptual difference between (1) a symptom and a sign and (2) between disease and illness.

This is not new information for most clinicians, but in the day-to-day practice of medicine, we tend to confuse these concepts in our descriptions and our diagnoses.

First, let's talk about what constitutes a symptom versus a sign.

Symptoms are privately experienced bodily sensations. We as clinicians have no direct window into these symptoms, and studies of pain suggest that we as clinicians often underestimate the severity and impact of symptoms, and we tend to attribute motivations – accurately or inaccurately – for our patients report of symptoms. We can often observe indirect indicators of symptoms such as patient reported severity and the behavioral signs of underlying suffering. Symptoms are strongly correlated with the presence and severity of impaired functioning and discomfort that patients with CMI experience.

Signs, in contrast, are directly observed and often specifically elicited on patient examination. Examples include heart sounds, reflexes, swelling, or redness.
When a sign is not recognized by a patient – for example, undiagnosed hypertension or some changes in heart sounds, it may not be associated with distress or suffering.

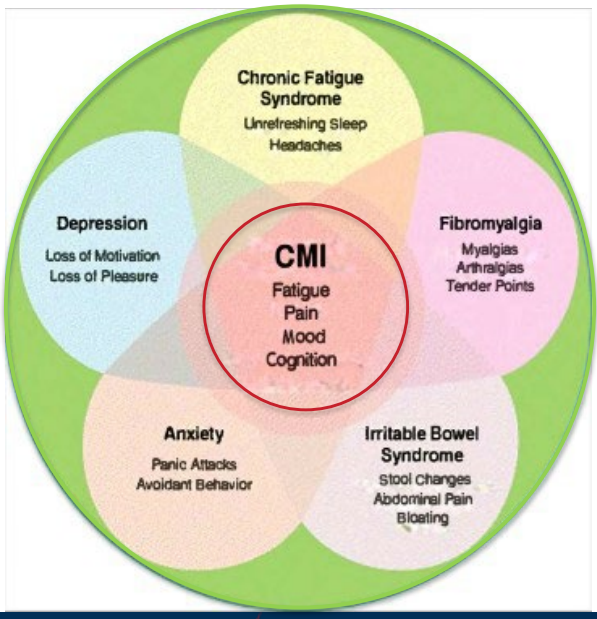
Key Clinical Concept Two: Disease Versus Illness

Disease	Illness
• Biomedical entity • Signs • Structural abnormalities (e.g., imaging) • Biomarkers (testing, procedures) • May or may not be associated with illness (e.g., hypertension)	• What a patient experiences • Symptoms • Suffering – social and psychological • Discomfort • Impaired function • May or may not be associated with disease (e.g., CMI)

Slide 27: It is similarly important to think carefully about the difference between illness and disease when evaluating a patient with apparent or possible CMI. Disease and illness typically overlap – for example congestive heart failure. However, in CMI and some other conditions, illness occurs without disease OR disease occurs without illness. The importance of this distinction can relate to how aggressive or conservative the clinician should be when evaluating and treating the Veteran with possible CMI.

In sum, the last two slides are presented for enhancing the audience to appreciate the approach to the assessment, diagnosis, and management. This helps us move move from the strictly biomedical view of CMI to a broader, more biopsychosocial clinical perspective.

Common Symptoms – Common Syndromes
Chronic Multisymptom Illness at the Intersection



Slide 28: This figure on the left offers one way of conceptualizing the relationship between CMI and some of some of the well-known symptom syndromes that overlap phenomenologically with it. CMI is at the center of these syndromes regardless of service deployment or putative/proposed etiology.

This was first apparent to researchers after Gulf War Veterans returned with multiple symptoms that came to be known as “Gulf War Illnesses”. As we will see, CMI, though more common after deployment, is a common illness in all populations. These symptoms involved (fatigue, IBS, anxiety, pain, mood) may be viewed as a universal manifestation in all chronic illness. These symptoms, in accordance with the previously outlined case definition, only become CMI when component symptoms exist independent of identifiable disease or cannot be fully explained by the severity of identifiable disease for a given patient.

Poll Question 1

Which of the following conditions are NOT considered presumptive after deployment to the Gulf War?

A. Fibromyalgia
B. Chronic Fatigue Syndrome
C. Pustular Skin Rash
D. Multiple Chemical Sensitivity (aka, Idiopathic Environmental Illness)
E. Irritable Bowel Syndrome

Slide 29: Thanks Dr. Engel. So, our first knowledge check and Poll Question. Which of the following conditions **ARE NOT** considered presumptive after deployment to the Gulf War? I'll give you a moment to read the question and answer.

A. Fibromyalgia
B. Chronic Fatigue Syndrome
C. Pustular Skin Rash
D. Multiple Chemical Sensitivity (aka, Idiopathic Environmental Illness)
E. Irritable Bowel Syndrome

Unlike the others, a rash is an observable sign and not a symptom.

Poll Question 2

Which of the response options below is MOST consistent with the 2021 VA/DoD Clinical Practice Guideline defined criteria for CMI?

A. At least 2 disabling symptoms and 4 or more months duration
B. At least 3 disabling symptoms explained by disease, medicines, or active SUD
C. Any 3 or more symptoms lasting at least 3 months
D. At least 2 disabling symptoms lasting 6 or more months with no identifiable disease explanation
E. At least 2 component symptoms lasting over 6 months not fully accounted for by disease

Slide 30: Our second Poll Question

Which of the response options below **is MOST consistent** with the 2021 VA/DoD CPG defined criteria for CMI? Again, take some time to read the answers and respond.

At least 2 disabling symptoms lasting 6 or more months with no apparent cause **are** the defining criteria of CMI.

Epidemiology of Symptoms & CMI

- Symptoms are common. In the average month…[1]
  - 80% of adults report symptoms
  - 33% consider visiting a clinician
  - 22% visit a clinician
- CMI is common
  - 10-12% in the general US population[2]
  - Deployed Gulf War Versus Non-Deployed Gulf War Era Veterans[3]
    - 39% mild to moderate CMI (versus 14%)
    - 6% severe CMI (versus 0.7%)
  - Longitudinal Cohort (2001-2016) showed rising prevalence[4]
- Post 9/11 Veterans between 25-50%[5]

1. Green et al., NEJM, 2001
2. Jason et al., 2014
3. Fukuda et al., JAMA, 1998
4. Porter et al., 2020
5. McAndrew, et al., JRRD, 2016

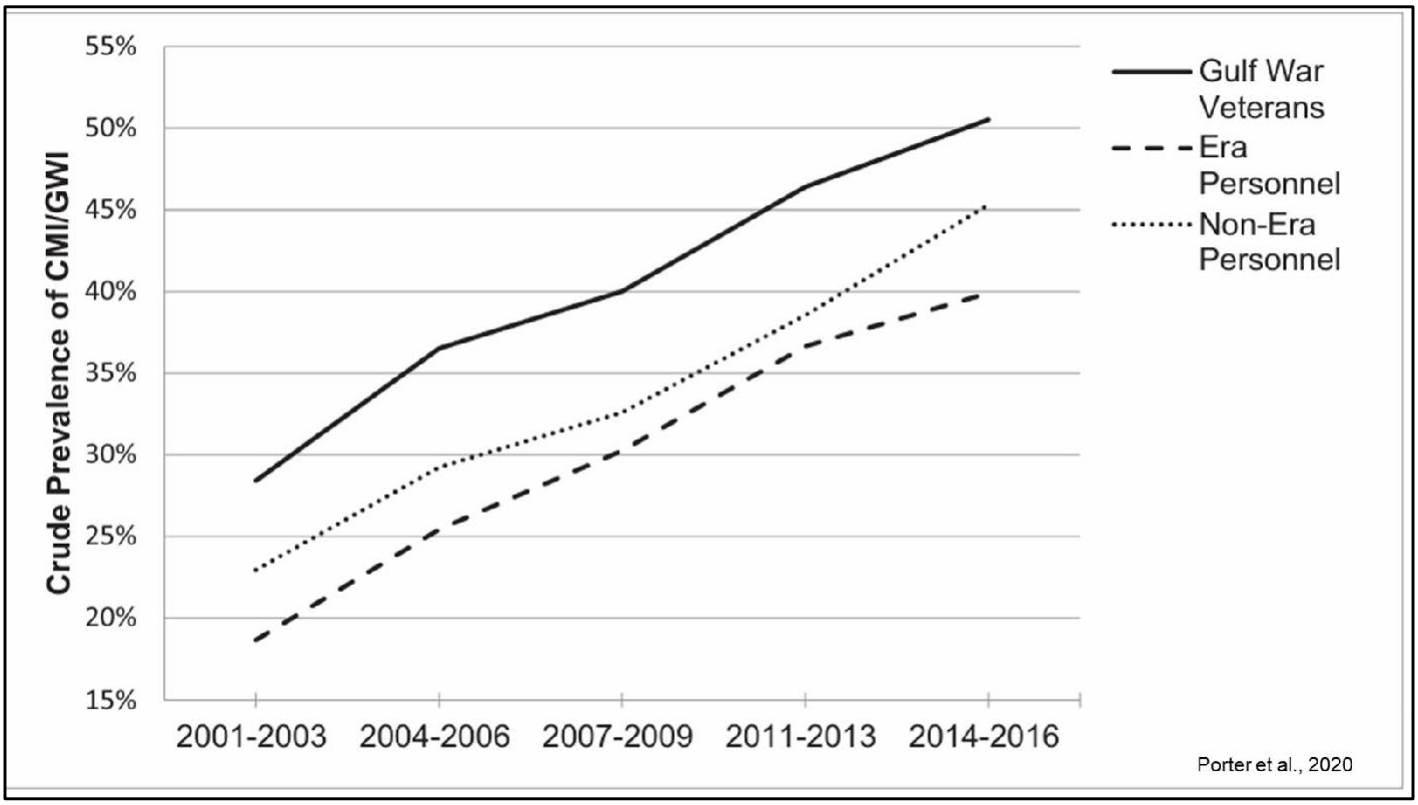
Slide 31: Let's look at the frequency and prevalence of symptoms and how it relates to CMI in various populations.

--In the first bullet, you see that Medical symptoms are common in the general population, and studies have estimated **that 80% of adults** will report one or more troubling issues in the previous month. **However**, less than half of those with symptoms will think about being seen, and only 22% overall—**will actually visit a provider.**

--Likewise, in bullet 2, CMI is very common and seen in **10-12% of the non-Veteran U.S. general population.** A CDC study of deployed Gulf War era Veterans showed nearly 40% had CMI, and a longitudinal cohort study…which I will illustrate in the next slide...showed that there is a rising prevalence over time in all these groups

–And in the last bullet, Veterans deployed to OEF, OIF, and New Dawn **are between 25 and 50 percent,** and that new-onset CMI was highly prevalent one year after deployment in this group.

One **important and consistent** finding across these studies is an **excess of symptoms** in the deployed populations which I'll also discuss shortly.



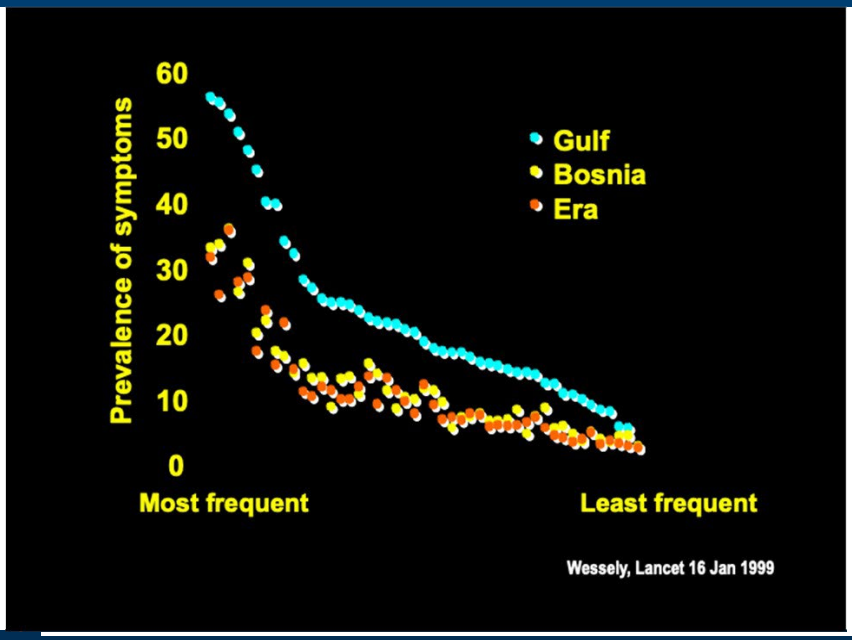
Slide 32: This is longitudinal data from the Millenium Cohort Study. To orient you to the chart, the Y-axis plots the prevalence of CMI at various points in time which are observed in various years as shown on the X-axis.

The comparison groups of interest are:
The Bold line on top is Deployed Gulf War Veterans
The Dashed line at the bottom is Nondeployed Gulf War Era Veterans
And the Dotted line in the middle are Veterans who deployed to Bosnia and Kosovo **but NOT** to the Gulf War.

So 3 important findings jump out: First, CMI is very common in all groups. Second, CMI **is more common** among those **deployed**. And Third, the prevalence of CMI rises in an likewise linear path across the three groups. So, **the bottom line to take away from these data is….that it's not easy to determine** at the individual level which previously deployed Veterans with CMI have illness that's associated **with deployment.**

This chart summarizes findings from multiple cross-sections of Service Members and Veterans. 28%-40% But this study is not truly longitudinal, because of rolling enrollment and oversampling due to more people being deployed during this time as well as people falling out of the study, lost or die. Because providers see CMI frequently with Veterans in their practice, it is may be easy to minimize the link between CMI and deployment. However, these figures suggest that only a minority of those who have been deployed and later develop CMI can attribute their illness to the deployment.

Deployment is Associated With an Excess of All Symptoms



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Slide 33: Now let's talk about **Excess of Symptoms in those that have been deployed**. This is a busy slide so again, allow me to orient you on the Y-axis is the prevalence of various symptoms seen in **3 groups of Veterans…** and on the X-axis are the **individual symptoms** taken from a symptom checklist given to each Veteran in this UK study.

--The Dots…are the prevalence **of a** given symptom…and the symptoms are arrayed on the X-axis so that the least common symptoms are on the right **and, more importantly**, **the most and more** common symptoms are on the left.

--The Blue dots are individual symptoms reported by Veterans deployed to the Gulf War. The Yellow dots, like the last slide, are individual symptoms reported by Veterans deployed to Bosnia, and the Orange dots are individual symptoms reported by non-deployed Veterans from the 1990's.

--The take away here is the **EXCESS OF SYMPTOMS ACROSS THE BOARD for each group but a larger excess with more symptoms as seen on the left side of the chart.** CMI is not just related to GI symptoms, or psych, or pulmonology, or derm, or neuro, etc., **but has signs and symptom clusters** from each**.** Lastly, you can also see the slight elevation and excess from the Bosnia group yellow dots compared to the non-deployed "Era" group orange dots **as symptoms increase.** (chart used with Sir Dr. Wessely's permission).

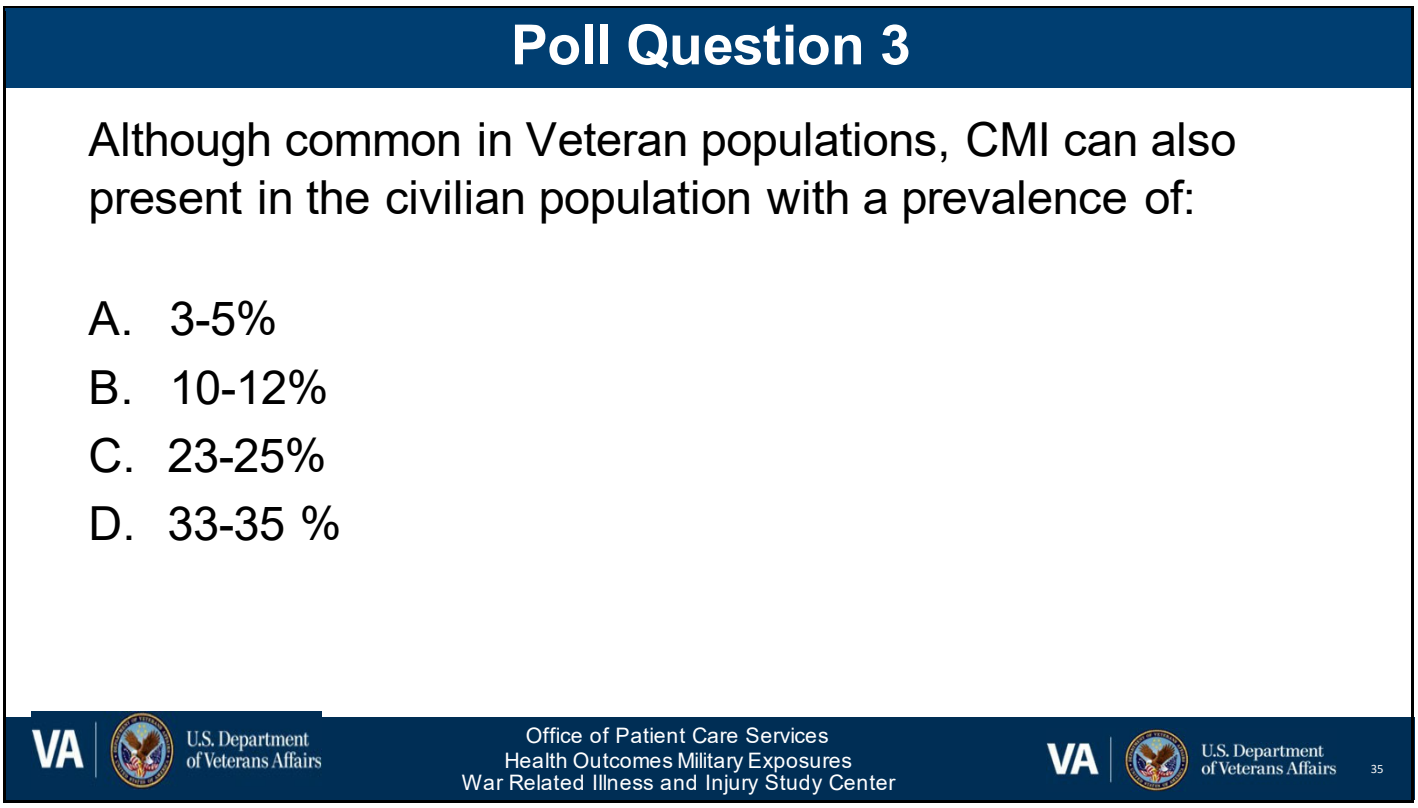
GWI/CMI Proposed Etiologies

- Gulf War Epidemiologic studies considered[1]:
  - Depleted Uranium
  - Pyridostigmine bromide nerve gas antidote
  - Organophosphates and pesticides
  - Sarin nerve agent
  - Physiological Stressors
  - Chemical Weapons
  - Oil well fires
  - Anthrax vaccine and Number of vaccines
  - Sand particulate
  - Tent heater exhaust
- Bottom Line: No causal factors identified
- Burn pit and excrement fire exposure
- Repeated Mild TBI exposure
- Increased stress
  - CNS-mediated symptom sensitivity/decreased modulation

1. Gulf War Illness and the Health of Gulf War Veterans, Scientific Findings and Recommendations. Department of Veterans Affairs. 2008. p. 232

Slide 34: So, let's talk about proposed causes of CMI which you can see are very complex ***and*** numerous; there isn't a decisive biomarker or test **to confirm or rule it in or out.** Although discovery of etiology is important for most disease processes, for CMI, it doesn't have a big impact on the care we deliver. While interesting, the potential listed causes on this slide haven't delivered any specific clinical innovations that help affected patients. Over the three decades, the VA and DoD have been rethinking this entire phenomenon in a direction that leans more toward care of the Veteran rather than ***"figuring out the disease".*** Instead, we are focusing on how to **best support these Veterans** which I stated at the beginning of this talk **is our most important mission!** Personally, my theory rests with a combination of these causes and how they relate to the last bullet and if we have more time at the end, I will go into this in more detail.

It took millions (or at least thousands) of years for the brain to develop. Most in military service and other high-stress work have become overwhelmed over the last 30+ with the advancement of computers, information, email, etc. And this adds to stress for those deployed and non-deployed as well as civilians, which increases activity in the stress centers of the brain, stress hormones and pain Neur-axial cytokines, as well as sleep, anxiety, and depression. Many of you have heard the phrase that he or she was… **"promoted to their level of incompetence…"** but it should say, they were **"promoted to their ability to not handle stress".** Again, this is my theory on why we see CMI in deployed, non-deployed and civilians. Sometimes deployment is easier than being in garrison.



Slide 35: Ok, so stopping for another knowledge check. Poll Question number three:

Although common in Veteran populations, CMI can also present in the civilian population with a prevalence of:

a. 3-5%

b. 10-12%

c. 23-25%

d. 33-35 %

I put this question in here for our providers in attendance who may see the 10-12% of civilians as well as Veterans in their practice.

Poll Question 4

Which conditions are frequently seen in CMI?

A. Fatigue
B. Gastrointestinal
C. Musculoskeletal
D. Respiratory
E. All the above

Slide 36: moving on to Question #4:

Which conditions are frequently seen in CMI?

a. Fatigue
b. Gastrointestinal
c. Musculoskeletal
d. Respiratory
e. All the above

All are frequently seen in CMI.

What's at Stake: Why Should a Clinician care?

- Poor functioning and lower QoL (Quality of Life)
  - Symptom management
- Perform a proper evaluation but pay attention to iatrogenic harm
  - Excessive medical testing (more on this next slide)
  - Overmedicating
  - Side effects of interventions
- Ensuring Veteran's receive benefits they are entitled

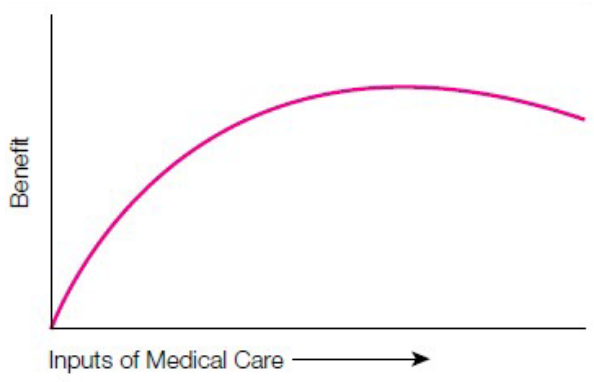
Slide 37: So what's at stake? It's important to understand that CMI impacts overall quality of life, family, socialization, work, relationships, etc. All providers treating patients, especially those with CMI, should be nudging them toward better strategies for physical and mental activity. However, it's important not to psychologize Vets…CMI is an issue with somatosensory processing. ***We need to trust what Veterans REPORT and are EXPERIENCING***we must do this as the VHA and allow the VBA to do what they do. But, if you have to prove you are ill, you are not going to get better.

We certainly appreciate all our primary care providers that are "in the trenches" so to speak and the time dilemma and perspective they face daily. This also makes the "what's at stake" more important. A study this year that looked at workload trends from 2019 to 2023 showed "there are not enough hours in the day for primary care physicians (PCPs) to do all that is expected of them, and it would take nearly 27 hours per day to follow national guidelines for acute, chronic, and preventive care."

What's at stake: million-dollar work-up (goal is to be able to tell Veterans what is going on that's causing their problems…we have good programs and guidelines to help you…validation). No more tests and meds that lead to more tests and possible harm. There are things we can do for you to feel better now rather than continuing to search for a disease rather than starting treatment, there may not be an answer in 30 years. On the management side, it's not about running multiple low-yield tests and consults just to say we did, it's about understanding the difference between an objective sign versus a subjective symptom and between a disease and an illness, then using our best medical judgment as to when to test and when to adopt a healer posture.

Remember: More Care Is Not Always Better Care

The Law of Diminishing Medical Returns



Fisher, 1999, JAMA

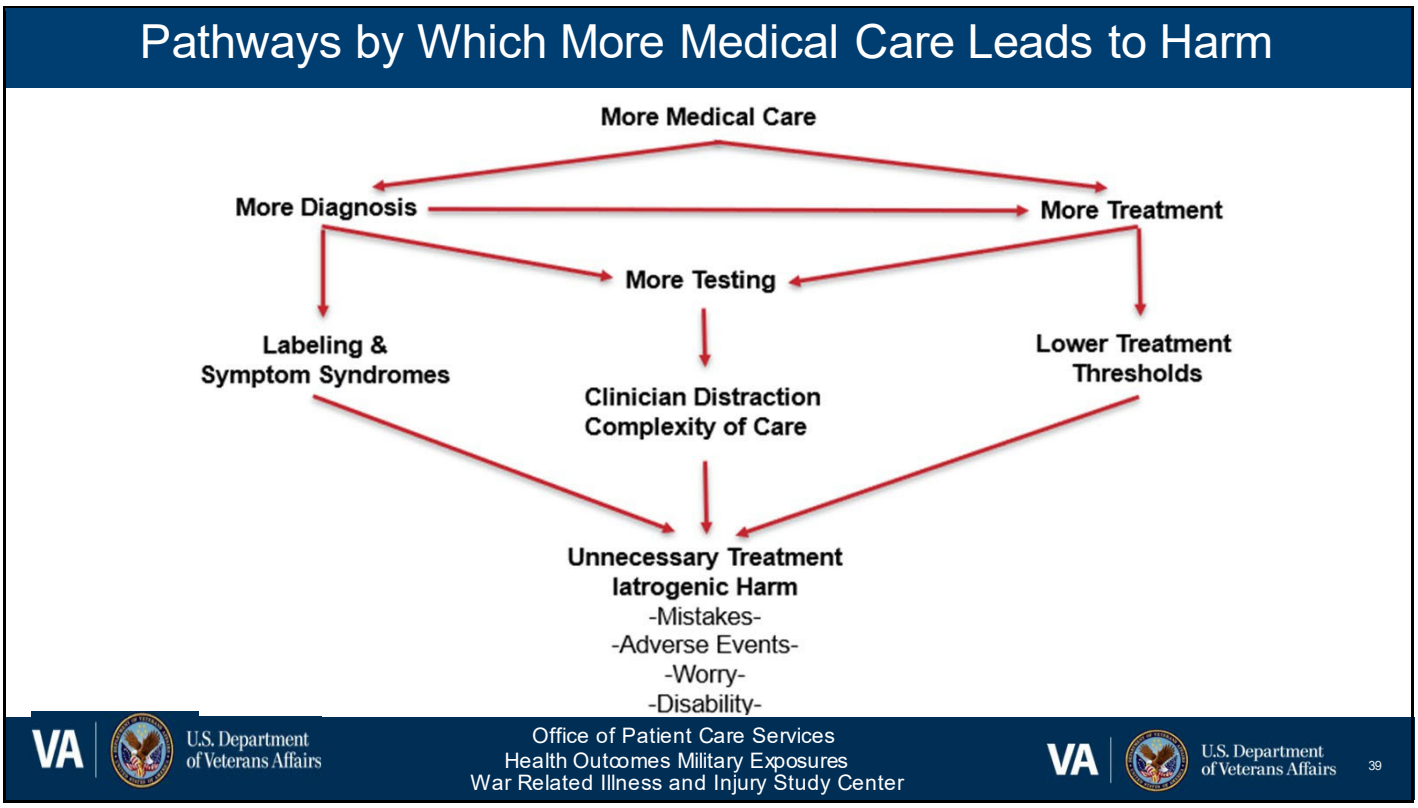
Slide 38: Elliot Fisher has noted in a seminal JAMA article, that more medical care is not necessarily better medical care, large part due to what he has called the law of diminishing returns. In short, the more care provided, the more likely one will experience more iatrogenic harm than benefit.

[flip to next slide]

If or when you expand into other illnesses with suffering, the medical model will lead to more harm than benefit. Less medical care and focus on sleep, diet, exercise, socialization and how the patient's disease impacts the patient, their family, etc.

--More Diagnoses, more treatment can lead to labeling pseudo-disease, distraction complexity, lower treatment thresholds and tampering (inpatient setting, fiddling with ventilator settings or fluid balance; outpatient setting, adjusting insulin or hypertensive medication doses). This leads to more worry and disability, more unnecessary treatment, more mistakes and more Adverse Events.

1999 Fisher, E., et al., JAMA, "Avoiding the Unintended Consequences of Growth in Medical Care: How More Might Be Worse"



Slide 39: We need to work as healers and understand that there are limits to biomedicine. We're not giving up on them, but better "being with the patient", reassure and experience with them when we can and share in their suffering when we can't, their life is their symptoms. Listening to them but not jumping to a pill and/or test…focus on optimizing health and well-being.

This slide displays the conceptual mechanisms by which Fisher hypothesized that more medical care leads to more harm.

In short, more care leads to more diagnosis, more testing, and more treatment – all aspects of care that come with cumulative risks as more and more care is delivered. Increased labeling of symptom syndromes and care for less and less severe illness leads to greater care complexity and clinician distraction and lowered treatment thresholds mean less opportunity for risky medical strategies to benefit patients.

The result, Fisher explains, is unnecessary treatment (what we would now call low value care) and increasing risk of iatrogenic harm.

Assessment I: Clinical History

- Obtain routine medical and deployment history
- Ask the Veteran for their best explanation for their symptoms
- Conduct psychosocial assessment
- Look for military and non-military psychological trauma including traumatic physical injuries

Slide 40: Assessment I: Clinical History: When someone reports a symptom, you evaluate it using evidence-based approaches, as is always your practice." You either establish a diagnosis to which the symptom can be attributed, or the symptom is unexplained. The latter is very common in primary care and medicine in general; the only difference here is the Veterans we see. This cohort is twice as common to have unexplained symptoms. We still don't know if the symptom is in any way related to the deployment, but our Veteran-centric policies mean that we do not make assumptions that lean away from the Veteran. We always give the Veteran the benefit of the doubt. It allows them to save face, and the fact is, it's true.

Clinicians should talk about the problem from the patient's perspective -- the more symptoms they experience, the more upsetting/distressing it is. Behavioral Healthcare can help them with that aspect of their suffering no matter the ultimate cause for patients with heart disease, diabetes, or post-stroke fatigue related depression or distress or family problems.

Assessment II: Physical Examination

- Keep the examination directed toward clinical suspicions
- Respect and validate the Veteran's concerns
  - For shortness of breath, examine lungs at each visit
  - For GI symptoms, assess abdomen, pelvis/prostate
- Focus on clinical suspicions, looking for physical signs
- Avoid unnecessary testing for "soft" findings

Slide 41: Physical Exam: Soft findings such as a protective response for example when you press on a belly and the patient jumps/pulls back out of concern, but it isn't rebound tenderness.

Assessment III: Laboratory and Imaging

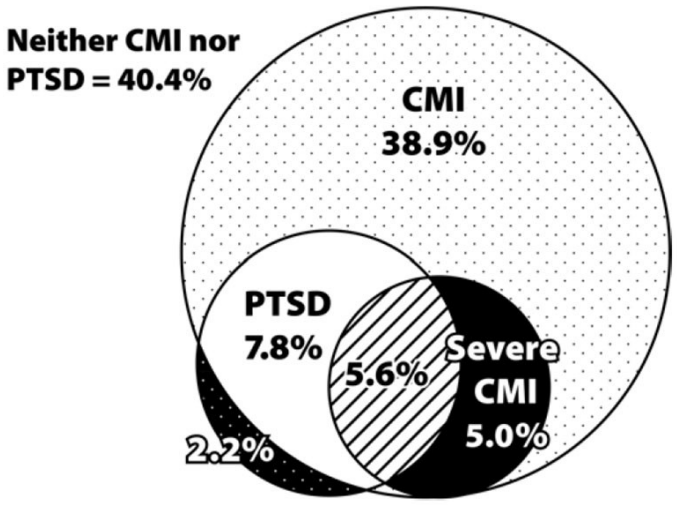
- Use diagnostic testing wisely and sparingly
  - Run high yield tests with direct treatment implications
  - Avoid "rule out" tests designed to reassure – Veterans are unlikely to benefit
  - Remember that the more tests you do, the more likely you will see false positive or equivocal findings (leading to even more testing)

- Review positive lab/imaging results with the Veteran
  - allow time for Veteran questions,
  - and time for you to explain the meaning and implications of results

Slide 42: We understand primary care providers are busy. But the emphasis with these patients is still on going over results with patients to establish rapport and reduce barriers and thinking when things are ordered but not shared, to avoid "there's something they are not telling me." Reviewing results, especially imaging, fosters a sense that care is an open book, and that nothing is hidden.

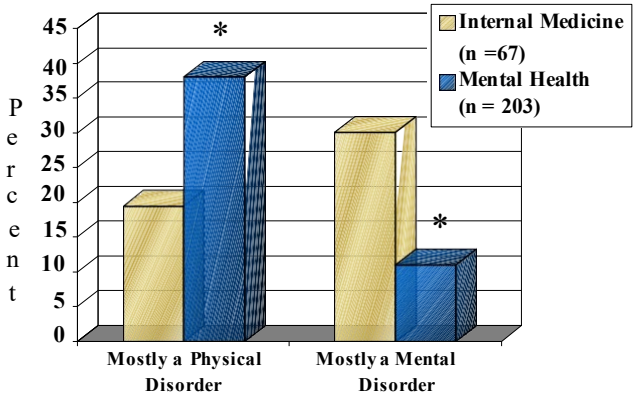
Examples that highlight this are that Providers are more aware of CMI and find it acceptable, and patients find the "label" neither unfairly trivializing nor stigmatizing. It communicates gravity, but it is not overly distressing or ominous. The label fosters physician/patient dialogue around the meaning of "idiopathic", a brief conversation that is used to inform patients that many symptoms that people experience are idiopathic, that highly effective medical therapies are available, and that active coping and self-management strategies can have significant impact on quality of life. There are many suspected and known etiologies. With illnesses such as CMI, the medical and research communities have struggled to meet the scientific rigor expected to find a solution. This is in part due to the complicated nature of CMI and the difficult task of understanding that system when CMI impacts multiple types of systems and disease states and sends research and treatment into disarray.

CMI: It's Idiopathic



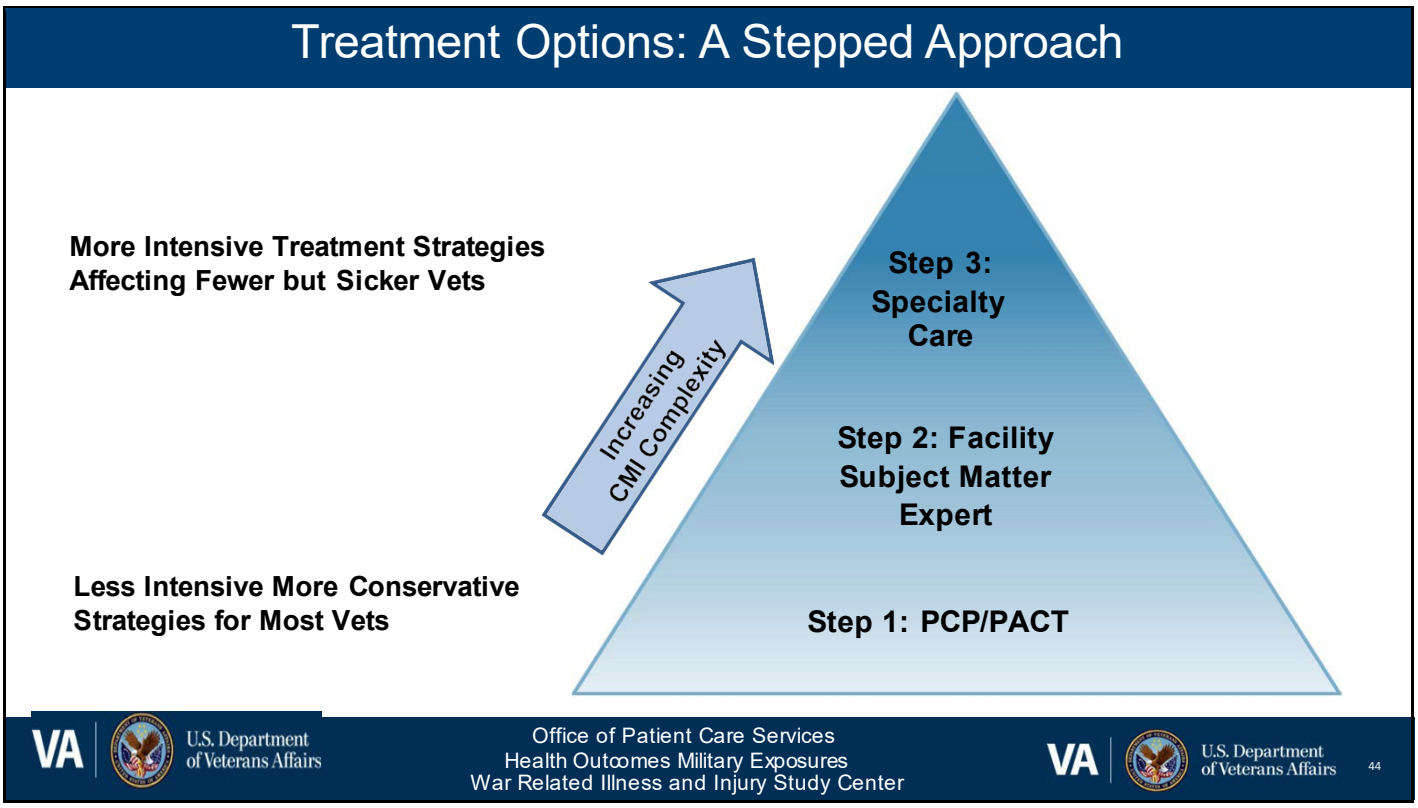
McAndrew, et al., JRRD, 2016

Rate the degree to which you believe 'Persian Gulf Illness' is…



Richardson et al., Arch Int Med, 2001

Slide 43: CMI: It's Idiopathic' (the slide shows that it's not PTSD per se (left) and on right it shows that clinicians from different specialties view causation differently. Most Veterans with CMI do not have PTSD. This study helps validates Fukuda's study. You can see that the overlap is small, 7.8% with CMI have PTSD and approximately 20% of those with CMI have PTSD, so it's obviously NOT the same thing. It is also noteworthy to point out to other findings in this study that 78% of those with PTSD have CMI, and in post 9/11 Veterans, 40% didn't have PTSD or CMI.



Slide 44: Stepped Treatment Approach. At the very least the optimal team standard post deployment integrated care should include a PCP, a social worker and a mental health clinician. Think about another special population where this principle could be applied?

Quaternary WRIISC

The teamlet consists of 1 clinician and 2 health coaches. A clinical encounter includes 4 parts: a pre-visit by the coach, a visit by the clinician together with the coach, a post visit by the coach, and between-visit care by the coach.

Step One: Initial PACT Management

- Time contingent visits
- Veteran centered symptom management planning
- Integrative medicine strategies as available (community, if necessary, in rural areas)
- Simple behavioral approaches, consider peer coaches
  - Mindfulness
  - Physical activation strategies
- Pharmacotherapy
  - Avoid polypharmacy
  - Avoid opioids
  - Avoid CNS depressants (muscle relaxers, pregabalin, benzodiazepines, 'z-drugs')

Slide 45: Step One: Initial CBOC Management. As Dr. Engel pointed out, the goal with CMI is to target it with conservative, low risk care, including regular time contingent visits with one primary care clinician, if possible, integrative strategies with emphasis on communication and activation strategies, both physical and psychological such as symptom management planning, peer or health coaches, mindfulness, and exercise.

Avoid any risky treatments such as CNS depressants, opioids, polypharmacy, and invasive procedures. And lastly, medication and non-medication interventions should also be based on individual's needs, goals, and preferences

Step Two: Multispecialty and Behavioral Treatment Programs

- Integrative health strategies (Whole Health): yoga, tai chi, acupuncture
- More intensive behavioral approaches
  - Mindfulness
  - physical activation strategies
  - CBT for pain
  - CBT for insomnia
- Pharmacotherapy
  - consider SNRIs, SSRIs for comorbid depression and painful symptoms
  - consider linaclotide or plecanatide for patients with IBC-C if osmotic laxatives fail
- Bottom line: quality of life and functioning is the primary goal of treatment

Slide 46: Step Two: let me discuss Behavioral and Multispecialty Programs that work with CMI and which that are not recommended.
For integrative Health, these 3 are recommended however there is insufficient evidence to recommend for or against the use of manual musculoskeletal therapies such as spinal manipulative therapy, chiropractic medicine, spinal mobilization, and osteopathic manipulation. Also consult for the following behavioral approaches in bullet 2, however, there is insufficient evidence (neither for nor against) for the use of biofeedback modalities. Biofeedback is a type of mind-body technique using electrical pads to control heart rate, respiration, and muscle responses. Consider the following medications for comorbid conditions noted in bullet 3 however, as discussed, the CPG recommends against the long-term use of opioid medications for the management of chronic pain, and a strong against the use of MIH-FEH-PRIH-STONE (**mifepristone)** for CMI (for those of you not familiar with this medication, it is a progesterone receptor antagonist, and an Randomized Controlled Trial in 2016 by Golier et al. compared the effect of this medication at 200 mg/day to placebo in GWV with CMI, and showed no difference in physical functioning, general mental health status, cognitive functioning, or fatigue-related symptoms between placebo in 12 weeks of treatment). It is important to note that many patients have been on multiple past "failed" trials so consider an in-depth medication review or restarting therapy if patients are willing. And as you all know, any medication trial or re-trial should be initiated one at a time, with a proper treatment course of at least 3 months, up-tapering to maximum doses if tolerated, and that duration, target symptoms, and side effects are explained.

What **NOW** for SFC Smithers?

- Inform Veteran that she has GWS/CMI
  - let her know there are many treatment options to improve her QoL
- Inform her of additional strategies to optimize her overall health:
  - Consider CPG treatment options
  - consider VA Whole Health
  - consult and follow-up with specialty care as needed
- Document her exposure concerns
  - determine if further evaluation is needed
    - start with her local Environmental Health Coordinator
- Focus on "The Big 4" that ALL Vets need!
  - sleep
  - diet
  - exercise
  - socialization

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Slide 47: …So, What NOW for SFC Smithers?
--Confirm and tell her she meets criteria for GWI and CMI since she served in the GW and OIF
--Provide her information from the 2021 CPGs and let her know about **or** provide her with the 2 page patient summary which includes factors that contribute to CMI.
--Consider WHOLE HEALTH to identify individual treatment goals such as returning to work, resumption of hobbies and interests, and improving quality of life.
--As mentioned, avoid psychologizing labels, and if time-permitting, emphasize follow-up with closer appts rather than an annual appointment, use shared decision-making, always follow through on promised actions, and lastly engage her social supports if given permission.
--Document her exposure concerns and refer her to your local Environmental Care Coordinator for evaluation and registry completion.
--And Lastly, focus on the big 4, sleep, diet, exercise, and socialization.

Agent Orange Registry
Airborne Hazards and Open Burn Pit Registry
Gulf War Registry (includes Operations Iraqi Freedom and New Dawn)
Ionizing Radiation Registry
Depleted Uranium Follow-Up Program
Toxic Embedded Fragment Surveillance Center

WHOLE HEALTH implies a holistic approach. We usually refer to these as 'symptom management plans', which emphasizes the role of the patient in taking responsibility for wellness and activation (physical and psychological) rather than emphasizing the 'chase' for a medical model diagnosis. (https://www.va.gov/wholehealth/)
Maximize use of nonpharmacologic therapies CBT, cognitive-behavioral therapy
CIH, complementary and integrative health interventions aerobic exercise, LIT low intensity training (light weights, gliders, rowers, walking)
--Some Veterans consider that they have been improperly diagnosed and are unaware of CMI. After being properly diagnosed, patient education on CMI can be highly valuable.

- It can take years for patients to receive an accurate diagnosis of CMI.
- Patients often receive other diagnoses (e.g., FMS, IBS) before being diagnosed with CMI.
- A major barrier to diagnosis is the difficulty in communicating symptoms.
- Education and understanding of their illness is particularly important to patients because it helps with coping and symptom management.

--Patients with CMI experience a constellation of symptoms that can affect many aspects of life, including work and interpersonal relationships.

- The complex and diverse nature means patients can experience a wide range of symptoms.
- Symptoms can have a significant impact on a patient's daily activities, including job performance, as well as interpersonal relationships with friends, family, and caregivers.

--Patient-centered care and shared decision making are highly important in finding an optimal set of treatments, especially since medications and other therapies can have significant side effects.

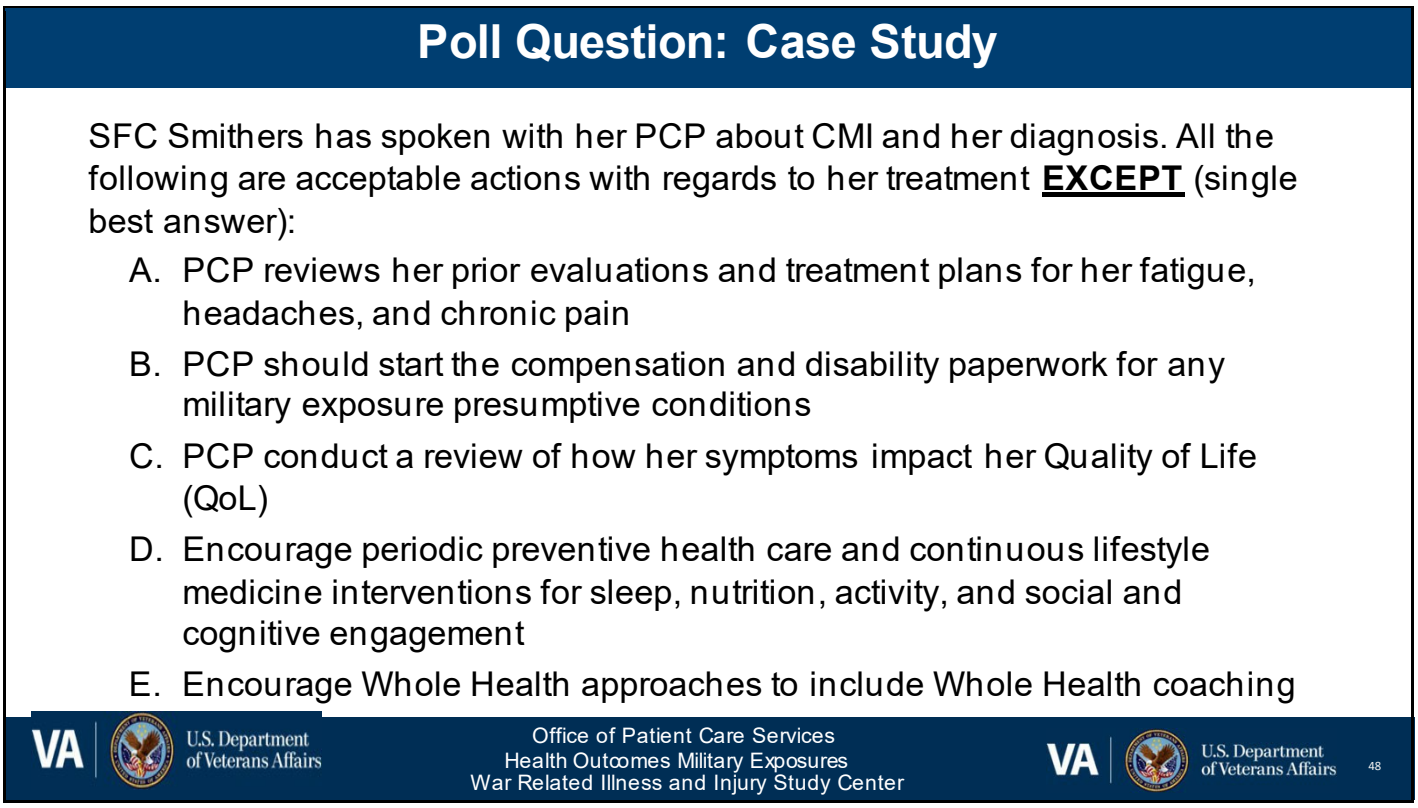
- Patient-centered care and shared decision making have been instrumental in improving care.
- Medications used to treat many of the common CMI symptoms may have significant side effects.
- Alternative treatments outside of standard medications may benefit some patients who are struggling to manage their CMI symptoms.

--Support groups can be very helpful because many patients with CMI are frustrated, lonely, and disengaged, and therefore in need of companionship, understanding, and support.

- Support groups can be beneficial for those diagnosed with CMI or who have undiagnosed conditions.
- Sharing experiences around common symptoms is particularly helpful.

--It can be difficult for patients to establish eligibility for healthcare services through the VA, resulting in frustration with VA providers. Patients may need help getting the benefits for which they are qualified.

- The participant noted multiple issues with VA providers that can negatively affect illness and treatment.
- Many Veterans have difficulties receiving VA benefits and, therefore, treatments.



Slide 48: So, our last Poll question is related to our Case Study:

SFC Smithers has spoken with her PCP about CMI and her diagnosis. All the following are acceptable actions with regards to her treatment **EXCEPT** (single best answer):

a. PCP review her prior evaluations and treatment plans for her fatigue, headaches, and chronic pain

b. PCP should start the compensation and disability paperwork for any military exposure presumptive conditions

c. PCP conduct a review of how her symptoms impact her Quality of Life (QoL)

d. Encourage periodic preventive health care and continuous lifestyle medicine interventions for sleep, nutrition, activity, and social and cognitive engagement

e. Encourage Whole Health approaches to include Whole Health coaching

Veterans Health Administration providers may discuss with her that she could and should consider submitting claims with the Veterans Benefits Administration or VBA.

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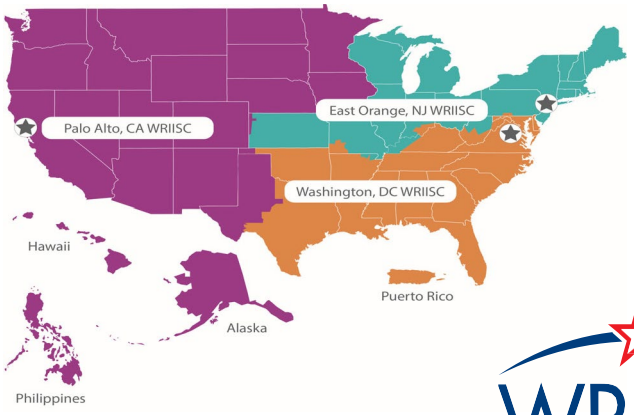
or through the VBA website for initiating or adding disability claims. The VBA will review her healthcare notes for determination of Service Connection so it's important to document mild, moderate, severe, chronic illnesses and the impact on her limitations for to carry out daily work, hobbies, socialization, and family affairs due to her symptoms. I would also add that while QoL would routinely be done in research settings, a less formal assessment of functional impact is more common in primary care settings.

War-Related Illness and Injury Study Center (WRIISC)

- VA's National Post-Deployment Health Resource
- **3 Sites:**
  - Washington DC
  - East Orange NJ
  - Palo Alto, CA
- **3 Missions**
  - Clinical Consultation
  - Research
  - Education

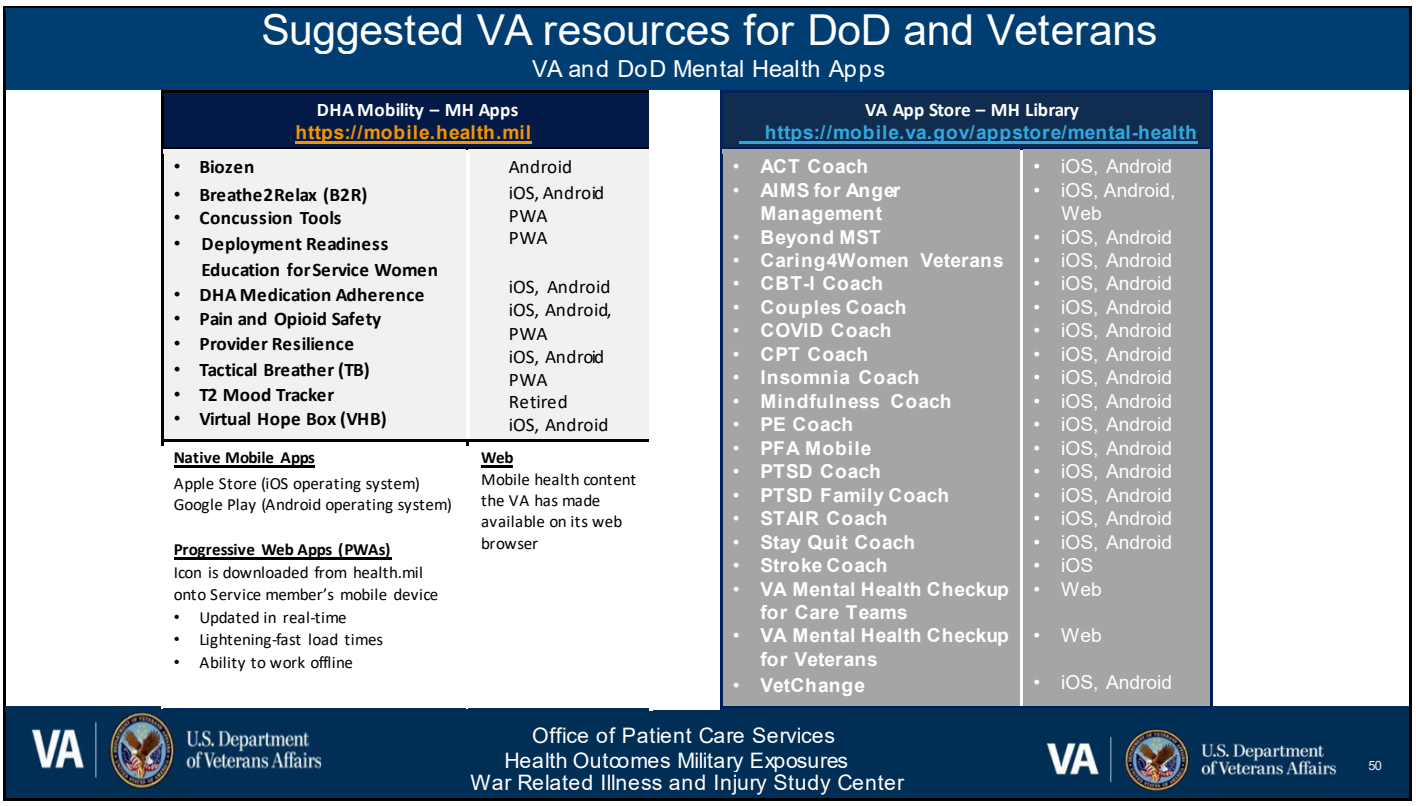


- The WRIISC is a VA foundational program with expertise and services not available in the civilian medical system

WRIISC
War Related Illness & Injury Study Center

Slide 49: so some information about the 3 WRIISC's, there locations as noted on the map and coverage. **I will highlight** that the **primary mission for all 3 is CLINICAL.** There are **no barriers** to consulting us, we do our best to assist you to help the Vets you care for. We'll contact you within 7 days as to whether we will do an E-con or a weeklong comprehensive evaluation. **So When should you reach out to the WRIISC and how?** When you've exhausted evaluation and treatment efforts that Dr. Hunt discussed earlier, place a consult in CPRS. But please **don't hesitate and think "I missed something" or they will be angry with me…I've had providers tell me this**…we provide feedback on ALL consults, and none are **quote/unquote "kicked back"** for more information, or that we need tests or labs ordered before we will complete the consult. Just know we will give you something useful to assist you with your difficult cases.

Our second mission is research and third teaching and collaboration like we're doing today but also at many national conferences as well as with our faculty with the Uniformed Services University, DoD and other non-VA or DoD Universities. As noted, each WRIISC specializes in various research projects. For example, the DC WRIISC is conducting an Explosive Ordnance Disposal study so all EOD Veterans from the NJ and CA WRIISCs will send EOD consults they receive to the DC WRIISC and vice versa with other WRIISCs and their research. The DC WRIISC also recently stood up the CETC or Complex Exposure Threats Center, the NJ WRIISC has the Airborne Hazards and Burn Pits Center of Excellence, and the CA WRIISC has the Women's Operational Military Exposure Network Center of Excellence. Please utilize the WRIISCs into your stepped care model for additional resources and team members that can be integrated into the Veteran's care plan and brought on to the Veteran's team. For example, our Health Coaching experts and the CA WRIISC Yoga program are two programs that Veterans especially like.



LINKS

- DHA Mobility – MH Apps **https://mobile.health.mil**
- VA App Store – MH Library **https://mobile.va.gov/appstore/mental-health**

Slide 50: And here are some VA and DoD web app that may be useful for your patients. IOS stands for iPhone Operating System.

Summary Conclusions

- There is a long history of CMI-like syndromes following combat deployments
- CMI is an illness rather than a disease
- Core symptoms include persistent pain, fatigue, cognitive concerns
- The etiology of CMI is elusive
- CMI leads to significant distress and functional impairment
- Over-testing, over-diagnosis, and over-medication is a risk when treating Vets with CMI
- Effective treatment is conservative and best delivered using a stepped approach
- VA offers resources to help clinicians when seeing Veterans with CMI

Slide 51: So, in summary…CMI is not new, it's an illness and not a syndrome or disease… symptoms can and do fluctuate and vary patient to patient…it leads to significant distress…be wary of over-testing and treatment, be conservative if possible and use the resources **discussed today** to 1) understand your patient's concerns 2) set realistic goals, and 3) collaboratively apply the recommendations in the CPG to your management plan.

- Webinar attendees will receive a survey in 3 months asking how well we met our objectives:
  - ✓ Define chronic multisymptom illness (CMI)
  - ✓ Describe CMI epidemiology and importance to patients and clinicians
  - ✓ Characterize symptom-based syndromes, their overlap, and how they relate to CMI
  - ✓ Explain clinical assessment and evidence-based non-pharmacologic and pharmacological treatments for CMI
  - ✓ Identify VA/DoD resources for Veterans with CMI

Thank you for attending! QUESTIONS?

War Related Illness and Injury Study Center
questions: *www.warrelatedillness.va.gov*

LINKS

- www.warrelatedillness.va.gov

Slide 52: This brings us to the end of our presentation. **A suggested reading slide follows this slide** as well our references. **The 3rd bullet** on the suggested reading slide is a 12 page paper reviewing the 2021 CPGs and is a great start, and half the length of the shortened CMI CPG clinician summary for providers. Although the slides are available today for download, they don't include our notes pages, however the WRIISC Webinar website will include the slides with the notes pages if you want to get more detailed information from today's talk. Thank you for participating, and we have some time now for questions and discussion.

Suggested Readings

- 2021 VA/DoD CMI Clinical Practice Guidelines
- NASEM Gulf War and Health: Volume 10: Update of Health Effects of Serving in the Gulf War, 2016
  - https//nap.nationalacademies.org.catalog/21840/gulf-war-and-health-volume-10-update-of-health-effects
- Management of Chronic Multisymptom Illness: Synopsis of the 2021 VA/DoD CPG, Robbins, R. et al., 2022 (12 pages)
  - https://doi.org/10.1016/j.mayocp.2022.01.031
- Explanatory and Pragmatic Perspectives Regarding Idiopathic Physical Symptoms and Related Syndromes, Engel, C., 2006
- Veterans and families with concerns about CMI or GWI can learn more by visiting:
  - Patient Summary at: https://www.healthquality.va.gov/guidelines/MR/cmi/
  - WRIISC fact sheet at: https://www.warrelatedillness.va.gov/WARRELATEDILLNESS/education/factsheets/gulf-war-illness-for-veterans.pdf

LINKS

- NASEM Gulf War and Health: Volume 10: Update of Health Effects of Serving in the Gulf War, 2016
  - https//nap.nationalacademies.org.catalog/21840/gulf-war-and-health-volume-10-update-of-health-effects
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Slide 53: Suggested Readings. The 3rd bullet is a 12 page paper reviewing the 2021 CPGs and is a good start. GWI in the 1990s was rolled into the CMI CPG's since CMI and GWI similar. The first CMI CPG's were in 2014 and updated in 2021. Use of these guidelines will: Enhance your assessment of the condition; Enhance collaboration with the patient, family, and caregivers to determine optimal management; Minimize preventable complications and morbidity of CMI; and Optimize individual health outcomes and quality of life for patients with CMI.

Level 3 Objectives

- Webinar attendees will receive a survey in 3 months asking how well we met our objectives:
  - ✓ Define chronic multisymptom illness (CMI)
  - ✓ Describe CMI epidemiology and importance to patients and clinicians
  - ✓ Characterize symptom-based syndromes, their overlap, and how they relate to CMI
  - ✓ Explain clinical assessment and evidence-based non-pharmacologic and pharmacological treatments for CMI
  - ✓ Identify VA/DoD resources for Veterans with CMI

Slides 54-56: this slide and the next 2 show our Level 3 objectives and references.

--WHAT ARE THE SYMPTOMS OF GULF WAR ILLNESS? Symptoms of GWI

vary and cannot be grouped into one consistent group of symptoms. This may make it challenging for healthcare providers to recognize and treat it. Here are the most common symptoms of GWI: • Fatigue • Muscle and joint pain • Cognitive difficulty • Skin rashes • Abdominal (belly) discomfort/ bowel changes

• Headaches • Shortness of breath • Sleep disturbances. It is important that prior to making a diagnosis of GWI, a Veteran have a thorough work up for their symptoms as some medically explainable conditions unrelated to GWI may also cause the above symptoms.

--WHAT ARE THE POSSIBLE CAUSES OF GULF WAR ILLNESS? Despite

much research, the potential cause of GWI is unclear. A number of possible causes include:

- Immune dysfunction
- Nerve dysfunction
- Mitochondrial (part of your cells involved in energy) dysfunction
- A genetic and environmental exposure interaction
- Deployment related exposures
- A combination of these factors

Many Gulf War Veterans have concerns that exposure to chemicals such as pyridostigmine bromide (taken in pill form to prevent effects from exposure to nerve agents) and smoke from oil well fires caused GWI. There have been no clear or consistent links found. However, research is ongoing.

--WHAT IS THE TREATMENT FOR GULF WAR ILLNESS? GWI falls under a

broad term for a group of chronic, unexplained symptoms called Chronic Multi Symptom Illness (CMI). In 2014, Department of Veterans Affairs (VA) and Department of Defense (DoD) released guidelines for healthcare providers caring for Veterans with CMI. These guidelines were updated in 2021. The guidelines can also help healthcare providers identify, manage, and treat GWI.

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As research has matured for CMI syndromes, awareness has developed that case definitions based completely upon physical symptom phenomenology in the absence of objective examination signs or test results have not yielded etiologically homogeneous patient samples. Investigators view the final common manifestation of CMI due to multiple etiological pathways. This is represented in state of-the-art biopsychosocial explanation rather than an easily defined defect in a single causal pathway. For example, IPS involve a perceptual step (a person “feels” symptoms), a cognitive psychological step (the symptomatic person decides the symptoms are ominous), and social behavioral step (the person with symptoms visits a doctor for help). Many potential reasons, but the one thing we know is that people that spent time in these conditions, have these symptoms.

There are several Case Definitions, which are useful for research but not a “gold standard” for diagnosing a disease when we do not understand the pathophysiology. The NAM (National Academy of Medicine, formerly known as the Institute of Medicine [IOM]) definition of CMI includes…
A National Academy of Medicine (NAM, formerly known as the Institute of Medicine [IOM]) committee has noted each definition has strengths, including the CDC’s inclusion of severity indicators and the Kansas definition’s exclusionary criteria, as well as limitations

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The way we think about disease is often inconsistent with nature: although clinicians recognize that illness severity ranges broadly and most chronic diseases develop over a prolonged period of time, we fall back on a dichotomous model of being sick or well which leads to more tests and treatments.

Findings drawn from narrowly framed studies are extrapolated broadly in many cases of disease.

Research levels are missing a level of analysis, the system. Outcomes must be measured not only for discrete groups of patients but also for the broader population that might be affected by the system change.

We look for more to be better. Data that are not consistent with our underlying beliefs are often ignored or rejected.

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Research levels are missing a level of analysis, the system. Outcomes must be measured not only for discrete groups of patients but also for the broader population that might be affected by the system change. We look for more to be better. Data that are not consistent with our underlying beliefs are often ignored or rejected.