GULF WAR ILLNESS

Medical Correlates of Chronic Multisymptom Illness in Gulf War Veterans.

Blanchard M[1], Molina-Vicenty HD[2], Stein PK[3], Li X[4], Karlinsky J[5], Alpern R[6], Reda DJ[7], Toomey R[8].

Am J Med. **2018 Dec 18**. pii: S0002-9343(18)31177-X. doi: 10.1016/j.amjmed.2018.11.045. PMID: 30576630. [Epub ahead of print]

BACKGROUND: Chronic multisymptom illness is more prevalent among deployed than non-deployed Gulf War 1 veterans. Objective physiologic markers of chronic multisymptom illness are lacking. The purpose of this study is to determine whether measurable abnormalities in the autonomic nervous system or hypothalamic-pituitary adrenal axis would distinguish chronic multisymptom illness cases (CMI+) from controls (CMI-) among deployed veterans of the 1990-1991 Gulf War.

METHODS: This is a cross-sectional case-control cohort study that examined deployed veterans who participated in the Phase III study: National Health Survey of Gulf War Veterans and Their Families. Autonomic nervous system and hypothalamic-pituitary adrenal axis function-related measures included: 24-hour heart rate variability, urinary catecholamines and cortisol, hypertension, insulin sensitivity, dyslipidemia, body fat, bone mineral density, and ultrasensitive C-reactive protein.

RESULTS: Gulf War 1 veterans with chronic multisymptom illness (n = 73) and without the condition (n = 111) were studied. Sociodemographic characteristics were similar. Veterans with chronic multisymptom illness reported poorer mental and physical functioning, greater use of prescription medications and more non-routine clinic visits. These veterans were also more likely to have fibromyalgia syndrome, irritable bowel syndrome, metabolic syndrome, and among males, a larger waist-to-hip ratio. Lower values for a non-linear heart-rate-variability parameter-the short-term fractal scaling exponent (DFA1), reflecting an increased randomness of beat-to-beat changes in heart rate-were observed in CMI+ compared with CMI- veterans (1.28±0.16 vs 1.35±0.15; p=0.005). Hypothalamic-pituitary-adrenal axis function measures were similar between groups.

CONCLUSION: In this cohort of deployed Gulf War 1 veterans, we identified abnormal heart rate variability in veterans with chronic multisymptom illness compared to veterans without the condition, which suggests abnormal functioning of the autonomic nervous system and possible long-term cardiovascular effects.

CHRONIC FATIGUE SYNDROME

The UK ME/CFS Biobank: A Disease-Specific Biobank for Advancing Clinical Research Into Myalgic Encephalomyelitis/Chronic Fatigue Syndrome.

Lacerda EM[1], Mudie K[1], Kingdon CC[1], Butterworth JD[1], O'Boyle S[1], Nacul L[1].

Front Neurol. **2018 Dec 4**;9:1026. doi: 10.3389/fneur.2018.01026. PMCID: PMC6288193. PMID: 30564186. eCollection 2018.

Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) is a disabling disease characterized by unexplained incapacitating fatigue, accompanied by variable multi-systemic symptoms. ME/CFS causes a significant personal and public health burden, and urgently requires the coordination of research efforts to investigate its etiology and pathophysiology and to develop and validate sensitive and specific biomarkers to confirm diagnosis. This narrative paper describes how people with ME/CFS, together with a multidisciplinary team of researchers, have established the UK ME/CFS Biobank (UKMEB), a unique research infrastructure specifically designed to expedite biomedical research into ME/CFS. We describe the journey that led to its conceptualization and operation, and how the resource has served as a model disease-specific biobank, aggregating human biospecimens alongside comprehensive health information on participants. The UKMEB currently has data and samples from 600 donors including people with ME/CFS and a comparison group with multiple sclerosis and healthy controls. A longitudinal sub-cohort has been established of participants having follow-up assessments at multiple time-points. As an open resource for quality and ethical research into ME/CFS, biological samples and data have not only been analyzed within our research team but have also been shared with researchers across Europe, America and the Middle East. We continue to encourage researchers from academic and commercial sectors to access the UKMEB. Major steps have been taken and challenges remain; these include sustainability and expansion, and harmonization of processes to facilitate integration with other bioresources and databanks internationally.

CHRONIC FATIGUE SYNDROME (Continued)

Persistent fatigue induced by interferon-alpha: a novel, inflammation-based, proxy model of chronic fatigue syndrome.

Russell A[1], Hepgul N[2], Nikkheslat N[3], Borsini A[4], Zajkowska Z[5], Moll N[6], Forton D[7], Agarwal K[8], Chalder T[9], Mondelli V[10], Hotopf M[11], Cleare A[12], Murphy G[13], Foster G[14], Wong T[15], Schütze GA[16], Schwarz MJ[17], Harrison N[18], Zunszain PA[19], Pariante CM[20].

Psychoneuroendocrinology. **2018 Dec 14**. pii: S0306-4530(18)30196-3. doi: 10.1016/j.psyneuen.2018.11.032. PMID: 30567628. [Epub ahead of print]

The role of immune or infective triggers in the pathogenesis of Chronic Fatigue Syndrome (CFS) is not yet fully understood. Barriers to obtaining immune measures at baseline (i.e., before the trigger) in CFS and post-infective fatigue model cohorts have prevented the study of pre-existing immune dysfunction and subsequent immune changes in response to the trigger. This study presents interferon-alpha (IFN-α)-induced persistent fatigue as a model of CFS. IFN-α, which is used in the treatment of chronic Hepatitis C Virus (HCV) infection, induces a persistent fatigue in some individuals, which does not abate post-treatment, that is, once there is no longer immune activation. This model allows for the assessment of patients before and during exposure to the immune trigger, and afterwards when the original trigger is no longer present. Fifty-five patients undergoing IFN-α treatment for chronic HCV were assessed at baseline, during the 6-12 months of IFN-α treatment, and at six-months post-treatment. Measures of fatigue, cytokines and kynurenine pathway metabolites were obtained. Fifty-four CFS patients and 57 healthy volunteers completed the same measures at a one-off assessment, which were compared with post-treatment follow-up measures from the HCV patients. Eighteen patients undergoing IFN-α treatment (33%) were subsequently defined as having 'persistent fatigue' (the proposed model for CFS), if their levels of fatigue were higher six-months post-treatment than at baseline; the other 67% were considered 'resolved fatigue'. Patients who went on to develop persistent fatigue experienced a greater increase in fatigue symptoms over the first four weeks of IFN-α, compared with patients who did not (Δ Treatment Week (TW)-0 vs. TW4; PF: 7.1 ± 1.5 vs. RF: 4.0 ± 0.8, p = 0.046). Moreover, there was a trend towards increased baseline interleukin (IL)-6, and significantly higher baseline IL-10 levels, as well as higher levels of these cytokines in response to IFN-α treatment, alongside concurrent increases in fatigue. Levels increased to more than double those of the other patients by Treatment Week (TW)4 (p = 0.011 for IL-6 and p = 0.001 for IL-10). There was no evidence of an association between persistent fatigue and peripheral inflammation six-months post-treatment, nor did we observe peripheral inflammation in the CFS cohort. While there were changes in kynurenine metabolites in response to IFN-α, there was no association with persistent fatigue. CFS patients had lower levels of the ratio of kynurenine to tryptophan and 3-hydroxykynurenine than controls. Future studies are needed to elucidate the mechanisms behind the initial exaggerated response of the immune system in those who go on to experience persistent fatigue even if the immune trigger is no longer present, and the change from acute to chronic fatigue in the absence of continued peripheral immune activation.

Prospective Biomarkers from Plasma Metabolomics of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Implicate Redox Imbalance in Disease Symptomatology.

Germain A[1], Ruppert D[2], Levine SM[3], Hanson MR[4].

Metabolites. **2018 Dec 6**;8(4). pii: E90. doi: 10.3390/metabo8040090. PMID: 30563204.

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) is a disease of enigmatic origin with no established cure. Its constellation of symptoms has silently ruined the lives of millions of people around the world. A plethora of hypotheses have been vainly investigated over the past few decades, so that the biological basis of this debilitating condition remains a mystery. In this study, we investigate whether there is a disturbance in homeostasis of metabolic networks in the plasma of a female 32-patient cohort compared to 19 healthy female controls. Extensive analysis of the 832-metabolite dataset generated by Metabolon®, covering eight biological classes, generated important insight into metabolic disruptions that occur in ME/CFS. We report on 14 metabolites with differences in abundance, allowing us to develop a theory of broad redox imbalance in ME/CFS patients, which is consistent with findings of prior work in the ME/CFS field. Moreover, exploration of enrichment analysis using www.MetaboAnalyst.ca provides information concerning similarities between metabolite disruptions in ME/CFS and those that occur in other diseases, while its biomarker analysis unit yielded prospective plasma biomarkers for ME/CFS. This work contributes key elements to the development of ME/CFS diagnostics, a crucial step required for discovering a therapy for any disease of unknown origin.

HEADACHE and MIGRAINE

Alcoholic beverages as trigger factor and the effect on alcohol consumption behavior in patients with migraine.

Onderwater GLJ[1], van Oosterhout WPJ[1,2], Schoonman GG[1,3], Ferrari MD[1], Terwindt GM[1].

Eur J Neurol. **2018 Dec 18**. doi: 10.1111/ene.13861. PMID: 30565341. [Epub ahead of print]

BACKGROUND AND PURPOSE: Alcoholic beverages are frequently reported migraine triggers. We aimed to assess self-reported alcohol consumption as a migraine attack trigger and to investigate the effect on alcohol consumption behavior in a large migraine cohort.

METHODS: We conducted a cross-sectional, web-based, questionnaire study among 2197 patients with migraine from the well-defined Leiden University MIgraine Neuro-Analysis (LUMINA) study population. We assessed alcoholic beverage consumption and self-reported trigger potential, reasons behind alcohol abstinence and time between alcohol consumption and migraine attack onset.

RESULTS: Alcoholic beverages were reported as a trigger by 35.6% of participants with migraine. In addition, over 25% of patients with migraine who had stopped consuming or never consumed alcoholic beverages did so because of presumed trigger effects. Wine, especially red wine (77.8% of participants), was recognized as the most common trigger among the alcoholic beverages. However, red wine consistently led to an attack in only 8.8% of participants. Time of onset was rapid (<3 h) in one-third of patients and almost 90% had an onset <10 h independent of beverage type.

CONCLUSIONS: Alcoholic beverages, especially red wine, are recognized as a migraine trigger factor by patients with migraine and have a substantial effect on alcohol consumption behavior. Rapid onset of provoked migraine attacks in contrast to what is known about hangover headache might point to a different mechanism. The low consistency of provocation suggests that alcoholic beverages acting as a singular trigger is insufficient and may depend on a fluctuating trigger threshold.

Prevalence and Clinical Factors of Migraine in Patients With Spontaneous Coronary Artery Dissection.

Kok SN[1], Hayes SN[2], Cutrer FM[3], Raphael CE[4], Gulati R[2], Best PJM[2], Tweet MS[2].

J Am Heart Assoc. **2018 Dec 18**;7(24):e010140. doi: 10.1161/JAHA.118.010140. PMID: 30561271.

Background Spontaneous coronary artery dissection (SCAD) is a cause of acute coronary syndrome predominantly in women without usual cardiovascular risk factors. Many have a history of migraine headaches, but this association is poorly understood. This study aimed to determine migraine prevalence among SCAD patients and assess differences in clinical factors based on migraine history. Methods and Results A cohort study was conducted using the Mayo Clinic SCAD "Virtual" Multi-Center Registry composed of patients with SCAD as confirmed on coronary angiography. Participant-provided data and records were reviewed for migraine history, risk factors, SCAD details, therapies, and outcomes. Among 585 patients (96% women), 236 had migraine history; the lifetime and 1-year prevalence of migraine were 40% and 26%, respectively. Migraine was more common in SCAD women than comparable literature-reported female populations (42% versus 24%, P<0.0001; 42% versus 33%, P<0.0001). Among all SCAD patients, those with migraine history were more likely to be female (99.6% versus 94%; P=0.0002); have SCAD at a younger age (45.2±9.0 years versus 47.6±9.9 years; P=0.0027); have depression (27% versus 17%; P=0.025); have recurrent post-SCAD chest pain at 1 month (50% versus 39%; P=0.035); and, among those assessed, have aneurysms, pseudoaneurysms, or dissections (28% versus 18%; P=0.018). There was no difference in recurrent SCAD at 5 years for those with versus without migraine (15% versus 19%; P=0.39). Conclusions Many SCAD patients have a history of migraine. SCAD patients with migraine are younger at the time of SCAD; have more aneurysms, pseudoaneurysms, and dissections among those imaged; and more often report a history of depression and post-SCAD chest pain. Clinical Trial Registration URL: https://www.clinicaltrials.gov. Unique identifiers: NCT01429727, NCT01427179.

HEADACHE and MIGRAINE (Continued)

Clinical relevance of atrial septal aneurysm and patent foramen ovale with migraine.

He L[1], Cheng GS[1], Du YJ[1], Zhang YS[2].

World J Clin Cases. **2018 Dec 6**;6(15):916-921. doi: 10.12998/wjcc.v6.i15.916. PMCID: PMC6288498. PMID: 30568946.

AIM: To test the potential association between atrial septal aneurysm (ASA) and migraine in patent foramen ovale (PFO) closure patients through an observational, single-center, case-controlled study.

METHODS: We studied a total of 450 migraineurs who had right-to-left shunts and underwent PFO closure in a retrospective single-center non-randomized registry from February 2012 to October 2016 on the condition that they were aged 18-45 years old. Migraine was diagnosed according to the International Classification of Headache Disorders, 3rd edition and evaluated using the Headache Impact Test-6 (HIT-6). All patients underwent preoperative transesophageal echocardiography, contrast transthoracic echocardiography, and computed tomography or magnetic resonance imaging examinations, with subsequent fluoroscopy-guided PFO closure. Based on whether they have ASA or not, the patients were divided into two groups: A (PFO with ASA, *n* = 80) and B (PFO without ASA, *n* = 370). Baseline characteristics and procedural and follow-up data were reviewed.

RESULTS: Compared to group B, group A had an increased frequency of ischemic lesions (11.3% *vs* 6.2%, *P* = 0.038) and migraine with aura (32.5% *vs* 21.1%, *P* = 0.040). The PFO size was significantly larger in group A (*P* = 0.007). There was no significant difference in HIT-6 scores between the two groups before and at the one-year follow-up after the PFO closure [61 (9) *vs* 63 (9), *P* = 0.227; 36 (13) *vs* 36 (10), *P* = 0.706].

CONCLUSION: Despite its small sample size, our study suggests that the prevalence of ASA in PFO with migraine patients is associated with ischemic stroke, larger PFO size, and migraine with aura.

CHRONIC PAIN

Outcomes of a 6-week Cognitive-Behavioral Therapy for Chronic Pain Group for veterans seen in primary care.

Martinson A[1], Craner J[2,3], Clinton-Lont J[1].

Transl Behav Med. **2018 Dec 18**. doi: 10.1093/tbm/iby127. PMID: 30561740. [Epub ahead of print]

Primary Care Mental Health Integration (PC-MHI) visits are mandated to be brief, limited in number, and delivered in the primary care practice area. Current evidence-based protocols for Cognitive-Behavioral Therapy for Chronic Pain (CBT-CP) do not meet these PC-MHI requirements, however, and thus PC-MHI providers are often left with the daunting task of modifying these protocols for the primary care setting. The aims of the current study were to examine effectiveness for a brief CBT-CP Group (6, 50-min sessions) for patients seen in primary care with various chronic pain conditions and to assess whether opioid medication use was associated with treatment outcomes. The current study represents a single-arm treatment study in which outcomes were evaluated by comparing self-reported symptom levels at the beginning of treatment (Session 1) to the end of treatment (Session 6). Dependent variables included pain symptoms, physical function lower/upper body, family disability, emotional functioning, sleep problems, satisfactions with outcomes/care, pain-related anxiety, generalized anxiety, pain catastrophizing, and depressed mood. Seventy-seven participants were enrolled and completed the treatment group. They were 56.81 ± 13.11 years old, 61% male, 51.9% taking opioids, with 39% reporting multiple pain diagnoses. Results showed that participation in the Brief CBT-CP Group resulted in statistically significantly improvement across all dependent variables (except emotional functioning). Results also showed that there were no significant treatment-related differences between patients taking opioids compared with patients who were not on opioids. The current protocol for Brief CBT-CP is effective in a real-world setting and aligns with the PC-MHI model of care.

CHRONIC PAIN (Continued)

Opioid use and the presence of Alzheimer's disease and related dementias among elderly Medicare beneficiaries diagnosed with chronic pain conditions.

Shen C[1], Zhao X[2], Dwibedi N[2], Wiener RC[3], Findley PA[4], Sambamoorthi U[2].

Alzheimers Dement (N Y). **2018 Dec 7**;4:661-668. doi: 10.1016/j.trci.2018.10.012. PMCID: PMC6288458. PMID: 30560199. eCollection 2018.

Introduction: There is scant literature on the use of opioids among community-dwelling elderly with Alzheimer's disease and related dementias (ADRD).

Methods: We adopted a retrospective, cross-sectional study design using Medicare Current Beneficiary Survey data from 2006 to 2013. The study sample included elderly community-dwelling Medicare beneficiaries who were diagnosed with chronic pain conditions and had Medicare fee-for-service plans for the entire year. We conducted bivariate χ^2 test and multivariate logistic regression to examine the relationship between opioid use and ADRD status.

Results: The study sample included 19,347 Medicare beneficiaries; 7.7% of them had ADRD. We found no statistically significant difference in opioid use by ADRD status in the unadjusted analysis; however, controlling for various factors, those with ADRD had lower odds of opioid use (adjusted odds ratio = 0.81, 95% confidence interval = 0.71, 0.93) than those without ADRD.

Discussion: This population-based study suggests that elderly Medicare beneficiaries with ADRD and chronic pain conditions may have undertreatment of pain.

Sleep and pain interference in individuals with chronic pain in mid- to late-life: The influence of negative and positive affect.

Ravyts SG[1], Dzierzewski JM[1], Raldiris T[1], Perez E [1].

J Sleep Res. **2018 Dec 18**:e12807. doi: 10.1111/jsr.12807. PMID: 30565347. [Epub ahead of print]

Poor sleep and chronic pain are known to be interrelated, but the influence of negative and positive affect on this relationship is not fully understood. The present study sought to examine whether negative and positive affect mediate the relationship between sleep and pain interference. Secondary data analysis from Midlife in the United States (MIDUS-III) was used to examine 948 individuals with chronic pain (mean age = 64.73 years). Sleep disturbance was conceptualized as the sum of self-reported difficulty with sleep-onset latency, wake after sleep onset, early morning awakening and daytime sleepiness, and total sleep time was assessed via self-reported sleep duration. Pain interference was operationalized as the sum of pain-related interference with general activity, relationships and enjoyment of life. Finally, items from the Positive and Negative Affect Schedule were used to measure affect. Mediation analyses revealed that sleep disturbance indirectly predicted pain interference via both negative affect (β = 0.15, confidence interval: 0.10, 0.21) and positive affect (β = 0.18, confidence interval: 0.12, 0.25). Similarly, negative (β = -0.003, confidence interval: -0.01, -0.001) and positive affect (β = -0.003, confidence interval: -0.01, -0.001) also mediated the effect between total sleep time and pain interference. This study highlights the unique role of negative and positive affect on pain interference for individuals with chronic pain in mid- to late-life. Additionally, findings suggest that holistic treatment approaches, which assess both sleep and affect in the context of chronic pain, may be beneficial.

The Benefits of Reflexology for the Chronic Pain Patient in a Military Pain Clinic.

Kern C, McCoart A, Beltranm T, Martoszek M.

J Spec Oper Med. **2018 Winter**;18(4):103-105. PMID: 30566732.

BACKGROUND: Chronic pain is a major cause of disability across the military, especially for the combat Soldier. More than twothirds of Americans with chronic pain are now using complementary medicine.

METHODS: Patients with chronic pain opting for reflexology as part of their treatment plan received bilateral therapy. Alternating pressure was applied to the individual patient's reflex points corresponding to their pain sites. Following a single treatment session, patients were asked to complete a short survey.

DISCUSSION: There is evidence that reflexology is therapeutic for many conditions, to include sleep and anxiety, both of which can be comorbidity in the patient with chronic pain. There is a lack of evidence on the use of reflexology with chronic pain patients receiving multidisciplinary pain care.

RESULTS: A total of 311 participants completed the survey. Posttreatment pain scored decreased by a median of 2 points (interquartile range [IQR] 1-3) on a 10-point pain scale. This represents a median 43% (IQR 25%-60%) reduction in pain for males and a 41% (IQR 30%-60%) reduction in pain for females.

CONCLUSION: Currently research is limited on effects of reflexology in treating chronic pain, yet, like acupuncture, this is an inexpensive, reliable, teachable, and simple noninvasive treatment. Further studies are warranted.

OTHER RESEARCH OF INTEREST

What are the key elements for implementing intensive primary care? A multisite Veterans Health Administration case study.

Chang ET[1], Raja PV[2], Stockdale SE[3], Katz ML[4], Zulman DM[5], Eng JA[6], Hedrick KH[7], Jackson JL[8], Pathak N[9], Watts B[10], Patton C[11], Schectman G[12], Asch SM[13].

Healthc (Amst). **2018 Dec**;6(4):231-237. doi: 10.1016/j.hjdsi.2017.10.001. PMID: 29102480. Epub 2017 Nov 6.

Many integrated health systems and accountable care organizations have turned to intensive primary care programs to improve quality of care and reduce costs for high-need high-cost patients. How best to implement such programs remains an active area of discussion. In 2014, the Veterans Health Administration (VHA) implemented five distinct intensive primary care programs as part of a demonstration project that targeted Veterans at the highest risk for hospitalization. We found that programs evolved over time, eventually converging on the implementation of the following elements: 1) an interdisciplinary care team, 2) chronic disease management, 3) comprehensive patient assessment and evaluation, 4) care and case management, 5) transitional care support, 6) preventive home visits, 7) pharmaceutical services, 8) chronic disease self-management, 9) caregiver support services, 10) health coaching, and 11) advanced care planning. The teams also found that including social workers and mental health providers on the interdisciplinary teams was critical to effectively address psychosocial needs of these complex patients. Having a central implementation coordinator facilitated the convergence of these program features across diverse demonstration sites. In future iterations of these programs, VHA intends to standardize staffing and key features to develop a scalable program that can be disseminated throughout the system.

Testing Novel Payment and Delivery Approaches Through the Veterans Health Administration's New Center for Innovation.

Pizer SD[1], Frakt AB[2], Sheetz K[3], Clancy C[4].

Ann Intern Med. **2018 Dec 25**. doi: 10.7326/M18-2225. PMID: 30583295. [Epub ahead of print]

In May 2018, Congress passed the VA [Veterans Affairs] Maintaining Systems and Strengthening Integrated Outside Networks (MISSION) Act to consolidate programs that provide veterans access to non-VA care and to formally establish a coordinated, high-performing network of VA and private-sector providers. The MISSION Act also established a VA Center for Innovation for Care and Payment (“Center”) to be staffed by VA employees and contractors with expertise in demonstrations and evaluations. Through the Center, the VA will have the ability to test novel payment and service delivery models. Although the VA is already recognized as a national leader in quality improvement and best-practice implementation, the new Center will facilitate the VA's shift toward value-based coverage strategies with a greater emphasis on population health. It will also empower the VA to collaborate with other payers to drive improvements in quality, costs, and efficiency. As its first initiatives are chosen, consideration will be given to feasibility and the scale of the improvements in quality and efficiency that could be achieved. The opportunity to undertake these initiatives comes with risk for unintended consequences. A commitment to rigorous evaluation along with the VA's strong research infrastructure will be crucial to the Center's ultimate success.

The goals of the new VA center are similar to those of the Center for Medicare & Medicaid Innovation (CMMI) created by the Patient Protection and Affordable Care Act. Both are empowered to engage private providers in value-oriented experiments with innovative payment models, but the VA's center is also charged with innovating within the VA's national network of public hospitals and clinics. Among the lessons learned from CMMI's early experience is that ongoing, iterative testing and learning is invaluable and will probably take time to produce measurable results. These lessons are likely generalizable to the VA's experience.

Studying innovative care and payment models in the nation's largest integrated delivery system has several advantages. First, veterans are a large group, which allows the VA to evaluate how new delivery models affect specific patient populations. Second, the VA's comprehensive electronic health record (EHR) allows investigators to use data that are not otherwise accessible through other public or private systems (for example, by linking detailed encounter-level clinical data with social risk factors and expenditures). Third, networks that include both VA and private-sector providers enable the VA to use heterogeneity in geographic practice patterns to compare effectiveness of treatments and management strategies.

[See full text of article in Annals of Internal Medicine.]

OTHER RESEARCH OF INTEREST (Continued)

Overcoming Challenges to Evidence-Based Policy Development in a Large, Integrated Delivery System.

Frakt AB[1], Prentice JC[2], Pizer SD[3], Elwy AR[4], Garrido MM[5], Kilbourne AM[6], Atkins D[7].

Health Serv Res. **2018 Dec**;53(6):4789-4807. doi: 10.1111/1475-6773.12986. PMCID: PMC6232400. PMID: 29862494. Epub 2018 Jun 3.

OBJECTIVE: To describe a new Veterans Health Administration (VHA) program to foster the learning health system paradigm by rigorously evaluating health care initiatives and to report key lessons learned in designing those evaluations.

PRINCIPAL FINDINGS: The VHA's Quality Enhancement Research Initiative and its Health Services Research and Development Service are cooperating on several large, randomized program evaluations aimed at improving the care veterans receive and the efficiency with which it is delivered. The evaluations we describe involve collaborative design, outcomes assessment, and implementation science through partnerships between VHA operations and researchers. We review key factors to assess before committing to an evaluation. In addition to traditional design issues (such as ensuring adequate power and availability of data), these include others that are easily overlooked: the stability of intervention financing, means of controlling and commitment to adhering to randomized roll-out, degree of buy-in from key implementation staff, and feasibility of managing multiple veto points for interventions that span several programs, among others.

CONCLUSIONS: Successful program implementation and rigorous evaluation require resources, specialized expertise, and careful planning. If the learning health system model is to be sustained, organizations will need dedicated programs to prioritize resources and continuously adapt evaluation designs.

The Prevalence of Military Sexual Trauma: A Meta-Analysis.

Wilson LC[1].

Trauma Violence Abuse. **2018 Dec**;19(5):584-597. doi: 10.1177/1524838016683459. PMID: 30415636. Epub 2016 Dec 16.

Due to methodological heterogeneity, the exact prevalence of military sexual trauma (MST) is unknown. To elucidate our understanding of the pervasiveness of this important social issue, a meta-analysis was conducted. A computerized database search in PsycINFO, PubMed, and PILOTS revealed 584 unique citations for review. Of these identified studies, 69 met the inclusion criteria for the meta-analysis. The results revealed that 15.7% of military personnel and veterans report MST (3.9% of men, 38.4% of women) when the measure includes both harassment and assault. Additionally, 13.9% report MST (1.9% of men, 23.6% of women) when the measure assesses only assault and 31.2% report MST (8.9% of men, 52.5% of women) when the measure assesses only harassment. Regardless of the type of victimization incident (i.e., harassment or assault), women evidenced significantly larger prevalence rates compared to men. Self-report measure and interviews were associated with higher prevalence rates than the review of veterans affair (VA) medical records when measuring both harassment and assault and only harassment. No significant differences were observed among prevalence rates based on VA, non-VA, or both VA and non-VA recruitment. Ultimately, the findings suggest that MST is a pervasive problem, among both men and women in the military, highlighting the importance of this line of research.

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