



UNDER SECRETARY OF DEFENSE

4000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-4000

PERSONNEL AND  
READINESS

MAY 31 2012

The Honorable Carl Levin  
Chairman  
Committee on Armed Services  
United States Senate  
Washington, DC 20510

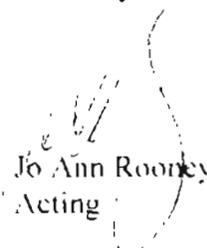
Dear Mr. Chairman:

The Department is pleased to provide Congress with the enclosed report in response to the National Defense Authorization Act for Fiscal Year 2010, section 715, "Management of Medications for Physically and Psychologically Wounded Service Members." While the completed report was to be submitted by April 1, 2010, the extensive review required to meet the Congress's interest in this topic took longer to conduct than expected. I apologize for the delay.

This report covers several important aspects of medication management for physically and psychologically wounded Armed Forces members including: the risks associated with medication administration, current and best practices for medication management, and identification of ways to reduce medication management risks. The report also captures the depth and breadth of innovations underway by military health care providers and their relevance for the civilian population. An important related effort taken by the Departments of Defense and Veterans Affairs has been to charter a cross-departmental working group to address pain management issues.

A similar letter is being sent to the Chairmen of the other congressional defense committees. Thank you for your interest in the health and well-being of our Service members, veterans, and their families.

Sincerely,

  
Jo Ann Rooney  
Acting

Enclosure:  
As stated

cc:  
The Honorable John McCain  
Ranking Member

PROD 2263-11



UNDER SECRETARY OF DEFENSE

4000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-4000

PERSONNEL AND  
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April 31 2012

The Honorable Jim Webb  
Chairman, Subcommittee on Personnel  
Committee on Armed Services  
United States Senate  
Washington, DC 20510

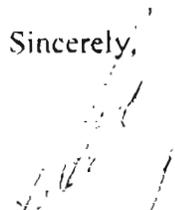
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Acting

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As stated

cc:  
The Honorable Lindsey Graham  
Ranking Member



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UNDER SECRETARY OF DEFENSE

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1/31/2012

The Honorable Howard P. "Buck" McKeon  
Chairman  
Committee on Armed Services  
U.S. House of Representatives  
Washington, DC 20515

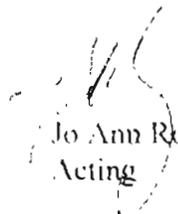
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cc:  
The Honorable Adam Smith  
Ranking Member



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PERSONNEL AND  
READINESS

July 31 2012

The Honorable Joe Wilson  
Chairman, Subcommittee on Military Personnel  
Committee on Armed Services  
U.S. House of Representatives  
Washington, DC 20515

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cc:  
The Honorable Susan A. Davis  
Ranking Member



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PERSONNEL AND  
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10 31 2012

The Honorable Daniel K. Inouye  
Chairman  
Committee on Appropriations  
United States Senate  
Washington, DC 20510

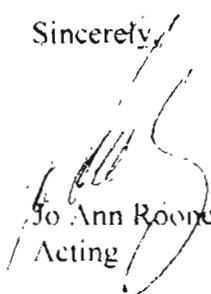
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The Honorable Thad Cochran  
Vice Chairman



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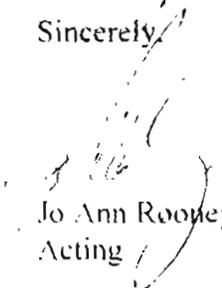
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Vice Chairman



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PERSONNEL AND  
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JUN 31 2012

The Honorable Harold Rogers  
Chairman  
Committee on Appropriations  
U.S. House of Representatives  
Washington, DC 20515

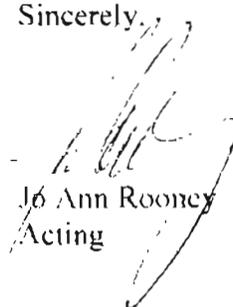
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Jo Ann Rooney  
Acting

Enclosure:  
As stated

cc:  
The Honorable Norman D. Dicks  
Ranking Member



UNDER SECRETARY OF DEFENSE

4000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-4000

10 01 2012

PERSONNEL AND  
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The Honorable C.W. Bill Young  
Chairman, Subcommittee on Defense  
Committee on Appropriations  
U.S. House of Representatives  
Washington, DC 20515

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cc:  
The Honorable Norman D. Dicks  
Ranking Member

# Report to Congress



## Medication Management for Physically and Psychologically Wounded Armed Forces Members

In

Fiscal Year 2011-2102

Preparation of this report/study cost the  
Department of Defense a total of  
approximately \$109,000 in Fiscal Years  
2011 - 2012.  
Generated on 2012Mar14 1723 RefID: 6-B74CA6F

## EXECUTIVE SUMMARY

This report covers five aspects of medication management for physically and psychologically wounded Armed Forces members. Reports prepared by the Institute of Medicine in 1993, 2000, and 2011 clearly outline the prevalence of medication errors and systematic processes for safe medication practice. This report covers medication management of various pharmacologic therapies, such as analgesics, psychotropic agents, and antibiotics, used to treat injured Service members. However, the findings, conclusions, and recommendations made for the analgesic pain medication class of drugs can be similarly applied to the other classes of medications used in wounded warriors, although, we have not duplicated or reiterated those recommendations in the body of the report. The unintended consequences of compassionate pain management advocated by pain specialists in the late 1990s include the escalation in the use of prescription opioid analgesics for medical as well as for nonmedical purposes. The use of medication reconciliation advocated by the Joint Commission, the use of the biopsychosocial model of patient and family centered care and the use of integrative medicine have had successful outcomes in caring for wounded warriors. The Department of Defense (DoD) has tackled thorny issues of misuse through innovative programs developed in concert with the DoD Pharmacoeconomic Center. Examples of multimodal multidisciplinary medication management and coordination of care for wounded warriors with comorbid physical injuries and psychological trauma show successful outcomes in the transition from passive patient status to active self-care management. Medical conditions that increase risk include severe and profound injuries that have increased survival in conjunction with psychological trauma, overlaid with the “no pain, no gain” warrior culture that may combine to cause a delay in treatment. Key risk mitigation strategies range from the use of anesthesia forward on the battlefield to effective team communication with the patient and family, full use of integrative medicine, biopsychosocial strategies and the protective measures developed in addition to initiatives developed with the DoD Pharmacoeconomic Center.

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Section 715 of the National Defense Authorization Act for Fiscal Year 2010 required a Department of Defense Study on the Management of Medications for Physically and Psychologically Wounded Members of the Armed Forces. The study required the following points:

1. A review and analysis of the published literature on the risks associated with the administration of medications, including accidental and intentional overdoses, under and over medication, and adverse interactions among medications.
2. A review and assessment of current practices within the DoD for the management of medications for physically and psychologically wounded members of the Armed Forces.
3. An assessment of current and best practices in the Armed Forces, other Departments and agencies of the Federal Government, and the private sector concerning the prescription, distribution and management of medications, and the associated coordination of care.
4. Identification of the medical conditions and of the patient management procedures of the Department of Defense, that may increase the risks associated with the administration of medications in populations of members of the Armed Forces.
5. An identification of means for decreasing the risks associated with the administration of medications and associated problems with respect to physically and psychologically wounded members of the Armed Forces.

## **1. LITERATURE REVIEW**

This review of the published literature presents the risks associated with the administration of medications, including accidental and intentional overdoses, under and over medication, and adverse interactions among medications. Medication safety has been a concern among health care providers for decades. In addition to precautions taken to prevent allergic reactions, idiosyncratic drug reactions, antagonistic and synergistic effects of medications, and the impact of over-the-counter or herbal medications with standardized approved medications, effective communication and teamwork are essential among the physician prescribing the medication, the pharmacist preparing the medication, the person administering the medication, and the patient to ensure the expected outcome of a drug's use.

This report assumes that medications used are approved by the Food and Drug Administration (FDA) and that off-label use is minimized. For more than 60 years, clinicians have been educated to observe the five rights when administering medications: right drug, right dose, right route, right time, and right patient.

The Institute of Medicine (IOM) recognized several systematic practices that would mitigate the risk of medication errors (IOM, 2000). The IOM recommended that the Food and Drug Administration (FDA) increase attention to pre- and post-marketing practices that include the development and enforcement of standards for the design of drug packaging and labeling to maximize safety in use (drugs with widely different concentrations of the active ingredient should have prominent differences in the packaging to adequately differentiate the concentration). The IOM also recommended that pharmaceutical companies use FDA-approved methods to identify and remedy potential sound-alike and look-alike confusion with existing drug names. And, lastly, the IOM recommended that the FDA work with physicians, pharmacists, and consumers to respond appropriately to problems identified through post-marketing surveillance to ensure patient safety.

According to IOM (2011), pain is the most frequent reason patients seek physician care in the United States. More than 116 million Americans suffer from chronic pain. The annual cost of chronic pain in the U.S. is estimated at \$560 billion, including health care expenses, lost income, and lost productivity. Back pain alone is the leading cause of disability in Americans under 45 years of age. Therefore, this is a national issue, not just one specific to the military. Numerous studies document errors in prescribing medications, dispensing by pharmacists and unintentional nonadherence on the part of the patient. The electronic physician drug order entry process was initiated at various medical centers in the mid-1990s to mitigate confusion as a result of misinterpretation of physician handwriting. The Joint Commission (JC) promulgated a list of abbreviations that led to confusion and suggested that units be spelled out to ensure appropriate interpretation of dosage. Studies done in the early 1990s (IOM, 2000) showed that many preventable medication errors could have been avoided had better *systems* of care been in place. Not surprisingly, the potential for medication errors increases as the average number of drugs administered increases. In addition, the rapid escalation of new drugs available makes it difficult for providers to be as well informed about side effects and potential interactions with other drugs as would be desirable. As new drugs are brought on the market, it sometimes takes

years for harmful side effects to become obvious. Technical errors, such as poor labeling and misreading handwriting also lead to errors. As an indication of the complexity of medication management, the usual degree for a practicing pharmacist is the Doctorate in Pharmacy (Pharm.D.)

Diagnostic errors related to medication management stem from an error or delay in diagnosis, or failure to act on results of monitoring or testing which can lead to medication errors of omission or commission; error in the dose or route for the drug; inappropriate drug for the condition; preventive errors such as failure to provide prophylactic treatment or inadequate monitoring or follow up of treatment; or failure of communication (inadequate instruction to patient about specifics of how to take the drug).

IOM found the *emergency department* to have the highest number of medication errors in a hospital. The complexity inherent in an emergency department and the need for standardized work procedures and teamwork are essential to mitigate this complex and dynamic environment of care.

IOM's Recommended Process for Medication Use includes processes for dispensing, administering, monitoring, checking for drug-drug interactions, synergistic effects, and antagonistic effects across medications in a patient's profile, designing for recovery, and improving access to accurate, timely information. This excellent report contains the full analysis of the risks associated with medication administration. Among the recommendations, the IOM suggested at the point of care, information about the patient, medications and other therapies can be disseminated by:

- Including a pharmacist and nurse on medical rounds
- Use of computerized lab data that alerts clinicians to abnormal lab values
- Lab report and medication administration records available on rounds
- Protocols are contained in the patient's chart
- Wrist bands are color coded to alert attention to allergies
- Errors and near misses are tracked and reported regularly
- Laboratory turn-around time is accelerated
- Standardize drug packaging, labeling and storage eliminate look-alike and sound-alike miscommunication
- Physician computerized order entry

- Pharmacy software that checks for drug-drug incompatibilities
- Implement unit dosing for all non-emergency medications
- Develop special procedures for high-risk drugs using a multi-disciplinary approach (written guidelines, checklists, pre-printed orders, special labeling and education)
- Ensure availability of pharmaceutical decision support to ensure review by a pharmacist; pharmacist available on-call after hours of pharmacy operation
- Approach medication errors as system failures and seek system solutions to preventing them.

A major factor in improving patient safety is to improve patients' knowledge about their treatment: prescription orders should include a brief notation of purpose unless considered inappropriate. Patients need to be educated about the safe and accurate use of their medications in the hospital, at discharge, and in ambulatory settings. Patients should tell physicians about all medications they are taking and ask for information in terms they understand before accepting medications (medication reconciliation). Before accepting a new medication, patients should ask:

- Is this the drug my doctor ordered?
- What are the trade and generic names of the medication?
- What is the drug for? What is it supposed to do?
- How and when am I supposed to take it and for how long?
- What are the likely side effects? What do I do if they occur?
- Is this new medication safe to take with other over the counter or prescription medications or with dietary supplements that I am already taking?
- What food, drink activities, dietary supplements, or other medication should be avoided when taking this medication?

The above guidance applies to medication management of all pharmacologic therapies used to treat ill and injured Service members such as analgesics, psychotropic agents, and antibiotics.

Aside from the mechanics of dispensing the appropriate medication at the appropriate time to the appropriate patient are the issues of current military medicine, handling the complex patient with polytrauma who often presents with significant physical pain as well as

psychological trauma and who may require psychotropic medication as well as narcotic analgesics.

Compassionate pain management advocated by the American Society of Anesthesiologists and the American Academy of Pain Medicine and the American Pain Society in 1997 has had some unintended consequences. In the ten years since then, the per capita retail purchases of methadone, hydrocodone, and oxycodone in the United States increased 13-fold, 4-fold, and 9-fold respectively. In addition to the increased diversion of these drugs to nonmedical uses, rates of emergency department visits also increased during this time frame (Hall). Americans constitute 4.6 percent of the world's population but consume 80 percent of the global opioid supply and 99 percent of the global hydrocodone supply. Apart from the lack of effectiveness except for short-term, acute pain, there are multiple adverse consequences including hormonal and immune system effects, abuse and addiction, tolerance and hyperanalgesia (increased sensitivity to pain). The National Survey of American Attitudes on Substance Abuse XII (August 2007) showed that 80 percent of America's high school students have personally witnessed, on the grounds of their school, illegal drug use, illegal drug dealing, illegal drug possession, students who were drunk or students high on drugs. The rate of drug use was higher for unemployed persons, 18.5 percent vs. 8.8 percent for those fully employed. In 2006, an adult aged 18 or over with a combination of a major depressive episode and substance use and dependence or abuse in the past year was more likely than those with a major depressive episode alone to have used an illicit drug in the past year (27.7 percent vs. 12.0 percent) (Manchkanti 2008).

The source of prescription medications for persons 12 years old and older who used these drugs for nonmedical purposes was from a friend or relative for free (55.7 percent); from one doctor (19.1 percent); a drug dealer or other stranger (3.9 percent); and the internet (0.1 percent).

Adverse consequences of opioids include nausea, sedation, euphoria, dysphoria, constipation and itching. With chronic use there are hormonal and immune system effects, abuse and addiction, tolerance and hyperalgesia (increased sensitivity to pain). Multiple studies indicate insufficient and poor evidence to prove the safety or effectiveness of any opioids. In 2005, the Drug Abuse Warning Network (DAWN) published results of emergency department visits with drug misuse and abuse indicating that 816,696 emergency department (ED) visits involved illicit use of a drug. Of these, 598,542 visits were secondary to nonmedical use of

prescription or over the counter pharmaceuticals or dietary supplements. Among these, psychotherapeutic agents constituted 46.5 percent and central nervous system (CNS) agents constituted 51 percent of the visits. Among the CNS agents, the most frequently identified ones were opioid analgesics at 33 percent. ED visits related to narcotics increased 274 percent from 1995-2005. Among the psychotherapeutic agents, the anxiolytics (anti-anxiety, sedatives, and hypnotics) were the most frequent, occurring in 34 percent of the visits associated with nonmedical use of pharmaceuticals. Unintentional drug poisoning mortality rates increased 91.2 percent between 1991 and 2002, due to prescription opioids. In 2007, unintentional drug poisoning was second only to motor-vehicle crashes as the cause of death from unintentional injury in the U.S. (Manchkanti 2008)

In 2005, Utah had the highest rates in the nation of reported nonmedical use of pain relievers, as well as an increase in prescription opioid related deaths; an estimated 72 percent who were prescribed an opioid had leftover medication; 71 percent of those with leftover medication kept it; and during the same period, 97 percent of those who used opioids that were not prescribed for them said they received them from friends or relatives. There are multiple implications for public health practice regarding these findings. Selection of opioid medications for acute or chronic pain should be done only after determining that alternative therapies do not deliver adequate pain relief and should use the lowest effective dose of opioids. Use of long-acting or sustained release opioids (OxyContin or methadone) should be reserved for the treatment of long-term pain. For patients who continue to experience severe pain without functional improvement despite treatment with opioids, specialty consultation should be sought. Federal agencies can monitor claims information for signs of inappropriate use of opioid medications (multiple prescriptions for the same medication) from different physicians and follow up by notifying these physicians that the patient may be misusing the medications. State drug monitoring programs may help to identify patients and providers with signs of inappropriate use, prescribing or dispensing of opioid medications (CDC, 2008).

Patients receiving higher doses of prescribed opioids are at increased risk for overdose. Group Health Cooperative of Puget Sound studied 9,940 patients with noncancer pain for a mean of 42 months. Two thirds of the cohort had back pain or extremity pain. There were six fatal opioid related overdoses and 74 nonfatal overdoses during the study (Dunn).

Problem medications used in analgesic regimens tend to be those that have rapid onset due to their lipophilic nature or route of administration, short duration, and a sedating or energizing effect. These medications are generally more affordable than alternatives with less abuse potential; are more often covered by insurance and more frequently prescribed. The primary goal of the practicing physician attempting to manage pain is to improve the patient's quality of life without harming either the patient directly or others who may be indirectly associated with that patient (Flugsrud-Breckenridge).

While physicians who prescribe carbamazepine for patients with a seizure disorder order frequent laboratory tests to ensure that the drug is not inhibiting the production of blood cells, similar vigilance is required with prescription opioids to monitor for signs of abuse or aberrant behavior, or even for signs that the drug is working and improving a patient's level of function (Kuehn).

In a study to determine motivation for the use of prescription drugs for nonmedical purposes, motivational interviewing was used to help the patient understand and resolve their competing drug use motivations (the motivation to continue using vs. the motivation to cease drug use) (Rigg). The rationale described by patients were anxiety and stress due to adverse life events, loss of employment, relationship difficulties, as well as avoidance of physical withdrawal symptoms (e.g., bone/muscle pain, diarrhea, vomiting, and involuntary shaking) and emotional manifestations (e.g., depression, anxiety, and mood swings).

In a large U.S. health care system, current opioid dependence was associated with such variables as opioid abuse history, high dependence severity, major depression and psychotropic medication use. Information about mental health history, current psychotropic medication use and pain status is essential prior to prescribing opiates (Boscarino).

In a retrospective study of 65 patients who were or were being considered for opiates and transitioned into a structured outpatient clinic, 24 were noncompliant (37 percent). Working status approached statistical significance ( $p = 0.07$ ) with those patients out of work demonstrating a greater likelihood of noncompliance (White).

Various screening vehicles have been used. The Screener and Opioid Assessment for Patients with Pain (SOAPP) was validated and showed adequate sensitivity and specificity for a screening risk potential for substance abuse among persons with chronic pain (Butler). The SOAPP instrument showed a propensity for prescription opioid abuse among 91 of 113 patients

studied. The three leading *comorbid diagnoses were depression, anxiety, and a history of substance abuse*, and, less frequently, panic attacks and *post-traumatic stress disorder*. Patients in chronic pain should be assessed for psychological and addiction disorders because they are at increased risk for abusing opioids. They should also be referred for psychosocial treatment as part of their care, where appropriate. Emergency department (ED) physicians operate under less than ideal conditions – limited time for assessment and lack of collateral history (Wilsey).

Another screening instrument was developed in response to the recognition that the principle drug of abuse for nearly ten percent of U.S. patients is a prescription drug, further complicated by frequent abuse of alcohol and illicit drugs. Commonly abused drugs include opioids, benzodiazepines, sedative-hypnotics and central nervous system (CNS) stimulants. Approximately 77 percent of suicides involve benzodiazepines.

In *interventional* pain management, controlled substances are not relied on as the sole management or mainstay of treatment. Controlled substances are used as an adjunctive to interventional techniques, along with other modalities including physical therapy, psychological interventions, and non-opiate analgesics. The predictive criteria with a 95 percent confidence interval for risk of abuse were: 1) excessive opiate needs (multiple dose escalations, multiple emergency room visits, multiple calls to obtain more opiates; repeatedly asking for higher doses; taking opiates or other controlled substances from others; 2) deception or lying to obtain controlled substances; and 3) current or prior intentional doctor shopping (Manchikanti, 2003).

One of the current patient safety initiatives in the United States is the medication reconciliation process. According to the Joint Commission (JC), a review of their Sentinel Database over fourteen years found the leading contributor to medication errors is *communication failure*. Medication reconciliation creates a formal process that enhances communication among physicians, nurses, pharmacists and the patients, especially during transitions of care. While there is no perfect process, knowledge of the patient's current medication regimen and drug allergies is an essential first step before any medication is prescribed. As medication is often the primary treatment tool for health care, the potential for harm to occur from misuse, whether intentional or unintentional, is well documented and carries a significant cost to patients and to society (JC, 2009).

System wide efforts are in place from the Food and Drug Administration (FDA), the Office of National Drug Control Policy (ONDCP), and the Department of Justice Drug

Enforcement Office of Diversion Control. According to the FDA, long-acting and extended release prescription opioids can provide effective pain management for appropriately selected patients when used as directed. But there are serious risks associated with patients who should not take them being prescribed these drugs, or accidental or intentional improper use. The amount of opioid contained in an extended-release tablet can be much more than the amount of opioid contained in an immediate release tablet because the extended release tablets are designed to release the opioid over a longer period of time. Long-acting opioids can take many hours to be cleared out of the body. Improper use of any opioid can result in serious side effects including overdose and death and this risk is magnified with long-acting and extended-release opioids (FDA).

All long-acting and extended –opioids are required to have Risk Evaluation and Mitigation Strategy (REMS). These products include Dolophine (methadone); all morphines: MS Contin, Kadian, Avinza, Embeda, and Oramorph; OxyContin (oxycodone), Exalgo (hydrodomorphone), Duragesic (transdermal fentanyl), Butrans (transdermal buprenorphine), and Opana ER (oxymorphone) (FDA).

The opioid REMS are expected to include educational materials that prescribers can provide to patients on how to use and store these products safely. These materials will enable physicians to *appropriately counsel their patients* on safe use and the responsibilities associated with using these products. Medication guides are available from the pharmacies where patients pick up their prescriptions (FDA).

Due to recognition that prescription drug abuse is the Nation’s fastest-growing drug problem (the number of prescriptions filled for opioid pain relievers increased 402 percent from 1997-2007), numerous states have authorized prescription drug monitoring programs (PDMPs). These aim to detect and prevent the diversion and abuse of prescription medications at the retail level. PDMPs track controlled substances prescribed by authorized practitioners and dispensed by pharmacies. The Prescription Drug Monitoring Program Center of Excellence at Brandeis University developed geospatial mapping of PDMP data, combined with data on prescription drug overdose ED visits and prescription drug overdose deaths, to identify concentrations in three suburban areas of the Massachusetts. There are “doctor shoppers” who visit multiple prescribers, in different locations within and outside of their states of residence, in order to receive controlled substances and other prescription drugs for diversion and/or abuse (ONDCP).

DoD providers can access PDMPs for controlled substance prescription histories before generating prescriptions for controlled substances.

As of May 2011, the State Prescription Drug Monitoring Program (PDMP) was operational in 35 states. Thirteen states have enacted legislation to establish a PDMP, but are not fully operational. The Alliance of States with Prescription Monitoring Programs ([www.pmpalliance.org](http://www.pmpalliance.org)) maintains a list of state contacts. Laws regarding PDMPs are available from the National Alliance for Model State Drug Laws ([www.namsdl.org](http://www.namsdl.org)) (DoJ). The military specific response to this challenge includes work by the PharmacoVigilance Center to apply the lessons learned and apply it to the military where relevant.

The *integration of psychosocial treatments* and behavior modification strategies are essential for successful treatment of opioid dependence. The American Society of Addiction Medicine suggests the following criteria to consider in the treatment of dependence: biomedical conditions and complications; emotional, behavioral, or cognitive conditions and complications; readiness to change; and the recovery or living environment. The American Psychiatric Association stresses that psychosocial treatments are an essential component of a comprehensive treatment program. One of the recommended psychosocial treatments is the community reinforcement approach (CRA). The basis of CRA is to provide *positive alternative reinforcers* and a *rewarding community and familial involvement*. Friends and family promote a lifestyle that enables the patient to select non-medication modalities to achieve optimum health and wellness (Nicholls). This model reflects the patient and family centered care model espoused by the Institute for Patient and Family Centered Care (IPFCC) as is consistent with the biopsychosocial model of care.

The biopsychosocial model (BPS) is a general model or approach that posits that biological, psychological (thoughts, emotions, and behaviors), and social factors, all play a significant role in human functioning in the context of disease or illness. Health is best understood in terms of a combination of biological, psychological and social factors rather than purely in biological terms. This is in contrast to the traditional model of medicine that suggests every disease process can be explained in terms of an underlying deviation from normal function such as a pathogen, genetic or developmental abnormality, or injury. The concept is used in fields such as medicine, nursing, health psychology and sociology, and in particular in specialty fields as psychiatry, health psychology, family therapy, clinical social work and clinical

psychology. The biopsychosocial paradigm is also a technical term for the popular concept of the “mind-body connection”.. George Engel proposed the Biopsychosocial Model in the 1960s, in what soon became a landmark event for understanding medicine as a science; model prompted a revolution in medical thinking.

According to the Office of National Drug Policy, illicit drug use increased from five to twelve percent among active duty military over a three year period from 2005-2008, primarily attributed to prescription drug abuse (ONDCP, 2011).

The VA utilized the “stepped care” model for pain management. This model uses simpler interventions initially with more intensive interventions reserved for when a good outcome is not achieved. Stepped care balances a focus on managing pain as early as possible in a primary care setting while providing access to pain medicine specialty consultation, and interdisciplinary and multimodal pain management resources when required. It also emphasizes optimal pain control, improved function and increased quality of life (Pain Management Task Force).

There is common concern among clinicians about the structure of Relative Value Units (RVUs), workload units which recognize acute interventions but show scant regard for the more holistic critical outcomes of quality chronic pain management, including dealing with psychosocial stressors and comorbidities (Pain Management Task Force). The University of Washington Health Care System developed an electronic patient pain information diagnostic system, “My Pain Profile” (MPP). Pain patients are guided through a series of questions concerning their demographics, pain characteristics, medication use, substance abuse and other pain variables. Information provided by the patients is provided in electronic format to the provider prior to the visit. The MPP generates information that can assist the provider by providing indicators of real or potential pain-related health problems.

Telemedicine pain clinics may be useful for patients at a distance from their providers. The triad of *comorbid pain, TBI and PTSD* require additional clinical guidance and support for providers. As with all health care, patient and family values and preferences regarding care must be respected.

The Pain Management Task Force recommended the use of an *integrative and interdisciplinary* approach to care. This model emphasizes patient and family-centeredness, where the patient is the team leader and the spectrum of providers are his consultants.

Integrative care *coaches* the patient toward effective self-care, self-responsibility, and self-awareness. This is similar to relationship-based care, where the care provider consistently maintains the patient and his family as the central focus. In this model the care provider knows each person's unique life story determines how he or she will experience an illness or injury. The care provider conveys an unwavering respect and personal concern for the patient, strives to understand what is most important to this particular patient and family, safeguards their dignity and well-being and actively engages them in all aspects of the patient's care. This care model necessitates the capacity for empathy to provide compassionate care to people in times of illness and suffering. Healthy interpersonal relationships among all those involved in a patient's care are essential: respect, affirmation of each other's unique scope of practice and contribution, working interdependently to achieve a common purpose and to accept responsibility for creating a culture of learning, mutual support, and creative problem-solving.

The Millennium Cohort Study Consortium is the largest prospective health project in military history. It is designed to evaluate the long-term health effects of military service, including deployments. The Department of Defense recognized after the 1991 Gulf War that there was a need to collect more information about the long-term health of service members. The Millennium Cohort Study was designed to address that critical need, and the study was launched by 2001. Funded by the Department of Defense, and supported by military, Department of Veterans Affairs, and civilian researchers, almost 150,000 people are already participating in this groundbreaking study. As force health protection continues to be a priority for the future of the United States military, the Millennium Cohort Studies will be providing critical information towards enhancing the long-term health of future generations of military members.

One Millennium Cohort study showed that deployed men and women with combat exposures had the highest onset of depression compared with nondeployed men and women. For men, the adjusted odds ratio was 1.32. For women, the odds ratio was 2.13 (Wells).

Among active duty personnel, the baseline, follow-up, and new-onset prevalence of all three drinking outcomes was highest among those deployed with combat exposures compared with those without combat exposures and nondeployed personnel. Proportionally, more women than men reported heavy weekly drinking at baseline than new onset, whereas proportionately more men reported binge drinking and alcohol related problems at all points. The highest baseline, follow-up and new onset prevalence was among those who were younger, white, non-

Hispanic, Marines and current smokers. Among Reserve and Guard, the new-onset prevalence of all outcomes was highest among those deployed with combat exposures, were younger, Marines, had PTSD and depression (Wells).

## **2. CURRENT PRACTICES WITHIN DOD**

A review of current practices within DoD for the management of medications shows a number of innovations at the MTF as well as the Department level to enhance the experience of relief of physical pain and psychological trauma. In addition to use of the biopsychosocial model, non-medication practices, complementary, alternative and integrative medicine complement traditional medication management.

To improve the management of medications for wounded warriors the DoD Pharmacoeconomic Center (PEC) developed two methods to facilitate oversight of medication administration by medical providers: the Controlled Drug Management Analysis and Reporting Tool (CD-MART) and the Military Treatment Facility (MTF) Prescription Restriction Program. CD-MART

The CD-MART is an automated tool to assist providers in analyzing controlled prescription usage. It uses a menu-driven, Microsoft® Access database with pre-set filtering parameters. The Pharmacy Data Transaction Service (PDTS) is the data source. The CD-MART focuses on beneficiaries enrolled to a specific MTF, and includes all enrollment locations under the parent MTF. Data can be stratified by either the MTF's 40-mile radius catchment area or for the entire DoD. Therefore, all points of service that involve controlled substances are captured. The four parameters that are determined by the specific MTF are: the number of prescriptions, pharmacies, providers and the total quantity of tablets or capsules. The user of CD-MART may manipulate the parameters to produce a specific report. Potential reports include any one or a combination of the following:

- All patients with more than “n” controlled substance prescriptions
- All patients with controlled prescriptions from more than “n” pharmacies
- All patients with controlled substance prescriptions from more than “n” providers
- All patients with controlled substance prescriptions quantities exceeding “n” tablets/capsules.

The above report may be exported to Microsoft® Excel.

## MEDICATION RESTRICTION PROGRAM

A Pain Management Support Tool created by the PEC also uses the PDTS source to obtain pharmacy data derived from prescriptions dispensed from MTF pharmacies; retail network pharmacies or mail-order pharmacies. The Medication Restriction Program (MRP) enables providers to identify beneficiaries who demonstrate “drug-seeking” behavior or high-risk individuals who may harm themselves from accidental or intentional medication overdose. The program restricts a beneficiary to specific medications, providers or pharmacies. The restriction forms are available on the PEC website. The MRP facilitates control by the Primary Care Provider (PCP) to manage access to restricted medications and requires the signature and coordination of the designated clinical provider, nurse care manager and the MTF pharmacist. This program is especially useful if the PCP deploys or the patient seeks medications from a different provider. The MTF Pharmacy Restriction Form specifies the pharmacies that the patient may use, the provider(s) who may write prescriptions for that patient, and excludes controlled or specific non-controlled substances. Enhanced electronic messaging is available between PDTS and the Armed Forces Health Longitudinal Technology Application (AHLTA) outpatient electronic record for MTFs regarding beneficiary prescription restrictions.

### 1-1-1 PROGRAM

The Department of Defense has several programs that are in place to limit access and coverage of controlled substances medications for TRICARE beneficiaries (including members in the Wounded Warrior Programs) who are identified as having “drug seeking behavior” or at risk for such behavior. Under TRICARE’s purchased care sector, the TRICARE Pharmacy Benefits Manager (PBM) routinely screens prescription claims files to identify potential over utilization of controlled substances. When potential over users are identified, the PBM contractor coordinates with the appropriate managed care contractor to determine if the beneficiary should be placed on restricted access to these medications. This program is frequently referred to as the 1-1-1 program where a beneficiary is restricted to one provider for obtaining prescriptions for controlled substances, one pharmacy at which these medications can be filled, and limited to one Emergency Room which are common sources for obtaining controlled medications by feigning a medical indication. This program is outlined in the

TRICARE Operations Manual 6010.56-M, February 1, 2008, Chapter 13, Section 2 4.4.7 Drug Seeking Beneficiaries.

A similar program is also in place for those beneficiaries accessing the Military Treatment Facility (MTF) for their care, as is the case for most Active Duty members. MTF providers may identify beneficiaries who may have “drug seeking behavior” or are at high risk of harming themselves through accidental overdose of narcotics and/or other high risk medications. Once identified, the provider may consider placing certain limits on the pharmacy benefit. One way to allow this limit is by utilizing the Pharmacy Data Transaction Service (PDTS). The provider has the option to: 1) restrict the beneficiary for all drugs to specific pharmacies and/or provider(s) 2) restrict beneficiary access to controlled medications to a specific provider(s) or 3) exclude controlled meds or specific non- controlled meds at a mail order or retail pharmacy. The TRICARE Pharmacy Operations Center will enter the restriction into PDTS which provides a means to manage the pharmacy benefit access. Active duty members assigned to a Community-based Warrior Transition Units (CBWTUs) can also be placed in the program. The health care providers can restrict identified “drug seeking behavior” or otherwise high-risk Service Members to a specific pharmacy and/or specific provider in the PDTS system by utilizing the CBWTU Prescription Restriction form.

The Civilian Based Pharmacy Restriction Program is used for active duty members assigned to a community-based warrior transition unit. The Community Based Pharmacy Restriction Form specifies the network retail pharmacy designated for the patient as well as a specific clinical network provider.

The Retail Medication Restriction Program may be initiated by a Managed Care Support Contractor’s Medical Director. The program is used to restrict a beneficiary from receiving controlled and non-controlled medications at the provider, pharmacy and medication level. The patient provides Express Scripts, Inc. (ESI), TRICARE’s designated contractor for mail order and retail prescriptions, information on the selected provider, pharmacy and facility where the patient receives medical care. If the information is not received by ESI within 60 days, the Contracting Officer’s Representative rejects authorization of payment on all restricted medications; and, the PDTS rejects restricted prescription claims for the beneficiary.

There is general recognition that wounded warriors require complex care management, due to complex medical-surgical conditions accompanied by the psycho-social context of combat

injuries. Often, the severely injured are far from their home of record and separated from their active duty unit comrades as well. To address this constellation of care management, the Army Medical Command developed comprehensive approaches.

#### WARRIOR TRANSITION CARE EXPERIENCE

The DoD Inspector General studied the Warrior Care and Transition Unit (WTU) at Brooke Army Medical Center (BAMC), San Antonio, TX, in 2010. BAMC and WTU teams were noted to be fully dedicated to providing the best available care and services for helping Warriors heal and transition. The nucleus of the WTU, the “Triad of Care Team,” is comprised of a squad leader, a nurse case manager, and a PCP. The goal of the Triad of Care staff is to *envelope the Warriors and their families in comprehensive care* and support to ensure that the Warrior heals. The Triad of Care team works together to collect Soldier data and information and to develop a plan of care specific to each Soldier. The plan of care addresses medical treatment, administrative requirements, support needs, and disposition. All work together to ensure advocacy for the Warriors, continuity of care, and a seamless transition into the force or return to a productive civilian life. This Triad of Care staffing model, which ensures patient and family involvement, fits with the relationship-based care and the patient and family centered models of care practiced in the civilian health care sector. It also reflects the medical home concept, initiated by the American Academy of Pediatrics in 1967, to address children with special (chronic care) needs. The Patient Centered Medical Home is currently one of the top initiatives of the Department.

Squad leaders are responsible for accounting for Warriors daily, counseling them and guiding them in their Comprehensive Transition Plan (CTP), ensuring that they attend all appointments, tracking all their administrative requirements, and building trust and bonding with Warriors and their families. Through interviews with Warrior patients, it has been determined that it is imperative for the squad leader to have had combat experience.

Nurse Case Managers are either civilian or Army officer nurses who provide the individualized attention needed to support the medical treatment, recovery, and rehabilitation phases of care of the Warriors. The goal of case management is to orchestrate the best care for the Warriors by monitoring progression of care, Transition Review Board recommendations, and the Warriors’ respective goals to proactively facilitate movement of the Warrior from one level of care to the next. Interviews with case managers and patient Warriors underscore the necessity

of these case managers to have experience working with physically injured with concomitant post-traumatic stress disorder and traumatic brain injury and to understand the culture and complexity of military medicine.

The PCP is the central medical point of contact and health care advocate for the Warrior. The PCP provides primary oversight and continuity of health care and is to ensure the level of care provided is of the highest quality. As the gateway to all specialty care (such as behavioral health specialists or orthopedic surgeons), the PCP coordinates with other physicians to ensure that Warriors are getting the treatment they need. Access to specialty care is a particular challenge as 82 percent of battle injuries for the Army, from calendar years 2009 and 2010, were due to orthopedic surgery conditions. This volume of patients can easily overload the system of care, particularly when there are multiple injuries and complications as compared with elective surgeries.

The BAMC WTB staff instituted four noteworthy initiatives.

- The High-Interest Patient (HIP) Database;
- Weekly Company-level “Triad of Care” Team meetings;
- Prescription Medication Analysis and Reporting Tool (P-MART) for polypharmacy management; and,
- Guidelines for the occupational therapy process, specifically via the Warrior in Transition Advancement Program (WINPAT)

#### High-Interest Patient Database

The HIP Database application was created to help with the care and risk management of complex patients. It was designed as a tool that could be used during interdisciplinary team meetings to facilitate the collection, retrieval, flow, and exchange of information, as well as to track tasks from assignment to completion. The HIP Database assists care team providers to categorize patients according to their level of risk and provides a transparent view of a patient’s appointment and medication history. A patient’s risk level is characterized by a color code; green (low-risk), yellow or amber (moderate-low risk), red (moderate-risk), black (high-risk), or unspecified (no color assigned). Care providers and case managers may create tasks necessary for the care of the patient, assign tasks to individual providers or managers, and view suspense and completion dates of assigned tasks along with their outcomes or comments. The HIP Database resides on the BAMC computer network. Access to this database is granted only to

authorized users and requires a network account and membership in a specific domain group. The HIP Database draws patient demographic and other information from the Composite Health Care System (CHCS), now known as AHLTA, which is used at all MTFs as part of a patient's electronic health record.

Polypharmacy has no universal definition but is often used to describe the use of a number of drugs, possibly prescribed by different doctors and filled in different pharmacies, by a patient who may have one or several health problems. With regard to Warriors, risk management is handled through the conduction of risk assessments of those Warriors who are or have: prescribed polypharmacy (due to multiple or complex conditions), prescribed narcotics, mental health diagnosis, prior history of high-risk behavior, experienced a broken relationship, suffered from chronic pain, and/or are pending punitive actions.

#### Weekly Company-Level "Triad of Care" Team Meetings

At the BAMC WTU, Triad of Care Team meetings are held on a weekly basis by each WTU Company to discuss and make decisions on necessary actions to ensure full synchronization of the clinical care, disposition, and transition for each Warrior. A typical Company meeting is attended by the squad leaders, platoon sergeants, nurse case managers, primary care managers, company commander, first sergeant, occupational therapists, and social workers responsible for Warriors assigned to that Company. This meeting includes a detailed discussion of all high- and moderate-risk Warriors, and updates significant changes for all Warriors not included on the high-risk list.

The first part of the weekly Triad of Care Team meeting discusses the high- and moderate-risk Warriors (those coded black or red in the HIP Database). During a typical Company meeting each patient coded black or red is discussed by a care element (such as medications, specialty care, occupational therapy) along with the necessary details to understand the Warrior's current medical situation, why a particular risk exists, and whether the risk indicator should be increased or decreased. The Company Commander then makes the final determination as to whether the risk level should be maintained, raised, or reduced for each Warrior that was discussed. Pertinent information on that Warrior's status is updated in the HIP Database as necessary, once discussions are concluded. Newly designated high-risk Warriors may be added to the database at any time.

The second part of the weekly Triad of Care meeting discusses the remaining Warriors within each company. During a Company meeting, there is a member-by-member update on activity and significant changes that occurred for the remaining Warriors. Items discussed, among many others, includes whether a Medical Evaluation Board has been scheduled, progress updates for certain Warriors' CTP are being recorded, Warriors' abilities to participate in certain activities, and the whereabouts of Warriors if they are on leave.

#### Prescription Medication Analysis and Reporting Tool (P-MART)

The P-MART was developed to provide a comprehensive database of medication information to health care providers concerning deploying Service members prior to their deployment. Initially, the P-MART tool did not contain a specific report that could identify Warriors at elevated risk for polypharmacy to facilitate medication reconciliation. Medication reconciliation is a formal process of identifying the most complete and accurate list of medications a patient is taking and using that list to provide correct medications for the patient anywhere within the healthcare system. In line with this concept, the DoD PEC designed a WTU P-MART to provide a monthly customized report for Warriors. It collects prescription data on the WTU Service Member from all points of service, identifies high-risk individuals, and prepares specialized medication reports focused on high-risk medications (i.e., narcotic use, sleep aids, etc.). Thus far, the WTU P-MART has been disseminated to Fort Drum, Fort Carson, and Walter Reed Army Medical Center. The WTU P-MART is an important initiative to achieve medication reconciliation, a major goal of the Joint Commission, the Institute for Healthcare Improvement, the American Medical Association, and the American Society of Health-System Pharmacists. This is a major contribution to medical management that hopefully can be implemented across the Military Health System (MHS).

The DoD IG reported impressions, listed below, of the BAMC process from the Warrior patients.

“Warriors told us that medication safety was infused in the culture within the BAMC WTB by the BAMC staff and the WTB cadre. One Warrior reported that he felt that both the BAMC management and staff and the WTB cadre were doing all they could do to reduce the chances of Warriors having adverse effects due to pain medications.

“Another Warrior told a personal story of how he was prescribed a medication at another WTB, which made him forgetful and addicted. After transferring to the BAMC WTB, he was weaned from this medication, and although he suffered while going through withdrawal, he felt he was better off not being on that particular drug.

“A different Warrior told a story about knowing of a Warrior who had died of an accidental overdose while recovering from surgery. He asked to have his own medications reduced during his own recovery period and his doctors respected his wishes.

“Another Warrior mentioned that his nurse case manager helped to manage his prescriptions and as a result, he had no problems with pain management. He further stated that a list of every prescription he took was attached to the back of his appointment sheet and the list described the dosage, times of day, and interactions for each medication.”

#### WALTER REED ARMY MEDICAL CENTER (WRAMC) EXPERIENCE

Being the “Home of Warrior Care” has allowed WRAMC and its Warrior Clinic to establish many U.S. Army standards and best medical practices for the care of Wounded Warriors throughout the military services. Often these practices require large amounts of medications due to the nature and severity of their injuries. These medications can cause dependency and other adverse effects. Medically driven addiction is called “iatrogenic,” a term used to describe an illness or reaction caused by treatment from the medical profession and/or system.

The Warrior Clinic and its PCPs, nurse case managers, social workers and pain management specialist understand as part of a Wounded Warrior’s comprehensive treatment plan, they have a duty to help the Soldiers and transition them off pain medication. With the support and direction of an integrated anesthesia physician from National Naval Medical Center, WRAMC and the Warrior Clinic staff initiated and incorporated a pain management program into the Warrior Clinic. Recognizing that pain is a continuum from acute to chronic pain, that staff challenge for the WRAMC’s Warrior Clinic faces is treating pain in the acute phase, in the effort to prevent it from developing into chronic pain.

The pain management program offered in the Warrior Clinic at WRAMC has drastically reduced the number of Wounded Warriors receiving prescribed pain medication. In 2008, roughly 83 percent of Wounded Warriors assigned to WRAMC's Warrior Transition Brigade (WTB) were using prescribed narcotics. In the first quarter of fiscal year 2011, that number had been reduced to 10.2 percent, according to officials. With nearly 1,470 Wounded Warriors seen quarterly, the Warrior Clinic is taking a unique and steady approach to treating and educating Soldiers with pain.

What is unique is the way this team treats pain. The Army Medical Command (*MEDCOM*) and the Warrior Clinic have *adopted an integrated and interdisciplinary approach* to the treatment of combat related injuries. This *holistic, interdisciplinary, and multi-modal* approach focuses beyond simply giving opioids for pain. Opioids are medications that fall within a class-referred to as prescription narcotics, which includes Morphine, Codeine, Oxycodone, and related drugs.

In the last few years, research has shown that if pain is initially treated effectively, one can prevent the rewiring of the brain and prevent chronic pain. Treating acute pain as close to the time of injury, with the appropriate medication, is just one part of this multidisciplinary approach. Although medications play an important role in the healing of these Soldiers, there are many ways to treat pain initially. Use of regional techniques *forward into the battlefield* with regional catheters placed to infuse local anesthetics to numb the area gets to the source of the pain in closer proximity to the injury than traditional methods. This innovation was new to military medicine in the battlefield with the onset of Operation Iraqi Freedom.

The Warrior Clinic has devoted a significant number of resources into looking at the alternative methods for managing and minimizing pain, from establishing complementary and alternative modalities that can help Soldiers with pain other than with medications. This dynamic and holistic approach to addressing and treating pain uses a wide variety of resources that look at the mind, body, and cognitive behaviors of the Soldier, as well as incorporating and educating the Soldiers' families into the treatment and overall management of pain. Accountability of the organization and of the Soldiers is essential for success. Although Wounded Warriors are highly motivated, the recognition of potential for addiction led to the development of the U.S. Army's Risk Mitigation Policy for the care of Wounded Warriors by the WRAMC WTU. Key elements of the policy include appropriate tracking and monitoring of

Soldiers and their medications, controlling quantities, prescribing the right medication at the right time and other aspects. Clinic staff also monitor the behavioral health of Soldiers and can identify “at risk” Soldiers. If necessary, clinic staff can ensure individuals enroll in the Army Substance Abuse Program and monitor Soldiers through random urine drug screens within the companies. Healthcare providers and WTU cadre are constantly reevaluating the Soldier to ensure continuity of care.

## POLYPHARMACY

One of the challenges for medical staff dealing with complex patients is determining a definition of polypharmacy. With multiple clinical conditions, addressing pain concerns with psychopharmacology requires complex assessments and expert experience to ensure pain control without causing either dangerous antagonistic or synergistic medication effects or addiction. Patients who feel under-medicated or experience sleep disturbances may turn to alcohol to relieve their suffering and inadvertently complicate medication interactions with alcohol.

According to the Centers for Disease Control and Prevention, the leading prescription medications in the United States are opioids. Aware of this trend, in May 2010, the DoD and Department of Veterans Affairs (VA) prepared a Clinical Practice Guideline on the Management of Opioid Therapy for Chronic Pain. This evidence-based guideline focuses on assessment, determination of the appropriateness of opioid therapy, starting the opioid therapy trial, assessment of patient status and response to therapy, adjustment of therapy, consultation/referral, follow-up, and discontinuance of opioid therapy and management of opioid therapy in special populations.

## INTEGRATIVE MEDICINE

The Department has an extensive research portfolio to explore the scientific hierarchy of evidence needed to establish the efficacy of complementary and alternative medicine modalities within the treatment programs for active duty as well as family members. In particular, extensive research is underway for those wounded warriors with either TBI and/or PTSD. These range from meditation to biofeedback, and yoga to acupuncture.

The Pain Management Task Force recommended the use of an integrative and interdisciplinary approach to care. This model emphasized patient and family-centeredness, where the patient is the team leader and the spectrum of providers are his consultants (Pain Management Task Force). Integrative care coaches the patient toward effective self-care, self-responsibility, and self-awareness. This is similar to relationship-based care, where the care provider consistently maintains the patient and his family as the central focus. With the goal of optimum recovery as the end result, staff emphasis is on coaching patients toward active self-reliance rather than passive dependency on the health care system. One of the interesting aspects of the DoD Pain Management Task Force report was distinguishing between passive and active aspects of various modalities as shown below in the table.

Modality	Passive	Active
Acupuncture	Clinic based Acupuncture	Self-directed acupressure
Yoga/Yoga Nidra	Facility based yoga classes	Self-directed with video, exercising
Non-allopathic chiropractic care	Clinic based manipulations	Self-correcting exercises
Therapeutic Medical Massage	Clinic based treatments	Partner or self-treatment
Biofeedback	Clinic based biofeedback techniques	Self-directed biofeedback with video, heart rate variability monitors, meditative practices
Mind-body Therapies (Meditation, Mindfulness)	Facility based classes	Self-directed
Movement Therapy (Qi Gong, Tai Chi, Martial Arts)	Facility based classes	Self-directed with video, exercising
Art Therapy	Facility based classes	Self-expression through journaling, art, dance, etc.
Music Therapy	Facility based classes	Self-directed with iPods, etc.
Aroma Therapy	Facility based treatments	Self-directed
Monochromatic Near Infrared Energy (MIRE) Treatments	Clinic based treatments	Self-directed with MIRE personal equipment
Cranial Electrical Stimulation	Clinic based treatments	Self-directed with CES personal equipment

The current perspective is to integrate pain management into primary care, consistent with the Patient Centered Medical Home Model. Using a biopsychosocial model that emphasizes self-management is used in concert with integrative techniques and judicious prescribing of pain medications. The biopsychosocial model (BPS) is a general model or approach that posits that biological, psychological (thoughts, emotions, and behaviors), and

social factors all play a significant role in human functioning in the context of disease or illness. Health is best understood in terms of a combination of biological, psychological, and social factors rather than in purely biological terms. The concept is used in fields such as medicine, nursing, health psychology, and sociology and particularly in psychiatry, health psychology family therapy, clinical social work, and clinical psychology. The biopsychosocial paradigm is also a technical term for the popular concept of the mind-body connection.

The Stepped Care model, developed by the VA (Pain Management Task Force) stratified pain management into three categories: primary screening (comprehensive assessment; management of common pain conditions; collaboration with mental health-primary care integration; secondary consultation referral to pain medicine, rehabilitation medicine, behavioral pain management, multidisciplinary pain clinics, substance use disorder programs and mental health programs. Tertiary care consists of interdisciplinary pain centers with advanced pain medicine diagnostics and intervention, and Commission on Accreditation of Rehabilitation Facilities (CARF) accredited pain rehabilitation. The Army developed the Musculoskeletal Action Plan (MAP) which focuses on injury prevention, early identification and management and rehabilitation and reintegration. An initiative that has been very successful is the movement of physical therapists into brigade combat teams to ensure that injury prevention and treatment capabilities are forward on the battlefield. An outgrowth of this is Building the Soldier Athlete (BSA) program and a reconditioning program designed for soldiers on profile (an individual with a temporary condition that limits full performance of duties required by a military occupational specialty). In counter-distinction to previous long wars for active duty, the goal for the volunteer force is to retain active duty personnel, when possible, rather than discharge them to treatment at the VA.

The Army has located pain management specialty care and support services proximate to the Warrior Transition Commands to help relieve pain, improve physical function and quality of life for the wounded warriors.

The highest risk patients for unsafe behaviors are those with comorbid diagnoses or psychiatric disease, substance abuse and pain. These factors are interrelated and mutually reinforcing. In some studies, the prevalence of comorbid PTSD, TBI and pain exceeds 40 percent in the VA (Pain Management Task Force).

The Pain Management Task Force identified the following risk factors for misuse of medications:

Biological	Psychiatric	Social
Age $\leq$ 45 years Male gender Family history of prescriptions Cigarette smoking	Substance-use disorder Preadolescent sexual abuse (in women) Major psychiatric disorder (e.g., personality disorder, anxiety or depressive disorder, bipolar)	Prior legal problems History of motor vehicle accidents Poor family support Involvement in a problematic subculture

The Pain Management Task Force also identified a matrix to increase the safer use of opioids.

Early Intervention	Appropriate early intervention in the treatment of acute pain, such as physical therapy, will help decrease the need for narcotics. Utilizing physical therapy in troop medical clinics, primary care clinics, and the emergency room will improve the treatment of acute pain and decrease its translation to chronic pain. Research is needed to determine the risk factors that influence this transition from acute to chronic pain, such as genetics, environment, and behaviors.
Screening	Complete an assessment of drug-abuse risk in all patients on chronic opioids or preferably before initiating opioids. Knowing in advance whether a patient possesses risk factors can assist a clinician in monitoring the progress of treatment. Awareness will result in better clinical outcomes and fewer instances of drug abuse. The goal is not to deny pain treatment to any patient but to set and maintain a level for monitoring that is proportionate to the individual's risk.
Recognize and Treat Substance-use Disorders	Currently, the poor continuity of care is a barrier to identification of problematic drug use. The visibility of patients with aberrant behaviors or previous history needs to be documented longitudinally. The number and persistence of aberrant behaviors is likely to be indicative of greater problems with managing opioid intake. If pain treatment with opioids is to be successful, prescription misuse must be managed. To accomplish this, it is necessary to monitor, chart over time, and address a patient's aberrant drug-related behaviors.
Prescription Monitoring Programs	Approximately seventy percent of DoD prescriptions are not filled in the civilian community. Military Medical Facilities and VAs should utilize state prescription monitoring programs for additional safety monitoring. DoD needs to encourage states to provide this information to practitioners to help identify high-risk patients, "doctor shopping", and compliance.
Urine Drug Screening	Urine drug testing is part of the effort to monitor the clinical efficacy of treatment, determine compliance, evidence of unsafe illicit drug use, and to serve as a deterrent to inappropriate drug taking. An abuser of street drugs is at increased risk for abusing prescription medications. As a clinical monitoring tool, urine drug screenings confer significant benefits

	as long as the limitations in interpreting results are well understood. Screening is recommended when aberrant behavior is suspected or confirmed, when changes in treatment are being make and when pain persists despite aggressive treatment.
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Embedding pain management and pharmacy resources within the Warrior Transition Units was one of the innovations considered by the Pain Management Task Force. Pharmacists have developed innovative Medication Therapy Management Services, which appropriately employed can reduce overall health care expenditures through optimizing therapeutic outcomes, reducing adverse medication events and reducing emergency room visits. Medication Therapy Management (MTM) is a partnership of the pharmacist, the patient or the caregiver, and other health professionals that promotes the safe and effective use of medications and help patients achieve the targeted outcomes from medication therapy. MTM may serve the purposes of selecting, initiating, modifying or administering medication therapy. They may also monitor and evaluate the patient’s response to therapy, and perform a comprehensive medication review to identify, resolve, and prevent medication–related problems, including adverse drug events. The Pain Management Task Force recommended the following safety protocols for the use of opioids.

Improve assessments of pain with function, pain level and quality of life to determine if pain is under-treated or over-treated and what are patients’ barriers to good treatment	Need primary care pain team or clinic.  Need assessment tools
Psychological assessment of each patient	Identify patients in pain with substance abuse, mental disease, PTSD, TBI.  Determine suicide risk.  Risk stratify patients with chronic pain – low, moderate, high
Create medical profile for soldiers on chronic opioids	Notifies command of safety issues.  Any effect on deployability or need for change of military occupational specialty.
Identify addiction and provide treatment	Use Army Substance Abuse Program referrals and assessments.  Medical is notified on command directed hot

	<p>urinalysis for safe use of pain meds.</p>
<p>PCPs able to identify their chronic pain patients</p>	<p>Providers need a quarterly list of their chronic pain patients.</p> <p>Providers should have available calculated daily morphine equivalents and the number of prescribers for past quarter for each patient.</p>
<p>Improve documentation of pain visits and opioid refills</p>	<p>Separate appointments with PCP for only pain management.</p> <p>Document analgesia level, Activities of Daily Living – function, adverse effects and aberrant behaviors for both visits and telephone consults.</p> <p>Document longitudinally aberrant drug-related behaviors.</p> <p>Determine effectiveness of pain treatment.</p> <p>Set treatment goals.</p>
<p>Clinical guidelines for opioid therapy at MTFs and VA hospitals with measurable metrics</p>	<p>Chronic pain patient should have PCP and sole prescriber.</p> <p>All chronic pain patients have opioid treatment agreement and informed consent.</p> <p>Chronic pain patient must see PCP at least every six months.</p> <p>High risk chronic pain patients must see pain specialist at least every 2 years.</p> <p>Documents drug screening for illegal drugs and compliance.</p>
<p>Provide opioid return program for unused prescriptions of opioids to decrease doses available for misuse and abuse.</p>	<p>Prescribe smaller quantities.</p> <p>Limit number of tablets (provide multiple dates Rxs).</p> <p>Establish ceiling limit of mg. of morphine/day prescribed in primary care.</p>
<p>Launch safety education program to educate teens, providers, soldiers, and families</p>	<p>Educate about the dangers of drugs</p> <p>Proper disposal of opioids</p>

	Dangers of using someone else's prescriptions.
Provide non-drug pain therapies at both inpatient and outpatient clinics	<p>Consider teams to provide this.</p> <p>Acupuncture</p> <p>Provide a resource list to all providers in each MTF and VA hospital</p>
Improve communication between civilian and VA, and MTF pharmacies for all beneficiaries	<p>Polypharmacy is a problem (methadone at VA and opioids at MTF)</p> <p>Outside mental health providers prescribing benzodiazepines and MTF dispensing opioids</p>
Create a system to flag patients	<p>ER frequent flyers and list the sole prescriber</p> <p>History of addiction</p> <p>Suicidal risk</p> <p>High risk due to medication regimens- multiple psychoactive drugs with opioids.</p> <p>Misuse/abuse behaviors indicating those who require closer monitoring</p> <p>Notify ER of drug seeking behaviors, opioid treatment agreement, medication management plan</p> <p>Identify patients who need safety restrictions</p> <p>TRICARE limit controlled drugs or prescribers (MTF only or one prescriber)</p> <p>Limit 1-1-1: one prescriber, one pharmacy, and one ER</p>

An indication of the migration of pain assessment from a strictly medical model to an integrative model is illustrated in a pain survey conducted by the DoD Task Force for Warrior Transition Units. Note the emphasis on alternatives to controlled drugs in the following questions.



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**DEPARTMENT OF THE ARMY  
OFFICE OF THE SURGEON GENERAL  
SURVEY PROGRAM OFFICE (SUITE 669)  
5109 LEESBURG PIKE  
FALLS CHURCH, VA 22041-3258**



Please use pen or dark pencil to mark an "X" in the answer box.

Correct

Incorrect

EXAMPLES:



Please return your completed questionnaire in the enclosed envelope to P.O. Box 5033, Chicago, IL 60680.

## WARRIOR TRANSITION UNIT Program Satisfaction Survey

We need your help. We are trying to improve the quality of care we give our Soldiers and their families. According to our records, you have been in the Army's Warrior Transition Unit Program for over 30 days. Is this correct?

- Yes .....  → Please continue with the survey.  
 No, not assigned to Warrior Transition Unit.....  → Please stop and return your survey now.

Thinking specifically about your interaction with your Warrior Transition Unit Case Manager, <<INSERT PERSON>>, please rate how much you disagree or agree with each of the following. Please mark an "X" in the box for the answer that is closest to your opinions.

	<u>Completely Disagree</u>	<u>Somewhat Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Somewhat Agree</u>	<u>Completely Agree</u>
1. My Case Manager, <<INSERT PERSON>>, spends the time talking with me that my health problem requires.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. My Case Manager listens carefully to my health concerns and questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. My Case Manager understands my health problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. My Case Manager treats me with courtesy and respect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. My Case Manager explains my plan of care so that I know what I can expect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Overall, my Case Manager helps me with my health problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>Completely Dissatisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Neither Satisfied nor Dissatisfied</u>	<u>Somewhat Satisfied</u>	<u>Completely Satisfied</u>
7. Overall, how satisfied are you with your Case Manager?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking specifically about your interactions with your Primary Care Provider or other healthcare specialists and your care, please rate how much you agree or disagree with each of the following. Please mark an "X" in the box for the answer that is closest to your opinion.

	<u>Completely Disagree</u>	<u>Somewhat Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Somewhat Agree</u>	<u>Completely Agree</u>
8. My healthcare provider(s) spent the time with me that my medical problem required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. My healthcare provider (s) listened to me carefully about my concerns and questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. My healthcare provider(s) understood my medical problem or condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My healthcare provider(s) treated me with courtesy and respect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. My healthcare provider(s) explained what was being done and why.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<u>Completely Disagree</u>	<u>Somewhat Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Somewhat Agree</u>	<u>Completely Agree</u>					
13. My healthcare provider(s) helped me with my medical problem.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	<u>Not Applicable</u>	<u>Poor</u>				<u>Outstanding</u>					
		1	2	3	4	5					
14. When you <u>needed care right away</u> , please rate your experience getting care as soon as you thought you needed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
15. <u>Not</u> counting the times you needed care right away, please rate your experience getting an appointment for your healthcare at a doctor's office or clinic as soon as you thought you needed.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
16. How would you rate your experience getting the treatment or counseling you needed for the personal or family problem since returning from deployment?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
17. Now, on a scale of 1-10, please rate your current level of pain:											
	Least Amount of Pain					Worse Pain Possible					
	1	2	3	4	5	6	7	8	9	10	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking specifically about your medical care, please rate how much you agree or disagree with the following statements. Please mark an "X" in the box for the answer that is closest to your opinion.

	<u>Not Applicable</u>	<u>Completely Disagree</u>	<u>Somewhat Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Somewhat Agree</u>	<u>Completely Agree</u>
18. Pain is my primary medical problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. My provider believes I am in pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I am confident that my provider will be able to manage my pain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I am able to control my pain with the pain management techniques and/or medication from my provider(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Where are you receiving pain care?						
	<input type="checkbox"/>	Military medical facility				
	<input type="checkbox"/>	Civilian facility				
	<input type="checkbox"/>	Other				
	<input type="checkbox"/>	Not Applicable				
23a. Under the column heading 23a, please mark an "X" under the yes column for each of the following pain management techniques you have ever used. If you have never used that technique, please mark the box in the no column.						
23b. Under the column heading 23b, please mark all the techniques that were helpful in pain management. If the technique you used was not helpful, please mark the box under the no column for that technique.						
23c. Under the column heading 23c, please mark all the pain management techniques you would try if available.						

	23a.		23b.		23c.	
	Ever Used		Were Helpful		Would Try If Available	
	Yes	No	Yes	No	Yes	No
Acupuncture	<input type="checkbox"/>					
Behavioral Health	<input type="checkbox"/>					
Bio Feedback	<input type="checkbox"/>					
Chiropractor	<input type="checkbox"/>					
Massage Therapy	<input type="checkbox"/>					
Meditation	<input type="checkbox"/>					
Occupational Therapy	<input type="checkbox"/>					
Pain Education	<input type="checkbox"/>					
Pain Medication	<input type="checkbox"/>					
Physical Therapy	<input type="checkbox"/>					
Yoga	<input type="checkbox"/>					
Other	<input type="checkbox"/>					

24. What are your expectations with respect to pain management? (**"X"** THE ONE BOX THAT IS CLOSEST TO YOUR OPINION)

- Pain free
- Pain reduction
- Tolerable pain that allows me to perform my activities
- I have no expectation that my pain will improve
- Other

	Completely Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Completely Satisfied
25. Overall, how satisfied are you with your current pain management?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

26. Do you have any other comments regarding your pain management?

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	Completely Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Completely Satisfied
27. How satisfied are you with your healthcare provider(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Overall, how satisfied are you with the medical care you are receiving?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about other aspects of your stay in the Army's Warrior Transition Unit Program, please rate how much you agree or disagree with each of the following. Please mark an "X" in the box for the answer that is closest to your opinion.

	Completely Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Completely Agree
29. My Platoon Sergeant/Squad Leader spends the time talking with me that my problem requires.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. My Platoon Sergeant/Squad Leader listens carefully to my concerns and questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>Completely Disagree</u>	<u>Somewhat Disagree</u>	<u>Neither Agree nor Disagree</u>	<u>Somewhat Agree</u>	<u>Completely Agree</u>
31. My Platoon Sergeant/Squad Leader understands my problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. My Platoon Sergeant/Squad Leader treats me with courtesy and respect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. My Platoon Sergeant/Squad Leader is actively involved with my comprehensive transition plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. My living quarters are satisfactory.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Transportation for my medical care has been adequate to meet my needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Any financial issues were handled to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

37. Thinking about your orders and how they were handled, which statement below best describes your experience? (**"X"** THE ONE BOX THAT IS CLOSEST TO YOUR OPINION)

I had no issues with my orders .....

➔ Skip to Qu 40.

There were some issues with my orders, but these issues were handled to my satisfaction ..

➔ Skip to Qu 40.

There were issues with my orders, and those issues were not handled to my satisfaction .....

38. What type of order did you have issues with? (**"X"** THE ONE ORDER THAT CAUSED YOU THE GREATEST PROBLEM)

- |   |   |
|---|---|
| <input type="checkbox"/> MRP-E orders (NGB and USAR Soldiers only)          | <input type="checkbox"/> Transfer orders (to CBWTU or WTU closest to support network) |
| <input type="checkbox"/> Initial MRP orders (NGB and USAR Soldiers only)    | <input type="checkbox"/> PCS orders to new assignment                                 |
| <input type="checkbox"/> MRP Extension (NGB and USAR Soldiers only)         | <input type="checkbox"/> REFRAD orders (NGB and USAR Soldiers only)                   |
| <input type="checkbox"/> ADME (NGB and USAR Soldiers only)                  | <input type="checkbox"/> Retirement orders  |
| <input type="checkbox"/> MRP-2 orders (NGB and USAR Soldiers only)          | <input type="checkbox"/> Separation orders  |
| <input type="checkbox"/> Assignment Instructions – Return to Duty (AC only) | <input type="checkbox"/> Non Medical Attendant orders                                 |
| <input type="checkbox"/> Return to Duty (NGB and USAR Soldiers only)        | <input type="checkbox"/> Other (please specify)                                       |

39. What was the nature of the problem with your orders? (**"X"** ALL THAT APPLY)

- |  |  |
|--|--|
| <input type="checkbox"/> Timeliness        | <input type="checkbox"/> Transfer Location               |
| <input type="checkbox"/> Break in service  | <input type="checkbox"/> AI (choice of next assignment)  |
| <input type="checkbox"/> Duration (length) | <input type="checkbox"/> Accuracy (administrative error) |
| <input type="checkbox"/> Report Date       | <input type="checkbox"/> Other (Please explain)          |

Effective Date

<u>Completely Dissatisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Neither Satisfied nor Dissatisfied</u>	<u>Somewhat Satisfied</u>	<u>Completely Satisfied</u>
------------------------------------	----------------------------------	---	-------------------------------	---------------------------------

- |   | <u>Completely<br/>Dissatisfied</u> | <u>Somewhat<br/>Dissatisfied</u> | <u>Neither<br/>Satisfied nor<br/>Dissatisfied</u> | <u>Somewhat<br/>Satisfied</u> | <u>Completely<br/>Satisfied</u> |
|---|------------------------------------|----------------------------------|---|-------------------------------|---------------------------------|
| 40. Overall, how satisfied are you with the Army's Warrior Transition Unit Program?   | <input type="checkbox"/>           | <input type="checkbox"/>         | <input type="checkbox"/>                          | <input type="checkbox"/>      | <input type="checkbox"/>        |
| 41. Do you have any comments about your Medical Care, your Case Management, your Healthcare Providers, or the Warrior Transition Unit Program in general? |                                    |                                  |   |                               |                                 |

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Thank you very much for your opinions.  
Please return this survey today in the enclosed postage-paid envelope.  
Attn: AMEDD Survey Center  
P.O. Box 5033  
Chicago, IL 60680

### 3. CURRENT AND BEST PRACTICES AMONG FEDERAL & CIVILIAN AGENCIES

In response to the requirement to assess current best practices in the public and private sector concerning the prescription, distribution, and management of medications, and the associated coordination of care, DoD has identified what appear to be recognized public and private sector best practices, as discussed more fully below.

Best practices in medication safety are continuously evolving. Among these are the Joint Commission (JC) publications, [A Guide to Medication Management Standards](#) and [Medication Reconciliation Handbook](#); The Institute for Safe Medication Practices, [Medical Errors: Causes, Prevention, and Risk Management](#); The VA/DoD Clinical Practice Guideline for Management of Opioid Therapy for Chronic Pain; and the National Guidelines Clearinghouse Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain, derived from the American Pain Society. In April 2011, the Agency for Healthcare Quality and Research Innovations site profiled successful medication safety initiatives from the private sector. The DoD CD-Mart and Pharmacy Data Transaction Service, and especially the WTU P-MART are useful tools when they are integrated into a relationship-based care context (consistent provider, pharmacist, case manager) with the patient and family member (or significant other) involved in the patient's care (medical home concept).

Medication management practices have been identified by major patient safety advocacy organizations, and a variety of methods to implement safe medical management in systems of care have been developed by the civilian as well as the military sector. The major health care advocacy institutions in the United States have become aware of the seriousness of medication

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errors of omission or commission. Among these institutions are: the Institute for Healthcare Improvement, the Joint Commission, the Institute for Safe Medication Practices, The Agency for Healthcare Research and Quality and the World Health Organization. The DoD Patient Safety Program, operational since 2001, has found that medication errors far exceed all other errors in medicine.

According to the Institute of Medicine's *Preventing Medication Errors* report of 2006, the average hospitalized patient is subject to at least one medication error per day. This confirms previous research findings that medication errors represent the most common patient safety error. More than 40 percent of medication errors are believed to result from inadequate reconciliation in handoffs during admission, transfer, and discharge of patients. Of these errors, about 20 percent are believed to result in harm. Many of these errors would be averted if medication reconciliation processes were in place.

Medication reconciliation is a formal process for creating the most complete and accurate list possible of a patient's current medications and comparing the list to those in the patient record or medication orders. According to the JC: "Medication reconciliation is the process of comparing a patient's medication orders to all of the medications that the patient has been taking." This reconciliation is done to avoid medication errors such as omissions, duplications, dosing errors, or drug interactions. It should be done at every transition of care in which new medications are ordered or existing orders are rewritten. Transitions in care include changes in setting, service, practitioner, or level of care. This process comprises five steps: (1) develop a list of current medications; (2) develop a list of medications to be prescribed; (3) compare the medications on the two lists; (4) make clinical decisions based on the comparison; and (5) communicate the new list to appropriate caregivers and to the patient."

Recognizing vulnerabilities for medication errors, numerous efforts are underway to encourage all health care providers and organizations to perform a medication reconciliation process at various patient care transitions. The intent is to avoid errors of omission, duplication, incorrect doses or timing, and adverse drug-drug or drug-disease interactions. Since 2004, the Institute for Healthcare Improvement (IHI) has had medication reconciliation as part of its 100,000 Lives Campaign. The JC added medication reconciliation across the care continuum as a National Patient Safety Goal in 2005.

A comprehensive list of medications should include all prescription medications, herbals, vitamins, nutritional supplements, over-the-counter drugs, vaccines, diagnostic and contrast agents,

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radioactive medications, parenteral nutrition, blood derivatives, and intravenous solutions (hereafter referred to collectively as medications). Over-the-counter drugs and dietary supplements are not currently considered by many clinicians to be medications, and thus are often not included in the medication record. As interactions can occur between prescribed medication, over-the-counter medications or dietary supplements, all medications and supplements should be part of a patient's medication history and included in the reconciliation process.

The steps in medication reconciliation are seemingly straightforward. For a newly hospitalized patient, the steps include obtaining and verifying the patient's medication history, documenting the patient's medication history, writing orders for the hospital medication regimen, and creating a medication administration record. At discharge, the steps include determining the post-discharge medication regimen, developing discharge instructions for the patient for home medications, educating the patient, and transmitting the medication list to the follow-up physician. For patients in ambulatory settings, the main steps include documenting a complete list of the current medications and then updating the list whenever medications are added or changed.

However, the process of gathering, organizing, and communicating medication information across the continuum of care is not straightforward. First, there is tremendous variation in the process for gathering a patient's medication history. Second, there are at least three disciplines generally involved in the process—medicine, pharmacy, and nursing—with little agreement on each profession's role and responsibility for the reconciliation process. Third, there is often duplication of data gathering with both nurses and physicians taking medication histories, documenting them in different places in the chart, and rarely comparing and resolving any discrepancies between the two histories.

However, patient acuity may influence the process of reconciliation. For example, a patient admitted for trauma may result in cursory data gathering about the medication history. Alternatively, a patient with numerous co-morbidities may stimulate gathering a more complete list of current medications. Initially, there was no standardization of the process of medication reconciliation, which resulted in tremendous variation in the historical information gathered, sources of information used, comprehensiveness of medication orders, and how information was communicated to various providers across the continuum of care.

Medication safety became a prominent goal in the Patient Safety Community since the JC partnered with the IHI's 100,000 Lives Campaign in 2004. In 2004, the JC published its first edition of Medication Management Standards as a priority focus area. In 2005, the JC identified

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medication reconciliation as a National Patient Safety Goal. The JC's announcement called on organizations to "accurately and completely reconcile medications across the continuum of care". In 2006, accredited organizations were required to "implement a process for obtaining and documenting a complete list of the patient's current medications upon the patient's admission to the organization and with the involvement of the patient" and to communicate "a complete list of the patient's medications...to the next provider of service when a patient is referred or transferred to another setting, service, practitioner or level of care within or outside the organization." This has proved sufficiently difficult for civilian and military hospitals, that the effective date for the standard was changed to July 1, 2011. The DoD Patient Safety Center developed a Medication Reconciliation Toolkit, which is available on the Patient Safety Learning Center.

However, the PEC worked assiduously to leverage their pharmaceutical technology with AHLTA and created P-MART for the Warrior Transition Units in the Army. This is a major accomplishment in achieving true medication reconciliation as a baseline for primary prevention of errors in under and over medication and adverse interactions among medications. It is a highly complex solution that has not yet been disseminated throughout the Military Health System (MHS).

#### **4. MEDICAL CONDITIONS THAT MAY INCREASE RISK**

Medication management for wounded warriors is best viewed in the context of the occupational hazards of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Deployed personnel routinely carry heavy body armor and equipment, often over 80 pounds, which over multiple deployments increases the likelihood of musculoskeletal injury. Better body armor and helmets, combined with advanced medical care and transport in the field, improve the survival rate (greater than 90 percent) from serious injuries caused by blasts or projectiles, but increasing the frequency of limb amputations and severe nerve and musculoskeletal damage in survivors. The multiplicity and severity of wounds in OIF/OEF Service members, *coupled with cognitive impairments* associated with traumatic brain injury (TBI) and *mental health morbidity* such as post-traumatic stress disorder (PTSD) complicates pain assessment and intervention efforts and consequences.

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An analysis of medical evacuations from Operations Iraqi Freedom, New Dawn and Enduring Freedom from October 2001 – September 2010 showed that 52.2 percent were for musculoskeletal disorders, primarily for back and knee non-battle sprains and fractures. In descending order, mental disorders (adjustment reactions, mood disorders, and PTSD) and signs, symptoms and ill-defined conditions (one fourth of which were for respiratory conditions) were the next greatest categories for evacuation (MSMR Feb, 2011). As military medicine progresses with innovative life-saving measures, more of those in combat arms survive their injuries.

The warrior culture tends to be rooted in “no pain, no gain”, stoic acceptance of suffering that can inhibit a member to ask for help and which results in minor acute issues becoming harder to manage as chronic conditions. VA providers have noted that the complexity of chronic pain management is often beyond the expertise of a single practitioner, especially for patients who pain problems are complicated by PTSD, combat injuries and substance abuse.

## **5. MITIGATION OF RISK**

Multipronged approaches are underway to mitigate the risk of medication management for wounded members of the Armed Forces. Examples of the efforts used by BAMC’s use of the Triad of Care to ensure effective communication with the patient and family, the designated team coordinating the care with the patient, and the innovative WTU P-MART shows an integration of the biopsychosocial model with patient and family engagement, continuity of care, and inclusion of the expertise of pharmacists to achieve solid outcomes. WRAMC recruited a pain specialist to help coordinate their pain management efforts with the interdisciplinary team with excellent results. Both centers used the innovations developed by the DoD PEC, CD-Mart, the WTU P-MART and the PDTS initiatives. The innovative use of regional anesthesia has been an effective rapid response close to the time of injury on the battlefield that addresses pain effectively and helps prevent chronic pain medications. The engagement of pharmacists in the treatment team helps sharpen the focus on the dangers of concurrent use of psychotropic medications with opiate analgesics. The creative use of integrative medicine also supports the healing process and assists patients from dependency on medication to developing tools for increased self-care, self-responsibility, and self-awareness. This transformation from patient to resilient active duty member is the desired outcome of these initiatives.

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## SUMMARY

The findings, conclusions and other recommendations made for the analgesic/pain medication class of drugs can be similarly applied to the other classes of medications used in wounded warriors although we have not duplicated or reiterated those recommendations in the body of the report. The Nation is faced with a serious problem of overuse of prescription medications for pain or nonmedical purposes. Our members of the Armed Forces come from this culture of relatively easy access to controlled drugs. However, the Department has made important strides in addressing pain management and fostering optimum recovery from war wounds and injuries. Among the accomplishments are:

- The use of regional anesthetic techniques in the battlefield – to get to the source of the pain more rapidly than traditional methods.
  - Use of the biopsychosocial model with an interdisciplinary team that includes the pharmacist, PCP, nurse, patient, family/family surrogates (squad leaders) as depicted in the description of the BAMC and WRAMC that operationalizes the Community Reinforcement Approach and enables the patient to select non-medication modalities to achieve optimum health and wellness.
  - The ongoing work to integrate psychosocial expertise within primary care.
  - The research and recognition of the impact of comorbid diagnoses of depression, anxiety, substance abuse and post-traumatic stress disorder during recovery from physical trauma.
  - The use of the Medical Home concepts to ensure constancy of the PCP and affiliated team members to ensure patient-centeredness and medication awareness.
  - The work of the Pharmacoeconomic Center is its development of the Controlled Drug Management Analysis and Reporting Tool (CD-MART); the MTF, Civilian Based and Retain Medical Restriction Programs; the 1-1-1 Program; and the Prescription Medication Analysis and Reporting Tool (P-MART) which enables electronic medication reconciliation, an essential feature for medication safety.
  - The ongoing commitment to research of complementary, alternative, and integrative therapies to alleviate pain and suffering combined with the Stepped Care model to treat pain aggressively and comprehensively to ensure optimum recovery without dependence on controlled substances.
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- The continuation of the Pain Management Task Force continues information sharing and dissemination of information.
  - The ongoing commitment to redistribute physical therapists and osteopathic providers in brigade locations to prevent injury or to treat injuries without delay.
  - Use of the Pain Management Task Force matrix to recognize and prevent dependence on opioids.
  - Use of the Medication Therapy Management with active use of pharmacists as part of the core primary care team.
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