War on Pain: Research Programs by the Defense & Veterans Center for Integrative Pain Management (DVCIPM)

Welcome and Introductions

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Session
September 14, 2012, 10:45 to 11:45AM

Learning Objectives

• Describe interdisciplinary past and ongoing programs of research conducted by the DVCIPM across transitions of care from the battlefield to military and Veterans Administration (VA) healthcare facilities
• Highlight important research findings that have informed pain assessment and treatment practices with combat-injured service member and Veteran populations - A snapshot
• Demonstrate successful partnerships that have advanced military pain science and team science

Defense and Veterans Center for Integrative Pain Management: DVCIPM

Kyung “Nancy” Kwon, CRNP, MNS, Henry Jackson Foundation & Defense & Veterans Center for Integrative Pain Management (DVCIPM)

Rosemary C. Polomano, PhD, RN, FAAN

Mission of DVCIPM

• Seek to revolutionize pain management for warriors on the battlefield and home
• Conduct clinical research efforts using holistic, multidisciplinary, and multimodal methods in acute and chronic pain management

Disclaimer

The views expressed in this presentation are those of the authors and do not reflect the official policy of the Department of Army, Department of Defense, or U.S. Government.

DVCIPM

• Collaboration with The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. (HJF) and the Telemedicine and Advanced Technologies Research Center (TATRC)
Research At Point of Injury in the Battlefield

Research in the Battlefield

- A Survey of Military Healthcare Professionals’ Perceptions of an Acute Pain Service at Camp Bastion, Afghanistan
- Impact of an Acute Pain Service on Pain Outcomes with Combat-Injured Soldiers at Camp Bastion, Afghanistan


Investigators

Principal Investigator: COL Chester “Trip” Buckenmaier III, MD, Defense & Veterans Center for Integrative Pain Management (DVCIPM), Walter Reed National Military Medical Center, Bethesda, MD

Co-Investigators:
- COL Peter Mahoney, MD, Royal Centre for Defense Medicine, Birmingham Research Park, Birmingham, UK
- Rosemary C. Polomano, PhD, RN, FAAN Associate Professor of Pain Practice, University of Pennsylvania School of Nursing, Philadelphia, PA

Research Coordinator: Kyung “Nancy” Kwon, CRNP, MNS, Henry Jackson Foundation & DVCIPM

Camp Bastion, Afghanistan

- British military base in Afghanistan, constructed in 2006
- Helmand Province, southern Afghanistan
- Inhospitable/dangerous region
- Largest overseas British military installation since World War II
- > 2000 personnel

Acute Pain Service Far Forward

- US Army Acute Pain Service deployed to Camp Bastion, Afghanistan during 23 April to 13 July 2009
- Support British efforts to implement APS at CSH
- What did health professionals think of the APS?

 Soldiers asked to quantify Pain Intensity and Pain Relief at 3 different time points

RECALL of pain intensity and pain relief at point of injury - prior to arriving at CSH (within 0 to 3 hrs of injury)
Post primary analgesic intervention (4 to 6 hrs after injury)
Prior to evacuation (7 to 24 hrs after injury)
Mean Pain Intensity and Percent Pain Relief Scores (Standard deviation bars represented)

Frequencies for Responses to 5 of the Items (N=70)

Perceptions of an APS

Pain Research on Air Evacuation from Combat Support Hospitals

Landstuhl Regional Medical Center in Germany

A Qualitative Analysis of Perceptions and Experiences Following Battlefield Injury and Evacuation: A Survey of Casualties from the Iraq and Afghanistan Wars

Investigators

Principal Investigator: COL Chester “Trip” Buckenmaier III, MD, Defense & Veterans Center for Integrative Pain Management (DVCIPM), Walter Reed National Military Medical Center, Bethesda, MD

Co-Investigators:
- Rosemary C. Polomano, PhD, RN, FAAN
- Christine Rupprecht, RN, MSN, Clinical Nurse Specialist, Army Regional Anesthesia Pain Management Initiative

Research Coordinator: Kyung “Nancy” Kwon, CRNP, MNS, Henry Jackson Foundation & DVCIPM
Pain and Levels of Emotion
Recall Outcomes During Transport

Worse

Better

Average pain

Worst pain

Anxiety

Distress

Worry

5.3

6.8

3.5

3.6

4.1

Pain Intensity Levels at LRMC

Worse

Better

All injured soldiers (N=110)

Pain right now

Average pain

Worst pain

Least pain

3.4

4.0

7.4

2.3

Research on the Home Front: Walter Reed National Military Medical Center (WRNMMC)

- Sciatic EXpression Identification (SEXI)
- Veteran Injury Pain Research, Molecular Subtypes of Chronic Pain Syndromes (VIPER)
- Regional Anesthesia Military Battlefield Pain Outcomes Study (RAMBPOS)
- Defense and Veterans Pain Rating Scale Validation Study-DVPRS

Investigators

Principal Investigator: Lisa Bleckner, MD, Henry Jackson Foundation, Defense & Veterans Center for Integrative Pain Management (DVCIPM), Walter Reed National Military Medical Center (WRNMMC), Bethesda, MD
Co-Investigator: COL Chester “Trip” Buckenmaier III, MD
Research Coordinator: Megan Vaughan, RN, BSN, Henry Jackson Foundation & DVCIPM
Research Nurses:
- Hisani Edwards, RN, BSN, Henry Jackson Foundation, DVCIPM, WRNMMC
- Nakeyia Rhodes, RN, BSN, Henry Jackson Foundation, DVCIPM, WRNMMC
- Joni Mills, RN, BSN, Henry Jackson Foundation, DVCIPM, WRNMMC

Biomarker for Pain Study at Walter Reed

- SEXIT-Sciatic EXpression Identification of differential protein on traumatized versus nontraumatized human nerve
- 4 minute video

Biomarker for Pain Study at Walter Reed

- VIPER: Veteran Injury Pain Research, Molecular Subtypes of Chronic Pain Syndromes
Investigators

**Principal Investigator:** Andrew Shaw, MD, FRCA, FCCM Associate Professor, Department of Anesthesiology, Duke University Medical Center, Durham Veterans Affairs Medical Center, Durham, NC  
**Co-Investigators:**  
- Thomas Buchheit MD, Associate Professor Department of Anesthesiology, Duke University Medical Center, Durham Veterans Affairs Medical Center, Durham, NC  
- Martin Arthur Moseley III, PhD, Associate Research Professor, Director of Proteomics, Institute for Genome Science & Policy, School of Medicine, Duke University  
- David B. MacLeod, MB BS, FRCA, Assistant Professor, Department of Anesthesiology, Duke University Medical Center  
- COL Chester "Trip" Buckenmaier III, MD  
**Research Coordinator:** Megan Vaughan, RN, BSN, Henry Jackson Foundation & Veterans Center for Integrative Pain Management (DVCIPM)  
**Research Nurses:** Mary McDuffie, RN, BSN, Henry Jackson Foundation, Defense & DVCIPM, Walter Reed National Military Medical Center, Bethesda, MD

Complimentary Alternative Medicine (CAM) Research at Walter Reed

- Evaluation of Restorative Exercises and Strength Training for Operational Resilience and Excellence (RESTORE) for pain control: a randomized controlled trial

**Investigators**

- **Principal Investigator:** MAJ Laura McGhee, PhD, Defense & Veterans Center for Integrative Pain Management (DVCIPM)  
- **Co-Investigator:** COL Chester "Trip" Buckenmaier III, MD  
- **Research Coordinators:**  
  - Megan Vaughan, RN, BSN, Henry Jackson Foundation & DVCIPM  
  - Audrey Schoomaker, RN, BSN, Henry Jackson Foundation & DVCIPM

Effects of Reiki on Neuropathic Pain

**Principal Investigator:** COL Petra Goodman, PhD, RN  
**Co-Investigators:**  
- Rosemary C. Polomano, PhD, RN, FAAN  
- MAJ Meriya Throop, PhD, CRNP, Center for Nursing Science and Clinical Inquiry, Walter Reed National Military Medical Center, Bethesda, MD  
**Research Coordinator:** Kyung "Nancy" Kwon, CRNP, MNS, Henry Jackson Foundation & DVCIPM  
**Consultants:**  
- Anne Vitale, PhD, RN AHN-BC, Project Facilitator and Reiki Research Consultant, Center for Reiki Research  
- Elise Brownell, PhD, Program Director and Consultant, Center for Reiki Research

This project is sponsored by the Tri-Service Nursing Research Program, Uniformed Services University

The Regional Anesthesia Military Battlefield Pain Outcomes Study (RAMBPOS)

Megan Vaughan, RN, BSN  
Research Manager, Henry M. Jackson Foundation & Defense and Veterans Center for Integrative Pain Management (DVCIPM)  
Rockville, MD

Rosemary C. Polomano, PhD, RN, FAAN

**Investigators**

**Principal Investigator:** Rollin M. Gallagher, MD, MPH, Pain Medicine Center, Philadelphia VA Medical Center and Department of Psychiatry, University of Pennsylvania, Philadelphia, PA  
**Co-Investigators:**  
- COL Chester "Trip" Buckenmaier III, MD  
- Rosemary C. Polomano, PhD, RN, FAAN  
- John T. Farrar, MD, PhD, and Wen Guo, PhD, Center for Epidemiology and Biostatistics (CCEB), University of Pennsylvania  
- David Oslin, MD, Philadelphia VA Medical Center and Department of Psychiatry, University of Pennsylvania, Philadelphia, PA  
**Research Staff:**  
- Yolanda S. Williams, MPH, Philadelphia VA Medical Center  
- Kyung H. Kwon, MSN, CRNP, Henry Jackson Foundation, DVPMI, WRAMC  
- Holly Luu, BA, Philadelphia VA Medical Center  
- Shawn Fernandes, BS, CCEB, University of Pennsylvania
Specific Aims

The specific aims of this investigation are to:

1. Systematically quantify and characterize the short-term and long-term effects of traumatic extremity injuries during combat on post-injury pain, chronic pain, health-related quality of life (HRQoL), functional status, social reintegration (e.g., level of disability) and psychological adjustment (PTSD and depression) in a soldier cohort injured in the Afghanistan and Iraq wars.

2. Evaluate the effectiveness of early aggressive (within 72 hours of the injury) advanced regional anesthetic interventional techniques, including one or more nerve blocks or infusions, continuous peripheral nerve block, or other specialized procedures on outcomes listed above.

Methods

Design: A prospective, longitudinal repeated measures design was used to obtain participant-reported outcomes collected over a 2-year period.

Sample:
- Eligible participants:
  - Sustained a combat injury to one or more extremities in the OEF/OIF conflicts
  - Required initial U.S. hospitalization at the Walter Reed Army Medical Center (WRAMC), Brooke Army Medical Center, or National Naval Medical Center
  - Soldiers were excluded for major head trauma and diagnosis of moderate or severe traumatic brain injury (TBI)
- Data are presented for a total of cohort of 277 patients at various time points during the study

Procedures:
- Participants were recruited at the WRAMC by research nurses or by phone contact at the Philadelphia VA Medical Center by research staff
- Baseline data (Time 0) were collected immediately following acute care hospitalization for initial combat injury when rehabilitation was initiated
- Data collection occurred at regular intervals and continued up to 2 years post-acute care

Validation of the Defense & Veterans Pain Rating Scale (DVPRS)

Hisani Edwards, ADN, BSN, RN-BC
Acute Pain Nurse Manager
Defense and Veterans Center for Integrative Pain Management (DVCIPM)
Rockville, MD

Objectives

- Background on developing DVPRS
- DVPRS v.1.0
- DVPRS v.2.0
- Study validating DVPRS was conducted at the former Walter Reed Army Medical Center (WRAMC)
- Methods and Results
- Future Implementation

Polling Question

How many of you feel that your current pain tools for assessing pain are clinically meaningful?
Introduction

• In 2008, the Army Surgeon General chartered a 22-member Pain Task Force charged with examining pain assessment and standardizing pain practices across the Department of Defense (DoD) and Veterans Health Administration (VHA) settings.


DVPRS

• Enhance the existing NRS with visual cues and word descriptors to anchor pain ratings with perceptual experiences and limitations imposed by pain
• Provide supplemental questions on general activity, mood, level of stress and sleep to help quantify the impact of pain

DVPRS Version v2.0

• Due to copyright restrictions, a new faces scale has been designed for the sole purpose to be used into the DVPRS v2.0
• Pain experts made recommendations on the faces
• Focus groups from in and out patients at WRNMMC

Validation of DVPRS v1.0

Principal Investigator: COL Chester “Trip” Buckenmaier III, MD, Defense & Veterans Center for Integrative Pain Management (DVCIPM), Walter Reed National Military Medical Center, Bethesda, MD
Co-Investigators:
• Rollin M. Gallagher, MD, MPH, Pain Medicine Center, Philadelphia VA Medical Center and Department of Psychiatry, University of Pennsylvania, Philadelphia, PA
• COL Kevin T. Galloway, BSN, MHA, Colonel, Chief of Staff, Army Pain Management Task Force, Office of the Army Surgeon General, Alexandria, Virginia
• Rosemary C. Polomano, PhD, RN, FAAN
Research Coordinator: Kyung “Nancy” Kwon, CRNP, MNS, Henry Jackson Foundation & DVCIPM
Research Nurse: Mary McDuffie, RN, BSN, Henry Jackson Foundation, & DVCIPM

Study Design

• Prospective, Single Measure Design

• Sample and Settings
  – 350 active duty or retired military service members at Walter Reed Army Medical Center

  2. Minute movie depicting how the study was conducted will be included, including the scramble

Participant Characteristics

• Demographics
  – Mean age: 44.22 ± 17.7 yrs. (range 19 to 92)
  – Male: 82%
  – Caucasian: 67%
  – Married: 62%
  – Active Duty: 67%
  – College Level Education or higher: 53%
Where are the current results taking pain measurement research?

- Initial purpose to standardize pain assessment in the military community
- Currently in the preliminary phase of validation
- Further is validation required on women, veterans, older adults, TBI and PTSD
- Plans are underway to validate DVPRS in the VA Medical Centers

Polling Question

How many of you feel that this tool could be useful in your clinical setting?

Closing Message

- “Pain is what the patient says it is...If only it was that easy”
- We have a prevailing urgency based on this widely accepted fact that military service members have high resilience for pain, and may underestimate pain


Presenter Bios

Rosemary C. Polomano, PhD, RN, FAAN

Rosemary C. Polomano, PhD, RN, FAAN, received her BSN and MSN degrees from the University of Pennsylvania in Philadelphia, Pennsylvania. After receiving her PhD degree from the University of Maryland in Baltimore, Maryland, she completed her postdoctoral fellowship training in pain research at the MCP-Hahnemann University in Philadelphia. Dr. Polomano is currently an Associate Professor of Pain Practice at the University of Pennsylvania School of Nursing. Previously she was Director of Outcomes Research in the Department of Nursing at Penn State Milton S. Hershey Medical Center in Hershey, Pennsylvania. She is a member of several professional organizations and national advisory boards, task forces and guidelines panels to address national agendas for pain management, and serves on several scientific grant review panels. Her research focuses on instrument development and testing of patient-reported outcome measures, advancing the translation of pain science to practice, and care of patients with cancer-related pain and military service members and Veterans experiencing pain from combat-related injuries. She has lectured extensively throughout the country and internationally on pain-related topics including the assessment and management of acute and chronic pain. Dr. Polomano has published over 70 peer-reviewed journal articles and 30 book chapters.

Kyung “Nancy” Kwon, CRNP, MSN

Kyung “Nancy” Kwon, CRNP, MSN received her BSN from Villanova University and MSN from University of Pennsylvania. While in graduate school, she worked as a research assistant for a NIH funded research study at the University of Pennsylvania School of Nursing and as a research coordinator for an industry sponsored study at the Hospital of University of Pennsylvania. She worked in private practice as a women’s health nurse practitioner in Manhattan then at Planned Parenthood of Metropolitan Washington in Washington DC. During this time, she was an adjunct clinical instructor for University of Pennsylvania and Johns Hopkins University School of Nursing for nurse practitioner students. Since 2006, she joined the Defense and Veterans Center for Integrative Pain Management which is a research organization focusing on pain management for military service members, dependents and veterans. She manages a large portfolio of research studies conducted out of Walter Reed National Military Medical Center, Womack Army Medical Center and Madigan Army Medical Center.

Megan Vaughan, RN

Megan Vaughan, RN is a Research Manager with the Defense and Veterans Center for Integrative Pain Management (DVCIPM). Following a fulfilling career in fundraising as the Director of Development for a national non-profit organization, Ms. Vaughan embarked on a new chapter by becoming a Registered Nurse in 2008. In the subsequent 4 years, Ms. Vaughan, who began her nursing career in the ICU at the George Washington University Hospital, found her home in military medicine research with the DVCIPM, a Henry M. Jackson Foundation group. She assists Clinical Research Investigators with protocol development, regulatory affairs/IRB compliance, and implementation of approved studies. Ms. Vaughan has a Bachelor of Art from Guilford College and Bachelor of Science from Ball State University.
Hisani Edwards, ADN, BSN, RN-BC

Hisani Edwards received her Associates Degree in Nursing from Norfolk State University and her BSN from Hampton University. After completing college she relocated to the DC Metropolitan area working as an intensive care unit nurse in the local area hospitals. She has 11 years of ICU experience, which also include 3 years of psychiatric nursing, and 4 years of fulltime acute pain nursing. She has been employed DVCIPM, Defense & Veterans Center for Integrative Pain Management for approximately 4 years. Within that time she obtained her Certifications in pain management through the ANCC. Currently, she is the Acute Pain Nurse Manager for DVCIPM. Her role involves ensuring the research mission of the organization is preserved at the current military facility that hosts the majority of the programs’ research. Maintaining continuous involvement with the inpatient clinical acute pain population carries this out. Aside from the managerial roles of her position, she also supports the implementation process of various research protocols.