Disclosures

• Phil Ullrich
  Has no financial interest or relationships to disclose

• Belinda Frazier
  Has no financial interest or relationships to disclose

• Jean Laubscher
  Has no financial interest or relationships to disclose

• CME Staff Disclosures
  Professional Education Services Group staff have no financial interest or relationships to disclose.
Learning Objectives

At the conclusion of this activity, the participant will be able to:

A. Describe methods implemented by the VA to collect, analyze, and utilize outcomes to improve patient care:

- Structure and operations of the outcomes program
- Innovative information technology infrastructure
Outcomes in the VA SCI/D System of Care: Collection, Analysis, Utilization

Phil Ullrich
Jean Laubscher
Pam Carter
Belinda Frazier
Barry Goldstein
Margaret Hammond
Rob Hendricks
Changing Expectations due to:

Advances in medical treatments....

.... and broader changes:

• Rehabilitation Act in 1973

• Americans with Disabilities Act 1990

• World Health Organization (WHO)

• International Classification of Functioning, Disability and Health (ICF)

• International standards in outcomes tracking
Describe methods implemented by the VA to collect, analyze, and utilize outcomes to improve patient care:

- Innovative information technology infrastructure
- Structure and operations of the outcomes program.
Post-WWII Era Beginnings
The mission of the spinal cord injury and disorders (SCI/D) program is to promote the health, independence, quality of life, and productivity of individuals with SCI/D throughout their lives.

Critical needs:

- Data-driven continuous quality improvement programs
- Nationally coordinated outcomes data
- Internal benchmarking
Need for Internal Benchmarks

Older

49% over age 65

Sicker

Compared to Age-Matched Americans

• 3 Additional Non-Mental Health Diagnoses
• 1 Additional Mental Health Diagnosis

Poorer

~ 70% with annual incomes < $26,000
~ 40% with annual incomes < $16,000
Development of VA SCI/D Outcomes

1996: SCI/D data registry

2001: Outcomes software system (SCIDO)

2002: Early Benchmarking efforts (11 SCI centers)

2008: National outcomes program established
Outcomes Project Mission

To provide a national, validated, risk-adjusted, outcomes-based program to measure and enhance the quality of rehabilitation and healthcare provided to Veterans with SCI/D
To provide a national, validated, risk-adjusted, outcomes-based program to measure and enhance the quality of rehabilitation and healthcare provided to Veterans with SCI/D
1) Standardize the use of reliable and valid outcome and program evaluation measures

2) Utilize risk-adjusted outcomes to understand care, resources, variability, quality, and the impact of SCI/D

3) Develop outcomes-based policy development, monitoring, and quality improvement programs.
Conceptual Model: WHO-ICF

- Health condition
  - Body Functions and Structures
    - Environmental Factors
  - Activities
  - Participation
    - Personal Factors
Outcomes Settings and Sources

Inpatient Rehabilitation

**START**
- ASIA
- FIM™
- Satisfaction with life (SWLS)

**FINISH**
- ASIA
- FIM™
- D/C destination

**3-Month Follow-up**
- FIM™
- Participation (CHART-SF)
- SWLS
- Health Status (SF-8™)

Also collected: Age, gender, education, etiology, length of stay

Calculated: FIM Gain, FIM Efficiency, Goal attainment, Neurological stability, and more.
Outpatient Rehabilitation

**Outcomes Settings and Sources**

- **START**
  - FIM™ + FAM
  - Participation (CHART-SF)
  - Satisfaction with life (SWLS)
  - Health Status (SF-8™)
  - Medical issues (DUSOI)

- **FINISH**
  - FIM™ + FAM
  - CHART-SF
  - SWLS
  - SF-8™

- **3-Month Follow-up**
  - FIM™ + FAM
  - CHART-SF
  - SWLS
  - SF-8™
Annual Evaluations

ASIA

Overall Health
Independence
Depression

Check Your Health tool

Education, employment, bladder drainage
Annual Evaluations: Long Term Care

ASIA

CYH Tool: Overall Health, Independence, Depression

Education, employment, bladder drainage

Pain: Short Form McGill Pain Questionnaire

Depression: PRIME-MD, CES-D

Health Status (SF-8™)

Satisfaction with life (SWLS)
Outcomes coordinators at each SCI Center
- Manage data collection and quality assurance
- Lead analysis of local outcomes data
- Facilitate outcomes utilization for quality improvement

VA SCI/D Services interdisciplinary teams:
- Medicine
- Nursing
- Social work
- OT, PT, RT
- Voc Rehab
- Psychology
- Outcomes Coordinator
Questions?
Data Collection: SCIDO

Spinal Cord Injury And Disorders Outcomes (SCIDO)

The principal tool for measuring and utilizing outcomes in the VA SCI/D System of Care
Hub and Spoke Architecture
SCI/D Catchments

- **Hub**
- **Spoke**
Registration Tab

Spinal Cord Injury and Disorders Outcomes

Registration

Additional Information

- Highest Level of Education:
  - PR = Graduate or Professional School

- Occupation at Time of Injury:
  - PR = Professional and Technical

- Service-Connected for SCI: Yes

- First Seen in VA for SCI: 01/15/2001

- Amount VA is Used:
  - HF = Half VA/Half Non-VA

SCI&D Outcomes Coordinator:

- Historic SCI&D Outcomes Coordinators:
  - ZZZZZZZ 04/25/2008

SCI&D Registration and Network Status

- Registration: NS = Not SCD

- SCI Network?: Yes

- Date Changed: 04/10/2008

- Network History: Y 04/10/2008

ASIA Information

- Highest Neurological Level: T01

- Impairment Scale: A

Primary Care Information

- Primary Care VAMC: PUGET SOUND HCS (663)

- Provider: Search

Etiology Information

- Trauma: Non-Trauma

- Other Etiology

- MS Subtype

- Date of Onset: 04/02/2001

- History

Annual Evaluation Information

- Offered: 01/15/2001

- Received: 01/15/2001

- Veteran declines further Annual Evaluation

- Next Due: 01/15/2002

- AE VAMC: PUGET SOUND HCS 04/23/2008

Display Information

- Metro/Micro/Rural

- Veteran’s Home Address

- SEATTLE WA 98108

- Registration Date: 04/02/2001

- Date of Last Review: 04/25/2008

- Last Updated By: Jeanne R Laubscher

- VA SCI Status

- Date of Death

- Enrollment Priority

- Medical Centers Visited
SCIDO has been organized using World Health Organization concepts. Four health domain topics include:

- Impairments
- Medical Complications
- Activities
- Participation & Satisfaction with Life
3/9/07 PRELIM UPDATE – NO GROWTH REPORTED BY SI@
Pneumonia and Respiratory Report

Nutrition or Dietary Precautions:

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
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<td>AUG 4, 2005</td>
<td>@20:01:43</td>
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<tr>
<td>JAN 19, 2006</td>
<td>@05:16:07</td>
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<td>FEB 20, 2006</td>
<td>@17:21:20</td>
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<tr>
<td>M &amp; R 27, 2006</td>
<td>@11:51:46</td>
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Pneumonia-Related Diagnoses (# of Dxs: 25):

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<tr>
<th>Date</th>
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<tbody>
<tr>
<td>05/01/2007</td>
<td>518.31</td>
<td>ACUTE RESPIRATORY FAILURE</td>
</tr>
<tr>
<td>05/03/2009</td>
<td>518.31</td>
<td>ACUTE RESPIRATORY FAILURE</td>
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<tr>
<td>05/17/2007</td>
<td>518.31</td>
<td>ACUTE RESPIRATORY FAILURE</td>
</tr>
<tr>
<td>05/20/2007</td>
<td>518.31</td>
<td>ACUTE RESPIRATORY FAILURE</td>
</tr>
<tr>
<td>05/03/2008</td>
<td>518.31</td>
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</tr>
<tr>
<td>05/10/2007</td>
<td>518.31</td>
<td>ACUTE RESPIRATORY FAILURE</td>
</tr>
<tr>
<td>05/03/2007</td>
<td>518.31</td>
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<tr>
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<td>518.31</td>
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<td>518.31</td>
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<td>518.31</td>
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<tr>
<td>05/03/2007</td>
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</table>

Atelectasis Incidents (# of Dxs: 4):

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<th>Description</th>
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<tr>
<td>03/27/2006</td>
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<td>02/20/2006</td>
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<tr>
<td>08/04/2005</td>
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<td>PULMONARY COLLAPSE</td>
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PEG and Gastrostomy Tube ICD Codes:

<table>
<thead>
<tr>
<th>Date</th>
<th>ICD</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>05/16/2008</td>
<td>96.6</td>
<td>ENT INFUS CONC NUTRITION SUB</td>
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Supply Orders for Nasogastric and Feeding Tubes:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Code</th>
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</table>

Intubation Procedure Codes:

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<th>Description</th>
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<tr>
<td>12/21/2007</td>
<td>31600</td>
<td>INCISION OF WINDPIPE</td>
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<tr>
<td>08/22/2007</td>
<td>31622</td>
<td>DX BRONCHOSCOPE/WASH</td>
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<tr>
<td>09/13/2005</td>
<td>31622</td>
<td>DX BRONCHOSCOPE/WASH</td>
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Discharge Locations:

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<tr>
<td>MAY 16, 2008@09:39:56</td>
<td>COMMUNITY NURSING HOME</td>
</tr>
<tr>
<td>DEC 12, 2006@12:18:27</td>
<td>BOARDING HOUSE</td>
</tr>
<tr>
<td>APR 08, 2008@09:39:56</td>
<td>BOARDING HOUSE</td>
</tr>
</tbody>
</table>
Pain Assessment and Treatment Report

McGill Pain Questionnaire (SF-MPQ) Scores:

<table>
<thead>
<tr>
<th>Type</th>
<th>Score</th>
<th>Score Type</th>
<th>Record Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-PRI</td>
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<td>Start</td>
<td>01/03/2008</td>
</tr>
<tr>
<td>A-PRI</td>
<td>4</td>
<td>Start</td>
<td>01/03/2008</td>
</tr>
<tr>
<td>T-PRI</td>
<td>15</td>
<td>Start</td>
<td>01/03/2008</td>
</tr>
<tr>
<td>S-PRI</td>
<td>22</td>
<td>Interim</td>
<td>12/03/2007</td>
</tr>
<tr>
<td>A-PRI</td>
<td>8</td>
<td>Interim</td>
<td>12/03/2007</td>
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<tr>
<td>T-PRI</td>
<td>30</td>
<td>Interim</td>
<td>12/03/2007</td>
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</table>

SF-MPQ and PPI

Pain Intensity (PPI) Scores:

<table>
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<th>Score Type</th>
<th>Record Date</th>
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</thead>
<tbody>
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<td>PPI</td>
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<td>Start</td>
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<tr>
<td>PPI</td>
<td>5</td>
<td>Interim</td>
<td>12/03/2007</td>
</tr>
<tr>
<td>PAIN</td>
<td>8</td>
<td></td>
<td>08/27/2007</td>
</tr>
</tbody>
</table>

Pain Alleviation Drugs:

- NSAIDS Analgesics:
- AntiConvulsants:
- Tricyclic Analgesics:
- Opioid Analgesics:
- Local Anesthetics:
- Other Medications:

Pain Management Surgical Diagnoses:

<table>
<thead>
<tr>
<th>Date</th>
<th>ICD</th>
<th>Description</th>
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<td>04.93</td>
<td>REMOVAL PERI STIM LEAD</td>
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<td>01/03/2008</td>
<td>03.39</td>
<td>OTHER CHORDOTOMY</td>
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Management Surgical Procedures:

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<th>Description</th>
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<td>02310</td>
<td>IMPLANT SPINAL CANAL CATH</td>
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<tr>
<td>01/03/2008</td>
<td>03170</td>
<td>INCISE SPINAL CORD TRACT(S)</td>
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<tr>
<td>01/03/2008</td>
<td>64550</td>
<td>APPLY NEUROSTIMULATOR</td>
</tr>
<tr>
<td>01/03/2008</td>
<td>E0720</td>
<td>Tens two lead</td>
</tr>
</tbody>
</table>

Transcutaneous Electrical Nerve Stimulation (TENS):

Select date range. The default is five years.

Five Years  Select
Activities Tab

Spinal Cord Injury and Disorders Outcomes

Name: SPINALCORD,SIXTEEN
SSN: 000-00-0016
Date of Birth:
Education: PR
Neuro. Level: C06
Employment: UU
ASIA: C
Bladder Drainage: SC
Pressure Ulcer: 3
Next AE Due: 01/17/2007

Activities

FIM

**Assessment Forms**

- **FIM Total:**
  - Score: 36, 09/01/2005
  - Benchmark: 66

- **FIM Motor:**
  - Score: 26, 09/01/2005
  - Benchmark: 33 (30-44)

- **FIM Cognitive:**
  - Score: 10, 09/01/2005
  - Benchmark: 33

- **FAM:**
  - Score: 05/15/2004 IN
  - Swallowing: 7
  - Car Transfers: 6
  - Community Access: 5
  - Reading: 6
  - Writing: 6

- **Bowel Accident Frequency:**
  - Score: 5, 06/14/2004

- **Bladder Accident Frequency:**
  - Score: 5, 06/14/2004

- **Kurtzke EDSS Rating:**
  - Score: 4.0, 05/15/2005

- **FSS:**
  - Score: 07/01/2005
  - Sensory: 3
  - Pyr: 3
  - Csrblr: 3
  - BS: 2
  - Sens: 3
  - BB: 3
  - Vis: 2
  - Men: 3
  - Oth: 0

**FAM**

**Kurtzke FSS & EDSS**

**Accident Frequency**

**Print** **Help**
Name: SPINAL, CORD PTONE

Division: 442

Care Type: Inpatient Rehabilitation

Score: 54

Motor Subtotal: 39

Record Date: 04/01/2008

Care Start Date: 01/02/2008

Score Type: Finish

Cognitive Subtotal: 15

SSN: 000-00-1001

Birthdate: 06/01/1931 (76)

Gender: M

Marital Status: MARRIED

Ethnicity: N

Military Status: Active Military

Rehabilitation Care Start Date: 01/02/2008

Admission Class: Short Stay

Finish Date:

Check if Program is Interrupted: 

Transfer Date: 

Return Date: 

Transfer Date: 

Return Date: 

Impairment Category: SCD - Traumatic Spinal Cord Dysfunction

Impairment Group: Complete Paraplegia

Date of Onset: 11/01/2006

ASIA Impairment Scale: C

FIM Polar Graph

Self Care
- Eating: 3
- Grooming: 3
- Bathing: 3
- Dressing - Upper Body: 3
- Dressing - Lower Body: 3
- Toileting:

Sphincter Control
- Bladder Management: 3
- Bowel Management: 3

Transfers
- Bed, Chair, Wheelchair: 3
- Toilet: 3
- Tub, Shower: 3

Locomotion
- Walk, Wheelchair, Both: 3
- Stairs: 3

Communication
- Comprehension: 3
- Expression: 3
- Auditory, Visual, Both: 3

Scoring Key
- Complete Independence (timely, safely)
- Modified Independence (extra time, devices)
- Minimal Assistance (supervision, prompting)
- Maximal Assistance (full time supervision, ongoing prompting)
- Total Assistance (total dependency)

Write Progress Note
Participation and Satisfaction with Life Scale Tab

**CHART-SF Over Time**

- **Marital Status:** MARRIED
- **Number in Household:** 2
- **Metro/Micro/Rural:**

**Assessment Entry Forms**

- **CHART-SF History:** 493.0, 08/15/2006 ST, 20, 09/10/2006 FI

**Occupation and Education**

- **Employment Status:** EP = Employed Part Time
- **Education:** CG = College Graduate
- **Student?:** Yes/No: Yes, 05/15/2004, Y 05/15/2004
- **Volunteer?:** Yes/No: Yes, 05/15/2004, Y 05/15/2004
- **Current Occupation:** Electronics Technician
- **Occupation at Injury:** PR = Professional and Technical
- **School:** 0.0 Hrs/Week
- **Employment Hours:** 10.0 Hrs/Week
- **Homemaking:** 5.0 Hrs/Week
- **Home Maintenance:** 3.0 Hrs/Week
- **Recreation:** 8.0 Hrs/Week

**Attendant Care**

- **Attendant Care:** 3.0 Hrs/Day
- **Paid Attendant Care:** 2.0 Hrs/Day
- **Unpaid Attendant Care:** 1.0 Hrs/Day
- **Att. Care Interruption Dates:** 07/11/2006
- **Attendant Loss Admissions:** 07/12/2005
- **Att. Care Interruptions in 5 Yrs:** 1
- **Att. Loss Admissions in 5 Yrs:** 1

**CHART-SF Subscales**

- **Physical:** 88.0, 08/15/2006 ST
- **Cognitive:** 85.0, 08/15/2006 ST
- **Mobility:** 73.0, 08/15/2006 ST
- **Occupation:** 55.0, 08/15/2006 ST
- **Social:** 92.0, 08/15/2006 ST
- **Economic:** 100.0, 08/15/2006 ST

**SWLS Over Time**

SWLS Benchmark vs SWLS Total Score

**Print | Reset | Submit | Help**
Questions
SCI/D Services National Office Outcomes Team

- Aggregating outcomes data from SCI Centers
- Analyzing aggregated outcomes data
- Risk adjustment
- National-level outcomes reports
- Assist with analysis of individual SCI Center outcomes
System-wide training in administration and scoring

Outcomes Coordinators manage SCI Center data quality

SCIDO: Built in data checks

SCI/D Services National Office Outcomes Team performs data quality checks
Outcomes Utilization

- Collect Outcomes Data
- Analyze Data, Produce Reports
- Interpret Outcomes Reports
- Select Outcomes of Interest

SCID

Outcomes Coordinators

SCI Center Quality Improvement Teams

CARF Committees
Program Coordination

Monthly Outcomes Coordinator teleconference

Topic-focused web-based forums

Annual face-to-face training

Web-based training

Manualized training

E-mail lists
Inpatient Rehabilitation, October 2008 – July 2011
N = 854

Annual Evaluations, October 2009 – September 2010
N = 6,468

Annual Evaluations, Long Term Care, 10/2009 – 9/2010
N = 89
Population Characteristics
Inpatient Rehabilitation

- **Gender:** 96% male
- **Age:** mean = 55 years; median = 59; \( \sigma = 16 \) years; range = 18-93

\[ N = 854, \quad 10/2008 – 7/2011 \]
Inpatient Rehabilitation

Etiology

Atraumatic 48%

Traumatic - 52%
Neurological Impairments

- High Tetraplegia: 17%
- Low Tetraplegia: 17%
- Paraplegia: 29%
- ASIA D: 37%
Annual Evaluations

Population Characteristics
Annual Evaluations

Age: mean = 58 years; median = 60; \(\sigma = 12\) years; range = 20-95

Gender: 97% male

Education: 94% High School
21% College grad

Employment: 15% full or part-time

N = 6,468
**Annual Evaluations**

### Etiology

**Atraumatic - 30%**
- Other: 38%
- Arthritis: 23%
- Infection: 15%
- Tumor: 8%
- Vascular: 8%
- Syringomyelia: 3%
- Unknown: 1%

**Traumatic - 70%**
- Vehicular: 46%
- Falls: 20%
- Violence: 14%
- Other: 11%
- Sports: 9%
Neurological Impairments

Annual Evaluations

- High Tetraplegia: 9%
- Low Tetraplegia: 17%
- Paraplegia: 35%
- ASIA D: 33%
Long Term Care
Annual Evaluations

Population Characteristics
Age: mean = 65 years; median = 62; 
\( \sigma = 12 \) years; range = 34-93

Gender: 99% male

Education: 82% High School
10% College grad

Employment: 4% full or part-time

N = 89
Long Term Care
Annual Evaluations

Etiology

- Atraumatic: 15%
- Vehicular: 34%
- Falls: 23%
- Violence: 16%
- Other: 7%
- Sports: 5%
Neurological Impairments

- High Tetraplegia: 30%
- Low Tetraplegia: 26%
- Paraplegia: 33%
- ASIA D: 10%
Future Efforts

Outcomes Portfolio: Additions, deletions, revisions

Tracking and promoting outcomes utilization

SCIDO refinements
VA SCI/D Services Outcomes Program

A comprehensive SCI/D outcomes system

Outcomes collection and utilization supported by the SCIDO software system:

- Unparalleled efficiency in outcomes data collection
- Ready access to multiple levels of outcomes: patient, SCI Center (facility), region, and national
Thank you!

philip.ullrich@va.gov

jean.laubscher@va.gov

belinda.frazier@va.gov
Obtaining CME Credit

• If you would like to receive CME credit for this activity, please visit:

http://www.pesgce.com/PVAsummit2011/

• This information can also be found in the Summit 2011 Program on page 8.