Perioperative Enhanced Recovery for Major Spine Surgery
Hi! Standardize best practices.

does better/standard processes
improve outcomes

Variables - bundles

screening, optimization

Outcomes - 

LOS
Cost
Pain
Functional outcomes
PCOR
Present
02/25/15
Karen L. Posner - posner@uw.edu
Peter J. Dunbar - pjdunbar@uw.edu
John S. Bramhall - bramhall@uw.edu
David Wright - wrigh048@uw.edu
Flavia B. Consens - fconsens@uw.edu
Bala G. Nair - nairbg@uw.edu
Ian R. Slade - islade@uw.edu
Arman Dagal – dagal@uw.edu
Research group projects

Does Standardized Care Improve Outcomes?

Obstructive Sleep Apnea and Spine Surgery Outcomes

Preoperative Carbohydrate Loading and Metabolic Outcomes

Airway practice and Neurologic Outcomes in C-Spine Surgery

Patient Reported Outcomes for the Spine Surgery Population

Goal Directed Fluid Management and Major Spine Patient Is it a Financial Burden?
DATA FLAGGING & COLLECTION
Any of the following*

- 4 and more levels
- Revision surgery 3 and more levels
- Anteroposterior surgery
- Planned staged surgery
- Expected blood loss >1 liter or >1/3 of total pt’s blood volume
- Expected surgery duration 6 hours and more
- Corpectomy
- Pedicle Subtraction Osteotomy (w/o pre-operative embolization)
- Revision anterior lumbar surgery

*Attending surgeon’s input required
### HMC Whiteboard - View Only

#### Edit Anesthesia Staff

**Today's Message:**
CRASH CRANI: 8-GEN: 16/EVAR: 17/AIC: DR. OLIVAR #47223 / BREAKS: CUDEJKOVA*, LOGUE, WOLKEN, BOSWELL (NEU #47170), GILMER* (SP. #47172), THOMPSON* (HAND #47164), WEINHEIMER*, INGALLS, MITCHELL*, PEREZ

<table>
<thead>
<tr>
<th>OR</th>
<th>Length</th>
<th>In Room</th>
<th>MRN</th>
<th>Unit</th>
<th>Pt Name</th>
<th>Age</th>
<th>Sex</th>
<th>Procedure</th>
<th>Surgical Staff</th>
<th>Anesthesia Staff</th>
<th>Scrub/Circ</th>
<th>Break</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>3.36</td>
<td>07:22</td>
<td>I</td>
<td>7E*</td>
<td></td>
<td>46 y</td>
<td>F</td>
<td>ORIF PIBULA, LEFT REVISION ROOT EX-FIX, LEFT</td>
<td>BERNACCHI</td>
<td>DAGAL BULLER 1845</td>
<td>CHRIS T* JENA*</td>
<td>P</td>
<td>SUPINE (PILOW RAMP, MIDMARK)</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>3.17</td>
<td>14:18</td>
<td>I</td>
<td>ER&gt;7*</td>
<td></td>
<td>48 y</td>
<td>M</td>
<td>ENDOSCOPIC TRANSMANAL TRANSPHENODAL FOR TUMOR RESECTION</td>
<td>FERRARA, OXFORD, ENE</td>
<td>SHARMA 5 BYRNE 1745</td>
<td>EDWIN* / KATIE M 2130</td>
<td>P</td>
<td>STEALTH NOT INTUBATED SENT FOR PT/PICK REG 1200 / MD REQ T/F RM 2</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>6.30</td>
<td>10:32</td>
<td>I</td>
<td>7E*</td>
<td></td>
<td>59 y</td>
<td>M</td>
<td>C7-T8 PSIS/L3 COSTOTRANVERSECTOMY</td>
<td>SHIATSUKI</td>
<td>NOVAK-&gt;SOUTER 2 NELSON 1645</td>
<td>CURTIS JF / ESTALLA*</td>
<td>P</td>
<td>SENT FOR PT/PICK 0002</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>2.00</td>
<td>7:30</td>
<td>I</td>
<td>AM</td>
<td></td>
<td>29 y</td>
<td>F</td>
<td>OPEN OSTEONCHORDAL GRAFTING TALUS/ REPAIR PERONEUS BREVIS, GASTROC RECESSION, PLATE ERI EXT FIX, LEFT</td>
<td>BRAGE</td>
<td>NOVAK-&gt;SOUTER 2 NELSON 1645</td>
<td>THAYER* (DAN) / CATHY 1141</td>
<td>P</td>
<td>FRESH TALUS / ETA 16:30</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>1.50</td>
<td>07:17</td>
<td>I</td>
<td>2W*</td>
<td></td>
<td>19 y</td>
<td>M</td>
<td>BIOPSY TEMPORAL ARTERY</td>
<td>SINGH, GARLAND</td>
<td>NANDATE 4 BISCIA</td>
<td>DAMON* AMBER*</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>6.00</td>
<td>14:32</td>
<td>I</td>
<td>AM&gt;</td>
<td></td>
<td>65 y</td>
<td>F</td>
<td>STAGE 1 OF 2-T10 PSLV PSIS L2-7 T-PFLPS</td>
<td>BRANSFORD</td>
<td>DAGAL TISO-ERMAN 1245</td>
<td>JONATHAN JOEL 2130</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1.96</td>
<td>14:17</td>
<td>I</td>
<td>6EHI*</td>
<td></td>
<td>50 y</td>
<td>M</td>
<td>WASHOUT DEBRIEFMENT, RIGHT LOWER EXTREMITY, POSS WOUND VAC CHANGE (DR. CHANDRA)</td>
<td>CHANDRA, SYKES</td>
<td>OLIVAR 2 LEOEFL 1845</td>
<td>SCHUMP* / ALYSSA</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>6.00</td>
<td>08:23</td>
<td>I</td>
<td>AM</td>
<td></td>
<td>86 y</td>
<td>M</td>
<td>STAGE 1 OR 2 PSIS/L5-6 PSIS</td>
<td>BRANSFORD</td>
<td>BENTOV 6 JILLIAN 5</td>
<td>SOUTHALLA* JEN*</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>8.00</td>
<td>07:40</td>
<td>I</td>
<td>AM*</td>
<td></td>
<td>65 y</td>
<td>F</td>
<td>LEROT I MAXILLOTMN APPROACH TO REMOVE TUMOR FAT ATION</td>
<td>SEKHAR, MOE, LAW</td>
<td>SHARMA 5 KHRISAND*</td>
<td>JOHNSON / EMMILY</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>2.06</td>
<td>14:09</td>
<td>I</td>
<td>6E*</td>
<td></td>
<td>51 y</td>
<td>M</td>
<td>IO RIGHT BUTTOCK WOUND ESA PSLV PSIS OR IPP OR PVC ORCING</td>
<td>FIROZABADI, SCHENKER, TOOGOOD</td>
<td>KOTLARZCYK-&gt;NANDATE 4 ALAMANDER-WOLNY 1845</td>
<td>KINZEL* / BERNARD1</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>3.06</td>
<td>11:07</td>
<td>I</td>
<td>9MB*</td>
<td></td>
<td>58 y</td>
<td>M</td>
<td>ORIF SUPRACONDYLAR/INTERCONDYLAR FEMUR FX WITH ALLOGRAFT POSS ORIF PATELLAR</td>
<td>HENLEY, HOLTZMAN</td>
<td>OLIVAR 2 GREEN</td>
<td>CHRIS P11 / OLIV1</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>2.06</td>
<td>12:32</td>
<td>I</td>
<td>3E*</td>
<td></td>
<td>38 y</td>
<td>M</td>
<td>STSG TO GENITALIA</td>
<td>WESSELS, HASDORN</td>
<td>CHEMISAN 3 WINTZICZ 1845</td>
<td>FRAN11 / ASHALEY*</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>1.29</td>
<td>11:32</td>
<td>I</td>
<td>5EH OBS*</td>
<td></td>
<td>67 y</td>
<td>F</td>
<td>1D CION ABSENCE (GEN SUG)</td>
<td>MCINTYRE, THORSTON DRAKE</td>
<td>CHEMISAN 3 BRYCE 1845</td>
<td>BRITTEN* JESSA*</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>0.45</td>
<td>13:36</td>
<td>I</td>
<td>OP*</td>
<td></td>
<td>67 y</td>
<td>F</td>
<td>PHACOEMULISATION WITH IOL / CATARACT EXTRUSION, RIGHT EYE</td>
<td>GUPTA</td>
<td>FIU COLETI</td>
<td>RUZI TRAN</td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>0.45</td>
<td>13:36</td>
<td>I</td>
<td>OP*</td>
<td></td>
<td>72 y</td>
<td>M</td>
<td>PHACOEMULISATION WITH IOL / CATARACT EXTRUSION, RIGHT EYE</td>
<td>GUPTA</td>
<td>FIU BENTOV 6 COLLETTI</td>
<td>RUZI TRAN</td>
<td>P</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Resource Map:**
- CSS:
  - PERMS / SPINE BED
  - PICK PRO: PATIENT IN PINS

**Legend:**
- OR: Operating Room
- Length: Length of Operation
- In Room: Time of Arrival
- MRN: Medical Record Number
- Unit: Unit Number
- Pt Name: Patient Name
- Age: Patient Age
- Sex: Patient Sex
- Procedure: Surgical Procedure
- Surgical Staff: Surgical Staff
- Anesthesia Staff: Anesthesia Staff
- Scrub/Circ: Scrub/Circulator
- Break: Break Time
- Status: Status
- Notes: Additional Notes
Clinical Flagging
Patient Placement
OR scheduling
PACU
Acute pain – CORES
ICU communication

Q&I Data Flagging
Administrative
Electronic health record
Infection
Patient satisfaction
Utilization, cost and financial
Total Collaborative

Purposes: Performance Improvement Measurement
Quality Improvement Measurement
Project Measurement

Administrative

Perioperative

Demographic
ADT
Utilization
Financial
Preoperative
Intraoperative
Postoperative
EHR Record
Survey

Other Clinical
Post Discharge

Collaborative Data Driven Process
Data Governance
The ERAS and PERMS collections are governed by the PEPI projects under the Medical Director and Quality leadership of Rick Goss and Tim Dellit.

Direct governing clinical leadership (key stakeholders):
Grant E. O’Keefe, Carlo Bellabarba, Arman Dagal

Advising clinical leadership (other stakeholders):
Members of the Surgery, Orthopaedics and Sports Medicine, Anesthesiology and Pain Medicine departments

Collection Owner(s)
Denise M. Leverentz, Director Performance Measurement and Cost Management Analytics
Andrew Moberg, Analyst/Programmer, Performance Measurement
65 Q&I Variables Currently Collected
| Height | Wt  | BMI  | PulseRateBPM | SystolicBloodPressure | DiastolicBloodPressure | RespirationRate | Temperature | surgid | FirstPosition | AnesthesiaType | orstart | orstop | caseduration | AnesthesiaStart |
|--------|-----|------|--------------|-----------------------|------------------------|------------------------|--------------|---------|--------|----------------|----------------|---------|--------|--------------|----------------|
| 187.0  | 90.0| 30.0 | 88           | 92                    | 92                     | 16                     | 38.8C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 180.0  | 84.0| 28.0 | 85           | 89                    | 89                     | 16                     | 38.6C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 176.0  | 78.0| 25.0 | 84           | 89                    | 89                     | 16                     | 38.4C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 170.0  | 72.0| 22.0 | 84           | 89                    | 89                     | 16                     | 38.2C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 165.0  | 66.0| 20.0 | 84           | 89                    | 89                     | 16                     | 38.0C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 160.0  | 60.0| 18.0 | 84           | 89                    | 89                     | 16                     | 37.8C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 155.0  | 54.0| 16.0 | 84           | 89                    | 89                     | 16                     | 37.6C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 150.0  | 48.0| 14.0 | 84           | 89                    | 89                     | 16                     | 37.4C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 145.0  | 42.0| 12.0 | 84           | 89                    | 89                     | 16                     | 37.2C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 140.0  | 36.0| 10.0 | 84           | 89                    | 89                     | 16                     | 37.0C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 135.0  | 30.0| 8.0  | 84           | 89                    | 89                     | 16                     | 36.8C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 130.0  | 24.0| 6.0  | 84           | 89                    | 89                     | 16                     | 36.6C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 125.0  | 18.0| 4.0  | 84           | 89                    | 89                     | 16                     | 36.4C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 120.0  | 12.0| 2.0  | 84           | 89                    | 89                     | 16                     | 36.2C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |
| 115.0  | 6.0 | 0.0  | 84           | 89                    | 89                     | 16                     | 36.0C        | 74       | NULL  | BEEF37  | General          | 01/08/2012 12:00 | 01/08/2012 12:30 | 01/08/2012 12:30 | 01/08/2012 12:30 |

**Note:** The table continues with similar entries for each patient detail.
Patient Reported Outcomes

PRO = Patient-reported outcomes data helps to develop performance measures to allow for accurate appraisals of quality and efficiency.

Benefits of PRO data...

Engages patient
Improves satisfaction
Allows functional assessment
Allows comparison
Improves health care delivery
Patient Reported Outcomes

PRO - quantitative data

• General health quality
• Pain scale
• Disease specific functional outcomes
Patient Reported Outcomes

General quality of life
• Short Form questionnaires (-6, -12, -36)
• EuroQol Five Dimension questionnaire

Pain
• Visual analog scale
• Numeric rating scale

Lumbar-specific
• Oswestry Disability Index
• Roland Morris Disability Questionnaire
• Quebec Back Scale

Cervical-specific
• Neck Disability Index
• Cervical Spine Outcomes Questionnaire

Patient-reported Outcome Measures in Spine Surgery
EQ-5D-5L
Health Questionnaire

MOBILITY
I have no problems in walking about
I have slight problems in walking about
I have moderate problems in walking about
I have severe problems in walking about
I am unable to walk about

SELF-CARE
I have no problems washing or dressing myself
I have slight problems washing or dressing myself
I have moderate problems washing or dressing myself
I have severe problems washing or dressing myself
I am unable to wash or dress myself

USUAL ACTIVITIES (e.g. work, study, housework, family or leisure activities)
I have no problems doing my usual activities
I have slight problems doing my usual activities
I have moderate problems doing my usual activities
I have severe problems doing my usual activities
I am unable to do my usual activities

PAIN / DISCOMFORT
I have no pain or discomfort
I have slight pain or discomfort
I have moderate pain or discomfort
I have severe pain or discomfort
I have extreme pain or discomfort

ANXIETY / DEPRESSION
I am not anxious or depressed
I am slightly anxious or depressed
I am moderately anxious or depressed
I am severely anxious or depressed
I am extremely anxious or depressed
oswesty low back pain questionnaire

name ........................................... address ........................................... date .................
date of birth ........................ age.......................... ...........................................
occupation .......................................................... ...........................................

how long have you had back pain? ....... years ....... months ....... weeks
how long have you had leg pain? ...... years ....... months ....... weeks

please read:
this questionnaire has been designed to give the doctor information as to how your back pain has affected your ability to manage in everyday life – please answer every section, & mark in each one only the one box which applies to you. we realise you may consider that 2 statements in any one section relate to you, but please just mark the box which most closely describes your problem.

section 1 - pain intensity
 quần I can tolerate the pain I have without having to use pain killers
 quần the pain is bad but I manage without taking pain killers
 quần pain killers give complete relief from pain
 quần pain killers give moderate relief from pain
 quần pain killers give very little relief from pain
 quần pain killers have no effect on the pain and I do not use them

section 2 - personal care (washing, dressing, etc)
 quần I can look after myself normally without causing extra pain
 quần I can look after myself normally but it causes extra pain
 quần it is painful to look after myself and I am slow and careful
 quần I need some help but manage most of my personal care
 quần I need help every day in most aspects of self care
 quần I do not get dressed, washed with difficulty and stay in bed

section 3 - lifting
 quần I can lift heavy weights without extra pain
 quần I can lift heavy weights but it gives extra pain
 quần pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, eg on a table
 quần pain prevents me from lifting heavy weights but I can manage light to medium weights if they are conveniently positioned
 quần I can lift only very light weights
 quần I cannot lift or carry anything at all

section 4 - walking
 quần pain does not prevent me walking any distance
 quần pain prevents me walking more than 1 mile
 quần pain prevents me walking more than 1/2 mile
 quần pain prevents me walking more than 1/4 mile
 quần I can only walk using a stick or crutches
 quần I am in bed most of the time and have to crawl to the toilet

section 5 - sitting
 quán I can sit in any chair as long as I like
 quán I can only sit in my favourite chair as long as I like
 quán pain prevents me from sitting more than 1 hour
 quán pain prevents me from sitting more than 1/2 hour
 quán pain prevents me from sitting more than 10 minutes
 quán pain prevents me from sitting at all

section 6 - standing
 quần I can stand as long as I want without extra pain
 quần I can stand as long as I want but it gives me extra pain
 quần pain prevents me from standing for more than 1 hour
 quần pain prevents me from standing for more than 1/2 hour
 quần pain prevents me from standing for more than 10 minutes
 quán pain prevents me from standing at all

section 7 - sleeping
 quần pain does not prevent me from sleeping well
 questão I can sleep well only by using tablets
 questão even when I take tablets I have less than six hours sleep
 questão even when I take tablets I have less than four hours sleep
 questão even when I take tablets I have less than two hours sleep
 questão pain prevents me from sleeping at all

section 8 - sex life
 questão my sex life is normal and causes no extra pain
 questão my sex life is normal but causes some extra pain
 questão my sex life is nearly normal but is very painful
 questão my sex life is severely restricted by pain
 questão my sex life is nearly absent because of pain
 questão pain prevents any sex life at all

section 9 - social life
 questão my social life is normal and gives me no extra pain
 questão my social life is normal but increases the degree of pain
 questão pain has no significant effect on my social life apart from limiting my more energetic interests, eg dancing etc
 questão pain has restricted social life and I do not go out as often
 questão pain has restricted my social life to my home
 questão I have no social life because of pain

section 10 - travelling
 questão I can travel anywhere without extra pain
 questão I can travel anywhere but it gives me extra pain
 questão pain is bad but I manage journeys over two hours
 questão pain restricts me to journeys of less than one hour
 questão pain restricts me to short journeys of less than 1/2 hour
 questões pain prevents me from travelling except to the doctor or hospital

from: fairbank J C T, couper J, davies J B & o' brien J P
physiotherapy 1980; 66: 271-73
<table>
<thead>
<tr>
<th>SECTION 1 - Pain Intensity</th>
<th>SECTION 6 - Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A I have no pain at the moment.</td>
<td>A I can concentrate fully when I want to with no difficulty.</td>
</tr>
<tr>
<td>B The pain is very mild at the moment.</td>
<td>B I can concentrate fully when I want to with slight difficulty.</td>
</tr>
<tr>
<td>C The pain is moderate at the moment.</td>
<td>C I have a fair degree of difficulty in concentrating when I want to.</td>
</tr>
<tr>
<td>D The pain is fairly severe at the moment.</td>
<td>D I have a lot of difficulty in concentrating when I want to.</td>
</tr>
<tr>
<td>E The pain is very severe at the moment.</td>
<td>E I have a great deal of difficulty in concentrating when I want to.</td>
</tr>
<tr>
<td>F The pain is the worst imaginable at the moment.</td>
<td>F I cannot concentrate at all.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 2 - Personal Care (Washing, Dressing, etc.)</th>
<th>SECTION 7 - Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>A I can look after myself normally without causing extra pain.</td>
<td>A I can do as much work as I want to.</td>
</tr>
<tr>
<td>B I can look after myself normally, but it causes extra pain.</td>
<td>B I can only do my usual work, but not more.</td>
</tr>
<tr>
<td>C It is painful to look after myself and I am slow and careful.</td>
<td>C I can do most of my usual work, but not more.</td>
</tr>
<tr>
<td>D I need some help, but manage most of my personal care.</td>
<td>D I cannot do my usual work.</td>
</tr>
<tr>
<td>E I need help every day in most aspects of self care.</td>
<td>E I can hardly do any work at all.</td>
</tr>
<tr>
<td>F I do not get dressed, I wash with difficulty and stay in bed.</td>
<td>F I cannot do any work at all.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 3 - Lifting</th>
<th>SECTION 8 - Driving</th>
</tr>
</thead>
<tbody>
<tr>
<td>A I can lift heavy weights without extra pain.</td>
<td>A I can drive my car without any neck pain.</td>
</tr>
<tr>
<td>B I can lift heavy weights, but it gives extra pain.</td>
<td>B I can drive my car as long as I want with slight pain in my neck.</td>
</tr>
<tr>
<td>C Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, for example, on a table.</td>
<td>C I can drive my car as long as I want with moderate pain in my neck.</td>
</tr>
<tr>
<td>D Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned.</td>
<td>D I cannot drive my car as long as I want because of moderate pain in my neck.</td>
</tr>
<tr>
<td>E I can lift very light weights.</td>
<td>E I can hardly drive at all because of severe pain in my neck.</td>
</tr>
<tr>
<td>F I cannot lift or carry anything at all.</td>
<td>F I cannot drive my car at all.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 4 - Reading</th>
<th>SECTION 9 - Sleeping</th>
</tr>
</thead>
<tbody>
<tr>
<td>A I can read as much as I want to with no pain in my neck.</td>
<td>A I have no trouble sleeping.</td>
</tr>
<tr>
<td>B I can read as much as I want to with slight pain in my neck.</td>
<td>B My sleep is slightly disturbed (less than 1 hour sleepless).</td>
</tr>
<tr>
<td>C I can read as much as I want to with moderate pain in my neck.</td>
<td>C My sleep is mildly disturbed (1-2 hours sleepless).</td>
</tr>
<tr>
<td>D I cannot read as much as I want because of moderate pain in my neck.</td>
<td>D My sleep is moderately disturbed (2-3 hours sleepless).</td>
</tr>
<tr>
<td>E I cannot read as much as I want because of severe pain in my neck.</td>
<td>E My sleep is greatly disturbed (3-5 hours sleepless).</td>
</tr>
<tr>
<td>F I cannot read at all.</td>
<td>F My sleep is completely disturbed (5-7 hours)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 5 - Headaches</th>
<th>SECTION 10 - Recreation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A I have no headaches at all.</td>
<td>A I am able to engage in all of my recreational activities with no neck pain at all.</td>
</tr>
<tr>
<td>B I have slight headaches which come infrequently.</td>
<td>B I am able to engage in all of my recreational activities with some pain in my neck.</td>
</tr>
<tr>
<td>C I have moderate headaches which come infrequently.</td>
<td>C I am able to engage in most, but not all of my recreational activities because of pain in my neck.</td>
</tr>
<tr>
<td>D I have moderate headaches which come frequently.</td>
<td>D I am able to engage in a few of my recreational activities because of pain in my neck.</td>
</tr>
<tr>
<td>E I have severe headaches which come frequently.</td>
<td>E I can hardly do any recreational activities because of pain in my neck.</td>
</tr>
<tr>
<td>F I have headaches almost all the time.</td>
<td>F I cannot do any recreational activities at all.</td>
</tr>
</tbody>
</table>

COMMENTS:

NAME: ___________________________ DATE: __________ SCORE: ___________