UW’s Surgical and Perioperative Outcomes Research Landscape

David R. Flum, MD MPH
Department of Surgery, Pharmacy and Health Services
Outline

• Opportunity
• Resources
  • CHASE
  • CHARMS
• Existing surveillance initiatives
• Future…
Big Opportunity

• 51.4 million procedures
  • 20 million with general anesthesia
• 1/3 of healthcare expenditures
  • Possible 1/3 do not “add value”
  • Possible 1/3 have preventable adverse events
• High volume of discrete healthcare encounters
  • UW 14,271
  • HMC 15,488
• UW driving the statewide agenda in surgery
• Partnerships to design/conduct high-impact research about the changing health system

• Links researchers, care delivery systems and other stakeholders
  • Health services, CER, health policy, health economics, technology/health systems assessment, patient reported outcomes

• Aims to improve healthcare through high-impact, real-world research and implementation
  • A resource for the community
Leadership Group
Medicine, Nursing, Pharmacy, Public Health

- Experts in CER, Health System Evaluation, Technology Assessment, Patient Centered Outcomes, Health Economics, and Community Dissemination & Translation

Community Healthcare Stakeholders
- Payers
- Policy makers
- Innovators
- Advocacy grps
- Patients

Research Partners
- VA
- FHCRC
- GHRI
- SCRI
- INWHS

TRAINING
RESEARCH CORES
RESOURCES
OUTREACH
Centers & Leadership

- Comparative Effectiveness, Cost and Outcomes Center, Schools of Medicine and Public Health
- Biobehavioral Nursing & Health Systems, School of Nursing
- Department of Health Services, School of Public Health
- Harborview Injury Prevention & Research Center, Schools of Medicine and Public Health
- Pharmaceutical Outcomes Research & Policy Program, School of Pharmacy
- Seattle Quality of Life Group, School of Public Health
- Surgical Outcomes Research Center, School of Medicine
- VA Health Services Research & Development Center, VA Puget Sound Health Care System
Multiple funded projects underway

3 ARRA grants awarded to CHASE Alliance
  - Clinical and Health Outcomes Initiatives grant-$10m
  - Enhanced Registries for QI and CER-$11.6m
  - ADVICE network-$4 m

10 CER grant proposals submitted in the last year

5 PCORI grants submitted last cycle
Collaboration in Action
Training in CER

- 3 funded training activities
- Training activities
  - CHASE WIP—every other Monday afternoon
  - Post-doctoral thru junior faculty
  - Exposure across disciplines and methodologies
- Healthcare Stakeholders & Community Outreach
  - CHASE symposium
  - WBBA Symposium
  - CER Institute, Annually in September
- Creating virtual communities
### Current Research Projects

#### Search:

**Sullivan**

<table>
<thead>
<tr>
<th>CENTER</th>
<th>PROJECT INFORMATION</th>
<th>SIGNIFICANT CONTRIBUTORS</th>
<th>FUNDING AGENCY</th>
<th>CLINICAL TOPIC PURPOSE</th>
<th>CHASE CORE</th>
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</thead>
<tbody>
<tr>
<td>PORPP</td>
<td>Data Investigation of Bariatric Surgery Outcomes and Economic Savings</td>
<td>Andrew Wright, MD; Lou Garrison, PhD; David Arterburn, MD, MPH;</td>
<td>DOD</td>
<td>Clinical Topic: Obesity; Surgery</td>
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<tr>
<td></td>
<td>Project Years: January 2008 - September 2011</td>
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<td>Purpose: The goal of this project is to use collected data and modeling techniques to create a portfolio of research on the economics of obesity and its treatments</td>
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<tr>
<td></td>
<td>Principal Investigator: David R. Flum, MD; Sean Sullivan PhD</td>
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</table>

| PORPP  | Surgical Care and Outcomes Assessment Program | Foundation for Health Care Quality; Sean Sullivan, PhD; Adam Goldin, MD; Ellen Farrokh, MD; Ben Starnes, MD; John Gore, MD; Hunter Wessels, MD; Neal Shonnard, MD; Jens Chapman, MD; Michael Florence, MD | Life Sciences Discovery Fund | Clinical Topic: Surgery; General Surgery; Vascular Surgery; Interventional Radiology; Urology; Pediatric Surgery; | Health System Evaluation, Comparative Effectiveness, Dissemination & Translation |
|        | Project Years: January 2008 - December 2011 | | | Purpose: The purpose is to expand the quality improvement project Surgical Care and Outcomes Assessment Program (SCOAP) which tracks the variance in surgical care across Washington State hospitals and aims at reducing inappropriate care and promoting cost-effective care. | |
|        | Principal Investigator: David R. Flum, MD | | | | |

| PORPP  | Benefit Design | Morok & Company, Inc | Clinical Topic: asthma controller medications; pharmacy, | - |
|        | | | | |


## Training

<table>
<thead>
<tr>
<th>CENTER</th>
<th>PROGRAM</th>
<th>FUNDING AGENCY</th>
<th>POSITION LEVEL</th>
<th>LENGTH</th>
<th>EFFORT</th>
<th>REQUIREMENT</th>
<th>CONTACT</th>
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<tbody>
<tr>
<td>HIPRC</td>
<td>Pediatric Injury Research Training Program (T32)</td>
<td>NICHD</td>
<td>Pre/Post Doctoral</td>
<td>2 years</td>
<td>100%</td>
<td>PhD enrollment for pre-doctoral</td>
<td><a href="mailto:hiprc@uw.edu">hiprc@uw.edu</a></td>
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<tr>
<td>HSERV</td>
<td>Health Services Research Training (T32)</td>
<td>AHRQ</td>
<td>Pre/Post Doctoral</td>
<td>2 years</td>
<td>100%</td>
<td>PhD enrollment for pre-doctoral</td>
<td><a href="mailto:hserv@u.washington.edu">hserv@u.washington.edu</a></td>
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<tr>
<td>PGRPP</td>
<td>Allergan Post-Doctoral Fellowship</td>
<td>Allergan</td>
<td>Pre-Doctoral</td>
<td>2 years</td>
<td>50%</td>
<td>MS enrollment, must have PharmD</td>
<td><a href="mailto:pennvee@u.washington.edu">pennvee@u.washington.edu</a></td>
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<tr>
<td>PGRPP</td>
<td>Lilly Post-Doctoral Fellowship</td>
<td>Eli Lilly and Company</td>
<td>Post-Doctoral</td>
<td>2 years</td>
<td>100%</td>
<td>Must have doctoral degree</td>
<td><a href="mailto:pennvee@u.washington.edu">pennvee@u.washington.edu</a></td>
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<td>PGRPP</td>
<td>Pfizer Post-Doctoral Fellowship</td>
<td>Pfizer Pharmaceuticals</td>
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<td>100%</td>
<td>Must have doctoral degree</td>
<td><a href="mailto:pennvee@u.washington.edu">pennvee@u.washington.edu</a></td>
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<td>SeaCo</td>
<td>Biobehavioral Cancer Prevention and Control Training (R25)</td>
<td>National Cancer Institute</td>
<td>Pre/Post Doctoral</td>
<td>2-3 years</td>
<td>100%</td>
<td>PhD enrollment for pre-doctoral</td>
<td><a href="mailto:preno@u.washington.edu">preno@u.washington.edu</a></td>
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<tr>
<td>SORCE</td>
<td>Student Internship Program</td>
<td>NIA</td>
<td>Undergraduate</td>
<td>1-2 years</td>
<td>10-15 hrs/week</td>
<td>Must have high school degree</td>
<td><a href="mailto:SORCE@uwashington.edu">SORCE@uwashington.edu</a></td>
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<tr>
<td>SORCE</td>
<td>Gastrointestinal Surgical Outcomes Fellowship (T32)</td>
<td>NIDDK</td>
<td>Post-Doctoral</td>
<td>2 years</td>
<td>100%</td>
<td>Must have medical doctoral degree; must be enrolled in surgical residency program</td>
<td><a href="mailto:SORCE@uwashington.edu">SORCE@uwashington.edu</a></td>
</tr>
<tr>
<td>VA HSR&amp;D</td>
<td>VA Health Services Research &amp; Development MD Fellowship</td>
<td>VA Office of Academic Affiliations</td>
<td>Post-Doctoral</td>
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<tr>
<td>VA HSR&amp;D</td>
<td>VA Health Services Research &amp; Development</td>
<td>VA Office of Academic Affiliations</td>
<td>Post-Doctoral</td>
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</tbody>
</table>
Welcome to the CHASE Alliance resource page. Use this page to quickly locate training, research and expertise available through the CHASE Alliance on the UW campus. Use the tools below to query the resources available through our research groups, then use the contact information associated to that resource to learn more about utilizing the resource or just how to get involved.

Search by Keyword
Search all CHASE Alliance resources by keyword.

Select a Chase Core Activity
Search for resources based on broad research core categories.

Select Areas of Expertise
Search for resources based on specific areas of expertise in the CHASE Alliance.
The Chase Alliance News & Events archive feature

News & Events

News

April 27

SAVE THE DATE!
CHASE & Washington State Biotechnology & Biomedical Association Symposium
PREPARING FOR NEW HEALTH-CARE MARKET REALITIES

For at least the last decade, pre-seismic tremors have hit the medical product and technology landscape, including the increased power of large health-care purchasers, insurance companies with many millions of insured lives, and the growing insistence on value-based and evidence-based medicine. Beyond this, many knowledgeable observers are predicting that the fee-for-service approach to paying for healthcare in the U.S. will be dramatically altered or eliminated much sooner than previously expected. If so, the decisions being made now about products, services, investments, partnerships and trials will need to accommodate new market realities. This half-day morning symposium will consider the forces shaping the market changes, the implications for companies and institutions, and the resources and expertise available to decision-makers.

April 26

Outcomes Research Collaborative
7:30A - 9:00A, UW Health Sciences, RR401

Upcoming Events

April 26

Outcomes Research Collaborative
7:30A - 9:00A, UW Health Sciences, RR401

April 26

Faculty Candidate Presentation: Todd Lee, PharmD, PhD
Tuesday, April 26, and will give his presentation from 2:00-3:00 in the Dept of Pharmacy conference room (H-371).

April 25

CHASE Works-in-Progress
Health Sciences, H-371, 2P-3P CHASE WIPs offer a common place for CER development and training across disciplines.

April 19

New Faculty Lecture -- Dr. Anirban Basu, PhD -- Valuing Information in Health
Title: Valuing Information in Health
12:00 pm - 1:00 pm
UW Tower, Magnolia Room (22nd Floor)
SEAQOL, HPRC, PORPP, and CHASE invite attendance to come and hear our most recently hired faculty member.
Unique WA State Resources
CHARS
UW’s Role in Shaping Landscape

- Cardiac surgery and interventional cardiology
- Bariatric surgery
- General surgery
- Pediatric surgery
- Urology
- Spine
- Breast cancer care
- Lung cancer care
- Cut across activities
  - SSI
  - Checklists
COAP
The best performing hospitals in WA for this particular measure, that represent $\geq 10\%$ of total volume in the state, are indicated in **green**. The ‘average’ of these best performers is known as the **Best Practice Benchmark for WA** and is indicated by the horizontal **green line**. The average for all of **WA State** is indicated by the **blue line**.

**CABG 2012:**

**WA Best Practice Benchmark** = 0.0\%; **Statewide Average** = 1.4\%
Surgical Care and Outcomes Assessment Program

Seattle
Spokane
Yakima
Wenatchee
Richland
Port Townsend
Sunnyside
Aberdeen
Kirkland
Portland
Longview
Port Angeles
Bellingham
Tacoma
Olympia
Wenatchee
Sunnyside
Yakima
Richland
Spokane
<table>
<thead>
<tr>
<th>Operations</th>
<th>Benchmark</th>
<th>Q3 2012 - Q2 2013</th>
<th>Q3 2013</th>
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<tbody>
<tr>
<td></td>
<td>SCOAP</td>
<td>Site #21</td>
<td>SCOAP</td>
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<tr>
<td><strong>Elective Colon Procedures</strong></td>
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<tr>
<td><strong>Total Procedures</strong></td>
<td></td>
<td></td>
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<tr>
<td>1.1 Median Age (years)</td>
<td>2580 62.0</td>
<td>202 55.0</td>
<td>612 64.0</td>
</tr>
<tr>
<td>1.2 Male</td>
<td>1156 44.8</td>
<td>93 46.0</td>
<td>270 44.1</td>
</tr>
<tr>
<td>1.3 Median BMI</td>
<td>2558 27.4</td>
<td>199 27.2</td>
<td>607 27.1</td>
</tr>
<tr>
<td>1.4 Mean Comorbidity Index</td>
<td>2580 0.4</td>
<td>202 0.3</td>
<td>612 0.4</td>
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<tr>
<td><strong>Operation Type</strong></td>
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<td></td>
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<tr>
<td>2.1 Right Hemicolecotmy</td>
<td>1073 41.6</td>
<td>110 54.5</td>
<td>252 41.2</td>
</tr>
<tr>
<td>2.2 Left Hemicolecotmy</td>
<td>442 17.1</td>
<td>9 4.5</td>
<td>106 17.3</td>
</tr>
<tr>
<td>2.3 LAR</td>
<td>911 35.3</td>
<td>65 32.2</td>
<td>187 30.6</td>
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<tr>
<td>2.4 Total Colectomy</td>
<td>107 4.1</td>
<td>15 7.4</td>
<td>17 2.8</td>
</tr>
<tr>
<td>2.6 Stoma Takedown</td>
<td>176 6.8</td>
<td>26 12.9</td>
<td>38 6.2</td>
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<tr>
<td><strong>Indication/Diagnosis</strong></td>
<td></td>
<td></td>
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<tr>
<td>3.1 Diverticular Disease</td>
<td>683 26.5</td>
<td>13 6.4</td>
<td>163 26.6</td>
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<tr>
<td>3.1a Diverticular Disease Description Incomplete</td>
<td>168 24.6</td>
<td>2 15.4</td>
<td>36 22.1</td>
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<td>3.1b Appropriate Surgery Indication for Diverticulitis</td>
<td>192 28.1</td>
<td>6 46.2</td>
<td>54 33.1</td>
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<tr>
<td>3.1c Episode-based Indication: (2 or more) among ages 51+</td>
<td>47 41.6</td>
<td>1 50.0</td>
<td>8 30.8</td>
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<tr>
<td>3.1d Episode-based Indication: (2 or more) among ages &lt; 51</td>
<td>18 41.9</td>
<td>1 100.0</td>
<td>4 36.4</td>
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<td>3.2 Cancer</td>
<td>750 29.1</td>
<td>57 28.2</td>
<td>153 25.0</td>
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<td>3.3 Perforation</td>
<td>88 3.4</td>
<td>1 0.5</td>
<td>27 4.4</td>
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<td>3.4 Polyps</td>
<td>306 11.9</td>
<td>5 2.5</td>
<td>61 10.0</td>
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<td>3.5 Obstruction/mass</td>
<td>137 5.3</td>
<td>8 4.0</td>
<td>45 7.4</td>
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<tr>
<td>3.6 Prolapse</td>
<td>92 3.6</td>
<td>9 4.5</td>
<td>12 2.0</td>
</tr>
<tr>
<td>3.7 Ulcerative Colitis</td>
<td>49 1.9</td>
<td>12 5.9</td>
<td>9 1.5</td>
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<td><strong>Normothermia</strong></td>
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<td>4.1 Peri-op Body Temp &gt;= 36 C</td>
<td>100.0</td>
<td>2435 97.4</td>
<td>193 96.5</td>
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<td><strong>DVT Prophylaxis Ordered On Discharge</strong></td>
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<td>78.2</td>
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<td><strong>Antibiotic Use</strong></td>
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<td>8.1 Antibiotics w/in 60 min of incision</td>
<td>100.0</td>
<td>2244</td>
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<td>8.2 Discontinued w/in 24 hrs of Closure</td>
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<td><strong>Pain Control</strong></td>
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<td>9.1 Any Advanced Pain Control Intervention</td>
<td>99.4</td>
<td>2076</td>
<td>2497</td>
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<td>9.2 PCA w/in 24 hrs Post-op</td>
<td>70.1</td>
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<td>2494</td>
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<td>9.3 Epidural w/in 24 hrs Post-op</td>
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<td>9.4 No Urinary Catheter among Epidurals</td>
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<td><strong>Gastrointestinal Function</strong></td>
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<td>10.1 Opioid Antagonist for Ileus Prevention</td>
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<td>10.2 Nasogastric Tube free leaving OR (non-</td>
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<td>10.3 Post-op NG Tube Placement (non-routine)</td>
<td>5.7</td>
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<td>10.4 Median Day of Diet Advancement</td>
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<td><strong>Laboratory &amp; Blood Bank</strong></td>
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<td>11.1 Transfusion Free</td>
<td>94.9</td>
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<td>2576</td>
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<td>11.2 Low Hgb (&lt;= 7) among Transfusion Recip</td>
<td>23.9</td>
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<td><strong>Postoperative Respiratory Function</strong></td>
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<td>12.1 Mechanical Ventilation Free</td>
<td>97.0</td>
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<td><strong>Myocardial Infarction Prevention</strong></td>
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<td>13.1 Beta-Blockers Continued Post-op</td>
<td>94.1</td>
<td>498</td>
<td>529</td>
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<td>13.2 Statin Continued Post-op</td>
<td>58.1</td>
<td>408</td>
<td>702</td>
</tr>
</tbody>
</table>
Transfusions

Elective colorectal procedures

- 2009: 16.0%
- 2010: 10.0%
- 2011: 10.0%
- 2012: 14.0%
- 2013: 4.0%
Bending the Cost Curve

The graph illustrates the cost trends for Non-SCOAP and SCOAP from 2006 to 2009. The cost for Non-SCOAP generally increases, while the cost for SCOAP decreases. The graph shows a clear trend of cost minimization through the use of SCOAP.
CERTAIN Hub

Improving PRO data collection and patient survey experience

Spine care survey

Your doctor is interested in understanding how your back pain affects your daily life.

By completing the following survey, you are providing your physician with important information about your back pain. Your doctor would also like to gather this information from you again in about 60 days from today, then again in one year and two years from today. This information will be used by your doctor to see if your pain is changed by your healthcare treatments and how your pain influences your function over time.

After you complete this survey, you will be asked to provide your contact information and preferences so we can contact you again. You will also have the opportunity to receive a copy of your survey results.

Learn more about Patient Voices
Frequently Asked Questions
Contact Us
Return of Information to Patients

**Certain**

**Patient Voices**

Your Survey Results

**Patient info**

- **NAME:** Jane Doe
- **AGE:** 71
- **GENDER:** Female
- **DOB:** 01/02/1943
- **ORDERED BY (PHYSICIAN):** Seuss
- **SURVEY COMPLETED ON:** 5/22/2014

1. About these results
   This report measures the intensity of the pain you are experiencing at this time and will help you understand the degree to which your pain is affecting your ability to perform everyday activities.

2. Your results
   - **BACK PAIN SCORE**
     - **Your score:** 5
     - **Scale:** None (0), Mild (1-3), Moderate (4-6), Severe (7-10)
   - **LEG PAIN SCORE**
     - **Your score:** 2
     - **Scale:** None (0), Mild (1-3), Moderate (4-6), Severe (7-10)
   - **ODI SCORE**
     - **Your score:** 26
     - **Scale:** Minimal (0-20), Moderate (21-40), Severe (41-60), Extensive (61-80), Complete Disability (81-100)
Return of Information to Clinicians

Patient-Reported Outcomes Progress Report

Your Patients
Provider: Dr. Anonymous
Began: 11/7/2013
Patients surveyed: 60
Patients opted out: 0 (0%)
Avg time to complete: 4 min

Number of Enrolled Patients
BEGAN SURVEYING 3/5/2014

Mean NDI Scores

Lumbar Spine
ODI
Mean score

Cervical Spine
NDI
Mean score

NRS
Mean score

Back
Leg
Neck
Arm

Your patients
Your clinic's patients
All participating patients

Months from procedure
Mean NDI Scores
Using Functional Improvement as QI Metric

Marker label indicates the # of records contributing to the data point
NRS Improvement

6-months
Nutrition
• Screening for malnutrition
• Albumin test for risk stratification
• Immunonutrition supplementation

Blood Sugar
• Diabetes risk screening
• Blood sugar control screening
• Perioperative glucose management

Smoking
• Smoking habits and history
• Establish and document quit plan

Medications
• Identify drugs that could cause bleeding and cardiac risks
• Herbal medication reconciliation

See full version of the checklists at www.strongforsurgery.org
Statewide Spine Fusion Patients
Recent Cigarette “Quitters”

Evidence of healthy behavior change—not just selection
NSQIP predicted savings-UWMC

- 242 complications in 2007 (15.13%)
- 177 complications in 2012 (8.85%)
- Reduced costs related to complications $1.5 million

<table>
<thead>
<tr>
<th>2007 Data General Surgery</th>
<th>2012 Data General Surgery</th>
</tr>
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<tbody>
<tr>
<td><strong>Complication Type</strong></td>
<td><strong>Number of Complications</strong></td>
</tr>
<tr>
<td>GEN Cardiac</td>
<td>5</td>
</tr>
<tr>
<td>GEN Pneumonia</td>
<td>17</td>
</tr>
<tr>
<td>GEN Unplanned Intubation</td>
<td>28</td>
</tr>
<tr>
<td>GEN Ventilator &gt; 48 Hours</td>
<td>29</td>
</tr>
<tr>
<td>GEN DVT/PE</td>
<td>19</td>
</tr>
<tr>
<td>GEN Renal Failure</td>
<td>8</td>
</tr>
<tr>
<td>GEN UTI</td>
<td>37</td>
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<tr>
<td>GEN SSI</td>
<td>99</td>
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<tr>
<td><strong>Totals</strong></td>
<td><strong>242</strong></td>
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</tbody>
</table>

*Complication costs provided by NSQIP and determined using a combination of public and private sector payor findings, with hospital cost perspective included, based on 1992 through 2007 amounts.
Accountable Care Network
Summary

• CHASE Alliance
• Statewide Initiatives
• Opportunity
  • Collaborative registries
  • SORCE for Anesthesia
  • ACN learning system