American College of Surgeons
Registries & Quality Programs

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Dedicated to improving the care of the surgical patient and to safeguarding standards of care in an optimal and ethical practice environment.
ACS Registry Facts

Iqvia Platform: 7 registries and growing – current builds:
- Data from EMR
- Financial Data
- PRO data

Registry Use:
- 2800 Hospitals
- Millions of Patients
- Thousands of Surgeons
- Other Society collaboration
Data Use – Peer Review

- NCDB - 20 years 566 PRP
- NTDB,TQIP - 20 years 789 PRP
- NSQIP - 15 years 910 PRP
- **2,265 Peer Reviewed Publications**
  - >100 year
  - About one every three days
- Access – open files easily available 1000’s requested
A Comparison of Clinical Registry Versus Administrative Claims Data for Reporting of 30-Day Surgical Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Sensitivity of admin data for detecting patients with a complication in clinical registry</th>
<th>% of complications recorded in admin data that are false positives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical site infection</td>
<td>27%</td>
<td>71%</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>60%</td>
<td>81%</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>68%</td>
<td>70%</td>
</tr>
<tr>
<td>Deep venous thrombosis</td>
<td>82%</td>
<td>76%</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>87%</td>
<td>88%</td>
</tr>
</tbody>
</table>
Risk Adjustment Critical

Improving American College of Surgeons National Surgical Quality Improvement Program Risk Adjustment: Incorporation of a Novel Procedure Risk Score

Mehul V Raval, MD, MS, Mark E Cohen, PhD, Angela M Ingraham, MD, MS, Justin B Dimick, MD, MPH, FACS, Nicholas H Osborne, MD, MS, Barton H Hamilton, PhD, Clifford Y Ko, MD, MS, MSHS, FACS, Bruce L Hall, MD, PhD, MBA, FACS

Risk Adjustment in the American College of Surgeons National Surgical Quality Improvement Program: A Comparison of Logistic Versus Hierarchical Modeling

Mark E Cohen, PhD, Justin B Dimick, MD, MPH, Karl Y Bilimoria, MD, MS, Clifford Y Ko, MD, MS, MSHS, FACS, Karen Richards, Bruce Lee Hall, MD, PhD, MBA, FACS

Evaluating parsimonious risk-adjustment models for comparing hospital outcomes with vascular surgery

Nicholas H. Osborne, MD, MS,a Clifford Y. Ko, MD, MS, MSHS,b,c Gilbert R. Upchurch Jr, MD,a and
<table>
<thead>
<tr>
<th></th>
<th><strong>SSI</strong></th>
<th><strong>Mortality</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of occurrence</td>
<td>6.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Sample size needed to achieve good statistical reliability (0.7)</td>
<td>254 (118-381)</td>
<td>1985 (109-3772)</td>
</tr>
<tr>
<td>% of surgeons achieving reliable statistics</td>
<td>35.5%</td>
<td>12.2%</td>
</tr>
</tbody>
</table>
Demonstrable Improvement

A National Evaluation of the Effect of Trauma-Center Care on Mortality


Figure 2. Odds ratio of increased mortality in non-Centers of Excellence (COE) when compared with COE.

Table 4: In-Hospital Outcomes by Accreditation Status, 2010

<table>
<thead>
<tr>
<th>Complication</th>
<th>Unaccredited</th>
<th>Accredited</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total charges, mean, $</td>
<td>53,189</td>
<td>42,212</td>
<td>&lt;0.00001</td>
</tr>
<tr>
<td>Any complication, %</td>
<td>12.3</td>
<td>11.3</td>
<td>0.001</td>
</tr>
<tr>
<td>Mortality, %</td>
<td>0.13</td>
<td>0.07</td>
<td>0.019</td>
</tr>
<tr>
<td>FTE, %</td>
<td>0.97</td>
<td>0.55</td>
<td>0.046</td>
</tr>
</tbody>
</table>

Does Surgical Quality Improve in the American College of Surgeons National Surgical Quality Improvement Program?

Does the number of compliant processes matter?

Compliance with:
- Any 0-5 items: 6.14 days
- 6-9 items: 5.13 days
- 10-13 items: 4.08 days
Failure of Care Delivery
Reducing Complications and Cost

82% OF HOSPITALS DECREASED COMPLICATIONS
66% OF HOSPITALS DECREASED MORTALITY

Potential savings 4,500 hospitals: $13 - $26 billion/year

Opportunity 1/3 waste

250-500 COMPLICATIONS PREVENTED ANNUALLY PER HOSPITAL
Quality as measured by NSQIP

| Good Quality |  
|--------------|---
| Higher Than Expected Cost | 14%  
| As Expected Cost | 33%  
| Lower Than Expected Cost | 52%  

"Is High-Quality, Low-Cost Surgical Care Achievable Everywhere?"

Elise H. Lawson, MD, MSHS; David S. Zingmond, MD, PhD; Anne M. Stey, MD, MSc; Bruce L. Hall, MD, PhD, MBA; and Clifford Y. Ko, MD, MSHS.
Uses & Challenges

**Uses**
- Regulatory compliance
  - MIPS, Payment
- MOC and ongoing assessment
- Individual surgeon self improvement, peer review and credentialing

**Challenges**
- Accepting use of measurement
- Data extraction, costs, interoperability, shared clouds
- Financial models for comparative cost, value, pricing
- Relevant outcomes from patients
- Implementation burden