Identifying and Eliminating Unnecessary Variation in Care: The Missing Piece of ACO Success

Howard Beckman, MD, FACP, FAACH
Chief Medical Officer
Focused Medical Analytics
Clinical Professor of Medicine and Family Medicine
University of Rochester SMD

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Our Task

• Ensure patients receive the right care at the right time at the right place by reducing overuse and underuse of services

• Achieve ACO financial viability

• Engage the professional community in a respectful accountable data driven process to promote optimal care

• Create clear, value driven, transparent goals that encourages the ACO and its partners to collaborate around a data driven process
Improving Value – Three Key Drivers

• Promoting prevention and reducing downstream costs  Long Term
• Improving the Efficiency and Effectiveness of chronic disease care  Intermed Term
• Reducing overuse of unwarranted services  Short Term
WHY Focus on Overuse?

• Overuse reduces bottom line dollars for reinvestment
• Overuse use reduction can be used to capitalize the interventions needed to improve chronic care outcomes
• Results are comparatively rapid
• If selected well – provides actionable, justifiable recommendations
• Engages practitioners in the discussion of what is appropriate care
• IT WORKS!!
How to Reduce Overuse of Unwarranted Services

- **Identify Variation** – What high cost conditions have the most variation?

- **Understand Variation** – What causes the variation and is it clinically appropriate?

- **Address Variation** – How to successfully reduce unnecessary variation?
Why Variation?

• Separating cost and quality has failed – V=Q+S/C
• Quality can be defined in terms of reducing overuse, misuse and underuse (IOM)
• Physicians respond to conversations around appropriateness
• One important marker of appropriateness is explaining variation in care that exists
• Peer comparison data about measures anchored in evidence of benefit is the most powerful motivator of behavior change

Beckman H. Ann Intern Med. 2011;154:430
What is Variation Analysis?

Variation analysis provides the ACO with clear, succinct and clinically based answers to five very important questions:

1. What Disease Conditions account for the Highest Cost?
2. What are the Key Cost Drivers within each Disease Condition?
3. What variation exists within each Key Cost Driver?
4. How does one select the right opportunities to Reduce Costs?
5. How does one achieve measureable savings while Maintaining or Improving Quality?
Why So Much Variation?

<table>
<thead>
<tr>
<th>Basis of Decisions</th>
<th>Number of Decisions*</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience/Anecdote</td>
<td>441</td>
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<tr>
<td>Arbitrary/Instinct</td>
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<td>Trained to do it</td>
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<td>Parental Preference</td>
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<tr>
<td>For Research</td>
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<td>0.3</td>
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<tr>
<td>Avoid a Lawsuit</td>
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</table>

* Rounded to the nearest integer

1188 100.0

What is Required for Meaningful Variation Analysis?

• A significant sized data base (Sufficient volume - > 50,000 lives)
• Access to a Diagnostic Grouper (Risk stratify)
• Early practitioner involvement
• Asking the right questions (Getting to action)
  – What do you want me to do differently?
  – Is it the right thing to do?
• Treating interventions as Quality Improvement
## Cost Analysis Blueprint for Completed Episodes

**Episode End Date Data Period:** 12 Months  
**Dates of Service:** 19 Months

**Key:**  
- **Condition, ETG number**  
- **Total Dollars Completed Inlier Episodes from Data Base:** $3,247,899,010  
- **Sum of top ETG dollars:** $132,690,369  
- **Percentage accounted for:** 4%

### Highest Cost ETG

#### Internal Medicine

<table>
<thead>
<tr>
<th>Condition, ETG number</th>
<th>Total dollars in top ETGs</th>
<th>% Specialty dollars in top ETGs</th>
<th>Total inlier dollars attributed to specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension (388100)</td>
<td>$52,915,879 2.575</td>
<td>0.92</td>
<td>$52,915,879 2.575</td>
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<tr>
<td>Diabetes (153000)</td>
<td>$40,367,350 2.892</td>
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<td>$40,367,350 2.892</td>
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<tr>
<td>Hyperlipidemia, other (164700)</td>
<td>$26,603,498 2.705</td>
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<tr>
<td>Asthma (438800)</td>
<td>$14,703,642 2.533</td>
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#### Family Practice

<table>
<thead>
<tr>
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<th>Total dollars in top ETGs</th>
<th>% Specialty dollars in top ETGs</th>
<th>Total inlier dollars attributed to specialty</th>
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</thead>
<tbody>
<tr>
<td>Hypertension (388100)</td>
<td>$14,124,340 2.540</td>
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<td>$14,124,340 2.540</td>
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<td>Diabetes (153000)</td>
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<td>0.91</td>
<td>$10,514,147 2.802</td>
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<tr>
<td>Hyperlipidemia, other (164700)</td>
<td>$6,745,640 2.688</td>
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<td>Asthma (438800)</td>
<td>$4,061,211 2.487</td>
<td>0.93</td>
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</table>

#### Cardiovascular Disease

<table>
<thead>
<tr>
<th>Condition, ETG number</th>
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<th>% Specialty dollars in top ETGs</th>
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<tr>
<td>Hypertension (388100)</td>
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<td>$1,269,000 1.239</td>
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#### Orthopedic Surgery

<table>
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<th>% Specialty dollars in top ETGs</th>
<th>Total inlier dollars attributed to specialty</th>
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</thead>
<tbody>
<tr>
<td>Joint degeneration, localized - thigh, hip &amp; pelvis (712003)</td>
<td>$53,751,123</td>
<td>45.5%</td>
<td>$53,751,123</td>
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<tr>
<td>Joint degeneration, localized - knee &amp; lower leg (714302)</td>
<td>Joint degeneration, localized - knee &amp; lower leg (712202)</td>
<td>Joint degeneration, localized - shoulder (712206)</td>
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# Potential Savings Blueprint

Ranked by Potential Savings...finding Actionable Projects

<table>
<thead>
<tr>
<th>Conditions</th>
<th>HIGHEST COST</th>
<th>LOWEST COST</th>
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<tr>
<td>Acute</td>
<td>Total specialty potential savings: $90,271,152</td>
<td>Total specialty extrapolated potential savings: $36,215</td>
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<tr>
<td>Ambulatory care, etc.</td>
<td>Total specialty potential savings: $1,495,374</td>
<td>Total specialty extrapolated potential savings: $4,273,150</td>
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<tr>
<td>Conditions</td>
<td>HIGHEST COST</td>
<td>LOWEST COST</td>
</tr>
<tr>
<td>------------</td>
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<td>-------------</td>
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<tr>
<td>Acute</td>
<td>Total specialty potential savings: $90,271,152</td>
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<tr>
<td>Ambulatory care, etc.</td>
<td>Total specialty potential savings: $1,495,374</td>
<td>Total specialty extrapolated potential savings: $4,273,150</td>
</tr>
</tbody>
</table>

**Specialties**

- Acute care
- Ambulatory care, etc.
Choosing Clinically Appropriate Areas on which to Focus

Addressing Clinical Variation

Necessary variation

Unnecessary variation

High utilization = Overuse

Low utilization = Underuse

Active clinician input
Engaging Physicians in Change: All Are Required

Core Values

Interpersonal Process

Leadership

Accurate, meaningful data

Clear, accessible Reporting Tools

A reason to focus
“It is difficult to get a man to understand something when his salary depends on his not understanding it”

**Upton Sinclair**

“I, Candidate for Governor; and How I Got Licked”
Reprinted from the Original published in 1934
What do you think motivates physician behavior change?

- Internal motivation
- External motivation
Self Determination Theory

• Developed by Ed Deci, Ph.D. and Richard Ryan, Ph.D.
• Proposes that internal motivation trumps external motivation
• Defines three areas responsible for internal motivation
  – Competence
  – Autonomy
  – Relatedness
  – In the context of synchronous core values
Promoting Internal Motivation: Competence

• Asking someone to accomplish something they believe is possible
• The need to feel that one can reliably produce desired outcomes and/or avoid negative outcomes
Autonomy

• Being given the chance to discover how to solve a problem; encouraged to own the solution
• Autonomy relates to the feeling that one is acting in accord with one’s sense of self
• A sense of choosing rather than feeling compelled or controlled
Autonomy

• Without the possibility of choice, and the exercise of choice, a man is not a man but a member, an instrument, a thing.
• Autonomy requires that engagement in an activity is freely chosen in accordance with one’s other goals and values
Relatedness

• The need to feel close to others and emotionally secure in one’s relationships

• The sense that significant others care about one’s well-being
Relatedness

• Believing one is being asked to be part of a larger task, goal, community (Doing meaningful work)

• Context values – Believing in the team asking for the effort. Feeling that the community involved in the project shares reasons for participating and conducts its work responsibly
“Getting to Action”
Focus on the Unnecessary Variation

• Avoids focus on non-essential behaviors
• Moves physicians to a clinical discussion
  – “Here is the variation we observe.”
  – “What are your thoughts on why there is so much variation?”
  – “What does our local expert panel recommend?”
Internists HTN Rx Costs per Episode
1/1/2002-12/31/2003 data load

Advisory Committee members show in red.
What is Driving Costs?

Costs Difference per Episode

Quartile 1
Quartile 2
Quartile 3
Quartile 4

Labs and Tests
Office Visits
Pharmacy
Analysis of Pharmacy Reveals
Best Practice is Quartile 1

![Chart showing the relative utilization per episode for different drug classes in different quartiles. The chart indicates that Thiazides have the highest relative utilization in Quartile 1, followed by ACE Inhibitors, Angiotensin Receptor Blockers, and CCB/ACE-I Combos. Calcium Channel Blockers and Beta Blockers have lower relative utilization.]

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October 21, 2012
Gastroenterology
Inflammation of esophagus, w/o surgery etg 433
Endoscopy with Biopsy Rate per 100 episodes
Dates of Service: 12 Months
High tendency to use endoscopy with biopsy in an episode (orange)
Inflammation of the Esophagus, without surgery
Groups of Gastroenterologists
Rate of Upper GI Endoscopy use per 100 Episodes
2008
Group A

Rate = Episodes with Upper GI Endoscopy / Total ETG episodes

- The highlighted group utilizes Upper GI Endoscopy in 45% of its episodes.
- The total episode load of this group is 618.
- There are 10 Gastroenterologists in Group A for this analysis.
Inflammation of the Esophagus, without surgery

Individual Gastroenterologists

Rate of Upper GI Endoscopy use per 100 Episodes

2008

Group A

Rate = Episodes with Upper GI Endoscopy / Total ETG episodes

- The 10 Individual Gastroenterologists in this group have rates of Upper GI Endoscopy Use ranging from 27 to 68.
- No Individual Gastroenterologists have a rate of 0.
- 5 Individual Gastroenterologists have rates above the network average.
# ETG 473300  Gastroenterology

## Inflammation of esophagus

### High percentage services: Surgery

**BY CPT CODE**

<table>
<thead>
<tr>
<th>Quartile</th>
<th>Service Description</th>
<th>Services per 100 Episodes</th>
<th>Services/Episodes Occurred</th>
<th>Occurred in/# of Episodes</th>
<th>Total Services</th>
<th>Quartile</th>
<th>Total Costs</th>
<th>Total Cost Per Quartile Episode</th>
<th>Difference Per Quartile Episode</th>
<th>Avg Cost (Unit Price)</th>
<th>% of Total Services (All Codes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>43235 Upper GI endoscopy, diagnostic w collection of specimen</td>
<td>10.32</td>
<td>1.02</td>
<td>0.10</td>
<td>87</td>
<td>843</td>
<td>$59,610</td>
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<td>43235 Upper GI endoscopy, diagnostic w collection of specimen</td>
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<td>1.00</td>
<td>0.04</td>
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<tr>
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<td>43239 Upper GI endoscopy, with biopsy (single/multiple)</td>
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</table>

Total: 2,687 = $2,582,264 = 2,610 = 100.0%
<table>
<thead>
<tr>
<th>Doctor Code</th>
<th>% of physician episodes</th>
<th>% of orthopedic specialty episodes</th>
<th>% episodes with arthrodesis</th>
<th>% episodes with decompression</th>
<th>% episodes laminectomy</th>
<th>average episode dollars with surgery</th>
<th>average episode dollars without surgery</th>
<th>average episode dollars and bac surgery</th>
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<tr>
<td>285</td>
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<td>7.2%</td>
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<td>7.4%</td>
<td>2.8%</td>
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<td>4.4%</td>
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<tr>
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<tr>
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<tr>
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<td>6.9%</td>
<td>$9,250</td>
<td>$2,607</td>
<td>$4,211</td>
<td></td>
</tr>
<tr>
<td>335</td>
<td>29</td>
<td>15</td>
<td>19.7%</td>
<td>4.6%</td>
<td>11.6%</td>
<td>$19,676</td>
<td>$3,145</td>
<td>$8,018</td>
<td></td>
</tr>
<tr>
<td>336</td>
<td>30</td>
<td>15</td>
<td>25.7%</td>
<td>4.8%</td>
<td>6.4%</td>
<td>$15,852</td>
<td>$2,965</td>
<td>$6,795</td>
<td></td>
</tr>
<tr>
<td>337</td>
<td>32</td>
<td>15</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>$20,544</td>
<td>$3,524</td>
<td>$8,899</td>
<td></td>
</tr>
<tr>
<td>338</td>
<td>33</td>
<td>15</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>$14,194</td>
<td>$2,718</td>
<td>$6,543</td>
<td></td>
</tr>
<tr>
<td>339</td>
<td>45</td>
<td>15</td>
<td>30.8%</td>
<td>14.6%</td>
<td>13.1%</td>
<td>$21,772</td>
<td>$3,438</td>
<td>$11,618</td>
<td></td>
</tr>
<tr>
<td>340</td>
<td>45</td>
<td>15</td>
<td>42.7%</td>
<td>29.3%</td>
<td>25.3%</td>
<td>$25,192</td>
<td>$3,839</td>
<td>$13,377</td>
<td></td>
</tr>
</tbody>
</table>
Choosing the **Right** Project(s)

- Linked to community/organizational goals/objectives
- Meaningful anticipated $$ savings
- Directed towards specialties or types of services (meds vs. procedures vs. E&M) viewed as likely to succeed
### “Actionable” Procedure Level Potential Savings

<table>
<thead>
<tr>
<th>Procedure Oriented Projects</th>
<th>Specialties</th>
<th>ETG description</th>
<th>Potential Savings</th>
<th>Experience</th>
<th>Success of Changing Behavior</th>
<th>Level Of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper GI endoscopy</td>
<td>GI, FP, IM</td>
<td>Inflammation of Esophagus</td>
<td>$2.20 ppm</td>
<td>2+</td>
<td>3+</td>
<td>2+</td>
</tr>
<tr>
<td>Chiropractic services</td>
<td>Chiropracter</td>
<td>Neck &amp; Back</td>
<td>$2.19 ppm</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Spinal Injections</td>
<td>FP, IM, Ne, NeSURG,</td>
<td>Neck &amp; Back</td>
<td>$1.20 ppm</td>
<td>3+</td>
<td>3+</td>
<td>2+</td>
</tr>
<tr>
<td>Back Surgery</td>
<td>Ortho</td>
<td>Neck &amp; Back</td>
<td>$.93 ppm</td>
<td>1+</td>
<td>-</td>
<td>3+</td>
</tr>
<tr>
<td>MRI</td>
<td>Ortho, FP, IM</td>
<td>Neck &amp; Back</td>
<td>$1.20 ppm</td>
<td>4+</td>
<td>4+</td>
<td>2+</td>
</tr>
<tr>
<td>Arthroplasty</td>
<td>Ortho</td>
<td>Knee</td>
<td>$2.40 ppm</td>
<td>3+</td>
<td>1+</td>
<td>4+</td>
</tr>
<tr>
<td>non-invasive cardiology</td>
<td>Card, FP, IM</td>
<td>Ischemic heart disease</td>
<td>$1.00 ppm</td>
<td>4+</td>
<td>2+</td>
<td>2+</td>
</tr>
<tr>
<td>nasal endoscopies</td>
<td>Otolaryngology</td>
<td>Chronic sinusitis</td>
<td>$1.60 ppm</td>
<td>4+</td>
<td>3+</td>
<td>2+</td>
</tr>
<tr>
<td>lithotripsy</td>
<td>Urology</td>
<td>Kidney stones</td>
<td>$.94 ppm</td>
<td>0</td>
<td>-</td>
<td>2+</td>
</tr>
</tbody>
</table>

Scale: 0 Low, 4 High
### “Actionable”

**Drug Level Potential Savings**

<table>
<thead>
<tr>
<th>Drug Level Projects</th>
<th>Specialties</th>
<th>ETG description</th>
<th>Estimated Savings</th>
<th>Experience</th>
<th>Success of Changing Behavior</th>
<th>Level Of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic ACE &amp; ARBs</td>
<td>FP, IM</td>
<td>Hypertension</td>
<td>$6.00 ppm</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Move brand/high cost statin to simvastatin</td>
<td>FP, IM, Card</td>
<td>Hyperlipidemia and hypofunction thyroid gland</td>
<td>$8.47 ppm</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PPIs brand to generic</td>
<td>FP, IM</td>
<td>Inflammation of esophagus</td>
<td>$4.67 ppm</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Brand hypoglycemic agents vs. generic alternatives</td>
<td>FP, GP, IM, Endo</td>
<td>Diabetes</td>
<td>$4.68 ppm</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Narcotics Impact</td>
<td>FP,IM, Ne, NeSurg</td>
<td>Neck &amp; Back</td>
<td>$.65 ppm</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Triptans</td>
<td>Ne, FP</td>
<td>Migraine headache</td>
<td>$.41 ppm</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>High cost antibiotics</td>
<td>FP, IM</td>
<td>Acute and Chronic Sinusitis</td>
<td>$.60 ppm</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Scale: 0 Low, 4 High
Choosing the **Right** Project(s)

- Focus where there is overlap with multiple products (Medicaid, Commercial, Medicare)
- Evidence based recommendations encourage eliminating overuse
- Clinical champion(s) available
- Choose projects with **actionable interventions**
So What: Does it Work?
Laryngoscopy Case Mix Curve

Otolaryngology
Chronic Sinusitis, with surgery - etg 334
Use of Diagnostic Nasal Endoscopy per 100 episodes
high tendency to use dx nasal endoscopy in an episode (dark blue)
high number of dx nasal endoscopy in an episode (green)
both (orange)
Outcome on ENT Fiberoptic Laryngoscopy

11% Reduction in Utilization Rate

Greene RA, Beckman HB, Mahoney T. Beyond the Efficiency Index: Finding a better way to reduce overuse and increase efficiency in physician care. Health Affairs. 2008;27:w250-w259. (Published online May 20, 2008:10.1377/hlthaff.27.4.w250.)
Another Example
$.32 pmpm Reduction

1998-99 MRI Utilization
Finger Lakes and U.S. States

Data Sources: FLHSA 2000 MRI Survey; 1998-99 TMG National MRI Survey
Antibiotic Savings
(all minor upper respiratory infections)

Trended antibiotic cost per episode

Actual antibiotic cost per episode

Trend factor = 2000 actual / 1999 actual, equals 11.42%
Estimated Timeline for Data Deliverables

- **Data Load** 3-4 weeks
- **Cost Analysis Blueprint** 4-6 weeks
- **Key Cost Driver Reports** 10-12 weeks
  - First reports are delivered 2-3 weeks after client selection. Remaining reports delivered on a rolling basis.
- **Potential Cost Savings Blueprint** 6-8 weeks
- **Client Selects up to 120 Specialty/Condition combinations for Key Cost Driver Reports.**
- **Case Mix Curves** 4-6 weeks
  - Curves delivered on a rolling basis after client selection.
- **Client selects up to 40 specialty/condition combinations for Case-Mix Curve analysis.**
Summary

• Reducing overuse is the short term method to reliably reduce overuse while improving value
• Reducing unnecessary practice variation is achievable, predictably successful and cost effective
• Early meaningful involvement of the physician community is essential
• Conducting the work as QI, not a tournament is foundational
References


• Greene RA, Beckman HB, Mahoney T. Beyond the Efficiency Index: Finding a better way to reduce overuse and increase efficiency in physician care. Health Affairs. 2008;27:w250-w259.

References...continued


• Safran D, Miller W, **Beckman H**. The Practitioner-Practitioner and Practitioner-Organizational Component of Relationship-Centered Care: Practice and Theory. J Gen Intern Med. 2006;21:S9-15
