In Pursuit of Appropriate Clinical Treatment: a clinician’s perspective

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2010
Clinical Appropriateness

- Unwarranted variation contributes substantially to healthcare costs

- Controllable aspects relate to:
  - Procedure
  - Proceduralist
  - Place
  - Patient

- Opportunities exist to decrease cost and improve quality
Clinical Appropriateness

The NEW ENGLAND JOURNAL of MEDICINE

HEALTH CARE 2009

Slowing the Growth of Health Care Costs — Lessons from Regional Variation

Elliott S. Fisher, M.D., M.P.H., Julie P. Bynum, M.D., M.P.H., and Jonathan S. Skinner, Ph.D.

FEBRUARY 26, 2009
Clinical Appropriateness

“The Dartmouth experience” …..

![Map of the United States with various shaded regions indicating different quintiles of EOL-EI and per capita Medicare spending.]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Quintile of EOL-EI (Lowest)</th>
<th>Quintile of EOL-EI (Highest)</th>
<th>Ratio (Highest to Lowest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOL-EI, $†</td>
<td>9074</td>
<td>14 644</td>
<td>1.61</td>
</tr>
<tr>
<td>Per capita Medicare spending, $‡</td>
<td>3922</td>
<td>6304</td>
<td>1.61</td>
</tr>
<tr>
<td>Hospital characteristics§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall supply (beds per 1000), n</td>
<td>2.4</td>
<td>3.2</td>
<td>1.32</td>
</tr>
<tr>
<td>Beds in teaching hospitals, %</td>
<td>10.2</td>
<td>28.1</td>
<td>2.76</td>
</tr>
<tr>
<td>Beds in hospitals with &gt; 300 beds, %</td>
<td>31.6</td>
<td>57.2</td>
<td>1.81</td>
</tr>
<tr>
<td>Physician supply (per 10 000), n§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical specialists</td>
<td>26.9</td>
<td>44.4</td>
<td>1.65</td>
</tr>
<tr>
<td>General internists</td>
<td>21.3</td>
<td>37.3</td>
<td>1.75</td>
</tr>
<tr>
<td>Family practitioner/GP</td>
<td>35.9</td>
<td>26.5</td>
<td>0.74</td>
</tr>
<tr>
<td>Surgeons</td>
<td>43.8</td>
<td>56.4</td>
<td>1.29</td>
</tr>
<tr>
<td>All other specialties</td>
<td>56.8</td>
<td>77.7</td>
<td>1.37</td>
</tr>
</tbody>
</table>

Clinical Appropriateness
“The Dartmouth experience” .....
Clinical Appropriateness
“The Dartmouth experience” .....

Figure 4. Utilization of physician services across quintiles of spending for the Medicare Current Beneficiary Survey cohort, 1992–1996.

- **Evaluation and management**
- **Diagnostic tests**
- **Imaging**
- **Minor procedures**
- **Major procedures**

<table>
<thead>
<tr>
<th>Quintile of End-of-Life Expenditure Index</th>
<th>Ratio of Spending from Quintile 5 to Quintile 1 in Each Category*</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Lowest)</td>
<td>1.05</td>
</tr>
<tr>
<td>(1)</td>
<td>1.45</td>
</tr>
<tr>
<td>(2)</td>
<td>1.65</td>
</tr>
<tr>
<td>(3)</td>
<td>1.78</td>
</tr>
<tr>
<td>(4)</td>
<td>1.72</td>
</tr>
<tr>
<td>(Highest)</td>
<td></td>
</tr>
</tbody>
</table>

_Fisher et al, Annals Int Med, 2003_
Clinical Appropriateness

- Procedure
- Proceduralist
- Place
- Patient
Clinical Appropriateness

Even inexpensive tests can have expensive outcomes

Faecal occult blood tests (FOBT)

Medicare Benefit Schedule fee $9.05

- Study of outcome of tests on 330 patients in one of 3 hospitals
- Only 1 patient had an appropriate indication for testing
- 50% presented with bleeding symptoms
- 18% problem warranted investigation irrespective of the outcome of FOBT

Use and abuse of faecal occult blood tests (FOBT) in an acute hospital inpatient setting
Friedman, A. et al. IMJ 2010
Clinical Appropriateness
Even inexpensive tests can have expensive outcomes

- 1 in 6 patients adversely affected as a result of testing
  - patients inappropriately subjected to colonoscopy
  - patients were not referred for colonoscopy because they returned a negative FOBT
  - Delayed subsequent treatment
  - Inappropriate subsequent treatment
  - Increased inpatient stay
Clinical Appropriateness

Gastroscopy

Gold standard for Barrett’s surveillance =
1. Gastroscopy with 4 quadrant biopsies/cm length of Barrett’s +
2. Repeat gastroscopy at recommended intervals

- Over 2000 Barrett’s surveillance cases in a U.S. community
- Linked gastroscopy and pathology reports
- 51% adherence to guidelines
- Longer segment associated with reduced adherence (> 9cm Odds Ratio = 0.03)
- Non-adherence had a lower pre-malignant detection rate (OR 0.53)
Clinical Appropriateness

Key Components

- Procedure
- Proceduralist
- Place (Environment)
- Patient
Clinical Appropriateness
Quality of care

Table 5. Quality of Care according to Level of Medicare Spending in Hospital Referral Region of Residence*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Quintile of EOL-El</th>
<th>Test for Trend†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 (Lowest)</td>
<td>2</td>
</tr>
<tr>
<td>Acute MI cohort‡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received reperfusion within 12 hours</td>
<td>55.8</td>
<td>55.3</td>
</tr>
<tr>
<td>Received aspirin in the hospital</td>
<td>87.7</td>
<td>87.0</td>
</tr>
<tr>
<td>Received aspirin at discharge</td>
<td>83.5</td>
<td>82.5</td>
</tr>
<tr>
<td>Received ACE inhibitors at discharge</td>
<td>62.7</td>
<td>60.0</td>
</tr>
<tr>
<td>Received β-blockers in the hospital</td>
<td>61.5</td>
<td>61.0</td>
</tr>
<tr>
<td>Received β-blockers at discharge</td>
<td>52.7</td>
<td>53.2</td>
</tr>
<tr>
<td>MCBS cohort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventive services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received influenza vaccine</td>
<td>60.3</td>
<td>56.3</td>
</tr>
<tr>
<td>Received pneumonia vaccine</td>
<td>29.4</td>
<td>28.7</td>
</tr>
<tr>
<td>Received Papanicolaou smear (among women without hysterectomy)</td>
<td>40.8</td>
<td>36.9</td>
</tr>
<tr>
<td>Received mammography (among women age 65–69 y)</td>
<td>48.7</td>
<td>46.9</td>
</tr>
</tbody>
</table>

Clinical Appropriateness

- Procedure
- Proceduralist
- Place
- Patient
Clinical Appropriateness
Complexity...

Afghanistan Stability / COIN Dynamics
Clinical Appropriateness
Complexity...

Cumulative Percent Survival of Primary Hip Replacement

<table>
<thead>
<tr>
<th>Partial vs Total</th>
<th>Hazard Ratio</th>
<th>(95% Confidence Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 3Mth</td>
<td>HR=10.77</td>
<td>(10.07, 11.51) p&lt;0.001</td>
</tr>
<tr>
<td>3Mth-6Mth</td>
<td>HR=6.97</td>
<td></td>
</tr>
<tr>
<td>6Mth-1.5Yr</td>
<td>HR=5.15</td>
<td></td>
</tr>
<tr>
<td>1.5Yr-2.5Yr</td>
<td>HR=4.03</td>
<td></td>
</tr>
<tr>
<td>2.5Yr-3.5Yr</td>
<td>HR=3.69</td>
<td></td>
</tr>
<tr>
<td>3.5Yr-4Yr</td>
<td>HR=3.52</td>
<td></td>
</tr>
<tr>
<td>4Yr-5Yr</td>
<td>HR=3.38</td>
<td></td>
</tr>
</tbody>
</table>

Would physician involvement improve outcomes (clinical and financial)?

Australian Orthopaedic Association National Joint Replacement Registry
Mortality following Primary Hip and Knee Replacement 2010 REPORT
The way forward...
Application of NHMRC guidelines to colonoscopic surveillance

Bamford P. MJA 2002; 176: 155-157

- Postpolypectomy surveillance decisions matching the guidelines increased from 37% to 96% ($P < 0.05$)

- 23% reduction in colonoscopies performed per year

- Mean time to repeat colonoscopy after polypectomy increased from 2.7 to 3.5 years ($P < 0.005$)

- 17% reduction in colonoscopies performed on the basis of a family history of colorectal cancer
Clinical Leadership…

“We’ve celebrated cowboys, but what we need is more pit crews.”

Gawande, The New Yorker, 2009
Team development…

<table>
<thead>
<tr>
<th></th>
<th>Mortality Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n hospitals)</td>
</tr>
<tr>
<td>Sophistication of training policy</td>
<td>-0.31  p&lt; 0.05</td>
</tr>
<tr>
<td>Level of teamwork</td>
<td>-0.37  p&lt; 0.05</td>
</tr>
<tr>
<td>Use of staff appraisal</td>
<td>-0.34  p&lt; 0.05</td>
</tr>
</tbody>
</table>

61 acute hospitals in UK: 2000-7,500 employees
Case severity adjusted (West et al 2002)
Checklists ...

**Surgical Safety Checklist**

**Before induction of anaesthesia**
(with at least nurse and anaesthetist)

- **Has the patient confirmed his/her identity, site, procedure, and consent?**
  - Yes

- **Is the site marked?**
  - Yes
  - Not applicable

- **Is the anaesthesia machine and medication check complete?**
  - Yes

- **Is the pulse oximeter on the patient and functioning?**
  - Yes

- **Does the patient have a:**
  - **Known allergy?**
    - No
    - Yes
  - **Difficult airway or aspiration risk?**
    - No
    - Yes, and equipment/assistance available
  - **Risk of >500ml blood loss (7ml/kg in children)?**
    - No
    - Yes, and two IVs/central access and fluids planned

**Before skin incision**
(with nurse, anaesthetist and surgeon)

- **Confirm all team members have introduced themselves by name and role.**

- **Confirm the patient’s name, procedure, and where the incision will be made.**

- **Has antibiotic prophylaxis been given within the last 60 minutes?**
  - Yes
  - Not applicable

- **Anticipated Critical Events**
  - **To Surgeon:**
    - What are the critical or non-routine steps?
    - How long will the case take?
    - What is the anticipated blood loss?
  - **To Anaesthetist:**
    - Are there any patient-specific concerns?
  - **To Nursing Team:**
    - Has sterility (including indicator results) been confirmed?
    - Are there equipment issues or any concerns?

- **Is essential imaging displayed?**
  - Yes
  - Not applicable

**Before patient leaves operating room**
(with nurse, anaesthetist and surgeon)

- **Nurse Verbally Confirms:**
  - The name of the procedure
  - Completion of instrument, sponge and needle counts
  - Specimen labelling (read specimen labels aloud, including patient name)
  - Whether there are any equipment problems to be addressed

- **To Surgeon, Anaesthetist and Nurse:**
  - What are the key concerns for recovery and management of this patient?
Clinical Appropriateness
The informed and informing patient…

Early Palliative Care for Patients with Metastatic Non–Small-Cell Lung Cancer

Conclusions

*Among patients with metastatic non–small-cell lung cancer, early palliative care led to significant improvements in both quality of life and mood. As compared with patients receiving standard care, patients receiving early palliative care had less aggressive care at the end of life but longer survival.*
LETTING GO

What should medicine do when it can’t save your life?

by Atul Gawande

AUGUST 2, 2010

Modern medicine is good at staving off death with aggressive interventions—and bad at knowing when to focus, instead, on improving the days that terminal patients have left.

Sara Thomas Monopoli was pregnant with her first child when her doctors learned that she was going to die. It started with a cough and a pain in her back. Then a chest X-ray showed that her left lung had collapsed, and her chest was filled with fluid. A sample of the fluid was drawn off with a long needle and sent for testing. Instead of an infection, as everyone had expected, it was lung cancer, and it had already spread to the lining of her chest. Her pregnancy was thirty-three weeks along, and the obstetrician who had ordered the test broke the news to her as she sat with her husband and her parents. The obstetrician didn’t get into the prognosis—she would bring in an oncologist for that—but Sara was stunned. Her mother, who had lost her best friend to lung cancer, began crying.

The doctors wanted to start treatment right away, and that meant inducing labor to get the baby out. For the moment, though, Sara and her husband, Rich, sat by themselves on a quiet terrace off the labor floor. It was a warm Monday in June, 2007. She took Rich’s hand, and they tried to absorb what they had heard. Monopoli was thirty-four. She had never smoked, or lived with anyone who had. She exercised. She ate well. The diagnosis was bewildering. “This is going to be O.K.,” Rich told her. “We’re going to work through this. It’s going to be hard, yes. But we’ll figure it out. We can find the right treatment.” For the moment, though, they had a baby to think about.

http://www.newyorker.com/reporting/2010/08/02/100802fa_fact_gawande?printable=true
Opportunities

- Incorporate quality indicators into negotiations with private hospitals
- Link with professional bodies interested in pursuing professional standards such as credentialing
- Share public sector safety agendas such as Time Out, hand hygiene, medication safety, open disclosure with stakeholders
- Align with other health related groups interested in quality e.g. ACI, CEC, ACHS
- Promote patient education
- Train patients to drive agenda e.g. advance care directives; Joint Commission
- Promote Clinical Leaders to drive change
Questions