Measuring clinical and financial outcomes

ABF/Casemix Symposium 1
Sydney/ 30 November 2012

Assoc Prof Terri Jackson
University of Melbourne, Australia
Northern Clinical Research Centre
The Northern Hospital
Activity based funding seeks to:

- Hold hospitals accountable for costs and quality, controlling for patient variation (adjusted for the mix of cases)
- Refocus management on the product of hospital care: the ‘treated patient’ not individual ‘services’ (Fetter’s ‘intermediate products’)
Fetter’s concept of intermediate products of the hospital

<table>
<thead>
<tr>
<th>OPERATIONAL DECISIONS</th>
<th>MEDICAL DECISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUTS</td>
<td>OUTPUTS</td>
</tr>
<tr>
<td>Capital:</td>
<td>Patient Bed/Days</td>
</tr>
<tr>
<td>Hospital Beds</td>
<td>X-Rays</td>
</tr>
<tr>
<td>Equipment</td>
<td>Lab. Tests</td>
</tr>
<tr>
<td>Labour:</td>
<td>Meals</td>
</tr>
<tr>
<td>Pharmacists</td>
<td></td>
</tr>
<tr>
<td>Pathologists</td>
<td></td>
</tr>
<tr>
<td>Nurses</td>
<td></td>
</tr>
</tbody>
</table>

Efficiency

Effectiveness

Specification of the Hospital Product

Adapted from Fetter and Freeman (1986)
Hospital managers are thus held responsible for:

• Ensuring best quality care at the lowest cost:
  • Better clinical use of evidence
  • Better utilisation of facilities
  • Reduced waste and duplication

WHILE

• Ensuring continued survival of the hospital:
  • Financial survival
  • Medical and nursing workforce retention
  • Sufficient volume to support core services
Physicians direct ≈ 80% of hospital expenditures

- Discharge timing
- Imaging & test orders
- Use of theatre
- Use of ICU
- Drugs
- Surgical prostheses
- Frequency of observations
- Equipment purchases
Casemix creates a common language between clinicians and managers (both resource and clinical homogeneity)

Inflamed appendix

DRG G07B

$3,409

Appendicectomy without complications
You can’t manage what you can’t measure

• How different is your length of stay?
  – by DRG
  – by clinical unit/ specialty
  – by individual clinician

• Do you have more DRGs ‘with complications’?
  – Are the ‘complications’ or ‘co-morbidities’?

• What is the pattern of the problem?
  – higher average cost/LOS across the board?
  – lower median but more ‘outliers’?
If length of stay information is all you’ve got, then you use what you have

- LOS is only a surrogate for the cost of care
  - LOS can be easily ‘benchmarked’
  - BUT: Cost is not perfectly correlated with length of stay
    - Surgical cases (1 hour in theatre $ \approx 1$ day of stay $)
    - ICU days $\approx 4$ times ordinary ward $

- Inaccurate (and potentially distorting) measurement of the inputs of care (eg, ICU)

- Premature discharge risks patient health and may increase readmissions
Patient-level utilisation data better

- Data from clinical support/order systems
  - Pathology/radiology test counts
  - Model departmental costs on RVUs
- Clinical costing systems ‘tag’ utilisation to patient’s URN
The direct costs of DRG I03C
(Hip Replacement – CscC)
What else can we do with ‘routine’ data?

Poor quality care adds to hospital costs

- Patients with at least one hospital-onset diagnosis:
  - Stay nearly 10 days longer than other patients
  - Cost $A 6,826 more per episode (controlling for DRG, age and co-morbidity; average case $A 3,000)

- Extrapolated to entire hospital system:
  - Adds 18.6% to hospital expenditures
  - Around $2 bil pa nationally in Australia
  - Even if only 40% preventable, potential savings of 7.5%

Newer anesthetics promise improved clinical outcomes but at a higher price per dose— are they worth it?

• 500 general surgery patients at The Alfred Hospital
• “Despite the lack of significantly different clinical outcomes, we sought to test whether there were financial benefits of the newer anesthetics”
• “No significant differences were found on length of stay, mean episode cost, operating room costs, ward costs, or readmission rate within 3 months”

What’s the cost-benefit of ‘feeding up’ malnourished inpatients?

- Recording of malnutrition on admission is poor
- “Controlling for the underlying condition and any treatment administered…malnutrition is estimated to add AU $1,745 per admission”
- “…our findings do not imply neglect in the treatment of malnutrition. Rather…as hospital managers seek to improve the quality of care and decrease costs, comorbidities such as malnutrition are obvious targets for interventions.”

International collaborations to improve use of routine hospital data

• IMECCHI (International Methodology Consortium for Coded Health Information)—WHO affiliation; Canadian base:

• PCSI (Patient Classification Systems International)—European base, Fetter initiative
Measuring clinical and financial outcomes requires reliable data

Comments? Questions?