KPIs

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DNT meeting, Launceston 2015
Outline

• Role of KPIs
• Types of indicators
• Issues to consider
• Victorian experience
Measures vs indicators

• Measure:
  – used to quantify things we see, e.g. weight, BMI

• Indicators:
  – used to assess more abstract concepts, e.g. ‘quality of care’ or ‘clinical performance’
KPIs in healthcare

• Traditional KPIs measure financial performance

• Focus on healthcare quality led to indicators for issues of clinical relevance, e.g.
  – patient satisfaction
  – medical error rates
  – infection control

• Systematic review of KPIs in hospitals to improve quality of care
  – majority of indicators focus on care processes rather than outcomes

Liu HC. Health Policy 2013; 113: 160-9
KPIs: Purpose

Allow evaluation of systems of healthcare delivery (rather than individual clinicians)

- Identify practice patterns
- Engage and support clinicians to improve quality of care
- Provide transparency to policy-makers and the public
KPIs: Implementation

• Issues:
  – process for data collection, collating and reporting
  – sustainability of processes (resources)
  – benchmarking and targets
  – role for audits
  – governance and handling of outliers
Types of indicators

• Structure
• Process
• Surrogate outcome
• Outcome

• Each category has pros and cons

• Key is balance whilst considering aim of the measurement initiative
Structure indicators

• Characteristics of the setting that affect a system’s ability to meet healthcare needs of patients

• Often reflect availability of services/resources

• E.g.
  – outpatient vascular access service
  – renal dietetic program
  – renal nurse-to-patient ratios
Process indicators

• Care that is being delivered

• E.g.
  – hepatitis B vaccination
  – U/S vein mapping in preparation for AVF creation
Outcome indicators

• Either observed or patient reported
  (e.g. death, bacteraemia vs QoL, satisfaction survey)

• And either;
  – Surrogate outcomes
    • more easily obtained, but need robust evaluation
  – Outcomes

• Also clinical correlates
  • objectively measured, associated with disease activity
## Pros and Cons

<table>
<thead>
<tr>
<th>Category</th>
<th>Pros</th>
<th>Cons</th>
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</table>
| **Structure**       | • Easy to record  
                     • Not influenced by pt case mix                                   | • Difficult /costly to change  
                     • Need more info to understand                                      |
| **Processes**       | • Sensitive to change in practice  
                     • Limited delay between delivering and measuring                     | • Clinical relevance may change  
                     • Influenced by pt preference                                           |
| **Clinical Correlates** | • More related to health status  
                     • More sensitive to differences in quality of care                   | • Requires a target value  
                     • Influenced by pt factors                                              |
| **Surrogate outcomes** |                                                                       |                                                                      |
| **Outcomes**        | • Relevant and noticeable to pts  
                     • Global assessment of performance                                     | • Long observation period, large numbers  
                     • Influenced by many other factors                                      |
What makes a good KPI?

• Good understanding of what is clinically relevant

• Assessment that may identify potential improvements
  – increase quality
  – decrease cost
  – both

• The perfect indicator doesn’t exist
Things to consider: validity

• Face validity
  – what the KPI look like it measures

• Construct validity
  – what the KPI actually measures

• Content validity
  – degree to which the KPI measures the theory it should

Special care to assess KPIs when linked to payment or reputation, to avoid potential unintended consequences
Things to consider: targets

• Targets can be controversial
  – international targets should be adopted if exist
  – otherwise consider desirable or based on comparative data

• Numerators and denominator (proportions)
  – selecting different numerators and denominators will affect the final indicator

• Adequate case-mix adjustment
  – obtain fair comparisons between services, and over time
Things to consider: evidence-base

- Measurement initiatives commonly built around set of indicators
  - create a comprehensive picture of the quality of care

- Evidence-base is useful start
  - systematic reviews of strategies to implement best practice

- Causal chain as starting point
  - care connected by evidence-based links
Causal chain of reducing the cardiovascular risk in adult CKD patients not receiving dialysis, including examples of potential performance indicators.

**Examples of potential indicators**

**STRUCTURE**
- Nurse practitioner responsible for cardiovascular risk management
  - evaluated by \(^{34}\)

**PROCESS**
- Prescription of statins
  - evaluated by \(^{35}\)

**SURROGATE OUTCOME**
- Low-density cholesterol level
  - evaluated by \(^{36}\)

**OUTCOME**
- Risk of cardiovascular event
  - Percentage of CKD patients aged ≥ 18 years (stages 1-5, not on dialysis) who had a (non-)fatal myocardial infarction and/or a (non-)fatal non-hemorrhagic stroke and/or an arterial revascularisation procedure in the last year

Things to consider: governance

• Accountability for not achieving targets
  – penalty systems
  – who is responsible: unit/hospital, health dept, or KPI committee?

• Potential for inappropriate practice,
  – e.g. pushing home dialysis for those not suitable

KPIs do not necessarily capture the distinction between performing a service and performing it well
  hence the need for strong evidence linking KPI to clinically meaningful outcomes
International Renal KPIs

• Canada: Ontario Road Map
• UK: NHS Outcomes Framework
• US: HD clinical performance measures
Victorian KPIs

• Measure the performance of renal services
  – focus on perceived high impact clinical activities

• Stimulate wider conversation at Network level
  – variations in practice, resources
  – achievements and discrepancies

• Stimulate shared learning, collaboration, research and evidence-based pathways

Victorian KPIs

• Working Group developed 2011 (from RHCN)

• Developed 6 KPIs
  – in association with the Transplant Working Group

• Data provided monthly via website portal

• Permission obtained from CE of all renal services
Victorian KPIs

• Complementary to ANZDATA

• Targets adopted using established criteria or agreed performance levels

• No additional funding, data easy to collect

• Standardised data collection to benchmark
# Victorian KPIs

<table>
<thead>
<tr>
<th>KPI</th>
<th>Description</th>
<th>Target</th>
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<tbody>
<tr>
<td>1</td>
<td>New, planned (i.e. early referral) patients that have received CKD education before starting dialysis</td>
<td>80%</td>
</tr>
<tr>
<td>2</td>
<td>New HD patients that use a permanent vascular access at first HD</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>Dialysis patients that are dialysing at home, both incident and prevalent rates</td>
<td>35% (both incident and prevalent)</td>
</tr>
<tr>
<td>4</td>
<td>Peritonitis rate of PD patients</td>
<td>Less than 1 in 18 months</td>
</tr>
<tr>
<td>5</td>
<td>New live donor transplants that are pre-emptive</td>
<td>20%</td>
</tr>
<tr>
<td>6</td>
<td>New ESKD patients ≤ 65 yrs with a transplant or are active on waiting list within 3 and 6 months of RRT</td>
<td>35% at 3 months 50% at 6 months</td>
</tr>
</tbody>
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Victorian KPIs

• Improvements in most KPIs at State-level

• Limited gains in 2:
  – % of patients dialysing at home (KPI 3)
    • varying prevalence (17-40%)
    • differences relate to resource allocation/enthusiasm?
  – timely listing for transplantation (KPI 6)
    • complex issues
    • overly optimistic targets?
KPI 3 Home dialysis (prevalence)
KPI 6 Waiting List

Target = 50% within 6 months

Target = 30% within 3 months
KPI 5 Pre-emptive transplant

Target = 20%
Victorian KPIs

• Good-will and enthusiasm of physicians and nurses

• Real-time reporting, quarterly feedback

• Require further evaluation and monitoring

• Auditing planned
Victorian KPIs

- Working Group is responsible for
  - analysing the data each quarter
  - ensuring indicators remain accurate and relevant
  - considering new KPIs or projects

- RHCN Forum annually: consensus to retain all 6 KPIs

- KPI reports to CE to generate internal discussions and analysis of gaps/barriers

- Inform the Department where to invest future improvement
Effect on clinical practice

• How can KPIs be used to catalyse improvements in clinical practice?
  – validity of Victorian KPIs not yet well determined
  – strategies to stimulate improved practice have not been defined either
# National KPIs

<table>
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<tr>
<th>State</th>
<th>KPI plans</th>
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<tbody>
<tr>
<td>Victoria</td>
<td>6 KPIs implemented with online reporting for last 2 years</td>
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<tr>
<td>New South Wales</td>
<td>16 KPIs drafted and endorsed by Dept of Health NSW, although data collection not commenced</td>
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<tr>
<td>South Australia</td>
<td>8 KPIs adopted, endorsed by SA Health Quality and Safety Strategic Governance Committee in 2014, implementation started</td>
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<tr>
<td>Queensland</td>
<td>Initially 36 KPIs (2002-2007) followed by 2 indicators (timely vascular access and BK virus screening) 10 KPIs under development, data collection to start 2015?</td>
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<tr>
<td>Western Australia</td>
<td>10 drafted KPIs, soon to approach the Department of Health WA</td>
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<tr>
<td>Tasmania</td>
<td>KPIs at Royal Hobart Hospital, State-wide established?</td>
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Questions?