Performance Indicators for Coding Quality (PICQ™) and Quality System Data Analysis
Workshop Contents
2pm to 5pm (less a break at 3pm)

- Introduction
- Clinical Coding Quality Management System
- Benchmarking
- Control
- Performance Measurement
- Performance Improvement
- Cause and Effect
- Organisational Change Levers
- Change Management Matrix
- Questions
- Take Away Points
Introduction

Shifting Your Paradigm

- Getting in the ‘strategic’ zone
CLINICAL CODING QUALITY MANAGEMENT SYSTEM
Clinical Coding Quality Management System

What Is It?

- Clinical Coding
  - The application of a disease and procedure classification system that permits the systematic recording, analysis, interpretation and comparison of morbidity and procedural data collected in different hospitals, states and countries
  - This information can be used for multiple purposes including health policy development, research, planning and financial reimbursement

- Quality Management System
  - A quality management system (QMS) can be expressed as the organisational structure, procedures, processes and resources needed to implement quality management
  - A set of co-ordinated activities to direct and control an organisation in order to continually improve the effectiveness and efficiency of its performance
Exercise 1

Clinical Coding Quality Management – Possible Components

- Table-based teams
- Brainstorm
- Q: In your experience… what are some of the components of a quality management system that are used to improve clinical coding quality?

- **Hint**: think of
  - Organisational structure and skill set
  - Procedures / processes, and
  - Tools
Exercise 1

Q: In your experience... what are some of the components of a quality management system that are used to improve clinical coding quality?

- Organisational structure and skill set
  - Clinical Coding Educator role and skill set
  - Internal Audit role and skill set
  - Health Information Management skill set
  - Clinical coding organisational champion (leader)

- Procedures / processes, and
  - Internal audit regime (DRG assignment, Discharge Summary completion, documentation and demographics quality...)
  - External audit regime
  - Education and training regime and delivery method
  - Internal / external audit results alignment with targeted training and education
  - Organisational review (positions, levels of work, capacity and skill levels)
  - Procedure review
  - Tool review
  - Medical record query process (clarification loop through clinicians)
  - Benchmarking analysis
  - Communications strategy / program
  - Clinical coding improvement policy / procedure

- Tools
  - Form formats
  - Performance reporting to administration
  - State-based reporting (PRS 2 error reporting)
  - Patient Administration System edits
  - Coding quality tools (PICQ™, ACBA)

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BENCHMARKING
Benchmarking

- Benchmarking answers the question:

  Where am I relative to others?

- Measurements are typically quality, time or cost based
- It is often used in conjunction with agreed or demonstrated best practice
- Typically the purpose of benchmarking is to increase some aspect of performance
- Benchmarking allows organisations to develop plans on how to make improvements or adopt specific best practices
- Benchmarking may be a one-off event, but is now often treated as a continuous process in which organisations continually seek to improve their practices
- Benchmarking should not be confused with performance measurement (specifically discussed later)
PICQ™
A Coding Quality Tool

- PICQ™ stands for Performance Indicators for Coding Quality
- PICQ™ is an auditing tool which identifies records in data sets that may be incorrectly coded
- PICQ™ measures coding accuracy by using a set of indicators
- PICQ™ is used for benchmarking across health services, hospitals and clinical coders
- PICQ™ is used for internal performance management to support:
  - the continuous review of coding quality, and
  - review of amended coded data quality
The PICQ™ Concept

- PICQ™ is designed to examine admitted patient morbidity data coded using the:
  - *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)*, and
  - the *Australian Classification of Health Interventions (ACHI)*

- ICD-10-AM and ACHI are the national standard coding systems for admitted patient morbidity episodes in Australia and a number of other countries
What Input does PICQ™ Require?

- PICQ™ uses the following data fields extracted from a PAS or data warehouse:
  - User episode ID
  - Hospital ID
  - Medical record number
  - Date of admission
  - Date of separation
  - Date of birth
  - Sex
  - Principal diagnosis code
  - Additional diagnosis codes
  - Procedure (intervention) codes
  - Care type
  - Mode of separation
  - DRG
  - Days in ICU
  - Intended length of stay
  - Neonatal admission weight in grams
  - Hours on mechanical ventilation
  - Leave days
  - Mental health legal status
  - Coder
  - User defined fields
What does a PICQ™ Indicator do?

- When an indicator examines a record, it analyses diagnosis and procedure codes:
  - in combination with other codes
  - in combination with National Health Data Dictionary (NHDD) data items
  - in a sequence
  - for their presence or absence
  - for their specificity

- PICQ™ can be applied at any stage of data collection
  - PAS extract
  - Data warehouse extract

- PICQ™ indicators are expressed in a standard format allowing comparison of outcomes:
  - over time
  - between facilities
  - between coders
PICQ™ Overall Quality Ratio

Numerator, Denominator and Ratio

- When the PICQ™ program processes indicators against a data set the results are expressed as a ratio of numerator to denominator

- **Denominator** records are the cases in the data set under analysis in which the numerator records (problem records) could occur

- **Numerator** records are the cases the indicator is seeking to identify (problem records); these records are selected from the denominator records
Exercise 2
Benchmarking

- Table-based teams
- Review and discuss the Benchmark by Time Reports
- Q: Rank the three organisations’ coding quality with the best being number 1 then 2 then 3
  - Organisation A, Rank _____
  - Organisation B, Rank _____
  - Organisation C, Rank _____

**Hint:** where is the overall quality ratio?
CONTROL
Quality Management System Concept

Control

Organisation A, B and C
PICQ Overall Quality Measure
6 months Ending June 2011 Result (%)

Organisation A
Organisation A Average
Linear (Organisation A)

Organisation B
Organisation B Average
Linear (Organisation B)

Organisation C
Organisation C Average
Linear (Organisation C)
Exercise 3

Control

- Table-based teams
- Review and discuss the graphic results of the PICQ™ overall quality measure by time
- Q: Rank the three organisations’ coding quality with the best being number 1 then 2 then 3
  - Organisation A, Rank _____
  - Organisation B, Rank _____
  - Organisation C, Rank _____
- Hint: who is control?
Quality Management System Concept

**Variation: Quality Enemy No. 1**

- **Traditional views on variation**
  - It’s a law of nature that no two things are identical
  - Any manufacturer knows that some variation, from piece to piece, exists in every day’s production
  - Managers of service industries also note variation in the operations

- **A new understanding of variation (Shewhart and Deming)**
  - All processes display variation
  - Some display Controlled Variation
  - Others display Uncontrolled Variation
Quality Management System Concept

Variation: Quality Enemy No. 1

- Controlled Variation
  - Where variation in outcomes is uniform and predictable over time, it is due to ‘chance causes’
  - The final outcome is a result of chance combinations of the many sources of variation
  - Coders are human, they have good and bad days
  - Clinicians are human, they have good and bad days

- Uncontrolled Variation
  - In addition to ‘chance causes’ are other sources of variation that can be assigned to specific resources or conditions
  - These sources of variation are called ‘assignable causes’
  - New or trainee coders are brought into a team
  - ICD Edition change or NCCC Errata release

- Continuous improvement
  - Eliminate ‘assignable causes’ first
  - Change the people, processes and / or tools (cause-and-effect)
  - Loop back with new control limits to eliminate ‘assignable causes’
Quality Management System Concept

Variation: Quality Enemy No. 1

- Let’s look at the same information with control limits
- Control limits set at + or – 3 standard deviations
  - Assumes a normal distribution
Quality Management System Concept

Control

Organisation A, B and C
PICQ Overall Quality Measure
6 months Ending June 2011 Result (%)
Exercise 4
Upper and Lower Control Limits

- Table-based teams
- Review and discuss the graphic results of the PICQ™ overall quality measure by time with control limits
- Q: Rank the three organisations’ coding quality with the best being number 1 then 2 then 3
  - Organisation A, Rank ______
  - Organisation B, Rank ______
  - Organisation C, Rank ______

- Hint: who has control and has the lowest overall PICQ™ quality ratio?
PERFORMANCE MEASUREMENT
Performance Measurement

- Performance measurement answers the question:

  *Where am I relative to policy?*

- Principles of performance measurement:
  - Desired performance outcomes must be established for all measured work
  - Work that is not measured or assessed cannot be managed - there is no objective information
  - Unmeasured work should be minimised or eliminated
  - Outcomes provide the basis for establishing accountability
  - Desired outcomes are necessary for evaluation and meaningful performance appraisal
  - Defining performance in terms of desired results is how managers and supervisors make their assignments operational
  - Performance reporting and variance analyses should be completed frequently
    - Frequent reporting enables timely corrective action
    - Timely corrective action is needed for effective management control
Performance Measurement

*Four PICQ™ Indicator Degrees*

- **F, Fatal Indicator** – any record found by such an indicator has been coded incorrectly by definition

- **W1, Warning Indicator, 1% threshold** – records found by a warning indicator indicates that individual codes or combinations of codes or data items are likely to be incorrect

- **W2, Warning Indicator, other** – records found by a warning indicator indicates that individual codes or combinations of codes or data items are likely to be incorrect (although the record is possibly correct)

- **R, Relative Indicator** – records found by such an indicator are counted and expressed as a ratio of a larger (usually) group of episodes. These indicators would generally be used to assess the overall quality of coded data rather than identify individual problem records
Performance Measurement

**PICQT Indicator Profile by Degree**

Organisation A Indicator Profile by Count
6 months ending June 2011
- Fatal, 2.0%
- Warning 1, 0.9%
- Warning Other, 1.4%
- Relative, 95.7%

Organisation B Indicator Profile by Count
6 months ending June 2011
- Fatal, 3.6%
- Warning 1, 1.0%
- Warning Other, 2.2%
- Relative, 93.2%

Organisation C Indicator Profile by Count
6 months ending June 2011
- Fatal, 1.0%
- Warning 1, 0.9%
- Warning Other, 1.1%
- Relative, 97.0%

<table>
<thead>
<tr>
<th>Item</th>
<th>Fatal</th>
<th>Warning 1</th>
<th>Warning Other</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation A</td>
<td>2.0%</td>
<td>0.9%</td>
<td>1.4%</td>
<td>95.7%</td>
</tr>
<tr>
<td>Organisation B</td>
<td>3.6%</td>
<td>1.0%</td>
<td>2.2%</td>
<td>93.2%</td>
</tr>
<tr>
<td>Organisation C</td>
<td>1.0%</td>
<td>0.9%</td>
<td>1.1%</td>
<td>97.0%</td>
</tr>
</tbody>
</table>
Exercise 5

*Performance Measurement*

- Table-based teams
- Review and discuss the graphic results of the PICQ™ Indicator Profiles by Degree
- Policy: Zero Fatal and Warning 1 PICQ™ Indicators
- Q: Rank the three organisations’ coding quality with the best being number 1 then 2 then 3
  - Organisation A, Rank _____
  - Organisation B, Rank _____
  - Organisation C, Rank _____

*Hint:* performance measurement supports policy
PERFORMANCE IMPROVEMENT
Performance Improvement

- Organisation B wants to improve its clinical coding quality outcome as follows:

  Reduce the number of Fatal PICQ™ Indicators triggered from 3.6% to demonstrated best practice 1.0%

- What recommendations or approach you would suggest?

- **Hint**: You do this all the time!
Performance Improvement

Pareto Analysis and Chart

- The Pareto chart is named after Vilfredo Pareto in 1906

- Based on the Pareto Principle
  - Also termed the 80-20 rule

- The purpose of the Pareto chart is to highlight the most important among a (typically large) set of factors

- In quality control, it often represents:
  - the most common sources of defects
  - the highest occurring type of defect, or
  - the most frequent reasons for customer complaints
Performance Improvement

Pareto Chart

- A Pareto chart contains both bars and a line graph
  - individual values are represented in descending order by bars, and
  - the cumulative total is represented by the line

- The left vertical axis is the frequency of occurrence, but it can alternatively represent cost or another important unit of measure

- The right vertical axis is the cumulative percentage of the total number of occurrences, total cost, or total of the particular unit of measure

- Because the indicator count is in decreasing order, the cumulative function is a concave function
Performance Improvement

Pareto Chart – Organisation B

Organisation B Fatal Indicator Pareto Chart
6 months ending June 2011

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Exercise 6
Performance Measurement

- Table-based teams
- Review and discuss the graphic results of the PICQ™ Indicator Pareto Chart for Organisation B
- Q’s:
  - Where would you target a cause and effect analysis?
  - Where would you target education and training?
  - Does this make you want to have another look at your choice in Exercise 5?

- Hint: look at values in descending order
Exercise 6

Performance Measurement

- Where would you target a cause and effect analysis?
  - PICQ™ Indicator 102083, Outcome of a delivery code without delivery code

- Where would you target education and training?
  - PICQ™ Indicator 102083, Outcome of a delivery code without delivery code
  - Addressing just this indicator would reduce Fatal results from 3.6% to 1.5%

- Does this make you want to have another look at your choice in Exercise 5?
  - No, not necessarily.. what would you have a look at?
CAUSE AND EFFECT
Cause and Effect

- A Health Networks (multiple hospitals of varying sizes) physical audit results
- Over 20% of all DRG mismatches were attributed to ICD Chapter 10, Respiratory

**DRG Mismatch Count by Body System**

- Respiratory
- Circulatory
- Digestive
- Hepatob
- Musculo
- Skin
- Kidney & Urinary
- Female Repro
- Pregnancy
- Neoplastic
- Infectious
- Mental
- Poisoning
- Burns
Exercise 7

Cause and Effect

- Table-based teams
- Review and discuss the graphic results of the DRG Mismatch Count by Body System for the Health Network
- Q: What do you think caused the ICD Chapter 10 - Respiratory, result?

*Hint:* listen and record your table mates’ ideas!
Ishikawa diagrams are also called fishbone diagrams, herringbone diagrams, cause-and-effect diagrams, or Fishikawa. They are causal diagrams created by Kaoru Ishikawa (1968) that show the causes of a specific event. Common uses of the Ishikawa diagram are product design and quality defect prevention or to identify potential factors causing an overall effect. Each cause or reason for imperfection is a source of variation. Causes are usually grouped into major categories which typically include:

- People: anyone involved with the process
- Methods: how the process is performed and the specific requirements for doing it, such as policies, procedures, rules, regulations and laws
- Machines: any equipment, computers or tools required to accomplish the job
- Materials: raw materials, parts, pens, paper, etc. used to produce the final product
- Measurements: data generated from the process that are used to evaluate its quality
- Environment: the conditions, such as location, time, temperature, and culture in which the process operates
Cause and Effect

*Ishikawa Diagrams*

- People
- Methods
- Machines
- Materials
- Measurements
- Environment

Mismatch of ICD Chapter 10 - Respiratory DRG
Cause and Effect

Physical Audit Attributes

- Locum blind audit following the ACBA methodology, 150 records per site selected with alternatives
- Qualified auditor assigned to each hospital through completion of the selected records
  - Clinical coding teams work to time deadlines
- Code mismatch analysis completed after blind coding results where posted
- Code mismatches reviewed with customer for verification / agreement
- DRG mismatches summarised by hospital and by error categories
  - The majority of the DRG mismatches where associated with the smaller hospitals and the PDx error category
- Customer coders at the smaller hospitals had similar or same skills / training regime as larger hospitals (some clinical coders have worked at both the large and small hospitals)
- Relevant national, State and / or local clinical coding standards and policies were applied by both the Auditor and the clinical coding teams
- The Auditor was provided with a clinical coding workstation with access and tools used by the clinical coding teams
- Missing code, late information (S4) was not responsible for the Chapter 10 – Respiratory, result
- The missing / incomplete Discharge Summary rate (when required) was not materially different across the ICD Chapters; however, this presented a global opportunity for improvement
Cause and Effect
Conclusions and Use of PICQ™

- Look at the factors that affect clinical coder capacity to process a medical record
  - Reviewed Chapter 10 records with DRG mismatch (13)
  - Lengthy progress notes with PDx identified on page 40+
  - A month PICQ™ analysis was used to identify all medical records where ‘un-specified’ was assigned as the PDx (PICQ™ Indicator 101915)
    - 56 clinicians were associated with medical records with ‘un-specified’ as a PDx
    - 4 of the 56 accounted for 80% of the medical records with ‘un-specified’ as a PDx
    - Hold a small workshop to review / improve:
      - Discharge Summary Form and completion rate
      - PDx assignment and its impact to the organisation
  - Add PICQ™ Indicator 101915 to weekly operational runs of Fatal, Warning 1 and Warning 2 PICQ™ Indicators
    - Implement a supporting medical record query process

- Monitor then loop back to clinical coder capacity
ORGANISATIONAL CHANGE LEVERS
Organisational Change Levers

*Focus on Behaviours*

- Focus on the behaviours which reinforce and drive value
- Business “change levers”
  - Leadership
  - Communications
  - Policies and Procedures
  - Job and Organisation Alignment
  - Performance Measurement
  - Performance Management
  - Education and Training
  - Post Implementation Monitoring
CHANGE MANAGEMENT MATRIX
Change Management Matrix
Do You Have Gaps?

VISION (Know where we are headed)

+ CAPABILITY (Skills & know how to confidently do it)

+ INCENTIVE (Reason to do it – WIIFM)

+ RESOURCES (Adequate means to do it)

+ ACTION PLAN (Tangible steps)

+ AGREED METHODS (Clearly defined new ways of working)

+ REVIEW & FEEDBACK (Keeping the score)

= SUSTAINABLE CHANGE

= CONFUSION

= ANXIETY

= RESISTANCE

= FRUSTRATION

= WHEELSPIN

= BACKSLIDE

= DEGENERATION

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Questions?
Take Away Points

- A Clinical Coding Quality Management System is made up of:
  - Organisational structure and skill sets
  - Procedures and processes
  - Tools

- Benchmarking answers the question ‘where am I relative to others?’
  - Consider context (rate of improvement, control…)
  - Consider measurement composition (indicator profile)

- Variation is quality ‘enemy number 1’
  - All processes display variation
  - Some display Controlled Variation (chance causes)
  - Some display Uncontrolled Variation (assignable causes)
  - Control limits are used to identify chance versus assignable causes
Take Away Points

- Performance measurement answers the question ‘where am I relative to policy?’
- A Pareto Analysis is one technique that can be used to identify performance improvement opportunities
  - A Pareto Chart is used to highlight the most important among a (typically large) set of factors
- An Ishikawa Diagram is one technique that can be used to identify potential factors causing an overall effect; causes are grouped into categories:
  - People
  - Methods
  - Machines
  - Materials
  - Measurements
  - Environment
Take Away Points

- Organisational change should focus on behaviors which reinforce and drive value
  - Leadership
  - Communications
  - Policies and Procedures
  - Job and Organisational Alignment
  - Performance Measurement
  - Performance Management
  - Education and Training
  - Post Implementation Monitoring

- The ‘Change Management Matrix’ can be used to understand where ‘gaps’ exist in a change program or initiative
The End

Thank You!