Improving the reliability of clinical coding:
DRG outcome or clinical truth

Kevin Ratcliffe
Julie Turtle
Dr John Marrone

Main Points

- Coding and review seem to focus on the DRG outcome, perhaps more than whether the clinical reality was reflected in assigned codes.
- Much progress has been made in regard to technical supporting systems, standards and coder education, but much still remains to be achieved.
- Previous and current Evidence of some poor coding in Tasmania
  - Comparison of proportions within adjacent DRG
  - Targeted coding audits / episode review
  - Data analysis
  - Queries on coding standards
- Opportunities to increase DRG weight
  - But is this reasonable
  - Or do we really want coding to reflect Clinical truth?

Coding is not that precise and issues magnify though stages
Accuracy essential at each stage

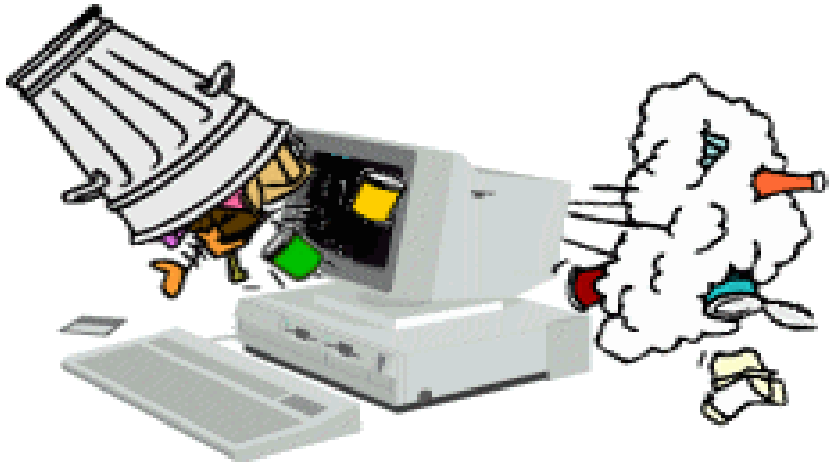
If 90% Conditions noticed

And 90% Documented

90% Interpreted

90% Entered correctly

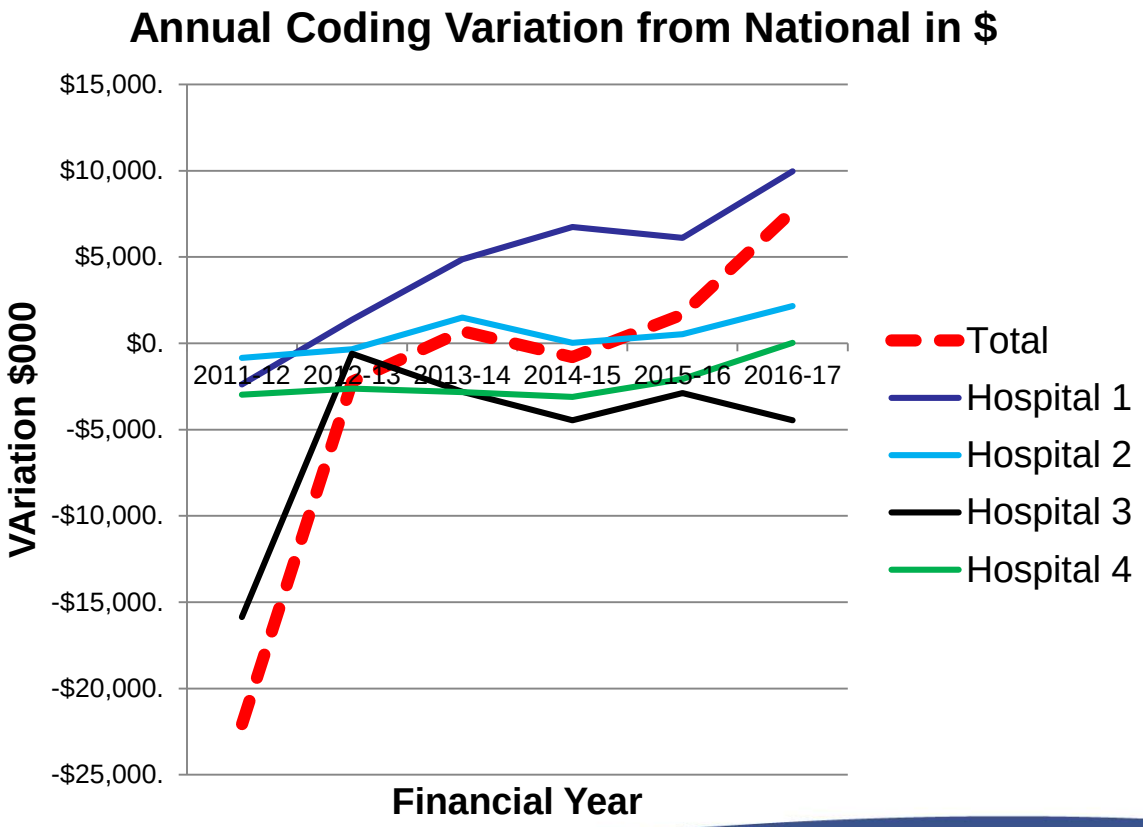
Results in = only 66% accuracy



Result: Garbage in – Garbage out!

Ref: Health Roundtable

Improvements in Coding

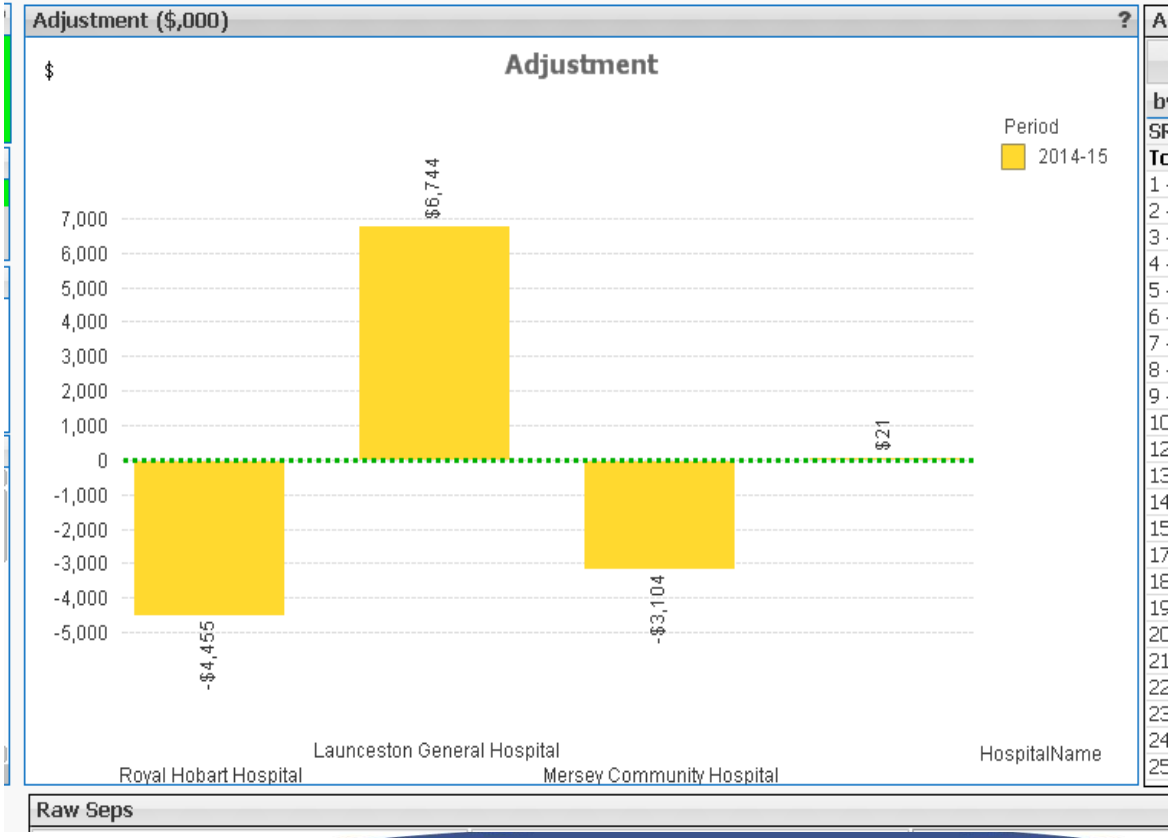


Variation in Coding between Hospitals

Creation of Coding outcome report available to Tasmanian Hospitals

Able to zoom down to DRG and hospital level

We still have variation – skewing any Funding



Steps taken

- ABF has itself assisted in achieving some focus of attention toward Education sessions with clinicians on documentation
- Production of coding bulletins with local issues
  - Mechanical ventilation
- Separation Summary policy
  - All episodes within 48 hours
- Provision of reports that highlight
  - Coding outcome benchmarked vs national rate, State rate and Hospital rate over time
  - Coding History at the person level
  - Listing of anomalous records for review – impossible copmbinations
  - HAC and “Condition onset flag” records for review

Chasing NWAU

- Examination of records where on boundary between classes A-B-C
  - Promote to the next ADRG
- Does this consider clinical reality or is it simply maximizing NWAU/$?
- A problem with chasing DRG outcome is that coders may stop looking once the “A”-DRG is reached or where there is no severity split
  - Compounded by coding throughput pressure
  - Major issue for multimorbidity and Safety and Quality

On additional conditions

- A key point for us…..
- For coding purposes additional diagnoses should be interpreted as conditions that affect **patient** management in terms of requiring any of the following:……
  - Commencement, altering adjustment of therapeutic treatment
  - Diagnostic procedures
  - Increased clinical care and /or monitoring

Our Aim

- That the coding reflects clinical reality supported by outcome and utilisation of resources
    - Does not mean – the codes reflect a *specific* form of documentation *within* the episode
- Coding should reflect;
    - What was wrong with the patient
    - What happened to the patient (incl. complications)
    - What was done to the patient
- How can coders determine whether ~~a~~ conditions impact patient management in terms of requiring increased care or monitoring or investigation?
    - Is there a coding education failure?
    - CDI is a possible solution but not the only one

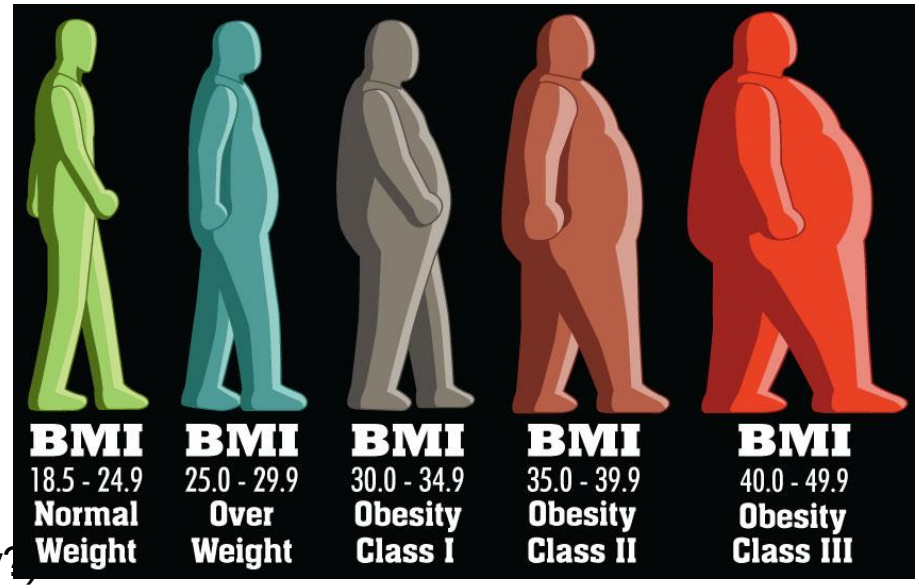
Clinical truth

- Is it that "**The documentation is the only source of truth after an episode**"; or Is clinical truth '**what actually was/happened**'? Communication is usually clinically clear, but the words may not be explicit to a lay reader
  - E.g. adult human BMI of

  50 is extreme obesity – always!
  - Affects ability to provide care

  and presents risks for interventions

  irrespective of coding



So how to deal with this?

- Ignore height and weight as not meeting acceptable documentation
- Question the Clinician (direct? – Is height 160cm & weight 130kg class III obesity?)
- Code – the matter is not in doubt so why not?

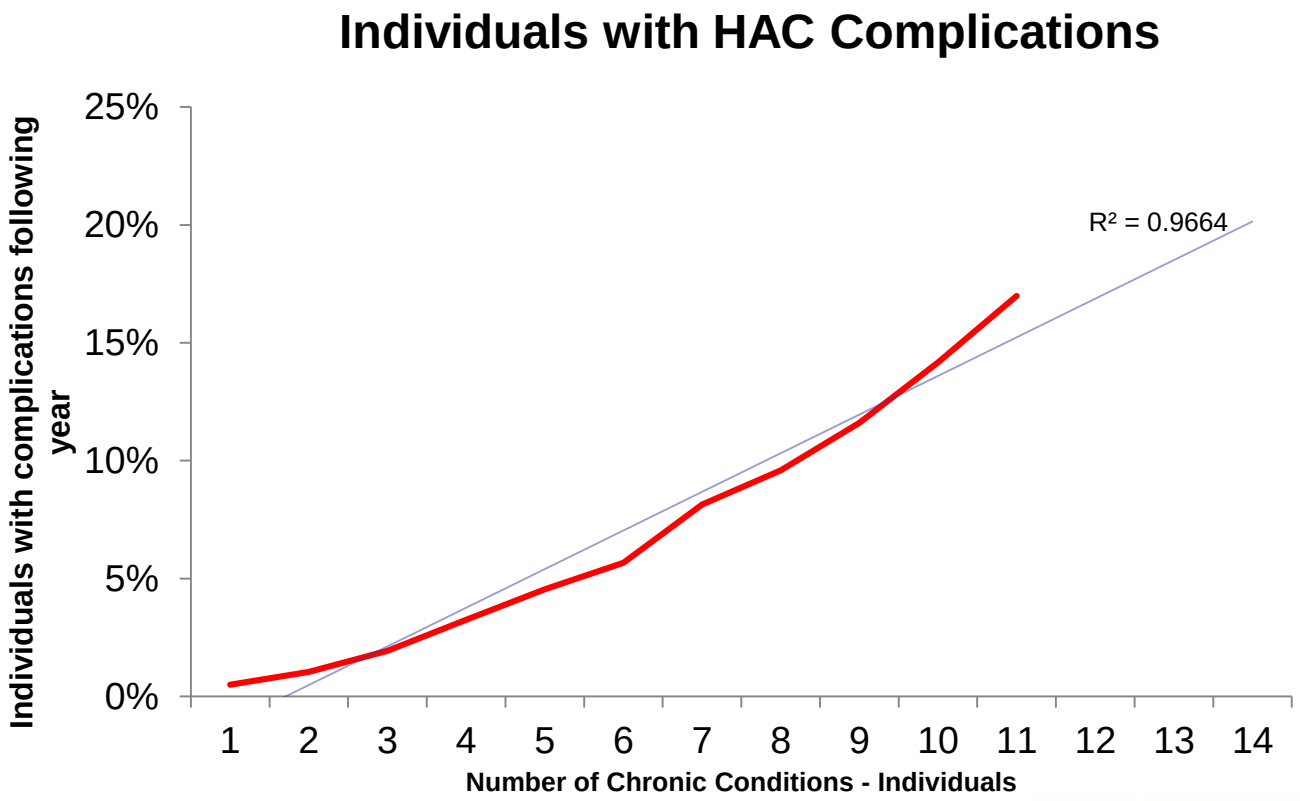
The challenge of Chronic conditions

- A significant issue in our work is the difficulty presented by the multimorbid patient. These patients experience more frequent and longer episodes of care where higher rates of suboptimal outcomes are noted.
- Use of trial ‘U’ Codes for Chronic conditions in Australian classification has been a step in the right direction, but we continue to observe lack of capture of significant parts of relevant and codeable clinical information for these patients.
  - Not all conditions have U codes e.g. depression when part of bipolar affective disorder, or drug or alcohol dependence.
- With the implementation of Safety and Quality funding – Risk adjustment is important.
  - **Chronic conditions increase the rate of complications regardless of whether they are coded**.

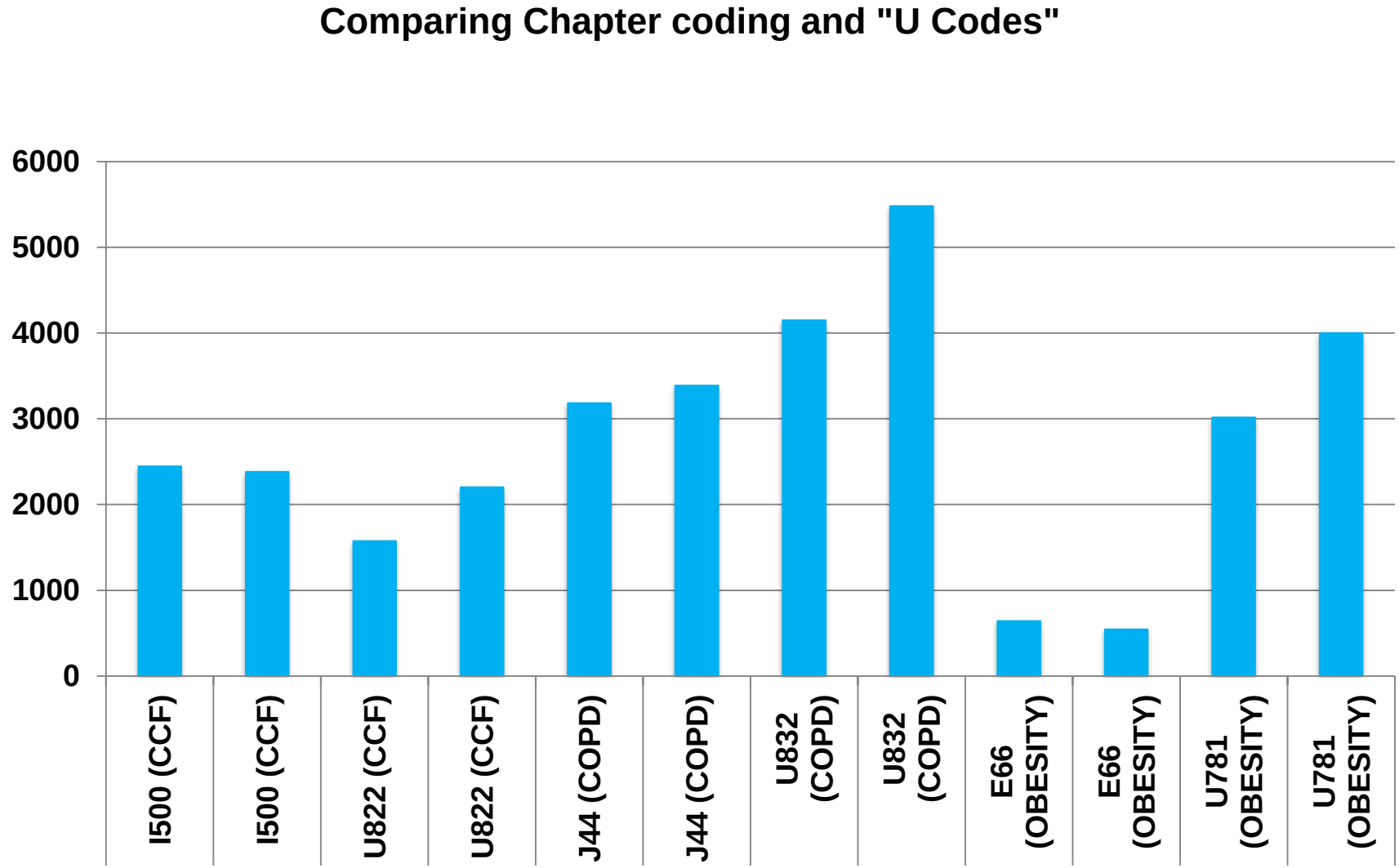
Impact of Chronic conditions on Quality and episodes 2014-15

	6+ chronic conditions	<6 chronic conditions
Persons	3,904	50,608
Episodes	18,096	93,603
Epi days	61,100	238,512
Average LOS	3.4	2.5
Epis /person	4.6	1.8
Days /person	15.7	4.7
HAC / Episode	5.0%	2.6%
HAC / Person	23.2%	4.8%

Increased comorbidity has increased risk of hospital complications in the next year



Impact of U-codes in coding of chronic conditions (2015-2017)



So you think we would capture chronic diseases as a priority – given importance

- Not really
  - The average rate of capture of any coexisting chronic condition for any particular episode is about 50%
  - Lessens value of Collection as reflecting Morbidity burden

However

- Capture of conditions over time is possible
  - All public hospital admissions in Tasmania are linkable
  - Linkage of longitudinal episodes was undertaken for past 10 years
    - Huge increase in capture of codes on longitudinal collection
      - Impact on HACS and Mortality
    - Normal Newborn episodes were excluded

Rate of coding is Variable

Chronic Dis Group	People	Coded episodes	Epi Since First Coded	% subsequent Epis Coded
Ca Secondary	1,844	4,927	6,297	**78%**
Ca Brain	126	272	362	**75%**
T2 Diabetes Obstetric	988	1,183	1,618	**73%**
Hepatitis C	602	1,019	1,450	**70%**
Ca Breast	748	1,603	2,372	**68%**
……..				
Obesity	4,889	7,288	16,337	**45%**
Amputation limb	256	796	1,886	**42%**
CCF	4,875	7,599	18,108	**42%**
Bronchiectasis	339	494	1,314	**38%**
PVD	802	1,232	3,478	**35%**
RespFail	1,349	1,585	5,080	**31%**
Total	**266,114**	**276,613**	**520,716**	**53%**

Example from a Report on Mismatch between history and current coding

Presenting Comment	**COPD**	Charlson Score	**1**
ADT	**03/09/2015**	DRGV8	**E41B**
Dis Date	**07/10/2015**	DRG ALOS	**6.8**
EpisodeNo	**1820440**	LOS Excess	**27.2**
AGEY	**67**	Ucodes In Epi	**1**
Died During Episode	**FALSE**	Epi Chronic DIs	**3**
Adm Care Type	**Acute**	No of HACs	**2**
LOS Total	**34**	Epis in Year	**8**
Known Chronic Dis	**12**	Adm days in Year	**143**

Chronic Disease History of Patient

Chronic Disease Group	Initial Code	Last Code	Times Coded	Epis
Smoking	24/05/2007	14/12/2016	15	17
COPD	01/06/2013	14/12/2016	14	17
Hypertension	01/06/2013	14/12/2016	13	17
CCF	02/08/2013	14/12/2016	4	17
IHD	21/07/2016	14/12/2016	4	17
Depression	19/08/2013	29/07/2016	3	17
Osteoporosis	19/08/2013	29/07/2016	3	17
Bronchiectasis	21/07/2016	29/07/2016	2	17
Falls	03/11/2015	13/11/2015	2	17
CKD	17/10/2016	17/10/2016	1	17
Emphysema	30/03/2016	30/03/2016	1	17
RespFail	17/10/2016	17/10/2016	1	17

All Dx Coded in Episode

ICD10 Code	CHronicDisGrp
N141 - Nephropathy induced by other drugs, medicaments and biological substances	-
E870 - Hyperosmolality and hypernatraemia	-
J151 - Pneumonia due to Pseudomonas	-
J189 - Pneumonia, unspecified	-
E052 - Thyrotoxicosis with toxic multinodular goiter	-
**** J440 - Chronic obstructive pulmonary disease with acute lower respiratory infection**	COPD
U823 - Hypertension	Hypertension
N179 - Acute kidney failure, unspecified	-
E876 - Hypokalaemia	-
R509 - Fever, unspecified	-
Y9222 - Place of occurrence, health service area	-
Y408 - Other systemic antibiotics causing adverse effects in therapeutic use	-
R11 - Nausea and vomiting	-
R090 - Asphyxia	-
Y95 - Nosocomial condition	-
Z8643 - Personal history of tobacco use disorder	Smoking

Some underlying problems we have encountered

- Coding standards can still cause confusion
- Documentation confusion for coders
  - Too much focus on special documentation for coders
    - Relating to standards and coders expectations
  - Do we Document for the coders or should coders Understand the documentation
    - Coders must take responsibility for clarification
    - If the documentation is appropriate for clinical handover, why not coding
- A critical issue
  - Focus on interventions rather than patient history
    - Seems to be more common in patients with chronic comorbidities in short stay episodes

Main points on Reviews

- We are in the process of creation of data analysis to confirm appropriate AR_DRG assignment
  - Not just highest value DRG
  - We are System Manager and funder as well as receiving funding – we need to ensure that the assigned DRG is the “right” DRG
- Safety and quality
  - HAC – are the conditions really originating in the episode?
    - Are the Coexisting conditions documented, recognized and coded?
  - HSMR – intent of episode really for acute management or Palliation?
- Use of resources
- Clinical intent
- Logical impossibilities

Summary

- Tasmania has improved its performance in coding
  - No longer the outlier
  - We are now looking at some examples of coding appearing high
- This method of analysis provides a good guide and is a powerful tool
  - A measure is also possible in weighted separations
  - But does not remove the need to validate and audit
- Targeted audit is likely to provide good improvement in accurate capture of relevant conditions/procedures
  - Far lower cost than undertaking a wide sample random audit
- Sample audits are still required but should be stratified
- National data also shows increase in coding for the “A” DRG
- Improvement in Discharge Summaries is an area where we will be focussing much more effort

Questions?

Where do we want to be

- Now for the rest of the Casemix Agenda…..

Initial look

- How well does the Tasmanian clinical coded data, (that was currently produced), support the ABF process?
  - Initial indications were not good
- Comparison Tas vs other states
  - Every Adjacent DRG with a Severity Split was examined
  - Round 14 data 2009-10 used
- Costly Care: Making Public Hospitals more efficient
  - Grattan Institute 2014.
- Basic assumption is that Tasmanian morbidity should **not** be less than the national average

Some interesting effects

- As coding improves so does ALOS comparisons
  - Undercoding will tend to send lower LOS cases back to the lower DRG class
    - E.g. from B70A to B70B or even B70C
    - This increases the ALOS of both the Higher and Lower ranked DRGs
- We can also see some cases where an analysis for reasons Tasmania would be coding at a higher level is required
  - The question of possible overcoding should and can also be asked

Rectification of Undercoding

- Coding Audit and Validations
  - Scattergun approach
    - Sample data
      - Select random sample of data from all records
  - Focussed Audit
    - Examination of data with following attributes;
      - Inliers - LOS >1.5 times AR-DRG average but less than 3 times average (high inliers)
      - Outliers LOS >3 times National ALOS
      - LOS >6 days (material LOS therefore worth looking at)
      - <3 Diagnosis codes (the level of coding is not likely to explain the additional LOS) or
      - PCCL = 0
      - NO highly complex procedure undertaken
  - Standard tools are available
    - PICQ – or In-house

Response to potential coding issues

- Comparative analysis undertaken of complexity reflected by Tasmanian coded data with that from other states
- Some key coding standards reinforced to Clinical Coders
- Engaged Clinicians regarding documentation that supports clinical coding
- Developed service agreement on Discharge summary
  - All episodes
  - Within 48 hours
  - Quarterly KPI report and sample survey
- Opportunities for improvement in coding quality processes explored
- The appropriateness and application of national definitions and directives for Tasmania investigated
- How well have we done and where to we want to get to?

Some issues we found

- Poor capture of secondary diagnoses particularly in patients with High burden of disease
- Deficient documentation in terms of providing support for secondary conditions (ACS 0002)
- Poor capture of hours of mechanical ventilation
- Significant coding from discharge summaries rather than whole of notes – e.g. Mental health where notes in some cases were not available to coders
- Not all records have discharge summaries, or summaries written by a doctor who actually saw the patient
- Some autocoding that may be inappropriate
  - particularly in Mental Health and day cases
- Some notes difficult for coders to read
  - e.g. ICU clinical charts
- Abnormal counts – e.g. qualified neonates

Overall Effect

- There has been an increase in proportion of “A” DRGs generally in Australia between Round 14 and Round 16
- Using Round 16 as the baseline
  - Considering every Severity split within the Adjacent DRGs the increase in weighed separations is approximately 1.7%
  - Tasmania has improved over the past 3 rounds by about 6.5%
- Considering the previous position of being undercoded, Tasmania is now much more consistent with national result than in 2010-11

Examination over time

- 4 years of Recent Tasmanian coded data was examined
- Compared against Nat R14 and R16 (latest available)
- Significant improvement in 2013 c/w 2010
- But National data also shows improvement
  - Both need to be considered together
  - Examination is required at the DRG level to clarify

  - Note – 2010-12 are same for National Data
  - R17 (2012-13) National data are not yet available

So How has it gone?

- Without undertaking a major coding Audit
  - Examine the coded output as per identification of initial problem
  - Look at most recent coded dataset against most recent National Public Estimated results

Identification of an “at risk” cohort

- Diabetes is an example of high risk group.
  - Similar effect with COPD, Dementia, CCF, etc
- Diabetes is recognised as a major healthcare issue in Australia
  - advice from clinical specialists is that it is always important in the care of a patient
  - These patients often cost more to provide care
    - Increased nursing, investigation, etc.
- We had some undercoding of diabetes in Australia - coding standard changed in 2013
- A simple dataset was created
  - any patient with any coded mention of diabetes in any episode identified.
  - All episodes related to these patients during 2008-09 were identified and compared against all episodes in the major hospitals.
  - 305,000 individual patients over 10 years
  - 5% incidence of diabetes ever coded in the patient group
- From the next slide, a level of diabetes undercoding can be seen.
  - this represents a risk to funding the additional morbidity.

Prevalence of Diabetes Coding

Hospital	total Individuals Admitted	Individuals with known Diabetes admitted	% of individuals admitted	Total Episodes	Diabetes Episodes	% Diabetic Episodes	Coded Diabetic Episodes	% Diabetics Coded
Hosp1	19,990	2,743	14%	45,904	14,638	32%	1,975	13%
Hosp2	6,762	1,245	18%	10,057	2,197	22%	910	41%
Hosp3	6,822	1,162	17%	10,045	2,091	21%	766	37%
Hosp4	30,007	3,694	12%	64,073	13,526	21%	3,380	25%
Total	**63,581**	**8,844**	**14%**	**130,079**	**32,452**	**25%**	**7,031**	**22%**