

# Is code sequencing important?

Sequencing of diagnosis and procedure codes in admitted patient data collections.

February 2018

# Is code sequencing important?

The sequencing of diagnosis and procedure codes can:

- impact the interpretation and use of coded data
- impact funding.

Code (diagnosis and procedure) sequence are impacted by:

- Australian Coding Standards (ACS)
- State/territory requirements (such as that for external cause codes and neoplasm/morphology)
- Grouping software requirements (some groupers will only group on the first 50 diagnosis and 50 procedure codes).

# Is code sequencing important?

Downstream use of coded data often relies heavily on the sequencing of codes as this gives context to the data for those that don't have access to the clinical record.

The sequence of codes is typically supported by other data such as procedure date, condition onset flag. So when sequence anomalies occur, this can then impact the interpretation of this additional data.

# Is code sequencing important?

When there appears to be sequencing anomalies this can:

- impact the use of the data for analysis and reporting
- may not complying with ACS
- raises questions of quality of the data.



# Is code sequencing important?

For diagnoses codes, there are ACS and national coding advice that support clinical coders assigning diagnoses codes (including external cause, morphology and supplementary codes for chronic conditions) in sequences that enable interpretation and downstream use of the data.



# Is code sequencing important?

For diagnosis codes this includes but is not limited to:

- ACS 0001 *Principal diagnosis*<sup>1</sup>
- ACS 0002 *Additional diagnoses*<sup>1</sup>
- ACS 0003 *Supplementary codes for chronic conditions*<sup>1</sup>
- ACS 0050 *Unacceptable principal diagnosis codes*<sup>1</sup>
- ACS 0236 *Neoplasm coding and sequencing*<sup>1</sup>
- ACCD Coding Advice (Ref No: Q3015) relating to ACS 0011 *Admission for surgery not performed*<sup>2</sup>.

# Is code sequencing important?

The follow are real examples from clinical coded data.

Abbreviations use:

- PD – Principal diagnosis
- AD – Additional diagnosis
- EX – External cause
- M – Morphology
- PR - Procedure

# Is code sequencing important?

## Example 1

PD	K92.1	Melaena
AD	Z530	Procedure not carried out because of contraindication
AD	I71.2	Thoracic aortic aneurysm, without mention of rupture

Interpretation of this sequence of codes would indicate that a procedure to investigate/treat melaena was not undertaken due to a thoracic aortic aneurysm.



# Is code sequencing important?

## Example 2

PD	K92.1	Melaena
AD	I71.2	Thoracic aortic aneurysm, without mention of rupture
AD	Z53.0	Procedure not carried out because of contraindication

The same codes in a different order could be interpreted as a procedure to investigate/treat the thoracic aneurysm was not undertaken.

# Is code sequencing important?

## Example 3

PD	J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
AD	B96.5	Pseudomonas (aeruginosa) as the cause of diseases classified to other chapters
AD	D50.9	Iron deficiency anaemia, unspecified
AD	R13	Dysphagia
AD	R04.0	Epistaxis
AD	I48.9	Atrial fibrillation and atrial flutter, unspecified
AD	Z06.63	Resistance to quinolones
AD	Z06.51	Resistance to penicillin
AD	Z92.1	Personal history of long term (current) use of anticoagulants

What looks unusual in this example?

# Is code sequencing important?

## Example 3

PD	J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection
AD	B96.5	Pseudomonas (aeruginosa) as the cause of diseases classified to other chapters
AD	D50.9	Iron deficiency anaemia
AD	R13	Dysphagia
AD	R04.0	Epistaxis
AD	I48.9	Atrial fibrillation and atrial flutter, unspecified
AD	Z06.63	Resistance to quinolones
AD	Z06.51	Resistance to penicillin
AD	Z92.1	Personal history of long term (current) use of anticoagulants

Do these two codes relate to I48.9 or maybe J44.0?

# Is code sequencing important?

## Example 4

PD	R55	Syncope and collapse
AD	N39.0	Urinary tract infection, site not specified
AD	E11.9	Type 2 diabetes mellitus without complication
AD	R53	Malaise and fatigue
AD	Z06.53	Extended spectrum beta-lactamase [ESBL] resistance
AD	Z22.3	Carrier of other specified bacterial diseases
PR	95550-03	Allied health intervention, physiotherapy

Does Z06.53 relate to N39.0 or Z22.3?

# Is code sequencing important?

## Example 5

PD	Z51.1	Pharmacotherapy session for neoplasm
AD	C77.2	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes
M	M8140/6	Adenocarcinoma, metastatic NOS
AD	C18.7	Malignant neoplasm of sigmoid colon
M	M8140/3	Adenocarcinoma NOS
AD	Z98.0	Intestinal bypass and anastomosis status
AD	Z92.1	Personal history of long term (current) use of anticoagulants
AD	Z86.43	Personal history of tobacco use disorder
AD	Z53.0	Procedure not carried out because of contraindication

What looks unusual?

# Is code sequencing important?

## Example 5

PD	Z51.1	Pharmacotherapy session for neoplasm
AD	C77.2	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes
M	M8140/6	Adenocarc
AD	C18.7	Malignant
M	M8140/3	Adenocarc
AD	Z98.0	Intestinal b
AD	Z92.1	Personal hi anticoagula
AD	Z86.43	Personal history of tobacco use disorder
AD	Z53.0	Procedure not carried out because of contraindication

Does this mean the chemotherapy was not performed or does the sequencing mean it relates to something else?

# Is code sequencing important?

The same challenges exist for procedural data.



# Is code sequencing important?

Australian Coding Standard 0016 *General procedure guidelines*<sup>1</sup> notes that the order of procedure codes should be determined using the following hierarchy:

- procedure performed for treatment of the principal diagnosis
- procedure performed for treatment of an additional diagnosis
- diagnostic/exploratory procedure related to the principal diagnosis
- diagnostic/exploratory procedure related to an additional diagnosis for the episode of care.



# Is code sequencing important?

## Example 6 (Same-day episode of care)

PD	G35	Multiple sclerosis	
PR	92514-39	General anaesthesia (GA), ASA 39	01Aug2017
PR	90901-03	MRI of spine	01Aug2017
PR	90901-00	MRI of brain	01Aug2017

### *ACS 0042 Procedures not normally coded*

Procedures normally not coded are only assigned if:

- cerebral anaesthesia is required in order for the procedure to be performed
- they are the principal reason for admission in same-day episodes of care.

# Is code sequencing important?

## Example 6 (Same-day episode of care)

PD	G35	Multiple sclerosis	
PR	92514-39	General anaesthesia (GA), ASA 39	01Aug2017
PR	90901-03	MRI of spine	01Aug2017
PR	90901-00	MRI of brain	01Aug2017

While the codes assigned are appropriate for a same-day episode of care, the sequencing of the codes are misleading and does not reflect that the GA was required to perform the two MRI procedures.

# Is code sequencing important?

## Example 7

PD	I83.9	Varicose veins of lower extremities without ulcer or inflammation	
PR	32520-00	Endovenous interruption of veins	19Jul2017
PR	92514-99	General anaesthesia (GA), ASA 99	19Jul2017
PR	32508-00	Interruption of varicose veins of great (long) and/or small (short) saphenous veins	19Jul2017

Was 32508-00 performed in the same theatre event as 32520-00 and the GA? Most probably, but when this data is being analysed down stream, only the codes above the GA would be considered.

# Is code sequencing important?

## Example 8

PD	J33.8	Other polyp of sinus	
AD	J32.9	Chronic sinusitis, unspecified	
PR	41716-03	Intranasal removal of polyp from maxillary antrum	16Oct2017
PR	92514-99	General anaesthesia (GA), ASA 99	16Oct2017
PR	41692-01	Submucous resection of turbinate, bilateral	16Oct2017
PR	41686-00	Surgical fracture of nasal turbinates, unilateral	16Oct2017
PR	41716-02	Intranasal maxillary antrostomy, bilateral	16Oct2017
PR	41689-01	Partial turbinectomy, bilateral	16Oct2017
PR	41737-03	Ethmoidectomy, bilateral	16Oct2017
PR	41764-01	Sinoscopy	16Oct2017

# Is code sequencing important?

## Example 8

With the GA being sequenced above the majority of the other functional endoscopic sinus surgery (FESS) procedure codes, data analysis could miss the six related procedures.

So while all the interventional activity has been captured, it is not represented accurately.

# Is code sequencing important?

## Example 9

PR	31235-00	Excision of lesion of skin and subcut tissue of other site of head	15Aug2017
PR	31230-02	Excision of lesion of skin and subcut tissue of ear	15Aug2017
PR	31205-00	Excision of lesion of skin and subcut tissue of other site	15Aug2017
PR	31235-01	Excision of lesion of skin and subcut tissue of neck	15Aug2017
PR	92514-39	General anaesthesia, ASA 39	15Aug2017
PR	30032-00	Repair of wound of skin and subcut tissue of face or neck, superficial	15Aug2017

Was 30032-00 performed with the other excisions?

# Is code sequencing important?



# Is code sequencing important?



Hints and tips:

Be aware that some systems may re-sequences some procedure codes from the sequence determined by the clinical coder and may place unrelated codes between related interventional codes.

Other systems may sort ventilation related codes to the bottom of all other procedure codes.



# Is code sequencing important?

## Example 10

PD	E65	Localised adiposity	
AD	L30.4	Erythema intertrigo	
PR	30177-00	Lipectomy of abdominal apron, radical	12Oct2017
PR	92514-19	General anaesthesia, ASA 19	12Oct2017
PR	95550-03	Allied health intervention, physiotherapy	12Oct2017
PR	92510-19	Regional block, nerve of trunk, ASA 19	12Oct2017
PR	92517-01	Management of regional block, nerve of trunk	12Oct2017

# Is code sequencing important?



Hints and tips:

Some groupers can only use the first 50 diagnosis and 50 procedure codes. So if there are more than 100 codes assigned not all will be used to group to a Diagnosis Related Group.

This can be significant if ventilation related procedure codes are sorted to be the last procedure codes sequenced.

# Is code sequencing important?

## Example 11

30566-00	Resection of small intestine with anastomosis	29Jul2017
30406-00	Abdominal paracentesis	29Jul2017
92514-40	General anaesthesia, ASA 40	29Jul2017
30473-00	Panendoscopy to duodenum	08Aug2017
92515-30	Sedation, ASA 30	08Aug2017
92062-00	Administration of other serum	28Jul2017
13706-02	Administration of packed cells	01Aug2017
95550-03	Allied health intervention, physiotherapy	
95550-09	Allied health intervention, pharmacy	
96027-00	Prescribed/self-selected medication assessment	
92061-00	Administration of coagulation factors	
92209-01	Management of noninvas vent support, > 24 & < 96 hrs	29Jul2017
92515-99	Sedation, ASA 99	29Jul2017
13882-02	Management of continuous vent support, ≥96 hrs	03Aug2017

# Is code sequencing important?



Hints and tips:

Ensure that procedures are sequenced in line with the classification rules in ACS 0016 *General procedure guidelines* and ACCD Coding Rule Reference Number Q3186 (Published 15 December 2017) Sequencing of ACHI codes.

# Is code sequencing important?

## Example 12

PD	S680	Traumatic amputation of thumb (complete)(partial)	
EX	W29.1	Contact with powered saw	
EX	Y92.9	Unspecified place of occurrence	
EX	U73.9	Unspecified activity	
PR	47921-00	Insertion of internal fixation device, not elsewhere classified	03Jul2017
PR	47963-02	Repair of tendon of hand, not elsewhere classified	03Jul2017
PR	39300-00	Primary repair of nerve	03Jul2017
PR	92514-20	General anaesthesia, ASA 20	03Jul2017

Would 47921-00 really be the principal procedure?

# Is code sequencing important?



Hints and tips:

Be aware of state/territory code sequencing requirements that may relate to:

- If the principal diagnosis requires external cause codes, the external cause codes should be sequenced directly after the principal diagnosis then followed by other related diagnosis code(s) with the external cause codes repeated.

Note: This is specific to Queensland.

# Is code sequencing important?

## Example 13

PD	S72.03	Fracture of subcapital section of femur
EX	W19	Unspecified fall
EX	Y92.09	Other and unspecified place in home
EX	U73.9	Unspecified activity
AD	S51.0	Open wound of elbow
EX	W19	Unspecified fall
EX	Y92.09	Other and unspecified place in home
EX	U73.9	Unspecified activity

# Is code sequencing important?



## Hints and tips:

Be aware of state/territory code sequencing requirements that may relate to (continued):

- Where there are two (or more) different neoplasms with the same morphology code, and if one of the neoplasm codes is in the PD position, the morphology code should be assigned twice, immediately following the PD, then again following the second neoplasm site code(s) in the AD position.

Note: This is specific to Queensland.



# Is code sequencing important?

## Example 14

PD	C34.0	Malignant neoplasm of main bronchus
M	M8140/3	Adenocarcinoma NOS
AD	C18.0	Malignant neoplasm of caecum
AD	U73.9	Malignant neoplasm of breast, unspecified
M	M8140/3	Adenocarcinoma NOS

# Is code sequencing important?



Hints and tips:

Access local resources and information when unsure about sequencing. Most states/territories have a collections manual with supporting information (such as data validations).

And don't forget that your fellow coders are an invaluable resource.



# Is code sequencing important?



Hints and tips:

While we all know now how busy we are, it is worth taking a extra few seconds to check that all the codes assigned are accurate and in the correct order.

“It’s not how many things you start that make you successful. It’s how many worthwhile things you finish.” – Peter Turla



# Is code sequencing important?

Coded data is being used for an increasing number of purposes. Along with this increased use, there is also a corresponding increase in the scrutiny of the content, quality and interpretability of this data.

As Clinical Coders we are great at what we do, and that is not only abstracting, assigning and sequencing codes! But just as with all the tasks and duties that we perform, we need to ensure that the quality of the data is the best that it can be to ensure that it is accurate and fit for purpose.

Always try to...



**KEEP  
CALM  
AND  
CODE  
ON**

# References

- <sup>1</sup> Australian Consortium for Classification Development (2015) *Australian Coding Standards Tenth Edition – 1 July 2017*. Darlinghurst: Independent Hospital Pricing Authority.
- <sup>2</sup> Australian Consortium for Classification Development, Reference Number Q3015, ACS 0011 *Admission for surgery not performed*, accessed 27 January 2018, <https://www.accd.net.au/Clip/CodingRules.aspx?published=True>