NHS Digital

The National Casemix Office

The implications of data quality of HRG4+

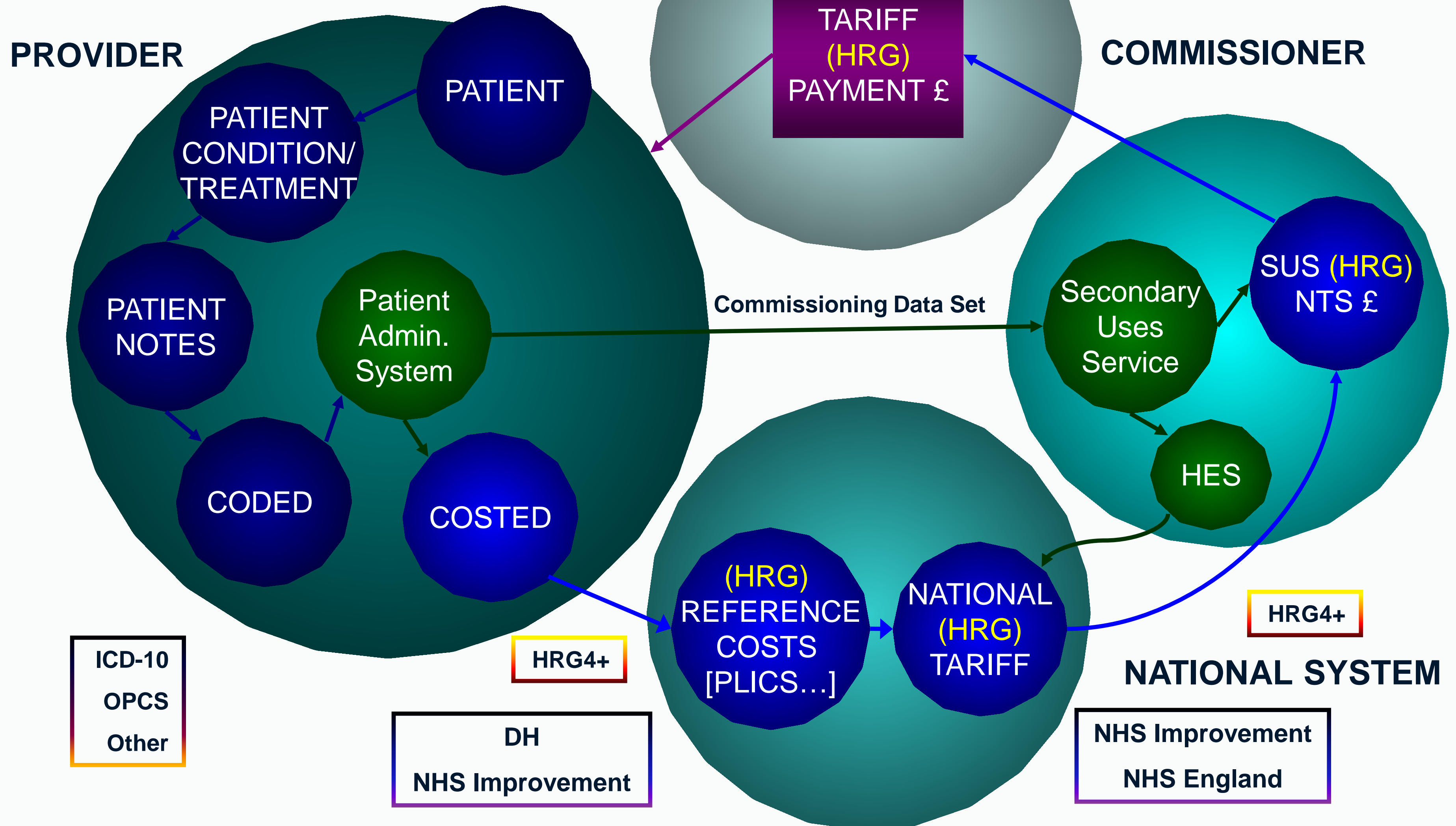
Information and technology
for better health and care

Paula Monteith,
Head of the National Casemix Office

Overview

- The Operating Environment
- (Not) Grouping Validations
- Data Quality at Record Level
- HRGs in General
- HRG4+ Specifically
- Data Quality Developments
- A Summary

The (Simplified) National Operating Environment



An Admission Tale

- Why should we admit? / What is wrong with me?
- What are our (clinical) options? / Can you make it go away?
- What do we need to do? / When can I escape? And will I be better?
- In summary: what happened, when, why ~ the story of a patient (in codes!)

Data Quality ~ at Patient Record Level

- **Not grouping: (simply) mandated (Commissioning Data Set) national (data dictionary) requirements**

Field	Question
– PROCODET	Where were they treated?
– PROVSPNO	"Who" are they?
– EPIORDER	Did they transfer Consultant?
– STARTAGE	How old were they when they were admitted?
– SEX PERSON GENDER CODE CURRENT	Are they boys or girls, or men or ladies?
– CLASSPAT	How were they admitted / when will they leave?
– ADMISORC	Where were they admitted from?
– ADMISSION METHOD CODE	How did they arrive?
– DISDEST	Where did they go when they left?
– DISMETH	Did they leave healthy?
– EPIDUR	How long did they stay?
– MAINSPEF	Who was in charge?
– NEOCARE	Did they receive neonatal care?
– TRETSPEF	What "specialty" were they treated by?
– DIAG_01 PRIMARY DIAGNOSIS (ICD)	What was their primary reason for admission? (Clinical)
– DIAG_02 - DIAG_99 SECONDARY DIAGNOSIS (ICD)	Was anything else wrong with them?
– OPER_01 - OPER_99 PROCEDURE (OPCS)	Did we "operate" / intervene?
– CRITICALCAREDAYS	Were they so sick they were in an ICU?
– REHABILITATIONDAYS	Did they get any rehabilitation?
– SPCDAYS	Are they very very ill?

- **Not grouping, or costing, or funding but <u>people</u> and care**
- [http://www.hscic.gov.uk/media/16744/HRG4-201415-Reference-Costs-Grouper-User-Manual/pdf/HRG4__201415_Reference_Costs_Grouper_User_Manual_v1.0.pdf]

Reviewing Patient Records in the APC CDS

- What we (sometimes) see:
  - Patients without a primary diagnosis
  - Patients discharged before they're admitted
  - "Day Case" patients who stop in overnight? / Inpatients who don't
  - "Emergency" day case patients who can't be (day cases are planned)
  - "Emergency regular attenders"? (ditto)
  - Planned births (they're not, even if they are)
  - Patients whose age "reverts" within a spell (requires multi-episode)
  - Physicians operating? Surgeons not? (See mismatches between MSC / TFC)
  - Patients in ICU (record "tail") with no Critical Care Day Adjustment
  - Patients receiving critical care (adjusted epidur) without an appropriate (record) tail
  - Patients who are discharged dead with no Specialist Palliative Care days
  - Patients with long lengths of stay where nothing happened that could be coded other than a Primary Diagnosis
- *These aren't always wrong (except PD!); just odd…*

HRGs: the English Casemix Classification

- International Best Practice dictates: A Resource Group is an aggregated grouping of patient level data that is:
  - Clinically meaningful – *if it makes clinical sense it will become used and embedded*
  - Similar in expected resource use – *tight distributions for costing / funding*
  - Manageable* in numbers – *otherwise it would be cost prohibitive*
  - Generated from readily available [nationally mandated] data – *else the administrative burden would outweigh the benefits of use*
- An HRG…
  - Relies on underlying primary classification systems (OPCS, ICD, etc.)
  - Intends to accurately capture clinical activity in the English NHS using Commissioning Datasets (CDS)
  - Is used as the currency for NHS Costing (and the National Tariff by which English NHS providers are reimbursed)
  - Evolves over time

HRG General Principles

- Procedures generally take precedence over diagnosis
  - (procedures have hierarchies to pick a dominant from many, based on clinical judgement, but design is evolving to recognise multiple norms)
- Complications and Comorbidities of care
  - (recorded using ICD-10 in other than the Primary Diagnosis position) and will affect the HRG derived, because the presence of multiple comorbidities affects the resource use of care (HRG4+ = additive CC "values")
- Age matters…for a traditional adult / child split (and beyond)
- Length of Stay may be a factor
  - especially short stay where procedures are relatively "minor" and the main resource driver of care is actually length of stay
- From HRG4 onwards (c. April 2006)
  - each patient record generates a single **Core HRG** for the primary reason for treatment, plus n number of **Unbundled HRGs** (linked to discrete, usually high cost, care inputs, which patients may – or may not – have)

HRGs Evolve

- All HRGs…
  - Are clinically owned and endorsed and validated by 30 Expert Working Groups (subchapters) with clinical representation (300+) from Royal Colleges and Academies (plus other clinical professions, plus finance, plus informatics) – *details on web*
  - Are locally, regionally and nationally used to understand the resource implications of healthcare activities
  - On purpose
    - Because of changes in practice; clinical (innovation), coding (linked to innovation and the availability of new codes to capture new activities)
    - Because of changes in policy; (identifying specific services to support differential funding, etc)
    - Because they don't work as we would wish – especially in terms of iso-resourcivity – difficult for new procedures without cost data

Data Quality Using HRGs

- Is easier…
  - HRGs provide an inbuilt (consistent) validation, aggregation and benchmark facility
  - All HRGs require valid data irrespective of whether it's used for grouping ~ UZ01Z Data Invalid for Grouping
  - Surgical HRGs require procedure codes to be recorded
  - Medical HRGs do not require procedure codes to be recorded (but check length of stay): they can never be generated outside APC
  - Maternity HRGs may/may not require procedure codes to be recorded (coding rules)
  - "With CC" HRGs (scored or otherwise) generally require at least one secondary diagnosis to be recorded. And never outside APC
  - Unbundled HRGs require OPCS codes or length of stay adjustments
  - Outpatient HRGs can never be diagnosis-driven and will never have a CC score of >0
  - A&E DOA patients should never have Investigation and Treatment codes recorded…or any OPCS codes for that matter
- *These aren't always wrong (except UZ01Z!); just odd…*

HRG4+ Principles

- Designed to enhance the recognition of the difference between **routine** (typically non-specialised) and **complex** (typically specialised) care of patients:
  - Multiple procedures
  - High cost devices and consumables
  - Interactive complication and comorbidities (CC)
  - Paediatric activity
  - Minor interventions (during longer medical stays) as proxy for severity
- Improves the current Casemix Classification
- (Still) Designed in partnership with clinical EWGs

HRG4+ Interactive CCs

- Change in RC13/14 – redesign of chapter P – split into 17 new subchapters to allow body system specific CC lists and rollout of interactive CC

Reference Costs 2012/13

HRG4	HRG Label	Activity	Average Cost*
PA23A	Cardiac Conditions with CC Score 1+	2,490	£4,399
PA23B	Cardiac Conditions with CC Score 0	654	£2,002

Reference Costs 2013/14

HRG4+	HRG Label	Activity	Average Cost*
PE23A	Paediatric Cardiac Conditions with CC Score 13+	224	£11,048
PE23B	Paediatric Cardiac Conditions with CC Score 10-12	280	£6,828
PE23C	Paediatric Cardiac Conditions with CC Score 6-9	729	£5,391
PE23D	Paediatric Cardiac Conditions with CC Score 3-5	931	£3,656
PE23E	Paediatric Cardiac Conditions with CC Score 1-2	691	£2,740
PE23F	Paediatric Cardiac Conditions with CC Score 0	455	£1,741

Data Quality Developments

- Speaking to the Clinical Classifications Team ~ (training) context not "instruction"
- Publication of "Clinical Snapshots" – see http://www.hscic.gov.uk/casemix
- Reference Costs Validations
  - Worked with Dept. of Health (RC 2015/16) to identify care setting that generate HRGs which are:

Flag	Description	Example
0	**Possible and probable**	e.g. these are HRGs as expected
1/3	**Possible but improbable** - too complex / too simple for care environment	i.e. complex surgery HRGs in outpatient setting / simple procedures such as hearing test in elective inpatient setting
4	**Possible but incorrect setting**	i.e. obstetric delivery HRGs in incorrect setting e.g. daycase - should be non-elective setting only (as per data dictionary rules)
2	**Impossible** – cannot be generated from the Grouper	i.e. diagnosis driven-HRG in outpatient setting, HRG with Length of stay 0 days check in Non-elective long stay

A Summary

- The best recipe for improving data quality is:
  - Pattern Matching (conflicting stories) +
  - Understanding National Guidance +
  - Human Time
- The HRG version is “largely irrelevant” for DQ (though HRG4+ is more responsive to coding completeness); all require robust underlying information, from you, that tells the Patient’s Story
- Odd is interesting, not always wrong, and always worthy of investigation…

Useful website links

- HRG4 2016/17 Local Payment Grouper and documentation
  - http://content.digital.nhs.uk/article/7052/HRG4-201617-Local-Payment-Grouper
- HRG4 2016/17 National Prices
  - https://www.gov.uk/government/publications/nhs-national-tariff-payment-system-201617
- HRG4+ 2017/18 Engagement Grouper and documentation
  - http://content.digital.nhs.uk/article/7326/HRG4-201718-Engagement-Grouper
- HRG4+ 2014/15 Reference Costs
  - http://content.digital.nhs.uk/article/6226/HRG4-201415-Reference-Cost-Grouper
- HRG4+ 2017/18 Tariff Engagement (now closed)
  - https://improvement.nhs.uk/resources/national-tariff-policy-proposals-1718-and-1819/
- HRG4+ 2017/18 Planning prices (two years available)
  - https://improvement.nhs.uk/resources/proposed-national-tariff-prices-1718-1819/
- Prescribed Specialised Services Identification Rules 2017/18 Planning Tool
  - http://content.digital.nhs.uk/casemix/prescribedspecialisedservices

Thank you!

Questions?

P.monteith@nhs.net