Improving clustering data & the assurance process
are trusts getting it right?

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Introduction

- Payment by Results is being introduced to mental health, with a “shadow” year commencing in April 2012
- As part of implementation of Mental Health PbR, provider trusts have been required to learn how to cluster their patients into one of the 20 PbR currencies
- The DH mandated the recording of cluster results for all adult and older adult patients in receipt of secondary mental health care by Dec 31st 2011
- In the rush to comply with deadline, have trusts been getting clustering decisions right?
- What can be done to improve the accuracy of clustering?
What is Clustering?

- Clustering is a method of undertaking a detailed assessment of the needs of each patient and then using the results of the needs assessment to allocate them to one of 20 “clusters”
- This clinically-driven approach has been adopted by the Department of Health as the template for implementation of Payment by Results in mental health
- The clustering booklet provides a description of each cluster and how to use the Mental Health Clustering Tool (MHCT)
The original tools for clustering were variants of HoNOS – HoNOS plus, SARN
Following several years of “dialogue” between CPPP, DH and RCPsych, HoNOS PbR was developed, combining the original HoNOS assessment designed for outcome measurement & the historical elements of SARN
To assess whether HoNOS PbR was valid outside of CPPP areas, the DH ran pilots in other parts of the country in 2009
London PbR pilot

Designed to evaluate whether HoNOS PbR is “fit for purpose” as the clustering tool for mental health PbR

Questions to be answered by the pilot:

- Can clinicians allocate > 90% of their cases to one of the 21 clusters?
- Is there inter-rater reliability of > 80%?
- Is the tool appropriate across care pathway stages?
- Is the tool easy to use?
- Does the algorithm provide sufficient assurance there is no gaming?
London PbR pilot - results

- 93% of all patients could be clustered into one of the 21 clusters
- Only 60% agreement between the HoNOS PbR algorithm & clinician opinion
- Conclusion was that:
  - HoNOS PbR could be used to help clinicians allocate their patients into one of the 21 clusters. Renamed MHCT
  - The algorithm was not good enough – further development was required
<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Common Mental Health Problems (Low Severity)</td>
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<td>2. Common Mental Health problems (Low Severity with Greater Need)</td>
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<td>3. Non-Psychotic (Moderate Severity)</td>
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<td>5. Non-Psychotic (Very Severe)</td>
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<td>6. Non-Psychotic Disorders of Overvalued Ideas</td>
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<td>7. Enduring Non-Psychotic Disorders (High Disability)</td>
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<td>8. Non-Psychotic Chaotic and Challenging Disorders</td>
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<td>9. First Episode in Psychosis</td>
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<td>10. Recurrent Psychosis (Low Symptoms)</td>
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<td>11. Ongoing or Recurrent Psychosis (High Disability)</td>
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<td>12. Ongoing or Recurrent Psychosis (High Symptom and Disability)</td>
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<td>13. Psychotic Crisis</td>
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<td>14. Severe Psychotic Depression</td>
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<td>15. Dual Diagnosis</td>
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<td>16. Psychosis and Affective Disorder Difficult to Engage</td>
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<td>17. Cognitive Impairment (low need)</td>
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<td>18. Cognitive Impairment (moderate Need)</td>
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<td>19. Cognitive Impairment (high need with functional complications)</td>
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<td>20. Cognitive Impairment (high need with physical complications)</td>
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<tr>
<td>21. Cognitive Impairment</td>
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<td>Common mental health problems (low severity)</td>
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<td>Common mental health problems</td>
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<td>Non-psychotic (moderate severity)</td>
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<td>4</td>
<td>Non-psychotic (severe)</td>
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<td>5</td>
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<td>10</td>
<td>Ongoing recurrent psychosis (low symptoms)</td>
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<td>11</td>
<td>Ongoing or recurrent psychosis (high disability)</td>
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<td>15</td>
<td>Dual diagnosis (substance abuse and mental illness)</td>
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<td>16</td>
<td>Psychosis and affective disorder difficult to engage</td>
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<td>17</td>
<td>Cognitive impairment (low need)</td>
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<td>18</td>
<td>Cognitive impairment or dementia (moderate need)</td>
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<tr>
<td>19</td>
<td>Cognitive impairment or dementia (high need)</td>
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<tr>
<td>20</td>
<td>Cognitive impairment or dementia (high physical or engagement)</td>
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Validation of clusters

• No substantial published studies yet?
• Needs validation against
  – Expected concurrent diagnoses
  – Expected concurrent scores
  – Outcomes:
    • expected progression of clusters
    • expected HoNOS change over time
  – costs

Some early data
PbR guidance 2012-3

• The final decision on which cluster to allocate a service user to rests with the mental health professional. Because clustering is linked to payment, the Department is exploring options for auditing and validating the assignment of clusters with the Audit Commission as part of the PbR data assurance framework. The Audit Commission plans to focus on … consistency of the data that underpins cluster allocation.

• The Department has commissioned work to inform the development of a national algorithm to support the initial clustering decision. This tool will take MHCT scores and suggest the most likely cluster(s). This will help support the mental health professional’s clustering decision and provide a level of validation that could also be used by commissioners. A link will be provided to the tool in early 2012 [now June/July].
Have we been getting clustering decisions right?

- Following the pilot, training in use of the MHCT was rolled out across the country.
- In London, the 2010/11 CQUIN included the training of all relevant clinical staff in clustering & then cluster 80% of patients on CPA.
- Nationally, the DH mandated all patients to be clustered by 31st December 2011.
Have we been getting clustering decisions right?

• Group task:
  – From knowledge of your own services, do you think staff have been getting clustering decisions right?
  – What evidence do you have that staff have been clustering accurately or inaccurately?
Have we been getting clustering decisions right?

- Patients may only meet the threshold for a cluster at certain points of their presentation – namely at point of referral, significant change in need or at formal review such as CPA.

- The scoring grid for MHCT items 1-18 include must score items for entry to a cluster. These apply at assessment.
### Cluster Definitions

#### Cluster 1

<table>
<thead>
<tr>
<th>No</th>
<th>Item Description</th>
<th>Score</th>
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<tr>
<td>2</td>
<td>Non-accidental self injury</td>
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<tr>
<td>3</td>
<td>Problem drinking or drug taking</td>
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<tr>
<td>4</td>
<td>Cognitive Problems</td>
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<tr>
<td>5</td>
<td>Physical illness or disability problems</td>
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<tr>
<td>6</td>
<td>Hallucinations and Delusions</td>
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<td>7</td>
<td>Depressed mood *</td>
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<td>Other mental and behavioural problems *</td>
<td><img src="image" alt="Score" /></td>
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<td>9</td>
<td>Relationships</td>
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<td>10</td>
<td>Activities of daily living</td>
<td><img src="image" alt="Score" /></td>
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<tr>
<td>11</td>
<td>Living conditions</td>
<td><img src="image" alt="Score" /></td>
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<tr>
<td>12</td>
<td>Occupation &amp; Activities</td>
<td><img src="image" alt="Score" /></td>
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<tr>
<td>13</td>
<td>Strong Unreasonable Beliefs</td>
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#### Cluster 2

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<thead>
<tr>
<th>Score</th>
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#### Cluster 3

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<thead>
<tr>
<th>Score</th>
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#### Cluster 4

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Have we been getting clustering decisions right?

• However to meet the DH deadline, many patients were clustered cross-sectionally, midway through an episode of care.

• The consequence of this is that many patients would have scored lower on several MHCT items (as they were receiving treatment and therefore had clinically improved) – and may have been placed in a lower cluster than if they had been clustered at first presentation.
Have we been getting clustering decisions right?

- Although all staff have been trained in use of the MHCT, how many truly understand clustering?
- Is there any evidence that trusts have been getting clustering decisions wrong?
Percentage of cluster allocations in line with 'must score' requirements in Cluster Handbook.
Are staff compensating by overriding the must scores?

MHCT Scoring Data Quality – ‘Must Score’ Items Cluster 16 (N=75)
Trustwide – Adult Acute Inpatient Cluster Allocations on Admission (661)
Cluster Allocations – Adult Boroughs
Cluster Allocations by CPA Level – Adult Directorate
Cluster Allocations by CPA Level – Borough 1
Cluster Allocations by CPA Level – Borough 2
Cluster Allocations by CPA Level – Older Adult Directorate
Cluster Allocations - Trustwide
Is there any evidence for inaccurate clustering?

Recent audit looking at clusters 1-4 in more detail:
Number = 7611
Primary diagnosis of:
-F60-69: 339
-F20-29: 317
-F30 & F31: 338
-Deep dive analysis of likely cluster for the F20-29 patients:

<table>
<thead>
<tr>
<th>Current Cluster</th>
<th>Forecasted Cluster 10</th>
<th>Forecasted Cluster 11</th>
<th>Forecasted Cluster 12</th>
<th>Forecasted Cluster 13</th>
<th>Forecasted Cluster 14</th>
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![Bar chart showing clusters comparison](chart.png)
Have we been getting clustering decisions right?

- Plenty of evidence to demonstrate that trusts are not yet getting this right.
- How surprising is this?
How long does it take to fully embed a service wide clinical process?

• Implementation of CPA?
• Risk Assessment and Management?
• Clinical Outcome Measurement
  – Took our eating disorder service 7 years to feel confident they were getting it right, with scores accurately reflecting outcomes
How can we improve the accuracy of clustering?

• Task: How can trusts improve their clustering? Consider:
  – Improving accuracy of cluster allocation
  – Improving timeliness of reclustering
  – How to persuade clinicians of the importance of the task?
  – How to persuade managers of the importance of the task?
CNWL approach

• MHCT training:
  – Staff trained in the 2009 pilot
  – Trustwide training in 2010/11 on how to use the MHCT. RCPsych training, then cascaded
  – Second wave of refresher training 2012. Focus is on improving the accuracy and timeliness of clustering, taking into account the transition protocols
CNWL approach

• Management teams:
  – Modelling of projected income if PbR actually implemented from April 2012 (rather than shadow)
• Clinical teams:
  – Link to finance
    • If we incorrectly cluster, we may not receive the level of funding required to meet the costs of providing clinical care - we will therefore be at financial risk
    • Income is dependent on recording activity & cluster result
  – Link to clinical care
    • The most appropriate packages of care we can deliver to our patients are based on detailed assessments of their problems and difficulties
    • The MHCT (mental health clustering tool) helps identify the right package of care for each patient by allocating a clinical “cluster” based on a patient’s needs
# Overview of non psychotic care packages

## Cluster 3
**Non Psychotic (Moderate Severity)**
Moderate problems involving depressed mood, anxiety or other disorder.
(Not including psychosis)

**LPC—case management**
Review risk, including safeguarding
Relapse prevention
Low intensity CBT
Sign posting

## Cluster 4
**Non-Psychotic (Severe)**
This group is characterised by severe depression and/or anxiety and/or other and increasing complexity of needs.
They may experience disruption to function in everyday life and there is an increasing likelihood of significant risk.

Cluster 3 package +
Increased liaison and communication
Pharmacy prescribing advice
Greater emphasis on life skills/establishing or maintaining structures and routines

## Cluster 5
**Non-psychotic Disorders (Very Severe)**
This group will be severely depressed and/or anxious and/or other. They will not present with hallucinations or delusions but may have some unconvincing beliefs.
They may present with suicide risk and they may present with sleeping issues and have severe disruption to everyday living.

Cluster 4 package +
LPC but could also be CPA
Crisis planning
Developing or maintaining independent living skills
Possibility of assessment under FACS
Facilitate self-directed care
Support with practical tasks
Possible more direct social intervention rather than sign posting

## Cluster 6
**Non-Psychotic Disorder of Over-valued Ideas**
Moderate to very severe disorders that are difficult to treat. This may include treatment resistant eating disorder, OCD etc.
Where extreme beliefs are strongly held, some personality disorders and enduring depression.

Cluster 5 package +
Likely to be on CPA
Access to MDT support
Risk management plan
CBT including harm minimisation, support with employment, education, more direct support
Referral for specialist assessment
A small numbers of patients may need inpatient admission

## Cluster 7
**Enduring Non-Psychotic Disorders (High Disability)**
This group suffers from moderate to severe disorders that are very disabling. They will have received treatment for a number of years and although they may have improvement in positive symptoms considerable disability remains that is likely to affect role functioning in many ways.

Cluster 6 +
 Usually CPA/MDT support
Social inclusion an issue
Risk
Considerable pharmacy input, e.g. combined antidepressants
Increased life skills support. Possible psychotherapeutic or high level psychology input
Overview of psychotic packages

Cluster 11
Ongoing Recurrent Psychosis (Low symptoms)
This group has a history of psychotic symptoms that are currently controlled and causing minor problems if any at all. They are currently experiencing a period of recovery where they are capable of full or near functioning. However, there may be impairment in self-esteem and efficacy and vulnerability to life.
Aim for LPC—with a view to discharge to
Review risk, including safeguarding
Relapse prevention
Maintain recovery -- this is likely to include a degree of social care—assisting with accommodation, vocation etc.
Sign posting

Cluster 12
Ongoing or Recurrent Psychosis (High Disability)
This group have a history of psychotic symptoms with a significant disability with major impact on role functioning. They are likely to be vulnerable to abuse or exploitation.
Most likely CPA—certainly MDT approach
Review and activity manage risk, including safeguarding
Recovery is perhaps challenged by negative symptoms
Aim to facilitate engagement
Increased support to reduce isolation—greater use of social care
Increased liaison and communication
Pharmacy prescribing advice
Greater emphasis on life skills—vocational needs to be addressed

Cluster 13
Ongoing or Recurrent Psychosis (High symptoms and disability)
This group will have a history of psychotic symptoms which are not controlled. They will present with moderate to severe psychotic symptoms and some anxiety or depression. They have a significant disability with major impact on role functioning.
Cluster 12 +
CPA -- unless specific reasons against
Work with compliance and active engagement in treatment
Likely pharmacy may do some dispensing
Life skills core
Greater support with practical tasks
Independent living may become an aim -- possibility of inpatient rehabilitation or placement
Refresher training

- Use vignettes matching clusters to service line
- Cover frequently asked questions eg:
  - Patients with a diagnosis of bipolar affective disorder ALWAYS go into a psychotic cluster (even if presenting with depression)
  - Cluster 0 is used when care is offered, but a patient’s needs are not well described by the current clusters (eg ADHD or Autistic spectrum disorders)
  - You can score symptoms/behaviours from the past two weeks on historical scales if they are relevant (eg acts of aggression/self harm)
Refresher training: Clustering patients who have previously been allocated a cluster

- We have spent the last 18 months clustering our caseloads – what next??
- For existing patients, we need to use the **transition protocols**.
  - ie If a patient is already allocated to a cluster, use the relevant guidance on care transition protocols for that cluster from the MHCT clustering booklet
2012/13 Clustering Guide

National guidance for Clustering:

• When reviewing a patient who has already been allocated to a cluster, upon reassessment using the MHCT, he or she may have a lower score because they are receiving effective treatment.

• However, if this treatment were to be stopped, due to allocation to a lower cluster or discharge, their needs would increase again.

• Therefore, to avoid such perversities, the Mental Health Clustering Booklet 2012-13 includes guidance on points to consider in re-assessment, known as care transition protocols.

• The protocols should be used before applying the MHCT and reviewing the care cluster scores.
Clustering & Transitions

- The points at which the appropriateness of the current cluster allocation is reconsidered should occur at natural and appropriate points in the individual’s care pathway.
- Typically these are termed as “reviews”, but can be in response to unforeseen changes in need i.e. unplanned as well as pre-planned.
Consider the following clinical scenarios:

- The planned review of a service user half way through a course of 16 sessions of CBT for depression will often reveal significant improvements and a corresponding reduction in MHCT scores for anxiety and low mood.

- This is rarely seen as a sustainable change in the user’s presentation and thus the original treatment plan continues until the intervention is completed, rather than be reduced to a lower intensity intervention (e.g. computerised CBT).
Step-by-step guide to the use of MHCT Scores, cluster profiles and care transition protocols at care reviews

- CNWL will be developing step-up, step-down and discharge criteria for each cluster over the next few months. These are to be considered in addition to MHCT scores at the end of a cluster period.

- For now, the key determinant for change/continuing in cluster will be the patient’s care package. 
  - *ie* should it stay the same or be increased/decreased?

Examples of change to care package:
- patient being reclustered due to change in need and now requires HTT or inpatient admission
- patient having yearly CPA meeting and care package is being changed eg transfer to lead professional care
Enhancing clinician engagement with clustering

Regular feedback to staff on analyses they generally find really interesting & helpful:

• Individual clustering results tells us about the needs of each patient – what does aggregating clustering results tell us?
• How complex is my caseload?
• Do I have the right clinical skills/ training to effectively manage my caseload? Does my team have the right skill mix?
• Analyses of clustering data is very helpful for determining the needs profile of patient groups & therefore for planning/ reorganising services to make them more efficient
Cluster Allocations by CPA Level – Borough 2
Improving assurance – Case example CWNL Acute Services

• To improve ownership by teams, the ASL are implementing a “bottom up” approach:

  For HTT and inpatients:
  – Team whiteboards
  – Team responsible for clustering is the team looking after the patient on day 7 (will need to be day 2) and day 21 of each cycle
  – Team whiteboard to track each patient
  – Cluster decision to be ratified by senior member of staff
Summary

• A major step towards implementing PbR in mental health has required MHTs to meet regional and national deadlines for clustering all of their patients.
• Previous experiences suggest it can take several years for service wide changes which require most clinical staff to learn to properly use a new process.
• We do not have several years, so to accelerate the learning process to get this right:
  – Run refresher training emphasising link to finances and clinical care.
  – Use relevant clinical vignettes & cover FAQs.
  – Implement transition protocols from the latest MHCT booklet.
  – Provide regular clustering analyses to clinical teams.
  – Engage team leaders and managers.
• Any questions?