Requirement to Protect True Psychiatric Intensive Care Threshold: Benefits to Quality Care Delivery

Dr Feras Mustafa
Sara Johnson
Rowena Rogers
Overview

• A Tale of Two PICUs
• Teal PICU Closure: Anxieties and Challenges
• Brief Literature Search
• 6-Month Post Closure Review
• Our Study: Methods/Results
• Discussion As We Go
• Conclusion
A Tale of Two PICUs (1)

- Marina PICU, Berrywood Hospital Northampton (SOC)
- Teal PICU, St Mary’s Hospital Kettering (NOC)
- 7-bedded purpose built mixed gender PICUs
- Staffing: day 5/7 night 4/7 - Medical cover
A Tale of 2 PICUs (2)

• 40 acute adult beds each side (admission ward, male recovery ward and female recovery ward)
• mixed urban/suburban population ~ 350 000
• management of acutely disturbed patients
• 12 bedded male only LSU at Berrywood Hospital
• Differences (airlock, entrances,...)
Teal PICU

- Pressure for acute beds affected PICU practice
- Informal admissions
- Delayed/blocked transfers
- Awaiting community/locked rehab placements
- Insidious “culture shift”/loss of specialism
- Continued to provide PICU function
- No quantitative data
Marina PICU

- PICU referral process
- Rapid assessment
- Stabilisation
- Transfer (PICU team decision)
Audit Jan 2009-Jan 2011

• 206 admissions (male 69%:female 31%)
• **Ethnicity:** 72% WB; other 28%
• **Mean age:** 36 years
• **Indication:** Aggression 62%; Absconsion 19%; Risk of Suicide or Vulnerability 9%; Other 10%
• **Diagnosis:** Psychosis 71%; Mania 15%; Depression 5%; Personality Disorder 4%; Other 5%
• How would patients’ profile change?
• Sep 2011 trust PICU services review

• High PICU capacity per local population compared with other trusts

• 23 Jan 2012 Teal PICU closure
Anxieties

• Families/carers from NOC
• Access to PICU beds more difficult
• PICU outflow referrals
• Increased incidents in the remaining PICU
• Difficulty with transporting patients to SOC (20 miles)
• Anything else?
The Challenge

• Sudden expansion in catchment area and acute beds (doubled: Northants 700 000)

• 1 bed: 100000 (Pereira et al. 2005;4:100000)

• Unchanged referral process

• Maintain dynamic model of rapid assessment, stabilisation and transfer
Google/Pubmed search

- Phyllis Montgomery & Barbara Johnson

Closing of a Psychiatric Intensive Care Unit: A manifestation of Lost Value. Perspectives in Psychiatric Care Sep 1996

- Financially driven closure of a 5-bedded unit after 11 months (1985)
- No quantitative data
- Disappointment
Independent Review Panel

- Financially driven closure of a 6-bedded PICU in Oct 2009 (temporary)
- Back up for LS service
- Southern England region/176500 population
- Access to 3 other PICUs (contingency beds could be tracked daily)
- Review Feb 2010
- Strong feelings/views/suggestions
- Concerns regarding increased incidents/disturbance/complaints on the open ward
- Two workshops Feb 2009 for staff and carers
- PICU closed with short notice
- Police support speedily available
- Improved/more focused PICU indication
- Improved openness in the dialogue with external agencies such as AMHPs
- No referral for private PICU beds required
- Panel did not recommend restoration of the PICU
6-month post closure review

• “Marginal increase” in private PICU referrals (6 over 9 months pre-closure; 8 over 6 months post-closure)

• Pre closure there were inappropriate placements (based on total reduction in PICU utilisation)

• No complaints regarding access/visiting

• No reports of difficulty of NOC accessing PICU

• Datix data suggests a “combined effect”

• Transporting uneventful; police 2; specialist 1
6-month post closure review conclusion

- No adverse impact on PICU provision
- More appropriate referrals
- No negative impact on NOC patients (access/transport)
- Patients needing PICU are admitted directly
- Open wards teams increased threshold of transfer/improved patient management/improved collaboration between PICU and other wards
- Consider 2 more PICU beds or more acute beds/review of staffing (numbers/skills/rotation)
Methods

• Year before – year after comparison
• Data inc. patient info, diagnosis, legal status, admission details (source and reason for referral, LOS, number of admissions), incidents, use of restraint, seclusion
• Descriptive statistics
• Changed referrals Vs. Changed PICU practice
• Female Vs. Male       NOC Vs.SOC
Number of Admissions

Pre: 113
Post: 160
PICU outflow referrals over 9 months

- Pre: 6
- Post: 13
Age

Mean

Pre
Post

32
34
Age Category

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>&lt; 18</td>
<td>4</td>
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</tr>
<tr>
<td>18 - 44</td>
<td>91</td>
<td>131</td>
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<tr>
<td>45 - 65</td>
<td>17</td>
<td>28</td>
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<td>&gt; 65</td>
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<table>
<thead>
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<th>Age Category</th>
<th>Pre</th>
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<tbody>
<tr>
<td>&lt; 18</td>
<td>3.5%</td>
<td>0%</td>
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<tr>
<td>18 - 44</td>
<td>80.5%</td>
<td>81.9%</td>
</tr>
<tr>
<td>45 - 65</td>
<td>15%</td>
<td>17.5%</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>1%</td>
<td>0.6%</td>
</tr>
</tbody>
</table>
Gender

Male

Female

Pre | Post
---|---
72 | 98
41 | 62

Male

Female

Pre | Post
---|---
64% | 61%
36% | 39%
Referring Area

<table>
<thead>
<tr>
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<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>South</td>
<td>94</td>
<td>107</td>
</tr>
<tr>
<td>North</td>
<td>16</td>
<td>51</td>
</tr>
<tr>
<td>External</td>
<td>3</td>
<td>2</td>
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</table>

Percentage:

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
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<tbody>
<tr>
<td>South</td>
<td>84%</td>
<td>67%</td>
</tr>
<tr>
<td>North</td>
<td>14%</td>
<td>32%</td>
</tr>
<tr>
<td>External</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Diagnosis 2

Personality Disorder
- Pre: 24
- Post: 37
- Percentage: 21%

Other
- Pre: 89
- Post: 123
- Percentage: 79%

Personality Disorder
- Pre: 79%
- Post: 77%

Other
- Pre: 21%
- Post: 23%
- Percentage: 77%
Ethnicity 2

Pre vs Post

White British/Irish:
- Pre: 79
- Post: 120

Black:
- Pre: 9
- Post: 20

Other:
- Pre: 25
- Post: 20

70% 12.5% 22% 12.5%
Reason for Referral 1

<table>
<thead>
<tr>
<th>Reason</th>
<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>Aggression</td>
<td>79</td>
<td>128</td>
</tr>
<tr>
<td>Self Harm</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Disinhibition</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Absconding</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

% Change:
- Aggression: 70% to 80%
- Self Harm: 22% to 16.3%
- Disinhibition: 0% to 0.6%
- Absconding: 5% to 0.6%
- Other: 3% to 2.5%
Reasons for Referral 2

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
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</thead>
<tbody>
<tr>
<td>Aggression</td>
<td>79</td>
<td>128</td>
</tr>
<tr>
<td>Self Harm</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>6</td>
</tr>
</tbody>
</table>

Pre vs. Post comparison for reasons of referral.
MHA Status

Informal Section 2 Section 3 Section 4 CTO recall Section 37 Section 5(2) Section 37/41

Pre Post

Informal

Section 2

Section 3

Section 4

CTO recall

Section 37

Section 5(2)

Section 37/41

1 0

51 80

43 70

2 0

2 6

1 1

13 1

0 2

1.8%

45.1%

38.1%

1.8%

11.5%

0%

0.6%

1.3%
Single Vs. Multiple Admissions

- **1 admission**
  - Pre: 69%
  - Post: 88%

- **Multiple admissions**
  - Pre: 44%
  - Post: 72%

Comparison of single vs. multiple admissions before and after an intervention.
Source of Referral

- **Open ward**
  - Pre: 51
  - Post: 75

- **Community**
  - Pre: 43
  - Post: 71

- **Prison**
  - Pre: 1
  - Post: 0

- **Other PICU**
  - Pre: 18
  - Post: 13

- **Other**
  - Pre: 0
  - Post: 1

**Comparison of Source of Referral Pre vs Post**

- **Open ward**
  - Pre: 45%
  - Post: 47%

- **Community**
  - Pre: 38%
  - Post: 44%

- **Prison**
  - Pre: 1%
  - Post: 0%

- **Other PICU**
  - Pre: 16%
  - Post: 8%

- **Other**
  - Pre: 0%
  - Post: 1%
Destination

<table>
<thead>
<tr>
<th>Destination</th>
<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>Open ward</td>
<td>91</td>
<td>138</td>
</tr>
<tr>
<td>Community</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Locked rehab</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Low secure</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other PICU</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Medium secure</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other hospital</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Died</td>
<td>0</td>
<td>1</td>
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</tbody>
</table>

Pre vs. Post:

- Open ward: 80.5% vs. 86%
- Community: 8% vs. 5%
- Locked rehab: 3.5% vs. 2%
- Low secure: 2% vs. 2%
- Other PICU: 5% vs. 1%
- Medium secure: 0% vs. 1%
- Other hospital: 1% vs. 2%
- Died: 0% vs. 1%
Average LOS

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>Mean</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>Median</td>
<td>15</td>
<td>11</td>
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LOS Category 1

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
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<tbody>
<tr>
<td>&lt;2 weeks</td>
<td>56</td>
<td>102</td>
</tr>
<tr>
<td>2-4 week</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>4-8 weeks</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>8-12 weeks</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>12-24 weeks</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>&gt;24 weeks</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Pre**
  - <2 weeks: 56
  - 2-4 week: 35
  - 4-8 weeks: 15
  - 8-12 weeks: 3
  - 12-24 weeks: 3
  - >24 weeks: 1

- **Post**
  - <2 weeks: 102
  - 2-4 week: 35
  - 4-8 weeks: 19
  - 8-12 weeks: 2
  - 12-24 weeks: 2
  - >24 weeks: 0
LOS Category 2

Pre Post

< 2 weeks
56
102

2-8 weeks
50
54

> 8 weeks
7
4

< 2 weeks
49.60%
63.80%

2-8 weeks
44.20%
33.80%

> 8 weeks
6.20%
2.50%
LOS by Age Category

Mean

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>&lt; 18</td>
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<td>16</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>22</td>
<td>11</td>
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Median

<table>
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<th>Post</th>
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<tr>
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<td>45-65</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>22</td>
<td>11</td>
</tr>
</tbody>
</table>
LOS by Referring Area

Pre: $p = 0.04$

Post: $p = 0.02$
LOS by Gender

Mean

Male
- Pre: 26
- Post: 16

Female
- Pre: 12
- Post: 17

Median

Male
- Pre: 18
- Post: 11

Female
- Pre: 9
- Post: 11

Pre: p = 0.001  Post: p = 0.29
LOS by Ethnicity

Pre: $p = 0.45$

Post: $p = 0.01$
LOS by Diagnosis

Pre: p = 0.01

Post: p = 0.01
LOS by Reason for Referral

- Aggression
  - Pre: 24
  - Post: 16

- Self Harm
  - Pre: 12
  - Post: 17

- Other
  - Pre: 16
  - Post: 8

Mean:
- Aggression
- Self Harm
- Other

Median:
- Aggression
- Self Harm
- Other

Pre: p = 0.02
Post: p = 0.06
Typical PICU Patient Pre-closure

- Male: 64%
- SOC: 84%
- WB/WI: 70%
- Scz: 48%
- Sec 2: 45%
- Aggression: 70%
- LOS: 21 days
- to open ward: 81%
- from open ward: 45%
- 32 years
- 1 ad. 61%
Typical PICU Patient Post-closure

- Male 61%
- SOC 67%
- WB/WI 75%
- 1 ad. 55%
- LOS 16 days
- Scz 45%
- Aggression 80%
- to open ward 86%
- from open ward 47%
- Sec 2 50%
- 34 years
- from open ward 47%
Typical Male NOC Pre-closure

- LOS: 15 days
- 1ad: 89%
- From Open Ward: 44%
- To Open Ward: 78%
- No.: 9
- Age: 33 yrs
- WB/WI: 78%
- Sec2: 56%
- Scz: 56%
- Aggression: 67%
- From Open Ward: 44%
- To Open Ward: 78%
Typical Male NOC Post-closure

- No. 27
- 32 yrs
- WB/WI 74%
- Sec2 48%
- Scz 59%
- From Open ward 48%
- Aggression 89%
- to open Ward 89%
- 1ad. 74%
- LOS 16 days
Typical Male SOC Pre-closure

- No. of patients: 61
- Average age: 34 yrs
- WB/WI: 61%
- Sec3: 44%
- Scz: 71%
- Aggression: 84%
- From Open Ward: 51%
- 1ad.: 66%
- LOS: 28 days
- To open Ward: 80%
Typical Male SOC Post-closure

- No. 70
- 34 yrs
- WB/WI 63%
- Sec2 57%
- Scz 56%
- From community 53%
- Aggression 87%
- to open Ward 90%
- 1ad. 51%
- LOS 16 days

From community 53%
Typical Female NOC Pre-closure

- No. 7
- 28 yrs
- WB/WI 86%
- Sec2 71%
- PD 43%
- Ag/SH 43%
- From Open ward 57%
- to open Ward 71%
- LOS 8 days
- 2ad. 57%
- From Open ward 57%
- To Open ward 71%
Typical Female NOC Post-closure

- LOS: 10 days
- No. 24
- 36 yrs
- WB/WI: 96%
- Sec3: 67%
- PD: 54%
- To open Ward: 96%
- From Open Ward: 75%
- Aggression: 67%
Typical Female SOC Pre-closure

- No. 33
- 30 yrs
- WB/WI 85%
- Sec2 52%
- PD 55%
- Aggression 55%
- From community 42%
- To open Ward 85%
- 1ad. 46%
- LOS 13 days
Typical Female SOC Post-closure

- 1ad. 51%
- No. 37
- WB/WI 87%
- Sec3 51%
- PD 49%
- 35 yrs
- From Open ward 54%
- To open Ward 76%
- Aggression 68%
- LOS 22 days

From Open ward 54%
All reported incidents – Post

- Violent incidents: 78%
- Sexual incidents: 13%
- Self Harm incidents: 2%
- Missing/AWOL patient: 2%
- Illicit Substance incident: 3%
- Health & safety incident (no beds, contraband items, environment, etc): 1%
- Accidental injury: 0%
- Accidental property damage/loss: 0%
Incidents pre & post (ex aggr.)

- Sexually Incident: Pre 34, Post 38
- Missing/AWOL Patient: Pre 6, Post 9
- Illicit Substance Related Incident: Pre 2, Post 0
- Health & Safety Incidents: Pre 2, Post 4
- Fire: Pre 1, Post 0
- Accidental Injury: Pre 4, Post 6
- Accidental Property Loss/Damage: Pre 2, Post 2
All Incidents Pre & Post

Pre – 1.9 incidents per admission
Post – 1.8 incidents per admission
Incidents of Aggression Pre & Post

- Violence towards staff: Pre 33, Post 31
- Violence towards environment: Pre 21, Post 9
- Aggression/Agitation (unspecified): Pre 50, Post 97
- Attempted assaults: Pre 37, Post 32
- Violence towards other patients: Pre 23, Post 23
- Verbal abuse: Pre 17, Post 15

Pre vs Post comparison for various incidents of aggression.
Use of Restraint Pre & Post

Pre | Post
---|---
Total number of restraints | 49 | 66
Teamwork | 34 | 39
Low Level Interventions | 15 | 27
Number of seclusions

Incidents of Seclusion

Pre: 82
Post: 87
Conclusions

• Uneventful reduction of PICU beds from 2:100 000, to 1:100 000
• Reduced PICU utilisation
• No sig increase in private PICU referrals
• No sig increase in seclusions
• Benefit of LSU provision
• Male Vs. Female PICU model
• Waiting for placements (e.g., Locked rehab)
Thank you!