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QUALITY IMPROVEMENT REPORT

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# Use of a quality improvement strategy to increase drug and alcohol consultation and care opportunities for mental health inpatients in rural and remote New South Wales

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**Abstract**

**Problem:** Mental health inpatients have high rates of co-morbid substance use disorders which may exceed 50% in addition to the presenting complaint(s). Treating teams may prioritise, and substance use disorders are often not addressed.

**Setting:** Dubbo inpatient mental health units.

**Key measures for improvement:** Rates of drug and alcohol consult of inpatients.

**Design:** Retrospective audit of all inpatient records for mental health units at Dubbo Hospital (May-October period 2018 and 2019) following the intervention. Qualitative reflections of clinical staff were also included.

**Strategies for change:** From early 2019, the problem was communicated with staff via education and open discussion. Modelling of the expected numbers of referral was understood as manageable within existing resources. The agenda of the morning meeting then always included an item that asked all team members to identify and refer a person if they needed drug and alcohol care.

**Effect of change:** Consultation by the drug and alcohol clinical nurse consultant increased from 48 of 228 (21%) patients in the 2018 period to 83 of 232 (35.8%) patients in the 2019 period.

**Lessons learnt:** The community and inpatient multidisciplinary team can correctly inform and increase drug and alcohol referral for mental health inpatients.

KEYWORDS

Aboriginal health, co-design, drug and alcohol, mental health, model of care

## 1 | INTRODUCTION

Local concerns arose in the integrated mental health drug and alcohol (MHDA) program in late 2018. Hospital-based drug and alcohol (D&A) staff perceived a deficit in referrals from the inpatient mental health (MH) units at Dubbo Hospital. The Gundaymarra (acute) and Barraminya (sub-acute) MH inpatient units (20 beds total, 10 beds each) support a large

geographic region of New South Wales that is rural, remote and very remote. The local health district reported that 11.1% of the population identify as Aboriginal.[1] The admission rate of Aboriginal people to these units was 39% between July 2018 and June 2019.[2]

The integration of drug and alcohol (D&A) care delivered in partnership with MH inpatient care is beneficial as each domain of care is duly emphasised and organised.[3] Underreporting of co-morbid D&A diagnoses is common for people admitted to acute MH units in Queensland despite high rates of co-morbidity that often exceed 50% in some diagnostic groups (57.6% of the sample of 2118 individuals were at risk in the D&A category).[4] Screening tools applied by MH clinicians commonly ask about D&A use and type, frequency and amount.[5] This information may be gathered by just one or a few health professionals, usually during the admission. The emphasis on how to proceed with this information may not be standard, with a decision for further D&A treatment or clinical review often determined by the nature of information available, possible urinalysis, the clinician leader and the D&A resources within the local system. Systems do not always prime all members to be valuable contributors, as historians and advocates, including all staff and next of kin.[6]

Addressing the specific needs of Aboriginal Australians was of paramount importance amid the sometimes fragmented community care arrangements seen in regional and remote settings.[7] Substance use disorders contribute a further additional burden of health inequity in this group, with case identification and planned links to care at discharge vital.[8]

**What is already known on this subject:**

- Mental health inpatients have substance use disorders at rates around 50%
- Specific drug and alcohol care is not necessarily a focus of mental health admission in the Australian health care setting
- Aboriginal and Torres Strait Islander peoples have higher rates of mental health and substance use morbidity than other Australians
- In rural and remote settings, there are often fewer and complex resource arrangements. Thus focused planning in a hospital setting is particularly opportunistic

**What this study adds:**

- Mental health inpatients are prime candidates for the delivery of integrated mental health and drug and alcohol care
- The entire ecosystem of people involved in care delivery can contribute to correctly identifying a person who should be referred. This includes all members of the community and inpatient teams. They may be informed by next of kin or other family members
- Additional resources were not required to achieve better quality care when rates of referral increased.
- Rates of initial psychoeducation, treatment options and connection to follow-up were increased

## 2 | METHOD

In early 2019, local MHDA team leaders raised the problem of substance use morbidity in MH inpatients with their respective community and inpatient teams. The perceived low referral rate was acknowledged, and general educational efforts were made to recognise that cases may be missed.

The weekday morning meeting of the Dubbo MHDA service occurs briefly each day via videoconference and discuses inpatients, community team and D&A team issues. This served as the time to address potential referrals. All staff were encouraged to consider referral based on information or concern from next of kin, history that had been encountered in the care trajectory (in the community or inpatient setting), withdrawal states or from urine drug screens.

Modelling illustrated that referrals were not going to exceed the existing services based on the length of stay, reminding staff to refer often and at the lowest possible threshold (Table 1).[9-11]

The goal was to increase the inpatient consult rate of the clinical curse consultant (CNC) and thus to begin a formal framing and connection to D&A care. An established model of care supported the D&A consultation-liaison (C-L) CNC[12] and is associated with cost savings in the hospital.[13] This strategy was to augment the existing care of the MH inpatient teams.

A retrospective audit was undertaken when the local service wished to clarify if the 2019 intervention had been successful. All people discharged between the 6-month periods of May to October 2018 and May to October 2019 were compared. Chi-square ($\chi^2$) analysis was planned to evaluate change across the 2 periods amid the 460 admissions. Ethical approval was sought for the quality improvement activity in this form. While Aboriginal status was known for each admission, this is not specifically reported for ethical reasons as prospective permission was never considered. The high admission rate of Aboriginal Australians to the MH units in

Dubbo was understood using existing reported local health service data, Aboriginal people among total admissions from July 2018 to June 2019.[2]

## 2.1 | Ethics approval

The project was deemed to be a quality improvement project by the local ethics processes of Western NSW Local Health District (evidence letter available on request).[14] The project title and number allocated was: 'GWAHS 2020-098: Retrospective audit of MH inpatient records Dubbo inpatient units. Who saw the D&A CNC? 2018 vs 2019 6 month snapshot. Checking on our quality improvement'.[15]

**TABLE 1** Modelling for change

| |
|---|
| In 2018 (March-July), the average length of stay for the 2 mental health (MH) inpatient units at Dubbo was 12.6 days. |
| Little's law was originally conceptualised in 1961 and can be used to determine the flow-through systems for people as they queue. |
| Little's law is classically written as: $L = \lambda W$ |
| This can be rewritten as: Patients = referral rate × length of stay. |
| Determining the number of patients:<br>Estimating that approximately 50% of all patients would be referred and that 18 beds of the total 20 beds in the 2 units were occupied at any time.<br>Hence, patients = 9, and length of stay = 12.6. |
| Referral rate = 9/12.6 = 0.71 patients per day. |
| To correct for the 7-day week, as the D&A C-L CNC works only 5 days = 0.71 × 7/5 = 1 patient referred per weekday. |
| In early 2019, the local executive team were able to clearly communicate that all possible referrals of D&A patients in the MH units would be supported within the context of the existing resources. |

## 3 | RESULTS

File audit was conducted for the 6-month periods in 2018 and 2019 for both inpatient units (Table 2). The focused effort to identify D&A morbidity and provide the opportunity for D&A CNC consultation during inpatient admission rose from 21% to 35.8%. A chi-square test of independence was performed to examine the relationship between the year in which people were seen and if they had a D&A consult or not. The relation between these variables was significant, $\chi^2$ (1, N = 460) = 12.24, $P = .0005$. The average length of stay for each unit was between 15.94 and 7.78 days (Table 3), falling between 2018 and 2019.

Qualitative comments from the auditors noted that there were still gaps in 2019 for some people who had clear evidence of D&A problems and no referral. A typical example was a person on an alcohol withdrawal scale with minimal attempt to address this difficulty (apart from short-term medication) despite evidence of tolerance and dependence. Thus, the potential for further added value for this person remained. The 2019 gap in the consult rate and the reported rate in the literature (35.6% vs >50%) was nonetheless a significant improvement over the 2018 consultation rate.

Staff also commented that as a whole they felt empowered to contribute to patient care. Peer workers and Aboriginal MH trainees (who are embedded in Western NSW MH services)

**TABLE 2** Drug and alcohol clinical nurse consultant consultation

| Year (May-October) | Drug consult | % | No Drug consult | % | Total |
|---|---|---|---|---|---|
| Gundaymarra (acute unit) | | | | | |
| 2018 | 27 | 22.5 | 93 | 77.5 | 120 |
| 2019 | 40 | 36.7 | 69 | 63.3 | 109 |
| Total | 67 | | 162 | | 229 |
| | | | | | $\chi^2$, $P = .0184^*$ |
| Barraminya (sub-acute unit) | | | | | |
| 2018 | 21 | 19.4 | 87 | 80.6 | 108 |
| 2019 | 43 | 35 | 80 | 65 | 123 |
| Total | 64 | | 167 | | 231 |
| | | | | | $\chi^2$, $P = .0086^*$ |
| Both units | | | | | |
| 2018 | 48 | 21 | 180 | 79 | 228 |
| 2019 | 83 | 35.8 | 149 | 64.2 | 232 |
| Total | 131 | | 329 | | 460 |
| | | | | | $\chi^2$, $P = .0005^*$ |

*All are significant as they are $P$ values less than .05.

**TABLE 3** Average length of stay

| Year (May-October period) | Gundaymarra Acute unit (d) | Gundaymarra Standard deviation (d) | Barraminya Sub-acute unit (d) | Barraminya Standard deviation (d) |
|---|---|---|---|---|
| 2018 | 9.05 | 10.73 | 15.94 | 17.68 |
| 2019 | 7.78 | 7.80 | 14.38 | 10.68 |

could integrate their experience or stories from family and give advice at the morning meeting to assist a person. More patients were able to contribute to their future care as they prospectively mapped D&A community care during their inpatient journey.

## 4 | DISCUSSION

The strength of this project is that it brought health care workers together with a shared vision to collectively seek out and address substance use morbidity in MH inpatients. Embedding this strategy into everyday thinking and behaviour that engaged both community and inpatient teams together made it everyone's business. The strategy also asked health care workers to look for missed opportunities in the form of communication from loved ones and other indicators such as withdrawal scales and urine drug screens. D&A care is foreseeable and addressable in the MH inpatient setting and all prompts and leads should be followed up by responsible and alert team members.

Audit also demonstrated occasional missed cases with the potential to actively keep seeking cases as a team. Short length of stay for some people, who may have valued community-based care over hospital care, was a possible explanation. When the admission occurred across a weekend, D&A specialist services were not available. Other explanations included the following: existing D&A care; refusal of D&A care; and D&A care within the context of the treating team.

The theme of MH inpatients missing the opportunity for D&A-specific care during the MH admission was more evident in 2018 and addressed in 2019 to a considerable extent. This quality improvement is generalisable in many MH inpatient settings where specific substance use treatment is not always offered.

Three clear recommendations emerge from this work. Firstly, specific work with a D&A team member should be offered in the acute and sub-acute MH inpatient settings as the beginning (or continuation) of a care trajectory that is inclusive and whole.

Secondly, the patient/person must be included. This was not intended as a co-design project but elements of co-design[14] emerged as the person and key people within their ecosystem were actively engaged and wished to contribute to future health care. The added value that a person can, at the microlevel, co-design their future D&A care while an inpatient is very powerful.

Thirdly, their extended networks are key. MH admission is often a critical life moment and the potential for reflection, reframing and activation of the person's family system is a vital ingredient. The inpatient team should include loved ones whenever possible to build that further care in the community, with the people who will often know what resources will best serve their interests. This approach is also known to decrease complaints.[14]

Future quality improvement and research efforts should focus on understanding and addressing missed opportunities to engage inpatients with substance use difficulty. While not a focus of this work, the effort to more broadly problem solve, in unity, while planning for discharge may have made the admission far more operationally efficient and the duration of admission shorter. The rates of follow-up in the community, once successfully engaged in the inpatient setting, must also be clarified.

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### AUTHOR CONTRIBUTIONS

WKB contributed to conceptualisation, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, validation, writing—original draft and writing—review and editing the manuscript. NC contributed to conceptualisation, data curation, formal analysis, project administration, validation, writing—original draft and writing—review and editing the manuscript. RW contributed to conceptualisation, data curation, project administration, validation and writing—review and editing the manuscript. BB contributed to data curation, project administration and writing—review and editing the manuscript. DR contributed to conceptualisation and writing—review and editing the manuscript. SM contributed to conceptualisation, data curation, project administration, resources and writing—original draft.

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