

A Clinical Audit at Metropolitan* Hospital of Mental Health Inpatient Discharge Summary Completion and Documentation Quality

Royal Australian and New Zealand College of Psychiatrists

Scholarly Project

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Background

Effective transfer of care between health service providers is critical to patient safety.¹ Optimally, transfer of care involves one agency providing all relevant information to a 'receiving' service or care provider, in a timely manner. This process is particularly important following discharge from an inpatient unit, with discharge summaries (also known as 'Transfer of Care' documents) being the primary information sharing tool detailing care and planned follow-up.¹ In most medical disciplines, discharge summaries are prepared with primary care providers (i.e. general practitioners, or GPs) in mind.² In psychiatry, communicating to GPs about immediate physical follow-up or prescribing, while also addressing secondary care providers (community mental health services),³ about issues including risk and mental health act (MHA) status is also required. The first week following psychiatric discharge corresponds to a period of higher suicide rates for psychiatric inpatients,⁴ meaning clinical communication in this period can have critical impact. Assessing quality, accuracy and timeliness of clinical communication at discharge has patient safety implications to this population and is thus important to good practise within the field of psychiatry.

Completion of discharge summaries within 48 hours of discharge is a key performance indicator (KPI) for health services across the state.* In mental health services, a target of 70% is routinely monitored at the local and state-wide level.⁵ This KPI was developed based on expert opinion and state-wide historical performance data.⁵ Reporting on the KPI is used for service accountability and improvement.

An internal audit conducted by the Quality and Safety team for Metropolitan Mental Health Service* from February to May 2018 (presented July 2018) found this KPI consistently not met by the inpatient unit at Metropolitan* Hospital. Moreover, consultation with community mental health teams alerted leadership to concerns about the completeness of discharge documentation, specifically noting that discharge medication information was at times incomplete or incorrect. The combination of sub-optimal completion rates and concerns over documentation quality prompted a more comprehensive audit cycle that considered both issues.

Literature review

A literature review was conducted, aimed to determine if there were any Australian or international standards for discharge documentation from adult mental health inpatient settings. It also reviewed interventions to improve timely and accurate discharge summary completion. Publications seeking data that linked specific interventions, content or quality standards with any established reduction in post-discharge harms or improved patient outcomes was especially sought.

Search Strategy

Search terms were applied to Pubmed, Medline, Embase, PsychINFO, CINAHL and Cochrane Library. The author used MeSH terms (e.g. 'patient discharge summaries') and free text terms 'discharge summary,' (using multiple iterations such as 'letter,' 'communication,' 'documentation') with additional search terms including 'mental health,' 'psychiatry,' 'inpatient,' 'outcomes,' 'risk,' 'harm,' 'standard,' 'content,' 'quality'

and 'audit', including word variations. This was supplemented by searching reference lists of retrieved articles. Database searches were limited to English language papers from the last 20 years (March 1999 to March 2019).

Included publications encompassed systematic reviews, quantitative studies, qualitative studies and published audits that;

- Assessed adult inpatient discharge summaries;
- Measured at least one patient safety or clinical outcome, or assessed at least one intervention to improve discharge summaries;
- Reviewed content, quality, or expectations regarding discharge summaries.

Publications excluded were;

- Conference abstracts, letters, and commentaries;
- Those specific to non-relevant sub-populations from other medical disciplines;
- Studies focussed on patient transfer or handover within the hospital, inter-hospital transfer, or discharge planning protocols;
- Studies focussed on evaluating specific technologies or systems used to communicate discharge information, and form or layout of digital platforms;
- Studies focussed on patient experience of discharge.

Australian papers were prioritised given their generalisability to the relevant patient population and service structure. Publications from other disciplines (i.e. general practice, general medicine) were also considered if relevant and could be reasonably applied to the mental health setting.

Grey literature was searched, including national health safety and quality standards, national and state mental health strategies, state-wide and local policies and

procedures, and chief psychiatrist policies, to ascertain if any of these informed expectations around content or quality standards for mental health discharge summaries (MHDS).

Review Findings

Few guidelines from regulatory bodies regarding content of discharge summaries were identified. The UK and Ireland both have general discharge summary guidelines that focus on the content and form of a discharge summary, while the US has a recommended minimum standard.⁶⁻¹¹ In Australia the National Safety and Quality Health Service Standards (NSQHSS)¹² provide broad expectations with regards to clinical handover (including at discharge), allowing health services to define the minimum information standard based on consultation and best practice guidelines. NSQHSS expects discharge communication must be 'timely', include patients, families and carers, and reflect current and correct information. They also require a current medicines list and reasons for medication changes provided on discharge. The National Standards for Mental Health Services¹³ state that discharge summaries must include medical information, follow-up appointments and outcomes of treatment, without further specificity.

Problems with discharge summaries can be understood with reference to four concepts; quality, timeliness, completeness and accuracy.^{6,14} Most studies measured quality improvements for discharge summaries, though very few addressed patient outcomes as endpoints.⁶

Quality of Discharge Summaries

A systematic review by Unnewehr et al.⁶ made recommendations that discharge summaries should be as short as possible, with clear use of language and should contain:

- Addressees (i.e. GP, other specialists)
- Date and duration of treatment
- Diagnoses
- Procedures and operations
- Summary of the patient's case and the treatment
- Results of investigations and findings
- Follow-up plan including practical treatment recommendations
- Complete medication list with dosages and times
- All medication changes and rationale for changes.

Wimsett et al.¹⁵ established that the most consistent elements ranked highly in the literature as "vital" were discharge diagnosis, discharge medications, investigation results and follow-up plan.

Disconnect between what authors of discharge summaries included and the opinions of GPs regarding priorities for documentation was a common theme through the literature.^{1,2,14,16} Qualitative research (typically surveys) and audits from general practice indicate that information most valued by GPs is reason for admission, results of investigations, treatment in hospital, discharge medications with rationale for changes, diagnosis on discharge and details of follow up arrangements.^{2,17} Less frequently education provided to the patient and family was considered relevant.¹

Timeliness of Discharge Summaries

There is no consensus as to when a discharge summary should be completed and disseminated; the literature gives examples from 24 hours up to 1 week.¹⁸⁻²² One Australian study noted only 55% of discharge summaries were received before the post-discharge GP consultation;²³ this was similarly noted to even greater proportions (66-88%) in a systematic review examining discharge communication between hospitals and primary care.¹ Some studies have associated delays in completion of discharge documentation with increased risk of readmission, unidentified investigation results, reduced care continuity and poorer quality of care.^{6,14,24-26} One Australian study demonstrated a 127% increase in readmission rate within one week for adult patients with a discharge summary completed after seven days.²¹ However the impact of the discharge process (including quality or timeliness of summaries) on readmission has not been consistently demonstrated.^{25,27}

Completeness and Accuracy of Discharge Summaries

GPs have expressed concern about incorrect and missing information in discharge summaries across disciplines. Common omissions or errors tended to involve medication changes, pending investigations, ongoing referrals and information regarding counselling/education of the patient or family.^{1,6,10,23,24} One Australian audit of discharge summaries from mixed disciplines found 36.4% of their sample summaries contained errors or omissions; 21% of summaries gave no indication regarding medication changes or whether the patient was discharged with any medications.²⁸ Moore et al.²⁵ reported that 49% of patients had at least one clinical error in their discharge summary. The literature associates poor communication of

medications at discharge with adverse drug events; incorrect or incomplete information about medications likely enhances this risk.^{6,14}

Mental Health Discharge Summaries

No specific standards for a MHDS or validated assessment tools were identified. NICE Guidelines for “Transition between inpatient mental health settings and community or care home settings”²² state that a MHDS should include an account of a hospital stay, diagnosis, outcomes of investigations, changes to treatment and medicines list including rationale, without further elaboration.

One UK survey identified that items of greatest import in MHDS for GPs included admission and discharge dates, diagnosis, medication on discharge, community key workers (i.e. case managers) and follow-up plan.²⁹ Another additionally identified presenting complaint, past psychiatric history (first admission), premorbid personality (first admission), mental state exam (MSE), investigations, discharge destination, risk factors and expectations of the GP as “essential”.³ No studies were found that measured expectations or requirements of community mental health services in utilising inpatient MHDS.

Five published audits of MHDS were found in the literature, four from the UK, one from Australia. Of the UK studies, two used local guidelines and audit procedures as the standards for quality,^{30,31} one used preferences of local GPs gained through a survey,³² and one used regional (NHS Trust) guidelines.¹⁹ Two of the UK audits also reviewed the timeliness of discharge summary completion but with different measures – two weeks³⁰ and seven days.¹⁹ All audits assessed the inclusion of particular content pertinent to the care of a mental health patient on discharge, but

the number of items audited and the specificity of that content varied considerably. Notable differences between audit standards were the extensiveness of past history, the extent of information relating to drug and alcohol use, inclusion of a MSE and inclusion of a risk assessment. Items present across all audits were diagnosis, physical examination findings, medication on discharge and follow-up arrangements.^{19,30-32} The audits focussed on presence of information; none assessed the quality or accuracy. The Australian audit was from a private hospital setting and assessed timeliness of dissemination (48 hours) amongst other measures of the discharge process,³³ but not discharge summary quality.

Interventions to Improve Discharge Summaries

Various interventions to improve discharge summaries have been reported. Interventions to improve quality are difficult to interpret due to small sample sizes, limited outcome data and inconsistent metrics. The introduction of electronic discharge summaries (eDS) has been examined widely but interpretation of findings is complicated by significant heterogeneity between studies, systems and formats.¹ A number of studies suggest that eDS improve the timeliness of completion, though there is dissent as to whether this correlates to improved or reduced quality and usefulness.^{1,6,14,34,35} The only evaluation found of electronic MHDS noted a reduction in useful information on introduction of an electronic system.¹⁸ Further literature appraisal regarding eDS was beyond the scope of this literature review or audit.

Other interventions identified in the literature included use of standardised formats, reduction in workload of medical officers completing discharge summaries, modest financial incentives, commencing summaries within five days of admission, education sessions, and quality improvement initiatives utilising feedback.^{1,6,20,33,36-43}

Each intervention improved outcomes short term, but limited information is available about sustainability. Interventions to improve accuracy of medication information in discharge summaries typically involve input from pharmacists, such as use of pharmacy-driven medication checklists.⁴⁴ One RCT found that having pharmacists (in comparison to medical officers) completing medication management plans in discharge summaries significantly reduced the rate of medication errors.⁴⁵

Aims, Objectives and Standards

The aim of this audit was to improve clinical communication through MHDS, considering opportunities for improvement and collaboratively finding solutions with staff to improve the overall quality of these documents.

Specific objectives of the audit were to:

1. Assess the completion rates of discharge summaries compared to the KPI of 70% within 48 hours, before and after targeted intervention.
2. Assess the inclusion of expected clinical content within MHDS, before and after targeted intervention.
3. Assess the accuracy of documented discharge medications within MHDS, before and after targeted intervention.

In the absence of national or state-wide standards specifying content of MHDS, an audit tool was adapted from the state-wide Mental Health Clinical Documentation User Guide,⁴⁶ which provided a 'minimum standard' for clinical documentation within the state-wide mental health electronic health record (EHR), known as EHR-1*. It is through EHR-1 that the inpatient unit completed their MHDS. The audit tool also

aligned with NSQHSS, National Standards for Mental Health Services and local procedure for mental health transfers of care.^{12,13,47}

Objective three assumed a standard that all discharge medication should be 100% accurate; audit involved comparison of information in the discharge summary with the electronic Discharge Medical Record (eDMR), the medication reconciliation completed by pharmacists on patient discharge.

Ultimately, this audit attempts to answer, “Were the targeted interventions associated with improving timely completion, documentation quality and medication accuracy of discharge summaries at Metropolitan Hospital?”

Methodology

Metropolitan Hospital’s mental health unit includes two 30 bed acute adult inpatient wards. Admitted patients are aged 18 years and over, and both wards are non-gender specific. The unit was audited as a whole. Psychiatry registrars employed on six monthly rotations are expected to complete the MHDS at or prior to patient discharge using EHR-1. Summaries are completed in a specific form (“Transfer of Care”) which includes headings under which free text is entered. The system lacks capacity for auto-population of data such as medications or investigations, so medication information is typically transcribed. The option of using the local generic discharge system (EHR-2*) which does allow for auto-population of medications and investigations, required loading a copy onto EHR-1 within 48 hours and was rarely used by registrars. Prompts for discharge summaries were provided by administration staff who emailed a report of the previous day’s discharges. Completed discharge summaries were sent to GPs by administration officers, as

indicated on the MHDS. The PDSA audit cycle (Plan, Do, Study, Act)⁴⁸ was utilised for this project.

Plan

Aims and objectives of the audit were developed in consultation with Quality and Safety staff, and an audit timeline established. The sample was defined to include all patients discharged within a one-month period from the inpatient unit, to provide accurate representation of practice. The literature review was completed to ensure there were no additional standards, measures or evidence to be considered before the audit tool was developed. It was predicted that MHDS would fall below the standards and that development of targeted interventions would see movement towards the standards.

Exemption from full ethical review was provided by Metropolitan Hospital's Human Research Ethics Committee as a quality assurance project. Approval for access to electronic systems was sought and granted.

Audit tool development

The audit tool was developed by the trainee under supervision of Quality and Safety staff. The tool focussed on clinical rather than clerical aspects of the discharge summaries. A pilot audit of five charts was completed by both the primary investigator (trainee) and four other clinical staff members (three registrars and a consultant) to ensure good inter-rater reliability. The discharge summaries were selected from the baseline audit patient list by random number generation through Microsoft Excel. Expectation was that less than 10% of items would differ between

auditors. If there was discrepancy of >10% of items (>2 items) in any of those five charts, further checking would occur two records at a time until discrepancies reduced. Of those five charts, three summaries had two discrepancies between auditors, two had one discrepancy between auditors. Discussion from this process resulted in small changes to the audit tool (Appendix 1) to improve clarity before commencing the baseline audit.

The tool assessed if a MHDS had been completed, if it had been completed within 48 hours, and if expected domains of a MHDS had been included (i.e. MHA status, diagnosis). Similar to the audits identified through the literature search,^{19,30,31,32} this audit did not comment on the comprehensiveness or accuracy of information, simply the presence or absence of audit items in an attempt to quantify the presence of expected content. It was assumed all items would be commented on, even if to outline an important clinical negative (i.e. if there were no medications on discharge, a statement to that effect would be in the summary). Documentation of negative findings constitutes 'documentation' of domains within the audit tool; no mention would constitute 'not documented'.

Accuracy of discharge medication information could be established in two ways; either attachment of the eDMR to the discharge summary, or if transcribed medication information in the MHDS matched the eDMR. The nature of medication errors was recorded by the auditor for categorisation after completion of the baseline audit. Frequency of attachment of the eDMR was also recorded.

Do

Using EHR-1, a de-identified list of all discharges (including date and time) during July 2018 was generated. Discharge summaries were accessed through EHR-1 and audited using the audit tool. The baseline audit was completed during the rotation of inpatient registrar cohort 1.

It was noted that multiple discharge summaries were incorrectly entered into EHR-1 under the wrong service episode. This misattributed a completed discharge summary to an episode of care other than the corresponding inpatient admission. Misattributed MHDS would not correctly contribute to external audit data for the KPI if an electronic report was run. Resultantly, correct or incorrect recording of the MHDS to corresponding inpatient episode was assessed retrospectively, with its inclusion as a measure for the re-audit.

Study

This stage focussed on reviewing the findings of the baseline audit. Findings are shown under 'Results.' Analysis was completed using Statistical Package for the Social Sciences (version 23). Fisher's exact test was used to observe for statistically significant difference between observed and expected frequencies in baseline and re-audit data.

Act

Areas for improvement were identified in the baseline audit. A multidisciplinary staff forum (including inpatient, outpatient and GP liaison staff) was convened to critically reflect on difficulties in meeting the KPI standard and seek feedback about content necessary for completeness of MHDS. Senior registrars were asked to consider 'tips and tricks' they had learnt to make the process more efficient that may assist junior colleagues. Feedback was given verbally and through use of a brief feedback form (Appendix 2).

Feedback highlighted some common and expected concerns (such as high workloads, time constraints, bed pressures, unexpected discharges, limited access to computers), but some additional issues were raised, including;

- Registrars were unsure how to correctly assign the MHDS with the associated admission on EHR-1.
- Registrars were misinterpreting the KPI; 48 hours was sometimes understood to mean 'two days' from discharge (i.e. completing a discharge Friday afternoon for a Wednesday morning discharge would be acceptable).

Suggestions for improvement included protected time for completion of summaries, use of a template to better define the expectations, improved access to computers, and improved education regarding EHR-1.

Priorities for intervention were identified in consultation with Executive staff; any intervention should be cost neutral and sustainable. Recognising that registrar cohorts rotated on a six-monthly basis, feedback sessions on this audit data may not result in long-term improvements. Suggestions from the literature were also

considered. For example, one study identified that 13.3% of electronic summaries contained medication errors when transcribed, with medication omission being the most common error;⁴⁹ our findings identified even higher rates of medication error in transcribed summaries. Studies utilising pharmacist input into discharge summaries had reduced the rate of similar medication errors.⁴⁵

Intervention

The intervention developed was two-fold:

- Registrars were required to include the pharmacist's reconciled eDMR within the MHDS. A copy could be electronically attached to the EHR-1 document, or the EHR-2 system could be utilised (which auto-populated the eDMR to the discharge system) but a copy of the EHR-2 summary would need to be added to EHR-1. It was noted that not having to transcribe medications may expedite completion.
- Poster resources were developed (Appendix 3);
 - One detailed this new process and provide guidance about correct and efficient use of the electronic systems, with clear explanations of the 48 hour KPI.
 - The other detailed prompts around content inclusions for MHDS, with 'Pro Tips' to provide guidance to less experienced trainees about content (mindful that clear expectations may make the process more expedient). Key areas of the guide were based on staff feedback regarding their perceptions of gaps in current practice.

These posters were distributed to staff, redistributed to incoming registrars at the change of rotation, and made visible through the work site. The forum and introduction of interventions occurred during the rotation of inpatient registrar cohort 2.

Re-audit

A re-audit was completed for all patients discharged during March 2019, three months after the interventions were implemented, using the methods described above. Results are detailed with comparisons to baseline data. Further recommendations with ongoing need for future evaluation are discussed. The re-audit was completed during the rotation of inpatient registrar cohort 3.

Results

For baseline audit, 133 discharges during July 2018 were identified, with one missing data set (i.e. no evidence of admission on the electronic system, inclusion most likely due to clerical error), leaving a sample of 132. Re-audit identified 133 discharges during March 2019, with 5 missing data sets, leaving a sample of 128.

Improvements were observed in both rates (87.88% v 97.65%, Fisher's exact, $p=0.002$), and timeliness of completion of summaries (54.54% v 64.84%, Fisher's exact, $p=0.059$). However, the improvement did not meet the KPI standard of 70%. There was also significant improvement in correct assignment of MHDS to appropriate inpatient episodes for completed summaries (56.03% v 71.2%, Fisher's exact, $p=0.010$) (Table 1).

The quality of the discharge summaries was assessed on completed summaries ($n=116$ and $n=125$ for baseline and re-audit respectively) (Table 2). Statistically significant improvement was noted in the documentation of response to treatment (Fisher's exact, $p=0.006$), patient functioning (Fisher's exact, $p=0.028$), substance use (Fisher's exact, $p<0.001$) and indication of who would receive the discharge summary (Fisher's exact, $p<0.001$). Areas of statistically significant decline between audits were recording of MHA status (Fisher's exact, $p<0.001$) and documentation of a brief formulation (Fisher's exact, $p<0.001$). Other domains changed between audits, but differences were not statistically significant. Both primary diagnosis and a summary of inpatient care was documented in every MHDS (Figure 1).

The accuracy of medication information was assessed on completed summaries; 7 data sets were removed from the baseline group and 4 data sets from the re-audit group due to missing eDMR (comparator) data. Some non-concordant discharge summaries included multiple error types in medication recording. There was improved concordance between MHDS and pharmacy discharge reconciliation following the interventions (accurate discharge medications rose from 44.04% to 91.73%, Fisher's exact, $p<0.001$) (Table 3). The most commonly identified error types at baseline audit were incorrect or excluded PRN ('as needed') medications, and incorrect or excluded physical health medications; at re-audit, it was omission of discharge medications.

Table 1: Timeliness of discharge summaries

	Baseline (n=132)	Re-audit (n= 128)	% change	Fisher's Exact [^]
Completed discharge summary	116 (87.88%)	125 (97.65%)	+9.77%	p = 0.002
<i>Assigned to correct inpatient admission/episode of care</i>	65/116 (56.03%)	89/125 (71.20%)	+15.17%	p = 0.010
Completed within 48 hours	72 (54.54%)	83 (64.84%)	+10.3%	p = 0.059

[^]Statistical significance in bold (p<0.05)

Figure 1: Quality of discharge summaries

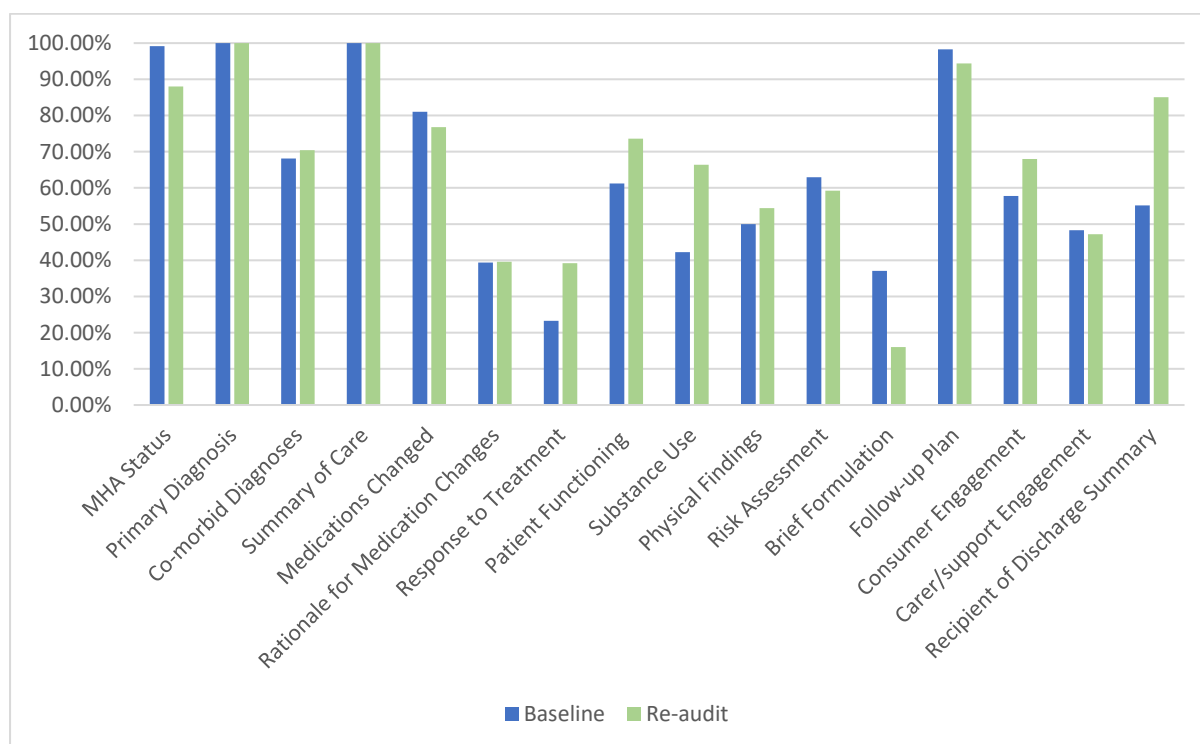


Table 2: Quality of discharge summaries

	Baseline (n=116)	Re-audit (n= 125)	% change	Fisher's Exact [^]
Mental Health Act Status	115 (99.14%)	110 (88.00%)	-11.14%	p <0.001
Primary Diagnosis	116 (100%)	125 (100%)	-	-
Co-morbid Diagnoses	79 (68.10%)	88 (70.40%)	+2.3%	p = 0.402
Summary of Care	116 (100%)	125 (100%)	-	-
<i>Biological Treatment</i>	100/116 (86.20%)	113/125 (90.40%)	+4.2%	p = 0.208
<i>Psychosocial Treatment</i>	45/116 (38.79%)	59/125(47.20%)	+8.41%	p = 0.118
Medications Changed	94 (81.03%)	96 (76.80%)	-4.23%	p = 0.259
<i>Rationale for medication changes</i>	37/94 (39.36%)	38/96 (39.58%)	+0.22%	p = 1.000
Response to Treatment	27 (23.28%)	49 (39.2%)	+15.92%	p = 0.006
Patient Functioning	71 (61.21%)	92 (73.60%)	+12.39%	p = 0.028
Substance Use	49 (42.24%)	83 (66.40%)	+24.16%	p <0.001
Physical Findings (including investigations)	58 (50.0%)	68 (54.40%)	+4.4%	p = 0.290
Risk Assessment	73 (62.93%)	74 (59.20%)	-3.73%	p = 0.322
Brief Formulation	43 (37.07%)	20 (16.00%)	-21.07%	p <0.001
Follow-up Plan	114 (98.28%)	118 (94.40%)	-3.88%	p = 0.105
Consumer engagement in care and discharge planning	67 (57.76%)	85 (68.00%)	+10.24%	p = 0.065
Carer/support engagement in care and discharge planning	56 (48.28%)	59 (47.20%)	-1.08	p = 0.485
Indication of recipient of discharge summary	64 (55.17%)	107 (85.06%)	+29.89%	p <0.001

[^]Statistical significance in bold (p=<0.05)

Table 3: Accuracy of discharge medications

	Baseline (n=109)	Re-audit (n= 121)
Discharge Summary Medications concordant	48 (44.04%)	111 (91.73%) [^]
Number of identified error types	77	11
<i>Error in psychotropic medications</i>	12	2
<i>Excluded or incorrect PRNs</i>	32	0
<i>Excluded or incorrect physical health medications</i>	27	3
<i>Excluded or incorrect treatment for AODS conditions[¶]</i>	4	0
<i>Discharge medications omitted</i>	2	6
Method of recording medication		
<i>Transcription of medications</i>	105 (96.33%)	19 (15.70%)
<i>eDMR in EHR-1</i>	4 (3.67%)	56 (46.28%)
<i>eDMR through EHR-2</i>	0	46 (38.02%)

[^]Fisher's Exact Test, **p<0.001**

[¶] AODS: Alcohol and other drugs - medications may include nicotine replacement therapy, opioid replacement medications etc.

Discussion

This clinical audit was completed to evaluate the impact of local, cost-neutral interventions on timeliness, quality and accuracy of discharge medications in MHDS, all identified as common problems with discharge documentation.^{6,14,15} Despite modest increases in completion rates within 48 hours, the KPI of 70% remained unmet. There were mixed findings regarding documentation inclusions. The accuracy of medication information was the most marked improvement, with correct discharge medications in MHDS rising to 91.73%.

A possible explanation for the limited improvement in timeliness of MHDS is that interventions focussed solely on capability to complete a MHDS well, without considerations for factors such as opportunity or workload.³⁷ Future recommendations might consider protected time for discharge summary completion,

and commencing summaries within 5 days of admission³⁹ instead of at discharge, for future evaluation.

Despite the interventions, some domains of documentation quality remained unchanged while others declined. Given that a significant portion of re-audit summaries were completed in EHR-2 (38.02% compared to none in the baseline audit), it was surprising that there was not greater inclusion of physical findings during the re-audit, given that this system allows auto-population of investigations. Auto-population within EHR-2 of GP information may account for the improvement in indication of practitioners to receive the summary. It is hypothesised that the use of EHR-2 may have contributed to the reduced documentation of MHA status and brief formulation in the re-audit. Both these domains are prompted in the EHR-1 discharge summary form as it caters to mental health populations, but neither were prompted within the generic EHR-2 system. This aligns with the concerns of Abbas et al.¹⁸ that doctors may neglect information without specific sub-heading in eDS. Similarly, risk assessment was emphasised in the poster interventions but did not show a significant increase in its documentation; it is suspected that any improvements in EHR-1 risk documentation may have been offset by EHR-2 summaries where a risk assessment prompt was not included.

The improved accuracy of medication documentation was likely associated with reduced transcription errors and increased use of pharmacy driven documentation^{45,49} by including the eDMR in 84% of summaries. The most common error in the re-audit was omission of discharge medications, which was less frequent in the baseline audit. It is suspected that this occurred due to technical difficulties in attaching the eDMR to the summary (it was noted during re-audit that a small number of summaries referred directly to the eDMR but none was attached).

Limitations

These findings have implications for practice but should be considered in light of limitations. Firstly, the baseline audit, staff forums and re-audit were completed across three registrar cohorts. Assessing the outcomes across different registrar cohorts meant the effect of interventions were evaluated in a realistic workplace setting, and controlled for the impact of participating in the staff forum. However different individual factors between cohorts (i.e. experience) may act as potential confounders. Assessing all stages of the project in a single cohort may have been more methodologically robust, but would be less generalisable to the realities of the workforce. Audit results can be changeable across cohorts due to multiple factors; reaudit across many cohorts would give a greater impression of the sustainability of interventions.⁴⁸

Secondly, when assessing the accuracy of discharge medications, it was assumed that the reconciliation by pharmacists was correct in producing the eDMR. This information was not cross checked against patient charts. This assumption was made based on research that demonstrated pharmacy medication recording at discharge was more accurate than their medical counterparts,⁴⁵ though it is recognised that this process is not infallible.

Though this audit assessed accuracy of medications, it did not assess accuracy of other clinical information, nor did it assess dissemination of these documents as a vital part of their usefulness.^{1,6,14} Future audits comparing all clinical information in the MHDS to patient charts and following up on receipt of the MHDS in the community would be valuable for informing future process.

As a clinical audit only limited data analysis was completed. Were formal research to assess the interventions be conducted, correction for multiple comparisons within the statistical analysis would be needed to reduce the likelihood of type 1 error.

Recommendations

Limitations notwithstanding, this audit can usefully inform local processes. Following evaluation of the interventions, it is recommended that eDMRs continue to be included in all MHDS, though that all MHDS are completed through the EHR-1 system rather than using EHR-2. Utilising a format that does not include mental health specific prompts, such as MHA status and risk assessment, may contribute to this important discipline specific information being omitted more frequently. Poster interventions will have to be adjusted to account for this change and be modified to emphasise domains where poor documentation was identified in the audit. Finally, it is recommended that the findings of this project are fed back to the clinical staff with re-audit on a six-monthly basis (i.e. for each new registrar cohort). Sharing of audit data can communicate rationale and develop momentum for further interventions by highlighting the need for ongoing change and regular, repeat evaluation.⁴⁸

Though there was an improvement in correct assignment of MHDS to the correlating inpatient admissions on EHR-1, almost 29% of summaries on re-audit remained misallocated. It is recommended that education sessions at the start of each registrar rotation, with a focus on correct EHR-1 use, may be helpful to reinforce these gains. These findings also have state-wide quality assurance implications. Given user error when completing MHDS on EHR-1, it appears state-wide audits may underestimate

the 'real' number of discharge summaries completed within 48 hours, though the precise impact is unclear.

Contribution to Psychiatry and Further Considerations

Mental health patients are especially vulnerable following inpatient discharge and given that MHDS contain significant discipline specific content, evaluation of this clinical communication is valuable to psychiatric practice.^{3,4} In the absence of published audits examining MHDS from Australia, this project provides some insight. The profession may benefit from clear, comprehensive¹³ standards for the expectations of MHDS, and standardised measures or metrics to support quality improvement and accountability for this form of clinical communication.¹¹ Given inconsistencies in the literature, the necessity for documentation of content such as formulation, risk assessment, MHA status and MSE ought to be explicitly stated.

Medico-legal implications also warrant consideration. If a standard is set for timeliness of MHDS completion (i.e. 48 hours), does failure to complete a summary in that timeframe contribute to the culpability of doctors or services in the event of associated adverse patient outcomes? By extension, should failure to meet this KPI result in professional remediation or ramifications, given potential patient safety risks?

Additionally, difficulties associated with concurrently using multiple EHR systems was apparent during this project. Having documentation requirements in multiple systems that do not communicate with each other can result in potential for transcription error and enhances risk for user error. Though there are clear benefits

of state-wide and local EHRs, platforms that can intercommunicate may enhance the speed and accuracy of clinical documentation.

Finally, though the views of GPs in using discharge summaries is well understood, future research may include qualitative surveys from community case managers regarding their experience of using MHDS, as this appears to be a gap in the literature.

Conclusion

While the interventions did not result in meeting the KPI, there were improvements made in the production of MHDS towards this goal. The most marked improvement occurred in the accuracy in recording of discharge medications, which may contribute to reduced risk of adverse drug events for patients after discharge. Recognition that some areas of quality declined in the re-audit provides good rationale for modifying the interventions, while maintaining some aspects such as inclusion of eDMRs. Changes to the interventions or additional adjunctive interventions will require regular and ongoing internal audit,⁴⁸ as is the cyclical nature of quality assurance.

Appendix

Appendix 1: Audit Tool

Audit Tool for Inpatient Discharge Summaries at Metropolitan Hospital

Discharge Summary Completion	Yes	No
Discharge Summary completed		
Discharge Summary completed within 48 hours of discharge		
Discharge Summary Documentation Quality Assurance	Documented	Not documented
Discharge Summary documents MHA status at discharge		
Discharge Summary documents primary diagnosis		
Discharge Summary documents co-morbid diagnoses <i>(This may include substance abuse diagnoses, cognitive impairments, physical co-morbidities, delirium etc.)</i>		
Discharge Summary documents a summary of care during the inpatient admission. <i>Take note of the documentation for both;</i> a) <i>Biological treatment (this may include medications, ECT)</i> b) <i>Psychosocial interventions (this may include counselling, therapeutic groups, social work supports, occupational therapy supports etc.)</i>	a) b)	
Discharge Summary documents any medication changes <i>(This may include initiation of medications, changes in dose, discontinuation etc.)</i>		
<i>If the last item was recorded as documented;</i> Discharge Summary documents the rationale for changes in any medications		
Discharge Summary documents the patient's response to treatment <i>(This may include therapeutic effect, side effects, tolerance etc.)</i>		
Discharge Summary documents information on patient functioning <i>(This may include information about engagement in employment, activities of daily living, relationships, stability of accommodation, physical disability or limitations etc.)</i>		
Discharge Summary documents information about substance use		

Discharge Summary documents physical findings <i>(This may include metabolic monitoring, blood test results, CT results, findings on physical examination, ECG findings etc.)</i>		
Discharge Summary documents a risk assessment for the patient at discharge		
Discharge summary documents a brief case formulation		
Discharge Summary documents a follow up plan <i>(This may include follow up appointments with health practitioners, actions for the patient to take, referrals made, actions for the GP or case manager etc.)</i>		
Discharge Summary documents consumer involvement in care and/or discharge planning <i>(This could include mention of discussion about discharge or follow up plans, discussion about patient preferences etc.)</i>		
Discharge Summary documents carer/ support person involvement in care and/or discharge planning <i>(This could include seeking collateral, family meetings, phone calls with support persons etc.)</i>		
Discharge Summary identifies who receives a copy of the discharge summary <i>(This could include GPs, private provider, other medical specialists etc.)</i>		
<u>Comments:</u>		
Discharge Summary Medication Information Quality Assurance	Concordant	Non-concordant
Discharge summary either; <ul style="list-style-type: none"> a) Is coupled to a copy of the electronic discharge medication record (reconciled by pharmacy); or b) Has been checked against the electronic discharge medication record to confirm accuracy of medication information <i>(This may include regular psychotropic medication, PRN medications, physical health medications etc.)</i> 		
<i>Types of discrepancies between the discharge medication record and discharge summary are to be noted below.</i>		
<u>Comments:</u>		

Appendix 2: Feedback Form

**Feedback Form
Discharge Summary Process – Metropolitan Hospital**

Date: _____

Role: Executive Consultant Registrar AO Nurse Clinician

At what point in the discharge summary process can you identify barriers to the completion of discharge summaries in 48 hours? What are these barriers?

What suggestions do you have that might help improve the completion of discharge summaries in 48 hours?

What does a discharge summary need to include?

Metropolitan Hospital Discharge Summary Flow Chart

Choosing your platform

EHR-1: Transfer of Care (TOC)

More detail for community teams
Often too much info for the GP
Already on EHR-1 without need to upload
Needs to be printed, then sent to GP

EHR-2

Available currently on My Health Record
Self populates medication and investigation data
Needs to be uploaded to EHR-1
Automatically sent to GP electronically



Content requirements

EHR-1: Transfer of Care (TOC)

TOC structure to guide your summary, filling all sections
Need to upload medication discharge summary as an attachment

EHR-2

Content as per Discharge Summary Template Poster
Ensure medication discharge summary and necessary investigations have been selected



Getting it done on time

EHR-1: Transfer of Care (TOC)

Date and time of TOC (left side of your screen) must be within inpatient service episode, not the time you write the TOC
Encounter selected as *INP*, *MET*.
Complete on EHR-1 within 48 hours of the discharge date and time
Liaise with pharmacist to gain access to the medication discharge summary - this must be uploaded as an attachment to TOC in PDF form within the 48 hours

EHR-2

Make sure you choose the correct admission episode in EHR-2. Write your summary.
Use the investigation and radiology tabs to input data
Save as a PDF (Print as PDF → Save to Desktop)
Open Discharge Summary (Attachment Summary) clinical note on EHR-1 - ensure time and date was within inpatient service episode, selecting *INP*, *MET* as encounter
Upload PDF to EHR-1 as attachment
Ensure date and time of signing EHR-1 note is within 48 hours. Completing the summary in EHR-2 by 48 hours, but uploading to EHR-1 at 48 hours 1 minute will fail to meet the KPI.

Metropolitan Hospital Discharge Summary Template

Inpatient Mental Health



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