

Transition of Care Pharmacy Project

Service Evaluation Report December 2023



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List of abbreviations

ABF	Activity-based funding
CA	Clinical Assistant (pharmacy)
DAA	Dose administration aid
DAPT	Dual antiplatelet therapy
DMR	Discharge Medication Record
DoP	Director of Pharmacy
EDS	Enterprise Discharge Summary
eLMS	Enterprise Liaison Medication System
ESM	Enterprise Scheduling Management
FTE	Full Time Equivalent
GP	General Practitioner
GPLO	General Practice Liaison Officer
HHS	Hospital and Health Service
HMO	Hospital medical officer
ICT	Information and Communications Technology
ieMR	Integrated Electronic Medical Record
MMP	Medication Management Plan
OCAHO	Office of the Chief Allied Health Officer
PHN	Primary Health Network
RACF	Residential aged care facility
SWT	Secure Web Transfer
ToC	Transition of care
ToCPP	Transition of Care Pharmacy Project

Introduction

The Transition of Care Pharmacy Project

The Transition of Care Pharmacy Project (ToCPP) was established to identify and implement a pharmacist-led intervention to improve transitions of care. The project, a Government Election Commitment, was sponsored by the Chief Allied Health Officer and funded by the Office of the Chief Allied Health Officer (OCAHO).

The aim of the project was to embed a transition of care (ToC) pharmacist model within inpatient care teams to provide a seamless, safe, and timely two-way handover of medication-related care between tertiary and primary care teams.

The project model of care was piloted in three Queensland Health facilities in specific patient populations:

- Site 1: Internal Medicine Services
- Site 2: Gerontology
- Site 3: Vascular surgery

Models of care

ToCPP model of care for patients discharging to home

The ToCPP model of care, which was stratified according to patient risk of readmission, was developed in consultation with a project oversight committee consisting of pharmacy, medical, and nursing representatives from hospital and primary healthcare settings.

The model of care was developed specifically for hospital inpatients discharging to home, and the risk of readmission was estimated using the LACE Index.¹

The key features of the model of care were as follows:

- Patient assessment to identify the risk of readmission.
- Generation of a discharge medication record (DMR) for moderate and high-risk patients using the Enterprise Liaison Medication System (eLMS).
- Provision of a DMR and medication education to identified patients on discharge.
- Communication of a copy of the DMR directly to the patient's nominated general practitioner (GP) and community pharmacy.
- Telehealth/telephone review of identified high-risk patients by the ToC pharmacist within 7 days of discharge.
- Generation of a post-discharge medication management plan (MMP) by the ToC pharmacist containing targeted medication handover information and recommendations.
- Documentation of the MMP in the integrated electronic medical record (ieMR).
- Communication of the MMP to the patient's nominated GP and community pharmacy.

Patients with a low or moderate risk of readmission were eligible to be managed under the high-risk pathway if referred by the medical team for post-discharge follow-up or if there was an identified risk of medicine misadventure.

Whilst all sites incorporated the key features listed above, Site 3 added a subsequent review for identified patients who were considered at further risk of medication misadventure. This review was scheduled to coincide with the patient's 6-week post-surgical appointment and was frequently undertaken in the outpatient clinic.

Residential aged care facility model of care

Following project implementation, a model of care was developed for patients discharging to residential aged care facilities (RACFs).

The key features of the RACF model of care were as follows:

- Collaboration between the ToC pharmacist, hospital treating team and, where appropriate, outreach aged care services to identify medication handover information to be communicated to primary healthcare providers.
- Input of medication handover information into eLMS by the ToC pharmacist for communication to the patient's RACF and GP via the DMR and electronic discharge summary.
- Follow-up with the community pharmacy servicing the RACF by the ToC pharmacist approximately 14 days following patient discharge. Reconciliation of ongoing medication with discharge medication and handover information to ensure continuity of care.
- Liaison with RACF/GP/outreach aged care service to resolve identified issues.

Project evaluation

The ToCPP was evaluated using a mixed-method approach. A series of studies were undertaken to collect quantitative and qualitative data to provide insight into service activity, service implementation, and stakeholder perspectives.

A research protocol and associated data collection tools were developed and submitted to a Queensland Health Human Research Ethics Committee, and the evaluation subsequently received an exemption from full ethical review.

The studies that comprise the service evaluation are presented individually with discussions regarding the findings. The final discussion aims to combine the findings, triangulate data, and present an overall evaluation of the impact of the ToCPP service.

Service activity data

An evaluation of the impact of the ToCPP service on healthcare delivery was undertaken through the evaluation of service activity. This evaluation aimed to quantify the number of patients receiving the service and the nature of the activities undertaken by the hospital pharmacists in delivering the ToCPP intervention.

Method

All Transition of Care (ToC) pharmacists and clinical assistants involved with the delivery of the ToCPP intervention at the pilot sites were asked to collect service activity data. A data collection tool was developed and used to collect the details of all patients identified as high-risk and, therefore, suitable to receive the full transition of care intervention, including post-discharge review. Details recorded included patient identifiers, rationale for offering the intervention, service acceptance and completion rates, and activities undertaken in providing the service.

Separate data collection tools were developed and used to collect information regarding the following activities:

- Subsequent reviews
- Other reviews conducted outside of the ToCPP model of care
- Reviews conducted under the residential aged care facility (RACF) model of care
- Communication/feedback received from primary healthcare providers or the patient

The data was recorded in a database developed specifically for the evaluation using Research Electronic Data Capture (REDCap) software v 13.5.1.

Data analysis

Reports were generated within the REDCap database and descriptive data analysis was used to identify and describe patient information and service activities.

Results

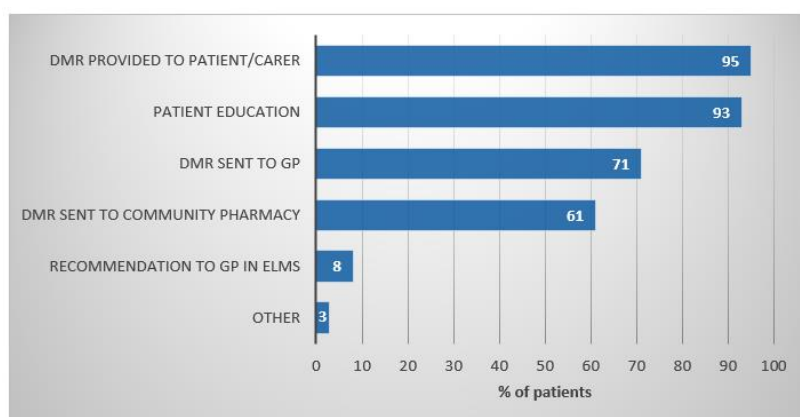
Data was collected for a 17 month period for patients discharged between 31 March 2022 and 31 August 2023.

Pre-discharge

A total of 862 high-risk patients were identified for post-discharge review as per the model of care. Of these, 12 (1.4%) refused the service and 850 (98.6%) agreed to participate. Most patients who refused the service considered that it was not required, as they were confident with their medication.

Figure 1 shows the medicine-related activities performed as a component of the ToCPP model of care prior to discharge for the 850 patients who agreed to participate in the service.

Figure 1 : Pre-discharge medicine-related activities



Post-discharge review

Completion rates

The post-discharge review completion rates are shown in Table 1. The highest number of reviews were completed at Site 3 (53.2% of total reviews), followed by Site 2 (27.1%) and Site 1 (19.7%).

Table 1: Completion rates for post-discharge review

Completion status	Number of patients (%)			
	Site 1	Site 2	Site 3	All sites
Patients agreeing to service	170	242	438	850
Completed	146 (85.9)	201 (83.1)	395 (90.2)	742 (87.3)
Failed to attend appointment/ non-contactable	15 (8.8)	5 (2.1)	22 (5.0)	42 (4.9)
Readmitted to hospital	1 (0.6)	27 (11.2)	20 (4.6)	48 (5.6)
Died	2 (1.2)	2 (0.8)	0	4 (0.5)
Other reason	6 (3.5)	7 (2.9)	1 (0.2)	14 (1.6)

Patient demographics

Figures, 2, 3, and 4 show the number of days to review, age, and LACE Index for patients who completed the post-discharge review. The median time to review was seven days post-discharge (range 0-43) and the median age of patients was 73.6 years (range 22.8-100.6).

The median LACE Index score was 12 (range 2-19). Most patients (83.4%) were classified as high-risk (LACE Index 10-19), whilst 15.5% were classified as moderate-risk (LACE Index 5-9), and 0.9% as low-risk (LACE Index 0-4). The median number of regular medicines on discharge was 9 (range 1-25).

Figure 2: The number of days from discharge to review across the patient population

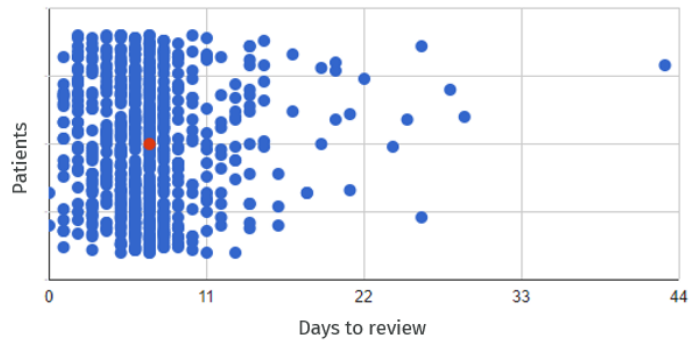


Figure 3: Patient age distribution across the population

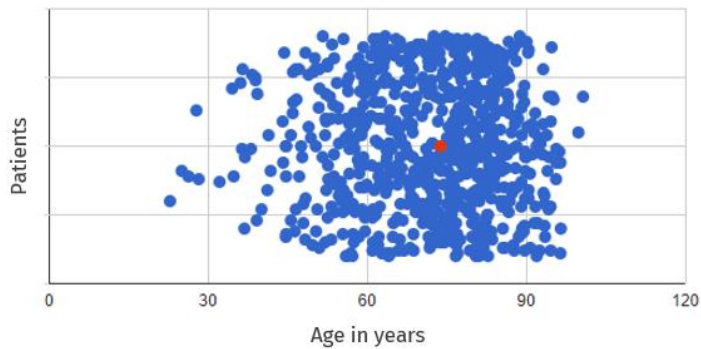
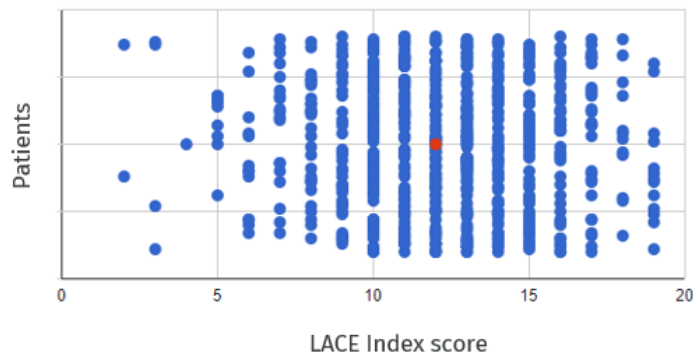
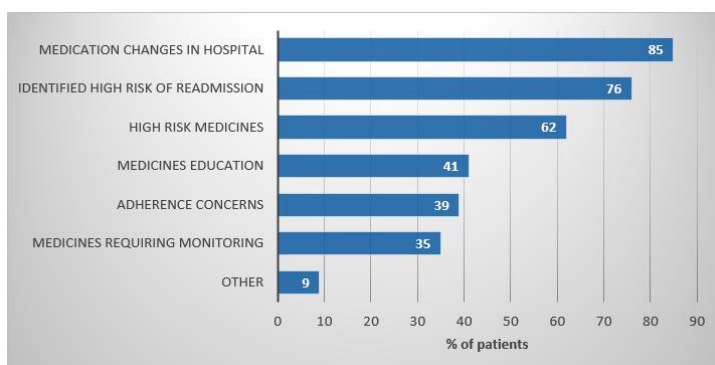


Figure 4: LACE Index for readmission across the patient population



The reasons provided by the transition of care (ToC) pharmacist for conducting a post-discharge review are shown in Figure 5.

Figure 5: Reasons for conducting post-discharge review



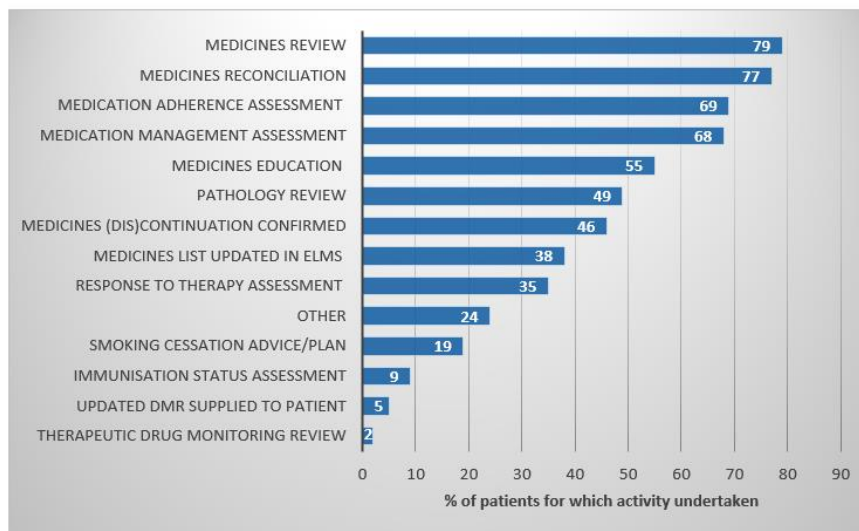
Only 0.5% of patients were known to have received a home medicines review (HMR) and 0.4% of patients a MedsCheck review within the previous 12 months.

Consultation

Most post-discharge reviews were conducted by phone (95.0%), whilst 4.2% were conducted by telehealth and 0.8% were conducted in person. Consultations were conducted with the patient only (67.8%), carer only (19.1%) or patient and carer (11.3%). Other people involved in the reviews included partners, relatives, a community pharmacist, a mental health service provider and a home care provider.

More patients had interacted with their community pharmacist prior to review (56.1%) than with their GP (38.4%). Figure 6 shows the medicine-related activities performed by the ToC pharmacist as a component of the post-discharge review.

Figure 6: Activities performed during post-discharge review



The ToC pharmacist contacted other healthcare providers to complete ToC activities or resolve identified issues in 232 reviews (31.3%). They contacted the patient's community pharmacist (16.6% of reviews), GP (7.4% of reviews) or the hospital medical officer (9.3% of reviews). Other people contacted included home care providers, nurse navigators, transition care program nurses, and social workers.

A mean of 0.8 medication-related problems (median 0, range 0-5) were identified for each patient review.

Medication management plan

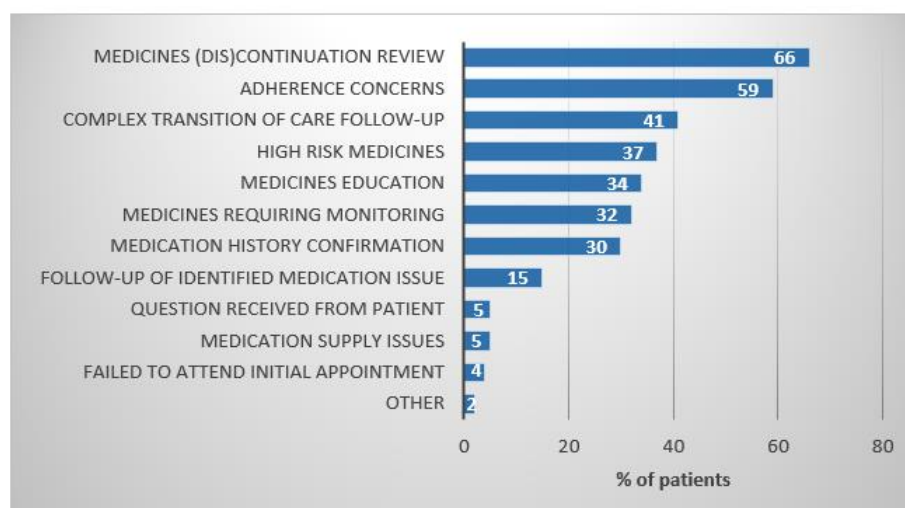
A medication management plan (MMP) was sent to the patient's nominated GP in 91.8% of patient reviews and the community pharmacist in 79.8% of reviews. The reasons for not sending an MMP included no regular GP or community pharmacist, no issues identified, no changes to discharge information, and the patient being readmitted. A median of 3 (mean 3.5, range 0-10) recommendations were included in each MMP for the GP and a median of 2 (mean 2.1, range 0-6) for the community pharmacist. A median of 2 (mean 2.4, range 0-7) recommendations were made to each patient.

Subsequent reviews

Of the 742 patients who completed a post-discharge review, 128 (17.3%) were scheduled for a subsequent review. The proportion of patients receiving a subsequent review was higher at Site 3 (28.4%) due to the local model of care, which supported a subsequent ToC review, where appropriate, for patients attending post-surgical follow-up.

The reasons provided by the ToC pharmacist for scheduling a subsequent review are shown in Figure 7.

Figure 7: Reasons for scheduling a subsequent review



Completion rates

The subsequent review completion rates are shown in Table 2.

Table 2: Completion rates for subsequent review

Completion status	Number of patients (%)			
	Site 1	Site 2	Site 3	All sites
Patients scheduled for review	6	10	112	128
Completed	6 (100)	9 (90.0)	79 (70.5)	94 (73.4)
Failed to attend appointment/ non-contactable	0	1 (10.0)	7 (6.3)	8 (6.3)
Readmitted to hospital	0	0	19 (17.0)	19 (14.8)
Died	0	0	1 (0.9)	1 (0.8)
Other reason	0	0	6 (5.4)	6 (4.7)

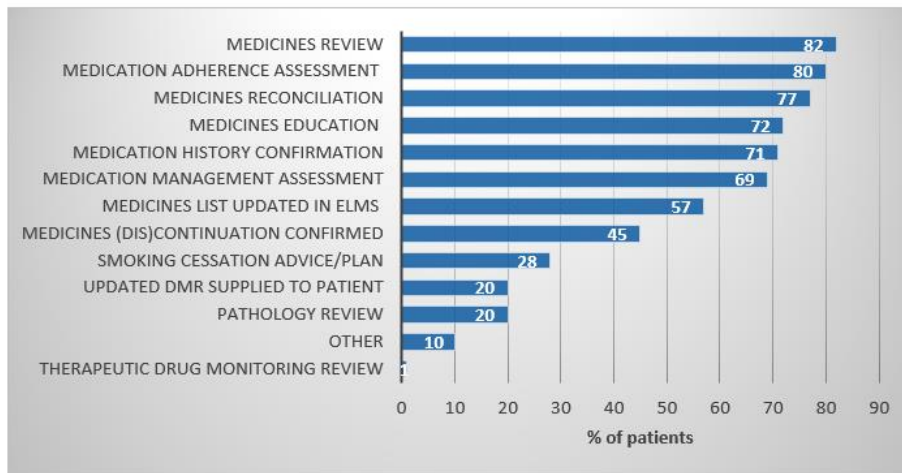
Consultation

Most subsequent reviews were conducted by phone (62.8%), whilst 4.3% were conducted by telehealth. A higher proportion of subsequent reviews (33.0%) were undertaken in person compared to the post-discharge reviews. This is because the subsequent reviews at Site 3 frequently took place in the vascular outpatient clinic when the patient attended their post-

surgical follow-up. Subsequent consultations were conducted with the patient only (79.8%), the carer only (10.6%), or the patient and carer (6.4%).

Figure 8 shows the medicine-related activities performed as a component of the subsequent review. A mean of 0.7 medication-related problems (median 1, range 0-3) were identified for each review.

Figure 8: Activities performed during subsequent reviews



Medication management plan

An MMP was only generated for 36 (38.3%) of the completed subsequent reviews. Of the 36 MMPs generated, 35 (97.2%) were sent to the patient's GP and contained a median of 0 (mean 1.0, range 0-5) recommendation per patient. Eleven (30.6%) MMPs were sent to the patient's community pharmacist and contained a median of 0 (mean 0.2, range 0-3) recommendations per patient. A median of 0 (mean 0.6, range 0-6) recommendations were made to each patient.

Other reviews

The transition of care pharmacists also completed 81 'other' reviews which were outside of the model of care.

Twenty-five reviews were for Site 3 patients who had been identified for the ToCPP service during their admission and either required a third or fourth review or had failed to attend the post-discharge or subsequent review but still required ongoing follow-up.

Thirty-three reviews were for patients referred to the ToC pharmacist after discharge by ward pharmacists or medical officers. These patients were not included in the post-discharge review dataset as they had not received the full ToCPP intervention, including DMR.

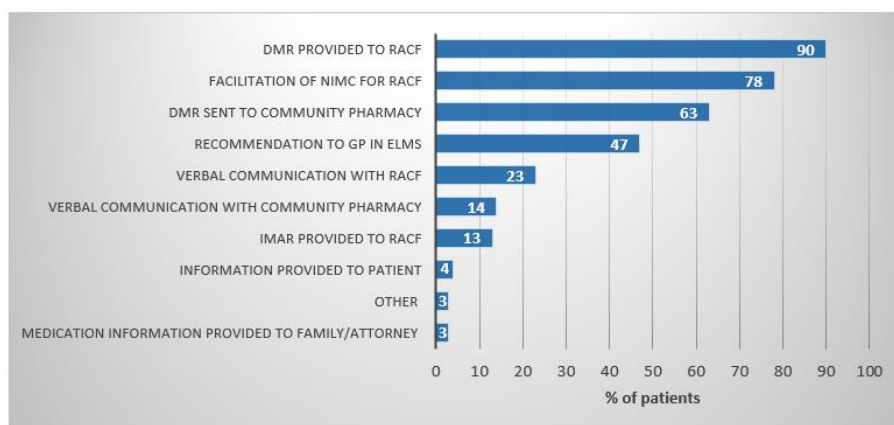
Twenty-three reviews were direct referrals to the Site 3 ToC pharmacist for review of vascular patients in either the high-risk foot clinic (16 patients) or the claudication clinic (7 patients).

Residential aged care facility reviews

The RACF model of care involved increased clinical handover for patients discharged to RACFs. A post-discharge review and reconciliation of the patient's medication list was also undertaken.

Figure 9 shows the medicine-related activities performed prior to patient discharge for the 111 patients identified to receive the service.

Figure 9: Pre-discharge activities for RACF patients

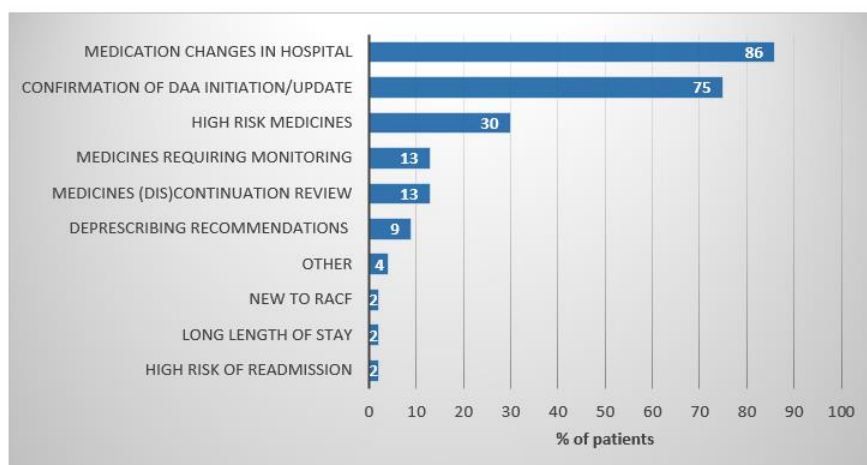


Communication with the patient's GP was predominantly by entering recommendations in the Enterprise-wide Liaison Medication System (eLMS) prior to patient discharge. These recommendations are uploaded into the discharge summary. A median of 2 (mean 2.3, range 0-5) recommendations were made for each patient discharged.

Of the 111 patients identified for the service, a RACF review was completed for 91 (82%) patients. The primary reason provided for not completing a RACF review was the patient being readmitted (14.4%).

RACF review was completed for 78 Site 2 patients (85.7%), 8 Site 3 patients (8.8%), and 5 Site 1 patients (5.5%). The median age of patients reviewed was 85.1 years (range 67.8-101.1) and the median time to review was 15 days (range 4-37). The median number of regular medicines on discharge was 9 (range 2-21). The reasons provided by the ToC pharmacist for conducting an RACF review are shown in Figure 10.

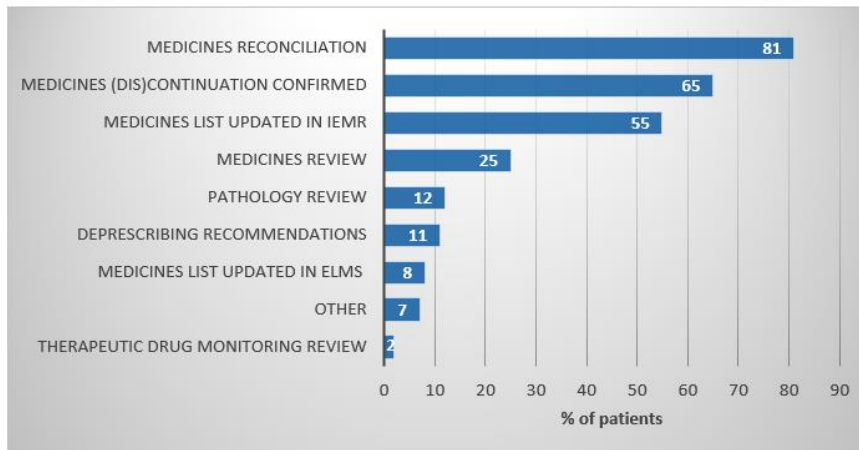
Figure 10: Reasons for conducting RACF review.



The ToC pharmacist contacted the community pharmacist who was providing a packing service for the RACF in 90 reviews (98.9%). Other people contacted to facilitate follow-up and resolve issues included RACF staff (64.8%), the patient's GP (6.6%), outreach aged care services (7.7%), and hospital medical officers (2.2%).

A mean of 1.1 medication-related problems (median 1, range 0-11) were identified for each patient review. Figure 11 shows the medicine-related activities performed as a component of the RACF review.

Figure 11: Activities performed during RACF review

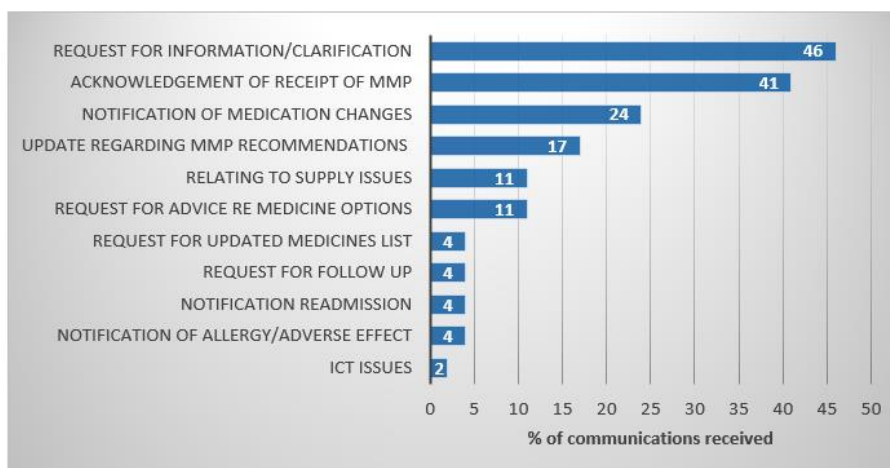


Post-discharge communication/feedback to transition of care pharmacists

ToC pharmacists received communication/feedback following 46 reviews (5.0% of the total reviews conducted, including post-discharge, subsequent, and other reviews).

Where communication was received, it came from GPs (13.3%), community pharmacists (46.7%), and patients/carers (37.8%). Feedback was also received from an HMR accredited pharmacist, a post-acute care service nurse, and a nurse practitioner. Feedback was received by phone (60.9%), email (34.8%), fax (4.3%), and verbally at a subsequent review (3%). The nature of the feedback received is shown in Figure 12.

Figure 12: Nature of feedback communication



Summary

Service provision

Site 3 conducted considerably more post-discharge and subsequent reviews than the other sites. The higher number of subsequent reviews was due to the Site 3 model of care, which facilitated the follow-up of identified vascular patients six to eight weeks post-surgery. The majority of RACF reviews were conducted at Site 2, which is unsurprising given their service population of gerontology patients.

The reasons most frequently provided for conducting a post-discharge review were medication changes, high risk of readmission, and high-risk medicines. These reasons are all in concordance with patient identification as per the model of care. The most frequent reasons for providing a RACF review were changes to medication and confirmation of DAA packing, which aligns with the post-discharge reconciliation focus of the RACF model of care.

Completion rates

Completion rates for the post-discharge review were satisfactory, with an all-site completion rate of over 87%. The reasons for non-completion varied from site to site. At Site 1, most non-completion was due to patients being uncontactable/failing to attend a scheduled appointment. However, at Site 2, non-completion was mainly due to readmission. The pilot population at Site 2 were gerontology patients who typically have increased rates of hospital readmission due to risk factors such as frailty syndrome, comorbidities, and high health system utilisation.² At Site 3, there was no predominant reason for non-completion.

Most subsequent reviews were conducted at Site 3, and completion rates were slightly lower than for post-discharge reviews. The lower completion rate could theoretically be due to patients perceiving there was no need for a second follow-up; however, a higher proportion of patients failed to attend a subsequent review at Site 3 due to readmission.

The majority of scheduled RACF reviews were completed. The high completion rate was due to the nature of the review, which did not require a patient to attend an appointment.

Patient demographics

Whilst the range for the number of days to post-discharge review is quite broad, the distribution indicates that most patients were seen within seven days of discharge as per the model of care. The age distribution shows that most patients receiving the service were over 60. This is unsurprising given the inclusion of gerontology as a patient population at Site 2. Additionally, medication use increases with age;³ therefore, elderly patients in pilot populations at the other sites were more likely to be identified as suitable for service inclusion than younger patients.

The ToCPP model of care used the LACE Index to identify patients at high risk of readmission and thus eligible for the full ToCPP intervention. However, ToC pharmacists were allowed to use their discretion and include patients with low (0-4) or moderate (5-9) LACE Index scores, whom they considered to be at high risk of medication misadventure. Most patients (83.6%) were classified as high-risk, and only 0.9% were classified as low-risk. This provides some validation for using the LACE Index to identify patients suitable for service inclusion.

Activities

The discharge-to-home model of care specifies the provision of a DMR to patients upon discharge, and activity data indicates high concordance with this component of the service. A DMR was sent to fewer community pharmacists than to GPs, this is because a higher proportion of patients declined to nominate a regular community pharmacy compared to a GP.

The most frequently provided services at post-discharge review were medicines review, medicine reconciliation, adherence assessment, medication management assessment, and medicine education. These services were typically repeated at subsequent review, although medication history confirmation was also undertaken with over 70% of patients. Medicine reconciliation and confirmation of medication continuation/discontinuation were the most frequent activities in RACF reviews.

There is a high incidence of medication discrepancy following hospital discharge,⁴ and medicines reconciliation is a component of both the discharge-to-home and RACF models of care. It could be argued that medicine reconciliation should be undertaken for all patients receiving post-discharge, subsequent, and RACF review, yet the data indicates this is not the case. It is unclear if this is a data collection discrepancy or an identified gap in service provision. Although confirmation of medication continuation/discontinuation was the reason most frequently provided for conducting a subsequent review (66% of patients), it was only reported as an activity for 40% of patients. Again, this may be due to discrepancies in data collection across the reviews.

Whilst an MMP was generated for over 90% of post-discharge reviews, it was completed for less than 40% of subsequent reviews. This is likely because the ToC pharmacist felt there was no additional information that needed to be conveyed to primary healthcare providers. Post-discharge review recommendations were provided to the GP more frequently than either the community pharmacist or the patient. On average, 0.8 medication-related problems per patient were identified at post-discharge review, 0.7 per patient at subsequent review, and more than one per patient at RACF review. It should, however, be noted that feedback was rarely received from primary healthcare providers regarding information supplied, recommendations made, or problems identified.

Hospital pharmacy staff semi-structured interviews

The previously described activity data provides insight to the patients identified for the ToCPP service and the activities completed. A subsequent evaluation was undertaken to determine the perceptions of hospital pharmacy staff who delivered the ToCPP intervention. Interviews were conducted to explore the participants' perceptions of the anticipated impact of the ToCPP service, attitudes towards the service, and the barriers and facilitators to service delivery.

Method

All hospital pharmacists and clinical assistants involved in the delivery of the ToCPP intervention at the time of the evaluation were sent an email inviting them to participate in a semi-structured interview. They were supplied with information regarding the evaluation and asked to reply to the email to indicate their consent to participate.

The interviews were scheduled at a time convenient to the participant and were conducted by telephone or in-person (location allowing), depending on the participant's preference.

Participants were advised that the interview would be audio-recorded and that the recording would be used for transcription and data analysis only.

Audio files were de-identified by using an assigned participant code. This code was subsequently applied across all further interview file formats. Transcripts were prepared using 'intelligent verbatim style' by an external service provider who signed a transcriber confidentiality agreement. Returned transcripts were reviewed for accuracy and de-identified using the previously assigned participant codes and newly assigned site codes. Any additional identifying features, for example, names, facilities and health services, were anonymised.

Data analysis

The verified, anonymised transcripts were uploaded to NVivo Software (QSR International) version 14.23.2.

Manual inductive coding was undertaken with the first three transcripts to identify topics and concepts. Emergent codes, subcodes, and descriptors were documented in a codebook to improve the reliability of the coding process. The remaining transcripts were coded against the codebook, and any newly identified codes were added. All transcripts were checked against the final codebook to ensure consistency of coding.

The final codes were reviewed and organised into study themes.

Results

Interviews were conducted with twelve participants across the three study sites between November 2022 and June 2023. The mean interview duration was 42 minutes (range 22-95).

The participants consisted of five pharmacists delivering the transition of care intervention (ToC pharmacists), three clinical assistants (CAs), and four ward pharmacists working in the clinical areas where the service was provided. The participants and their associated sites are shown in Table 3.

Table 3: Hospital pharmacy staff semi-structured interview participant demographics

Participant code	Designation	Site	Gender	Interview mode
ToC_pharm_1	ToC Pharmacist	1	Male	In person
ToC_pharm_2	ToC Pharmacist	2	Female	Phone
ToC_pharm_3	ToC Pharmacist	3	Female	Phone
ToC_pharm_4	ToC Pharmacist	1	Female	Phone
ToC_pharm_5	ToC Pharmacist	1	Male	Phone
ward_pharm_1	Pharmacist	3	Female	Phone
ward_pharm_2	Pharmacist	2	Female	Phone
ward_pharm_3	Pharmacist	2	Female	Phone
ward_pharm_4	Pharmacist	2	Female	Phone
CA_1	Clinical assistant	2	Female	Phone
CA_2	Clinical assistant	3	Female	Phone
CA_3	Clinical assistant	1	Female	Phone

Three themes were identified: service delivery, health performance, and stakeholder perceptions. Quotations are provided to illustrate the findings, with the associated code identifying the participant source.

Service delivery

There was significant commentary regarding the implementation and the ongoing delivery of the ToCPP service. This commentary predominantly fell into the following categories: ToCPP model of care, documentation processes, the clinical assistant role, information and communications technology, training, project support, and resources.

Model of care

Patient identification

Pharmacists delivering the ToCPP intervention (ToC pharmacists) used a variety of methods to identify patients at high risk of admission who would potentially benefit from the service. ToC pharmacists described referring to patient flow lists, liaising with the ward pharmacist, and receiving referrals from medical officers. Some ToC pharmacists also used multidisciplinary team meetings and ward rounds as another referral source.

'I, in the morning, attend the MDT meeting to hear about the patients from the medical staff and hear about other allied health concerns and probably most importantly for my role, hear about the discharge plan and estimated discharge dates.' [ToC_pharm_1]

There was also evidence that medical staff were engaged with directly identifying and referring patients to the service.

'... whenever we would go on ward rounds, the doctors were always focusing on oh, would this person meet the criteria to be referred ...?' [ward_pharm_1]

Whilst ToC pharmacists initially used the LACE score to facilitate patient identification, this became less important as the service continued, with both ToC and ward pharmacists increasingly using their clinical judgement to identify patients.

'Initially we were using the LACE score, but now it's just their perception of the patient on the ward and what medication changes have been made, and whether they think the patient would benefit from a high-risk follow-up or not.' [ToC_pharm_3]

Consumer information leaflet

The ToCPP consumer information leaflet was used by most pharmacists. In some sites, the ward pharmacist handed out the brochures to facilitate initial patient engagement, especially when the ToC pharmacist was unavailable. It was also considered that the leaflet gave credibility to the service.

'I definitely think there's a point to them. Whether or not the patient goes ahead and reads them, I'm not entirely sure. But it gives a little bit more credence to what we're doing.' [ToC_pharm_2]

It was, however, noted that patients receive a lot of written information whilst in hospital, and one pharmacist felt that they did not need to supply the leaflets due to the high level of patient engagement.

'... people get a lot of handouts, and a lot of pamphlets, so in the end I was happy that I wasn't really getting any people denying, so I stopped using it.' [ToC_pharm_1]

Mode of review

ToC pharmacists reported that most patients expressed a preference for a phone call rather than telehealth. It was considered that patients who were elderly, cognitively impaired, or had lower levels of health literacy may have difficulties managing telehealth technology.

'... a lot of the patients who I identify as actually going to benefit from this service are those who are a little bit cognitively impaired, or health illiterate in the first place, and often if you start to explain Telehealth, they just say, please just call me.' [ToC_pharm_1]

One ToC pharmacist suggested that patients didn't like telehealth in their own home due to privacy concerns.

'People just felt that technology in their home- they didn't want somebody spying on them, somehow.' [ToC_pharm_1]

There was a sense that telehealth review may not be necessary for all patients and should be reserved for complex patients or for situations where the ToC pharmacist specifically wanted to review medication packaging.

'I think the telehealth probably has more space for more complex patients, but for the majority of the [patient type], for example, I just don't think it's worth the time. It just doesn't seem to provide the benefits.' [ToC_pharm_3]

Time to review

ToC pharmacists generally considered that conducting the patient review within seven days of discharge, as per the endorsed model of care, was appropriate. However, pharmacists noted that a delayed follow-up was sometimes required depending on the clinical situation, for example, to confirm a patient had ceased temporary medication as planned.

'... if someone's on three weeks of DAPT [dual antiplatelet therapy] post stroke, then we've been calling them at that three-week mark, to make sure that they discontinue one of their anti-platelets correctly. [ToC_pharm_4]

Chosen patient population

There were some comments relating to the appropriateness of the patient population in which the service was piloted. Reduced patient numbers due to a downturn in elective surgery during the COVID-19 pandemic temporarily limited service delivery at Site 3. At Site 1, the inability to expand the service due to a co-existing discharge service kept patient numbers low.

Pharmacists providing the ToCPP service to patients who had presented with a stroke noted that most of the complex patients transferred to other hospitals or rehabilitation facilities rather than being discharged home, and hence were not eligible for the service.

'... we're not following up those rehab and inter hospital transfers, which are probably even higher risk than the patients going home.' [ToC_pharm_5]

Integration of the transition of care service with ward-based activity

There was considerable commentary regarding the integration of the pilot model of care with existing ward-based services. These comments varied depending on the site and the service delivery model.

At Site 3, the service evolved into a discharge-focused model, where the ToC pharmacist provided minimal inpatient care, instead concentrating on conducting post-discharge and subsequent reviews. The ward pharmacist took responsibility for organising the discharge medication and DMR; however, the ToC pharmacist would engage with the patient immediately before discharge to provide counselling and discuss the arrangements for the transition of care follow-up.

'So, I would do the entire discharge, but then [ToC pharmacist] would hand out the discharge. So, she would go and speak to the patient and discharge them and explain their discharge medications.' [ward_pharm_1].

If required, the service delivery model at Site 3 supported a second patient review, which could be undertaken at the patient's post-surgical follow-up, typically scheduled for 6-8 weeks post-surgery. These subsequent reviews were often conducted in-person when the patient attended the vascular surgical clinic. Not all patients received a subsequent review; the ToC pharmacist targeted complex patients or those with unresolved medication-related issues, including those awaiting a decision regarding ongoing medication. Whilst vascular surgical patients were targeted initially, it was noted that complex respiratory patients occasionally required a second review.

At Site 2, the ToC pharmacist was initially more involved in ward activities, especially the discharge process. This level of involvement frequently depended on the pharmacy staffing levels at the time.

'It depends on workload as to how much [ToC pharmacist] helps us. If we're really smashed and we've got a heavy discharge load in a day, sometimes we will ask [ToC pharmacist] if she's got time to completely take over the process...' [ward_pharm_4]

The involvement of the ToC pharmacist in usual care activities did, however, diminish over the course of the project. Whilst the original intent was to provide a more integrated model, project expectations regarding the number of patients managed through the service resulted in a shift to a discharge-focused service.

At Site 1, two different integrated service models were piloted across the duration of the pilot. In both models, the ToC pharmacist was considerably more involved in inpatient care than the ToC pharmacists at the other sites. Initially, the HP4 ToC pharmacist position was added to the existing HP3 pharmacist allocated to these teams. The ToC pharmacist identified high-risk patients, provided inpatient services to these patients, and conducted post-discharge reviews. It was proposed that the more experienced ToC pharmacist would provide clinical and mentoring support to the team-based junior pharmacist.

Feedback from the ToC pharmacist indicated that this service model resulted in handover inefficiencies, and the junior pharmacist did not require additional clinical support.

'... I think overall the complexity of the average medical patient probably doesn't justify needing additional, more senior oversight.' [ToC_pharm_1]

The ToC pharmacist also felt the added pharmacist position was confusing for both medical and nursing staff.

'... the nursing team leader who is trying to sort out her discharges will sometimes go through the resident pharmacist before being redirected back to me. I think that is a bit of a disadvantage, and because we've been doing it case by case, there's not really any rule of thumb they can go via and know who to contact.' [ToC_pharm_1]

The ToC pharmacist considered that the ToCPP service could be provided as a component of usual care if activities were prioritised, and less critical inpatient activities ceased.

'I would like to see a model where it is the one pharmacist doing everything. Obviously, that does make the job quite demanding I would think. I think there is probably some things we can disinvest in though in terms of our inpatient practice. I think there is still a lot of things that we do that probably doesn't add a lot of value. But we do it just out of completeness.' [ToC_pharm_1]

The service at Site 1 was subsequently modified to trial this concept. The service was relocated to a new clinical setting in stroke and neurology, where two project-funded pharmacists (equivalent to 1.0 FTE) provided a full ward service in addition to undertaking ToC activities. To facilitate this, the project-funded CA worked on the ward in an expanded scope capacity. The CA aimed to reduce the workload of the ToC pharmacists by performing tasks that a ward pharmacist would traditionally perform, hence freeing the ToC pharmacists to conduct post-discharge reviews and generate MMPs.

The ToC pharmacists working under this fully integrated service model described the work pressure of the added activities and the juggle of managing ward expectations whilst

completing post-discharge reviews. They provided examples of being interrupted during their post-discharge consultations and unable to complete ToC documentation in a timely manner.

'I'm actually only finishing writing up the MMPs today for those three that I did Thursday/Friday last week because when I did them, I then had to go up to the ward and discharge some other people.' [ToC_pharm_5]

The lack of discharge planning and advanced prescription writing was considered to hamper time management. Additionally, working in a team-based model of care was considered a barrier to managing workload due to fluctuations in patient numbers and the location of patients across multiple wards.

'So as the list blows out, not just the number of patients is a barrier, but also the fact that they're like - we have outliers everywhere. So just the logistical nightmare of having to go and see those patients' [ToC_pharm_4]

The ToC pharmacists described reducing the frequency of pharmacist inpatient medication chart reviews to optimise the number of patients they were managing under the ToCPP service. They anticipated that the CA review would alert them to priority patients.

'... we're not going to be able to see as many patients on the ward by taking on more transition of care patients. But we've got [CA] there. So, she's looking at all the charts and can report back to us and then help us to prioritise which ones we might need to see.' [ToC_pharm_4]

When ToC pharmacists at all sites discussed the relative benefits of a discharge-focused versus a fully integrated service model, opinions tended to favour a discharge-focused or outpatient referral model, in which patients were referred to the ToC pharmacist for post-discharge review. One participant acknowledged the advantages of the fully integrated model but felt that, from a patient outcome perspective, it would be more beneficial to provide a ToC service to a higher number of patients rather than managing a few patients through their entire patient journey.

'... if you do a great job with one person, that's one person, that's great. But it's not effective as far as an investment. So, I understand that there's two trains of thought. We do really well for a number of people if we follow them from start to finish, it's a huge workload, and it just wouldn't work with our current model of ward care.' [ToC_pharm_2]

ToC pharmacists considered it was not feasible to expand a fully integrated model to other clinical pharmacy services and expressed concerns about pharmacist burnout.

'I am sceptical to say how it would go to be rolled out across other wards/how you would be able to achieve it in the long-term. You would have to have a very motivated pharmacist that would not be at risk of burnout because it – the demands of ToC and ward are quite challenging.' [ToC_pharm_5]

Ward pharmacists perceived that managing a patient from admission to post-discharge would be professionally satisfying and provide continuity of care benefits. Conversely, the advantage of another pharmacist reviewing the patient was also noted.

'I think if my time with the patient finishes and then gets handed over to [ToC Pharmacist], it does then provide another perspective for the patient, like another pharmacist coming in, double checking everything that's happening.' [ward_pharm_1]

Participants acknowledged that if there was a requirement for the service to generate income through activity-based funding (ABF), then a discharge-focused or outpatient referral model would provide a greater economic return and favour sustainability. There was discussion regarding the impact of an outpatient referral model on patient engagement with the service. Some ToC pharmacists considered that building a rapport with the patient prior to discharge facilitated patient trust and engagement with the post-discharge review.

'... we follow up our own discharges, so they know you when you're following them up, which I think has really helped with rapport and that trust, which is necessary for, I think, positive outcomes.' [ToC_pharm_4]

It was generally considered that if a referral model was introduced, it was preferable to build some patient rapport by seeing the patient and providing medication counselling prior to discharge. One pharmacist noted that whilst this may be optimal, it was still possible to meaningfully engage with a patient over the phone when they'd had no prior contact. It was, however, perceived that patients should be made aware of the service before discharge, consented to participate, and advised of the follow-up arrangements, even if this was done by the ward pharmacist.

'I think whilst it is really nice to build that rapport with the patients and see them on discharge, the instances where I've called someone blindly after they've been told that they're going to receive a call from the Transition of Care pharmacist, you can still have really meaningful discussions over the phone to someone you haven't built that rapport with in-person.' [ToC_pharm_3]

Discharge medication record

There was evidence that the ToC model of care resulted in the generation of DMRs for patients who would not usually receive them; for example, those discharged from areas with limited pharmacist resourcing or high patient turnover, and patients discharged to RACFs. It was noted that because the medication record created by the pharmacist in eLMS feeds directly into the discharge summary, the increased generation of DMRs resulted in an increase in the number of discharge summaries containing accurate and comprehensive medication information.

'... it's helping the medical team for their discharge summaries to be more complete. Because otherwise, they're just adding in maybe the new or changed things, but it's not the full reconciled list.' [ToC_pharm_2]

In one project setting, the discharge summary was routinely generated before patient discharge, and a hard copy was given to the patient along with the DMR. The ToC pharmacist at this site questioned the utility of sending an additional copy of the DMR to the GP when they had already been sent a copy of the discharge summary electronically. However, a different ToC pharmacist considered that sending the DMR directly to GPs was helpful in situations where the preparation of the discharge summary was delayed.

'I think there's value in that because you make that list regardless, and as we know, the discharge summaries can be 48, 72 hours delayed, possibly more than that, just because of sheer workload, and so it really means nothing for us to print that off, and to fax it off, or to email it off, preferably.' [ToC_pharm_1]

Capacity of healthcare providers

Several participants expressed concern that primary healthcare providers may not have the capacity to undertake the patient review and medication reconciliation processes associated with the model of care. There were several comments relating to the recommendations made to community pharmacists to undertake MedsCheck reviews. It was noted that not all community pharmacies provided this service, and suggestions to undertake a MedsCheck review were frequently met with resistance.

'I haven't had one experience where a pharmacy has been keen to engage in a MedsCheck or anything like that after the conversation. They're always – it always seems to be met with resistance, and I've almost stopped mentioning it because I haven't had any experiences where it's worked out, I suppose, or where a pharmacist has been actively keen to pursue it.' [ToC_pharm_3]

It was perceived that this was due to the workload of the community pharmacists, especially the increased requirements to provide vaccination services across the COVID-19 pandemic period. There was evidence that undertaking MedsCheck reviews diverted community pharmacists from other services that potentially generated more income.

'I think more than anything they're just flat out. They're vaccinating, they're doing all of this additional stuff, and it's not a priority. From when I spent a bit of time earlier this year at a community pharmacy, one of the pharmacists was saying that even though there is some financial incentive to do a MedsCheck, it takes a pharmacist off the back deck for a period of time so that it isn't necessarily in their best financial interests to facilitate it.' [ToC_pharm_3]

The value of sending an MMP to primary healthcare providers for every patient was also questioned. There were concerns that this may be an unwarranted administrative burden on GPs and community pharmacists.

'I do wonder about the administrative burden that we're putting on to GPs and community pharmacies with the best intentions, but I think some of the softer medication management plans I've sent through, because it's a project requirement, I do wonder, in the whole net good, whether I'm doing net good, or net bad, by asking a clinician to read that piece of work' [ToC_pharm_1].

When discussing the option to provide a verbal rather than written handover, it was considered that it would be difficult to identify a suitable time to engage with busy primary healthcare providers. ToC pharmacists also felt that whilst they wanted to include meaningful recommendations on the MMP, they were unsure what actions they could reasonably expect a community pharmacist to undertake.

'... the one thing that I have also struggled with is, what is a realistic expectation of a community pharmacy and what recommendations you could actually make that isn't just purely trying to tick boxes to say, please follow this up, please check this, please check that?' [ToC_pharm_5]

The difficulty in delivering the model of care when the patient did not have a regular GP or community pharmacist was also noted.

'I found it difficult when patients don't have a regular GP or community pharmacy. I've had one patient who just doesn't trust GPs, so won't go back to the GP. I try to book them into a GP, try to talk to them about picking the right GP, but there was always barriers about that.' [ToC_pharm_3]

Residential aged care facility model of care

During the project, a second model of care was developed to facilitate transition of care for patients discharging to residential aged care facilities. This model involved the ToC pharmacist liaising with community pharmacists to reconcile medication packing profiles and ensure changes and recommendations made in hospital were sustained upon discharge. As would be expected, this model of care was most frequently provided by Site 2. Comments regarding this model are integrated into the relevant sections.

Documentation

The discharge-to-home model of care identifies two main points at which documentation of patient information can be made to facilitate communication with primary healthcare providers. There was considerable discussion regarding these options.

Documentation on the medication management plan

The main route for communicating information to primary healthcare providers is via the medication management plan (MMP). This is generated following the post-discharge review and includes recommendations to the GP and community pharmacist. ToC pharmacists felt that writing the MMP was time-consuming and may not be required for all patients. It was felt that when the focus of the post-discharge review was confirming a patient action or providing education, there was no need to communicate with the primary healthcare providers, particularly if the recommendations had previously been provided in the discharge information.

'... I have actually just been putting it in ieMR [Queensland Health integrated electronic medical record] and saying phone call, patient stopped this, the end, rather than doing a whole MMP and sending it off to the GP and community pharmacy, because I'm not sure what value that adds to them, given that the original plan had that that needed to be ceased anyway.' [ToC_pharm_4]

Documentation in eLMS

Hospital pharmacists do not have access to the Enterprise Discharge Summary (EDS) system and are, therefore, unable to add content to discharge summaries. Medicine management advice can be communicated to the GP upon discharge using the 'recommendations to GP' function within eLMS. These recommendations are uploaded into the EDS system and sent electronically in the discharge summary. Most of the ToC pharmacists used this function, although it was acknowledged that it was not frequently used by other hospital pharmacists. The recommendation function in eLMS was considered useful for highlighting changes to medication and the rationale behind such changes. However, the limitations of using this method to communicate more complex information were noted.

'It's just that eLMS isn't really built for clearly communicating changes that are a little bit more complex' [ToC_pharm_1]

Clinical assistant role

The role of the pharmacy clinical assistant (CA) varied depending on the service delivery model at the site. All CAs facilitated service delivery by undertaking administrative activities such as phoning primary healthcare providers to confirm communication preferences; printing and sending patient information by fax, Kiteworks® or email; scheduling appointments in the enterprise scheduling manager (ESM); and entering service evaluation data in REDCap. In sites using a Microsoft Word® MMP template, the CAs retrieved patient information from hospital systems and commenced the MMP by adding patient details such as name, date of birth, contact details, LACE score and the details of the patient's nominated primary healthcare providers.

One CA described dispensing discharge medication, and CAs also assisted the pharmacists with clinical activities such as calculating the LACE Index score, entering admission medication details into eLMS, and preparing DMRs.

Expanded scope clinical assistant

As described previously, the role of the CA changed at Site 1 following the move to a fully integrated model in which the pharmacist provided the ToCPP service as a component of usual care. The CA worked in an expanded scope ward-based role under the supervision of the ToC pharmacist, and performed activities such as printing bed lists, identifying new patients, reviewing medication charts and supplying medication. Additionally, the CA assisted the ToC pharmacist with medication history taking by retrieving pre-admission medication information from community pharmacies, medical practices, and previous admission notes, and then entering it into eLMS for confirmation.

'... I might do my own history from the information I've gathered. I often do that with [ToC pharmacist], I enter it first and then she'll come round and once she's interviewed the patient and then edit anything that needs editing and then save her copy.' [CA_3]

The CA also identified patients transferred to the ward during the day, reviewing their medication charts to identify potential clinical issues and urgent supplies that the pharmacist needed to be alerted about. The CA noted that patients admitted later in the day would not otherwise be seen until the following morning.

'Throughout the day as well, if we've got any people that are down in emergency that have come in throughout the day, I'm also looking at them as a bit of a – go through their medication and see if there is anything that I might need to flag to the pharmacist before then, because they're probably not going to see them that day, they'll see them tomorrow morning when they come in' [CA_3]

The CA predominantly reviewed medication charts from a supply perspective, identifying new medication that was not available on the ward and resupplying medication to patients whose supplies were running low. The CA annotated the medication chart in line with departmental guidelines and conducted a 'crush review', identifying and annotating administration information and alerting the pharmacist to medications requiring a formulation change. This was particularly pertinent given the patient population of stroke and neurology patients.

'... with our patients, we have quite a few people that are on NG tubes or PEG tubes or something or if they have difficulty swallowing, so I'll go through and do like a crush review on them and annotate from the MIMS crush guide what they can crush and disperse and if it's hazardous when they're crushing and dispersing it.' [CA_3]

The CA considered that they would review the medication charts of all patients on the ward on most days. They also checked and annotated transcribed charts, alerting the pharmacist to any issues before the pharmacist reviewed and signed the new chart.

An identified barrier to the ward-based CA role was when the usual pharmacists were either away from the ward conducting post-discharge reviews or on leave, and the CA was left unsupervised. The CA noted that they were unable to facilitate medication supply or respond to all enquiries from ward staff when this occurred.

Clinical assistant scope

The CA working in an expanded scope capacity felt that they were confident in the role and the limits of their responsibilities were clear.

'I feel pretty confident in my scope and if it's something I can't answer I will tell them straightaway that I'm not sure, that I'm a technician, but I can definitely ask the pharmacist for them.' [CA_3]

It was felt that opportunities for the CA to expand their scope of practice and undertake different activities resulted in improved job satisfaction.

'Actually, [CA] has said that one of her favourite jobs is doing a crush review and documenting it on the medication chart. So that's expanded her scope, and led to job satisfaction from that perspective, and just upskilling.' [ToP_pharm_4]

Whilst there were opportunities for the CA to work in an expanded scope capacity at Site 1, there was evidence that there were barriers to expanding the CA role at other sites.

'Historically there has been that barrier as, you know, we don't want to let the clinical assistants loose on this.' [CA_1]

Information and communications technology

The method for communicating patient information to primary healthcare providers varied across the pilot sites and was frequently a source of frustration. The limitations of information and communications technology (ICT) were frequently raised as a service barrier.

'One of the biggest barriers of this project seems to be providing a reliable communication method to get it onto the eyeballs of GPs and [community] pharmacists.' [ToC_pharm_1]

Modes of communication were constrained by Queensland Health information transfer policies and access to electronic transfer systems. Only Site 2 was able to access a secure web transfer (SWT) account and electronically send information directly to the inbox of individual GPs. Whilst the ToC pharmacist felt the SWT application was easy to use, the poor appearance and readability of the information sent to GPs was considered a project barrier.

'I really enjoy working SWT, but I wish it was a little more user friendly in that being able to put in a PDF that looks nice and is easy to read' [ToC_pharm_2]

Most community pharmacies do not have the required software to receive information via SWT and hence a different system, Kiteworks®, was used at Site 2 to send encrypted information. The requirement to use two communication systems was considered an administrative burden.

'I know we've discussed this at length, but the community pharmacy not being integrated into SWT, that is a huge barrier because it then compounds our admin side of it.'
[ToC_pharm_2]

SWT was not available to Site 1 or Site 3. As neither site has used Kiteworks® previously, it was initially decided that information would be faxed to GPs and community pharmacies. Faxing was viewed as a relatively inefficient mode of communication that provided no record of transmission and no guarantee that information would reach the intended recipient.

'... we've had to resort to fax, which is time consuming because you have to call up and confirm receipt. Occasionally they fail. There's no real permanent record to say that you've sent them.' [ToC_pharm_1]

CAs described inefficiencies in confirming communication preferences and fax numbers with medical practices. Unable to get a response, they often resorted to communicating via email. The environmental and cost impacts of faxing were also noted.

'Yeah, I've been on hold up to six minutes, sometimes, and if I call again, and then they don't answer, then [ToC pharmacist] and I just sort of agree that just to send it via email, because you can't keep holding and calling, because you just can't get through.' [CA_2]

ToC pharmacists described the administrative burden arising from the inability to generate and send information using the same system. It was also felt that faxing information limited opportunities to receive feedback and generate two-way communication with primary healthcare providers. An approved alternative to fax for transferring secure information is to use encrypted emails; however, it was considered that email encryption was a barrier to communication because end users are required to generate and enter a one-time password to access a message.

'... if you send encrypted emails, it does ask a lot of that recipient to do with putting in one-time passwords, they have to get from their mobile phone, and things like that.'
[ToC_pharm_1]

It was also noted that encrypted emails cannot be forwarded. As project communication was typically sent to a generic medical practice or community pharmacy email address, the information could not be forwarded to individual health practitioners.

'... if you are sending it on to some admin address, and then they're required to forward it on to the GP in question, then that's problematic.' [ToC_pharm_1]

As the project progressed, problems with communication meant that both Site 1 and Site 3 started to send patient information predominantly by email. There was, however, evidence that communications sent by both fax and email did not reach their intended target, and there was the perception that access to SWT may resolve some of these concerns.

'... the biggest timewasting thing is that medication management plans - all of this stuff takes so long to create and to invest the time in to write. You don't know what percentage of them are even hitting the intended recipient. Like that email the other week that – you do all this work, and it doesn't necessarily reach the right person.' [ToC_pharm_3]

Another issue raised was the perceived inability of community pharmacies to store clinical patient information to facilitate clinical handover and onward patient management.

'... their software doesn't communicate with one another. You leave a note under the patient's record that moves down with dispensing history. If you send them a medication list and they're not a Webster-pak patient, what are they going to do with it?' [ToC_pharm_3]

Training

All the ToC pharmacists and clinical assistants considered they had received sufficient training and were suitably prepared to provide the service. Some pharmacists perceived that previous experience in other roles contributed to their competence.

'I have project experience and a background in education. So that was helpful. So yeah, I feel like I was adequately prepared for the role.' [ToC_pharm_4]

Participants felt the project orientation they received was useful.

'...well, [project officer] obviously also went through heaps of stuff with me with transition of care which was really good to get the background of the project and what my role will be in it.' [CA_3]

ToC pharmacists provided examples of the training they had received. These included training on how to write the MMPs, which was achieved by using sample MMPs and obtaining feedback from the project officer and local general practice liaison officers (GPLOs).

'Early on, that feedback that we got from the GPLO was amazing ... that initial feedback, to make sure you're working within the system correctly, or how it's designed, and whether the communication is focused in the right area, that was really useful.' [ToC_pharm_2]

ToC pharmacists also highlighted the peer review and feedback opportunities that were provided.

'I did seek out my own chances for feedback, like I asked [project officer] to sit in on a clinic with me which was helpful.' [ToC_pharm_1]

Training relating to ICT, data collection, and appointment scheduling was also described. It was acknowledged that not everything could be taught initially, and systems often had to be learnt as they were implemented.

'... ESM was – the training was the whole day. I think, initially, I was a bit apprehensive, because I've never done scheduling before, but after a few – probably after a week or so, I got the hang of it.' [CA_2]

The CA working in an expanded scope role described training received from other ward-based CA's.

'I was able to shadow other ward technicians to see how they work, which helped just with exposure to the clinical area here at the hospital' [CA_3]

Ward pharmacists working directly with the ToC pharmacist considered they had received sufficient information regarding the service and their involvement with it. Project engagement was achieved by one-on-one communication, emailing, sharing resources, and departmental meetings. It was noted that education and engagement needed to be maintained to capture new staff and those rotating through clinical areas.

When asked about additional training needs, ToC pharmacists felt that ongoing feedback regarding MMP content would be useful. It was, however, acknowledged that it was hard to develop an MMP writing style that would be acceptable to all GPs.

'I'd love to do it again. I'd like to be able to do that repetitively, like on a regular basis, just to make sure that the message I'm sending out has enough fire in it, that people are going to take notice of what I've said.' [ToC_pharm_2]

One participant considered that should the service be expanded to other areas, pharmacists delivering the service would require additional training regarding communication with primary healthcare providers and generation of ABF.

'I think that the whole outpatient side of the role is very different to inpatient in terms of how to communicate with GPs and pharmacies and how to – I suppose additional understanding of how the ABF is captured and what's required in a review and all of that wouldn't be common practice for a ward pharmacist. They would need that additional training.' [ToC_pharm_3]

Another suggestion relating to the expanded CA role was for the ward-based CA to be trained as a checking technician to facilitate ward supply.

Support for the ToCPP service

An identified facilitator to service implementation and delivery was the support the ToC pharmacists received from others. Some participants acknowledged the activities undertaken by the project officer in developing and implementing the service and with stakeholder engagement prior to them commencing in the role.

'... [project officer] did a lot of work in terms of the preparatory materials, so I think the format for the medication management plan was done for me. Obviously, the referral stickers were all done. The initial contacts with consultants were all done, so everyone was at least peripherally aware of this service. So, I think there was a lot that had been set up when I came into the role.' [ToC_pharm_1]

The ongoing support provided by the project officer and directors of pharmacy (DoPs) during the project was also noted.

'So, the teaching, the education I received at the start, excellent. But that support that [project officer] provided throughout has been just as important, if not more important than the rest of it.' [ToC_pharm_2]

'I think it's fabulous. [DoP] is quite supportive of what we've been doing, when we go to him.' [CA_2]

Project meetings with the team, project officer, and DoPs were considered to support service delivery, and the shared project resources were thought to be useful. CAs also noted the support and direct supervision provided by the ToC Pharmacists.

‘... and [ToC pharmacist]’s always there to back me up in any of the decisions that we make together. I’m always under her supervision. [CA_2]

Participants also observed that the project had been well received by the pharmacy departments they were working in, and support from pharmacy team leaders was noted. It was perceived that pharmacy colleagues were interested in the project and engaged with processes to identify suitable patients for the service.

‘I think that no one here dismissed the service at all. Like everyone just got around it straightaway and was initially making sure that they were flagging patients with [ToC pharmacist].’ [ward_pharm_1]

Conversely, one ToC pharmacist indicated that there was occasionally tension with other hospital pharmacists during staff shortages. It was considered that other pharmacy staff did not understand the position was externally funded and expected the ToC pharmacist to cover staff absences.

‘... people don’t understand why I can’t be reabsorbed into day-to-day work. Everyone else is drowning, but I’m still chugging along doing the usual work. So, there’s been a bit of animosity about that from other ward staff, other pharmacists.’ [ToC_pharm_2]

Participants also perceived there was good support from medical colleagues and highlighted the involvement of medical officers in identifying patients. Support from the consultants within the clinical areas was recognised as being important to service implementation.

‘Even the doctors have been in good support of it as well, flagging patients to us who they think would be of benefit as well.’ [ward_pharm_4]

‘... [Consultant name] spent a lot of time introducing me to everyone on the ward within the doctors. Yeah, and to this day she has been very supportive and friendly and approachable for any questions.’ [ToC_pharm_3]

Resources

The external funding of the project and the additional positions was considered facilitatory to service implementation and delivery.

‘Definitely an allocated FTE to it seems to have helped, I think, having what we just talked about. If I just put that workload on my normal work – ward pharmacists and said you need to do that in addition to your normal work, they’d probably tell me to get stuffed.’ [ward_pharm_2]

It was noted that, despite being externally funded, ToC pharmacists and CAs were pulled from the ToCPP service to provide cover to other areas.

‘... when I first started obviously, I was getting pulled a fair bit from the transition of care role. I feel like that may have been a barrier because it meant that I wasn’t able necessarily to send off stuff for GPs and community pharmacies straight away.’ [CA_3]

There was no consensus regarding whether the service could be provided without CA support. CAs themselves considered they were busy, and ToC pharmacists described their positive impact on workload.

‘... also [CA] being able to prepare the eLMS. I’d say that’s a huge impact on our workload.’ [ToC_pharm_2]

However, one ToC pharmacist considered that once the activities directly related to the project such as data entry were removed, there may not be sufficient work for a CA.

'It's definitely useful having a CA, but at what FTE – is it more of a luxury I suppose than an essential? I mean, another way to look at it is that there are 50 million other outpatient pharmacists working at [site] in different areas, and none of them have a CA. They get an AO to do all of their scheduling and the rest is done themselves.' [ToC_pharm_3]

The personal attributes of the individual ToC pharmacists and CAs providing the service was seen as another facilitator to service provision.

'... the person that's recruited into the position as well. Just making sure that they've got the right skillset and personality and things to be able to integrate with co-workers and doctor teams et cetera to promote the project.' [ward_pharm_2]

ToC pharmacists also discussed physical resources, highlighting the importance of having an appropriate workspace to undertake patient consultations and generate MMPs.

'It would be nice to have a more dedicated space to work in, that's not so frequently interrupted and burdened by robot noise.' [ToC_pharm_1]

The ToC pharmacist and CA at one site were located some distance from the ward and considered this not only inconvenient but a barrier to service provision.

Health performance

Several of the codes identified during analysis were closely related to the health system dimensions within the Australian Health Performance Framework.⁵ The Framework has, therefore, been used to categorise the findings.

Continuity of care

Not surprisingly, there was considerable commentary relating to the impact of the service on continuity of care. Discussions primarily focused on the benefits of the post-discharge review and the additional handover information supplied to primary healthcare providers.

Post-discharge review

Participants perceived that patients were often bombarded with information at the time of discharge. It was considered that the post-discharge review provided the opportunity for patients to ask questions, confirm their understanding of medication, discuss medication concerns, and resolve supply issues.

'I guess it's probably just a little bit more reassurance once they leave the hospital setting that there is someone who will touch base - in regard to the medicines that might be able to help out any problems that they encounter after they've just left the hospital.' [ward_pharm_2]

ToC pharmacists felt the post-discharge review enabled them to check the patient's progress, confirm medication comprehension, and identify emergent issues.

'I feel like getting that space away from the hospital to talk to them in their own environment actually gives you a lot more information about what they're doing, and how much information they actually retain from their admission. It gives them time to have a think about things and if anything is going to happen like adverse effects wise, and it's probably happened in that week. So, you can chase that sort of stuff up.' [ToC_pharm_4]

The review was also considered to be an opportunity for pharmacists to follow up on issues that were not resolved at the time of discharge.

'Things that are enacted in hospital you don't necessarily have the time to see the follow-up and the outcome of it, whereas you've got that additional review happening to improve that.' [ToC_pharm_3]

Information provision

It was perceived that the service improved access to discharge information that may not otherwise have been available to primary healthcare providers.

'... discharge summaries, which potentially don't get done in a timely manner. So, this at least gives the GP, the patient, the pharmacy some more information, to go forward with the patient's care. Patients often do go into the GP within a week of being discharged, which is surprising. Yeah, it's just good to give them the heads up.' [ToC_pharm_4]

Participants felt that communication with community pharmacists was traditionally reserved for patients using dose administration aids (DAAs), and the ToCPP service improved the transfer of information for patients who did not.

'I think where the difference is has been for community patients without dose administration aids of some form. So, having that communication about Mrs so-and-so is going home, her carer is coming to pick up this extra medication. So, the people who are benefiting in the community from the community side of it, is the patients who don't have Webster-pak.' [ToC_pharm_2]

Some ToC pharmacists believed that the additional information they provided regarding the rationale for medication change facilitated ongoing care and continuity of medication. ToC pharmacists also used the MMP to highlight patients whom they believed to require a more thorough medication review on discharge.

'... from a GP perspective I think that they're getting a much deeper understanding of medication changes and the rationale for them that have happened in hospital, and a more detailed medication summary than what would be put on the discharge summary.' [ToC_pharm_3]

The ToCPP service was also considered to facilitate communication back into the hospital. Participants described patients contacting the ToC pharmacist if they were unclear about an aspect of their medication. Ward pharmacists also believed that having a known point of contact was helpful for community pharmacists. However, ToC pharmacists noted that they received little feedback from primary healthcare providers, and it was perceived that the early intention to build a two-way communication process had not come to fruition.

'... I think a big goal of the project was to close that loop. They go back and see their GP, or they do go back and see their pharmacist and then they report back with what the outcome was for the patient. It's kind of not like that. So, you're almost just sending something into the abyss and hoping that it reaches the intended party with a good, intended meaning but you don't really know for certain.' [ToC_pharm_3]

The benefits of the RACF model of care in relation to information provision were also described. At one site, it was not standard practice to send a copy of the DMR to the RACF upon patient transfer, and it was considered that the requirement to send a DMR as a component of the ToCPP service improved communication.

'... we don't do discharge lists for nursing home patients as a standard, so the discharge summaries are unfortunately lacking sometimes. So, I do find that [ToC pharmacist] picking up those patients has definitely improved, just communication to the GP at the nursing home.' [ward_pharm_3]

Additionally, the improved clinical handover and follow-up associated with the RACF model of care was considered to improve the management of complex patients who were readmitted frequently.

'... we have quite a few nursing home patients who do flick in and out of hospital a lot... we see it all the time that things get missed in the handover between all those bits and pieces, so if it's someone like that then we would be picking up the phone and asking for help from [ToC pharmacist]' [ward_pharm_2]

Effectiveness

There were discussions relating to the effectiveness of the service and the impact of the model of care on patient outcomes. Participants felt that the post-discharge follow-up improved patients' engagement in their healthcare, provided additional opportunities for patient education, and facilitated medication understanding and adherence. It was considered that patients were more open to receiving medication education at home rather than on the day of discharge.

'When people discharge from hospital, they've got a lot on their minds. Most people just want to get home and have a cup of tea. There's a lot going on, so having that refresher of what the plan was after discharge in their own home environment, I think there's a great benefit to that.' [ToC_pharm_2]

Engaging with the patient and providing education both at discharge and during the post-discharge review was considered to optimise information exchange and retention. There was evidence that the service improved medication management by facilitating DAAs and enabling a post-discharge assessment of medication management in the patient's home environment.

'It's also an opportunity for the clinician who is making the call to – even if it's over the phone, make an assessment about their medication management now that they're at home, which sometimes you can – things come to light that may not have been there in hospital.' [ToC_pharm_1]

It was felt that the service also facilitated medication optimisation. ToC pharmacists perceived that there were identified medication recommendations that could not be implemented during admission because they were either not a clinical priority or required a

longer time frame for de-prescribing or modification. It was considered that the service facilitated engagement with primary health providers to achieve these outcomes.

'... it's very messy to change these things in hospital when you've only just met the patient, and it's probably not fair to the patient or the GP to start messing around with those things, especially, inappropriate – or potentially inappropriate benzodiazepines, or anti-psychotics, those things can be fraught with danger changing them too rapidly. So, I think those ones have been good for me to say, oh, these are things I can raise with the GP.' [ToC_pharm_1]

However, ToC pharmacists noted that they usually didn't know if primary healthcare providers acted on their recommendations and whether the desired outcomes were achieved.

'... you would hope that they take into consideration that improves patient's medication management and optimises their outcomes from a patient safety perspective. We don't know that for sure.' [ToC_pharm_5]

There was also evidence that the ToCPP service resulted in practice changes for both ward and ToC pharmacists. One ward pharmacist considered that her involvement in referring patients to the ToCPP service had improved her awareness of patients at risk of medication misadventure. Another described how she had started to add additional information to the DMR to prompt the ToC pharmacist at post-discharge review.

'I found that I was maybe tailoring the green cards or the DMRs for them to be reviewed again. To be seen, you put notes on there to be reviewed in clinics, things like that that maybe perhaps I wouldn't normally write on there just because I knew that [ToC pharmacist] would spend – it would prompt her to follow those things up.' [ward_pharm_1]

One ToC pharmacist considered that she would not previously have contacted GPs, whereas now she was happy to phone them. She explained that some GPs even knew her name.

'... especially with really urgent issues, I have absolutely no problem whatsoever just calling up and speaking directly with the GP or having something organised. So, previously, I would've gone, oh, maybe that's the patient's or the family's thing to follow up, but now I'm doing the following up.' [ToC_pharm_2]

Another ToC pharmacist considered the role had made her think more holistically about the patient, their medication needs, and medication management.

'I think you also have a much more holistic approach to all medications and you're a lot more attuned to, I suppose, the patient's understanding over them and rationale and adherence cues and optimisation, than maybe what you are as a ward pharmacist where you're just admitting and discharging.' [ToC_pharm_3]

Some ToC pharmacists described changes in the way they educated patients. One considered she was having earlier discussions with the patient about their medication because she perceived patients wanted to be more informed. However, another felt that because they were providing a post-discharge follow-up, they could leave some of the medication education for later. It was perceived that this was especially useful when the ToC pharmacist was busy, but it also prevented the patient from being bombarded with too much information.

'I would admit that now that I have the transition of care, when we are stretched, I probably don't go through an exhaustive list for counselling points because I know that I can do some of that counselling in the follow-up with the transition of care. So, there is a little timesaving there, because you know you can – look you can flood them with so much information which is not great.' [ToC_pharm_5]

Safety

Participants believed that the ToCPP service improved patient safety. It was considered that the post-discharge review enabled ToC pharmacists to check on the patient's progress and identify medication-related problems.

'We are just able to catch things and not only catch things in the hospital, then say to the patient, oh, you need to fix this but then a week later, we can follow up with them and double check that everything is going okay. That things have changed for the better and make sure that everything is still running smoothly, I think. Yeah, that big safety element is, I think, one of the winning factors of this service.' [ward_pharm_1]

It was felt that the post-discharge review provided an opportunity for ToC pharmacists to check whether plans to cease or modify medication following discharge had been carried out and confirm that the patient was taking the correct medication. If the patient had not understood or followed advice, the pharmacist could intervene and, if necessary, contact the patient's primary healthcare providers.

'If the pharmacist calls and they haven't stopped something or they didn't start something or decrease something like they're supposed to, at least then the pharmacist can contact the doctor.' [CA_3]

Examples were provided where ToC pharmacists had identified and resolved medication-related problems at post-discharge review. This included a scenario where a patient discharged on dual antiplatelet therapy (DAPT) had misunderstood verbal and written instructions to stop one of the drugs after three weeks. Additionally, the patient's GP had not received the discharge summary and had prescribed ongoing DAPT, thus increasing the risk of bleeding.

'... for example, a patient who went back to their GP, they're on DAPT, but they're only meant to be on it for three weeks, the GP hadn't got a discharge summary. So had thought that they were on that ongoing. Even though we'd supplied the discharge medication list, the patient hadn't taken that in, and we counselled on the three-week aspect, but they obviously didn't understand that.' [ToC_pharm_4]

There was evidence that ToC pharmacists identified issues with medication management following discharge and facilitated the initiation of DAAs to improve patient safety.

'People who I have identified that they're really not managing their medicines well at home, and we've got packs set up for them, which I think decreases their risk of misadventure.' [ToC_pharm_1]

It was also considered that improved clinical handover assisted medication reconciliation by primary healthcare providers. The RACF model of care, involving post-discharge reconciliation of medication by the ToC pharmacist, was considered to facilitate the identification of discrepancies and effect change when issues were identified.

Pharmacists providing the fully integrated service at Site 1 described another potential impact on patient safety. They considered that due to the competing demands on their time and the need to be away from the ward to undertake post-discharge reviews, they were not reviewing inpatient medication charts as frequently as usual and were not always available to deal with enquiries from medical and nursing staff. Whilst there was no evidence to indicate this had impacted patient safety to date, they considered there was the potential that medication errors could get overlooked.

'I can't necessarily quantify what – if there have been any safety issues with us not reviewing patients as often on the ward or not being as present.' [ToC_pharm_5]

However, it was noted that the CA was able to review the medication charts of most patients on the ward every day, and this was an increase in chart review above baseline. Whilst it was acknowledged that the CA was unable to undertake a full clinical review, several examples of medication problems identified by the CA were provided.

'... a lot of patients are on prednisolone, high dose prednisolone for long periods of time, or insulin and antiepileptics, and [CA] will pick up that, hey look, there's either going to be a dose missed or there has been a dose miss because these haven't been recharted.' [ToC_pharm_4]

Accessibility

There was some evidence that the ToC pharmacists assisted patients with access to medicines. The relationship between the ToC pharmacist and community pharmacies was considered to facilitate timely access to medication packing services, which may not otherwise have been possible.

'I think [ToC pharmacist]'s made some good connections with a couple of community pharmacies to get Webster-paks at a quick turnaround. So, there's patients that we would normally say no, we can't organise a Webster-pak with two hours' notice. [ToC pharmacist] takes them on, and she's got those relationships. So, I think she's helping in that way.' [ward_pharm_3]

There was also evidence that ToC pharmacists assisted patients who were unsure how to get further medication supplies.

'... if the patient has any questions or concerns in that meantime, they need additional prescriptions or something, they know that there's someone who can take on that responsibility and assist them with it.' [ToC_pharm_3]

One participant noted that many patients were experiencing difficulties in accessing their primary healthcare providers. It was considered beneficial that the ToC pharmacist could provide support in the interim.

'I think the other thing that's been really prominent this year is how difficult it is to get in to see a GP and to spend quality time with your local pharmacist given all the COVID and everything that's been going on. So, in the absence of having that opportunity within seven days after discharge they've got another face that I suppose invested into their care in the meantime' [ToC_pharm_3]

Efficiency and sustainability

Efficiency

There was discussion regarding the efficiency of using the CA in an expanded scope capacity. It was perceived that the CA reduced the workload of the ward pharmacist by assisting with the preparation of DMRs.

'Our pharmacy assistant has been doing some data entry into eLMS, and prepping discharge eLMS, and med lists, and things like that – like as a pharmacist on the wards, that's awesome.' [ward_pharm_2]

It was also considered that both the CA and the ToC pharmacist roles facilitated quicker patient discharge; however, this appears to be due to the CAs and ToC pharmacists assisting with usual care discharge activities rather than providing those related directly to the ToCPP model of care.

'It's always about bed pressure here. So, if it's like I've got two discharges and [ToC pharmacist] – and one of them is a ToC patient, [ToC pharmacist] can come down and do it and then we get the patients out at the same time instead of one after the other.' [ward_pharm_3]

'When you've got a dedicated technician to help them prepare the discharge and someone to assist with handing it out, they might be leaving the hospital sooner.' [ToC_pharm_3]

The ward-based CA expanded scope role at Site 1 provided efficiencies outside of the ToCPP model of care, particularly in relation to the timeliness of medication supply. The CA's presence was considered to reduce the time spent by nursing staff ordering and chasing medication supplies. The CA also assisted with the prioritisation of patients for pharmacist review.

'... I think that will lead to an increase in timely supply of medications, and a reduction in nursing staff having to follow stuff up like that.' [ToC_pharm_4]

Although they considered the support provided by the ward-based CA invaluable, pharmacists working within the fully integrated model of care felt that it did not fully offset the time it took them to undertake ToC activities. The pharmacists considered there were inefficiencies with them having to check activities performed by the CA.

'... it's not definitely a one-to-one time saving. So, one hour of [CA]'s time doesn't necessarily save one hour of my time.' [ToC_pharm_4]

It was also considered that there were inefficiencies associated with the model of care, particularly relating to the generation of the MMP, communication of patient information, scheduling appointments, and collection of evaluation data.

'So currently, we have to fill out that referral form, put a sticker in the chart, we have to give the patients a brochure, we have to book patients into ESM, then tick them on and off when we see them, and then put the data into REDCap, and that's just on top of already doing the discharge medication list...' [ToC_pharm_4]

Sustainability.

Most participants considered there was good support for the service to continue. They felt there was good patient engagement and the service was beneficial. Resourcing was perceived to be the main barrier to ongoing service provision.

'... it all comes down to resources and funding, doesn't it, at the end of the day? With an additional service like this, so long as there's funding, I think that would be the main barrier to the service being provided.' [ward_pharm_1]

It was considered that the activity-based funding generated through post-discharge patient review would offset staff costs to an extent. It was noted that, if funding was identified, it would be important to protect the ToC service and ensure pharmacists did not get diverted to cover usual care activities.

'... the danger is that it gets funded and then gets absorbed into that ever-growing pit of, we need more help.' [ToC_pharm_2]

The pharmacists working in the fully integrated service delivery model felt that because the ToC pharmacist position was externally funded, their time was somewhat protected, and they were not asked to take on mentoring roles or provide cover for staff absences. They highlighted that the situation would change if the service transferred to a business-as-usual model, and this would potentially be a barrier to sustainability.

'... often, you'll see the other pharmacists have to pick up extra workload because someone's sick. But I think we are being protected because of the transition of care aspect. To be honest, I don't think I could fit anything more in. So that's a barrier for sustainability if you're then asked to cover more.' [ToC_pharm_4]

ToC pharmacists considered that with the recent funding to embed primary care pharmacists into RACFS, there may not be an ongoing need to provide the RACF model of care. It was felt that a clinical handover should be provided to such pharmacists, and they would be responsible for performing medication reconciliation and identifying and resolving problems.

'From a future sustainability point of view, it's almost like we need to look at this is going to change when you get pharmacists coming in, the aged care pharmacists coming into the nursing home. I don't know what capacity they will have within the nursing home and how often they'll be there, but I guess it's more around looking towards enhancing communication with them, rather than actually doing that whole reconciliation thing, making sure they're informed of any decisions around discharge planning and onward medicine problems.' [ToC_pharm_2]

Another barrier to sustainability was the previously described ICT limitations. It was considered identification of an appropriate ICT system to facilitate efficient, consistent, and user-friendly patient information transfer would greatly facilitate ongoing service provision.

'I think the biggest thing is around communication like the ICT, because – for no other reason but just that email and faxing and everything is so cumbersome and a waste of time, that if this was to be implemented more widely it would definitely smooth the transition of it.' [ToC_pharm_3]

Stakeholder perceptions

Patients

Participants felt that patients were receptive to and appreciative of the ToCPP service. Pharmacists considered most patients were happy to engage with the service and rarely declined the offer of post-discharge follow-up.

'Lots of appreciation for the calls, and lots of appreciation for also communicating the medication list and the information and the recommendations to their GP and pharmacy, particularly to their GP, because I think it's a lot for patients to, I guess carry themselves.' [ToC_pharm_3]

Participants perceived that patients were reassured by the knowledge that they would be followed up and would have the opportunity to ask questions after leaving hospital. Some participants received direct feedback from patients who were happy with the service provided.

'I think the intervention is easy for patients to understand, and I have had some patients that have provided verbal feedback about their positive experience with the service, with a few patients continuing to make contact with the service, calling back a few times over the course of a few months.' [ToC_pharm_1]

Some participants considered that the patient's perception of their hospital experience and the hospital pharmacist's role was strengthened by the ToC follow-up.

'I think, by having it, it improves the pharmacists' standing with patients as well... As in what the patient's perception is of a pharmacist and what we can do and offer to them.' [ToC_pharm_5]

Primary Healthcare providers

ToC pharmacists stated that they had received little direct feedback from primary healthcare providers, and it was difficult to gauge their perceptions of the service. They did, however, acknowledge that GPs and community pharmacists were happy to take their calls when contacted about a patient.

Participants felt that the community pharmacists' perceptions and engagement with the service varied.

'Community pharmacies, some have been really good and appreciative of the inclusion into it. Some of them don't get it, as in don't understand why they're receiving it, I suppose. Some of them are quick to dismiss it.' [ToC_pharm_3]

There was concern that some community pharmacists were unsure what to do with the additional clinical handover information. This was more evident when community pharmacists received information for patients whom they were not packing for.

'Sometimes, there is a bit of a sense of, I maybe perceive that they're not 100 per cent sure what they're supposed to do with the information if the patient is not on a Webster-pak. Like, why am I sending through this history?' [ToC_pharm_1]

ToC pharmacists providing the RACF model of care felt that most community pharmacists were responsive to their requests for the medication information required to facilitate reconciliation.

‘... they are more accepting of me contacting them and saying, we need this information please, can you send it through?’ [ToC_pharm_2]

There was evidence that one of the ToC pharmacists was able to generate some ongoing links with community pharmacists in their area. However, ToC pharmacists working in metropolitan areas with numerous primary healthcare services felt that the GPs and community pharmacists may have only experienced one patient transiting through the service and may not have a good understanding of the project aims.

Hospital Medical Officers

Participants considered that hospital medical officers had engaged with the ToCPP service and were actively involved in identifying and referring patients.

‘The consultants did actually start taking an active interest in the pharmacy service. When I was in the role, they would be actively looking at patients and seeing, oh, could this person be referred on to the transition of care program.’ [ward_pharm_1]

It was perceived that the ToCPP service had improved medical officer awareness regarding the pharmacist's role within the hospital team

‘There’s just more awareness of what Pharmacy actually do for patients.’ [ward_pharm_4]

One participant expressed concern that when the ToC pharmacist was present on the ward in addition to the usual pharmacist, this may cause confusion for medical officers with respect to whom they should liaise with.

‘I think there is an element of confusion as to who’s what, who does what, just that there are two pharmacists.’ [ToC_pharm_3]

At one site, the ToC pharmacist perceived that although the hospital medical officers valued the service, they were unwilling to engage in any issues identified at the post-discharge review. Instead, they perceived that the patient's GP should resolve these medication-related problems.

‘... when you say, “oh look, I’m going to follow-up with this patient”, they’re “great”. But they don’t actually want to hear back from the patients if they are having issues. They are very much like, “we were taking care of them and now that’s for their GP to follow-up those issues”’. [ToC_pharm_5]

Summary

Service delivery

Participants generally considered that most aspects of the model of care worked well, although there were suggestions to optimise and streamline service delivery. Pharmacists increasingly relied on their clinical judgement to identify suitable patients, and calculation of the LACE Index became superfluous to service needs.

A component of the endorsed ToCPP model of care was to provide a copy of the DMR to patients, and implementation of the service appears to have increased the number of patients receiving a DMR, especially in areas of limited pharmacist resourcing. However, the value of sending the DMR directly to the GP upon discharge was unclear and appeared to depend on the likelihood of medical officers producing a timely discharge summary containing a pharmacist-generated medication list.

The requirement to generate an MMP was considered time-consuming and potentially unnecessary for all patients. There were concerns regarding the capacity of primary healthcare providers to review and action the recommendations made in the MMP. It was suggested that many medication recommendations could be identified at discharge and communicated to GPs via the discharge summary. The MMP would then be reserved for complex patients where ToC pharmacists needed to provide additional detail or notify issues identified at follow-up. It should be noted that the evaluations of primary healthcare providers' perceptions contribute added insight into the value of the ToCPP communications and are discussed in subsequent sections.

The option to complete a subsequent review was a component of the local model of care at Site 3, although service activity data indicates that ToC pharmacists at Site 1 and Site 2 also completed a small number of additional reviews. There appears to be good support for this option, with ToC pharmacists typically reserving subsequent reviews for complex patients, those with unresolved medication issues, and situations where post-discharge medication changes were pending.

As identified in the service activity data, most reviews took place by phone, and ToC pharmacists perceived this was due to patient preference. From an income generation perspective, it is worth noting that the Queensland ABF price is considerably higher for in-person and telehealth clinical pharmacy reviews compared to phone reviews.

The service delivery model varied across the three pilot sites. At Site 3, the ToC pharmacist focused on discharge education and post-discharge review, and it is clear from the service activity data that this enabled more patients to receive the ToCPP service. The fully integrated service model at Site 1 appeared to have the most barriers to delivery. It was perceived that whilst the integrated model provided patient continuity benefits, it would be difficult to expand to more areas and may lead to pharmacist burnout. Most ToC pharmacists supported a discharge-focused model moving forward, especially if there was pressure to offset service resourcing through ABF income generation. It was considered that the service could operate as an outpatient referral model, with patients referred to the ToC pharmacist for post-discharge review. There was, however, a preference to initiate patient contact prior to discharge and consent the patient for post-discharge follow-up.

Provision of the model of care was supported at all sites by a pharmacy CA. At two of the sites, the CA predominantly undertook administrative tasks associated with the model of care, although they were involved in the preparation of medication lists in eLMS. At Site 1, the CA worked successfully in an expanded scope capacity to support the pharmacist in providing the ToCPP service in addition to usual care. In this service delivery model, benefits of the CA role outside of the model of care were identified, especially in relation to timely medication supply.

The main barrier to service delivery was the method for communicating patient information to GPs and community pharmacists. None of the Queensland Health-approved information

transfer methods were fully functional for project needs. Secure web transfer (SWT), which enables the electronic transfer of information directly to an individual practitioner, was only implemented at one site and could not be used for transferring patient information to community pharmacists. Additionally, there were concerns regarding the readability of information sent by this method.

Sending information by fax was considered time-consuming and unreliable, and email encryption was considered inappropriate due to the difficulties in forwarding encrypted messages to other staff within medical practices or community pharmacies. Such problems were considered a barrier to two-way communication, and sites started to send information by unencrypted email.

Training, including peer review and input to MMP writing, was considered facilitatory to service delivery. Support for the project was also considered an enabler of service implementation. The value of the project officer in service development, implementation, and maintenance was noted, and participants also described the support from the Directors of Pharmacy, pharmacy colleagues, consultant leads, and other medical staff.

The project resourcing for the project officer, ToC pharmacist, and clinical assistant positions was also highlighted as a service enabler. However, the absolute necessity of the CA position for ongoing service provision was unclear, particularly within an outpatient referral model. Having an appropriate physical space to conduct patient consultation was also seen as essential to service provision.

Health performance

Enhanced continuity of care was perceived the main advantage of the ToCPP service. Additionally, the service was considered to improve patient outcomes through medication optimisation and increased patient medication understanding and adherence. Post-discharge review was thought to assist with medicine supply problems and bridge a gap when patients could not readily access their primary healthcare providers.

Participants described patient safety benefits arising through increased medication reconciliation and identification of medication-related problems. However, ToC pharmacists noted the lack of feedback from primary healthcare providers in relation to the recommendations provided and the issues identified. ToC pharmacists considered that they had not successfully created a two-way communication process regarding patient care. This may be because primary healthcare providers are too time-poor or felt it unnecessary to communicate their responses to recommendations and identified issues. Whilst the lack of feedback to ToC pharmacists may not impact ongoing patient management in the community, it could interrupt continuity of care should the patient later re-present to hospital. Additionally, the lack of feedback makes it difficult to gauge whether the service is meeting stakeholder needs and prevents the ToC pharmacists from adapting their practice to optimise patient care.

There was limited commentary relating to the efficiency of the service. Whilst efficiencies associated with the expanded scope CA role were described, they were not considered to offset time spent by ToC pharmacists on ToCPP activities. However, what is potentially of interest for future CA expanded scope roles is the perception that the ward-based CA reduced the time spent by nursing staff in relation to medication ordering and supply.

Participants agreed that the ToCPP service should continue, although resourcing and ICT were identified as barriers to ongoing service provision.

Whilst the RACF model of care was perceived to provide continuity of care and patient safety benefits, some respondents considered there was no ongoing need to provide a medication reconciliation service. It was suggested that reconciliation activities should be undertaken by aged care pharmacists embedded in RACF services in the future. There is, however, an ongoing requirement to supply appropriate clinical handover to RACFs, and ToC pharmacists are well placed to provide targeted medication information, including rationale for changes and recommendations for medication optimisation and ongoing monitoring.

Stakeholder perceptions

Participants perceived there was good patient engagement with ToCPP services. This is also evidenced in the activity data by the low service refusal and high completion rates. ToC pharmacists felt that although GPs and community pharmacists were happy to respond to phone calls, they had a limited understanding of the project and their role within it.

There was evidence that hospital medical staff supported the ToCPP service and were willing to engage in patient referral processes. It was also felt that the project raised medical staff awareness of the hospital pharmacist's role.

Patient Survey

The evaluation of patients' experiences and views of the ToCPP service was conducted in two stages. An initial survey enabled the sampling of a larger population to gain an overview, whilst subsequent semi-structured interviews facilitated a more in-depth exploration of patient perceptions.

Method

An online survey to evaluate the experiences and perceptions of patients who had received the transition of care service on discharge from hospital was developed and tested in Microsoft Forms®. The survey consisted of several questions regarding healthcare arrangements and interaction with the ToCPP service. It also included 15 statements to which participants were asked to indicate their level of agreement using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

Study participants were identified from the service activity database. All patients who had received the full intervention, including a post-discharge review, were sent information about the project evaluation and a link to the survey. The information was sent two weeks following their post-discharge review via email or SMS, using the Telstra Instant Messaging Service, depending on patient preference. A reminder email/SMS was sent to all participants 14 days after the initial message. Completion of the survey was taken as implied consent.

Data analysis

Survey responses were downloaded from Microsoft Forms® to a Microsoft Excel® spreadsheet. The spreadsheet was then uploaded into IBM® SPSS® software version 28.01.0. The survey submission data, patient contact details, and all free text responses were removed. A frequency analysis was performed on the remaining variables, including the survey statements.

The free text responses were reviewed in the Microsoft Excel® spreadsheet to identify common concepts.

Results

Participant demographics

The survey was sent to a total of 281 patients across three sites. Responses were received from 98 patients, with a survey response rate of 35%. Respondent demographics are shown in Table 4.

Table 4: Patient survey respondent demographics

	Patient respondents per site (% per site)			Total (% of all respondents)
	Site 1	Site 2	Site 3	
Gender				
Male	16 (70)	11 (58)	33 (59)	60 (61)
Female	7 (30)	8 (42)	23 (41)	38 (39)
Age				
25-34	0	0	2 (4)	2 (2)
35-44	0	0	1 (2)	1 (1)
45-54	3 (13)	0	4 (7)	7 (7)
55-64	7 (30)	1 (5)	22 (39)	30 (31)
65-74	8 (35)	0	17 (30)	25 (26)
75 and over	5 (22)	18 (95)	10 (18)	33 (34)
Total (% of all respondents)	23 (24)	19 (19)	56 (57)	98 (100)

Quantitative responses

In response to questions regarding their usual primary healthcare providers, 95% had a regular GP, whilst only 49% of patients always used the same pharmacy. Thirty-six per cent of patients usually used the same pharmacy, and 16% used whichever pharmacy was convenient at the time.

Sixty-one per cent of patients had not previously been admitted to hospital for the same condition, whilst 17% had been admitted within the previous month. When asked whether they received a medicines list on discharge from hospital, 91% said yes, 6% said no, and 3% couldn't remember.

Post-discharge review was conducted by telephone with 90% of respondents and by telehealth with 10%. The majority of respondents (87%) had a post-discharge review appointment at a time that suited them, and 96% stated they experienced no problems with connection or technology. Of the four patients who did experience a problem, one stated they were not contacted, one stated the doctor couldn't connect with them, and one stated they couldn't use telehealth. The fourth patient did not provide additional details.

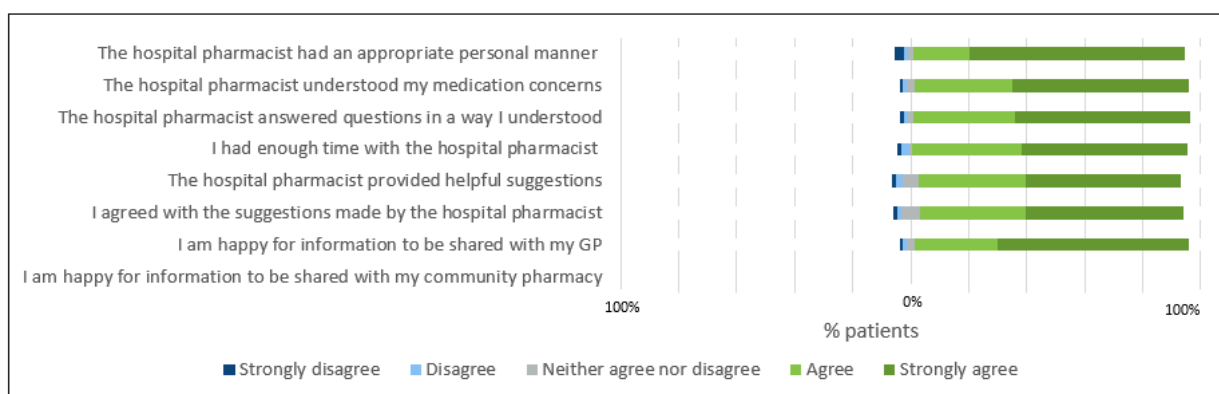
Table 5 shows the responses to the statements about the post-discharge review service. The results indicate that patients felt the interaction with the hospital pharmacist was appropriate. A large majority of respondents agreed or strongly agreed that the hospital pharmacist had an appropriate manner (94%), understood their medication concerns (95%), and answered their questions in a way they understood (96%). Additionally, most respondents (95%) agreed or strongly agreed that they had enough time to discuss medication issues.

Table 5: Patient agreement with responses to statements regarding the post-discharge review service

Statement	Agreement: number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
The hospital pharmacist had an appropriate personal manner (friendliness, respect, courtesy, sensitivity)	3 (3.2)	1 (1.1)	2 (2.2)	18 (19.4)	69 (74.2)	93
I felt the hospital pharmacist understood any concerns I had about medication	1 (1.3)	1 (1.3)	2 (2.6)	26 (33.8)	47 (61.0)	77
The hospital pharmacist answered my questions in a way I understood	1 (1.4)	1 (1.4)	1 (1.4)	26 (35.1)	45 (60.8)	74
I had enough time with the hospital pharmacist to discuss any medication issues	1 (1.3)	2 (2.6)	1 (1.3)	29 (37.7)	44 (57.1)	77
The hospital pharmacist gave me some helpful suggestions about medication	1 (1.3)	2 (2.6)	4 (5.3)	28 (36.8)	41 (53.9)	76
I agreed with the suggestions made by the hospital pharmacist	1 (1.3)	1 (1.3)	5 (6.5)	28 (36.4)	42 (54.5)	77
I am happy for the hospital pharmacist to share information from the follow-up with my GP	1 (1.3)	1 (1.3)	2 (2.6)	22 (28.6)	51 (66.2)	77
I am happy for the hospital pharmacist to share information from the follow-up with my community pharmacist	2 (3)	4 (5)	5 (6)	22 (28)	45 (58)	78

The data in Table 5 is shown in Figure 13 to facilitate a comparison of the responses. Note: some of the statements are abbreviated.

Figure 13: Patient agreement with statements regarding the post-discharge review service



When questioned about the ToC pharmacist's suggestions, 91% of respondents agreed or strongly agreed that the pharmacist provided helpful suggestions and that they agreed with the suggestions. With respect to information sharing, 95% of respondents agreed or strongly

agreed that the hospital pharmacist could share information from the review with their GP, whilst slightly less (86%) agreed that the information could be shared with their community pharmacist. It should be noted that patients who selected 'strongly disagree' for any of the statements provided no supporting comments to explain their selection.

Most respondents (91%) had been to a community pharmacy prior to their discharge review. The patient-reported services provided by the community pharmacy are shown in Figure 14, with the most frequently reported service being dispensing.

Figure 14: Patient-reported services provided by community pharmacy

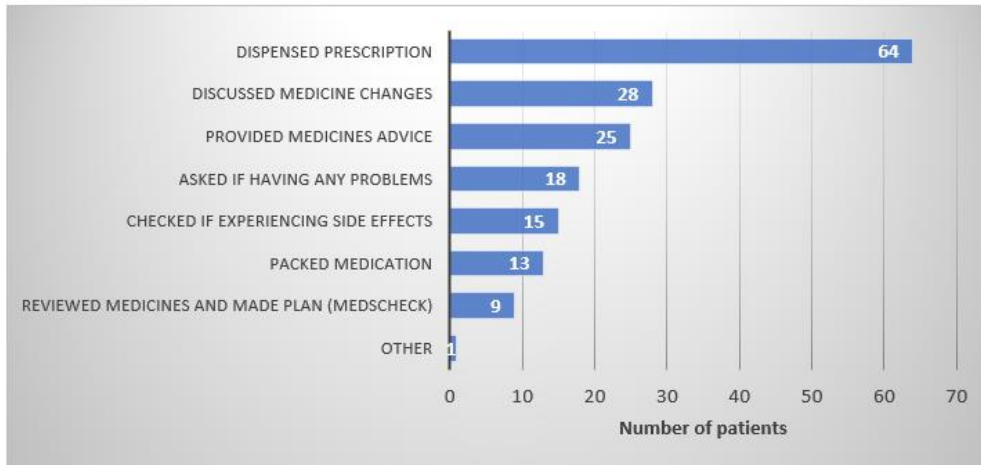


Table 6 shows the responses to questions relating to patient comprehension of their medication. The results indicate that patients had a good understanding of their medicines. The majority of patients agreed or strongly agreed that they knew how to take their medicines correctly (93%), knew what their medicines were used for (91%), knew where to get further supplies (94%) and knew who to ask if they had a problem (91%). Slightly less (88%) agreed or strongly agreed that they understood the changes to their medicines. Most respondents agreed or strongly agreed that the service was useful (90%) and helped them to understand their medicines (83%).

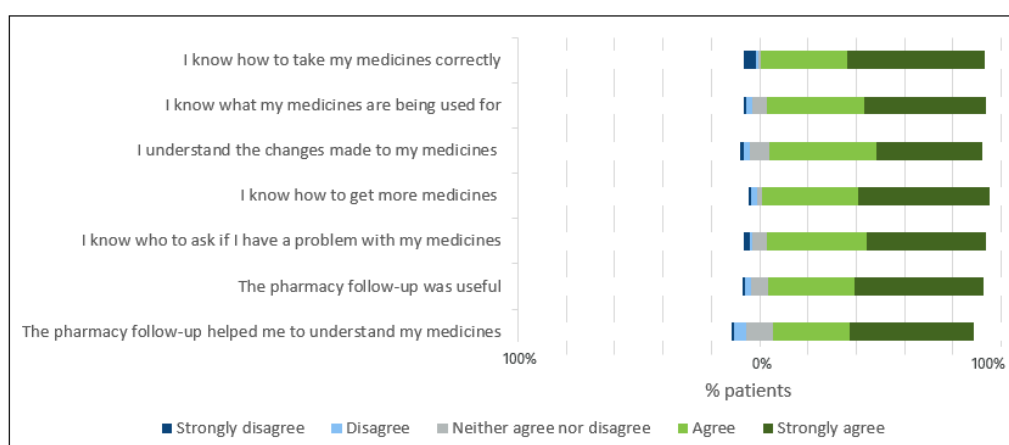
Table 6: Patient agreement with response to statements regarding patient medication understanding and service utility

Statement	Agreement: number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I know how to take my medicines correctly	5 (5.1)	1 (1.0)	1 (1.0)	35 (35.7)	56 (57.1)	98
I know what my medicines are being used for	1 (1.2)	2 (2.4)	5 (6.0)	34 (40.5)	42 (50.0)	84
I understand the changes made to my medicines in the hospital	1 (1.2)	2 (2.4)	7 (8.5)	36 (43.9)	36 (43.9)	82
I know how to get more medicines when my current supply runs low	1 (1.2)	2 (2.3)	2 (2.3)	34 (39.5)	47 (54.7)	86

Statement	Agreement: number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I know who to ask if I have a problem with my medicines	2 (2.4)	1 (1.2)	5 (5.9)	35 (41.1)	42 (49.4)	85
The pharmacy follow-up service was useful	1 (1.2)	2 (2.4)	6 (7.1)	30 (35.7)	45 (53.6)	84
The pharmacy follow-up service helped me to understand my medicines	1 (1.2)	4 (4.9)	9 (11.0)	26 (31.7)	42 (51.2)	82

The data in Table 6 is displayed in Figure 15 to facilitate a comparison of the responses.
Note: some of the statements are abbreviated.

Figure 15: Patient agreement with statements regarding patient medication understanding and service utility



Qualitative responses

Patients' comments regarding the service were generally positive. They described the service as useful, helpful, and informative.

When asked what they liked about the service, patients frequently described the personal attributes of the pharmacist, using such adjectives as friendly, helpful, kind, caring, understanding, and informative. Some patients commented on the time that the pharmacist had spent with them and said the pharmacist treated them holistically and made them feel valued. Several patients commented on the pharmacist's communication style, stating that the pharmacist was easy to understand, explained things simply and clearly, and was easy to talk to.

Patients provided examples of topics discussed during the consultation, including response to medication, side effects, clarification of medication changes, and medication management. Numerous patients described continuity of care advantages, for example, the pharmacist involving a carer or family member in the consultation, liaising with the patient's GP, making a medication plan, and ensuing ongoing supply of medicines. Patients felt the pharmacist helped them understand their medication and stated that they appreciated the opportunity to ask questions and receive advice following discharge.

Patients only provided a few specific comments when asked what they did not like or found the least useful about the service. One patient stated that they didn't like telehealth, and one noted that they would like to know more about the medicines they were put on. Another patient felt that he should have been given a prescription for pain relief upon discharge as his GP would not prescribe analgesics, and he was unable to sleep.

Similarly, few patients provided specific comments when asked what would improve the pharmacy follow-up service. One patient, who presumably had a telehealth consult and was unaware of the option for a phone review, proposed alternative communication options for patients who weren't tech-savvy. Another suggested that the pharmacist should see the patient before discharge. One patient suggested making it easier for patients to pay their medication invoices, whilst the patient who previously commented on his lack of analgesia felt that pain relief should be followed-up following discharge. Another patient stated that it would be good if the doctors could let the pharmacy know what was happening; however, it was unclear whether they were referring to the hospital or primary healthcare doctors and pharmacy. Finally, one patient believed there would be less confusion over medication changes if the service was provided for all patients discharged home.

Summary

The distribution of respondents across the pilot sites was generally reflective of the number of consultations undertaken at each site; however, there was a slightly higher proportion of Site 1 patients represented compared to Site 2.

Whilst most patients could identify a regular GP, less than half used the same pharmacy regularly. Most patients had received a DMR, which is reflective of service activity data and concordant with the ToCPP model of care.

Fewer patients were happy for their information to be shared with a community pharmacy compared to their GP, and it is likely this reflects the lower number consistently attending the same community pharmacy.

The findings indicate that patients had a positive attitude to both the ToC pharmacist and the ToCPP service. Patient-reported understanding of their medication was high, and patients described continuity of care benefits. There was evidence of appropriate, patient-centred service provision in quantitative and qualitative data.

Patient semi-structured interviews

Method

Patients who responded to the patient survey and indicated that they were happy to be contacted further regarding the service were sent an email inviting them to participate in a semi-structured interview. They were supplied with information regarding the evaluation and asked to reply to the email to indicate their consent to participate.

A convenience sample of patients who agreed to participate were subsequently interviewed. Interviews were conducted by telephone and audio recorded. Transcripts were prepared using the same method as the hospital pharmacy interviews.

Data analysis

The verified, anonymised transcripts were uploaded to NVivo Software (QSR International) version 14.23.2.

Manual inductive coding was undertaken with the first two transcripts to identify topics and concepts. Emergent codes, subcodes and descriptors were documented in a codebook to improve the reliability of the coding process. Where appropriate, the codes used in the hospital pharmacy staff interviews were used to facilitate comparison across the data sets. The remaining transcripts were coded against the codebook, and newly identified codes were added. All transcripts were checked against the final codebook to ensure consistency of coding.

The final codes were reviewed and organised into study themes.

Results

Interviews were conducted with five participants across the three study sites between November 2022 and April 2023. The mean interview duration was 16 minutes (range 12-23).

Demographic details of the participants are shown in Table X.

Table 7: Patient semi-structured interview participant demographics

Participant	Site code	Gender	Length of stay (days)	Previous admission to hospital
Patient_1	3	Female	6	Yes
Patient_2	3	Male	23	No
Patient_3	2	Female	5	Yes
Patient_4	3	Male	14	Yes
Patient_5	1	Male	3	Yes

Many of the identified codes regarding the ToCPP service were similar to those identified in the hospital pharmacy staff interviews. It was, therefore, decided to use health performance as a theme to enable a service comparison across different stakeholders.

The remaining topics centred around the patients' experiences in hospital and with the discharge process and were incorporated into a hospital experience theme.

Hospital Experience

When asked to describe their experiences in hospital and their involvement in medication decisions, many of the patients felt that they were not encouraged to participate in choices relating to their care. One participant described an adverse effect that occurred following the cessation of a medication without her knowledge.

'... they actually stopped one of my medications which I didn't realise and I ended up collapsing. Because it was prednisone and they stopped it for three days without my knowledge, I didn't know they'd done this.' [patient_1]

Another patient considered their concern regarding the adverse effect of their venous thromboembolism prophylaxis was ignored.

'I was getting these needles in the tummy twice a day which was stinging and there's a lot of bruising on my tummy. I think they were blood thinners or something like that, and I wanted to - because my stomach was so bruised after 14 days that you couldn't find anywhere else to put the next one in, so I asked the doctors if it was all right if I went off them and just went back to the medication that I'd be on when I came home. That never happened because the nurses just said, well, you're not having a stroke on my watch, whack, into the tummy it goes.' [patient_4]

When asked whether the doctors talked to them about their medication, one patient felt they were only given information when they specifically asked questions and were not involved in any decisions about their medicines. The lack of explanation regarding medication changes was also apparent with another patient who described a situation in which he was not allowed to use his own packed medication whilst in hospital. The patient perceived that the substitution of his usual medication led to a loss of blood glucose control.

'Well, I took my medicines with me, which was a Webster-pak, when I went into hospital and they wouldn't let me take them, any of them. I was quite happy, my blood sugars were happy, but when I got into hospital everything changed because they wanted to use their medicines and all of a sudden, my bloody blood sugars are very high again. I said why are you taking my medicines off me? They said because of the operation. Apparently, the medicines I was on weren't good enough for the operation.' [patient_2]

Whilst there was probably a clinical justification to withhold the patient's oral hypoglycaemics during the peri-operative period, it is clear the patient did not fully comprehend the changes and rationale. The patient described sustained hyperglycaemia that led to the need for temporary insulin. The patient noted that their blood glucose was well controlled, now that they were back at home taking their usual medication.

'... the whole time I was in there my blood sugars were extremely high, it even got up over the 20s.... and then next thing they started pumping bloody insulin into me. I've never had insulin in my life.' [patient_2]

When asked about the information they had received regarding their condition, patient responses were mixed. Some patients perceived they had received no information, and it was suggested that the shortage of staff resources in hospital may have contributed to the lack of engagement and information provision.

'... the operation went well, but as far as all the staff, and I understand they were very, very busy, but I was just left in the dark.' [patient_3]

However, other patients stated they were very satisfied with the information provided. One patient described how his doctors explained his imaging results and discussed the risks of the condition reoccurring.

'There were numerous doctors that came and saw me from the neurology department but he – apparently, he's pretty much well up there. He came and saw me with a team of doctors, and he showed me the scans, and explained to me things.' [patient_5]

When asked if they felt adequately prepared to go home, patients' perceptions were, again, mixed. One patient felt that the hospital should have provided physiotherapy as a component of their recovery and hadn't. Another patient thought they were ready for discharge, yet once home, they felt worse and could not cope with the level of pain they were experiencing.

'... when you're in hospital you've got access to pain killers, like the Endones. When I got home, I was just - Panadols didn't do what it had to do. I became distressed, my feet swelled up and there was a lot of leg pain. I was not prepared for that, because I thought that I'd feel like as good as what I felt when I was in hospital. In fact, I wasn't.' [patient_4]

When describing the information provided upon discharge, some patients considered they had received the most information from the hospital pharmacist. One patient stated that the only information they had received was provided by the pharmacist.

One patient stated they had not received any information regarding wound care or follow up and had organised this themselves. Another patient stated they had only been given a brochure.

'They just gave me a print-out brochure of what not to do.' [patient_3]

Other patients were satisfied with the amount of information provided upon discharge; however, there was some evidence that patients do not always read the written information supplied.

'... the stroke lady came just as I was about to leave, actually, and just gave me a folder – which, very remiss of me, I still haven't read the contents of.' [patient_5]

With respect to the discharge process itself, one patient, who lived in a regional area, considered that the discharge was quicker than in previous hospital admissions.

'They said we've got to get the pharmacist up and then within a couple of minutes the pharmacist was there and then whoever else you had to see, the discharge doctor and a few other things.' [patient_1]

Health performance

Continuity of care

As with the hospital pharmacy staff interviews, continuity of care was a major topic of discussion. Patients had mixed experiences regarding the transfer of information to their primary healthcare providers. There was some evidence of issues with patients' discharge summaries. One patient stated that their doctor did not receive a discharge summary. Another described how the discharge summary from the hospital contained insufficient information for his GP.

'Actually, he told me he didn't receive reports from any of the doctors. He said he got the list from the pharmacist on the medication. [patient_3]

'Yes, he did [receive a summary], but there wasn't much in it.' [patient_2]

Another patient stated their GP received all the information from the hospital; however, they were unclear whether the information came from the medical officers, ToC pharmacist, or both.

'My GP gets all the information that the hospital sent her because she mentioned that when I was in there, so that's good.' [patient_4]

There was also evidence that the medication information sent by the ToC pharmacist as a component of the model of care had reached the GP. There did, however, seem to be a lack of awareness that the ToC pharmacist was sending information to the patient's community pharmacist.

As identified by the hospital pharmacy staff, patients considered that they were given a lot of information upon discharge, and the post-discharge review provided the opportunity to confirm their understanding and ask questions about their medication.

'You know what it's like, you're in hospital and everything's going on around you and you don't always think about things you want to ask. Then you get home, and you go gee, I wish I'd asked that. So yeah, I think for that reason that's a very good thing to do, to call after you get home.' [patient_1]

Effectiveness

Whilst there was little direct evidence of improved patient outcomes, most patients perceived the service was beneficial.

Most of the patients stated that they received a DMR on discharge. One patient could not recall receiving the DMR but acknowledged they were given a lot of paperwork. Patients felt that the DMR was helpful, and one patient described how they updated any subsequent changes on the DMR and took it with them when they attended medical appointments.

'... the most current one, any changes that have happened since then we change it on that form. If I go anywhere, to visit the doctor or hospital, whatever, it comes with me anyway, so it's been good like that.' [patient_1]

Patients generally provided positive comments in relation to the post-discharge review with the ToC pharmacist.

'I thought it was absolutely fantastic. I mean, because I never go into hospital, I don't know whether it's been a service that you did all the time. But I just thought that's great. It cleared up some issues for me with my medication I've been taking.' [patient_3]

One patient considered that the post-discharge review provided reassurance that they were taking their medication correctly.

'... it's the confidence knowing that oh yeah, I'm supposed to take this at this time, or no, I'm not supposed to take that one anyone, that's right, they cut that one off. If you can check that when you get home with the phone call or whatever, I think it's a great idea.' [patient_1]

Another patient added that as well as confirming the patient's medication management, the post-discharge review provided the opportunity for the ToC pharmacist to ask about potential adverse effects.

'I think it's really important that there's a follow-up from pharmacy to see whether people are coping with it, are there any changes, do they feel – are they bleeding quickly, are they knocking themselves more.' [patient_5]

The same patient perceived that the follow-up may initiate conversations leading to the identification of medication-related problems that may not otherwise be detected.

'I would think 99 per cent is older people who tend have a mindset that, oh, she'll be right, mate, won't worry about it. But if you ring them, then it may just get them speaking about, well, this has been a little bit different, and that's been a little bit different, so – yeah, I think 100 per cent it's important.' [patient_5]

However, one patient stated that although they had enjoyed the service, they did not consider it impacted their care.

There was evidence that, despite the post-discharge review, some patients were still confused regarding aspects of their medication. One patient was unsure why he was prescribed specific medication and considered the indications provided on the DMR were not relevant to his medical condition.

'I looked on the form, a lot of them seem to do the - prevent blood clotting, prevent thrombose, prevent heart - like the statins prevent heart attacks, stroke and lower cholesterol. From my understanding, from blood tests, I haven't got any cholesterol and as I understand it, there's nothing wrong with my heart.' [patient_4]

Another patient explained she had previously taken aspirin, but this was ceased whilst she was treated with an anticoagulant. She was unsure whether to restart the aspirin following the cessation of the anticoagulant and had forgotten to ask the ToC pharmacist during the post-discharge review.

There was evidence that the communication style of health professionals may contribute to the lack of understanding across both the inpatient and transition of care contexts.

'I couldn't understand a word he was saying to me. He told me a few issues that I had, and I said can you explain it a bit better for me? Then he said you'll see a different doctor tomorrow, and you ask them to follow-up.' [patient_3]

Whilst some patients considered that the hospital pharmacist explained things simplistically, one patient felt that their GP had provided the best explanation regarding the DMR and their medication.

'I got more service from the hospital pharmacist than I get from my doctor, and they explain it to you in layman's terms.' [patient_3]

'Well, I gave it [the DMR] to my doctor, and he explained it a hell of a lot better than what anyone else did.' [patient_2]

Patients stated that they rely on the information supplied for their understanding and ongoing medication use, and explanations should be provided in a manner suitable for the recipient.

'I can only go by what I'm being told because I don't know what questions to ask or not to ask because I'm a boat builder, I'm not a physician.' [patient_4]

Appropriateness

None of the interview questions specifically focused on service appropriateness, such as the treatment of consumers and patient-centred care. There was, however, some indication that the service was acceptable to patients and that they were treated appropriately.

'She was lovely. As I said before, the aftercare has just been terrific – it's been five star all the way as far as I'm concerned.' [patient_5]

There was also evidence that the ToC pharmacist had provided a patient-centred approach.

'... we went through what I was taking and whether I was happy...' [patient_2]

Most participants elected to receive their follow-up by phone and experienced no issues with connection or getting an appointment at a time that suited them. Only one patient had a telehealth review. Her husband, who also looked after her medication, was a computer technician, and found it easy to navigate the technology. When asked whether she preferred a telehealth or phone appointment, the patient expressed no preference.

Efficiency and sustainability

Whilst there were no specific questions or directed discussions regarding the efficiency and sustainability of the service, some patients commented that they felt it should be continued in the future.

'I just wanted to say I'd like to see it go ahead, because I think it does give people that confidence when they get home to know that they're doing what they're supposed to, that they're doing what they're supposed to be doing with their medications. I think it would be a fabulous idea to go ahead with.' [patient_3]

Summary

Hospital experience

Patients' accounts of their hospital experience highlighted a lack of shared decision-making and information provision in relation to inpatient management. Whilst there may have been a clinical justification for decisions made by healthcare professionals, it was clear there had been a breakdown in the communication relating to these decisions.

Health performance

Findings in relation to the ToCPP service generally supported those from the patient survey and the hospital pharmacy staff interviews. Patients valued the medication information provided by ToC pharmacists upon discharge and the opportunity to connect with the pharmacist once at home. Patients confirmed hospital pharmacy staff perceptions that the post-discharge review enabled them to ask questions, confirm medication management, and discuss adverse effects. However, there was some evidence that patients were still confused about aspects of their medication and that communication style may contribute to the lack of understanding.

General Practitioner Survey

The evaluation of GPs' experiences and views of the ToCPP service was conducted in two stages. An initial GP survey enabled the sampling of a larger population to gain an overview, whilst subsequent semi-structured interviews with healthcare providers, including GPs, facilitated a more in-depth exploration of stakeholder perceptions.

Method

An online survey to evaluate the experiences and perceptions of GPs regarding the transition of care service was developed in Microsoft Forms®. The survey consisted of several questions regarding the discharge information received from the hospital. It also included 14 statements to which participants were asked to indicate their level of agreement using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

Study participants were GPs of patients managed under the ToCPP service and were identified from the service activity database. All GPs who had been sent a medication management plan were emailed information about the project evaluation, including a link to the survey, two weeks following the patient's post-discharge review. A reminder email was sent 7-14 days after the initial message. Completion of the survey was taken as implied consent.

Data analysis

Survey responses were downloaded from Microsoft Forms® to a Microsoft Excel® spreadsheet and analysed using the same method as for the patient survey.

Results

The survey was sent to 513 GPs across the three sites. Responses were received from 49 GPs (11 from Site 1, 16 from Site 2, and 22 from Site 3), with a survey response rate of 9.6%.

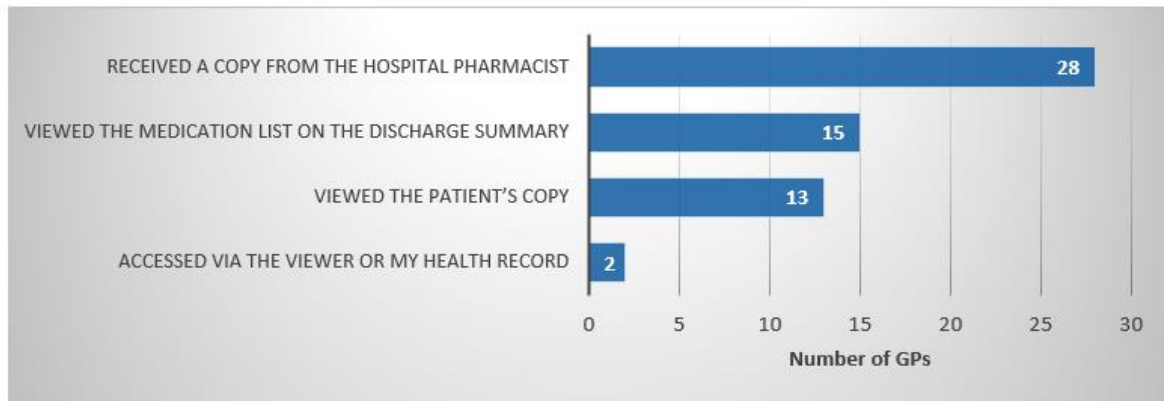
Quantitative responses

Most respondents (88%) were aware their patient had been in hospital recently. Thirty-nine respondents (80%) described themselves as the patient's regular GP, whilst the remainder provided care to the patient with other GPs within a medical practice.

Of those GPs who responded to the question, 39 (81%) had consulted with the patient since discharge, and most (88%) had received a discharge summary. All discharge summaries were received electronically, and 90% of respondents stated they had been received within an appropriate timeframe to facilitate ongoing care. When asked to rate the quality of the discharge summary, 79% rated it as good quality, containing all the information they needed, whilst the remainder rated it as average quality, containing most of the information they needed.

Ninety per cent of respondents had access to the patient's discharge medication record (DMR), whilst five respondents (10%) had not seen a copy of the DMR. Figure 16 shows how GPs accessed the DMR (more than one selection was allowed).

Figure 16: Method by which GPs accessed the patient's discharge medication record



Seventy-three per cent of respondents stated they had received a copy of the post-discharge medication management plan (MMP). Table 8 shows the responses to the statements regarding the medication management plan.

Most respondents agreed or strongly agreed that the MMP was received within an appropriate time frame (75%), was easy to understand (81%), was useful (75%), and provided a better understanding of medication changes (72%). Fewer respondents (56%) agreed or strongly agreed that the MMP provided a better understanding of the patient's ability to manage their medicines at home.

Regarding the recommendations in the MMP, most respondents agreed or strongly agreed with the recommendations (78%) and were likely to act on them (75%). However, 11% of the respondents considered they did not have time to act on the recommendations. A large majority of GPs (92%) strongly agreed or agreed that they would like to receive an MMP for more of their high-risk patients.

Table 8: GP agreement with statements regarding the medication management plan

Statement	Agreement: number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
The medication management plan was received within an appropriate timeframe to facilitate ongoing patient care?	0	3 (8.3)	6 (16.7)	17 (47.2)	10 (27.8)	36
The medication management plan was easy to understand	3 (8.3)	0	4 (11.1)	19 (52.8)	10 (27.8)	36
The medication management plan was useful	1 (2.8)	0	8 (22.2)	16 (44.4)	11 (30.6)	36
The medication management plan provided me with a better understanding of the medication changes made and the rationale for change	1 (2.8)	3 (8.3)	6 (16.7)	15 (41.7)	11 (30.6)	36
The medication management plan provided me with a better understanding of the ability of the patient to manage their medicines at home	1 (2.8)	5 (13.9)	10 (27.8)	12 (33.3)	8 (22.2)	36
I agree with the recommendations made to me in the medication management plan	0	2 (5.6)	6 (16.7)	22 (61.1)	6 (16.7)	36
I am likely to act on the recommendations within the medication management plan	0	1 (2.8)	8 (22.2)	19 (52.8)	8 (22.2)	36
I do not have time to act on the recommendations in the medication management plan	12 (33.3)	14 (38.9)	6 (16.7)	2 (5.6)	2 (5.6)	36
I would like to receive a medication management plan for more of my high-risk patients	0	0	3 (8.3)	15 (41.7)	18 (50.0)	36

The data in Table 8 is displayed in Figure 17 to facilitate a comparison of the responses. Note: some of the statements are abbreviated.

Figure 17: GP agreement with statements regarding the medication management plan

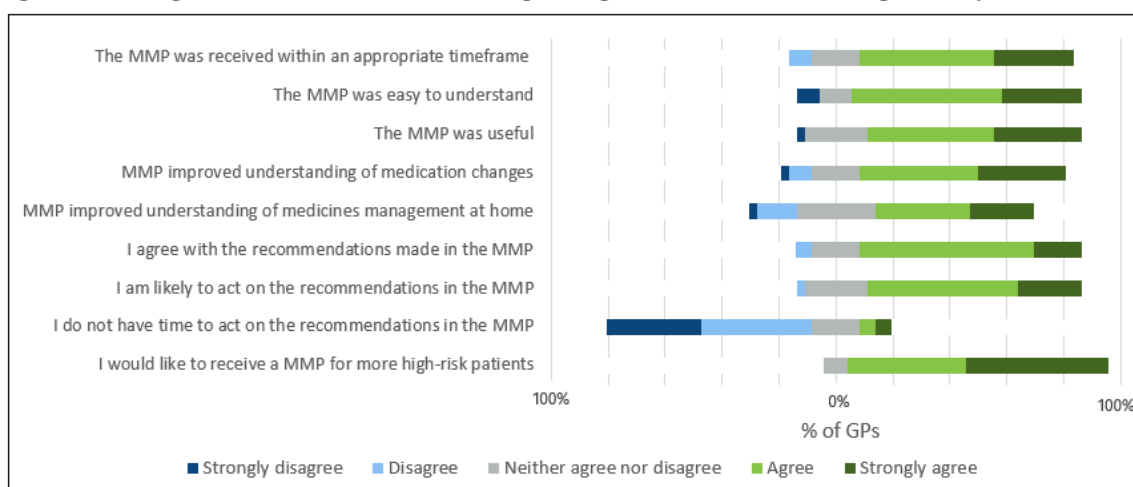


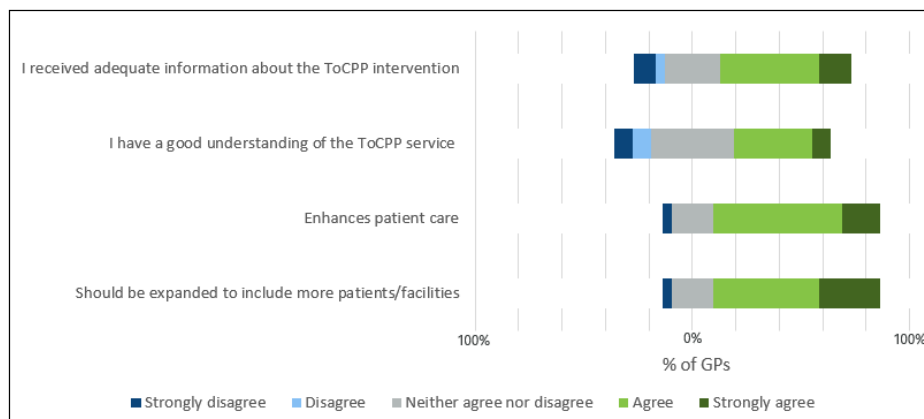
Table 9 shows the responses to the statements regarding the ToCPP service. Fewer GPs strongly agreed or agreed that they had received adequate information about the intervention (60%) and had a good understanding of the project (45%). However, most (77%) strongly agreed or agreed that it enhanced patient care and should be expanded to include more patients and facilities.

Table 9: GP agreement with statements regarding the transition of care pharmacy service

Statement	Agreement: number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I received adequate information regarding the Transition of Care Pharmacy Project intervention	5 (10.4)	2 (4.2)	12 (25.0)	22 (45.8)	7 (14.6)	48
I have a good understanding of the service provided to me as part of the Transition of Care Pharmacy Project	4 (8.5)	4 (8.5)	18 (38.3)	17 (36.2)	4 (8.5)	47
The Transition of Care Pharmacy Project intervention enhances patient care	2 (4.3)	0	9 (19.1)	28 (59.6)	8 (17.0)	47
The Transitions of Care Pharmacy Project intervention should be expanded to include more patients/facilities	2 (4.3)	0	9 (19.1)	23 (48.9)	13 (27.7)	47

The data in Table 9 is displayed in Figure 18 to facilitate a comparison of the responses. Note: some of the statements are abbreviated.

Figure 18: GP agreement with statements regarding the transition of care pharmacy service



Qualitative responses

Respondents were asked to provide additional comments relating to the discharge summary they had received from the hospital. Comments included that discharge summaries were not always received in time to provide patient care and sometimes contained insufficient information, particularly regarding follow-up. It was noted that the summaries were sometimes difficult to read and that the formatting of pathology results was problematic.

One respondent stated that the discharge summary did not contain any medication details; however, they had received this information separately from the ToC pharmacist as a component of the ToCPP model of care. Another respondent considered the summary to contain insufficient information regarding medication changes.

When asked to comment on the MMP, several GPs highlighted the formatting and the poor readability, especially regarding the discharge medicines list. It should be noted that all these comments were in relation to Site 2, where the MMP was sent electronically using secure web transfer.

Some GPs commented on the time taken to receive the MMP. Whilst some stated it was timely and facilitated patient review, a couple stated they had received the medication list after the discharge summary and, in one case, after the patient consult. One doctor noted it would be useful to receive the information before the patient came in for their consultation.

Several GPs commented that the information supplied was useful, especially information regarding medication changes. However, a couple of GPs felt the MMP provided no additional insight, although one did acknowledge that no major changes were made to the patient's medicines in the hospital. Another suggested that treatment recommendations may not be ideal given the hospital pharmacist's limited understanding of the patient and their previous medication experiences.

When providing comments regarding the ToCPP service, several respondents commented on their lack of awareness regarding the project. One suggested awareness could be improved through the GPLO newsletter or practice visits.

It was suggested the service was particularly useful for complex patients and would aid patient adherence and follow-up. One respondent felt there should be a verbal handover for important information relating to medication changes, for example, monitoring requirements; however, another questioned why they were receiving information from the hospital pharmacist and not their medical colleagues. A couple of respondents commented that they did not receive any information.

Summary

The survey response rate was low, and results may be susceptible to non-response bias. Of the GPs that did respond, over 10% had not received a discharge summary for the ToCPP patient and, when summaries were received, they did not always contain sufficient information. This is concerning, especially as ToCPP patients were specifically selected because they were at high risk of readmission or medication misadventure. Studies evaluating discharge communication have previously identified delayed transmission of discharge letters and found information was lacking, of low quality, and not patient-centred.⁶ Whilst the quality and transmission of discharge summaries is outside the scope of the ToCPP, it clearly impacts service provision and continuity of care.

Access to the patient's DMR was predominantly via the copy sent to GPs by the ToC pharmacist as a component of the model of care. Worryingly, a tenth of respondents had not seen a copy of the DMR from any source. In interviews, some ToC pharmacists questioned the value of sending the DMR upon discharge, given that GPs could access the medication list from other sources. However, survey findings clearly indicate that GPs routinely used the ToCPP-supplied list when available. Future service models must determine the appropriate

balance between ensuring GPs receive medication handover and avoiding information duplication.

The survey findings confirm the ToC pharmacists' perceptions that the MMP is not always reaching the intended recipient. For respondents who did receive an MMP, survey findings indicate that GPs predominantly held positive views towards the MMP and were likely to act on recommendations. There was less agreement that the MMP provided a better understanding of the patient's ability to manage their medicines at home, and ongoing training of ToC pharmacists regarding MMP preparation may help to improve this.

From a sustainability perspective, just over a tenth of respondents considered they would not have time to act on the recommendations provided; however, a large majority of GPs agreed they would like to receive an MMP for more of their high-risk patients. There was also support for expanding the service to additional patients and facilities.

Both quantitative and qualitative responses highlighted a lack of project awareness. Additionally, qualitative responses confirmed concerns raised by the ToC pharmacist that MMPs sent by SWT are difficult to interpret due to their appearance to the end user.

Whilst the low response rate may limit the significance and application of the findings, the survey, proved helpful in identifying service barriers, for example, project awareness and readability issues with MMPs sent via SWT.

Community Pharmacist Survey

The evaluation of community pharmacists' experiences and views of the ToCPP service was conducted in the same manner as GPs, with an initial survey followed by semi structured interviews.

Method

An online survey to evaluate the experiences and perceptions of community pharmacists regarding the transition of care service was developed in Microsoft Forms®. The survey consisted of several questions regarding the discharge information received from the hospital. It also included 14 statements to which participants were asked to indicate their level of agreement using a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.

Study participants were community pharmacists servicing patients managed under the ToCPP service and were identified from the service activity database. All community pharmacists who had been sent a medication management plan were emailed information about the project evaluation, including a link to the survey, two weeks following the patient's post-discharge review. A reminder email was sent 7-14 days after the initial message. Completion of the survey was taken as implied consent.

Data analysis

Survey responses were downloaded from Microsoft Forms® to a Microsoft Excel® spreadsheet and analysed using the same method as for the patient survey.

Results

The survey was sent to a total of 428 participants across the three sites. Responses were received from 57 community pharmacists (15 from Site 1, 14 from Site 2, and 28 from Site 3), with a survey response rate of 13%.

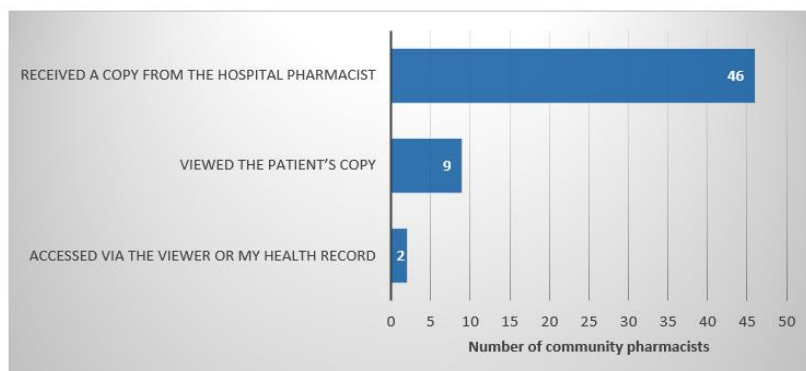
Quantitative responses

Most respondents (75%) were aware that their patient had been in hospital recently.

When asked whether they'd had contact with the patient since discharge, 42 (74%) of respondents stated the patient had either visited the pharmacy or spoken with the respondent or another staff member.

Fifty respondents (88%) had access to the patient's discharge medication record (DMR), whilst seven respondents (12%) had not seen a copy of the DMR. Figure 19 shows how community pharmacists accessed the DMR (more than one selection was allowed).

Figure 19: Method by which community pharmacists accessed the patient's discharge medication record



Seventy-four per cent of respondents stated they had received a copy of the post-discharge medication management plan (MMP).

Table 10 shows the responses to the statements regarding the MMP. Most respondents agreed or strongly agreed that the MMP was received within an appropriate time frame (86%), was easy to understand (90%), was useful (86%), provided a better understanding of medication changes (81%), and provided a better understanding of the patient's ability to manage their medicines at home (76%). Regarding the recommendations in the MMP, most pharmacists agreed or strongly agreed with the recommendations (83%) and were likely to act on them (83%); however, 26% of the respondents considered they did not have time to act on the recommendations. Despite this, 86% strongly agreed or agreed that they would like to receive an MMP for more of their high-risk patients.

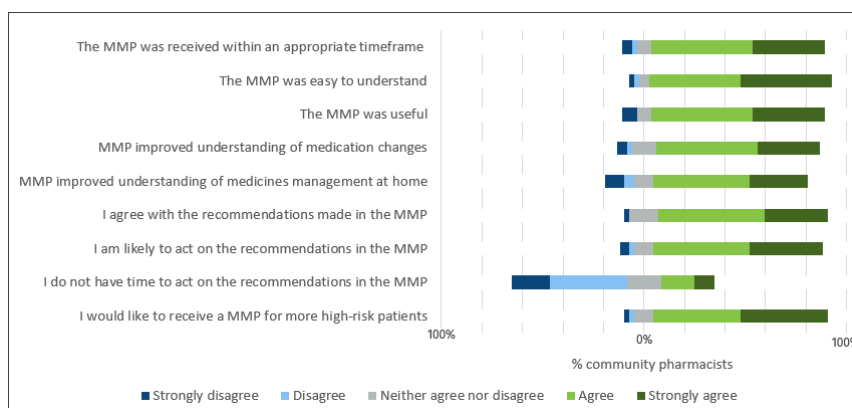
Table 10: Community pharmacist agreement with statements regarding the medication management plan

Statement	Agreement: Number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
The medication management plan was received within an appropriate timeframe to facilitate ongoing patient care?	2 (4.8)	1 (2.4)	3 (7.1)	21 (50.0)	15 (35.7)	42
The medication management plan was easy to understand	1 (2.4)	1 (2.4)	2 (4.8)	19 (45.2)	19 (45.2)	42
The medication management plan was useful	3 (7.1)	0	3 (7.1)	21 (50.0)	15 (35.7)	42
The medication management plan provided me with a better understanding of the medication changes made and the rationale for change	2 (4.8)	1 (2.4)	5 (11.9)	21 (50.0)	13 (31.0)	42
The medication management plan provided me with a better understanding of the ability of the patient to manage their medicines at home	4 (9.5)	2 (4.8)	4 (9.5)	20 (47.6)	12 (28.6)	42

Statement	Agreement: Number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I agree with the recommendations made to me in the medication management plan	1 (2.4)	0	6 (14.3)	22 (52.4)	13 (31.0)	42
I am likely to act on the recommendations within the medication management plan	2 (4.8)	1 (2.4)	4 (9.5)	20 (47.6)	15 (35.7)	42
I do not have time to act on the recommendations in the medication management plan	8 (19.0)	16 (38.1)	7 (16.7)	7 (16.7)	4 (9.5)	42
I would like to receive a medication management plan for more of my high-risk patients	1 (2.4)	1 (2.4)	4 (9.5)	18 (42.9)	18 (42.9)	42

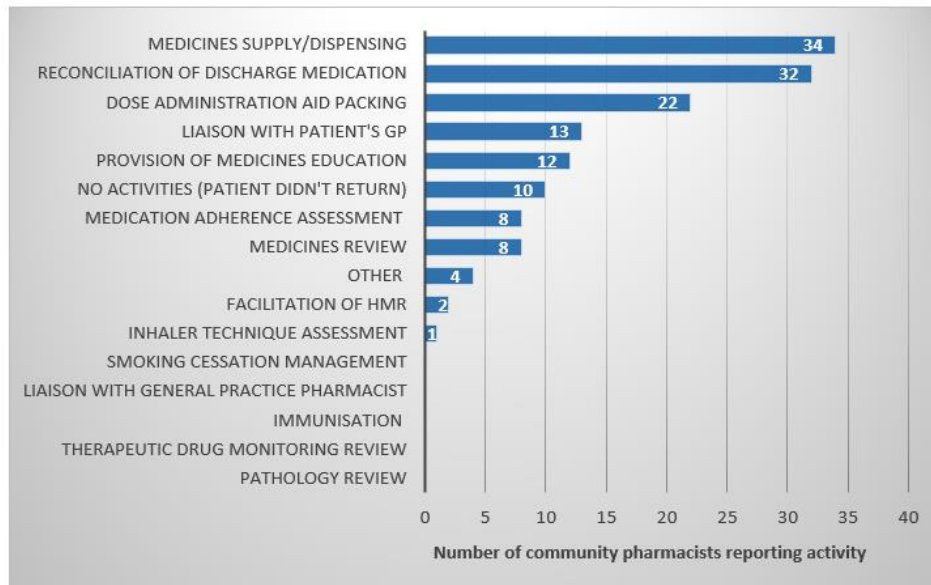
The data in Table 10 is displayed in Figure 20 to facilitate a comparison of the responses. Note: some of the statements are abbreviated.

Figure 20: Community pharmacist agreement with statements regarding the medication management plan



Respondents were provided with examples of services that could be undertaken in relation to a patient's discharge from hospital and asked to indicate which services they or other pharmacy staff provided to their specific patient. Figure 21 shows the activities as reported by the community pharmacists.

Figure 21: Community pharmacist-reported activities undertaken in relation to the patient's discharge from hospital



When specifically asked about MedsCheck reviews, only 6 (11%) of community pharmacists reported that they had undertaken a review with the patient since discharge. The MedsCheck action plan was communicated to the patient's GP on two occasions and was not communicated to any other health professional.

The reasons provided for not completing a MedsCheck review are shown in Figure 22.

Figure 22: Community pharmacist-reported reasons for not providing a MedsCheck review

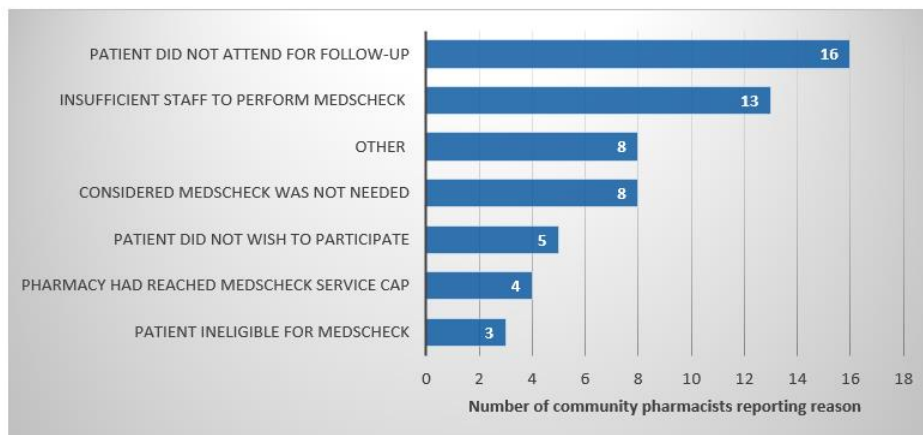


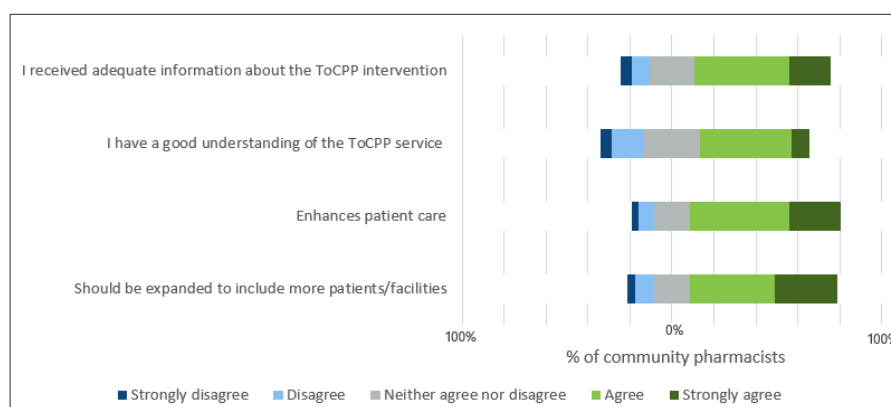
Table 11 shows the responses to the statements regarding the service as a whole. Fewer community pharmacists strongly agreed or agreed that they had received adequate information about the intervention (65%) and had a good understanding of the project (53%). However, most strongly agreed or agreed that it enhanced patient care (72%) and should be expanded to include more patients and facilities (70%).

Table 11: Community pharmacist agreement with statements regarding the transition of care Pharmacy service

Statement	Agreement: Number of respondents (%)					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I received adequate information regarding the Transition of Care Pharmacy Project intervention	3 (5.3)	5 (8.8)	12 (21.1)	26 (45.6)	11 (19.3)	57
I have a good understanding of the service provided to me as part of the Transition of Care Pharmacy Project	3 (5.3)	9 (15.8)	15 (26.3)	25 (43.9)	5 (8.8)	57
The Transition of Care Pharmacy Project intervention enhances patient care	2 (3.5)	4 (7.0)	10 (17.5)	27 (47.4)	14 (24.6)	57
The Transitions of Care Pharmacy Project intervention should be expanded to include more patients/facilities	2 (3.5)	5 (8.8)	10 (17.5)	23 (40.4)	17 (29.8)	57

The data in Table 11 is displayed in Figure 23 to facilitate a comparison of the responses. Note: some of the statements are abbreviated.

Figure 23: Community pharmacist agreement with statements regarding the transition of care pharmacy service



Qualitative responses

When asked to provide comments on the MMP, several community pharmacists commented that the MMP was useful and facilitated continuity of care. One pharmacist suggested that a phone call may produce better outcomes. They did, however, acknowledge the time constraints of this approach.

There were a few patient-specific comments in which the pharmacist stated the recommendations were for activities that should have been directed at the GP, for example, requesting a home medicines review or making changes to medicines. It is unknown whether these recommendations were documented in the 'recommendation to GP' or 'recommendation to community pharmacist' section. One pharmacist asked whether the GP received similar information.

When asked to provide additional information regarding the MedsCheck reviews, a few respondents stated that the increased workload due to COVID-19 immunisation meant they did not have the capacity to perform MedsCheck reviews. Other comments explained that the patient did not personally attend the pharmacy; for example, patients whose carers looked after their medication or those who had their medicines delivered. One respondent requested that the ToC pharmacist continue to refer patients for MedsCheck reviews.

Other comments related to poor project awareness, with some respondents stating they had no knowledge of the project before receiving the clinical handover documents.

Summary

The community pharmacy survey also had a low response rate. The distribution of respondents across the pilot sites was reflective of the number of consultations undertaken at each site; however, there was a slightly higher proportion of Site 1 patients represented compared to Site 2.

As with the GP survey, access to the patient's DMR was predominantly via the copy sent by the ToC pharmacist. There was also evidence that the MMP was not always received. Findings indicate that compared to GPs, community pharmacists hold similar, if not slightly more favourable views of the MMP. However, a higher percentage of community pharmacists considered that they did not have time to act on recommendations.

Despite the tendency for more positive views for most survey statements, a lower proportion of community pharmacists than GPs agreed they would like an MMP for more of their high-risk patients. This may be reflective of the workload concerns of community pharmacists. Similarly, there was less support for expanding the service to other patients and facilities.

The services provided by community pharmacists most frequently were dispensing/supplying medicines, medication reconciliation, and DAA packing. This somewhat aligns with the patient survey findings, where dispensing was the most frequent patient-reported service. Community pharmacists appeared to provide fewer patient assessment and education services compared to the activities undertaken by the ToC pharmacists in post-discharge reviews.

As indicated by ToC pharmacists, MedsCheck reviews were not frequently undertaken for ToCPP patients. Whilst there was evidence that community pharmacists do not have the capacity to perform this service, the main reason for not providing a MedsCheck review was that the patient did not return for follow-up.

As with the GP survey, poor project awareness was highlighted in quantitative and qualitative responses. There was also some indication in qualitative comments that some community pharmacists were unclear about their role within the service.

Healthcare provider semi-structured interviews

Semi-structured interviews were conducted to identify the perceptions of healthcare provider stakeholders who had interacted with the ToCPP service. The interviews provided the opportunity to build on the findings from the GP and community pharmacist surveys and to explore the perceptions of hospital medical officers managing patients who had received the ToCPP service.

Method

GPs and community pharmacists previously approached to participate in the surveys were sent an email inviting them to take part in a semi-structured interview. An invitation was also communicated more broadly to community pharmacists by the Pharmaceutical Society of Australia via their Facebook page and newsletter. An invitation to GPs was communicated by the relevant primary health networks in the form of a project update brief. Hospital consultants who managed the patients within the pilot services were also invited to participate in an interview.

All identified stakeholders were supplied with information regarding the evaluation and asked to indicate their consent to participate.

A convenience sample of medical and pharmacist stakeholders who agreed to participate were interviewed. Interviews were conducted by telephone and audio recorded. Transcripts were prepared using the same method described for the hospital pharmacy interviews.

Data analysis

The verified, anonymised transcripts were uploaded to NVivo Software (QSR International) version 14.23.2.

Manual inductive coding was undertaken with the first three transcripts to identify topics and concepts. Emergent codes, subcodes and descriptors were documented in a codebook to improve the reliability of the coding process. Where appropriate, the codes used in the hospital pharmacy and/or patient interviews were used to facilitate comparison across the data sets. The remaining transcripts were coded against the codebook, and newly identified codes were added. All transcripts were checked against the final codebook to ensure consistency of coding.

The final codes were reviewed and organised into study themes.

Results

Interviews were conducted with twelve participants and occurred between January 2023 and July 2023. The mean interview duration was 21 minutes (range 10-43).

Participants consisted of four community pharmacists, three GPs, a general practice pharmacist, and three hospital medical officers (HMOs). Demographic details of the participants are shown in Table 12.

Table 12: Healthcare provider semi-structured interview participant demographics

Participant code	Designation	Gender	Site patient discharged from
CP_1	Community pharmacist	Female	2
CP_2	Community pharmacist	Female	2
CP_3	Community pharmacist	Male	3
CP_4	Community pharmacist	Female	2
GP_1	General practitioner	Female	3
GP_2	General practitioner	Female	2
GP_3	General practitioner	Male	3
GPP_1	General practice pharmacist	Female	2
HMO_1	Hospital medical officer	Female	3
HMO_2	Hospital medical officer	Male	2
HMO_3	Hospital medical officer	Female	2
HMO_4	Hospital medical officer	Male	1

Many of the identified codes regarding the delivery and the impact of the ToCPP service were similar to those identified in the hospital pharmacy staff interviews. It was, therefore, decided to use service delivery and health performance as themes to enable a service comparison across different stakeholders.

The remaining topics centred around the healthcare providers' previous experiences and were incorporated into a 'transition of care experiences' theme.

Transition of care experiences

Participants frequently described their experiences relating to transitions of care. These discussions did not specifically relate to the ToCPP service and were included in a separate theme.

Clinical handover

Several participants described a lack of clinical handover relating to patients discharged from hospital.

'It's always the issue that people are discharged, and we haven't received any paperwork, so that can happen, especially with elderly people because they don't know what's gone on and what's happened.' [GP_2]

There was evidence regarding problems in the mode of transmission of discharge summaries.

'I know one has been done because the patient's handing me the paper version of it, so whether they're not being uploaded properly to The Viewer, I don't know.' [GP_1]

Another GP felt that the mode of communication was not the issue, and most discharge summaries were received promptly. However, the GP perceived that discharge summaries were not generated for all patients.

'My personal experience is that it's pretty good. I get most of them in a timely manner. So, I don't think there's any problem with the way it's sent, it's just a matter of people actually doing them.' [GP_3]

It was acknowledged that medical staff resourcing issues sometimes hindered the timely preparation of handover information.

'I've worked in the hospital so long, I kind of know my way around, and quite often the discharges are delayed, so you often have some poor resi [resident medical officer] doing them four days later...' [GP_1]

It was considered that communication processes were improving; however, the timely receipt of discharge information was dependent on which hospital the patient was discharged from.

'Less so these days – [non QH hospital name] is dreadful and the public is getting better.' [GP_2]

All GP participants mentioned using The Queensland Health Viewer as an alternative source to access clinical handover when patient information was not directly communicated.

'Even if it doesn't get sent to us for any reason, we can still look for it on the Viewer, as long as it has been completed and published.' [GP_3]

Whilst comments predominantly focused on discharge communication, one GP indicated they would be happy to provide a clinical handover for patients admitted to hospital. She considered that, as the patient's GP, she invested considerable time and effort in optimising the patient's management and was the most appropriate person to hand over care to the hospital team. However, it was noted that GPs are often unaware that their patients have been in hospital until they receive discharge information.

'I get really annoyed that people don't just give me a quick call. I am super proprietorial...if they had of given me a quick phone call, I would have said to them, look, I'll send through their medications list, I'll answer your questions...' [GP_1]

Medication changes

There was considerable commentary regarding the medication changes made during hospital admission. Some HMOs expressed frustration that medication changes made in the hospital to optimise patient management did not persist in the community setting.

'... from those feedback from the nursing home, nurses from the nursing home, then we are aware that maybe about, you know, 10, 15 per cent at least of GPs never actually carry out, they just continue the same with every script that they used to prescribe, and all the changes are - so they're back to square one.' [HMO_2]

HMO participants provided several suggestions as to why GPs did not continue the medication changes made in the hospital or implement recommendations to optimise

therapy. Some participants considered the attitude of some GPs precluded the uptake of recommendations.

'... we have identified a few GPs that are particularly hard-headed or lacking interest I suppose, but because of that then it's very hard to have a buy-in from them.' [HMO_2]

It was perceived that there were additional barriers to medication continuity for patients discharged to RACFs, where the care provided by GPs was inconsistent.

'... if the patient is from residential aged care facility the barrier will be dealing with inconsistent GP involvement...' [HMO_3]

Some HMO participants considered that for patients discharged home, delayed access to GP appointments was preventing continuity of care in the community.

'The patient comes up with the same problem and they say, did you see your GP between visits? No, I couldn't get in. Well, I guess I'll do exactly what I said I was going to ask your GP to do last time. I'll be the GP.' [HMO_4]

It was felt that even when the patient did get an appointment, the GP focused on emergent issues rather than discussing the hospital admission and the associated care plan. It was considered this was due to the limited consultation times.

'I think they get time constrained and just deal with the problem of the day... they'll just come in and get their check-up or their vaccine or their whatever they go and see their doctor for, and that never comes up in conversation what happened at [site 1].' [HMO_4]

GP participants had a different perspective and provided examples where medication changes in the hospital resulted in adverse patient outcomes following discharge.

'I actually had a man last year that was falling all the time. I did a lot of work, I spoke to the cardiology team, blah, blah, blah, blah, blah. We did a big medications review, did this sort of water-tight plan, stopped the falls – all this kind of stuff, low and behold he went into the – came out on, I think, 10 milligrams of amlodipine and another something or other that had been started in the emergency department... he came in again to my surgery with a fall.' [GP_1]

It was perceived that medication was often modified in response to an acute change in the patient's condition or to optimise therapy according to evidence-based guidelines without a complete understanding of the patient's context and previous medication experiences.

'... a lot of the times by the time they come to see us in a week's time, things have changed again, so we end up having to – because you know yourself, they're either going to get hypertensive or hypotensive once they go to hospital.' [GP_2]

One GP participant described how they spent time optimising their patients' medication, and was annoyed when hospital medical officers re-started the same medicines they had deliberately ceased.

'... it really annoys me when I've taken the time to either wean someone off opioids, in particular, or some sort of medicine or there's issues.... They come back from hospital – what do you know – either on double or treble the doses of opioids that they – I've actually taken them off or alternatively, back on a blood pressure medicine that I've dutifully taken off because they were falling all the time and they're warfarinised and everything else.' [GP_1]

One community pharmacist felt that the hospital policy to supply discharge prescriptions without repeats was a barrier to continuity of care for patients with newly initiated medicines who had their medication packed. The pharmacist acknowledged that repeat prescriptions were not provided to facilitate early review by the patient's regular GP. However, they considered that patients did not understand this and did not seek timely follow-up, instead returning to the community pharmacy as usual for ongoing supplies.

'That's where the issue for me has been occurring – where they haven't got any repeats after their first month, and then I'm like, hey, you've got to go chase it up.' [CP_3]

The community pharmacist felt that if the discharge prescriptions authorised one repeat supply, this would provide sufficient opportunity for the pharmacist to alert the customer that they needed to see their GP for a new prescription.

Queensland Health pharmacies do not provide packing services, and it was noted that community pharmacies were frequently contacted by hospital pharmacists who asked them to pack a patient's discharge medication at short notice. It was considered that this put considerable stress on the community pharmacists.

'When the hospital calls up, they normally give me two options –either hey, can you get this one sorted by the end of the day, or otherwise, how long will it take? Most of the times I've been pretty blessed that most of our customers live within one or two suburbs within the area, and our chemist offers a delivery service which is really good. We also have a dedicated Webster-paker.' [CP_3]

Patient factors

Participants highlighted several patient factors that they considered contributed to problems with medication comprehension and were a barrier to transitions of care. One community pharmacist worked in a pharmacy where the majority of consumers did not speak English as their first language. The pharmacist considered such consumers particularly vulnerable to the miscommunication of medication-related information.

'A lot of times there's a lot missing through, the language barrier and it's very hard for them to communicate. Because they'll obviously nod yes and say yes, but a lot of the times they don't understand English...' [CP_3]

The pharmacist explained that because he spoke Vietnamese, he could provide additional information to consumers and clarify medication changes.

Participants also noted that elderly patients and those with cognitive impairment may not understand information provided in transitions of care. The use of unfamiliar terminology and generic medication names was considered to contribute to patient confusion.

'A lot of the times they're elderly, they're confused... hospitals use a lot of terminology that the patient can't understand. For example, they'll say something like, we've changed your atorvastatin to a higher dose. They're like, "sweetheart, they've changed something, I don't know". I'll just go, "oh, [patient name], it was your Lipitor – you know that – the Lipitor?" She went, "oh, Lipitor, I know Lipitor."' [CP_3]

One HMO described how the elderly patients they were caring for continued to submit old prescriptions for dispensing, which meant that medication changes made in the hospital did not persist in the community.

'... sometimes for older people they will have multiple scripts stored in their home and then even though you have given them all the right information they still go to the pharmacy with an old script.' [HMO_3]

Health literacy was also identified as a barrier to continuity of care. One GP explained that some of her patients had insufficient health literacy to understand their condition and how it was managed in the hospital.

'... they're health illiterate and illiterate themselves. A lot of them can't even tell me why they were there other than that they might have had chest pain or something like that.' [GP_1]

It was also noted that patients could not always be relied on to relay paper-based health information to their GP.

'... I personally don't think it's hard to carry a piece of paper from the hospital to your doctor but blow me down – it never happens.' [GP_1]

Service delivery

Model of care

Patient identification

HMO participants commented on the identification of patients to be managed under the service. They considered it part of the responsibilities of the medical teams to refer patients to the ToC pharmacist.

'I think we saw our role as identifying patients, highlighting it to the pharmacists on the ward round, and involving the pharmacists on our ward round.' [HMO_1]

They did, however, acknowledge that the ToC pharmacists were proactive in highlighting patients to them.

'... she goes through all the patients list that we have in geriatric and then she will come to us with, hey, I think this one is most - this one is suitable, this one also suitable.' [HMO_3]

Patient population

Several participants commented on the suitability of the patient population selected for the pilot. HMOs felt that patients within the pilot populations were high-risk, typically had their medication changed in hospital, and had lower levels of health literacy.

'I think it's a good group of patients, just in that they are so high-risk, they often struggle with health literacy, and just so much happens in hospitals that they're not sure when they go home.' [HMO_1]

One community pharmacist felt that cardiology patients were an alternative patient cohort that could be targeted. In her experience, such patients frequently did not understand their new medication.

'They'll come home, and they really don't have any understanding why they have to stay on things and that. Because it's a life changing event and they can be all different ages.' [CP_1]

MedsCheck review

As discussed previously, the ToC pharmacists were encouraged to recommend that the community pharmacist undertake a MedsCheck review to facilitate remuneration for post-discharge medication reconciliation. Comments from community pharmacist participants supported the survey findings that MedsCheck reviews were frequently not undertaken.

It was considered that providing a MedsCheck service was time-consuming and diverted a pharmacist away from other activities, impacting customer services such as medicines supply.

'... the time can vary so much for MedsCheck; like you can get the person talking and you can be in there a lot longer, and if you, especially if you've only got one or two pharmacists on, it really takes that person away. So yeah, we don't tend to use MedsCheck at all.' [CP_2]

Some community pharmacist participants expressed doubts that the MedsCheck service was used as intended. One participant felt some community pharmacists were claiming for MedsCheck services that weren't provided within the program rules.

'I'm a bit cynical butI've seen other people claim MedsChecks and then the patient knows absolutely nothing about it or it hasn't been involved in it.' [CP_1]

Another participant noted that, at their pharmacy, the service was provided to maximise income within the service cap but was undertaken with regular consumers on five to six medicines regardless of need. They considered consumers with medication issues, likely to benefit the most from the review, were not targeted.

'Now, for me – to be quite transparent again – MedsChecks for us is just – it's less of an actual medications check, but more of a way to – a push for money. Because you obviously get to claim it, and so the boss obviously recommends, hey, can you do 20 MedsChecks... ' [CP_3]

The same participant noted that patients in and out of hospital with multiple medication changes would probably benefit from the service most; however, they would not be eligible to receive the service if they had already received a MedsCheck within the previous 12 months.

Capacity of healthcare providers

As well as discussing their capacity to undertake the MedsCheck reviews, participants described the time constraints related to providing additional activities. As highlighted by the ToC pharmacists, community pharmacists were time-pressured due to the added work that had occurred through COVID-19 and influenza immunisation programs.

'I think that when it started off that we were hit with flu vaccinations and COVID vaccinations. So, they took up a lot of time... ' [CP_1]

One participant felt that it was difficult to review the information sent by the ToC pharmacist within an appropriate time frame due to their workload. Community pharmacist participants considered it hard to roster sufficient staff, and community pharmacies were short-staffed on some days.

'I did find the tricky sometimes on different days, especially if it was in the afternoon, to try to get to the information in a timely manner.' [CP_2]

Pharmacy owners expressed concern regarding pharmacist burnout due to the pressure to provide multiple services.

'... there's only so much you can fit into a day. I've also got to watch out that burnout thing which is just too - we don't have a very easy life.' [CP_1]

The ToCPP RACF model of care involves post-discharge medication reconciliation. The review relies on the ToC pharmacist obtaining a current packing list from the community pharmacy servicing the RACF. One community pharmacist, who provided a packing service for RACFs, was asked whether they have the capacity to provide patient medication lists when requested by the ToC pharmacist. The community pharmacist explained that they were servicing multiple RACFs and already received a high call volume regarding their packing services. They stated that although the requests from the ToC pharmacist added to their workload, they responded because they considered the service beneficial.

'... we do it because we know it's important. We probably get between six and 10 phone calls – some days six to 10 phone calls a day – from the hospital, asking for information because we have about 1,000 residents in nursing homes. Honestly, it is a real time constraint for us. It's difficult, but we do do it.' [CP_4]

As identified by the ToC pharmacists, it was considered difficult to provide the service to patients who do not have a regular GP.

'I did have a few people that don't have regular GPs which obviously, makes it very hard to provide continual service to someone.' [CP_2]

The general practice pharmacist (GPP) considered that whilst they were currently able to follow up with patients referred through the service, they may not have the capacity to continue to review all patients if the service continued or expanded to a larger patient population.

'I think time constraints would be the only potential barrier, so just thinking ahead, if the project were to continue, then obviously if it's a larger scope and more patients, it would just be a volume thing for me within my certain number of hours a week that I'm here – am I managing to catch and follow through all of those patients?' [GPP_1]

GP participants considered that the additional information they received as a component of the ToCPP service was helpful and prompted them to facilitate patient review.

'... it's definitely very helpful information to have, as long as it goes into our software.' [GP_3]

However, GP participants pointed out that they could not claim under the Medicare Benefits Schedule for the time spent reviewing patient information sent under the ToCPP model of care. GPs are only eligible for payment of transition of care follow-up activities such as medication reconciliation, updating medication records, or ongoing monitoring if they undertake a consultation with the patient.

'I suppose the other thing is that we sort of need the patients to actually come in again to go through the whole thing because, I mean, I don't get – it's not like the hospital. We don't get paid in general practice for reading all of these things and updating charts and all that type of stuff.' [GP_2]

One GP explained that they usually recalled recently discharged patients to facilitate such consultations. However, they considered it may reduce the need for a phone call and save practice staff time if the hospital could reinforce to the patient that they needed to take ownership of organising a review with their GP.

Not all GP participants actively recalled patients; one stated that unless the patient had an identified issue that needed to be actioned promptly, they would wait until the patient came to see them.

'... usually I leave it up to them to follow-up with me, unless there is a very specific recommendation, unless there's a specific job for me – for the patient team for me to do the follow-up.' [GP_3]

Several participants felt that appropriate remuneration for transition of care activities, for example, review of patient information and medication reconciliation, may facilitate engagement with the service and support continuity of care. One GP participant suggested that having a Medicare item number for post-discharge review would be helpful. However, it was noted that there were so many pharmacy programs currently funded through the 7th Community Pharmacy Agreement that any proposed transition of care service would need to be positioned as a priority to encourage community pharmacists to participate.

'I could see that it would be good to resource something but yeah. They would have to make it a fairly important - because there's so many programs at the moment, like there's programs for lots of things, do you know what I mean?'

Information and communications technology

As identified in both the community pharmacist and GP surveys, there was evidence that some project communication was not reaching the intended recipient. One community pharmacist explained that whilst they had received faxed copies of the DMR for various patients, they had not personally seen an MMP containing recommendations.

'I'll be honest with you – I haven't seen a single one at all.' [CP_3]

One GP participant described how the only project communication he had received was the invitation to participate in the survey. When he provided feedback to the project officer that he had not received a clinical handover, the ToC pharmacist was informed, and the MMP was re-sent.

'So, that was probably where some improvement can be made because nothing was sent and all I got was an email asking me to review – asking me to participate in the feedback form. It was not until I sent the feedback form that the pharmacy sort of picked up that they didn't actually send anything to me. Then I got everything through by email and it looks great.' [GP_3]

When asked what mode of communication was best, GPs generally considered that digital transfer of clinical handover documents directly into their personal inbox within the medical practice's software was preferable to emailing or faxing.

'So, basically, how the discharge summaries get to us through Medical Objects.' [GP_3]

Communication appeared to be more reliable at Site 2, which transferred information in this way using secure web transfer (SWT). However, as identified in the GP survey, GPs who had received the MMP via SWT found the document difficult to read. The medication list sent via SWT appeared to be especially difficult to interpret.

'You can imagine because you're really busy and then you've got that to look at. It's like, oh my God, I can't be looking at this. But anyway, we do, so we get on with it.' [GP_2]

Some participants considered that the ToC pharmacist should provide a verbal handover to the GP for complex patients. One GP observed that pharmacists frequently apologised for interrupting them and, as medication experts, should feel more empowered to contact GPs.

'I feel often that pharmacists, who are experts in medicines – they're far better at their pharmacology than I'll ever be – I feel that they don't always feel like they can pick up the phone or communicate legitimately.' [GP_1]

This sentiment was echoed by some of the HMOs, who felt that empowering the ToC pharmacists to communicate verbally with GPs regarding identified medication issues was necessary to optimise the service potential.

'I think for this project to be completely beneficial, 100 per cent fully, I think the pharmacists need to be empowered to talk to the GP directly so that they don't have the excuses to say that, oh, we didn't know about all those changes.' [HMO_3]

However, not all participants agreed that verbal handover was appropriate, with one GP stating that they preferred to receive a written handover.

One of the concerns raised earlier by the ToC pharmacists was the perceived inability of community pharmacists to store and share clinical handover information. When asked how they handled the ToC information transferred to them, community pharmacist participants described how they documented relevant information in their dispensing software.

'That's my dispensing software. I use FRED. So what happens is, there's a little window down where you can put little information, extra information that comes up each time you key into there when you're dispensing. So then you can go and look at that or you can put a note in if you want something to flash up as well. So yeah, there's all those options every time you dispense.' [CP_1]

Community pharmacists also described how they used their Webster-pak® software to document clinical handover information.

'In our Webster packing program there's a note section, and the transition of care email that's sent gets saved into the person's file.' [CP_2]

One community pharmacist participant described a cloud-based Webster-pak® program used in their pharmacy. This system was used to document additional information regarding medication changes and any relevant clinical information. The information was then shared with other pharmacists via a Webster-pak® group chat.

Another community pharmacist explained that the pharmacists within their pharmacy flagged important emails in the pharmacy inbox. They also verbally communicated to share clinical information and decide which pharmacist would complete specific recommendations.

'We're also in earshot distance of each other –we have four pharmacists in our pharmacy. We have two to three working at a time. So, we're very verbal with what we're doing because we have so much to do. We say, hey, this has come through and who will action it? Then once someone's actioned it, then it's normally a verbal, this person's coming in, or this has to be delivered today...' [CP_2].

Project awareness

Participants expressed mixed views when asked if they had received sufficient information about the ToCPP and the model of care.

Not surprisingly, HMOs felt they had received sufficient information and had a good understanding of the project. Information was predominantly obtained via direct engagement with the local ToC pharmacist. The HMOs also described how the ToC pharmacist had conducted education sessions for the resident medical officers working in their teams.

'I think my team would say that they did too, because [ToC pharmacist] came and spoke to them directly, spoke to the nurses as well. Then they also got written information, so that was helpful.' [HMO_1]

It was also noted that ongoing staff engagement was provided for junior medical officers rotating through the clinical area.

'I think [ToC pharmacist] has done a very good job, so she proactively comes and tells the junior staff, because we do have regular rotation of staff that comes to geri. So, she has done a very, very good job educating the junior doctors about the aim of the program and what we need to do overall to facilitate this process.' [HMO_2]

All community pharmacist participants felt their understanding of the project and ToCPP service could be improved. One community pharmacist had not received any project information except that contained within the communication from the ToC pharmacist regarding a patient who had received the service.

'So, the whole idea of this program – like I mentioned before, I didn't really understand a lot of it because I sort of just got the email like, hey, would you like to be a part of this' [CP_3]

Two of the community pharmacists had received information directly from the ToC pharmacist prior to managing a patient under the service. One community pharmacist felt that a visit from the ToC pharmacist had improved their understanding of the project. However, the other community pharmacist felt that despite being notified about the project, she didn't fully understand how the service would work until she received the first communication regarding a patient.

'It was a bit like oh, how's it going to work, as with all the emails that come through, your email trail – you have a quick flick through, what's happening, but I think it wasn't until we got, say, the first communication, then you kind of knew more about it.' [CP_2]

GPs also described a lack of project awareness prior to them receiving patient-specific clinical handover information.

'All I know is just what I've got from when you send them.' [GP_2]

However, when asked about the best method for sharing project information, there was no clear response. GPs acknowledged they did not have time to read communications sent to them.

'It's not easy, is it? Yeah. Because I know everything these days goes through the PHNs, but – yeah, we don't really read that.' [GP_2]

It was suggested that project information could be sent directly to the medical practices and that service awareness would improve as exposure to the service increased.

Support

The value of project sponsorship and support by Queensland Health was acknowledged as contributing to project implementation. The support of the project officer in implementing and delivering the service was also noted.

'I definitely think having the backing of Queensland Health has made - clearly watching this project happen, versus other projects, it does make a massive difference. So that's been good just to start with.' [HMO_1]

Resources

HMOs considered that service delivery was facilitated by the attributes of the pharmacists delivering the intervention. Participants described the ToC pharmacists' relevant clinical experience and personal attributes, such as professional and communication skills.

'Having [ToC pharmacist] has been excellent. She's clearly the right person for the job. She's got lots of patient skills, she's very good - she's happy to talk to registrars, consultants, nursing staff and then also patients. So, she sort of bridges that gap really well. She's not offensive, she's - so I think we were really lucky in that way, in that it makes it even more successful.' [HMO_1]

One HMO participant stated that the ToC pharmacist had been working in the clinical area for a long time; hence, it was easy to work together to provide the service. However, they did not know if they would have such a positive relationship with another pharmacist.

'[ToC pharmacist] has been in the geriatric service, well, working as a pharmacist in a geriatric service for quite a long time and I've been here for about eight years. So, this kind of relationship, positive relationship struck up very easily, but the thing is I can't say if some other pharmacist would have come to us, I don't know.' [HMO_3]

The contribution of the ward pharmacists working with the ToC pharmacists to deliver the service were also acknowledged.

Health performance

Continuity of care

As with the hospital pharmacy staff interviews, there was considerable commentary relating to the impact of the service on continuity of care. It was considered that increased access to clinical handover information enabled primary healthcare providers to manage patients more effectively.

'I feel that with the more information you get, the better you can look after the patient when they come out' [CP_1]

'the more information we get, the better.' [GP_2]

It was felt that additional clinical information, such as diagnosis, desired outcomes, and therapeutic plans, encouraged ongoing patient review by community pharmacists in addition to the usual medication supply activities.

'So, it's not just a dispensing thing, it's sort of a reviewing and making sure that they're adhering to really their plan as well as they can.' [CP_1]

Community pharmacists considered that the additional information was helpful for identifying patients advised to seek GP review and meant they could ensure the appropriate follow-up had occurred.

'Because they might be coming to us for Webster Paks, but have they gone and done that follow-up with the doctor, and we can say hey, you doctor still has to review so-and-so. So I found that very beneficial.' [CP_2]

One community pharmacist felt that when issues were not resolved by the patient's GP, there should be a pathway for referring patients back into the hospital system.

'The other thing I would like to do is be able to send them - if they have - I'd like to be able to send them back to the hospital sometimes...I feel like she really needs a really good review but her GP's not doing that.' [CP_1]

Participants considered that the enhanced patient education provided additional context regarding medication changes, including the different brands of medicine supplied by the hospital. It was felt that this could reduce potential confusion.

'It's so much better than them coming out and not having an idea what - because the tablets look different in the hospital because obviously, they're a different brand and then everybody's confused.' [GP_2]

The handover information also helped community pharmacists to explain medication changes to the patient and provide a rationale for the modifications.

'I've noticed there was a lot more clarity between me and my customers as well. Because most of the times they'll come home, they'll be like, [CP_3] do you know what's changed? Do you know why they might have done that? What's this white tablet for that they've put in or why did they remove it? So, by having all that information and by having it ready for me I can obviously explain it to them.' [CP_3]

It was perceived that sharing clinical handover information facilitated a multidisciplinary approach and that patients were more receptive to health information because all their primary healthcare providers were saying the same thing.

'It's great having the pharmacy as well because then they know what's going on as well, so it's - everybody can check on each other.' [GP_2]

'Just getting everyone on the same page - just having that multidisciplinary approach to more holistic care for the person I think has increased- it has more quality, they're more receptive to the information because everyone's telling them the same thing.' [CP_2]

The community pharmacist providing a packing service to RACFs also considered that the additional information regarding medication changes provided context when they were asked to amend a patient's packing profile.

'It's very handy to have if we're unsure about what the doctor's doing. It's another point of reference, I guess. If it looks like something's not right or odd, we can always use it to go back to, to see what it was written out as from the hospital.' [CP_4]

The GPP felt that the direct communication of clinical handover information from the ToC pharmacist helped them identify patients recently discharged from hospital.

'Because I'm getting the information from [ToC pharmacist] just days after or maybe the day of discharge, that flags to me.' [GPP_1]

The GPP explained that the communication from the ToC pharmacist prompted them to review the patient's information and see if they had an upcoming appointment with the GP. They could then liaise with the GP to facilitate a timely review.

The GPP perceived that the ToCPP service ensured that issues highlighted on discharge were followed up in the community.

'A lot of my follow up or interactions with the GPs are just basically a conversation – hey, just letting you know I've received information that this patient's been discharged. Obviously, they receive that information as well, but they may not have a chance to check that or, as I said, the patient might not be coming in for a month so they wouldn't necessarily be looking at that.' [GPP_1]

They considered that issues would get overlooked without the ToCPP service and their subsequent involvement in patient follow-up. The GPP also perceived that their involvement with the service had helped to develop a link between them and other hospital pharmacists and increased awareness regarding the GPP's role. They felt that hospital pharmacists outside the ToCPP service may now consider liaising with them regarding patient discharge.

'I think other patients outside of your scope for the transition of care project would be benefiting as well, because even if it's an informal discussion that [ToC pharmacist] had with other pharmacists or whatever, they've got in their mind that, oh, [GPP_1] might be able to follow up or help with my patient even though they're not in with the transition of care project.' [GPP_1]

One HMO considered the service made junior hospital doctors more mindful of how they communicated to GPs, including the clarity and specificity of the instructions they provided. They considered that it highlighted to HMOs that they were part of a critical process.

'Hopefully, what this points out to – certainly the junior staff – is that actually they are part of an important process, and they need to do their bit. I'm hoping that the more that we did this, the more that they would understand that.' [HMO_1]

The HMO considered that, ideally, the junior medical officers working for them should contact GPs directly to provide a clinical handover; however, they acknowledged that this was impractical.

Effectiveness

GPs considered that the information contained within the MMP was useful and most of the recommendations were appropriate.

'So, it's basically the documentation of all the medication changes that happened in hospital and some longer-term recommendations post-discharge, which I really like. All very neatly documented here, separate from the discharge summary.' [GP_3]

One GP participant considered it helpful to have some guidance on patient management following discharge.

'It just helps to have some guidance. Definitely, it makes me feel a lot more comfortable managing the patients post-discharge.' [GP_3]

As identified in the GP survey, it was felt that the ToC pharmacist's lack of knowledge regarding the patient context and previous medication experiences contributed to the occasional inappropriate recommendation in the MMP.

It was perceived that the communication of additional information to the community pharmacist facilitated their input into optimising the patient's medication adherence and medication management. It was considered that the follow-up service and the clinical handover increased patient education opportunities and improved patients' awareness of their medication.

'Personally, I know one patient that was – that we've – that's really benefited from it. He's an old man. He's about 90 and he forgets a lot of things, unfortunately, and so by having that sort of service, I was able to break down everything and all his changes for him.' [CP_3]

One HMO participant described feedback they had received during a clinic consultation with a patient and their carer. The participant felt that the improved awareness regarding antipsychotic use enabled the family to raise their concerns and advocate for the patient when the GP suggested adding an antipsychotic to the patient's medication regimen.

'... so the family are more aware of the side effects of it - the anti-psychotic, and the indication for the anti-psychotic and then when they go back to the GP, so sometimes because of progression of the dementia when the GP wanted to start the different types of anti-psychotic and then family are empowered to sort of tell the GP, oh, look, it's because you have this kind of dementia so you're not supposed to use this kind of anti-psychotic...' [HMO-3]

When asked about patients' perceptions of the service, whilst some participants had received no direct feedback, others felt that patients liked the service.

'I definitely think in talking to [ToC pharmacist] and hearing what patients say, I definitely think patients have really liked it...' [HMO_1]

It was considered that patients liked the convenience of the service, the reassurance provided by the post-discharge review, and the knowledge that their healthcare providers had received information regarding their onward medication management.

'... they were thankful that someone – they knew that someone was behind the scenes doing all of the running around, per se, with the medical information, and they felt like they were more relaxed that they knew what the plan was.' [CP_2]

Safety

Most participants felt that the service had an impact on patient safety. It was considered that the improved communication reduced the risk of medication errors, including medication omissions.

'I think it definitely improves patient safety because it leads to less medication errors.' [GP_3]

It was noted that having additional health professionals involved in reviewing the patient's medication reduced the risk of an issue or error being overlooked and provided a different perspective on medication management.

'Because the more people they have – especially polypharmacy and elderly people – the more you have somebody looking at it, they might just see something that you haven't had the time to see or just missed, because it happens. Yep, it's always good, and you get another perspective looking at it, so that's not a bad thing either.' [GP_2]

It was felt that the post-discharge review provided an additional opportunity to identify medication-related issues.

'... it is very reassuring for them getting those follow-up calls. Even if there's not something specific that she needs to change. I think it's just that it is safety-netting, and I think patients appreciate that.' [HMO_1]

One HMO described a scenario where a recently discharged patient had mistakenly stopped taking the anti-coagulant prescribed for a critical indication. The ToC pharmacist spent time with the patient and provided education and additional follow-up.

'... she just completely missed that she was meant to be on her anti-coagulation. I can't actually remember now what the intervention was for. It was something bad - like aortic thrombus, or something quite significant, and she just wasn't taking her medication. So - but that meant then, [ToC pharmacist] could re-explain it, spent heaps of time with her, followed it up with her.' [HMO_1]

Another identified benefit was the indirect education and training received by junior doctors when interacting with the service. It was felt that this learning would impact their future practice and improve patient safety.

'... it has indirect education to the junior doctors as well...the principles about medication safety are well highlighted with this kind of program, so everyone knows it's not just about they come in with this medication, you discharge with this medication, what sort of drug-drug interaction, why you have this concern, why you have that concern. So, I think it's a good opportunity for indirect junior staff teaching.' HMO_3]

Accessibility

There was less commentary in relation to service accessibility. One participant recounted the actions taken by the ToC pharmacist to facilitate the supply of medication to a homeless person.

'... we had a homeless patient who she organised medications for, and also, we changed some of the diabetic medications, because she didn't have endocrine follow-up. So, a whole lot of things that a pharmacist - having a pharmacist available made that so much easier, and then you can look after the at-risk group of people that would otherwise fall through the cracks.' [HMO_1]

Efficiency and sustainability

There was little discussion regarding the efficiency of the service. However, when asked, most participants felt that the service should continue.

'Yeah, definitely. I mean, the few people that I've had on it – because they're elderly, polypharmacy and lots of illness going on and they're still in the community, so they're people who actually could be in residential aged care but they're lucky enough to be still at home, but they're more complex, so – yeah, the more information you get, the better.' [GP_2]

Hospital-based participants highlighted resourcing as a barrier to ongoing service provision. It was considered that should the service be expanded to other areas, it would be necessary to engage with consultants to drive the implementation rather than relying on the ToC Pharmacist.

'I suppose moving forward, if we were to do this long term - I think getting other surgeons, or other physicians involved - that would just take time to - for them to drive it. It's okay if the pharmacist drives it themselves, and that's great, but it would obviously be nice if moving forward, or moving into other specialties, that other consultants drove the implementation. That would just take time.' [HMO_1]

Expansion of the service to benefit additional patients was supported. It was felt that service expansion would lead to a more consistent approach to transitions of care and improve service awareness amongst other disciplines.

'I would love to see more patients benefit from it, but I suppose because of the type of patients that we focus on for the study purpose or for the initial pilot project purpose then the cohort of patients that benefit from it is a bit smaller than it could possibly be.' [HMO_2]

Some participants suggested patient populations that could be included in service expansion.

'I can't see that it can't be useful for things like medicine... In surgery specifically I think - like, cardiology/cardiothoracics would be a really good place. Because again, you often have - you've come in with some sort of life-threatening event, you've had massive surgery, you've had big changes in your medications, and so then - and you're looking at lifelong medications. So then having someone to touch base with you and making sure that you understood that. I think that's probably super useful.' [HMO_1]

It was felt that a referral-based model would work best if the service was expanded.

'...you could have one role that covered certainly most of the surgical specialties on discharge, where people could then highlight people that were at risk.' [HMO_1]

Another suggestion was that the ToC pharmacist currently providing a service to gerontology patients should be integrated into the local Frailty Intervention Team that visited RACFs to undertake post-discharge reviews of facility residents.

'... if this transition of care project can be incorporated into Frailty Intervention Team, I think it's going to be a lot more helpful...' [HMO_3]

The only objection to ongoing service provision came from one community pharmacist who had only been involved in the RACF model of care and could not see the value of service continuation or expansion.

'Not convinced, to be honest.' [CP_4]

Summary

Transition of care experiences

There was some evidence of an ongoing lack of clinical handover between hospitals and GPs. Primary healthcare providers also described patient factors such as cognitive impairment,

health literacy, and language, which they considered to impede continuity of care and safe medication use.

Discussions with GPs and HMOs provided different perspectives regarding medication changes made in hospital. Whilst HMOs expressed frustration that hospital-initiated medication changes did not persist into the community, GPs described medication-related problems arising from such changes that often resulted in a reversal of prescribing decisions.

Service delivery

As identified in the GP survey, there was little evidence in interview findings to indicate that GP work capacity was a barrier to the ToCPP service. GPs did, however, note that much of the work they undertake in relation to transitions of care is unpaid. Conversely, community pharmacist interview participants specifically expressed concerns regarding the workload resulting from the ToCPP service. A component of the endorsed model of care was for the community pharmacist to undertake medicines reconciliation/review, and ToC pharmacists were encouraged to recommend MedsCheck reviews to facilitate community pharmacist remuneration for these activities. Service activity data, hospital pharmacy staff interviews, and community pharmacist survey findings previously indicated that MedsCheck reviews were not routinely completed for ToCPP patients. Community pharmacist interview participants confirmed this is often due to workload issues; however, they also highlighted the limitations of the MedsCheck Program and questioned whether it was used appropriately. It would, therefore, seem that the MedsCheck service is not currently effective in facilitating medication continuity in transitions of care.

ICT has previously been highlighted as a major barrier to service delivery, and there was further evidence from the interviews that patient information is not consistently reaching primary healthcare providers. Despite issues regarding readability, GP participants expressed a preference for direct electronic transfer of medication-related information into their practice software. However, as previously described, only Site 2 had access to the Queensland Health secure web transfer system. Reassuringly, community pharmacists addressed concerns previously raised by ToC pharmacists regarding the handling of patient information transferred to them, providing examples of how they stored and shared such data.

As identified in GP and community pharmacist surveys, poor project awareness was highlighted. There was, however, no consensus regarding how information could be effectively conveyed in the future, with some stakeholders stating that they did not have time to read communications sent to them via PHNs.

Health performance

Participants' opinions regarding the ToCPP service were concordant with hospital pharmacy staff interviews and GP and CP survey findings. Participants generally held positive views and identified continuity of care improvement as the primary service benefit. It was considered that the service positively impacted patient safety, and there was support for ongoing service provision.

Final Discussion

The ToCPP service appears to be well accepted by both patients and healthcare providers. There is evidence that the service delivers patient benefits, and there is support for ongoing service provision and potential expansion to additional patient populations and facilities.

Transition of care experiences

Patients' and healthcare professionals' experiences of transitions of care highlighted several issues which, whilst outside the scope of the ToCPP service, are relevant to tertiary healthcare providers.

The lack of communication and involvement in decision-making described by patients in the semi-structured interviews was also identified in a study evaluating patient satisfaction with hospital care in Australia.⁷ The study authors suggested that consistent, high-quality staff practices in relation to shared information and respect for patient wishes would improve patient perceptions of patient-centred care.

The opposing opinions of GPs and HMOs relating to medication changes made in hospital highlights a friction in transitions of care. There is evidence that medication changes frequently occur following discharge, and the reasons for this are varied and commonly include delayed or missing discharge information.^{8, 9} Indeed, there was evidence in both the GP survey and interviews of discharge communication not reaching the intended recipient. However, the interviews provided insight into why GPs do not continue medication. The potential for enhanced GP handover on admission could be considered, as could their subsequent involvement in hospital prescribing decisions. Patient factors such as age, cognitive impairment, health literacy, and language should be highlighted as potential barriers to transitions of care and strategies to provide additional support to mitigate such factors identified.

Models of care and service delivery

ToCPP model of care for patients discharging to home

Whilst service activity data indicated the validity of the LACE Index in identifying patients suitable for service inclusion, hospital pharmacists preferred to use their clinical judgment for patient selection. LACE Index calculation requires time, and it is suggested that future care models do not use the LACE Index to determine patient risk. It is also suggested that future models of care remove the patient risk stratification and differential management of low, moderate, and high-risk patients, instead providing one simplified management pathway for patients considered to be at high risk of medication misadventure or readmission. This would facilitate a focused use of available resources to maximise patient outcomes.

The activities within the model of care appeared to be acceptable to most stakeholders; however, service capacity issues were identified for both hospital and primary healthcare professionals. Streamlining the model of care may reduce the workload for pharmacists delivering ToC services in the future, allowing them to focus on patient follow-up and

enabling more reviews to be conducted. Service efficiencies could be achieved by ceasing the sending of DMRs to GPs and community pharmacists, communicating recommendations to GPs via the discharge summary, and generating MMPs only for complex patients. Such actions would also reduce the time spent by primary healthcare providers reviewing information supplied.

Whilst reducing the volume of communications sent to primary healthcare providers may address work capacity concerns, the project aimed to improve clinical handover. Primary healthcare providers have highlighted the value of ToCPP information, and evaluation data has identified issues relating to delayed or missing discharge communication between hospitals and primary healthcare providers. Further consideration needs to be given to service optimisation, and it is suggested that primary healthcare providers are consulted more widely regarding future models of care.

The option to complete a subsequent review with selected patients was supported by ToC pharmacists. Evidence of judicious patient selection was provided by the activity data, which showed that even at Site 3, where subsequent reviews were enabled as a component of the local model of care, only 28% of post-discharge patients were identified for a subsequent review. Confirmation of medication continuation/discontinuation was the main reason for conducting a second review, and there is evidence that medication prescribed for temporary treatment of an acute condition may be unintentionally continued following discharge.¹⁰ It is, therefore, appropriate that ToC pharmacists prioritise patients with temporary medication changes for additional review, and it is suggested that the option for subsequent review is retained in future service models.

RACF model of care

Improved clinical handover and post-discharge medication reconciliation are the primary components of the RACF model of care. Service activity data indicated that medication changes and confirmation of dose administration aid (DAA) packing were the primary reasons for selecting patients to be managed under the service.

Hospitalisation of elderly patients in Australia results in multiple medication changes and increased regimen complexity.¹¹ This highlights the importance of post-discharge medication reconciliation and follow-up of RACF patients. However, following the 2022 Federal Government announcement of funding to embed aged care pharmacists in RACFs, it is important to consider the place of this model in the future.¹² Whilst communication of medication changes to RACFs will remain an essential feature of clinical handover on discharge, it is likely that post-discharge medication reconciliation will be the role of the aged care pharmacist on-site at the RACF. Additionally, hospital pharmacists cannot generate ABF under the ToCPP RACF model of care, and it is unlikely this service is sustainable.

Service delivery

A discharge-focused or outpatient referral delivery model appears optimal in maximising the number of patients managed and generating ABF to support service sustainability. Whilst fully integrated models support continuity of patient care, they are likely to be difficult to implement widely and liable to service interruptions due to workload fluctuations.

Ongoing local resourcing of pharmacist-led ToC services should be sought, with ABF offsetting HHS funding requirements. However, it is important to note that pharmacists delivering ongoing ToC services should, where possible, be protected from diversion to cover other clinical areas, as service disruption will impact outcomes and ABF generation.

The value of a CA resource in delivering future ToC services remains unclear. CA support for patient scheduling, preparation of DMRs, and communication of handover information to primary healthcare providers undoubtedly reduces the burden on the ToC pharmacist, allowing more patient reviews to be completed. Some of these activities could be undertaken by other pharmacy staff. For example, patient scheduling is done by administrative officers for other pharmacists at all three pilot sites. DMR preparation is traditionally done by the ward pharmacist and under a discharge-focused or outpatient referral model, they will continue to provide this service. However, it should be noted that there is still a resourcing requirement even if the activities are re-directed to alternative staff. The evaluation perhaps indicates that the value of the CA may lie in an expanded scope ward-based role in which they can potentially assist the ward pharmacist in DMR preparation, medication chart screening and medicine supply, thus freeing the ward pharmacist to undertake clinical review, medication optimisation, and patient education activities.

ICT has repeatedly been identified as a major barrier to service delivery and has impacted service efficiency, reliable transfer of project information, and opportunities to create two-way communication between hospital and primary healthcare professionals. There is currently no single Queensland Health system that can effectively meet service requirements to electronically transfer patient information securely and directly to individual GPs and to community pharmacies. It is recommended that there is ongoing consultation with Queensland Health ICT services to highlight communication shortfalls and to identify immediate and future solutions to information transfer problems.

Health performance

Not surprisingly, enhanced continuity of care was identified as the main advantage of the ToCPP service. Stakeholders considered that improved communication to primary healthcare providers reduced the risk of medication omissions and errors, contributed to medication persistence post-discharge, and facilitated medication optimisation. Other benefits, for example, improved patient education, safety, adherence, and medication management were also described.

Published evidence relating to such perceived benefits is limited. A 2019 umbrella review concluded that pharmacy-supported interventions at transitions of care have a positive effect on medication discrepancies and adverse drug events and potentially improve medication safety.¹³ However, there is less evidence to indicate that transitions of care activities contribute to enhanced patient medication adherence. A 2021 systematic review identified only two studies that demonstrated improved patient adherence associated with pharmacist-led transition of care intervention.¹⁴

The value of the ToCPP service is further evidenced in the service activity data. A mean of 0.8 medication-related problems per patient were identified at post-discharge review, 0.7 per patient at subsequent review, and more than one per patient at RACF review. These rates are

comparable to data in the Pharmaceutical Society of Australia's *Medicine Safety: Take Care* report, which states that over 90% of patients have at least one medication-related problem following discharge from hospital.¹⁵ It is, however, unknown whether the medication-related problems identified by ToC pharmacists were resolved and whether primary healthcare providers acted on recommendations provided in the MMP.

There is already evidence to suggest that pharmacists working in outpatient clinics are effective in identifying and resolving medication-related problems.¹⁶ Additionally, the significance and outcomes of pharmacist-identified medication-related problems in the Site 3 ToCPP service are being evaluated. It is suggested that future ToC services should aim to evaluate patient outcomes to provide further evidence of service effectiveness.

Patients highlighted the benefits of the post-discharge follow-up, especially the opportunity to ask questions and clarify medication plans. Previous studies have identified that patients believe information provided in transitions of care is not tailored to their needs, and potential risks and adverse effects of new medication are not discussed.¹⁷⁻¹⁹ It would, therefore, appear that the ToCPP service effectively addresses these concerns.

There was, however, some indication that despite receiving the ToCPP service, patients did not fully understand all aspects of their medication. Whilst hospital pharmacists predominantly display appropriate communication behaviours, there are areas that could potentially be improved to optimise patient counselling.²⁰ These include agenda-setting with the patient, delivering information in shorter segments across different times, and health literacy and cultural awareness. The use of teach-back techniques by pharmacists may also improve patient counselling on discharge.²¹ It is recommended that there is ongoing education and training of ToC pharmacists to optimise patient-centric consultation practices, including the assessment of patients' medication beliefs and understanding of information provided.

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