Transfer of Care Around Medicines (TCAM) Evidence Review

Summary of four Transfer of Care Around Medicines (TCAM) pilots across England. We have summarised the information from the original Newcastle study published in the BMJ Open, and a recently published paper from Leeds Hospital. Also, a West of England evaluation and analysis from Southampton Hospital, neither of which are published in peer reviewed journals. We have included some qualitative information from Yorkshire & Humber AHSN and Chelsea & Westminster Hospital, and a summary of a website release from Cheshire and Merseyside Health and Care Partnership.

The 2016 **Newcastle-upon-Tyne** study[1] evaluated an electronic patient referral system from one UK hospital Trust to 207 community pharmacies across the North East of England and presented data on hospital readmissions and number of bed days.

Results

- 2,029 inpatients were referred over a 13-month period (1 July 2014–31 July 2015).
- Only 31% (n=619) of these patients participated in a follow-up consultation;
- 47% (n=944) of referrals were rejected by community pharmacies with the most common reason being 'patient was uncontactable' (35%, n=138).
- 23% (n-466) unlikely to have follow up by community pharmacist (recorded as 'accepted' or 'remain referred' on PharmOutcomes).
- Most referrals were accepted/completed within 7 days of receipt and most rejections were made >2 weeks after referral receipt.
- Most referred patients were over 60 years of age and referred for a Medicines Use Review (MUR) or enrolment for the New Medicines Service (NMS).
- Those patients who received a community pharmacist follow-up consultation had statistically significant lower rates of readmissions and shorter hospital stays than those patients without a follow-up consultation.

Further analysis on hospital readmission rates and number of bed days was conducted on 1,386 hospital patients who received electronic referrals to community pharmacy between 1 July 2014 and 30 June 2015. Of these patients (referrals):

- 501 (36.1%) patients had a record of receiving a follow-up consultation by a community pharmacist, i.e. referred, accepted and completed.
- 885 patients did not receive a completed consultation. These were either 'rejected' by the community pharmacist [607 = 43.8%] or unlikely to have received a follow-up by the community pharmacist [278 = 20.0%], i.e. referred, some accepted but zero completed.
- The odds of readmission for patients who did not receive a follow-up consultation from the community pharmacy were found to be significantly higher than patients who did receive a completed consultation.
- This result was consistent across the three readmission time points (30, 60 and 90 days).
- Readmission rates were higher among those who did not receive a follow-up consultation:
    - 0 to 30 days: 5.8% consultation vs. 16% no consultation
    - 31 to 60 days: 3.4% consultation vs. 9.5% no consultation
    - 61 to 90 days: 3.6% consultation vs. 9.4% no consultation
    - Among readmitted patients, average duration of hospital stay was at least 5 days less for those who received a consultation.

Conclusions

Hospital pharmacy staff were able to use an information technology (IT) platform to improve the coordination of care for patients transitioning back home from hospital. Community pharmacists were able to contact the majority of patients and results indicate that patients receiving a follow-up consultation may have lower rates of readmission and shorter hospital stays.

Based on the Newcastle study, PharmOutcomes (Pinnacle Health Partnership LLP) have analysed the savings delivered and claim a potential £1.4 million local health economy saving (based on 2,600 referrals), this has been challenged and further work is being done to evaluate this.

On 20th June 2019, **Cheshire and Merseyside Health and Care Partnership** shared via their website[2] that the TCAM initiative in Cheshire and Merseyside, which involved 635 community pharmacies and 10 hospital Trusts, had been shown to help reduce the number of avoidable bed days in hospital. Up to March 2019, the initiative had resulted in 17,686 referrals to community pharmacists. Using the same approach as the Newcastle upon Tyne study and the Pharmoutcomes Discharge Referral Savings Calculator, Cheshire and Merseyside Health and Care Partnership estimated that this resulted in a reduction of 6,008 bed days.

A **Leeds Teaching Hospitals NHS Trust** (2019) academic paper[3] evaluated the outcomes of their 'Connect with Pharmacy' (TCAM) model between January and April 2017. During the 3 month period, a total of 997 patients gave consent for their information to be electronically transferred to their chosen community pharmacy using the Connect with Pharmacy intervention. The primary outcome measure was admission rates 6 months prior (baseline) and 6months post-intervention, with effect on total length of stay if readmitted included as a secondary outcome measure.

Results

- The evaluation found that there was an overall reduction in the frequency of the total number of readmissions post-intervention (n = 690) relative to admissions prior to the intervention (n = 823) and this difference was statistically significant.
- Whilst these 133 fewer admissions are unlikely to all be due to the CwP intervention reported here and a full evaluation of the economic benefit of the intervention is beyond the remit of this study, it can be estimated that £211,470 was saved in this sample post-intervention [Each non-elective admission estimated at £1,590].
- Of the referrals made, 84% were marked as 'completed' by community pharmacies, thus the data examined from the extraction was deemed likely to be a representative reflection of the intervention.

Table 1 shows the sub-analysis of 627 patients (over 65 years old) which found no reduction in total length of stay. However, the results suggest that the number of patients spending more than three days in hospital was reduced post-intervention (a change of 61 patients and shift of 9.73%):

Table 1 : Days in Hospital Analysis

n=627	3 days or fewer in hospital	Greater than 3 days in hospital
Pre-intervention	(52.15%) = 327*	300 (47.85%)
Post-intervention	388 (61.88%)	239 (38.12%)
Difference		61 patients (9.73%)

- * Typographical Error on paper = states 237 but % indicates value should be 327.

Conclusion

The results showed a reduction in readmissions and potential post-intervention length of stay, indicating there may be further benefits for our older patients' experiences and hospital flow and supports the finding of the Newcastle study.

A **West of England** evaluation[4] of their TCAM process operating across 5 hospital sites reported that 14,983 patient referrals were made over a 27 month period (April 2016 – June 2018).

- At least 56% of referrals were for patients over the age of 75.
- In 77.4% (9989) of total completed referrals (n=12,906), the medication had changed and as a result 7,834 referrals were considered by the community pharmacist to have prevented waste (60.7% of total referrals).
- In 72.6% of referrals the community pharmacist contacted the GP to reissue scripts.
- Of the 14,983 patients referred, 1,575 patients (11%) received follow-up support from their pharmacy.

One Trust reviewed their outcome data and identified that:

- 11/374 patients had been referred on for advice to GP or hospital due to non-compliance with medication, and
- 3/374 were found to be suffering adverse reactions that required cessation of the drug.
- One patient had a discharge review as a result of there being serious discrepancies between discharge summary and current medication list.

Therefore, there are at least 15 patients who have had a direct improvement in their care due to this intervention that is different to previous process.

The evaluation concluded that electronic transfer of information can be embedded into routine practice for inpatients who were discharged from hospital with Multi-compartment Compliance Aids, and inpatients who are considered to benefit from a Medicines Use Review or New Medicines Service review after leaving hospital. This creates a safety-net for patients, resulting in reduced medication waste and improved communication across transition of care.

An evaluation of data from the **University Hospital Southampton NHS Foundation Trust**[5] TCAM process during the 12 months from April 2018, analysed 30 day readmissions of patients referred by the hospital.

- The Trust estimated an annual saving of £159,898 related to 62 prevented readmissions (Using an 'average spell cost' for a 30 day readmission of £2,579).
- This was based on 2,120 total TCAM referrals, of which 1,813 were accepted by a community pharmacist (not clear how many resulted in completed consultations).

In June 2019, **Yorkshire & Humber AHSN** surveyed all community pharmacists who had received referrals from Calderdale and Huddersfield Foundation Trust and Leeds Teaching Hospitals Trust to gain a better understanding of their experiences of their regional TCAM process, 'Connect with Pharmacy', and provide feedback around any improvements which needed to be made to the process[6].

Twenty Community Pharmacists responded to the survey and their responses clearly demonstrated their support for 'Connect with Pharmacy'.

- 85% reported that it had saved them time and improved the information provided to patients about their medicines and their relationships.
- 50% of respondents had provided new services to patients because of the referrals received via' Connect with Pharmacy', these included the New Medicines Service and Medicines Use Review, and 50% believed that receiving referrals had helped to reduce medicines wastage.
- 100% of respondents picked up unintended discrepancies between hospital discharge summary and GP prescription, thus preventing potential harm to patients.

In 2017, 15 community pharmacists who had received discharge information referrals from **Chelsea and Westminster Hospital NHS Foundation Trust** responded to a questionnaire with feedback on the service[7]:

- 80% of the community pharmacists surveyed found the discharge information provided through the process either very useful or extremely useful
- 73% had provided New Medicines Service or Medicines Use Review consultations.
- 64% made a prescription intervention
- 80% stated that referrals had saved them time
- 82% stated that referrals had prevented or reduced medicines waste.
- 91% of the pharmacists surveyed stated that the process had improved the information they provided to patients about their medicines, and all of the pharmacists surveyed stated that they were happy to receive discharge information even if they were not able to provide a New Medicines Service or Medicines Use Review for any reason.

A **Healthcare Safety Investigation Branch report and safety recommendations** published on 24th October 2019[8] identified a significant safety risk posed by poorly implemented electronic prescribing and medicines administration (ePMA) systems. The report made observations about the availability, use and potential uses of the Pharmoutcomes system for electronically transmitting medicines-related information to community pharmacies. The report also references TCAM and the medicines reconciliation process. The Summary Report[9] for the same Healthcare Safety Investigation found that:

- In the reference event, the medicines reconciliation process in primary care would have provided an opportunity to detect the continuation of the dalteparin after discharge from hospital. (Finding 11)
- Transfer of care initiatives improve communication between care settings. (Finding 15)

A **2019 systematic review and meta-analysis**[10] evaluated interventions delivered during hospital stay or following recent hospital discharge in 24 studies (total participants=17,664 across 12 countries) that supported successful transitions of care through enhanced medication continuity. This review was targeted at older populations and selection criteria included mean participant age of 65 years and older. The meta-analysis, stratified by intervention component, demonstrated that self-management activities (RR 0.81 [0.74, 0.89]), telephone follow up (RR 0.84 [0.73, 0.97]) and medication reconciliation (RR 0.88 [0.81, 0.96]) were statistically associated with reduced hospital readmissions. Medicines reconciliation, performed manually or via electronic intervention was shown to significantly reduce hospital readmissions and was linked to fewer medication errors. The authors found the results suggested that interventions that best support older patients' medication continuity were those that bridged transitions and that these also had the greatest impact on reducing hospital readmissions.

References

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