

# Consensus methodology to investigate appropriate referral criteria for inpatients to be offered a transfer of care service as they are discharged home

Hamde Nazar<sup>1</sup>  
 Gregory Maniatopoulos<sup>2</sup>  
 Efi Mantzourani<sup>3</sup>  
 Neil Watson<sup>4</sup>

<sup>1</sup>School of Pharmacy, Newcastle University, Newcastle upon Tyne, UK;

<sup>2</sup>Institute of Health and Society, Newcastle University, Newcastle upon Tyne, UK; <sup>3</sup>School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Cardiff, Wales, UK; <sup>4</sup>Pharmacy Services, Royal Victoria Infirmary NHS Hospital Trust, Newcastle upon Tyne, UK

This article was published in the following Dove Press journal:  
*Integrated Pharmacy Research and Practice*

## Introduction

An emerging clinical role for community pharmacists is to become actively involved in the follow-up care of patients who are discharged back into the community (transfer of care services) by promoting better medication adherence and by contributing to the safe, effective, and efficient use of medication.<sup>1</sup> Recent research highlights how this extended role of community pharmacists could help to reduce drug-related adverse events, unnecessary health provider visits, hospitalizations, and readmissions while strengthening integrated primary care delivery across the healthcare system.<sup>1,2</sup>

Risk prediction models have been developed to effectively target the offering of postdischarge interventions to reduce patient hospital readmission. These tools aim to standardize the offer and provision of services that could otherwise be dependent upon professional and clinical expertise, knowledge and bias. Despite over 30 years of work to develop and optimize a risk prediction tool, there is limited consensus on the fundamental patient parameters that are most useful to target delivery of readmission-reducing interventions.<sup>3-5</sup>

A consensus methodological approach was adopted in this study to address a gap in the literature by identifying appropriate referral criteria of hospital inpatients for follow-up care in the primary care setting.

## Methods

### Phase 1

Semistructured interviews were conducted in February 2018 with a small number (n=4) of experts purposively sampled due to their involvement in delivering, designing or managing transfer of care services between hospital and community pharmacy. The interviewer probed about potential referral criteria for patients to be offered postdischarge care. Transcribed interview data were analyzed using inductive thematic analysis to generate category systems and repeated themes.<sup>6</sup>

### Phase 2

The stakeholder interviews informed the design of a survey tool to be employed in an adapted two-round Delphi consensus activity.<sup>7</sup> The survey was reviewed and piloted by two clinical pharmacists for clarity of language and face validity.

Correspondence: Hamde Nazar  
 School of Pharmacy, Newcastle University, King George VI Building, Newcastle upon Tyne, NE1 7RU, UK  
 Tel +44 191 208 236  
 Email hamde.nazar@newcastle.ac.uk

**Table 1** The inpatient referral criteria identified through semistructured interviews, indication of importance and relative importance in Round 1, and validated indication of importance in Round 2 of the Delphi consensus

Identified inpatient criteria	Round 1		Round 2
Patient factors that could determine appropriate referral criteria	Indicated as important (number of participants)	Relative importance (%)*	Indicated as important (number of participants)
Patient demographics			
Age	8	38	0
Residential status	8	24	0
Deprivation index	4	12	0
Health/illness status			
Diagnosed condition	9	32	0
Presence of comorbidities	9	40	4
Medication factors			
High-risk drugs (NPSA** classification)	10	73	9
Polypharmacy	10	68	6
Changes in medication during inpatient stay	10	81	10
New medication on discharge	10	75	10
Health care use			
Number of previous admissions	8	36	

**Notes:** \*Calculated by  $\frac{\text{Total sum of the ranking scores across the 10 participants}}{\text{Highest total sum of the ranking scores (100)}} \times 100$ . \*\*National Patient Safety Agency, England.

The Delphi panel members included senior pharmacists, pharmacy directors and managers across the primary and secondary care sectors nationwide whom were known to the study team members and who are involved in the design, delivery and management of transfer of care services. These individuals were recruited through a combination of convenience and snowball sampling.

Participants were asked to indicate which patient characteristics were important to consider when deciding whether to offer postdischarge care, and then asked to rank these identified characteristics by level of importance (1=not important, 10=very important). Based on the first round of responses, a refined survey was sent out again to the same stakeholders to validate the patient referral criteria.

Favourable ethical approval was granted by the Faculty of Medical Sciences, Newcastle University.

## Results

The early interviews offered a range of factors to be considered when determining whether an inpatient should be referred to their community pharmacist upon discharge for follow-up care.

Of 29 invited panellists, 10 consented to take part. The participants represented primary (n=2) and secondary care settings (n=7), and represented the North East (n=2), the South (n=4), the North West (n=2), and the South East (n=2) regions of England. All 10 participants completed all questions giving a response rate at round 1 of 34%. These 10 participants also completed round 2 of the Delphi. Table 1 shows whether the participants thought the patient characteristics were important or not and their relative ranking of importance. Round 2 results are also displayed where 3 out of 5 factors achieved a high level of consensus ( $\geq 90\%$ ).

## Discussion

This study presents that consensus was achieved across three inpatient referral criteria:

1. Changed medication as inpatient
2. New medication on discharge
3. High-risk drugs

This work offers service designers, providers and managers some guidance on inpatients who may be appropriate to refer through transfer of care, or postdischarge services.

This study is based on expert opinion of a small number of panellists self-selecting from practice who have a keen interest in transfer of care services. These factors limit the findings as a larger sample size from a wider population would improve overall reliability.

Further research is also required to explore the feasibility of adopting this referral criteria and empirically assessing if patients fitting this criteria benefit most from postdischarge care from community pharmacists.

## Disclosure

Mr Neil Watson reports grants from Wessex AHSN, during the conduct of the study. The other authors report no conflicts of interest in this work.

## References

1. Nazar H, Nazar Z, Portlock J, Todd A, Slight SP. A systematic review of the role of community pharmacies in improving the transition from secondary to primary care. *Br J Clin Pharmacol*. 2015;80:936–948. doi:10.1111/bcp.12718
2. Nazar, H., Brice, S., Akhter, N. et al. New transfer of Care initiative of electronic referral from hospital to community pharmacy in England: a formative service evaluation. *BMJ Open*. 2016;6:e012532. doi:10.1136/bmjopen-2016-012532
3. Damery S, G Combes. Evaluating the predictive strength of the LACE index in identifying patients at high risk of hospital readmission following an inpatient episode: a retrospective cohort study. *BMJ Open*. 2017;7:e016921. doi:10.1136/bmjopen-2017-016921
4. Billings J, Blunt I, Steventon A, Georgiou T, Lewis G, Bardsley M. Development of a predictive model to identify inpatients at risk of re-admission within 30 days of discharge (PARR-30). *BMJ Open*. 2012;2:e001667. doi:10.1136/bmjopen-2012-001667
5. Donzé J, Aujesky D, Williams D, Schnipper JL. Potentially avoidable 30-day hospital readmissions in medical patients: derivation and validation of a prediction model. *JAMA Intern Med*. 2013;173:632–638. doi:10.1001/jamainternmed.2013.3023
6. Boyatzis RE. *Transforming Qualitative Information: thematic Analysis and Code Development*. Thousand Oaks CA: SAGE; 1998.
7. Trevelyan EG, Robinson N. Delphi methodology in health research: how to do it? *Eur J Integrative Med*. 2015;7(4):423–428. doi:10.1016/j.eujim.2015.07.002

### Integrated Pharmacy Research and Practice

### Publish your work in this journal

Integrated Pharmacy Research and Practice is an international, peer-reviewed, open access, online journal, publishing original research, reports, reviews and commentaries on all areas of academic and professional pharmacy practice. This journal aims to represent the academic output of pharmacists and pharmacy practice with particular focus on integrated care. All papers are carefully peer reviewed

to ensure the highest standards as well as ensuring that we are informing and stimulating pharmaceutical professionals. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <http://www.dovepress.com/integrated-pharmacy-research-and-practice-journal>

Dovepress