Developing Foundation Pharmacist decision making skills: Covid-19 spotlights the need

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ABSTRACT

The role of the pharmacist is changing, moving from a product focus, centred on the medicine, to a model of delivering person-centred care through the safe and effective use of medicines. This requires the development of enhanced clinical skills. It is recognised that there are significant gaps in current educational programmes, leaving novice pharmacists feeling unprepared for their transition to practice. This situation has been exacerbated by the current Covid-19 pandemic. Of the enhanced clinical skills, one of the most difficult to teach is decision making: often complex and high stakes, it is recognised as one of the hallmarks of the expert practitioner. Despite the importance of this skill in underpinning safe and effective practice, relatively little is known about how experts make such decisions, and there is little support for novices. This case study describes the development of a reflective tool, informed by naturalistic decision making and based on the aviation model of Threat and Error Management. This encourages systems thinking to help novice pharmacists cope with the complexities of decisions relating to real life patient-centred care.

KEYWORDS

Decision making, systems, clinical complexity

Introduction

The role of the pharmacist has undergone significant change in recent years, moving from a 'product focus' (the manufacture and supply of a medicine and associated information) to a 'care focus' (delivering person-centred care through the safe and effective use of medicines). This new role is recognised as requiring enhanced decision-making capability. Previously, decision making traditionally centred around a relatively simple triage process to decide whether referral to a physician was necessary, with the decision being arrived at largely as a result of protocol-driven questioning. The pharmacist then might make a product recommendation from the limited range of medicines available without a prescription. In contrast, the enhanced role takes the pharmacist into that space where difficult therapeutic decisions are commonplace.

These developments are happening against a backdrop of a changing NHS, where the aim is to reconfigure care, bringing it closer to home. Here, individuals are viewed as 'people living with conditions' rather than patients defined by their disease. The direction of travel is captured within 'We are the NHS: People plan for 2020/21' which describes a "sustainable supply of prescribing pharmacists with enhanced clinical and consultation skills." These skills are undoubtedly best developed as part of clinical practice. However, the current education model means that pharmacists have very little exposure to the clinical environment during their undergraduate programmes. The first significant block of clinical experience that most encounter is in their pre-registration year. Pre-registration and newly registered pharmacists report these early experiences as a steep learning curve and a time of anxiety, as they attempt to develop their clinical skills (Magola et al., 2018).

Foundation training has been available for some time to support the early career pharmacist, but its availability across the UK has been limited. In answer to this, the newly developed Foundation Pharmacist programme has been designed to provide all newly qualified pharmacists with a mentored and structured training framework. This is typically of two years duration (Royal Pharmaceutical Society, 2019). The overall aim is to help inexperienced practitioners acquire the skills and competencies required for working in extended clinical roles and taking responsibility for therapeutic outcomes. Covid-19 has accelerated the roll-out of the framework. Graduates of the class of 2019 have seen their pre-registration training significantly disturbed and will not sit their pre-registration examination until March 2021. However, they have already been provisionally registered and are still facing the pressures of clinical practice. Health Education England has responded with the Interim Foundation Pharmacist Programme (IFPP). The IFPP provides a structured framework (and resources) to support practice development. It also ensures that all Foundation Pharmacists are linked with an Educational Supervisor. In the session 2020-21, some 2500 pharmacists are eligible to join the programme.

Among practice skills, clinical decision making is recognised as one of the most challenging, seen as one of the hallmarks of the expert professional. It is also recognised that such expertise develops as a function of experience (Anakin et al., 2020). Inexperienced pharmacists report struggling with applying their knowledge in the unfamiliar, complex and highly dynamic naturalistic settings common in healthcare. This complexity has been exacerbated by the Covid-19 pandemic, which has significantly altered the operational environment. Additionally, the postponement of the pre-registration examination has had an impact. The lack of 'endorsement' normally provided by passing this milestone has been anecdotally reported as a further blow to clinical confidence.

The recognition of this problem led to an approach to the Chartered Institute of Ergonomics and Human Factors (CIEHF)'s Covid-19 response Gold Team from the Associate Dean (Foundation Pharmacists) at Health Education England. A small writing team was assembled comprising chartered ergonomists and clinical pharmacists. A wider review team was also identified, many of these drawn from the CIEHF Pharmaceutical Sector Group. For Phase II, the team was expanded to include more clinical pharmacists with a range of experience and expertise.

Aims

Phase 1: To undertake a scoping literature review, exploring what is currently known about clinical decision making in general, but also specifically in relation to pharmacy practice.

Phase 2: To develop a tool to support the development of pharmacist clinical decision making.

Phase 3: To evaluate the effectiveness of the tool as a resource within the scope of the IFPP.

This paper covers Phases 1 and 2.

Methods

For Phase 1, a scoping review was considered appropriate. This allowed the consideration of a breadth of literature across a range of disciplines. It also supported the mapping of key concepts and gaps in the literature. Phase 2 involved an 'expert panel' approach for developing a tool, and a set of clinical scenarios to be used as exemplars. These were then tested by clinical pharmacists with a range of experience (in terms of years in practice) and expertise (in relation to the specific clinical scenarios). The feedback was used to adapt both the tool and the exemplar scenarios.

Results and Discussion

Phase 1

While there are a number of models which describe the maturation of decision making, it is recognised that these have limits in practice. Klein and colleagues (1993) suggest that this is because models are often based on the study of subjects in artificial environments that fail to mirror the complexities of normal work. The recognition that decision making is highly dependent on context, and that the clinical context is particularly complex, triggered a broadening of the review to also consider the literature on naturalistic decision making. In seeking possible solutions, the team also drew on literature from other complex safety-critical industries which have had a longer history of embedding Human Factors principles. The main findings are show in Table 1.

Table 1: Main findings from the scoping review

Summary of findings	
1.	Effective decision making is an advanced skill only fully developed through experience.
2.	It is usually developed implicitly, by immersion in the practice environment and through
	observation of more advanced practitioners.
3.	Expert decision makers struggle to articulate how they make choices in complex scenarios
4.	Most models recognise a developmental aspect. Practitioners move from an analytical,
	rule-based approach in earlier years of practice through to the holistic, intuitive situational understanding of the 'expert' decision maker.
5.	Effective decision making in complex scenarios involves gathering information to build mental models. Construction of such models allows pattern recognition that triggers a particular course of action.
6.	Expert decision makers recognise that they will not always get it right. Part of their decision making includes how sub-optimal decisions can be recognised and corrected before they become unrecoverable.
7.	Building effective mental models can be – at least in part – taught. This is a process which is best supported through effective mentorship and supervision, allowing a safe space for discussions that start to 'make the implicit explicit.'
8.	From a learning perspective, the decision itself is less important than understanding the underlying process. Process insight allows better understanding of the developing practitioner's skills in gathering high-quality information, their ability to evaluate their own performance and their attitude to risk.
9.	Pharmacists tend to be risk-averse, and prefer to strive to reduce error, rather than accepting it as a normal outcome of everyday work. This is one of the reasons why there is a relatively limited focus on error recovery strategies in pharmacy education.
10.	Systems thinking supports effective decision making: a Human Factors approach to information gathering is a useful starting point.
11.	There are some interesting models used in other safety critical industries. One such model
	which seemed particularly useful for the pharmacy context (and the need to develop
	attitude to risk) was Threat and Error Management used within aviation.

Phase 2: A modified version of Threat and Error Management (TEM)

In risky situations, errors will happen and there will also be *threats* (hazards which are beyond the control of the team) which must be managed. In aviation, a specific work-based scenario is considered (usually the flight ahead) and a plan made by the flight crew (which will involve some

initial decisions). Threats and errors considered likely to affect *this specific plan* are then considered. In doing this, the crew considers information specific to their own context – their own experience, the particular aircraft being flown, their currency etc. In this way, the most likely scenarios can be considered, and recovery strategies planned in advance. These strategies will – where possible – attempt to answer the problem by converging on standard operating procedures (Dekker and Lundstrom, 2007; UK Civil Aviation Authority, 2014).

The success of TEM in aviation stems from its reinforcement through daily practice – it is actively discussed as part of pre-flight briefing and reflected on as part of debriefing. It is this verbalisation of risk awareness that is so valuable. Risk itself is a construction – situations that appear daunting to a newly qualified pharmacist may appear much less so to a professional with 30 years' experience of similar situations. However, inexperience may lead to an underestimation of complexity, especially where information is limited. TEM discussions make attitudes to safety (and strategies for improving it) explicit, allowing weaknesses to be identified and addressed. How does this help with decision making? Firstly, being more comfortable with managing the risks associated with decision making is likely to improve confidence. Secondly, it is an excellent mechanism for externalising decision-making processes, which supports the development of expertise. How can this be built into the daily work of a newly qualified pharmacist? Even when a pharmacist is working alone, TEM principles can still be applied. One of the strengths of airline TEM is that discussing it with team members undoubtedly makes for a richer consideration threat of and error because of the different experience levels. Conversations around risk management would be an excellent topic for reflective discussions with mentors. Depending on the circumstances, it might be possible to do this prospectively, for example, before a consultation with a patient already known to the team. It could also be used retrospectively to support critical reflection on performance.

A tool to facilitate pharmacist TEM

Applying TEM principles in aviation happens routinely because of the pre-flight plan, brief and debrief framework. There is not necessarily an obvious equivalent in most clinical settings. It was decided to build a resource that included a basic systems-thinking tool to underpin pharmacist TEM. Systems can be considered as a set of entities, linked in a 'common purpose' and outcomes 'emerge' as a result of interactions between these entities. The model below shows a modification of a Human Factors framework for enhanced Significant Event Analysis used in NHS Scotland.



Figure 1: Enhanced Significant Event Analysis tool developed by NHS Education for Scotland

This was adapted, replacing the 'notes' section with separate note pads allowing the user to note threats, errors and the interactions between entities. The idea was this framework could be used by the Foundation Pharmacist to help them in approaching decision making by allowing them to more fully consider the factors influencing decision making performance. However, the greatest value is perhaps for this to be used as a focus for reflection not only with their Educational Supervisor, but also their peers. Using the notepad tool as a 'discussion object' with colleagues with different levels of experience supports a deeper understanding of how expert staff decide on a course of action, and how this differs for less experienced staff. In this way, the novice can see where they are on this trajectory and track their progress.

Exemplars were developed as part of the resource. Three different complex scenarios were chosen, all of which should be recognisable by most Foundation Pharmacists. Two of the scenarios also captured some of the additional complexity added by the need to manage pharmaceutical care within the Covid-19 restrictions. A number of different pharmacist personas were developed for each of the scenarios, designed to reflect a realistic progression of the clinical case. The notepad tool was then filled out from the perspective of each of the personas, allowing comparison of the different approaches to treatment. At each stage, input from the clinical pharmacist panel informed the design and development. In effect, the personas within the exemplars *are* their real-life clinical counterparts, ensuring authenticity of the resources.

Learnings

The major output of this work is an educational resource comprising three sections: (i) Theoretical principles of decision making; (ii) Practical approaches; (iii) Worked examples. This was launched in December 2020. The resource is being used to support the practice of up to 2500 Foundation Pharmacists and their Educational Supervisors. Beyond this, there were some interesting insights

that are worthy of consideration for those involved in clinical decision making (or supporting its development):

- The content of the notepads had to be simplified significantly for the worked examples in order to allow specific learning points to stand out. In real-life, the notepads are likely to be much busier. This is not something to be frightened of it should be considered as a first step to embracing complexity. Poor outcomes often result from an attempt to over-simplify a scenario; by considering the messy reality, users are at least primed to recognise where threat might arise.
- The 'layering' of the clinical case development using personas with different types and length of experience illustrates how important peers are in providing the sort of guidance that may help development of decision-making skill. Novice clinicians should reflect on this and think about how they can actively seek out appropriate people to form their professional support network.
- While these scenarios were being constructed, it became apparent that the move from less experienced pharmacist to advanced practitioner was accompanied by a change in focus. This could be identified as moving from 'prescribing drugs,' through to 'managing the disease' to 'supporting the person living with a condition.' That is an interesting learning point, but also underlines the importance to less experienced practitioners of managing their information gathering to accurately capture the patient perspective.
- Similarly, recognition of 'threats' is not as common for less experienced staff this lack of awareness of complexity is a recognised issue at this stage, and so it is worth educational supervisors encouraging discussion and reflection specifically around this point.

Conclusion

This project is one example of the CIEHF Covid-19 Human Factors Response programme. It involved putting together a national multidisciplinary team drawing on Human Factors and clinical input. This clinical input included practitioners ranging from recently qualified pharmacists right through to highly experienced expert practitioners. This user engagement allowed the team to capture multiple decision-making perspectives, but also provided opportunity for wide review. Preliminary feedback has been very promising, and the resource will hopefully deliver in terms of supporting Foundation Pharmacists (and their Educational Supervisors) in this extraordinary year, where coping with the transition to practice means also means adjusting to the challenges of the Covid-19 pandemic. The Phase 3 evaluation exercise is planned for completion at the end of the first year, after which it will be reviewed and revised. It is hoped that this will be followed by the development of further resources, including Human Factors tools and case studies to support ongoing pharmacist development.

Acknowledgements

The authors would like to thank Health Education England and NHS Education for Scotland for their support in developing this resource in partnership with CIEHF; also Hannah Beba (national diabetes and endocrinology expert) and Emma Pearson (Clinical Leadership Fellow, Health Education England) for their particular contribution to clinical input.

References

Anakin, M, Duffull, SB, Wright, DFB. 2020. Therapeutic decision-making in primary care pharmacy practice. Research in Social and Administrative Pharmacy ePub ahead of print: <u>https://doi.org/10.1016/j.sapharm.2020.04.005</u>

- Dekker, SWA, Lundstrom, J. 2007. From threat and error management (TEM) to resilience. Human Factors and Aerospace Safety 6(3): 261-273
- Klein, G A. (1993). A recognition-primed decision (RPD) model of rapid decision making. In G. A. Klein, J. Orasanu, R. Calderwood, & C. E. Zsambok (Eds.), Decision making in action: Models and methods (p. 138–147). Ablex Publishing.
- Magola, E, Willis, SC, Schafheutle, EI (2018). Community pharmacists at transition to independent practice: isolated, unsupported and stressed. Health and Social Care in the Community https://doi.org/10.1111/hsc.12596
- National Health Service. 2020. We are the NHS: People plan 2020/21. Available at: <u>https://www.england.nhs.uk/wp-</u> <u>content/uploads/2020/07/We_Are_The_NHS_Action_For_us_all-updated-0608.pdf</u> [accessed 19/08/20]
- NHS Education for Scotland. Enhanced significant event analysis toolkit. Available at: <u>https://learn.nes.nhs.scot/903/patient-safety-zone/enhanced-significant-learning-event-analysis-sea</u> [accessed 20/08/20]
- Royal Pharmaceutical Society. 2019. The RPS Foundation Pharmacist Framework. Available from: <u>https://www.rpharms.com/resources/frameworks/foundation-pharmacy-framework-fpf</u> [accessed 12/10/20]
- UK Civil Aviation Authority. (2014). Flight crew human factors handbook. CAP737. Available at: https://publicapps.caa.co.uk/docs/33/CAP%20737%20DEC16.pdf [accessed 19/08/20]