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AVOIDING HARM: Tackling Problematic Polypharmacy through strengthening Expert Generalist Practice

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Abstract

Problematic polypharmacy is a growing challenge. Medication that is intended to improve patients' health and wellbeing is instead becoming part of the problem. The way we practice medicine has become one of the drivers for the problems. Dealing with the challenge will need us to think differently about how we do clinical care. A 2013 Kings Fund report stated that tackling problematic polypharmacy requires us to actively build a principle of 'compromise' in to the way we use medicines. There are implications for how we consult and make decisions with patients, in how we design health practice and systems to support that decision making, and in our understanding of the process of research – how we generate the knowledge that informs practice. This review considers the current state of play in all three areas and identifies some of the work still need to do in order to generate the practice-based evidence needed to tackle this most challenging problem. Finding a way to redesign practice to address problematic polypharmacy could offer a template for tackling other related complex issues facing medical practice such as multimorbidity, chronic pain and complex mental health.

AVOIDING HARM: Tackling Problematic Polypharmacy through strengthening Expert Generalist Practice

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Abstract

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The Challenge of Problematic Polypharmacy

Polypharmacy is now a routine medical intervention. Defined as the concomitant use of multiple medicines on a long-term basis, it represents an approach to medical care that has expanded significantly in scale and scope over the last twenty years [1]. Around one third of people aged 75 and over take 6 medicines or more a day [2]. The last two decades has seen the number of people prescribed 5+ medicines a day increase four-fold [2].

Appropriate Polypharmacy offers significant potential benefit to both individual and population health [1. However, the 2013 Kings Fund report also recognises a new challenge – that of Problematic Polypharmacy [1]. A person on ten or more medicines a day is over three times more likely to be admitted to hospital than someone on 1-3 medicines per day [3]. The risk of adverse reactions and medication errors increases with higher prescribing [1]. 40% of people taking 5 or more medicines a day report feeling burdened by their use [4]. Many factors contribute to problematic polypharmacy, including patient, professional and health system issues. The Kings Fund therefore defines problematic polypharmacy with reference to what is experienced by the patient: being when the "intended benefit of the medication is not realised" [1]. This definition requires us to consider explicitly what we mean by 'intended benefit'.

Work to date to address the challenges associated with polypharmacy has centred on the principles of medicines optimisation: "ensuring people get the right choice of medicines, at the right time, and are engaged in the process by the clinical team" [5]. In practice, this focuses on the safe and effective use of medicines to enable the best outcomes [5], involving whole practice teams in safely delivering medicines to patients. The intended benefit is optimal medical impact from medication with minimal side effects or risk.

Medicines optimisation programmes have been criticised for a lack of person-centred focus in defining 'best' practice and outcomes with relation to decisions about medication use [6]. Indeed, the 2013 Kings Fund report described that addressing problematic polypharmacy would require *compromise* between medical and patient perspectives on the use of medicines [1]. Intended benefit may still be biomedical outcomes. For some patients, priorities for care may reflect different benefits.

Achieving compromise is the expertise of the medical generalist. Generalist practice describes the skills needed to integrate biomedical and biographical perspectives of individual illness to generate an individually *tailored* interpretation of what is wrong and what needs doing [7]. The goal of generalist practice is to support health as a resource for daily living – a means to an end rather than the end itself [7]. Generalist skills offer a mechanism to deliver robust, safe compromise.

However, the 2019 NHS Long Term Plan recognises a shortage of capacity of generalist skills in the hospital setting [8]. IN the community/primary care setting, research highlights four barriers to use of generalist skills in practice [9,10]. A 2017 survey of prescribers including GPs, pharmacists and nurse prescribers described that tailoring of medicines was inhibited by the 4Ps of Permission, Prioritisation, Professional training and Performance management [10]. Professionals described a perceived lack of *permission*to work beyond guidelines – an approach needed to achieve tailoring and compromise. They highlighted a failure to *prioritise* this complex task in a multitude of other competing priorities in their daily work, meaning they lacked the 'head space' to tailor medication use. People described both a lack of *professional training* in the complex decision making required for tailoring, exacerbated by a lack of confidence in using the skills they did have. Finally, they challenged*performance management* processes which at best ignored , and at worse criticised, this area of practice.

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As yet, and for a variety of reasons that I shall return to, we have no evidence-based description of an expert-generalist-prescribing intervention. However, we do have a growing body of research evidence and professional scholarship that offers us insights in how we could overcome the described barriers. This review aims to provide an evidence-informed overview of the state of play and proposes next actions for avoiding harm from problematic polypharmacy through strengthening expert generalist practice.

Building a generalist response

This review will therefore consider, can strengthening expert generalist practice support the compromise needed to tackle problematic polypharmacy? Underpinning generalist practice and the delivery of compromise is the principle of person-centred care: that care is guided by the needs and preferences of the individual [11], recognising health as a resource for living and not an end in itself[12]. Healthcare decisions require an interpretation of illness and need based on understanding of the individual in their context, not just their disease status. Delivering person-centred care is a complex intellectual task, and certainly not a 'soft skill' [13].

To explore this further, I will examine three areas of practice: the consultation (the clinical intervention), the practice setting (the context), and scaling and sustaining practice (implications for research and scholarship).

Rethinking the consultation

Compromise needs an approach to clinical practice that supports robust and safe construction of "contextualised meaning" driving clinical decision making [14,p11]. Generalist practice constructs whole-person-centred meaning in context through the integration of knowledge/evidence on both the biomedical and biographical aspects of individual illness experience. Decisions are informed by, rather than based on, guidelines/evidence, with the clinician exercising the skills and clinical judgement of the expert generalist to robustly work beyond guidelines to deliver whole-person tailored care [15,16].

A (still limited) body of scholarship describes how clinicians work beyond guidelines in practice. Gabbay's account of generating practice-based evidence, and the construction of mindlines, describes how GPs actively construct knowledge-in-practice-in-context through the use of clinical scholarship [16]. Similarly, Donner-Banzhoff used ethnographic methods to observe GPs in practice, and described the "inductive foraging" used by these clinicians to construct tailored understanding of patients' illness and needs [13]. Both describe the knowledge work [17], or clinical scholarship [18,19], undertaken by clinicians to robustly construct tailored interpretations in context. Drawing on the scientific principles of epistemology (the theory of knowledge), I have described a framework (or consultation model) that can be used to establish the trustworthiness of this work [15,20].

The importance of interpretive practice – the exercise of clinical judgement – is recognised within key systems that currently govern clinical practice. The National Institute for Health and Care Excellence (NICE) produces most UK guidelines describing best practice. The Chair of NICE, Professor Haslam, has repeatedly described that NICE produces "guidelines not tramlines" [21], with all NICE documents calling for professional judgement. Guidelines are constructed from a review of best evidence (see Box 1). The Evidence Based Medicine (EBM) movement also supports the use of clinical judgement in deciding if and when to apply evidence to an individual patient [22]. Both NICE and EBM emphasise the importance of clinical judgement. However, both can be criticised for failing to provide a robust account describing what is clinical judgement – and in particular, how it can be distinguished from the 'clinical opinion' that appears at the bottom of the EBM hierarchy of evidence [23].

INSERT BOX 1 ABOUT HERE

As highlighted in my own research [9,10], and within informal discussions with colleagues, clinicians feel

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that they lack the skills and confidence to robustly defend clinical judgement and beyond protocol decisions. Professional training (and assessment) focuses on demonstrating what you know, rather than how you make use of what you know (for example, to deliver tailored decisions) [25]. Professionals feel unable to defend complex decisions, and so they do not make them. This undermines the capacity for compromise, and so contributes to problematic polypharmacy.

Tools for generalist practice

A number of tools help a clinician with specific tasks related to medicines use such as deprescribing. However, and surprisingly, there is still limited specific evidence for whole-person-centred prescribing. However, I describe two evidence-informed approaches currently available which address the barriers of permission and professional skills. Both share in a goals-focused approach to using medication.

Scottish polyphArmAcy guidANCE [26]

This tool describes 7 steps to 'appropriate polypharmacy'. The first step, which informs all that follows is to determine what matters to the patient – to set the goals for care. The clinician is then guided through identifying essential drug therapy and unnecessary therapy; an assessment of whether therapeutic goals are being achieved and at what costs (in terms of adverse effects). The cost-effectiveness of the medication from a service perspective is considered, along with the question of whether the patient is able or willing to take the medication as prescribed.

The guidance provides data (for example on absolute benefit and harm from medication use) and structure for complex decision making (addressing the barrier of professional skills); as well as permission and prioritisation for this model of practice. Case studies are offered to bolster learning potential, with hot topics of common challenges flagged.

The Scottish Guidance is a useful resource for clinicians embarking on person-centred review of medication use. However, the Guidance lacks a strong evidence base or theoretical framework informing its development and implementation.

THE SAGE CONSULTATION MODEL [20]

Epistemological principles describe five steps needed to support robust generation of knowledge in practice in context [15]. These are recognised within the SAGE consultation model [20] – see Box 2 . Clinicians should pay attention to, and document their thinking/decision making, with reference to: a clear statement of GOALS of care with the default being to support health for daily living; a considered EXPLORATION of a full data set; the construction of a TAILORED EXPLANATION; a clear process of professional SAFETY NETTING; and follow up of the patient for IMPACT ASSESSMENT. This fifth step recognises that a tailored explanation is always an interpretation constructed to support a goal. The quality of the interpretation lies in the process of its construction (the first 4 stages) but also its utility – whether it offers value to an outcome [15].

INSERT BOX 2 ABOUT HERE

The 5 Steps model provides a framework that addresses each of the 4P barriers described: in recognising the legitimacy of professional interpretive practice, and the complexity of the task (and so prioritisation). It provides a framework to support the application of skills, and an epistemologically robust framework for critically reviewing and defending decision making; as well as performance management/assessment.

Both the Scottish Guidance [26] and the 5 Steps SAGE model [20] can be understood as complex interventions supporting professional practice. As such, both can – and should – be subjected to critical evaluation through research in order to understand the impacts on professional practice and patient outcomes. The principles

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behind the SAGE model have been assessed within Quality Improvement activity [27]. Both models describe principles of practice that will be recognised by and familiar to many professionals:

"The good physician treats the disease. The great physician treats the person who has the disease" (Osler) [cited in 28]

However formal research evaluation of either consultation approach has yet to be done.

Addressing barriers: rethinking the organisation of practice

Both the Scottish guidance and the SAGE consultation model offer evidence-informed guidance to inform the interaction between clinician and patient. But consultations happen in an organisational context. Contextual factors can both support and undermine practice [9,10]. Successful implementation of new ways of working requires us to pay attention to the context as well as the intervention itself [29]. For generalist expertise to improve the 'compromise' needed to address problematic polypharmacy, we need to look not just at what clinicians and patients are doing, but also to think about the organisation of practice.

Repeat prescribing supporting long term medication use occurs mainly in the primary care (general practice) context. In the UK in 2018, 1.1 billion prescription items were dispensed in the community, at a cost of £8.8billion [30]. Improvements to the organisation of prescribing practice has come through the development of Medicines Optimisation systems [5]. The principle behind Medicines Optimisation is simple: to "improve outcomes and value" [5]. Measures to achieve these goals include the introduction of practice systems that improve outcomes for patients by helping them take their medicines correctly, avid unnecessary medicines and reduce wastage, and improve safety [5]. Medicines Optimisation has contributed to significant improvements in practice areas such as antibiotic prescribing and reducing the use of medicines that are not clinically or cost effective. Utilisng the clinical skills of pharmacy teams within primary care settings has been a crucial part of this success [5].

But Medicines Optimisation approaches, to date, have not fully embraced the challenge of implementing 'compromise' and in particular the 4P's to generalist practice that my work has described.

The principles of Medicines Optimisation recognise the importance of a patient-centred approach (see Box 3) and so potentially addresses 'Permission' as a barrier to person-centred care. Although practice models do not offer specific guidance on how to ensure that principle #1 (understanding the patient's experience) should be used to guide or moderate choices raised by principle #2 (evidence based use of medicines). But the approaches to strengthen generalist expertise that I have already outlined may help address this challenge.

INSERT BOX 3 HERE

However further work is also needed to tackle the wider organisational barriers to achieving compromise in practice. As discussed, these include how to appropriately prioritise the work needed within the wider context of a primary care service, how to build the teams and resources needed to support professional practice, and how to appropriately performance manage this complex area of work. Again, the research literature offers us insights in to how we might address these wider organisational gaps and challenges. Table 1 offers an overview.

INSERT TABLE 1 HERE

As yet, there are no research studies that pull all of these factors together to evaluate a new generalist complex intervention to address problematic polypharmacy. We do have a Cochrane review evaluating the impact of introducing evidence-based medicines optimisation tools (eg STOPP-START, Beers criteria, Medication Appropriateness Index) to address polypharmacy [31]. Results demonstrate improved governance outcomes (for example, a reduction in biomedically defined inappropriate prescribing) but with uncertain evidence of benefit for 'clinically significant outcomes' and patient-centred care. Newer studies now seek to evaluate multi-faceted (complex) interventions that recognise the range of clinician, patient and context components needed

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to address problematic polypharmacy [37-42]. Each study has a slightly different focus for its intervention. It is likely that we will need innovative research methods, for example realist synthesis [43], to help us integrate the findings and so draw wider conclusions on redesigning prescribing practice.

Implications for research and scholarship

This current body of research will provide us with 'proof of concept' statements: evidence of what could work to address problems associated with polypharmacy. What comes next is the implementation stage – assessing whether the principle works when we seek to deliver it at scale in the primary care setting. Implementing complex interventions into everyday practice and at scale requires yet another set of knowledge and skills [29,44].

Yet there is a common theme running through each stage discussed here: the theme of knowledge work and the robust generation and application of knowledge in, and for, practice [17, 19, 45, 46]. At a consultation level, the generalist clinician works to integrate biomedical and biographical understanding of illness to generate new knowledge-in-practice of compromise. At a practice level, the generalist team works to integrate the multiple elements needed to enable and support this complex knowledge work. Now, at the systems level clinicians and academics must work together to integrate the knowledge and insights from their different contexts to co-produce solutions to shared problems.

Evans & Scarborough recognised this process as a new understanding of how research works [46]. Their observations of health services research in action revealed two types of practice: bridging and blurring. Bridging refers to the (perhaps) more traditional review of scholarship and research: where objective knowledge is generated in a controlled setting, with the use of new 'knowledge translation' tools and workers to deliver this new understanding to the context in which it is to be used. They also observed examples of blurring: where academics and applied workers came together to co-produce new knowledge-in-context. Evans & Scarborough didn't seek to judge between the approaches. However, they did note that both produce different types of knowledge and so raise questions for us on how we judge 'best' evidence.

Our understanding of best evidence is currently largely driven by the epistemological assumptions of the Evidence Based Medicine movement (EBM) [22]. Epistemology is the theory of knowledge, and offers us insights in to how we judge between different types of knowledge. EBM gave us a 'hierarchy of knowledge' which judges between different types of knowledge based on the methodology used to generate it. EBM was originally developed within a specialist, biomedical setting and the epistemological assumptions (and so hierarchy) reflect the ontological beliefs and knowledge work of that context. But its assumptions about 'best evidence' have been applied more broadly across health care settings; with implications for achieving the compromises discussed here.

Glasziou and Chalmers have challenged this methodological definition of best evidence on the grounds that it is insufficient to prevent waste: the generation of research that doesn't deliver any impact [47,48]. They propose that research should be judged by three components: the relevance or appropriateness of the research question, the appropriateness of the methodology *for the question* , and the impact of the research. This broader vision of research quality offers a framework by which to judge the generation of knowledge from a blurred model. Established epistemological frameworks allow us to judge the knowledge output. Scaling these research processes to enable research to be part of the solution to problematic polypharmacy challenges not only the knowledge work of clinical practice, but also that of research practice too [49].

In conclusion

Building capacity for clinical compromise in order to address problematic polypharmacy needs a whole-system model of practice that supports active generation and assessment of the robustness of knowledge in real-time and in context.

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Rethinking how we generate and use knowledge in practice has implications for how we train practitioners in scholarship, how we organise teams and practices to generate and use knowledge, and how we organise systems to understand and support knowledge in practice.

These challenges and suggested changes apply to more than just addressing problematic polypharmacy – but also other complex illness such as multimorbidity, complex mental health, medically unexplained symptoms and managing uncertainty.

We have an opportunity to address a key clinical challenge. Finding a way to redesign practice to address problematic polypharmacy could also offer a template for tackling other related complex issues facing medical practice such as multimorbidity, chronic pain and complex mental health. In tackling problematic polypharmacy, we may also describe a new model for evidence-informed innovation of practice for the holy grail of whole-person-centred healthcare.

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