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When Procedures Meet Practice in Community Pharmacy: Qualitative Insights From Pharmacists and Pharmacy Support Staff.

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ABSTRACT

Objectives: Our aim was to explore how members of community pharmacy staff view procedures and how procedures are used to manage risk in community pharmacies.

Setting: The setting for our study was community pharmacies in England and Wales.

Participants: Twenty four community pharmacy staff including pharmacists and pharmacy support staff were interviewed regarding their view of procedures in community pharmacy. Transcripts were analysed using thematic analysis.

Results: Tensions were evident between the standardisation of practice and the professional autonomy of pharmacists. Procedures were considered useful for outlining expected practice, but pharmacists felt following them precisely did not always guarantee safe patient care. Pharmacists feared being unsupported by their employer for working outside of procedures, even for patient benefit. Work demands influenced how procedures were viewed and used for managing risk. Lack of staff, pressure to hit targets and poor communication effected how able staff felt to follow procedures. Following procedures on weekends could be difficult as prescribers were not always available and pharmacists often relied on professional judgement. Views of procedures differed between staff. Pharmacists tended to believe procedures should have some flexibility; however some support staff believed strictly following procedures would keep both patients and themselves safe. Professional registration was suggested to influence support staff's views. Dispensers described following the guidance of the pharmacist which sometimes meant working outside of procedures, but occasionally felt unable to voice concerns about not working to rule.

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Conclusions: Organisational resilience in community pharmacy was apparent and findings from this study should help to inform policy-makers and practitioners regarding factors likely to influence the implementation of procedures in community pharmacy settings. Future research should focus on exploring instances where community pharmacy staff purposively bypass or deviate from procedures and the impact this may have on patient safety.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This is the first study to specifically explore the effect of procedures on practice in community pharmacies.

- Detailed insights were provided by community pharmacists and support staff holding a range of roles and levels of experience from a variety of pharmacy settings.

- These qualitative findings highlight the importance of organisational factors in shaping how procedures are used to manage risk in community pharmacies

- These findings should help to inform policymakers and pharmacy teams on how to optimise the implementation of procedures in practice.

- Future work is needed to explore organisational resilience in community pharmacy, which must investigate instances where staff purposively bypassed or deviated from procedures in order explore the potential impact this may have on patient safety.

1. INTRODUCTION

Safety in healthcare environments is high on the agenda in many countries, especially as several million adverse events could be prevented every year[1]. One method used to manage risk is through standardised procedures. These have been applied to a range of healthcare activities, for example antibiotic usage and infection control[2]. However, while procedures are an effective method of safety improvement in principle, in practice they have a more limited effect than anticipated. In some sectors including the rail industry, procedures are continually amended to prevent actions implicated in recent incidents[3], but have less influence than expected on the occurrence of future incidents[4-6].

Operating in this way can become increasingly restrictive for employees and result in procedures being difficult to follow unless working in optimal conditions, which can be rare[3]. Reason[3] notes that procedures might be used to protect the organization as opposed to the individual employee. Although procedures instruct employees on how to do the job 'safely', this can result in an inability to get the job done[4]. This can lead to differences between centralised guidance and local practice[4], meaning employees may work outside of procedures in order to complete their work. This difference between 'work-as-imagined' and 'work-as-done'[7], can lead to lack of continuity in practice[8] which is sometimes due to organisational factors such as lack of resources. In healthcare, practitioners may use expertise and professional judgement to adapt to situations presented whilst still reaching expected outcomes[8-10].

Previous research on the use of procedures in healthcare has largely concentrated on hospital settings. Findings suggest procedures were viewed differently by healthcare staff

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based on their role[11-16]. Doctors for example, felt working outside of procedures was sometimes necessary and that a flexible approach to patient safety was crucial[13, 14, 17]. However, nursing staff felt procedures were of high importance and were more likely to hold more systemised and less individualistic views to procedures[12, 15, 18]. The likelihood of following procedures has been seen to be affected by the behaviour of others, with medical students being more likely to go against a procedure if their superior did so[19]. Studies show individuals rarely feel able to speak up about the behaviour of their colleagues with regards to compliance with procedures[14, 19-21]. A qualitative study examining the views of hospital pharmacists, doctors and nurses suggested that health professionals acknowledged they were required to comply with procedures yet could not make compliance a priority due to competing demands[14]. Day of the week and time of day were also noted as affecting compliance, due to changes in employee workload, fatigue and morale[16, 22]. This suggests that role and organisational factors affect how procedures are viewed and the extent that they are followed as intended.

This study explores the use of procedures in community pharmacy (CP), which is a topic of increasing importance as CP assumes more responsibility for healthcare provision[23]. Since 2005, UK pharmacies are required to operate to written standard operating procedures (SOPs) for the dispensing and supply of medicines[24]. These SOPs encompass activities normally occurring within the pharmacy such as the sale of over the counter medicines and providing advice to patients[25]. In practice, SOPs detail "what should be done, when, where and by whom"[26]. It has been suggested that this helps pharmacists and support staff to ensure quality, consistency and good practice at all times[26]. However, as professionals, pharmacists are often faced with a choice to operate to the standards set by

their organisation versus the values instilled during their training[27]. The effect of procedures on professional autonomy in CP is yet to be explored.

Although SOPs have been mandatory for a decade, there is a lack of research into how procedures are viewed and utilised in CP, with much of the research conducted focusing on the supply of over-the-counter (OTC) medicines[28, 29]. These studies have found that, in some circumstances, procedures may be not followed as they should be. In a 2013 investigation into CPs in the UK, trained "mystery shoppers" visited 122 pharmacies and rated 45% of OTC consultations as 'unsatisfactory'[30]. In some cases, advice was given that could have resulted in hospitalisation due to the employee's failure to recognise the risk of drug interactions between requested OTC medicines with the mystery shopper's pseudo regular medication[30].

Given the lack of research into procedures in CP settings, this study aimed to explore how CP staff view procedures and how procedures are used to manage risk. The effect of procedures on professional autonomy, and the ways in which organisational factors within CP may affect the success of procedures in managing risk were also explored.

2. METHODS

2.1 Design and Setting

The study used a qualitative design. The setting for the study was community pharmacies in England and Wales.

2.2 Sampling and Recruitment

Twenty-four participants working in community pharmacies (13 pharmacists and 11 pharmacy support employees) agreed to take part. Participants were recruited on a purposive basis, using departmental contacts and social media, to represent a range of pharmacy settings and roles (that is, different locations, opening hours, employment types and pharmacies (independent, small, medium, and large national chains). The mean length of time since participants had qualified for their current role was 6.7 years ($SD = 8.29$). The mean length of time that each participant had worked in CP (sometimes in other pharmacy support roles) was 11.6 years ($SD = 9.03$). Seven participants worked in independent pharmacies, ten worked for large pharmacy chains, two worked for a medium sized pharmacy chain, two worked for a small sized pharmacy chain, one participant worked for a supermarket and two participants were locum/sessional staff.

Participants were required to be qualified or appropriately trained to practice in their current job role to ensure participants in a given role had comparable levels of knowledge and experience, Fig. 1 illustrates the hierarchy of staff within a typical CP in the UK. Asterisks refer to members of staff who are registered with the General Pharmaceutical Council (GPhC), the regulatory body for pharmacists, pharmacy technicians and pharmacy premises in the UK. Other members of staff are accountable to the responsible pharmacist in their pharmacy. Within corporate pharmacy chains, superintendent pharmacists have overall responsibility for setting out the standards and procedures for the provision of pharmacy services for their organisation. Each participant was sent a letter of invitation and a participant information sheet via email.

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Fig. 1 – Community Pharmacy Staff Hierarchy in the UK.

2.3 Data Collection

Semi-structured interviews were conducted; these focused on the participants' opinions of the procedures they are expected to follow in their role. The topic guide included questions on factors that had been identified in the literature as affecting compliance with procedures, such as day of the week[16, 22] workload and organisational pressures[14]. The topic guide was piloted with a member of CP support staff before data collection began. Each interview was conducted by one author, CT. Each interview was audio-recorded and transcribed in full. Interviews were held in a private place with only the participant and the interviewer present for each interview. Each participant gave informed written consent for the interview and interviews lasted between 30-90 minutes. Participants were recruited until data saturation was reached and no new themes emerged. Ethical approval was granted by the University of Manchester ethics committee (Ref 14352).

2.3 Analysis

Transcripts were analysed using the principles of a thematic analysis using a template method of organising qualitative data[31], and NVivo V.10 (QSR International) was used to support data analysis[32]. Analysis was guided but not constrained by the research question. Independent coding (undertaken by authors CT and DP, the latter not being involved in the interviews) and critical comparison of the data was undertaken to increase the reliability of the results[33]. *A priori* codes were created based on previous literature on compliance and views of procedures[34]. Salient issues found within the data were coded and also added to create a template which was applied to the participants' transcripts. Once

all of the interviews had been coded, the template was analysed by all three authors in order to identify the main themes emerging from the interview transcripts.

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3. RESULTS

Three main themes were identified; namely, the influence of work demands, the influence staff role has on how procedures are viewed and the dissemination and enforcement of SOPs.

3.1 The Influence of Work Demands

A variety of work demands were found to effect how procedures were used to manage risk. Work scheduling was frequently mentioned by all staff types as affecting how procedures were viewed. Each participant spoke of times where working in the pharmacy was especially difficult due to the increased workload. Particular pressure points included Christmas, Easter and other public holidays. Furthermore, the beginning and end of the week were felt to be particularly busy. Some participants expressed how working in CP on a weekend could feel like a 'different job entirely', mainly due to difficulties in inter-professional working, primarily with the closure of general practices. Another crucial element of work scheduling was felt to be staffing levels. Participants of all roles expressed how following procedures was especially difficult when they felt there were not enough staff allocated for their pharmacy.

"As you go through the Christmas period and the early New Year, patients are ill so you've got acute illness superimposed on chronic long term conditions so your workload goes up, plus the staff get ill too. So you end up doing twice the work with half the staff and that can be really difficult."

(P13, Superintendent Pharmacist, Medium Sized Chain)

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"Staffing and [lack of] time are probably the biggest things that put extra pressure on what

you're doing, and maybe lead to some of these things not quite going as they should do."

(P19, Dispenser, Large Chain)

Many participants spoke of regularly attempting to complete many tasks at once to manage workload which made abiding by procedures difficult and could lead to shortcuts being taken. With regards to work demands, all participants spoke of the volume of tasks that they were expected to complete under time pressure. Pharmacists commented on the need to provide additional professional services such as medicines usage reviews [35] and the new medicine service [36], some of which are set specific target levels of activity by the head office or area management.

"The management put a lot of pressure on pharmacists and pharmacy teams, particularly

driving targets around services. Every pharmacist wants to offer services because that's

what we're trained to do….It's not that we don't want to offer these services, it's that we've

got a responsibility to keep the whole pharmacy running safely. There are a lot of things

going on and you need to physically be there in order for that to happen."

(P1, Relief Pharmacist, Large Chain)

Participants often spoke of the 'the way we do things around here', behaving in a way that did not always coincide with how their company had instructed them to work in SOPs. This sometimes resulted in sessional pharmacists and pharmacy support staff feeling under pressure to conform to the way things ran in a particular pharmacy, even if this way of practicing was not outlined in procedures. This resulted in differences between branches of the same company.

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"You get mixed feelings and I think most of the time you just end up shutting up that side of you that's saying, oh my god, oh my god, don't do that, and you just say if that's what [the regular pharmacist does] then I'll just do the same. So, even though deep inside you might be not 100 per cent sure of what's going on...because of the demand around you [from the support staff]...you just get on with it."

(P11, Locum Pharmacist)

"Locum [pharmacists] also have to comply to our SOPs, we know that they might not read every SOP, so we use [an online system] so that all SOPs are on there and they need to tick that they have read the SOPs, but it is a bit like signing on iTunes [to say you have read the terms and conditions] but at least if the SOPs are there they can always refer to them wherever they are in a store or not."

(P20, Superintendent Pharmacist, Supermarket)

3.2 The Influence of Role on How Procedures Are Viewed

3.2.1 Views of Superintendent Pharmacists and Pharmacists

Pharmacists tended to feel procedures were useful to an extent, and could justify bypassing or deviating from procedures if it was necessary for patient safety. With regards to autonomy, pharmacists sometimes felt procedures undermined their ability to decide on the best care for the patient. Some pharmacists spoke of procedures being useful for 'when things go wrong' suggesting they are used to manage risk retrospectively or to show what *should* have been done in practice. However, there were some procedures that were considered to be less flexible than others. All three superintendent pharmacists in the

sample noted that pharmacists are sometimes faced with situations that are not documented within an SOP, and that professional autonomy is pivotal at these times.

"I think the trouble with our profession is that we want a rule for everything and that's not how a profession works."

(P13, Superintendent Pharmacist, Medium Sized Chain)

"I think [making a professional decision] scares some pharmacists, some of them want it in black and white…pharmacy can't be black and white. But that's why we are professionals because we make those decisions. Anyone can follow a process, a dispenser can follow a process…the pharmacist has to make a professional decision."

(P20, Superintendent Pharmacist, Supermarket)

As qualified and regulated professionals, all pharmacists felt that being able to use their professional judgement to manage risk was a key element of their role. However, some pharmacists noted that doing so sometimes meant deviating from outlined procedures. This led to questions regarding whether their company would support their decisions, resulting in unease for pharmacists.

"There are scenarios where the patient's health is at risk if you follow them. So sometimes, you do have to make your own decision on what is best for the patient's care, because that's the most important thing to do as a pharmacist."

(P4, Pharmacist, Large Chain)

"I suppose people follow the bits that they agree with and they don't follow the bits they don't agree with. And being in a big company, there's not really a lot you can do about the

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bits you don't agree with. It's not like they're going to change it, so you just have to take it

upon yourself, which then leaves you open to being uninsured if you don't follow them, so

it's a lose-lose situation really, but everybody kind of does it."

(P9, Pharmacist, Large Chain)

Our data highlighted clinical encounters in which professional judgement played a major role, such as emergency supplies of medicines (without prescription) on request from patients. Some pharmacists spoke of deciding not to give certain drugs such as anti-depressants without a prescription as missing a small number of doses would not have a harmful physiological effect, whereas other pharmacists noted the psychological effect of missing doses of medicines. Some pharmacists also questioned the impression that not supplying medicines could give to patients with regards to adherence to medication regimens.

"If somebody doesn't take sertraline for a day, not much is really going to happen to them. I

mean, they might think it's the end of the world but realistically their levels will be high

enough that it won't make too much difference."

(P5, Pharmacist, Small Chain)

"You have to go with a holistic viewpoint…Particularly when it comes to mental health, it's

not as easy as saying no or thinking, well, it's fine, it doesn't matter if they miss one

antidepressant, their therapy will still work. But the detrimental effect that can have

psychologically is massive. So you have to consider the whole patient, yeah."

(P1, Pharmacist, Large Chain)

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3.2.2 Views of Support Staff

Amongst the support staff, training level and experience played an important role in participants' attitudes to procedures. For ACTs, being registered with the regulatory body was important and they stated that they were committed to following procedures as much as possible.

"I don't want to be struck off…sticking within the rules, makes sure that the patient's safe.

Go out of the rules and the patient's not safe, and neither's your job."

(P24, ACT, Independent Pharmacy)

Registered technicians were of a similar viewpoint and were confident in asserting their wish to follow the procedures. Members of these staff groups often mentioned their own professionalism and the importance of following procedures in order to protect their registration.

"Being registered with the GPhC has a huge influence on the way that I feel, because, one, I

want to keep it. You know, I value my job and I do value the rules…But it also kind of gives

me, because I'm registered, I think it heightens my realisation that there are rules because I

am responsible for myself and my own actions… if you go against the rules, then you're

asking for trouble."

(P24, ACT, Independent Pharmacy)

"I'm quite happy to say no to a pharmacist…if it's something I don't feel comfortable with

then I'm happy to kind of just say, no, sorry, leave it and I'll get to it, or, check it yourself. If

you really want to rush it out then check it yourself, that's fine, I don't mind."

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(P21, ACT, Independent Pharmacy)

Dispensers' attitudes towards not always following procedures as outlined could be deemed more flexible than their registered support colleagues. Some dispensers felt procedures were a 'tick box exercise' and did not necessarily shape their work to a large extent. Findings indicated some dispensers relied on the pharmacist's knowledge and instructions when working. This suggests that although dispensers are required to sign to say they have read and will abide by SOPs, in certain circumstances some may follow the instructions of the responsible pharmacist as an alternative way of working.

"I just go by basically what the pharmacist is telling me to do, because they're responsible

for what goes on, so it's their call."

(P18, Relief Dispenser, Large Chain)

"I'd like to think that because a pharmacist said it was fine [to not follow a particular

procedure] that it wouldn't make a significant difference, because otherwise they wouldn't

have said that."

(P3, Dispenser, Large Chain)

3.3 The Dissemination and Enforcement of SOPs

A key theme was seen to be the format in which SOPs were given to staff. Most participants referred to their SOPs being printed materials that they were expected to read upon starting work in the pharmacy. Reading through the procedures was sometimes seen as a prerequisite in order to start dispensing. A superintendent of a supermarket spoke of plans to provide procedures electronically along with a short test to encourage and demonstrate

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understanding. Another superintendent pharmacist of a medium sized chain noted the

danger that procedures are 'often left on a shelf and ignored'. In most cases staff spoke of

an overload of procedures which led to difficulty comprehending and digesting the

literature.

"I couldn't dream of recalling every step of every policy and I don't think the staff that work

with me could either…some might say that undermines the value of having all the rules

because there's too many…but it's important that things are laid out."

(P1, Relief Pharmacist, Large Chain)

With regards to the creation of SOPs the level of input from CP employees was seen to vary.

The superintendent pharmacist from a large chain noted that their branch pharmacists are

heavily involved in procedure development and that amendments were available for certain

branches if needed. Participants from an independent pharmacy spoke of the flexibility and

control they had in creating and updating their SOPs. Participants from another large

pharmacy chain noted there was little flexibility in their SOPs and that this could result in

procedures that were not always appropriate.

"Sometimes you can't follow them exactly as they're written, 'cause they are written for the

whole of [the country] and each store is different, and they do things slightly differently even

though they're all supposed to be the same. They try but they can't because customers want

different things and surgeries do things differently, so I think they're useful to a point but I

think the company needs to recognise that they need to be a bit more flexible with them."

(P9, Pharmacist, Large Chain)

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An element that influenced how procedures were enforced was supervisory and management style. Some pharmacists felt that by instructing staff to work according to SOPs, it helped to justify their requests to work in a particular way. On the other hand, some pharmacy support staff felt frustrated when pharmacists did not reprimand their fellow colleagues for not following the procedures. The support staff felt they did not have the authority to instruct their colleagues on how to work, which resulted in feelings of unease and fear that patients were at risk. For example,

"It would be nice to get a bit more back-up from pharmacists [regarding following the rules]. You're not moaning…it's just the fact that the [rules are] not just there for one person, they're there for everyone and it's safer if everybody follows the rules properly."

(P22, Accuracy Checking Dispenser, Independent Pharmacy)

Communication was essential in enforcing SOPs and for ensuring that all staff members were clear about the procedures they were expected to follow. Communication was also important with regards to learning from errors and updating the procedures accordingly, which was commonly conducted by the superintendent pharmacist in larger corporate pharmacy chains.

"Listening [to staff] is really, really powerful…we don't want to over complicate things and give [staff] things that are too hard to do…Questioning do we really need this checklist? Do we really need this part of the SOP?"

(P20, Superintendent Pharmacist, Supermarket)

4. DISCUSSION

We found that procedures in CP are viewed as useful for setting expectations of practice and for improving knowledge, yet tensions were evident between the standardisation of practice and the professional autonomy of pharmacists. Procedures were considered helpful for outlining expected practice, but pharmacists felt following procedures at all times did not always result in the best patient care. Pharmacists feared being unsupported by their employer if they worked outside of procedures, even if it was for patient benefit.

Pharmacists were seen to have a similar attitude to doctors and surgeons in hospitals who felt a degree of flexibility was required when working with procedures in healthcare as oppose to the notion of 'cookbook' care[12-14]. Professional autonomy affected how certain procedures or services were followed, showing similarities to previous research that explored the implementation of emergency hormonal contraception services in community pharmacies[37]. In a recent study that evaluated emergency supplies of medicines from CPs, pharmacists and general practice staff were seen to struggle with the issue of what constituted 'immediate need' for a medication, which could lead to a lack of continuity in care for patients[8].

The findings from this study have important implications for pharmacy practice and policy, as they highlight the role organisational factors have on how procedures are used to manage risk in CP. Factors such as pressure from the organisation regarding achieving targets, or setting procedures that are difficult to follow when working out of hours can create an environment where following procedures and achieving required outputs is sometimes felt to be unachievable. The sheer amount and format of procedures that CP

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staff are expected to follow may not be optimal for risk management as participants noted

they were overwhelming and difficult to remember. Previous research has highlighted that

in organisations where there are a large number of procedures to follow, refresher training,

testing and retesting may be necessary[3]. Our results suggest there are instances where

bypassing or deviating from procedures occurs, and future work is needed to investigate the

consequences of these events and the organisational factors that may have contributed to

these decisions.

In practice, CP employees rely on their ability to adjust when working in demanding

conditions with standardised systems on the one hand whilst regularly dealing with un-

standardised situations on the other. This is an example of how procedures sometimes

outline work-as-imagined as opposed to work-as-done[7]. Zohar's model of safety

climate[38], notes the detrimental effect of a perceived discrepancy between "espoused"

safety policy (for example, the stated expectation that certain procedures will be followed)

and "enacted" safety policy (for example, these procedures not being followed in practice,

possibly due to competing work demands such as those described in the current study)[38].

While adherence to procedures may help to manage risk in some circumstances, an

overreliance on procedures could be counterproductive, and so a more adaptive approach is

required with regards to how procedures are implemented in the future.

This study is the first to highlight how procedures may be viewed differently by members of

the CP team, and how training and registration with a professional body may influence

opinions and behaviours amongst CP staff. Registered support staff showed similarities to

hospital-based nurses who have been noted as having a more systemised approach to

healthcare, and as more likely to follow procedures[15, 16]. Our findings suggest that an

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element of this may be ACTs increase in knowledge of procedures and the potential risks in

CP as a result of their training and experience working in CP; however professional

registration also serves as a prompt to comply with procedures. In contrast, dispensers who

have undergone in-house or external training but are not registered professionals appeared

to have a more flexible approach to procedures when instructed to do so by the responsible

pharmacist. In most circumstances, dispensers would be expected to follow the guidance of

the pharmacist because the pharmacist is the most qualified individual in the pharmacy[39].

However, when dispensers are following instructions that do not directly benefit the

patient, the identified difficulties of dispensers not feeling able to voice concerns may affect

patient safety[14, 19-21]. Failing to communicate has been identified as a key threat to

patient safety[40].

4.1 Conclusion

This study examines how procedures are viewed by staff in community pharmacies and how

this can impact on professional autonomy. The findings highlight the tension between

standardising practice on the one hand and the need, at times, for greater flexibility for

pharmacists to decide on the most appropriate course of action to manage risks to patient

safety. Evidence of organisational resilience in community pharmacy practice was apparent

and the findings should help to inform policy-makers and practitioners with regards to the

factors most likely to influence the implementation of procedures in community pharmacy

settings.

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COMPETING INTERESTS

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AUTHOR CONTRIBUTIONS

Conceived and designed the study: CELT, DLP, DMA. Conducted the interviews: CT. Analysed the data: CELT, DLP, DMA. Wrote the paper: CELT, DLP, DMA

DATA SHARING

No additional data available.

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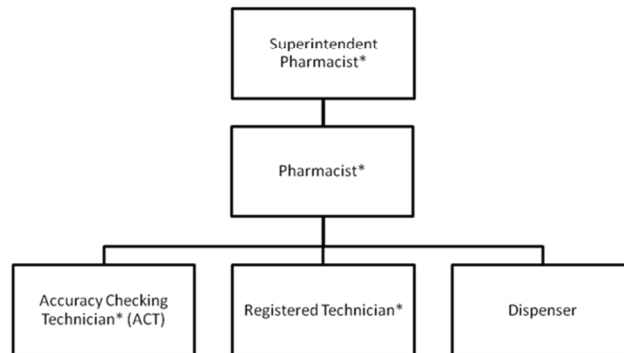
Fig. 1 – Community Pharmacy Staff Hierarchy in the UK.
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When Procedures Meet Practice in Community Pharmacies: Qualitative Insights From Pharmacists and Pharmacy Support Staff.

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ABSTRACT

Objectives: Our aim was to explore how members of community pharmacy staff perceive and experience the role of procedures within the workplace in community pharmacies.

Setting: Community pharmacies in England and Wales.

Participants: Twenty four community pharmacy staff including pharmacists and pharmacy support staff were interviewed regarding their view of procedures in community pharmacy. Transcripts were analysed using thematic analysis.

Results: Three main themes were identified. According to the 'dissemination and creation of standard operating procedures' theme, community pharmacy staff were required to follow a large amount of procedures as part of their work. At times, complying with all procedures was not possible. According to the 'complying with procedures' theme, there are several factors that influenced compliance with procedures, including work demands, the high workload and the social norm within the pharmacy. Lack of staff, pressure to hit targets and poor communication also affected how able staff felt to follow procedures. The third theme 'procedural compliance versus using professional judgement', highlighted tensions between the standardisation of practice and the professional autonomy of pharmacists. Pharmacists feared being unsupported by their employer for working outside of procedures, even when acting for patient benefit. Some support staff believed strictly following procedures would keep both patients and themselves safe. Dispensers described following the guidance of the pharmacist which sometimes meant working outside of procedures, but occasionally felt unable to voice concerns about not working to rule.

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Conclusions: Organisational resilience in community pharmacy was apparent and findings from this study should help to inform policy-makers and practitioners regarding factors likely to influence the implementation of procedures in community pharmacy settings. Future research should focus on exploring community pharmacy employees' intentions and attitudes towards rule-breaking behaviour and the impact this may have on patient safety.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This is the first study to specifically explore in depth opinions and experiences of working with procedures in community pharmacies.

- Detailed insights were provided by community pharmacists and support staff holding a range of roles and levels of experience from a variety of pharmacy settings.

- These qualitative findings highlight the importance of organisational factors in shaping how procedures are used in the context of community pharmacies.

- These findings should help to inform policymakers and pharmacy teams on how to optimise the implementation of procedures in practice.

- Future work is needed to further explore organisational resilience in community pharmacy, which should investigate the circumstances under which staff purposefully bypass or deviate from procedures and the potential impact this may have on patient safety.

1. INTRODUCTION

A commonly encountered strategy for improving patient safety is the standardisation of healthcare practice, often by developing and implementing standardised procedures (in the form of guidelines, protocols and standard operating procedures)[1].In principle, procedures provide assurance by holding healthcare staff to a minimum standard of practice and controlling aspects of their work that may create patient safety hazards[2, 3]. However, the implementation of procedures has had a more limited effect on work practices than anticipated, with studies in hospitals[4, 5], general practices[6] and community pharmacies[7] finding that healthcare staff sometimes deviate from formal procedures in the course of their work.

Such findings have led researchers to examine the relationship between procedures and practice in healthcare. Reason[8] and Dekker[9] noted that strict adherence to inflexible procedures can make a task inefficient, or even unachievable, in practice. This is illustrated by the experience of one operating department, which found that adherence to a particular safety protocol interfered with the execution of surgical tasks[10]. Other studies have identified a divergence between the nature of work assumed by formal procedures and that encountered in everyday practice; the latter being marked by varying and sometimes complex task demands, variation in the material and human resources available to achieve task goals, challenging work environments, and diverse expectations on the part of staff members, patients, organisations and other stakeholders with regard to how task goals are defined and achieved[11-15].

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The relationship between procedures and practice can be understood in terms of organisational "resilience" – that is, the ability of an organisation or its members to maintain effective and efficient work in the face of a dynamic environment that is characterised by discontinuities in care, hazards, trade-offs, and multiple goals[16, 17]. According to the notion of resilience, staff may adapt their work activity in order to achieve task goals under the prevailing circumstances, thus creating a divergence between "work as imagined" (as represented by the formal procedures) and "work as done" (as represented by actual practice at a given time or in a given location)[9, 18, 19]. Hence, the effect of implementing procedures is determined by the relationship between these two aspects of work.

This study explores the use of procedures in In England and Wales, community pharmacy (CP) staff (in addition to their traditional role of supplying prescribed and non-prescription medicines) routinely provide advice on the management of minor ailments and the appropriate use of medicines, as well as conducting medicines usage reviews[20-22]. Since 2005, pharmacies have been required to adopt standard operating procedures (SOPs) for the storage, dispensing and supply of medicines and the provision of medicines advice to patients[23, 24]. A CP team can encompass a range of staff members including pharmacists, registered and non-registered support staff, medicine counter assistants and delivery drivers as well as a range of trainees that are all expected to abide by SOPs. However, evidence from studies of non-prescription medication supply, both in the United Kingdom and in other countries, suggests that CP staff may not follow procedures as consistently as expected[7, 25, 26]. Given the various demands and relationships that dictate the work of CP staff[27, 28], it is possible that the implementation of procedures in this setting is subject to interplay between formal expectations about how CPs should operate and how they

operate in practice[29]. The aim of the current study is to explore the experience of CP staff in applying procedures to their everyday work.

2. METHODS

2.1 Design and setting

For the study design we used semi-structured interviews to collect qualitative data. The sampling frame for the study was community pharmacy staff in England and Wales.

2.2 Sampling and recruitment

Participants were identified on a purposive basis, using departmental contacts, professional networks and advertisements on Twitter. One of the authors invited each of these participants to opt in to an interview about the use of procedures in their work via email. This recruitment was followed up with snowball sampling, in which the initial participants were asked to recommend other members of the sampling frame for the researchers to invite[30-32].

Twenty-four participants (pharmacists (n=13), registered accuracy checking technician (ACT; n=1), registered technician (n=1), non-registered accuracy checking assistants (n=3) and dispensing assistants (n=6)) agreed to participate. These participants represented independent pharmacies (n=7), large pharmacy chains (n=9), medium sized pharmacy chains (n=2), small sized pharmacy chains (n=2), a supermarket (n=1) and locum/sessional staff (n=3; 2 pharmacists, 1 dispenser) who worked in a variety of pharmacy types. Participants worked in a range of locations including a city centre (n=1), a suburb (n=7), a town (n=10), and a village (n=2). Participants were Participants' time since qualifying in their role ranged

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from six months to thirty years. Participants' total time working in CP (either in their current role or in other roles) ranged from 2.5 years to 35 years.

2.3 Data collection

Semi-structured interviews were conducted; focusing on the participants' opinions of procedures they are expected to follow in their role. The topic guide was developed from both the literature on procedural compliance in healthcare and the first author's personal experience as a CP employee. Questions included:

- "How are you made aware of the procedures that you need to follow during your work?"

- "How useful are procedures for helping you to do your job?"

- "Do you feel able to follow the procedures at work?"

- "Are there certain times of the day, week, month or year that you feel procedures are typically deviated from or bypassed?"

The topic guide was piloted with a member of CP support staff before data collection began. Interviews were conducted by the lead author between November 2014 and April 2015. Each interview was audio-recorded and transcribed in full. Interviews were held in a private place with only the participant and the interviewer present. Each participant gave informed written consent and interviews lasted 30-90 minutes. Participants were recruited until data saturation was reached and no new issues emerged during interviews. Ethical approval was granted by the University of Manchester ethics committee (Ref 14352).

2.4 Analysis

Transcripts were analysed using a thematic analysis with a template method of organising qualitative data[33], and NVivo V.10 (QSR International) was used to support data analysis[34]. A template of *a priori* thematic codes was created based on previous literature on compliance and views of procedures[35]. The template was then independently applied to each transcript by authors CT and DP (the latter not being involved in the interviews), who then discussed the coding and agreed on modifications to the template in order to represent the ideas identified in the data. Once the next version of template was agreed, it was refined through successive re-readings of the transcripts until no new themes emerged. The final template was then reviewed by DA to ensure that it provided adequate coverage of the data.

3. RESULTS

Three main themes were identified; namely, the influence of work demands, the influence staff role has on how procedures are viewed and the dissemination and enforcement of SOPs. All participants appreciated the need for procedures in CP and agreed the ultimate aim of procedures was to guarantee patient safety. Participants generally found SOPs useful for highlighting the 'ideal' way to work from a patient safety point of view. However, procedures were restrictive at times and could not be followed constantly for many reasons. Three main themes were identified; 'the dissemination and creation of SOPs'; 'complying with procedures' and 'procedural compliance versus using professional judgement'.

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3.1 The dissemination and creation of SOPs

One of the main themes with regards to the use of procedures as a whole in CP was how participants were made aware of the SOPs. Overall issues included the large amount of detailed procedures in CP. Participants felt complying with all procedures at all times was an unrealistic organisational aim given the complex setting and the high workload. The findings highlighted a difference in work-as-done and work-as-imagined due to the sometimes unrealistic expectations placed on CP staff, in terms of the large number of detailed procedures that resulted in difficulty for staff to learn and retain all of the procedures provided.

3.1.1 Dissemination of SOPs

Most participants were provided with written SOPs that they were expected to read upon starting work in CP and this was often viewed as a prerequisite to start dispensing. Frequently participants mentioned an overload of procedures leading to difficulty in complying with expected practice. A pharmacist (P13) noted that procedures are 'often left on a shelf and ignored'.

"I couldn't dream of recalling every step of every policy and I don't think the staff that work

with me could either…some might say that undermines the value of having all the rules

because there's too many…but it's important that things are laid out."

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(P1, Relief Pharmacist, Large Chain)

"I think we often just read it, sign it and then you don't look at it again until you get told to…you never look anything up..."

(P3, Dispenser, Large Chain)

"[Staff are] presented with this massive folder [of procedures] and a lot of them are very repetitive…people will lose their attention span after five minutes…it defeats the point."

(P16, Locum Pharmacist)

"I think the people who write the SOPs, they've never actually worked in [a branch] either."

(P12, Dispenser, Large Chain)

Disseminating pharmacy specific SOPs to locum/sessional staff was noted as unrealistic, therefore making SOPs available to refer to when needed was important.

"The agency I'm with have a lot of the [company] specific SOPs on their website…[So if] you've got a week in [a particular company], and they've got something particular that they do…you can read through before you go."

(P19, Locum Dispenser)

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"I think you'd be hard pressed to find a locum that could genuinely say, that if they walked

into a pharmacy they'd never walked into before, they're going to spend an hour scouring

the SOPs [before they start any work]…you can't work that way."

(P16, Locum Pharmacist)

3.1.2 The creation of SOPs

With regards to the creation of SOPs the level of input from CP employees varied. A

supermarket pharmacist (P20) noted that branch pharmacists are heavily involved in

procedure development and that amendments were available for branches if needed.

Having 'front-line' pharmacy staff comment on SOPs was useful for aligning work-as-

imagined and work-as-done. Participants from an independent pharmacy spoke of the

flexibility and control they had in creating and updating SOPs. Participants from a large

pharmacy chain noted there was little flexibility and this could result in procedures that

were not always appropriate.

"Sometimes you can't follow them exactly…[they're] written for the whole of [the country]

and each store…do things slightly differently even though they're all supposed to be the

same. They try but they can't because customers want different things and surgeries do

things differently…I think the company needs to recognise that they need to be a bit more

flexible…"

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(P9, Pharmacist, Large Chain)

3.2 Complying with procedures

A variety of factors effected compliance with procedures in CP. Participants from all roles emphasised the impact that work demands, workload and the behavioural norm within the team had on their ability to comply with procedures. Organisational factors were often attributed to result in a difference between work-as-imagined in the SOPs and the work-as-done by CP staff in practice.

3.2.1 Work demands

One of the main work demands that impacted on the ability of CP staff to comply with procedures was work scheduling, which was frequently mentioned by all staff types. Particular pressure points included public holidays and the beginning and end of the week. During these times, participants found complying with procedures challenging with some participants describing how working in CP on a weekend could feel like a 'different job entirely', mainly due to the closure of general practices and other resources not being available out of hours. Under these circumstances, pharmacists often resorted to applying their professional judgement regarding patient safety.

"Easter weekend, the weekend before Christmas…the end of the week, Friday as well is usually very busy…sticking to the rules becomes less of a priority. [The job doesn't] become less of a priority, it's how you're doing the jobs…[it] depends on how much experience you

have…you can [figure] out what you need to carry on doing by the rule book and what you

don't."

(P10, Pharmacist, Large Chain)

Another crucial element that added to work demands was staffing levels. Participants in all

roles expressed how following procedures was especially difficult with insufficient staff for

their pharmacy.

"Staffing and [lack of] time are probably the biggest things that put extra pressure on what

you're doing, and maybe lead to [some things] not quite going as they should do."

(P19, Dispenser, Large Chain)

3.2.2 Workload

Many participants spoke of regularly attempting to complete several tasks at once to

manage workload, leading to occasional shortcuts. All participants mentioned the volume of

tasks they had to complete under time pressure. Pharmacists also highlighted the need to

achieve service targets set by head office or area management regarding professional

services such as medicines usage reviews[21] and the new medicine service[22].

"…The number of items goes up every year, the time [you have] to spend just doing those

goes up and up and more and more services come out at the same time. [The challenge is]

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having time with the patient to do everything you can for them, so [following the] rules come

into that and it's really hard [to manage]."

(P15, Pharmacist, Large Chain)

"The general thing [is] time…either you have too much work or…your colleagues isn't

there…there's always steps in the SOPs which you cannot do, but still get the same result at

the end…"

(P3, Dispenser, Large Chain)

3.2.3 Behavioural norms

Participants often spoke of the 'the way we do things around here', which did not always

coincide with work-as-imagined in SOPs. Sessional pharmacists and support staff felt under

pressure to conform to local practice, even if this was not outlined in procedures. This

resulted in differences between branches of the same company, despite an apparent

purpose of SOPs being to standardise performance.

…most of the time you just end up shutting up that side of you that's saying… don't do that,

and [instead] you say if that's what [the regular pharmacist does] then I'll just do the

same...you might be not 100 per cent sure of what's going on...because of the demand

around you [from the support staff]...you just get on with it."

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(P11, Locum Pharmacist)

"It would be nice to get a bit more back-up from pharmacists [regarding following the procedures]…the [procedures are] not just there for one person, they're there for everyone and it's safer if everybody follows the [procedures] properly."

(P22, Accuracy Checking Dispenser, Independent Pharmacy)

3.3 Procedural compliance versus using professional judgement

There were varied opinions between participants about the relative merits of standardised practice and the use of professional judgement by CP staff. In our sample, the variation in opinion was particularly noticeable when comparing the views of the pharmacists with those of staff in other roles. The pharmacists appreciated that procedures were useful to an extent, but also felt that they reserved the right to bypass or deviate from procedures if they judged it necessary for the patient's outcome.

"There are scenarios where the patient's health is at risk if you follow them. So sometimes, you do have to make your own decision on what is best for the patient's care, because that's the most important thing to do as a pharmacist."

(P4, Pharmacist, Large Chain)

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"If somebody's on their way to dying and the doctor's forgotten the Midazolam CD schedule three, and forgot to put the quantity, where the figures all look clear and [the prescriber says] 'okay, we're on visits, we'll be over in an hour to sign it'. Do I leave it an hour? The patient could be dead in an hour."

(P6, Pharmacist, Independent)

However, some participants expressed concern that acting outside of procedures exposed them to the risk of disciplinary action or litigation.

"I think if something's gone wrong then I'd definitely go back and have a look at the SOPs…[unless] you're the actual pharmacy manager there and you work there full-time, you [don't] have the time to take [SOPs] home [to read]..."

(P16, Locum Pharmacist)

"I suppose people follow the bits they agree with and they don't follow the bits they don't agree with. And being in a big company, there's not really a lot you can do about the bits you don't agree with. It's not like they're going to change it, so you just have to take it upon yourself, which then leaves you open to being uninsured if you don't follow them, so it's a lose-lose situation really, but everybody kind of does it."

(P9, Pharmacist, Large Chain)

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There were some procedures that were considered important enough that participants would adhere to them even in unfavourable circumstances.

"[Bypassing the procedure that states I should not work in the pharmacy alone means I can] actually do things properly. There are certain things that I would never be happy cutting corners with. I want to do a full CD balance every week. I'm not going to not do that. So if that means doing overtime for free then I'm going to do it…it's protecting myself, it's protecting my registration…"

(P14, Store Based Pharmacist, Large Chain)

Interestingly, newly qualified pharmacists seemed to rely on SOPs as a guide to practice, however more experienced pharmacists noted that this was not a realistic approach to professional practice.

"When you newly qualify…you've literally swallowed up the [Medicines, Ethics and Practice professional guide for pharmacists] and you're so into the laws that when it comes to practise it's quite shocking how much deviation takes place in a pharmacy …I was extremely cautious and very worried and I'd go home and I'd start thinking about everything that had happened [at work]. But, then eventually...you get used to it."

(P11, Locum Pharmacist)

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"I think [making a professional decision] scares some pharmacists, some of them want it in

black and white…pharmacy can't be black and white. But that's why we are professionals

because we make those decisions. Anyone can follow a process, a dispenser can follow a

process…the pharmacist has to make a professional decision."

(P20, Pharmacist, Supermarket)

At times pharmacists would face situations in which there was no set guidance and

professional judgement was crucial.

"There's a balance…I think the trouble with our profession is that we want a rule for

everything and that's not how a profession works…We shouldn't anticipate that there's

always going to be an SOP for everything."

(P13, Pharmacist, Medium Sized Chain)

All participants allude to "professionalism" – for pharmacists though, professionalism is

about exercising professional judgement whereas for some support staff it was about

following rules. For support staff, professional judgement plays less of a part in their role –

so following procedures was seen as a way to ensure patient safety.

"SOP's are in place to make sure also the fact that we're doing the right thing… If we don't

do as we're told when we're dispensing, then it's a danger to the patient."

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(P22, Non-Registered Accuracy Checker, Independent Pharmacy)

"I don't want to be struck off…sticking within the rules, makes sure that the patient's safe.

Go out of the rules and the patient's not safe, and neither's your job."

(P24, Registered ACT, Independent Pharmacy)

"Being registered with the GPhC has a huge influence on the way that I feel, because I want

to keep it…I value my job and I do value the rules…because I'm registered, I think it heightens

my realisation that there are rules because I am responsible for myself and my own

actions…"

(P24, Registered ACT, Independent Pharmacy)

Notably, dispensers' attitude towards procedures was seen to be more flexible at times.

Some felt procedures were a 'tick box exercise' and did not necessarily shape their work to a

large extent. Although dispensers are required to sign to say they have read and will abide

by SOPs, in certain circumstances the instructions of the responsible pharmacist were

followed as an alternative. Dispensers especially, did not always feel able to question the

decision of the responsible pharmacist.

"[I do] what the pharmacist is telling me to do, because they're responsible for what goes on,

so it's their call."

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(P18, Relief Dispenser, Large Chain)

4. DISCUSSION

The participants saw procedures in CP to be useful for setting expectations of practice and for improving knowledge, yet tensions were evident between the standardisation of practice and the scope of behaviour available to pharmacy staff in completing their tasks**.** The need to deviate from work-as-imagined when patient safety was at risk was an important part of being a professional for pharmacists. Dekker[9] describes tension between procedures and safety as a considerable practical problem. A successful outcome for patient safety is not guaranteed from following procedures, but created from a diversity of responses that allow staff to cope with their changing environment[15].

Our findings expose elements of organisational resilience in CP. Participants relied on their ability to adjust; dealing with standardised systems on the one hand and with un-standardised situations on the other. This flexibility is fundamental to working in CP, as employees create changes to procedures and accommodate changes in order to meet patient needs[36]. The formation of rule-related behavioural intentions in CP could be compared with the findings of Phipps and Parker[37] which found anaesthetists sometimes worked 'in the moment' when deciding how to act in a given situation. This process is most likely to occur in settings such as CP, as it involves a multidisciplinary team, time pressure;

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emergency situations; shifting goals and organizational norms and goals that may go against the employee's interests[15, 38]. Phipps and Parker note these are areas where procedural violations should be of 'most concern'[37]. Evidence of procedural violations in CP is limited[7, 39] and further exploration of this topic is suggested to assess potential risk to patient safety.

We found some variation in the views of participants about procedures. Some of this variation might be attributed to differences in role and responsibility between participants. For example, pharmacists tended to express similar attitudes to doctors and surgeons in previous published studies which identified the need for a degree of flexibility was required when working in healthcare as oppose to the notion of 'cookbook' care[12, 13, 40]. The pharmacists here appeared to invoke the notion of professional autonomy with regard to following procedures, echoing previous research exploring implementation of emergency hormonal contraception services in community pharmacies[41]. The attitudes of registered support staff were similar to nursing staff, as they approached patient safety by systematically following procedures[42, 43]. In contrast, dispensers had a more flexible approach, as the ultimate responsibility for their actions was that of the responsible pharmacist at the time[44]. However, when following instructions that do not benefit the patient, we identified difficulties of support staff not feeling able to voice concerns[13, 45-47]. Failing to communicate has been identified as a key threat to patient safety[48].

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Therefore, a culture in which all CP employees feel able to discuss adherence to or deviation from procedures needs to be encouraged.

Adherence to procedures may help manage risks to patient safety in some circumstances; an overreliance on procedures could be counterproductive. Efforts to align work-as-imagined with work-as-done, would be beneficial for creating SOPs that are more reflective of practice whilst providing an effective risk control. One method for achieving this is to maintain a dialogue between "frontline" staff and those responsible for creating SOPs regarding the correspondence between the SOPs and actual practice.

4.1 Study limitations

Though our study is the first to explore the experience of CP staff in applying procedures to their everyday work, it has some limitations. A limitation of this study is that all members of a CP team were not invited to participate. Healthcare counter staff were excluded as previous research has already focused on how procedures are followed with OTC medicines[7] and our aim was to focus on the dispensary due to the large number of existing procedures relating to the safe supply of prescribed medicines.

A limitation could also be the inclusion of senior pharmacists (whose roles included setting and disseminating SOPs) as their opinions may differ due to decreased time practicing. However, it was thought that their experience and knowledge of procedures in CP would

help to enrich our understanding. Therefore, future work exploring the suggested differences in opinion of CP staff on a larger scale would be beneficial with regards to how employees are trained.

It should be noted that the topic guide will have impacted on the data collected, as will the use of *a priori* themes. In an effort to account for this, semi-structured interviews were undertaken to provide participants with the opportunity to discuss issues they believed to be salient to the use of procedures in CP that may not have been captured within the topic guide. To account for any potential bias caused by the interviewer's personal experience of working in CP, the data was triangulated between all authors during data analysis.

4.2 Study implications

4.2.1 Theoretical implications

This study supports the use of organisational resilience as a valuable concept for understanding how procedures are viewed and utilised in CP. The notion of resilience helps to explain how CP staff attempt to manage multiple goals, whilst coping with high workloads and low staffing in an effort to ensure patient safety. It is thought that the concept of organisational resilience would be useful to further explore specific instances of CP staff bypassing or deviating from procedures.

4.2.2 Implications for practice

The findings from this study have important implications for pharmacy practice and policy, as they highlight the role that organisational factors have on how procedures are implemented in CP. Factors such as pressure from the organisation regarding achieving targets, or setting procedures that are difficult to follow when working out of hours can create an environment where following procedures and achieving required outputs is sometimes felt to be unachievable. Furthermore, the fear of being unsupported by an employer if procedures were not complied with, even if it was for patient benefit created an additional pressure to pharmacists.

On the other hand, this study has shown that the use of professional judgement is crucial when deciding whether to comply with a procedure. A suggested implication for practice is the notion of an appropriate and justified flexibility, allowing the responsible pharmacist to make professional judgements with the support of their employer in order to ensure patient safety. The aim of this paper is not to undermine the important role that procedures play in CP, but our results suggest that there are times in which bypassing or deviating from procedures may be required for patient safety.

4.3 Suggestions for future research

Future work is needed to investigate instances in which CP staff deviate or bypass procedures and how organisational factors noted in this study may have contributed to the

decision to do so. In addition, based on this study, further work exploring the attitudes of CP staff and their intention to follow procedures on a larger scale, may have important implications for patient safety.

4.4 Conclusion

This study examines how procedures are viewed by staff in community pharmacies and how this can impact on professional autonomy. The findings highlight the tension between standardising practice on the one hand and the need, at times, for greater flexibility for pharmacists to decide on the most appropriate course of action to manage risks to patient safety. Evidence of organisational resilience in community pharmacy practice was apparent and the findings should help to inform policy-makers and practitioners with regards to the factors most likely to influence the implementation of procedures in CP. We suggest more work is needed in practice to 'realign' work-as-imagined and work-as-done, one suggestion is to improve communication between staff on the 'frontline' and management to lessen the gap between the two[19].

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COMPETING INTERESTS

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AUTHOR CONTRIBUTIONS

Conceived and designed the study: CELT, DLP, DMA. Conducted the interviews: CELT.

Analysed the data: CELT, DLP, DMA. Wrote the paper: CELT, DLP, DMA

DATA SHARING

No additional data available.

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Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description

Domain 1: Research team and reflexivity

Personal Characteristics

1. Interviewer/ facilitator	Which author/s conducted the interview or focus group?
	CT conducted the interview (pg7).
2. Credentials	What were the researcher's credentials? *E.g. PhD, MD*
	Psychology BSc, MRes
3. Occupation	What was their occupation at the time of the study?
	PhD student & dispenser in community pharmacy.
4. Gender	Was the researcher male or female?
	Female.
5. Experience and training	What experience or training did the researcher have?
	The researcher has an MRes qualification in Psychology, part of which included qualifications in qualitative analysis. The researcher has conducted interviews as part of UG degree and has conducted focus groups as part of PhD.

Relationship with participants

6. Relationship established	Was a relationship established prior to study commencement?
	Some participants were known to the researcher through professional networks (pg.6).
7. Participant knowledge of the interviewer	What did the participants know about the researcher? *e.g. personal goals, reasons for doing the research*
	Participants were made aware of the reasons for doing the research via the information sheet which was sent to the participant prior to the interview.

8. Interviewer characteristics

What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic*

CT works as a dispenser in CP, this has been noted in the data collection section 2.3 &section 4.1 Study Limitations (pg23).

Domain 2: study design

Theoretical framework

9. Methodological orientation and Theory

What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis*

Thematic analysis using a template method of organising data was utilised (pg8).

Participant selection

10. Sampling

How were participants selected? *e.g. purposive, convenience, consecutive, snowball*

Participants were initially purposively selected, followed by a snowballing approach (pg6).

11. Method of approach

How were participants approached? *e.g. face-to-face, telephone, mail, email*

Participants were approached by email (pg6).

12. Sample size

How many participants were in the study?

There were 24 participants (pg6).

13. Non-participation

How many people refused to participate or dropped out? Reasons?

We did not have anyone refuse to take part.

Setting

14. Setting of data collection

Where was the data collected? *e.g. home, clinic, workplace*

Data was collected in a private place convenient for the participant. This was sometimes their home, at the university, at their workplace (pg7).

15. Presence of non-participants

Was anyone else present besides the participants and researchers?

No, it was just the participant and the interviewer in the room (pg7).

16. Description of sample

What are the important characteristics of the sample? *e.g. demographic data, date*

Demographic data is provided for participants in section 2.2 (pg6).

Data collection

17. Interview guide

Were questions, prompts, guides provided by the authors? Was it pilot tested?

A sample of the interview questions and pilot testing information is provided in section 2.3 (pg7).

18. Repeat interviews

Were repeat interviews carried out? If yes, how many?

No repeat interviews were conducted.

19. Audio/visual recording

Did the research use audio or visual recording to collect the data?

Audio recording was used to collect the data (pg7).

20. Field notes

Were field notes made during and/or after the interview or focus group?

No field notes were taken.

21. Duration

What was the duration of the interviews or focus group?

The interviews lasted 30-90 minutes (pg7).

22. Data saturation

Was data saturation discussed?

Data saturation is discussed on pg8.

23. Transcripts returned

Were transcripts returned to participants for comment and/or correction?

Transcripts were not returned to participants for comment during this study.

Domain 3: analysis and findings

Data analysis

24. Number of data coders — How many data coders coded the data?

There were 2 data coders (pg8).

25. Description of the coding tree — Did authors provide a description of the coding tree?

The coding tree was not described however information on a priori codes is included on pg8.

26. Derivation of themes — Were themes identified in advance or derived from the data?

A priori themes are defined on pg8, some themes were derived from the data (pg8).

27. Software — What software, if applicable, was used to manage the data?

NVivo V.10 was used to manage data (pg8).

28. Participant checking — Did participants provide feedback on the findings?

One pharmacist and one dispenser provided feedback regarding the manuscript.

Reporting

29. Quotations presented — Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? *e.g. participant number*

Quotations were provided and participant numbers were used throughout the results section (section 3).

30. Data and findings consistent — Was there consistency between the data presented and the findings?

Data has been provided as evidence for the findings.

31. Clarity of major themes — Were major themes clearly presented in the findings?

Section 3 (pg8) presents the major themes identified. Headings are used throughout the section to highlight major themes.

32. Clarity of minor themes — Is there a description of diverse cases or discussion of minor themes?

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Each major theme has a number of sub-themes which are outlined through sub-headings in Section 3 (pg.8-19).