Taking Multiple Medications: balancing the pros and cons

What are the perceptions & attitudes of those involved?

Summary of findings from a research study:

Stakeholder perceptions of and attitudes towards problematic polypharmacy and prescribing cascades: a qualitative study

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Why was this study needed?

Glossary of terms used:

Polypharmacy = often referred to as being prescribed five or more long-term medications daily

Polypharmacy is frequently necessary; however there are pros and cons that need to be balanced, especially in older adults.

Problematic polypharmacy = when the intended clinical benefit of the medicines is not achieved

Problematic polypharmacy can increase the risk of adverse drug reactions[1] and unintentional prescribing cascades[2]

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1. **Adverse Drug Reaction** = unintended reaction/side-effect to a medicine at the dose it is usually prescribed.

2. **Prescribing cascades** = when a new medication is prescribed to treat/prevent an adverse drug reaction caused by another medication.

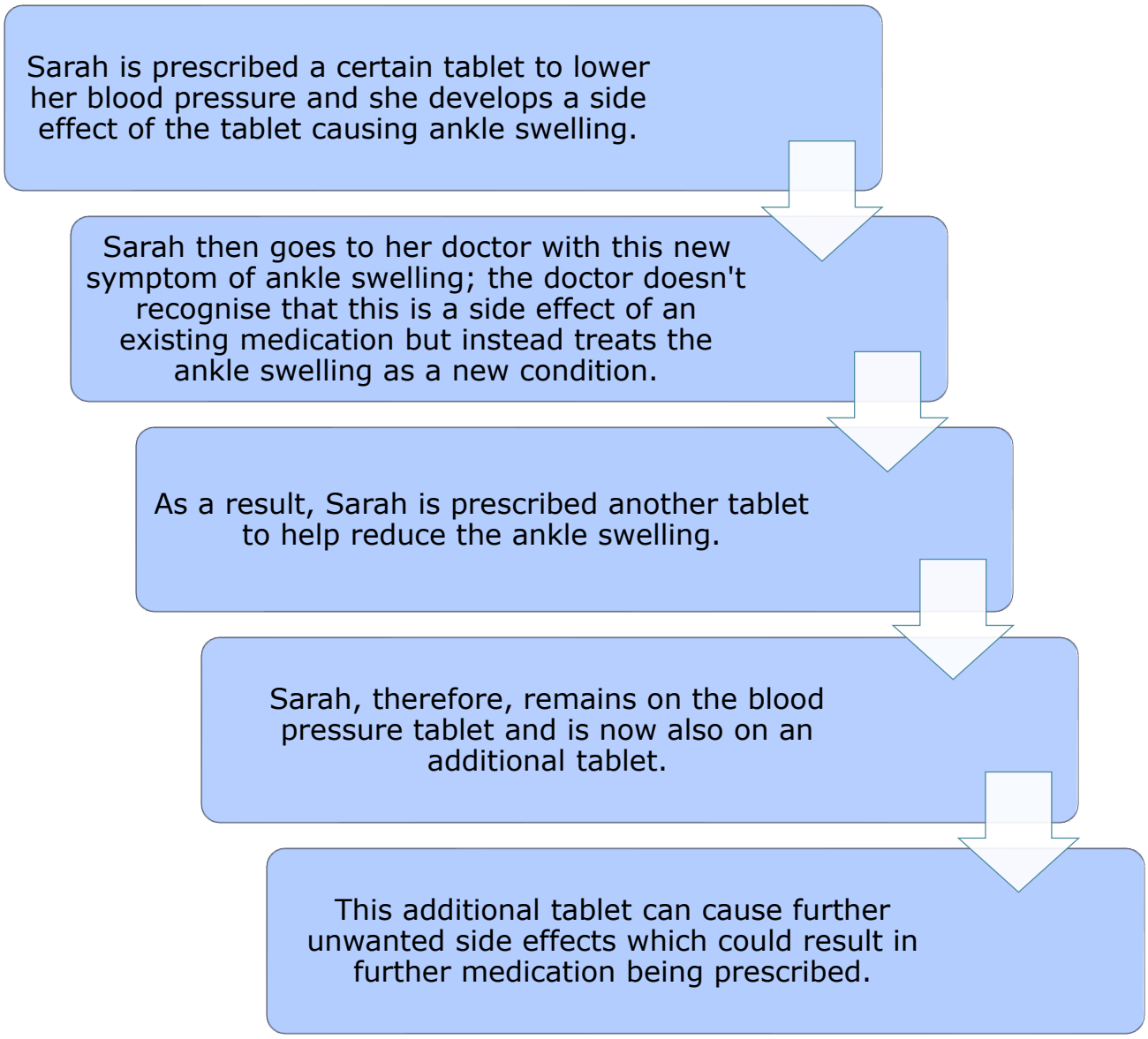
Example of intentional prescribing cascade = prescribing anti-sickness medicine to prevent/treat vomiting due to chemotherapy.

Prescribing cascades can be intentional or unintentional.

Unintentional prescribing cascade = when an adverse drug reaction is misinterpreted as a *new* problem, which results in prescribing a new (second) medication.

This can be complicated, so let's talk through an example:

An example of an unintentional prescribing cascade:



Our research study was needed to gain insights from the perspective of all people involved regarding problematic pharmacy, which will help to inform effective interventions in this area.

An example of such intervention = develop a tool to support prescribers and patients/carers in medication management to reduce the risk of side effects

What did we do?

We interviewed those involved/affected by problematic pharmacy & prescribing cascades.

You can read the full paper HERE

A Summary:

Who were the study participants?

6 Patients	Person taking the medication
2 Carers	Role in medication management
8 Community Pharmacists	Dispensing/managing medication
7 General Practitioners	Prescribing/managing medication
3 Hospital Interns	Prescribing medication/discharges in hospital
1 Consultant Geriatrician	Specialist in older person medicine
2 Policy Makers	Regulation & legislative/system changes
2 Professional Organisation Representatives	Training of Doctors & Pharmacists

How were these recruited?

- Community Pharmacists/GPs: via Continuing Professional Development networks and a national GP webinar
- Patients/Carers: GPs independently contacted suitable patients and carers.

- Hospital interns/consultant geriatrician and professional organisation representatives/policymakers: via networks available to the study team.

How was the information gathered?

Interviews were conducted by a pharmacist who is also a researcher online or via telephone from April to October 2021.

One-to-one interviews were undertaken which provided a broad structure and allowed follow up questions.

The following topics were used as a guide for the interviews:

- Problematic polypharmacy
    - experience with multiple medications
    - beliefs about benefits, challenges and risks
    - suggestions for improving pills management
- Risks and benefits of medication
- Adverse Drug Reactions
    - Understanding/experiences
    - Prevention
- Prescribing cascades
    - Understanding/experiences
    - Prevention

What happened next?

Interviews were recorded and converted into text via a professional transcription service.

Participants were pseudo-anonymised according to their primary classification (e.g. Carer 1, Pharmacist 3 etc.), so they cannot be identified.

These interviews were analysed by two members of our team, a GP who also has a lot of experience as a qualitative researcher and a pharmacist/postdoctoral researcher in problematic polypharmacy.

We then identified themes across the interviews.

What did we find?

Three main themes were identified:

1. Adverse drug reactions and prescribing cascades; a necessary evil
2. Balancing the risk-benefit tipping point
3. The minefield of medication reconciliation (ensuring that a patient's medication list is up to date)

Theme 1 - Adverse drug reactions & prescribing cascades; a necessary evil

Beliefs about medications varied, but all groups thought adverse drug reactions and prescribing cascades were unavoidable

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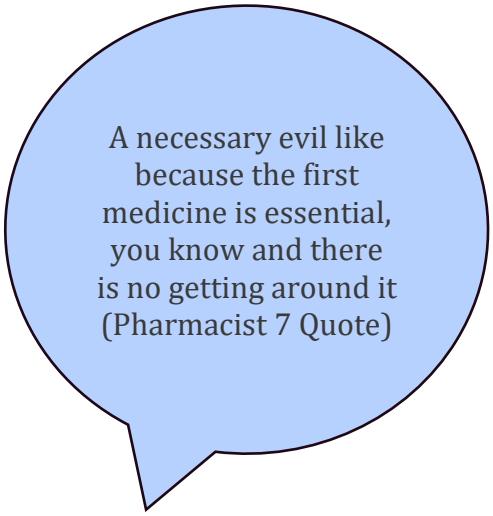
Beliefs in the benefit of medication varied (in the context of polypharmacy).

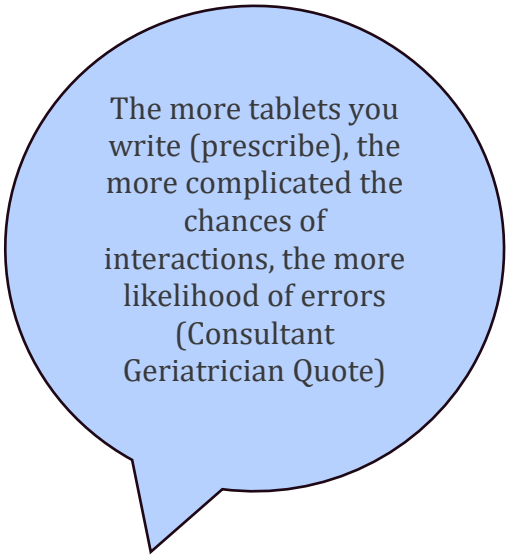
Pharmacists tended to believe strongly in the importance of medication adherence:

> If they are prescribed something they should start on the treatment anyway no matter how many medications – you have to take them (Pharmacist 1 Quote)

Adverse drug reactions and prescribing cascades were seen as unavoidable by pharmacists:

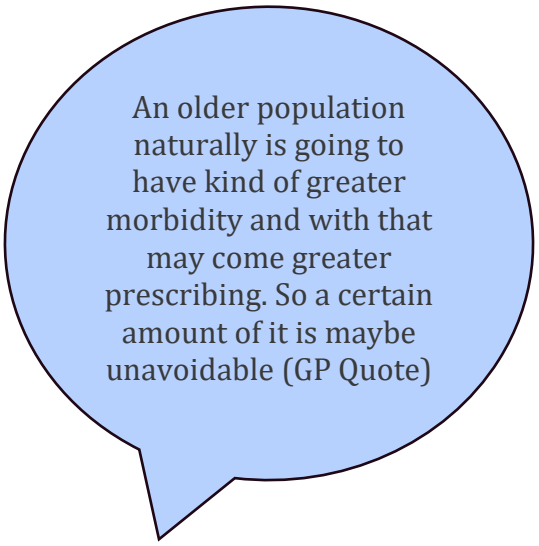


The GPs and consultant geriatrician held different views:



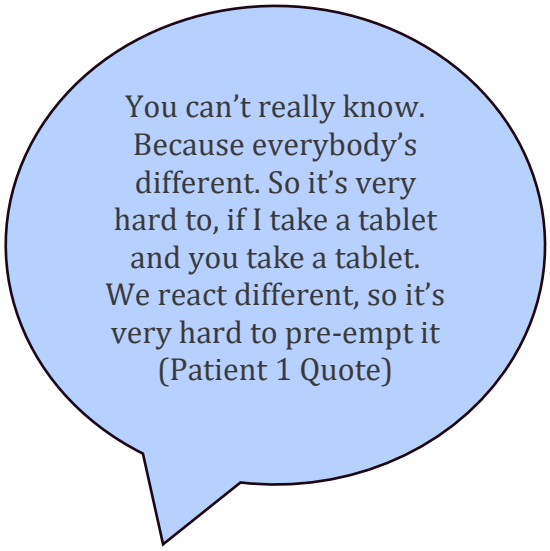
GPs' attitude to polypharmacy was a little different. However, like the pharmacists, GPs perceived prescribing cascades as unavoidable consequences of polypharmacy.

Healthcare professionals expressed concern that adverse drug reactions and prescribing cascades would negatively impact the patient's trust in medication & confidence in their doctor:



However, contrary to the concerns of the healthcare professionals, the patients and carers had a very pragmatic approach.

Adverse drug reactions were viewed by patients and carers as an unpredictable risk that did not impact on their trust in medication or their doctor:



Although adverse drug reactions were viewed as undesirable events that "throw a spanner in the works of everyday life" (Carer 2), patients and carers felt it was a risk that needed to be tolerated to reap the potential benefit of the medications.

Theme 2 - Balancing the risk-benefit tipping point

Assessing and managing a patient on multiple medications becomes extremely challenging and can cause prescribing avoidance / indecision

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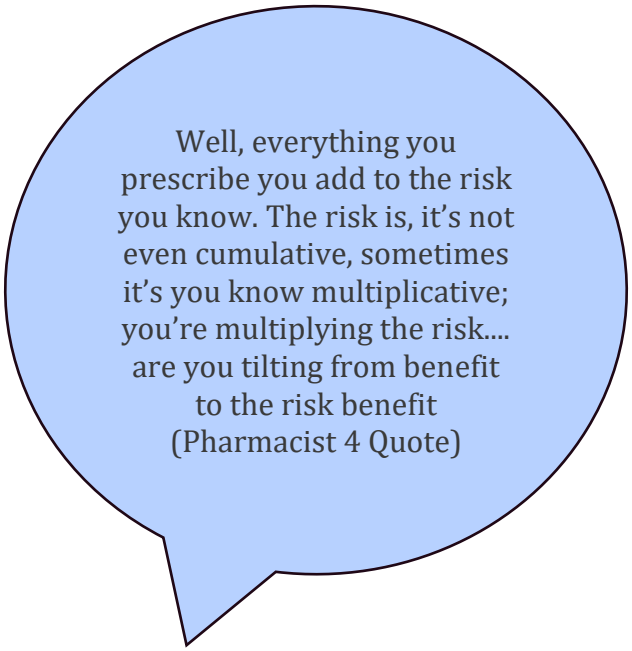
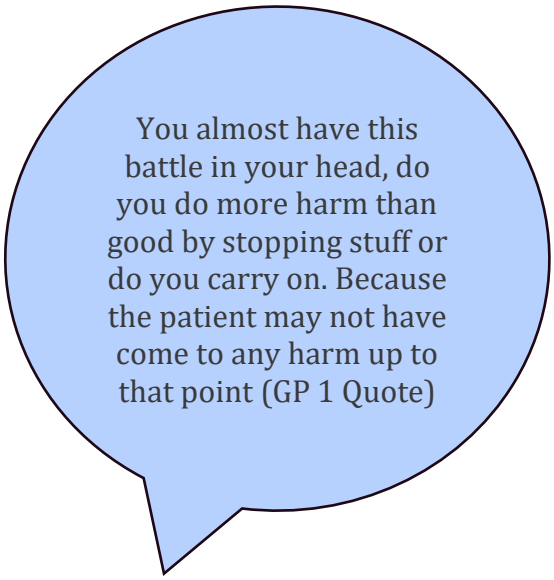
Prescribing decisions in the context of polypharmacy was as a careful balancing act that required constant trade-offs:



Several GPs felt prescribing in patients with polypharmacy as an ethical dilemma:



When a patient was experiencing intolerable side-effects, the decision to stop taking the medication was straightforward. The challenge for prescribers occurred where there was a potential risk and a potential benefit to stopping the medication.

Making prescribing decisions that had risk-benefit trade-offs required a level of understanding, knowledge, and time. All healthcare professional groups referenced how challenging it is to correctly identify that a new symptom is being caused by an existing medication:

> I suppose when you introduce a cocktail of medicines, if someone isn't feeling well in themselves for whatever reason whether it's nausea or just lethargy it is very, very difficult to pinpoint whether it's a disease state or if it's a particular medicine causing a particular side effect you know (Pharmacist 7 Quote)

The key barrier to identifying prescribing cascades appeared to be the sheer complexity of polypharmacy. At a certain level of polypharmacy, the risk that a new symptom is being caused by an existing medication becomes incalculable:

> It just becomes so complex and it means that all of the hazards are, it's just all hidden. It's so difficult for anybody to kind of think clearly once you are into that level of polypharmacy (Policymaker 1 Quote)

Theme 3 - The minefield of medication reconciliation

Medication reconciliation was challenging due to communication deficits

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Medication reconciliation = the process of ensuring that a patient's medication list is as up-to-date as possible on discharge from hospital following an emergency admission.

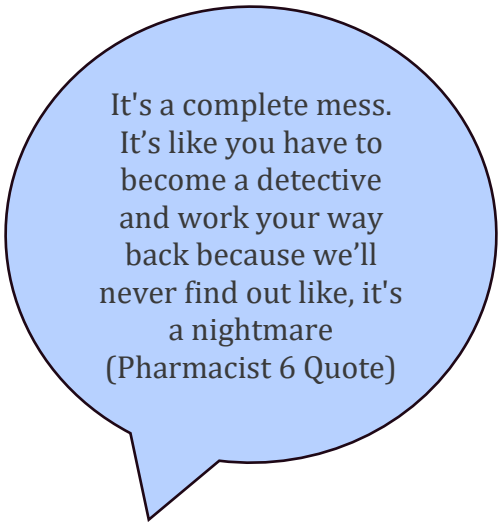
Managing the medications of an older adult with polypharmacy after hospital discharge was an emotive issue for GPs, pharmacists, patients and carers.

GPs viewed this process in patients with polypharmacy post hospital discharge a time of increased risk for patients and for GPs as the ongoing prescriber:

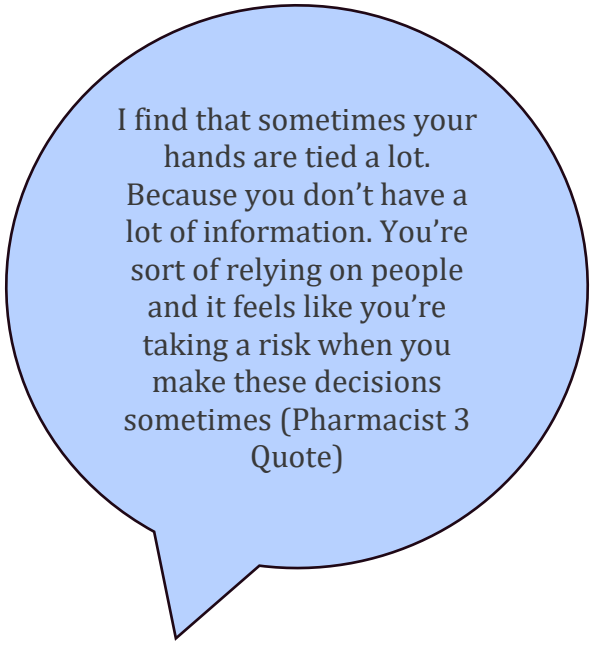
- Medication changes that occurred within hospital settings were mostly communicated to the GP via discharge letters, often sent via post.
- GPs relied on these discharge letters for information on medication changes since the hospital prescription generally went directly to the pharmacy.
- However, GPs reported that the discharge letters were often delayed and information on medication changes was often incomplete.
- Because of these delays and/or incomplete information after hospital discharge, the GPs relied upon the community pharmacist for information about medication changes.

From the perspective of the community pharmacists, medication reconciliation in the context of polypharmacy was seen as a challenging and high-risk endeavour.

The process of accurately identifying the correct list of medications for a patient with polypharmacy discharged from hospital required the pharmacists to proactively pursue information rather than simply passively receiving it:



Pharmacists felt frustrated that they had no access to the discharge letter or to relevant clinical information:



The potential for medication error during the process of medication reconciliation was recognised by healthcare professionals and carers. As was the risk of the patient: "falling through the cracks" (Pharmacist 6, Professional Rep 1).

Carers described themselves as constantly being on the lookout, checking that the prescription was correct and monitoring for medication side-effects. The carers felt that the burden of identifying unintentional prescribing errors fell to them because healthcare professionals were busy:

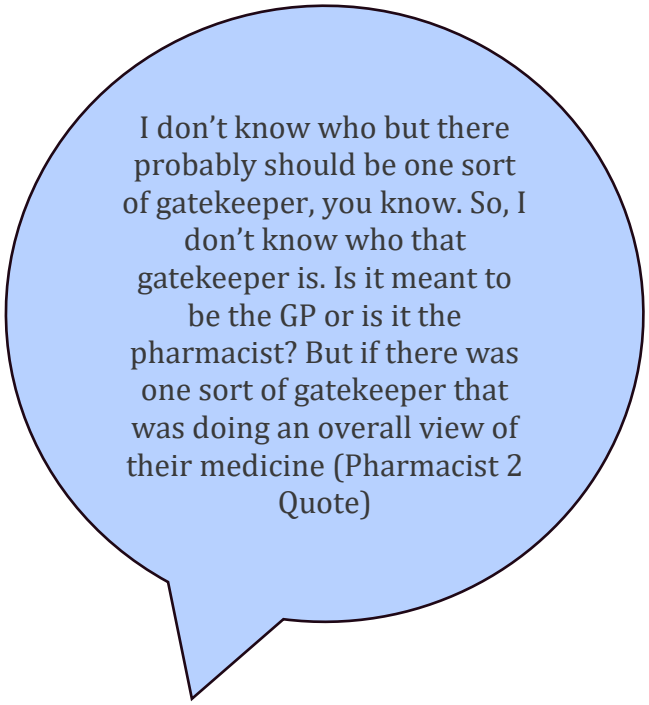
> You have to be quite on the ball like because things can get lost in translation… You know they didn't get the updated prescription, so that they're giving you the wrong doses… So, you do have to keep an eye on it… it could slip through the net (Carer 1 Quote)

The patient and/or carer was central to and excluded from this 'pharmacy-GP–secondary care' communication triad. They were required to compensate for the communication failures by acting as a translator. However, they did not feel adequately informed to fulfil this task:

> They [hospital doctors] just give me a prescription and say bring that to your GP. I think, depending on the GP to give you the talk about what the medicine is and all that. But like that's not facing facts, the fact of life in a modern GP…. doctors don't have the time to sit down and talk to me about my latest medicine (Patient 2 Quote)

No healthcare group felt they had access to adequate, timely information to make sure a patient on multiple medications has the correct/up-to-date medication list.

GPs and pharmacists both felt that they were responsible for untangling the web of prescribing but questioned if this should be their responsibility:



A clinical pharmacist working in the GP practice providing expertise in medication reviews was suggested by many participants as the most appropriate professional to provide the support required for these complex medicines lists.

Main Takeaways

- Adverse drug reactions and prescribing cascades were considered unavoidable for older patients taking multiple long-term medicines.
- Prescribing cascades were mostly unintentional due to the overlap of symptoms of side-effects and chronic health conditions.
- Preventing prescribing cascades requires time and necessitated a thorough medication review which takes significant time and expertise.
- Once a certain level of polypharmacy was reached, healthcare professionals believed that using a risk/benefit assessment to identify a prescribing cascade was very challenging due to the level of complexity it involved.
- Medication reconciliation post hospital discharge was particularly challenging due to communication deficits and difficulty in accessing information required for ongoing prescribing in primary care.

What happens next?

We will share these results with:

- Patients and the Public
- Healthcare Researchers
- Healthcare Professionals
- Policy Makers

This study is part of a larger Health Research Board of Ireland funded project looking at problematic pharmacy and prescribing cascades.

How can I find out more?

If you have any questions you can contact us at:

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Two other published articles as part of this project can be found at:

- Prescribing cascades in community-dwelling adults: A systematic review - Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy. October 2022.

- Adverse drug reactions and associated patient characteristics in older community-dwelling adults: a 6-year prospective cohort study - British Journal of General Practice. March 2023

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This report was prepared by Steven Gilmore (Research Assistant) in collaboration with patient representatives for this study Mr Larry Hally and Ms. Stella O'Gorman.