Safety in Polypharmacy Training Course

Session 1

Basics on Polypharmacy and Patient Involvement

Written version of the video scripts

In this session

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VIDEO #1 — Polypharmacy: What It Is, Why It Matters, and How to Get It Right

Estimated Duration: 8–11 minutes
Target Audience: Broad: patients, caregivers, and clinicians

1. Introduction

Imagine opening your medicine cabinet and seeing five, eight, maybe even fifteen different bottles staring back at you. Which ones do you really need? Could any of them be working against each other? And does your doctor even know about all of them?

Welcome to SafePolyMed training session one, part one. In this video, we're going to break down what polypharmacy really means, why it is becoming one of the biggest safety challenges in modern healthcare, and most importantly, how you can make sure it is working for you, not against you.

2. Main content

What Is Polypharmacy?

Let's start with the basics. Polypharmacy, sometimes called polymedication, they mean exactly the same thing, is simply the use of multiple medications at the same time.

Now, there is no single universal definition that everyone agrees on, but the most commonly used threshold, and the one we'll use throughout this course, is the routine use of five or more medications.

And here is what a lot of people miss: that count does not just include your prescription drugs. It also includes over-the-counter medicines or OTCs, and dietary supplements, and even traditional or complementary therapies.

All these count in your full medication picture!

Key Concepts: Do You Know the Difference?

So, what do these terms actually mean? Let's quickly clarify them, because you will hear them a lot in this series.

A drug is any chemical substance that affects how living systems function.

A medicine is more specific: it is a substance designed to treat or prevent a disease and its symptoms. These can range from traditional natural products to modern biologics and gene therapies.

OTC or over-the-counter medicines are the ones you can buy without a prescription. Think ibuprofen, antihistamines, cough syrups. They are considered safe when used as directed, but here's the key point: they still count in your medication picture, and they can absolutely interact with your other drugs.

Then we have dietary supplements. Things like vitamin D, fish oil, or minerals. They are not officially medicines because they are not designed to treat diseases, but they can affect how your body processes other medications.

And finally, complementary or alternative medicine. This is a really broad category: everything from acupuncture to herbal remedies. These practices are not fully integrated into most conventional healthcare systems, but they can still impact your metabolism and interact with your prescribed treatments.

Adverse Drug Reactions (ADRs)

Before we go further, there is a concept we need to understand: adverse drug reactions, or ADRs. These are unintended, harmful, or unpleasant events that happen when you use a medicine.

Most ADRs are spontaneous and unexpected, but they can also happen because of a medication error, because a medicine is being misused, or because a drug is being used off-label, meaning for a purpose or in a way that is different from what was officially approved.

There are two main types. Type A reactions are dose-dependent and predictable, they are essentially the drug doing what it does, just a bit too much. For example, a chemotherapy drug that causes anaemia as a known side effect. Type B reactions are the unusual, unpredictable

ones, they are not expected based on how the drug normally works, and they can sometimes raise important research questions.

One more small but important distinction: an adverse reaction and an adverse effect refer to the same event, but from different perspectives. The patient has a reaction; the drug causes an effect. Same coin, two sides.

Polypharmacy: Causes, Benefits, and Risks

So, why does polypharmacy happen in the first place? The main causes are pretty straightforward: the presence of chronic diseases, having multiple health conditions at the same time, what doctors call multi-morbidities, ageing, chronic pain, and mental health conditions. All of these tend to require multiple medications.

But here's the thing: polypharmacy is not automatically bad. When done right, it has real benefits. Combining medications can manage chronic conditions and improve quality of life far better than any single drug alone. Think about blood pressure management: sometimes one medication is not enough, but a carefully chosen combination can make a huge difference. And appropriate polypharmacy can prevent unplanned hospital visits, those stressful emergency room trips that nobody wants.

Now, the risks. When medications are not managed carefully, things can go wrong. You can get unwanted drug-drug interactions, DDIs, or even drug-gene interactions, DGIs, which we will explore in later sessions. There is the risk of adverse drug reactions, decreased quality of life, cognitive impairment and falls, especially in elderly patients, and non-adherence, which means patients struggle to keep up with complex medication schedules. All of this can worsen disease symptoms and increase the burden on the healthcare system

How Common Is Polypharmacy?

Let's put some numbers on this. Studies show that 26 to 40 percent of people over 60 are taking five or more drugs at the same time. In the general population, about half will experience polypharmacy at some point in their lives, and nearly a quarter experience what we call excessive polypharmacy, that is ten or more different medications simultaneously.

Appropriate vs. Inappropriate Polypharmacy

So, how do we tell the difference between polypharmacy that is working and polypharmacy that is problematic? The World Health Organisation draws a clear line between appropriate and inappropriate polypharmacy.

Appropriate polypharmacy means all medicines are prescribed to achieve specific therapeutic goals agreed upon with the patient. Those goals are being met, or there's a reasonable chance they will be. The therapy has been optimised to minimise the risk of adverse reactions. The patient is motivated and able to follow the medication plan. And there is good record-keeping of what is being taken and at what doses.

Inappropriate polypharmacy is the opposite: there is no evidence-based reason for a prescription, or the reason has expired. Medications are not achieving their goals. The drug combinations are causing or risking adverse reactions. The patient can't or won't take the medicines as intended. Or there is poor or no documentation of the medication history.

Your Treatment Plan

So how do we make polypharmacy work? It starts with a solid treatment plan. This is a detailed roadmap that covers your disease, the goal of your treatment, the options available along with their possible side effects, and how long the treatment is expected to last. It can also include information about costs and what follow-up care looks like once treatment ends.

From a patient's perspective, knowing the expected duration of treatment is something people value enormously, yet it is often not communicated. Surveys consistently show patients rating this as a top priority.

Deprescribing: Getting Smarter About Medications

And then there is a concept that might be new to many of you: deprescribing. This is the process of tapering, stopping, or withdrawing medications from a patient's regimen. The goal is to improve their health or reduce the risk of side effects, and it is a key part of managing polypharmacy responsibly.

Deprescribing can involve lowering the dose, reducing how often you take a medication, or stopping it altogether. The challenge is that most deprescribing today is reactive, it happens after something goes wrong, like an adverse reaction or a therapeutic failure. The SafePolyMed

recommendation is that clinicians should be proactive, regularly reviewing medications with their patients to see what can be safely reduced or stopped.

But deprescribing is not risk-free either. Patients identify four main concerns: Adverse drug withdrawal events, the return of their medical condition, unpredictable changes in drug-drug interactions when a medication is removed, and damage to the trust relationship with their healthcare provider. That last one is really important and often overlooked, as patients sometimes feel like their doctor is taking away something that was helping them, and that communication needs to be handled with care.

3. Key takeaways

So, here's what we would like you to take away from this video. If you or someone you care about is taking multiple medications, start by making a complete list, and we mean everything: prescriptions, over-the-counter drugs, supplements, herbal remedies. Bring that list to your next medical appointment and ask your healthcare team to review it together with you.

In our next video, we will talk about something just as important: your role as a patient in making polypharmacy safer. Because the truth is, good communication between you and your healthcare team is one of the most powerful tools we have.

If you found this helpful, share it with someone who might benefit from it. See you in the next one!

VIDEO #2 — Your Voice Matters: Patient Involvement in Polypharmacy Safety

Estimated Duration: 7–9 minutes
Target Audience: Broad: patients, caregivers, and clinicians

1. Introduction

What if I told you that one of the most powerful tools for making polypharmacy safer is not a new drug, a genetic test, or a high-tech app? It is you! Your voice, your experience, and your active participation in the decisions about your own treatment.

In this second video of our Session 1, we are going to explore why patient involvement is not just nice to have, it is essential! And we will introduce you to some powerful concepts: evidence-based medicine and patient-led evidence.

2. Main content

Why Patient Involvement Matters

There is solid evidence for this: when communication between patients and their healthcare providers is good, fewer errors happen and treatment outcomes improve. Better outcomes also occur when patients are fully informed and educated about their disease and their medications.

So, what does patient involvement look like in practice? It means patients and caregivers playing a key role in ensuring safe healthcare. Let's break that down into the specific things you can do.

First, bring your lived expertise to the conversation. You are the one who knows your symptoms, your pain levels, the daily burdens and challenges of living with your condition. Nobody else has that information, only you!

Second, provide accurate information. The more your healthcare team knows about what you are experiencing, the better they can diagnose and evaluate your situation.

Third, and this is a big one, participate in decision-making. Work together with your provider to decide on appropriate treatment plans and weigh up the risks and benefits. This is what healthcare professionals call shared decision-making, and research shows that patients who feel ownership over their treatment decisions are much more likely to stick with complex medication schedules.

Fourth, make sure treatments are administered properly. When, how, with or without food, these details matter enormously. A patient shared with us a lived experience in which neither her doctor nor her pharmacist told her that certain medications needed to be taken on an empty stomach.

So, the timing around food, liquids, and even grapefruit juice can make or break how a drug works in your body.

Fifth, identify and report adverse events. If something feels off, a new cough, a rash, unusual fatigue, brain fog, write it down. Even if you're not sure it is related to your medication, that information could be the missing piece in understanding your treatment. One patient once described having a persistent cough for a full year before a specialist recognised it as a known adverse reaction to one of her drugs.

And sixth, keep adequate records. Write down what you're taking, when you started, the doses, and any changes or reactions. This is admittedly hard — medication names can be long and impossible to pronounce — but having a written record is invaluable for your healthcare team.

Shared Decision-Making: Two-Way Communication

Now, all of this requires a two-way conversation. Patient involvement is not just patients talking, it is healthcare providers listening and creating space for that dialogue. Well-informed patients can act as shared decision-makers, and healthcare providers need to actively support patients, families, and caregivers in taking on this role.

But here's the reality: not everyone starts from the same place. Health literacy, the ability to understand medical information and act on it, is a real barrier for many people. Words like "comorbidities" and "adherence" can feel like a foreign language.

Patient Involvement: Key Actions

So, what can we do about it? We need to enable patients to be their own self-agents by improving their knowledge about their medications. We need tools in local languages that help bridge the gap between patients and providers. We need to promote health literacy that goes beyond simply giving people more information, it is about helping them develop confidence to act on that knowledge. And we need to consider the social determinants of health: education levels, cultural context, economic circumstances. These all affect how someone can engage with their own care.

There are practical actions being taken right now. The SafePolyMed project itself developed a medication management platform that helps patients track their drugs and alerts them to potential interactions. Digital tools, patient information leaflets, and even AI-powered assistants can help with health literacy.

Evidence-Based Medicine: A Quick Introduction

Let's shift now to a concept that underpins all modern medicine: evidence-based medicine, or EBM. This is the process of systematically reviewing clinical research to figure out what works best for patients.

What makes EBM special is that it brings together three things: the best available research evidence, the clinical expertise of the healthcare professional, and crucially, the patient's own values and preferences.

EBM: The 5-Step Model

In EBM, there is a well-established five-step model that can be followed. First, define a clinically relevant question, for instance: "Why is my patient coughing after starting this new drug?" Second, search for the best evidence to answer it. Third, assess the quality of that evidence. Fourth, use it to make a clinical decision together with the patient. And fifth, evaluate: did the treatment achieve what we set out to do? If not, adjust and try again.

How EBM Benefits You as a Patient

The benefits for patients are clear: EBM helps you make more informed decisions about your treatment, gives you a more accurate perception of risks, helps you use elective procedures appropriately, and supports meaningful shared decision-making with your doctor.

Your Experience Is Evidence

And here is where things get really exciting: your experience as a patient is not just a story. It's data. It's evidence.

Patient-led evidence generation is a growing field where patients themselves contribute insights into the lived experience of their conditions and treatments. This can take many forms: self-reported experience surveys conducted by patient organisations, patient-preference studies that help researchers understand which aspects of a treatment journey matter most to the people actually going through it, and something called patient-generated health data, health information that is created, recorded, and controlled by patients themselves or their families and caregivers.

What is powerful about this is that patients decide how this data is shared. It puts patients in the driver's seat. And increasingly, this kind of evidence is being published in peer-reviewed journals, with patients as co-authors.

A great example came up during the life SafePolyMed training session: when the evidence for a particular cancer treatment was ambiguous, as it seemed to help only about 5 to 7 percent of patients but came with real costs and risks, the guidelines committee turned directly to patient groups and surveyed thousands of patients to understand their preferences. That patient input directly shaped the clinical guidelines. That is patient-led evidence in action!

3. Key takeaways

Here's our challenge to you. Before your next medical appointment, prepare three things: a complete list of everything you're taking, a note of any side effects or reactions you have experienced, even the minor ones, and one question you want answered about your treatment plan.

Your voice is not just welcome at the table, it is necessary! The more informed and engaged you are, the safer your polypharmacy becomes.

You have completed Session 1!

In our next session, we're going to dive into the science of drug-drug interactions. How drugs work in your body and what happens when they collide. It's fascinating, and we promise to make it understandable.

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