McMaster University | Family Medicine
David Braley Primary Care Research Collaborative

TAPER

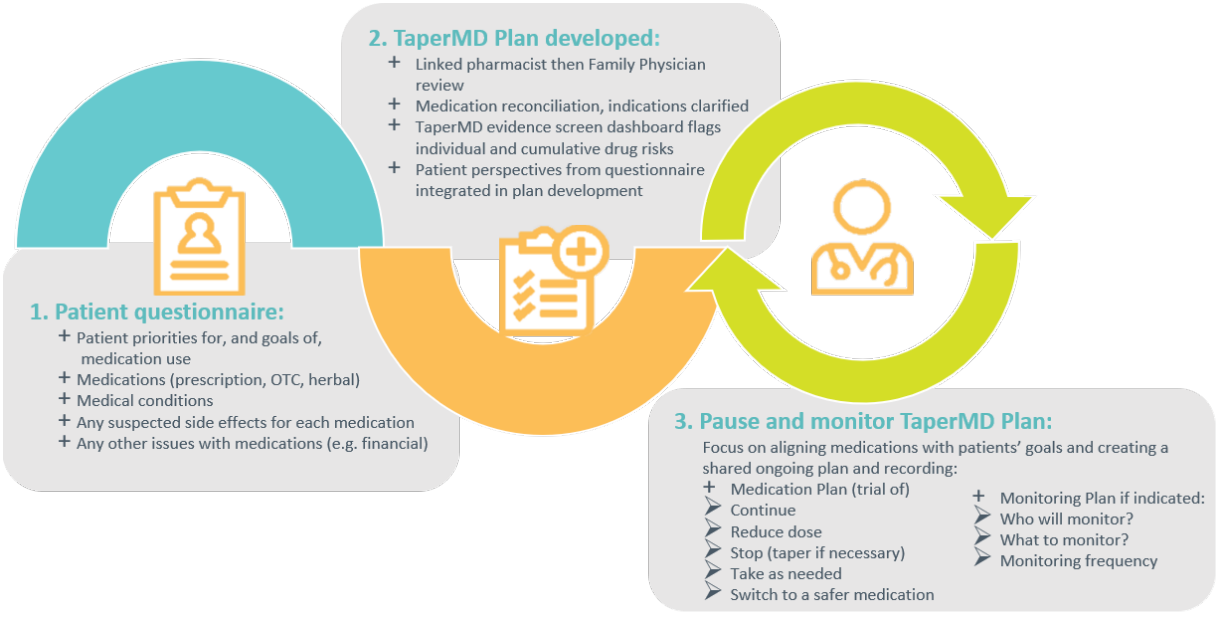
Team Approach to Polypharmacy Evaluation and Reduction: Feasibility Randomized Trial of a Structured Clinical Pathway to Reduce Polypharmacy

Why did we do this study?

Polypharmacy, commonly defined as the use of 5 or more long-term medications, can lead to serious negative health impacts—especially in older adults. It is associated with higher risks of hospitalizations, falls, adverse drug reactions, and cognitive impairment. Complicated medication regimens can also be burdensome for patients, leading to confusion, frustration, and poorer medication adherence. Deprescribing is a planned method used to reduce polypharmacy and optimize a patient's medications by attempting to stop, reduce or switch drugs where the risks may outweigh the benefits. While explicit lists of "potentially inappropriate" drugs and deprescribing guidelines exist, there are few approaches to deprescribing that take into consideration a patient's wishes and priorities for treatment *in addition* to clinical research and evidence-based clinician expertise.

What is TAPER?

The Team Approach to Polypharmacy Evaluation and Reduction (TAPER) is a structured clinical pathway that aims to reduce polypharmacy by explicitly including a patient's goals and priorities for their own medical treatment and use of medications into the conversation. The TAPER approach facilitates shared decision-making between a patient and their primary care providers, including the patient as an expert member of the decision-making team, alongside their primary care provider and clinical pharmacist



The TAPER process is simple. The patient is first asked a series of questions about their health and medications, including any functional goals or symptom priorities that they feel may be made better or worse by their medications, and if there are any medications, symptoms or other aspects of their health they would like deprescribing to focus on. They then attend two special appointments dedicated to deprescribing. The first appointment is with the pharmacist to discuss their medications in detail and develop a plan to identify any that can potentially be stopped using a "pause and monitor" approach. The second appointment is with the patient's primary care provider who will review, discuss and enact the plan with the patient. The plan also includes frequent monitoring and follow-up with the patient following any changes to medications to ensure their continued safety.

What is TaperMD?

The TAPER appointments are facilitated by an online shared electronic record platform, TaperMD. TaperMD can be accessed by both the pharmacist and physician and is used to synthesize and integrate clinical evidence surrounding medication use with the patient's stated goals and priorities for treatment. The patient's up-to-date medication list is entered into TaperMD, where it undergoes a "machine screen" to identify any potentially inappropriate medications. Links to deprescribing guidelines and medication-related evidence provide at-a-glance information to help clinicians develop the deprescribing plan. The patient's goals and priorities for treatment can be entered into the dashboard where they are prominently displayed to encourage a patient-centred approach. Clinicians can use TaperMD to develop, discuss and operationalize the deprescribing plan, as it allows for asynchronous communication between the two providers.

Will TAPER work in a real-life clinical setting?

To determine if TAPER can be feasibly implemented into a primary care setting, we undertook a feasibility randomized controlled trial. The main objective of this trial was to determine if using TAPER was something clinicians would engage with and be willing to try in their day-to-day practice. We also wanted to see if there were signs that TAPER might be able to improve patient-important health outcomes.

What did we do?

We recruited patients from McMaster Family Practice and Stonechurch Family Health Centre who were 70 years old or older, and on 5 or more long-term medications. We recruited a total of 39 patients into the study. Half were randomized to receive the TAPER intervention right away, and half were randomized to the control group—they were given the opportunity to receive TAPER after their six-month study period was completed. Patient characteristics were recorded at baseline. An up-to-date medication list, as well as data on other health outcomes such as multimorbidity status, quality of life, sleep quality, functional mobility, etc. were collected from participants at baseline and again at six months. We also collected data on feasibility outcomes over the course of the study (e.g., number of participants and clinicians recruited, challenges with data entry and administering surveys, and usability of TaperMD).

Key findings:

- TAPER is feasible to implement in a routine clinical practice setting in primary care. Before starting the trial, we had determined a threshold of success for each feasibility outcome—all of these thresholds for success were met.

- A sufficiently high proportion of participants and clinicians were willing to engage in the intervention—100% of invited clinicians and 46% of invited eligible participants were recruited. Only 2 participants withdrew from the study, and only 3 were lost to follow-up.

- The direction of health outcomes appears to favour TAPER versus usual care—although this study is not powered to determine effectiveness of the TAPER intervention, our results signal that the majority of health outcomes measured may favour the TAPER group.

- In the 18 participants randomized to receive TAPER over 6 months:

    - 21 medications were stopped
    - 9 new medications were started
    - 5 medications were switched to a safer alternative
    - 6 medications were reduced in dose
    - 9 medications were increased in dose
    - 7 medications were paused, but restarted

Bottom line:

TAPER was found to be a feasible way to approach deprescribing in day-to-day clinical practice. Results show that it may be an effective way to reduce polypharmacy. Lessons learned from this feasibility study have since been used to implement a larger-scale randomized controlled trial to measure the effectiveness of TAPER—this study is currently underway. This feasibility study will also help inform future research on the effectiveness of TAPER in other settings, such as long-term care.

Citation:

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Read the full paper here

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