NICE National Institute for Health and Care Excellence

# Medicines evidence commentary

commentary on important new evidence from medicines awareness weekly

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## Deprescribing in older people approaching the end of life

A small study provides evidence for a relatively simple approach to reducing polypharmacy that could potentially be replicated in UK clinical practice. The small, unblinded randomised controlled trial (RCT) in 130 frail elderly patients in 2 hospitals in Ireland found that using a deprescribing tool reduced polypharmacy and monthly medication costs. The study was not powered to show changes in patient-oriented outcomes. However, the approach in the study is consistent with the NICE guideline on medicines optimisation, which highlights the importance of conducting a structured medication review in older people and those who are taking multiple medications.

### Overview and current advice

Multimorbidity (the presence of 2 or more long-term health conditions) is associated with reduced quality of life, higher mortality, polypharmacy (taking multiple medicines), high treatment burden, higher rates of adverse drug events, and much greater health services use (including unplanned or emergency care). Polypharmacy in people with multimorbidity is often driven by the introduction of multiple medicines intended to prevent future morbidity and mortality in individual health conditions. The absolute benefit gained from each additional medicine is likely to reduce when people are taking multiple preventative medicines but the risk of harms increases. Resources and screening tools are available to help guide decision making about the appropriateness of prescribing and stopping medicines (deprescribing). See the NICE key therapeutic topic on multimorbidity and polypharmacy for more details.

The NICE quality standard: medicines optimisation recommends that local healthcare providers have systems in place enabling identification of people taking medicines who would benefit from a structured medication review such as people taking multiple medicines, those with chronic or long-term conditions, and older people as recommended by NICE in the guideline on medicines optimisation.

The NICE guideline on multimorbidity recommends tailoring an approach to care that takes account of multimorbidity, including improving quality of life by reducing treatment burden and optimising care and support by identifying underlying problems. For example, NICE recommends discussing with the person treatments that could be stopped because of limited benefit. NICE recommends how to identify adults with multimorbidity who are at risk of adverse events, and how to assess frailty. Guidance and resources to support the GP core contract (2017/18) regarding frailty (updated April 2019) are available on the NHS England website. The British Medical Association has also published advice for clinicians on identifying and helping people with frailty. The NICE Pathways on medicines optimisation and multimorbidity give more details about these topics.

## New evidence

A small unblinded, parallel group randomised controlled trial (RCT) in 2 acute hospitals in Ireland examined the effect of applying a deprescribing tool to the medication regimens of 130 older people who had advanced frailty (Curtin, 2019). Participants were aged 75 years or more (mean age 85 years), hospitalised from the community with acute unselected medical or surgical illness and unable to return to independent living, but required long-term nursing care. Participants were also prescribed 5 or more long-term medications and were 'severely frail' defined by a Clinical Frailty Scale score of 7 or higher and an indication from the treating physician that they "would not be surprised if the patient died in the next 12 months".

Between 27 March 2018, and 3 April 2019, participants were randomised to either standard care (n=65) or the deprescribing intervention (n=65). This involved a trained research physician developing a medication withdrawal plan using STOPPFrail criteria and communicating this to one of the participant's physicians, as well as documenting it in the case notes. STOPPFrail was developed specifically to aid deprescribing decisions in older people who are nearing the end of their lives and consists of 27 indicators that highlight instances of potentially inappropriate prescribing in this population. All outcome data were collected by 2 research physicians who were blinded to participants' group allocation.

No statistically significant differences were found at baseline between the two groups in terms of age, sex, or measures of cognitive, functional or co-morbidity status. At baseline, the mean number of regular prescribed medicines was 11.5 (± standard deviation [SD] 3.0) in the deprescribing intervention group and 10.9 (± 3.5) in the standard care group (no statistically significant difference). More people in the intervention group were prescribed analgesic medications at baseline (75.0% versus 49.2%; p=0.03).

In the intervention group, at least one deprescribing recommendation was made for 90.8% of participants. These included recommendations to discontinue a mean of 2.4

(± SD 1.4) medications per participant and to reduce the dose in a mean of 0.75 (± 0.73) medications per participant. A total of 87.8% of deprescribing recommendations were accepted and implemented by the doctors looking after the participants. All outcome data were collected by 2 research physicians who were blinded to participants' group allocation. There were no potential adverse effects of deprescribing reported to the research teams during the trial.

The primary outcome, the mean reduction in the number of long-term medicines taken 3 months after randomisation, was statistically significantly greater in the deprescribing intervention group (reduction of 2.61 [± SD 2.73] regular items) compared with the control group (reduction of 0.36 [± SD 2.60] regular items), with a mean difference of 2.25 regular items (± SD 0.54, 95% confidence interval [CI] 1.18 to 3.32, p<0.001). At 3 months, no statistically significant difference was found between groups in the secondary outcomes, unscheduled medical reviews, unplanned hospital admission, emergency department presentation (not admitted), falls, fractures, mortality, and quality of life. There was a reduction in monthly medication cost in the intervention group (mean difference when compared with the control group $61.74 (± SD $26.60, 95% CI 8.95 to 114.53, p=0.02).

This study only included a small number of participants and so was insufficiently powered to show differences in the secondary outcomes, many of which were patient-oriented outcomes. The study was limited to 2 hospitals in 1 city of Ireland and the findings might not be generalisable to a different, broader population such as the UK. Physicians might have been more willing to use the STOPPFrail tool because it was developed in the locality of the study and it did not collect data on adverse drug withdrawal events or disease relapses caused by deprescribing, or include any other quality-control measures to assess the deprescribing recommendations made. A further limitation was that the study was unblinded and did not use a cluster randomisation design to limit bias. Furthermore, due to being trained in use of the deprescribing tool, physicians may have automatically applied these criteria to people in the control group. Strengths are that it included real-world patients and the straightforward design of the deprescribing tool makes it easier to replicate in other settings.

## Commentary

### Commentary provided by Lelly Oboh, Consultant Pharmacist, Care of Older People, Guys & St Thomas NHS Trust

This small unblinded RCT (Curtin, 2019) demonstrated that using the STOPPFrail criteria to identify potentially inappropriate medicines (PIMs) as part of a deprescribing process in a hospital setting reduced the number of medicines in older people living with frailty and limited life expectancy.

Implementing deprescribing in clinical practice for this cohort is difficult and complex. There are gaps in the knowledge and expertise required to identify if medicines prescribed are producing actual benefits or harmful effects. Also, there is a lack of evidence on the optimum deprescribing process, complex interprofessional relationships between multiple clinicians involved as well as misalignment between clinician perspectives and the patient's preferences or willingness to continue or stop medicines. The study addresses some of these issues.

Identifying PIMs is a crucial step in the deprescribing process. Explicit tools like STOPPFrail are objective, quick, easy to use and do not require in-depth expertise. Most tools are based on expert opinion and few have been tested in clinical practice. Using STOPPFrail to identify PIMs has been found to be comparable to geriatrician led deprescribing targets and has evidence of high interrater reliability when used by different disciplines across professional grades (Curtin, 2019).The study outlines a detailed, pragmatic and structured medication review protocol for deprescribing to identify PIMs, ascertain the necessity for ongoing therapy, safely discontinue medicines using a withdrawal guide, monitor tolerability and identify situations in which the medicines should be reinstated. This process can be adapted for use in primary care settings.

The study is relevant to current practice as older people living with frailty are particularly vulnerable after hospital discharge. Although the patients and PIMs were identified and reviewed by doctors in secondary care settings, there are tools and systems in place as part of the GP contract in England to identify those with severe frailty or limited life expectancy, or in care homes for a structured medication review. Using the STOPPFrail tool as part of a structured medication review process may offer an opportunity for more clinicians to be involved with deprescribing instead of relying solely on older people specialists.

The study was not powered to show a difference in the secondary, more patient-oriented outcomes. Nevertheless, the review process is consistent with the principles in the NICE guidelines on medicines optimisation, multimorbidity and managing medicines in care homes, which highlight the importance of structured, evidence based and patient-centred reviews that take into considerations frailty and multimorbidity and aim to reduce the burden of polypharmacy. Further research is needed to demonstrate improvement in patient-related outcomes over and above reducing the number of medicines.

The limited range of medicines in STOPPFrail omit some medicines that are commonly inappropriately prescribed in practice, like analgesics or laxatives. However inappropriate prescribing of these medicines was identified, as the most common reason for deprescribing was 'medicines where there is no clear indication'. It is worth noting that although polypharmacy was defined as 5 medicines or more,

the average number of drugs taken was 10 or more which is similar to ‘real-world’ practice in the UK.

Overall, this study is relevant to current practice and the deprescribing process can be adapted for use during structured medication reviews, by a wider range of healthcare practitioners (doctors, pharmacists and nurses) working within multidisciplinary teams in care homes to reduce medicines burden and costs without causing adverse outcomes.

Declaration of interests:
Lelly Oboh has received teaching and speaker fees for training sessions for pharmacists and other healthcare professionals on polypharmacy, deprescribing and medicines optimisation in older people.

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## References

Curtin D, Jennings E, Daunt R et al. (2019) Deprescribing in older people approaching end of life: a randomized controlled trial using STOPPFrail Criteria. J Am Geriatr Soc 68:762–9

## About this medicines evidence commentary

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