

1. Executive summary

Implementing Stimulating Innovation in the Management of Polypharmacy and Adherence Through the Years (iSIMPATY) was a three-and-a-half-year European Union (EU) funded project and managed by the Special EU Programme Body in Northern Ireland, Scotland and the Republic of Ireland. The project aims were to ensure the most sustainable use of medicines for patients by training pharmacists and other healthcare professionals to deliver person-centred medicines reviews and embedding a shared decision-making approach to managing polypharmacy (the use of multiple medicines).

There are 8.6 million unplanned hospital admissions across Europe each year due to adverse drug events, of which approximately 50% are potentially preventable (Figure 2).

The iSIMPATY project embedded a multidisciplinary collaborative approach to deliver pharmacist-led, person-centred medicines reviews using the 7-Steps methodology.

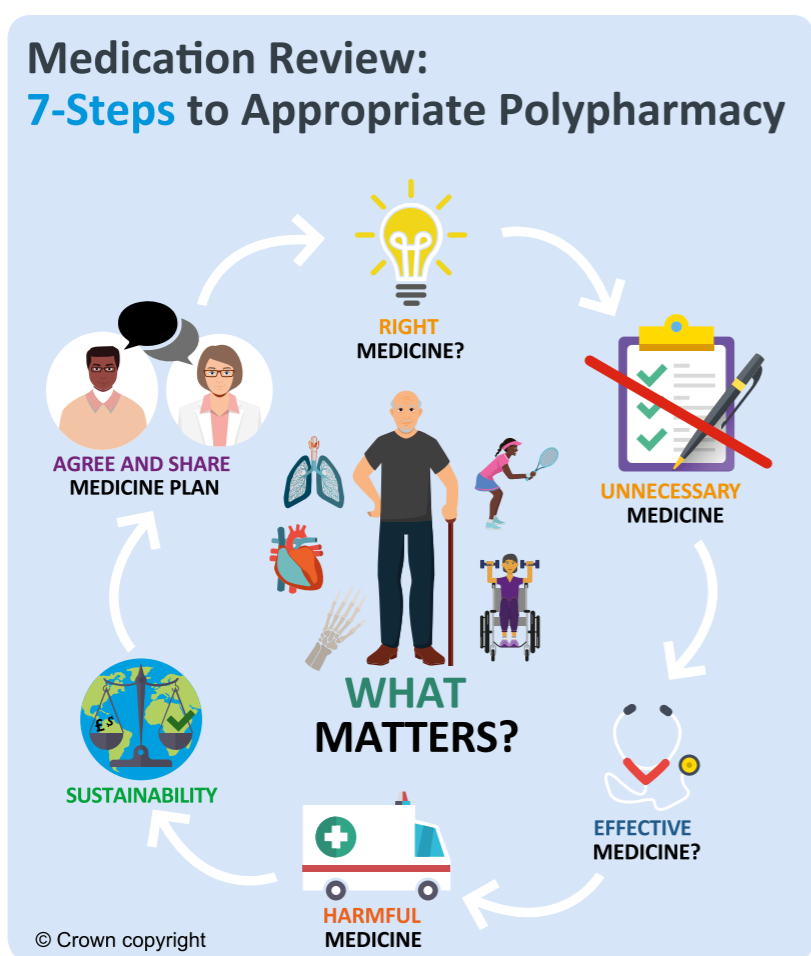


Figure 1: 7-Steps to appropriate polypharmacy, Scottish Polypharmacy Guidance, 2018.

In order to undertake the work, a project team of pharmacists were recruited, and a comprehensive bespoke training programme developed. This programme included the rationale for the 7-Steps approach, the importance of numbers needed to treat (NNT) in this context as well as change methodology and the psychology of interacting with patients. The project sought to evaluate the impact of reviews through assessing the levels of polypharmacy, medicines appropriateness, patient reported

outcome measures (PROMs) and pharmacist interventions. This was complemented by qualitative studies with project pharmacists and managers and with a survey of multidisciplinary professionals working with project pharmacists. The project developed a person-centred version of the Medicines Appropriateness Index (PC-MAI), and pharmacist interventions were graded and classified according to the Eadon scale for clinical significance. Robust training and quality assurance (QA) processes standardised the approach across the project.

Reviews were carried out in different settings including hospital in-patient, out-patient and GP practice settings. A total of 6,481 patients participated in iSIMPATY medicines reviews. The average age of patients reviewed was 72 years and 53% were female. An average of six long-term conditions were recorded per patient. The project pharmacists made an average of 11 interventions per review which included patient education, medicines reconciliation, medication changes and monitoring.

A number of key benefits were obtained by utilising the 7-Steps approach.

Interventions made were graded for clinical significance, with 82% being classified as clinically significant and 968 (4%) potentially preventing major organ failure, adverse drug reactions or incidents of similar clinical importance. Ninety-four per cent of interventions recommended were accepted. The average number of medications reduced from 12 to 11, with 92% of the reviews resulting in more appropriate medication use, therefore decreasing the likelihood of medication-related harm. Inappropriate medications were stopped (i.e. deprescribed), reduced or altered to improve appropriateness.

The changes in number of medications and improvement of appropriateness will minimise medication waste which is important to achieving both climate and sustainability strategies of the three jurisdictions. With respect to health inequalities, the criteria for review means that those from more deprived communities will benefit from reviews at younger ages due to a higher prevalence of multiple long-term conditions.

Patient experience was captured through Patient Reported Outcome Measures (PROMs). Patients reported large improvements in understanding, with over 90% of patients reporting post-review that they fully understood their medicines and potential problems with medicines, compared with 16% pre-review. Patients reported reduced side-effects, 64% pre-review, reducing to 38% post-review. Improvements were also reported in patients' ability to perform their usual activities and in some parameters of medicines adherence. Patients also reported decreased pain, discomfort, anxiety and/or depression following these reviews.

Many patients and carers were very appreciative of the opportunity to engage in reviews and very positive about the experience:

“No-one has ever sat down with me and taken time to go through all my medicines with me.”

“...huge improvement walked for half an hour this morning used to have to stop every few minutes because of the dizziness.”

Project pharmacists worked within multidisciplinary teams in the different practice settings, and also engaged closely with healthcare professionals across care settings, for example liaising with specialist teams and community pharmacists. All multidisciplinary team survey respondents would welcome continuation of the service provided during the iSIMPATY project, with high levels of satisfaction

reported with iSIMPATY and its effects on patients and healthcare professionals. Healthcare professionals felt more empowered in addressing medication-related harm and welcomed the collaborative working with multidisciplinary colleagues:

“iSIMPATY is one of the most impactful changes in General Practice in 20 years.” (GP, Ireland)

“We have definitely made significant changes to medications as a direct result of these reviews and advice.” (Consultant, Scotland)

An analysis of the economic costs and benefits associated with polypharmacy reviews was undertaken as part of the iSIMPATY project, with detail shown in Annex A. The analysis determined that, on average, 100 reviews:

- Cost £7,500 (€8,786) to deliver
- Result in £13,100 (€15,346) direct savings associated with medication changes
- Can be associated with £6,600 (€7,731) indirect savings from avoided adverse drug reaction-related hospital admissions (in-patient costs)
- Avoid an average of £168,800 (€197,800) in medical costs and are associated with a 7.4 Quality-Adjusted Life Year (QALY) gain, using Eadon intervention classification calculations

The total cost reduction from net medication changes alone would more than outweigh the staff cost for the Republic of Ireland and Scotland. With either the bottom-up or top-down approaches to economic analysis, the benefits (cost avoidance) would outweigh the associated direct cost in all three regions.

If comprehensive medicines reviews were provided to all patients aged over 65 years (over 75 years in Northern Ireland), taking five or more medicines in each country the maximum avoidable inpatient cost would be £24.7 million (€28.9 million) for Ireland; £11.0 million (€12.9 million) for Northern Ireland; and £36.0 million (€42.1 million) for Scotland.

The iSIMPATY model has been demonstrated to be generally applicable in a range of healthcare settings and in different healthcare systems. There has been interest both at EU level and globally to adopt this methodology to address this public health challenge. ^{1,2} An implementation pack and accredited online training pack is available to facilitate and support scaling. Over the course of this project over 200 healthcare professionals have completed this training, online or in face-to-face sessions, with positive feedback.

This programme has delivered on its key objectives by improving patient outcomes, safety and individual engagement with their medication regimens by fully adopting a “what matters to me” person-centred approach, the 7-Steps process, the clinical guidance of the Scottish polypharmacy guidance and the change methodology as set out in SIMPATY.

There are significant healthcare resource utilisation benefits as indicated by a positive return on investment of both medication and healthcare costs, together with patient reported improvements.

The approach is scalable by means of the tools and resources developed over the duration of the project and strong support for spread and scale up has been expressed by patients, project pharmacists, policy makers, healthcare professionals and managers.

iSIMPATY: Impact of comprehensive person-centred medicines reviews



iSIMPATY embedded a multidisciplinary collaborative approach to deliver pharmacist-led, person-centred medicines reviews using the 7-Steps methodology.

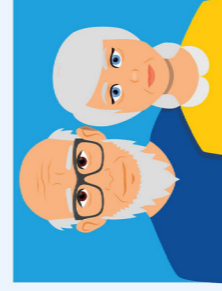
8.6 million unplanned hospital admissions each year across Europe due to adverse drug reactions



50% of hospital admissions due to adverse drug reactions are preventable

Over 6400 patients reviewed

- average age **72**
- **53%** female
- average **6** co-morbidities



Average 11 interventions per review e.g. education, medicine reconciliation, drug changes, monitoring

iSIMPATY's methodology can be applied across healthcare systems. An implementation pack and accredited online training is available.

Medication Review: 7-Steps to Appropriate Polypharmacy

