

Medication Without Harm



WHO Global Patient Safety Challenge

Introduction to the WHO Technical Report “Medication Safety in Polypharmacy”

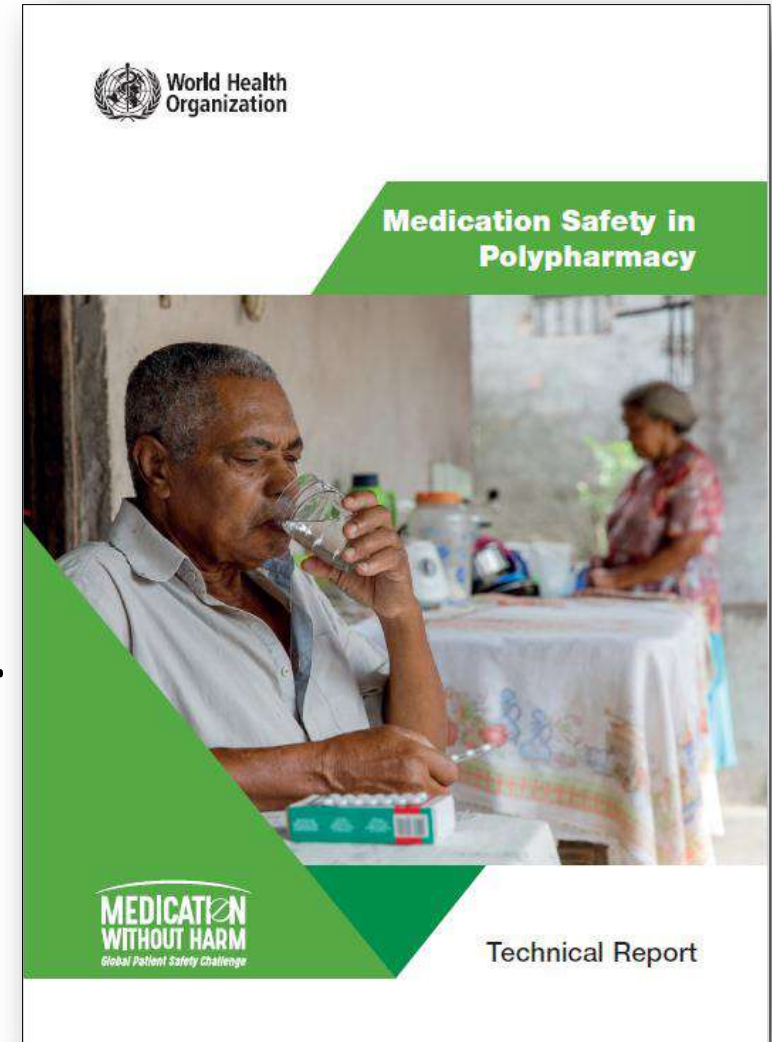
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Division
Scottish Government
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12 July 2022

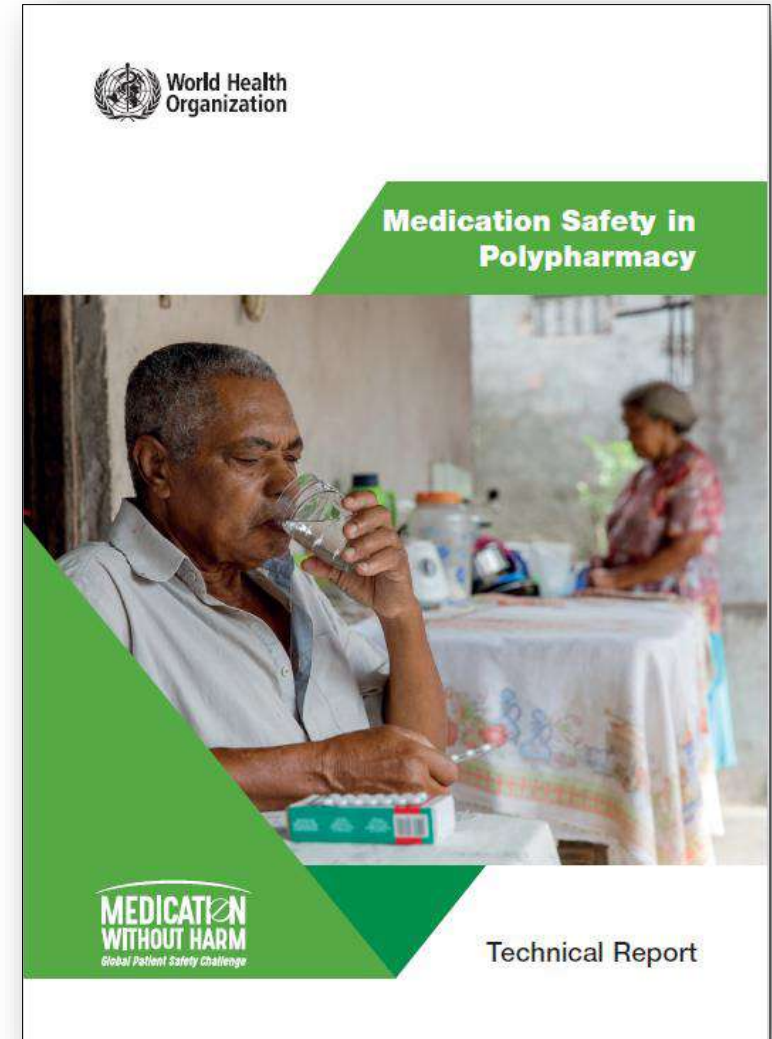


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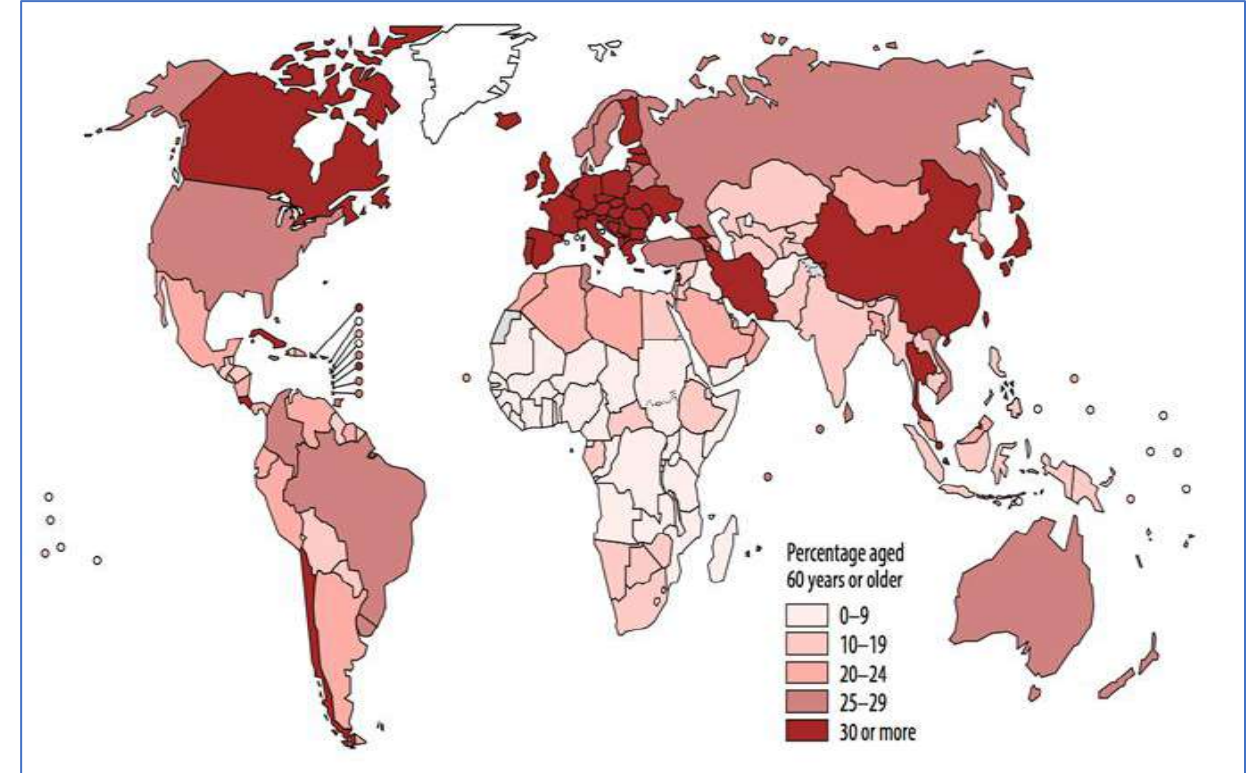
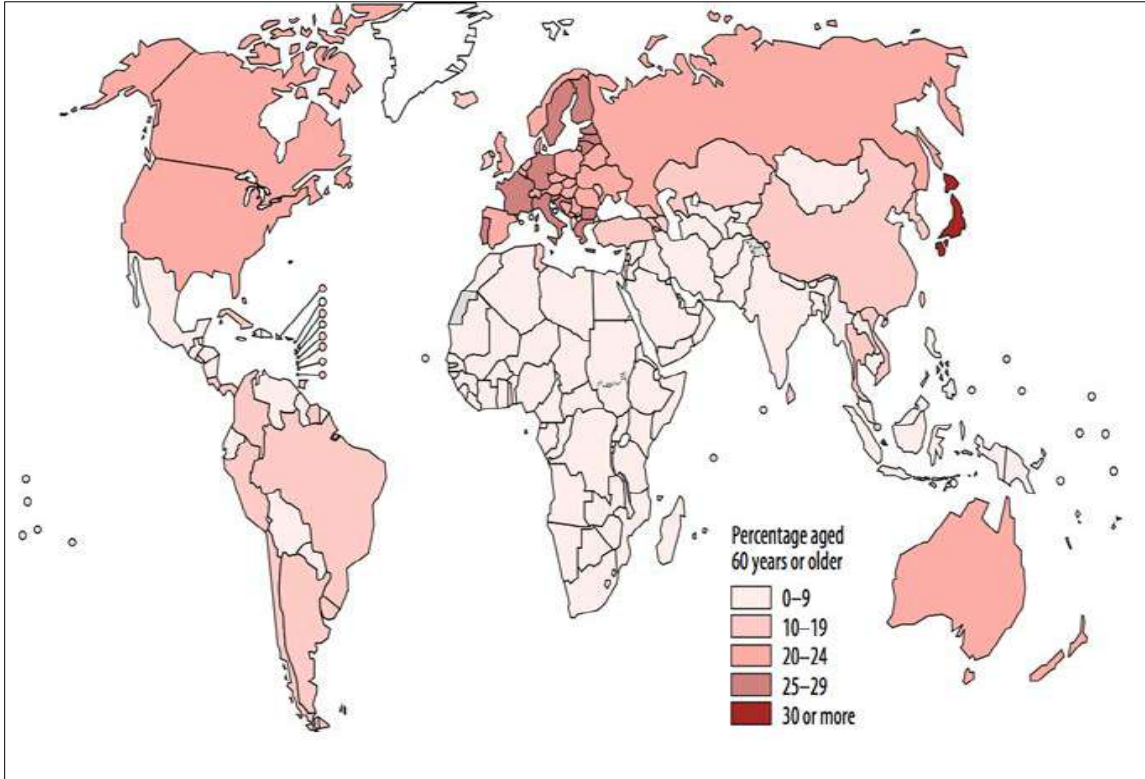
A project supported by the European Union
Interreg VA Programme, managed by the
Special European Programme Body (SEUPB)

1. Introduction



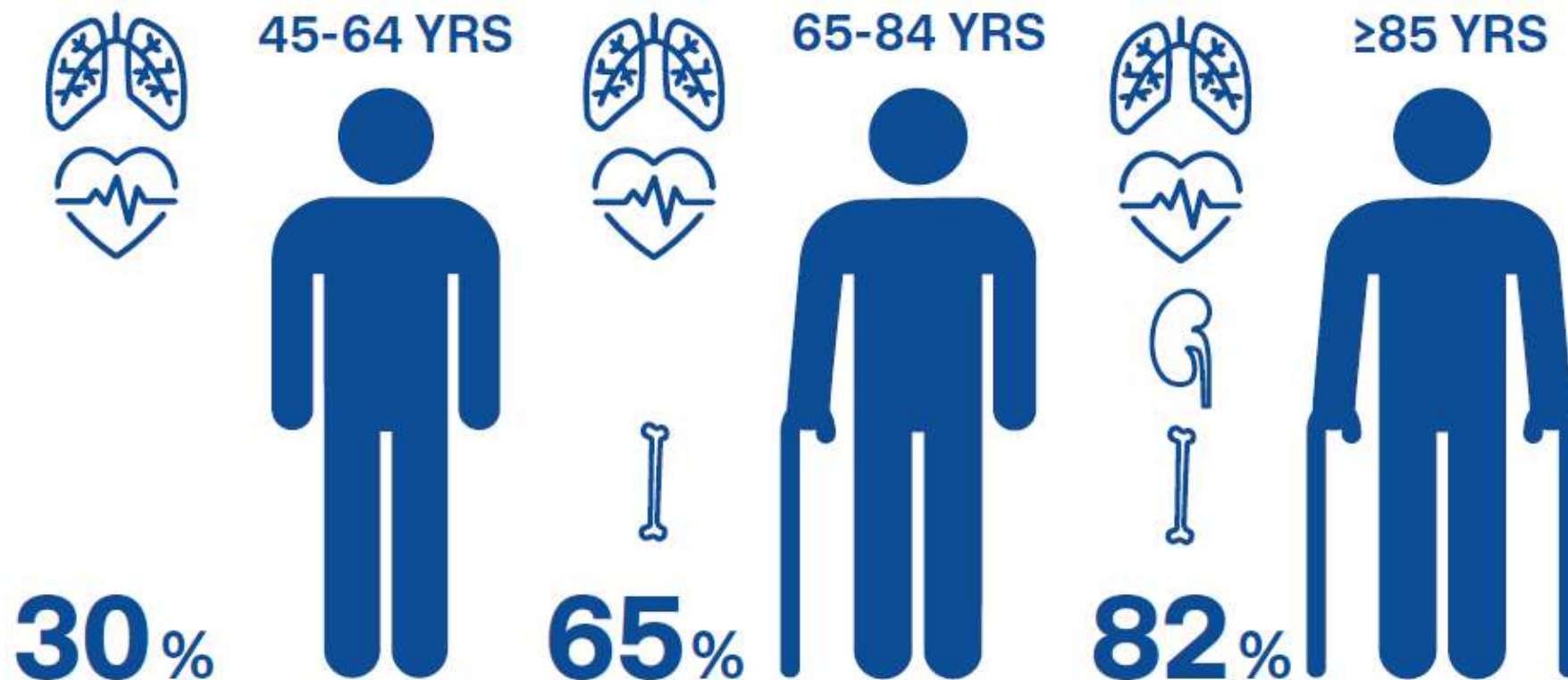
Population in 2015 and projections in 2050 (WHO)

Survival at younger age & socioeconomic development



Multiple morbidity is common

**MORE PEOPLE HAVE MULTIMORBIDITY
THAN A SINGLE DISEASE**



People: Impact of Frailty- renal & liver disease

PHARMACOLOGY



FRAILITY AND THE NUMBER OF MEDICINES

MORE FRAILITY



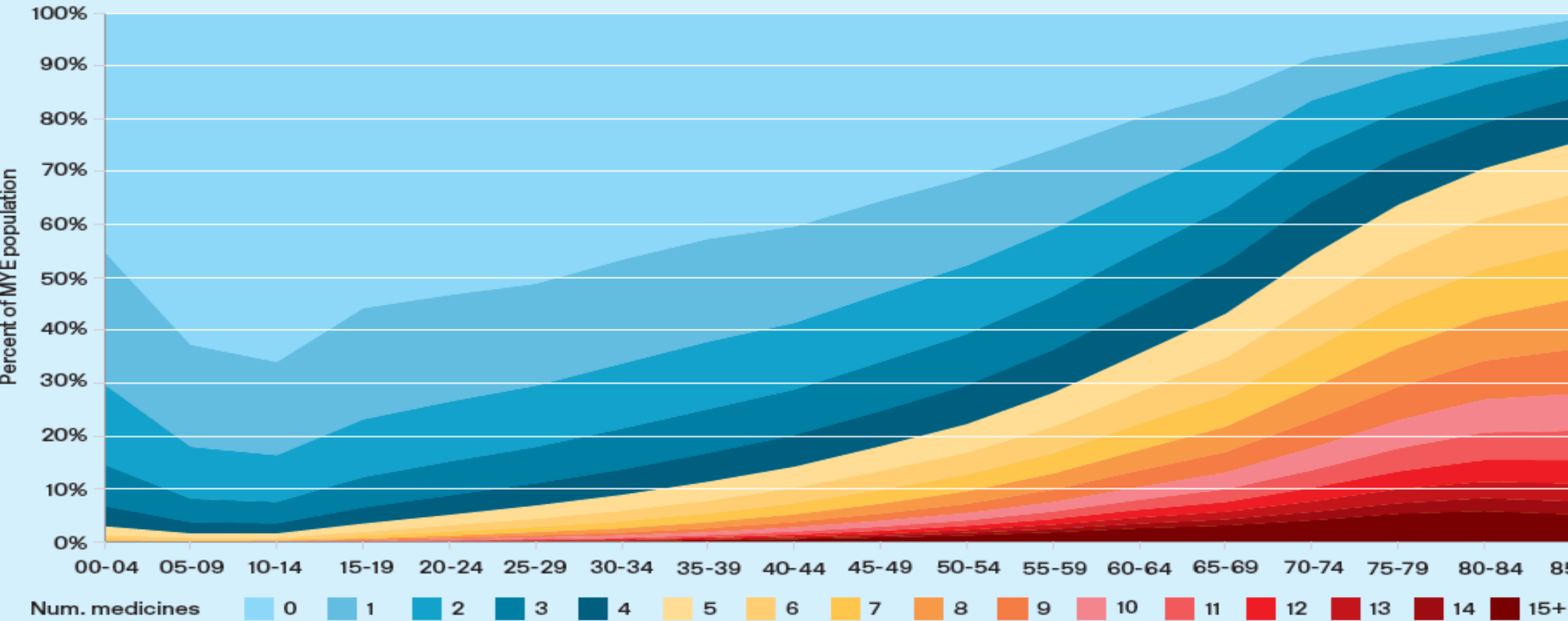
FRAILITY
1.5 X **5** OR MORE
MEDICINES

MORE MEDICINES



FRAILITY
2.0 X **10** OR MORE
MEDICINES

PERCENTAGE OF PEOPLE BY AGE GROUP ON MULTIPLE MEDICINES



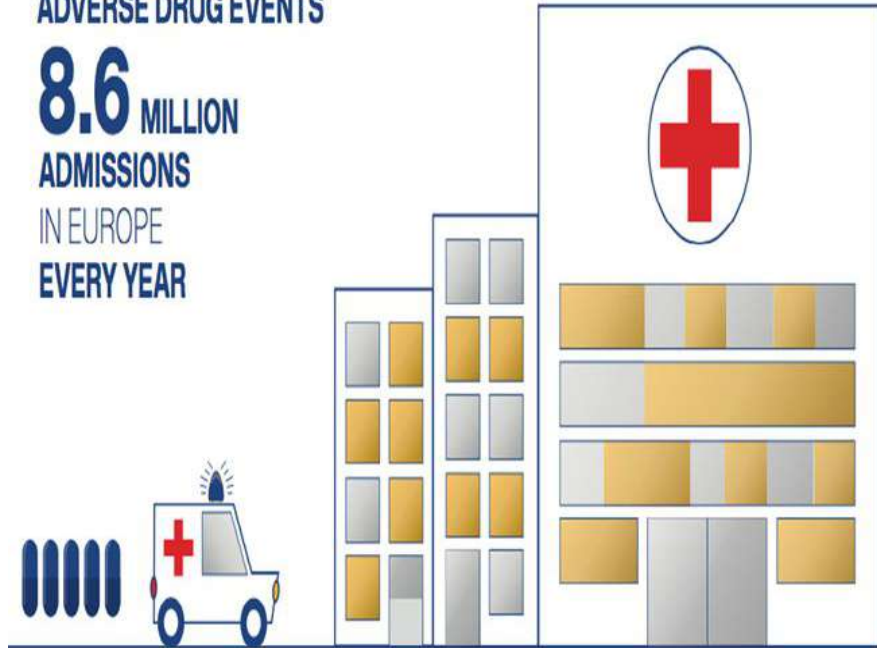


- **Appropriate polypharmacy** is present, when all drugs are prescribed for the purpose of achieving specific therapeutic objectives that have been agreed with the patient
- **Inappropriate polypharmacy** is present, when one or more drugs are prescribed that are not or no longer needed

Urgency: Public health challenge: @initiation & @review

UNPLANNED HOSPITAL
ADMISSIONS CAUSED BY
ADVERSE DRUG EVENTS

8.6 MILLION
ADMISSIONS
IN EUROPE
EVERY YEAR



50% OF HOSPITAL ADMISSIONS
DUE TO ADVERSE DRUG
EVENTS ARE PREVENTABLE

70% OF
THESE ARE



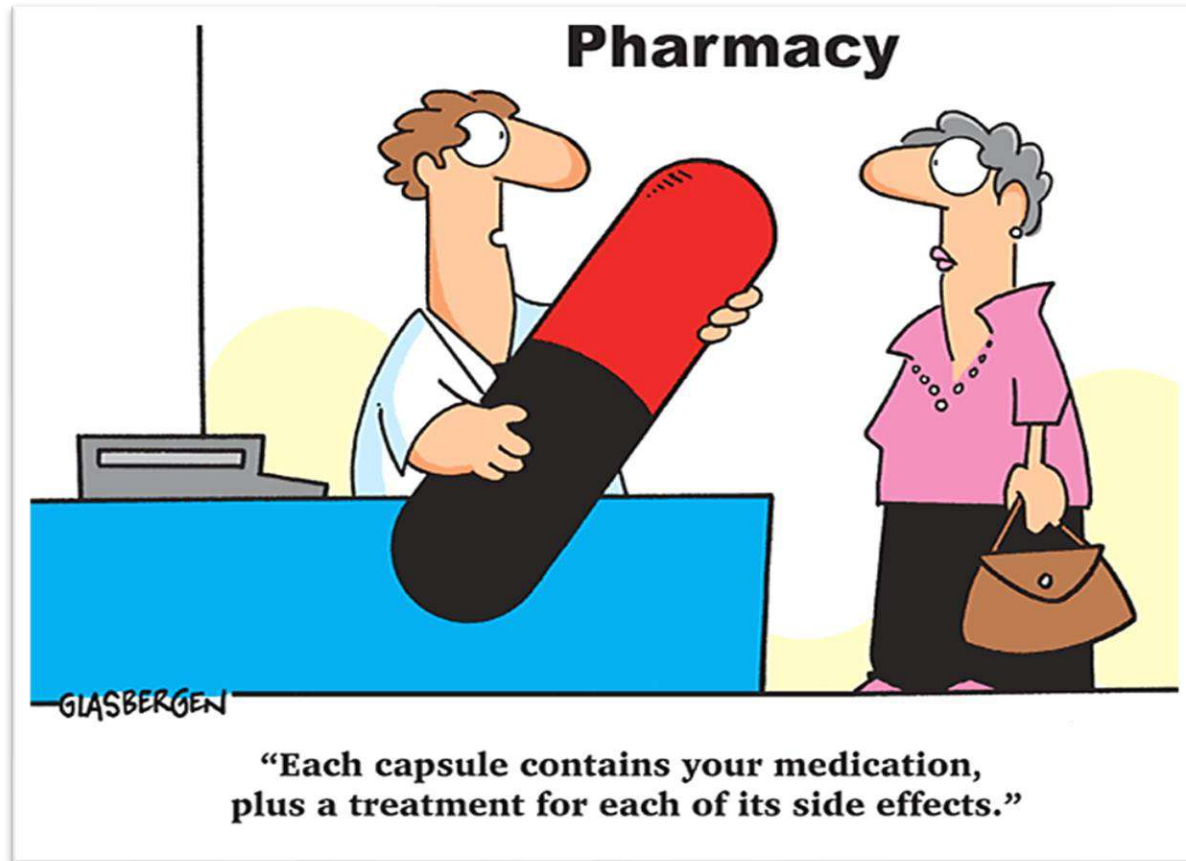
IN PATIENTS
OVER **65** YEARS
OF AGE

AND

ON **5** OR MORE
MEDICINES

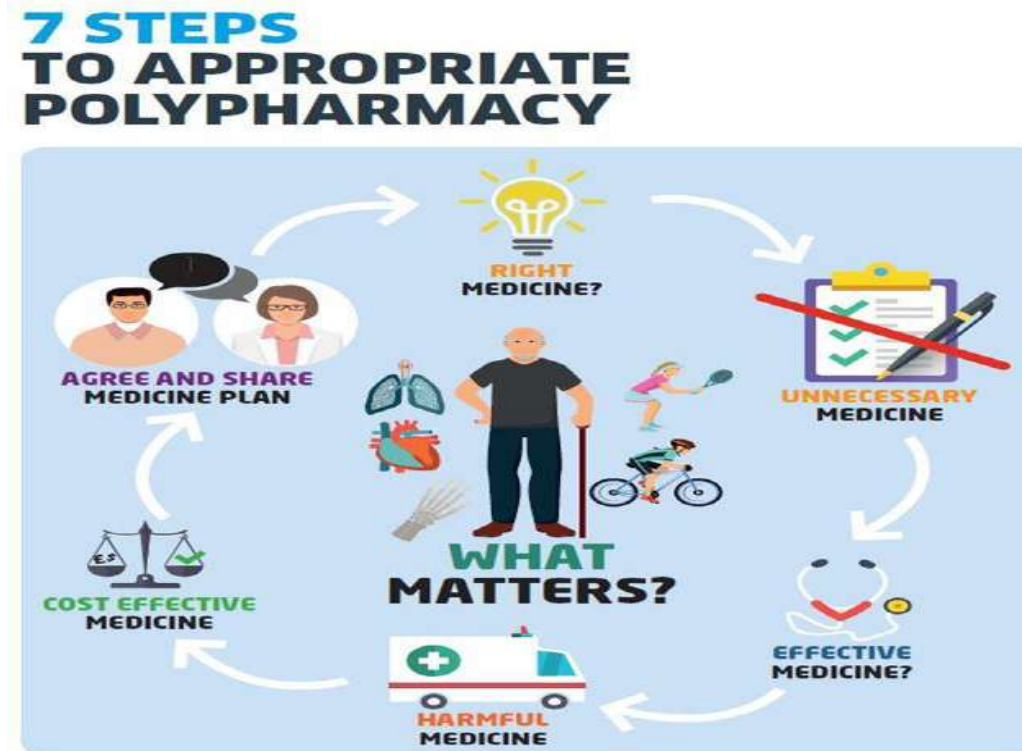
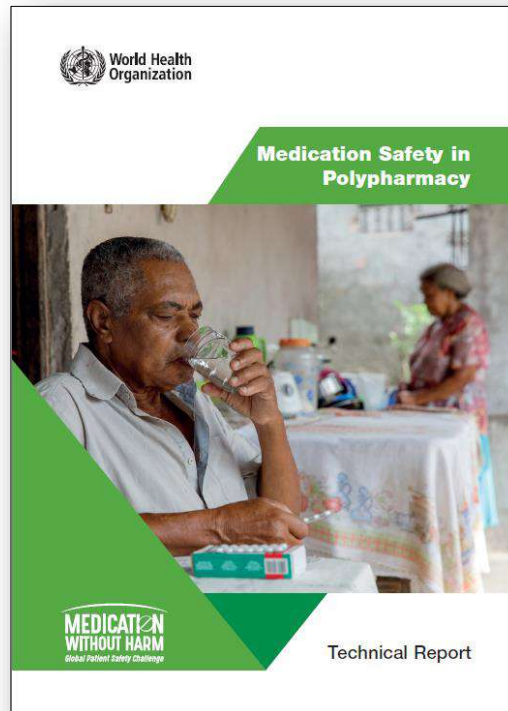


Adherence: Is polypill the answer?....



- 50% -80% with > 4 meds
- Non-adherence ~48% of asthma deaths, an 80% increased risk of death in diabetes and a 3.8-fold increased risk of death following a heart attack.
- Non-adherence to medicines costs the European Union €125bn pa billion

2. Medication Review in Polypharmacy





“Trade offs”

Polypharmacy Clinic in rural Uganda

Patients shared decision making : Patient advocate



Antiplatelets

Print

Antiplatelets – to prevent a second heart attack or stroke (Aspirin, Clopidogrel, Dipyridamole)

How likely are Antiplatelets to help me?

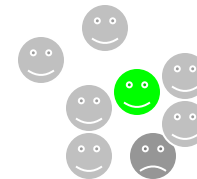
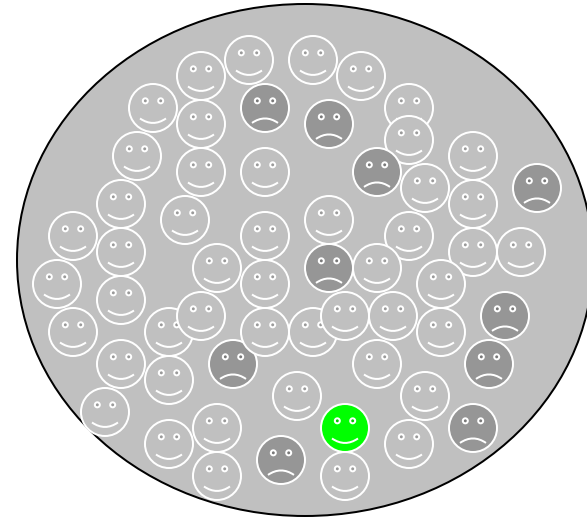
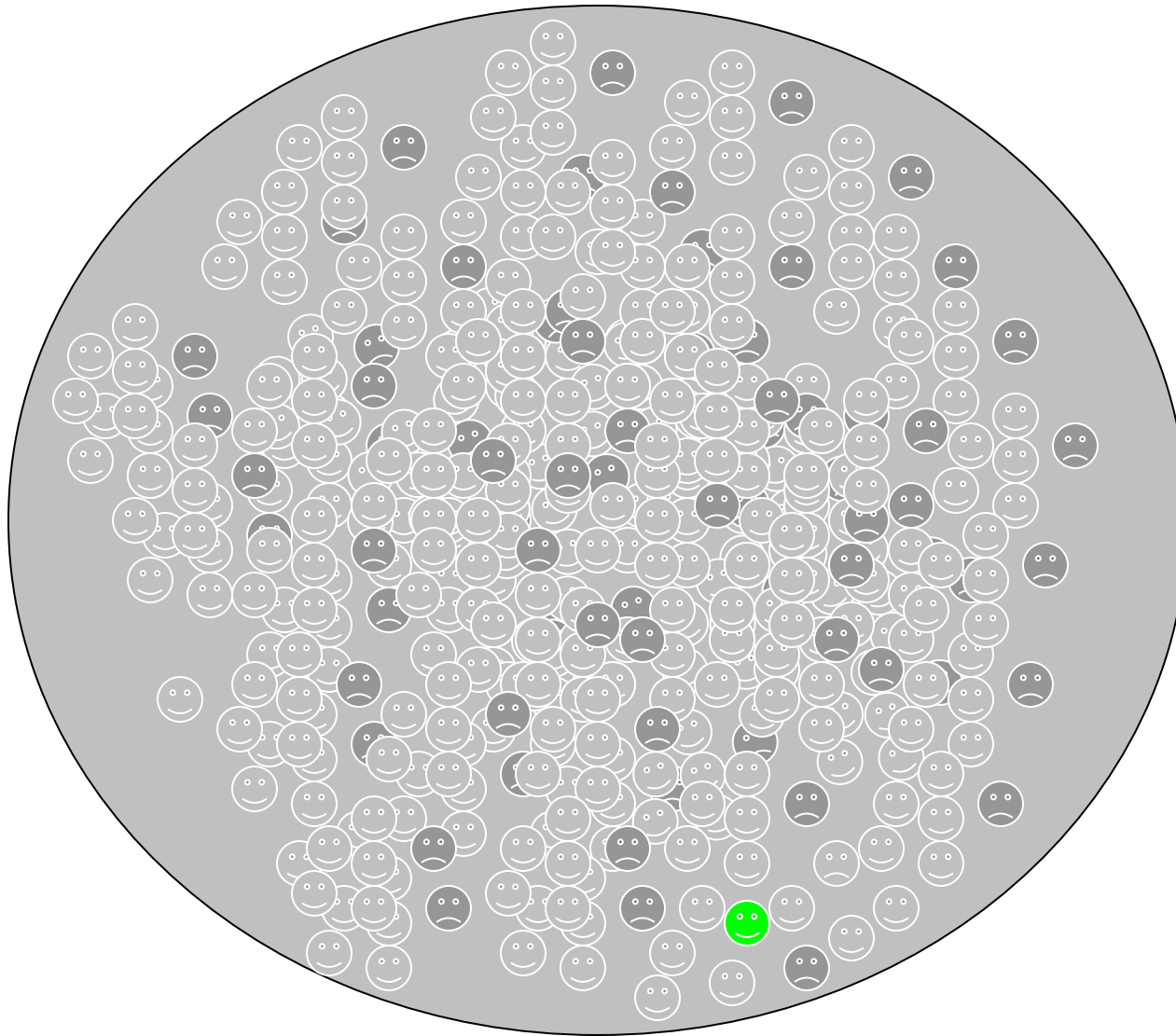
Key

This grey face represents the number of people in the survey group.

This green face represents the one person in the survey group that the medicine has helped.

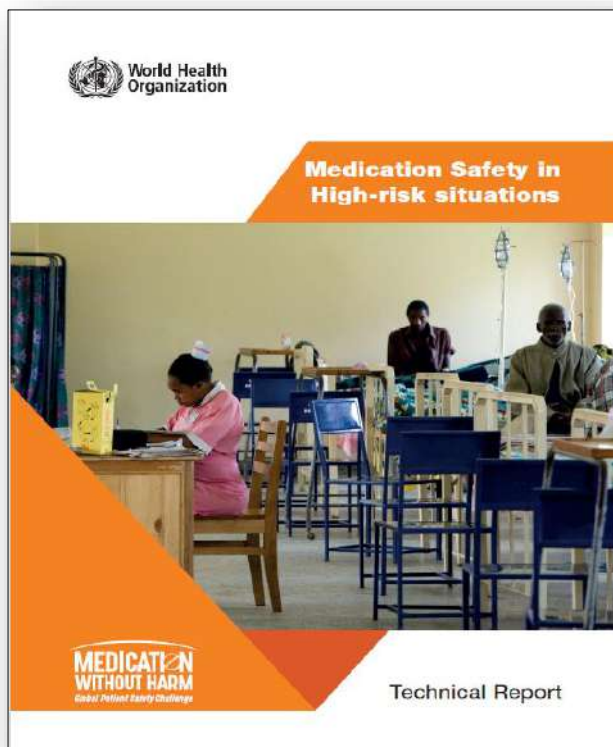
Research suggests:

In a group of **94 people aged between 68-94** people with previous stroke or TIA, antiplatelets will prevent one person from this group (on average) from having another stroke or heart attack in the course of a year. (Research at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC64503/> and <https://www.ncbi.nlm.nih.gov/pubmed/21576939>)





High-risk Situations



- Some high-risk (high-alert) **medications** are associated with significant harm when used in error (e.g. **APINCH**)

A – anti-infective

P – Potassium & other electrolytes

I – Insulin

N – Narcotics (opioids) & other sedatives

C – Chemotherapeutic agents

H – Heparin & anticoagulants

O -Other high-risk medications identified by local health facilities

High risk meds and situations in primary care:

- Mair A, Wilson M, Dreischulte, T. **Addressing the Challenge of Polypharmacy**
Annu.Rev.Pharmacol.Toxicol.2020.60:33.1–33.21

<https://www.annualreviews.org/doi/abs/10.1146/annurev-pharmtox-010919-023508>

High Risk medicines in Primary care

Mair A, Wilson M, Dreischulte, T. Addressing the Challenge of Polypharmacy

Annu.Rev.Pharmacol.Toxicol.2020.60:33.1–33.21

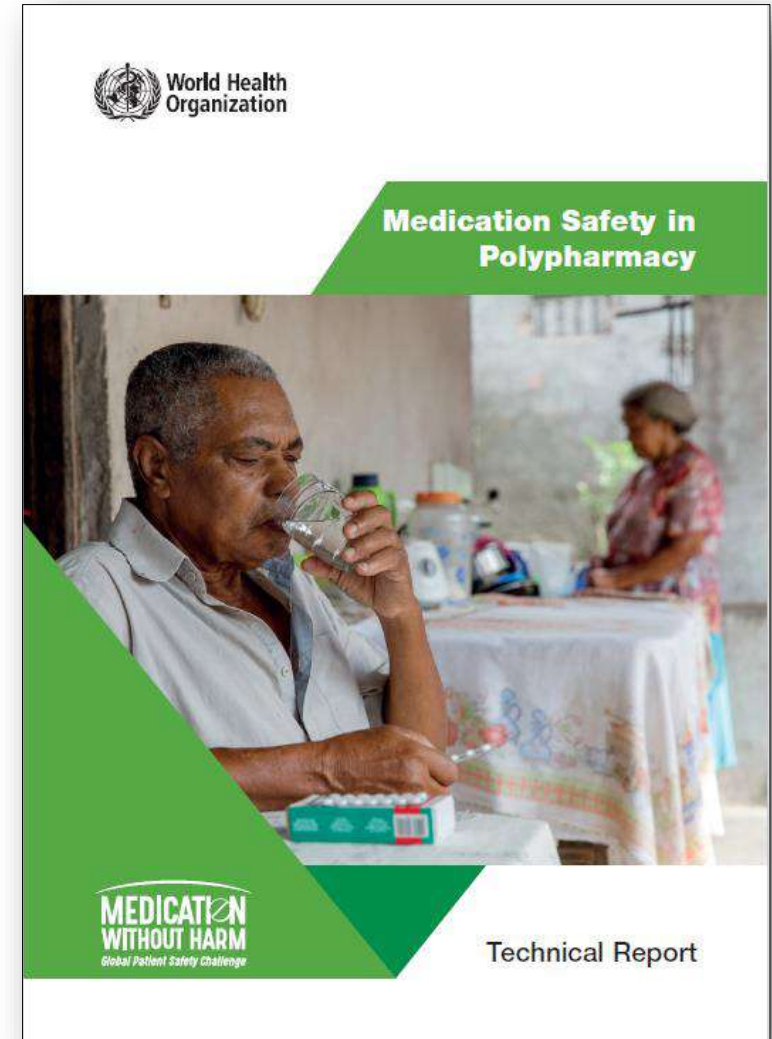
<https://www.annualreviews.org/doi/abs/10.1146/annurev-pharmtox-010919-023508>

- ***Non-steroidal anti-inflammatory drugs and antithrombotics***
 - NSAIDs, antiplatelets, anticoagulants, corticosteroids, and selective serotonin reuptake inhibitor
- ***Antipsychotics***
 - In 2009, antipsychotics were estimated to cause approximately 1,800 deaths and 1,620 cerebrovascular events in people with dementia in UK
- ***Benzodiazepines***
- ***Antidepressants***
 - falls, cardiotoxicity & withdrawal reaction
- ***Medicines with anticholinergic side effects***
 - Linked to impaired cognition, increased risk of falls, functional decline, cardiovascular events, and mortality.
 - dose-dependent however, sensitivity to anticholinergic effects varies significantly between individuals.

High Risk medicines

- ***Centrally acting analgesics***
 - Limitations on benefits of medicines for pain
 - Falls and potential for abuse and addiction
- ***Antihyperglycemics***
 - Type 2: Smoking cessation, adequate blood pressure control, and lipid
 - Tight glycemic control ($\text{HbA1c} < 53 \text{ mmol/mol}$) preventing macrovascular complications may be appropriate in patients who are relatively health
 - increase the risk of hypoglycemia, which has been associated with increased mortality, cardiovascular events, falls, and accidents
- ***Medications associated with increased risk of falls***
 - 30% of community-dwelling older adults falling every year and about half of these experiencing multiple falls >80, this can rise to 50%
 - Medications are modifiable extrinsic risk factors
 - benzodiazepines, antidepressants, antipsychotics, antihypertensives, and diuretics
 - Polypharmacy: specific fall-inducing drugs or combinations of drugs

3. Implementing polypharmacy initiatives



Scotland's Change Management Approach

Scotland has a well developed polypharmacy review programme. The National Polypharmacy Guidance (2015) has been adopted by all 14 health boards (100%), with each board developing plans to identify priority patients who have potentially inappropriate elements to their polypharmacy, and to implement reviews for those patients at highest risk of harm. **Introduction of mobile app has sustained acceleration.**



<http://www.polypharmacy.scot.nhs.uk/>

Management of polypharmacy using the Scottish multi-disciplinary approach helped develop therapeutic partnerships between doctors and pharmacists in primary care that has been integrated into national program of work.

All 14 Scottish Health Boards use the Polypharmacy Guidance.

€20 m

is being invested to increase the number of pharmacists working in GP practices. Mobile App for clinicians developed.

Generating short term wins includes the evidence that on average one or two medicines were stopped at each polypharmacy review. There are approximately 12,000 polypharmacy reviews every year in Scotland.

Of those patients identified to be at high risk of hospital admission, pilot work suggested a 40% reduction in hospital admissions following a polypharmacy review. Further reduction in high risk medication related issues is expected from roll out.

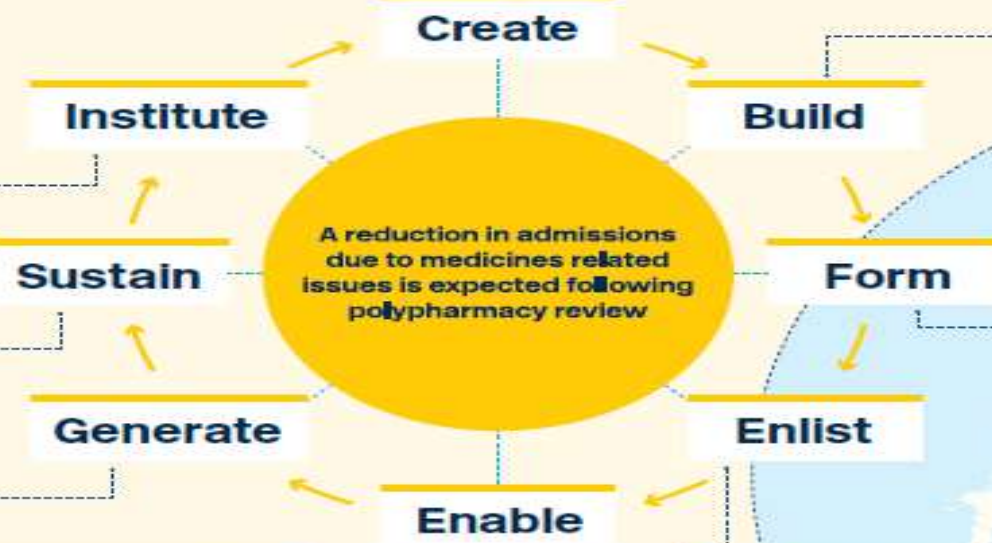
Removing barriers to implementation included successful addition of a contractual requirement for GPs, and recognising the potential role of Pharmacist non-medical prescribers. Design delivery process to enable care to be integrated into existing patient pathway.

The sense of urgency was created by highlighting that current prescribing of medicines was not fit to meet the changing needs of an aging population with increasing multiple long term conditions, particularly in terms of the increasing potential to cause harm and risk to financial sustainability of prescribing patterns.

Building the guiding coalition came from linking the pioneering work by NHS Highland and NHS Tayside with key clinical policy makers. Crucial was the early engagement of clinicians and operational leaders.

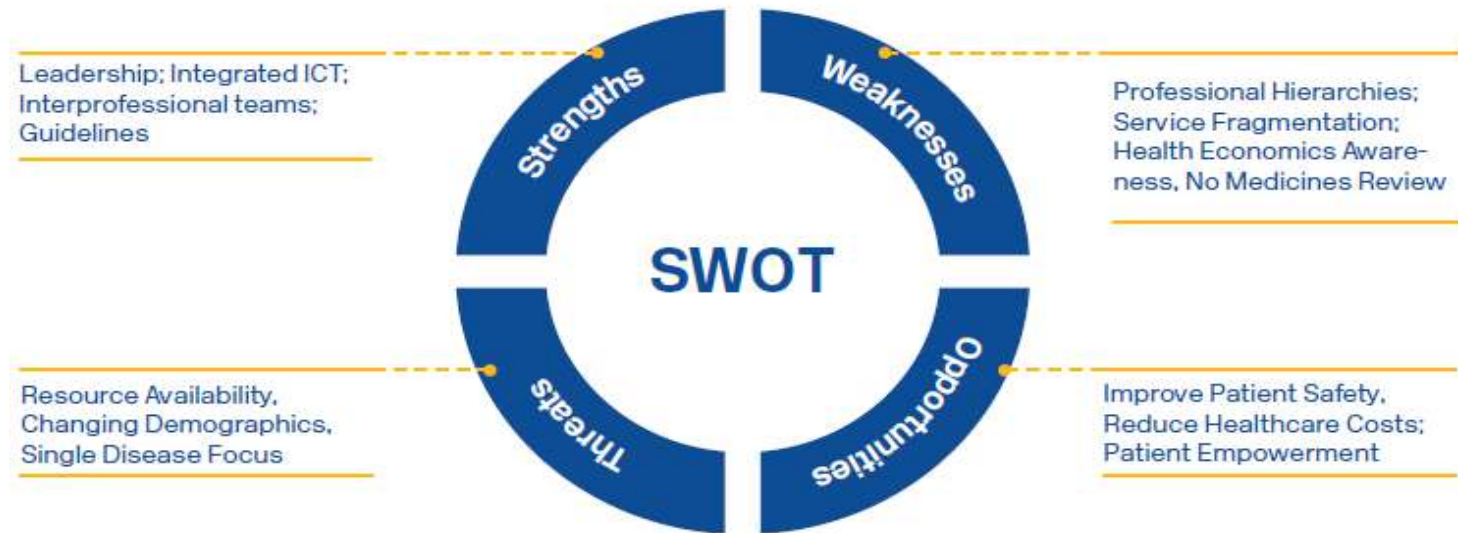
Formation of the strategic vision came through refinement of the adoptive work by NHS Lothian and the Scottish Government. Policy leadership was essential with clinical leadership to meet the needs of patients and prescribers.

Enlisting the volunteer army was exemplified by NHS Greater Glasgow and Clyde, who serve 25% of the Scottish population, and were able to implement the Polypharmacy Guidance at scale through using established means of implementation through practice pharmacist networks working with GPs.



1 NHS Ayrshire and Arran 2 NHS Borders 3 NHS Dumfries and Galloway 4 NHS Fife 5 NHS Forth Valley 6 NHS Grampian 7 NHS Greater Glasgow and Clyde
 8 NHS Highland 9 NHS Lanarkshire 10 NHS Lothian 11 NHS Orkney 12 NHS Shetland 13 NHS Tayside 14 NHS Western Isles

ANALYSE YOUR INFRASTRUCTURE FOR POLYPHARMACY MANAGEMENT



4. Health Systems approach to polypharmacy



4.1 Patients and the Public

Role of patients :

- report all medicines taken including those brought together with
- tools designed for patients

Prioritising Patients for Review:

- Due to limited resources- care homes, frailty, Taking 10 or more meds

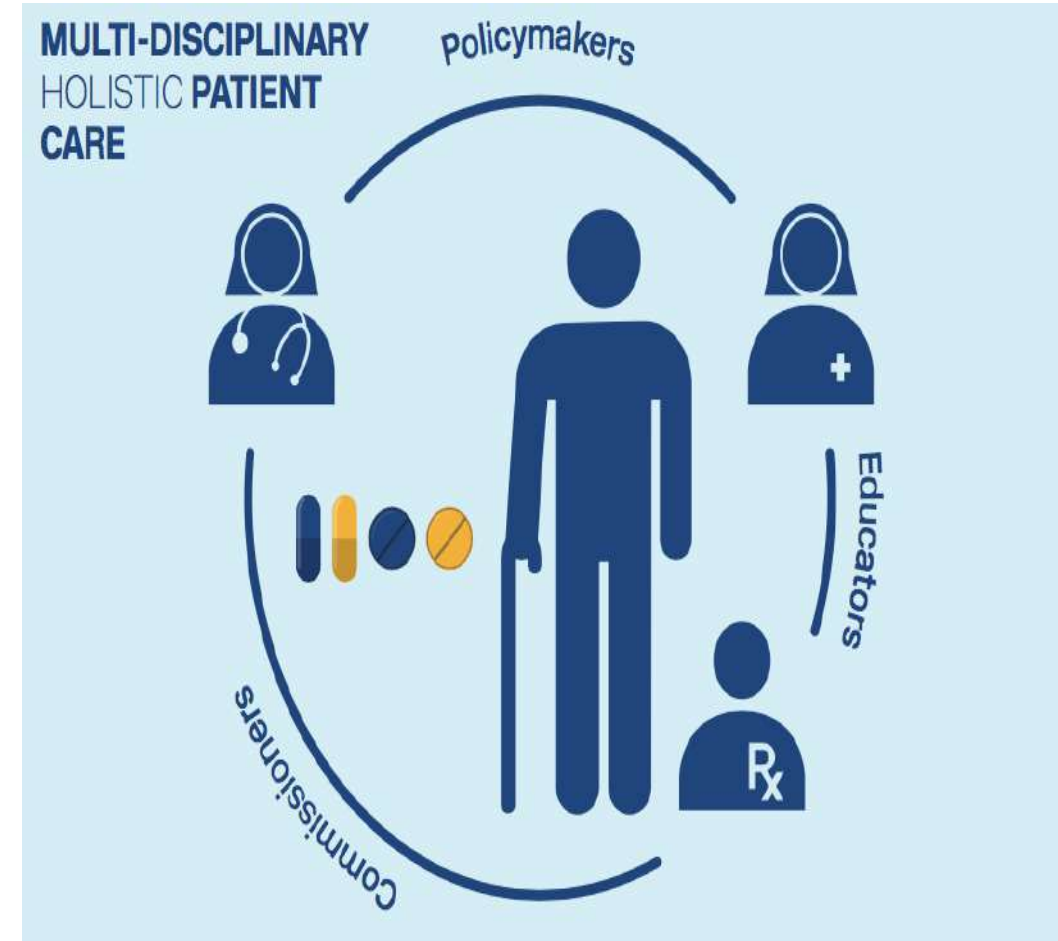
4.2 Health care Professional- Case studies for learning



4. Health Systems approach to polypharmacy

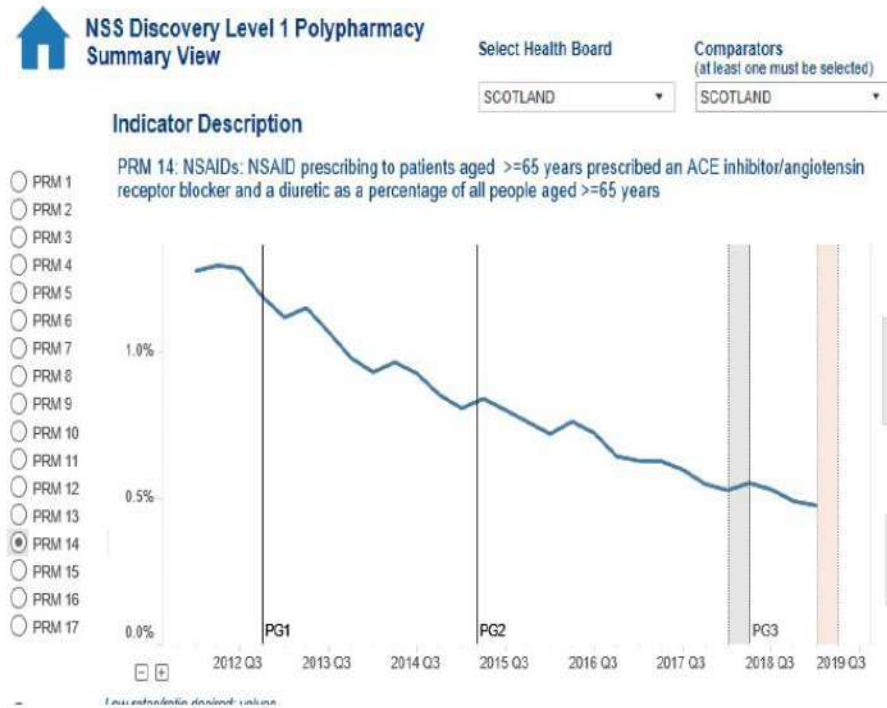
4.3 Medicines – Drug -drug/
drug disease interactions/ decision
support

4.4 Systems and Practices
Making polypharmacy reviews part of
patient pathways & ensuring monitoring
in place to establish cause
of hospital admissions

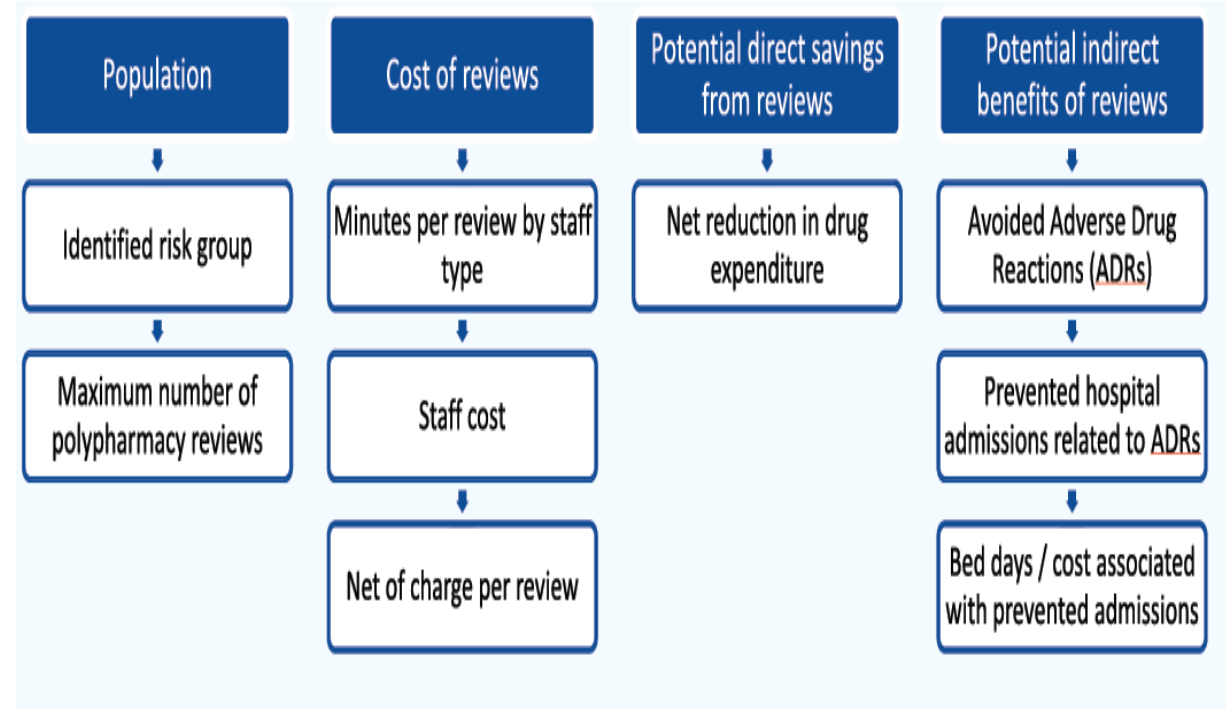


4.5 Monitoring and evaluation

Indicators

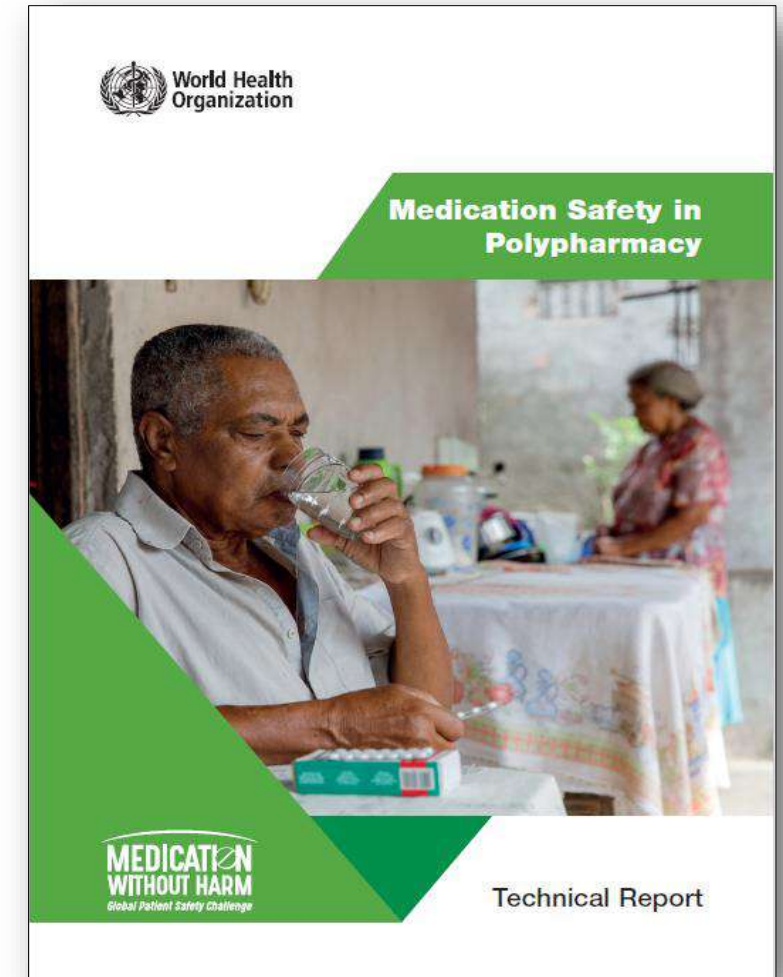


Economic Impact



5. Points for Consideration for countries

- Policies for regular reviews & that support programmes at scale using change management
- Addressing at inappropriate polypharmacy initiation, during transitions of care
- Safety culture to enable healthcare workers to work in teams and reduce barriers
- Healthcare workers to involve patients to discuss issues for shared decision making



5. Points for Consideration for countries

- Safety culture for person-centred approach to medication review
- Addressing lifestyle issues during reviews
- Using technology where appropriate to support shared decision making
- Using reporting systems that are available to support reporting and learning from errors



Berwick, D. M., Nolan, T. W., & Whittington, J. (2008), "The triple aim: care, health, and cost", *Health Aff. (Millwood.)*, vol. 27, no. 3, pp. 759-769. ** Bodenheimer, T; Sinsky, C. From Triple to Quadruple Aim: Care of the Patient Requires Care of the Provider. *Ann Fam Med* 2014;12:573-576. doi: 10.1370/afm.1713.

Implementing the findings of SIMPATHY

- 15 000 person centre reviews for appropriate polypharmacy
- Adherence
- PROMS
- Training developed for HCP
- www.isimpathy.eu

