World Health Organization

Medication Safety in Polypharmacy

MEDICATION WITHOUT HARM
Global Patient Safety Challenge

Technical Report

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Abbreviations

ACE	angiotensin-converting enzyme
ADR	adverse drug reaction
ARB	angiotensin II receptor blocker
BP	blood pressure
COPD	chronic obstructive pulmonary disease
eGFR	estimated glomerular filtration rate
NNH	number needed to harm
NNT	number needed to treat
NSAID	non-steroidal anti-inflammatory drug
OTC	over-the-counter
PESTEL	political, economic, social, technological, environmental and legal
PIM	potentially inappropriate medication
RLS	reporting and learning systems
SWOT	strengths, weaknesses, opportunities and threats
UHC	universal health coverage
WHO	World Health Organization

Preface

Health care interventions are intended to benefit patients, but they can also cause harm. The complex combination of processes, technologies and human interactions that constitutes the modern health care delivery system can bring significant benefits. However, it also involves an inevitable risk of patient harm that can – and too often does – result in actual harm. A weak safety and quality culture, flawed processes of care and disinterested leadership teams weaken the ability of health care systems and organizations to ensure the provision of safe health care. Every year, a significant number of patients are harmed or die because of unsafe health care, resulting in a high public health burden worldwide.

Most of this harm is preventable. Adverse events are now estimated to be the 14th leading cause of morbidity and mortality in the world, putting patient harm in the same league as tuberculosis and malaria *(1)*. The most important challenge in the field of patient safety (see Annex 1) is how to prevent harm, particularly avoidable harm, to patients during their care.

Patient safety is one of the most important components of health care delivery which is essential to achieve universal health coverage (UHC), and moving towards the UN Sustainable Development Goals (SDGs). Extending health care coverage must mean extending safe care, as unsafe care increase costs, reduces efficiency, and directly compromises health outcomes and patient perceptions. It is estimated that over half of all medicines are prescribed, dispensed or sold inappropriately, with many of these leading to preventable harm *(2)*. Given that medicines are the most common therapeutic intervention, ensuring safe medication use and having the processes in place to improve medication safety (see Annex 1) should be considered of central importance to countries working towards achieving UHC.

The Global Patient Safety Challenges of the World Health Organization (WHO) shine a light on a particular patient safety issue that poses a significant risk to health. Front-line interventions are then developed and, through partnership with Member States, are disseminated and implemented in countries. Each Challenge has so far focused on an area that represents a major and significant risk to patient health and safety (see Annex 1). In 2005, the Organization, working in partnership with the (then) World Alliance for Patient Safety, launched the first Global Patient Safety Challenge: *Clean Care Is Safer Care (3)*, followed a few years later by the second Challenge: *Safe Surgery Saves Lives (4)*. Both Challenges aimed to gain worldwide commitment and spark action to reduce health care-associated infection and the risks associated with surgery, respectively.

Recognizing the scale of avoidable harm linked with unsafe medication practices and medication errors, WHO launched its third Global Patient Safety Challenge: *Medication Without Harm* in March 2017, with the goal of reducing severe, avoidable medication-related harm by 50% over the next five years, globally *(5)*.

This Challenge follows the same philosophy as the previous Challenges, namely that errors are not inevitable, but are very often provoked by weak health systems, and so the challenge is to reduce their frequency and impact by tackling some of the inherent weaknesses in the system.

As part of the Challenge, WHO has asked countries and key stakeholders to prioritize three areas for strong commitment, early action and effective management to protect patients from harm while maximizing the benefit from medication, namely:

- medication safety in high-risk situations
- medication safety in polypharmacy
- medication safety in transitions of care.

Consider the following case scenario describing a medication error (see Annex 1) involving these three areas.

Medication error: case scenario

Mrs Poly, a 65-year-old woman, came to the outpatient clinic complaining of abdominal pain and dark stools. She had a heart attack five years ago. At her previous visit three weeks ago she was complaining of muscle pain, which she developed while working on her farm. She was given a non-steroidal anti-inflammatory drug (NSAID), diclofenac. Her other medications included aspirin, and three medicines for her heart condition (simvastatin, a medicine to reduce her serum cholesterol; enalapril, an angiotensin-converting enzyme (ACE) inhibitor; and atenolol, a beta blocker). She was admitted to hospital as she developed symptoms of blood loss (such as fatigue and dark stools). She was provisionally diagnosed as having a bleeding peptic ulcer due to her NSAID, and her doctor discontinued diclofenac and prescribed omeprazole, a proton pump inhibitor. Following her discharge, her son collected her prescribed medicines from the pharmacy. Among the medicines, he noticed that omeprazole had been started and that all her previous medicines had been dispensed, including the NSAID. As his mother was slightly confused and could not remember exactly what the doctor had said, the son advised his mother that she should take all the medications that had been supplied. After a week, her abdominal pain continued and her son took her to the hospital. The clinic confirmed that the NSAID, which should have been discontinued (deprescribed), had been continued by mistake. This time Mrs Poly was given a medication list when she left the hospital which included all the medications she needed to take and was advised about which medications had been discontinued and why.

The events leading to the error in this scenario and how these could have been prevented are reflected in Figure 1, and the text below.

Figure 1. Key steps for ensuring medication safety

In this scenario the key steps that should have been followed to ensure medication safety in the inpatient setting include:

1. Appropriate prescribing and risk assessment

Medication safety should start with appropriate

2. Medication review

A comprehensive medication review (see Annex 1) is a multidisciplinary activity whereby the risks and benefits of each medicine are considered with the patient and decisions made about future therapy. It optimizes the use of medicines for each individual patient.

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