KEY FACTS ABOUT MEDICATION ERRORS (MEs) IN THE WHO EUROPEAN REGION

WHAT IS A MEDICATION ERROR?

A medication error is defined as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health-care professional, patient, or consumer" (*1*). Medication harm accounts for more than half of the overall preventable harm in medical care globally, with an estimated annual cost of €4.5–21.8 billion in Europe (*2*).

€2 billion

The cost of medication errors was estimated at €2 billion in one of the countries (representing 3% of the total national health-care expenditure) (*3*).

237 million

- Another study found that there are approximately 237 million medication errors over a year in one country; 66 million are potentially clinically significant. The estimated costs for the government in avoidable adverse reactions to medication are £98.5 million a year.
- This comprises primary care adverse drug events (ADEs) leading to hospital admission (£83.7 million; causing 627 deaths), and secondary care ADEs leading to longer hospital stay (£14.8 million; causing or contributing to 1081 deaths) (*4*).

In Europe there is great variation in terms of the scale and nature of this harm. The rate of medication error in hospitals ranges from 0.3% to 9.1% in prescriptions, from 1.6% to 2.1% at the dispensing stage. (*3*)

Some of the common factors leading to medication errors in hospitals include environmental, staffing or workflow problems.

Electronic prescription, medication error surveillance and barcode medication administration systems are the most important areas in which to reduce MEs (*3*).

Evidence on MEs shows that 50–70.2% of such harm can be prevented through comprehensive systematic approaches to patient safet (*5*).

References

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2. Hodkinson A, Tyler N, Ashcroft DM, Keers RM, Khan K, Phipps D et al. Preventable medication harm across health care settings: a systematic review and meta-analysis. BMC Med. 2020;18(1):313.

3. The urgent need to reduce medication errors in hospitals to prevent patient and second victim harm [White paper]. European Collaborative Action On Medication Errors and Traceability (ECAMET); 2022 (https://eaasm.eu/wp-content/uploads/ECAMET-White-Paper-Call-to-Action-March-2022-v2.pdf, accessed 5 August 2022).

4. Elliott RA, Camacho E, Jancovic D, Sculpher MJ, Faria R. Economic analysis of the prevalence and clinical and economic burden of medication error in England. BMJ Qual Saf. 2021;30:96–105 (https://qualitysafety.bmj.com/content/qhc/30/2/96.full.pdf, accessed 3 August 2022).

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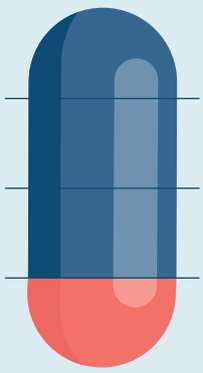
WHAT ARE THE COMMON MEs?

Several different types of MEs are possible. These can relate to drug prescription or administration, timing, communication, human error, among others.



25%

25% of patients with type 2 diabetes suffered at least one drug error, mostly due to prescribing a wrong dose (*6*).

MOST COMMON MEs

Examples of the most common types of MEs reported are incorrect dosage (34.7%), omission of a dose (40.0%), and wrong administration speed (*7*).

References

6. Mader JK, Aberer F, Drechsler KH, Pottler T, Lichtenegger KM, Kole W et al. Medication errors in type 2 diabetes from pateints' perspective. PLoS One. 2022;17(4):e0267570.

7. Delgado MCM, Alvarez JT, Lopez ES, Gomez MR, Galindo AS, Moro MN et al. Medication error prevention in adult, paediatric and neonate intensive care units in Spain. Madrid: PREVEMED (https://semicyuc.org/wp-content/uploads/2022/05/20220427_INFORME-PREVEMED-INGLES-002.pdf, accessed 5 August 2022).

WHY DO MEs OCCUR?

- **MEs can occur due to weak medication systems, human factors such as fatigue, or poor work conditions such as heavy workload and staff shortages (*8*).**
- **Health-care staff directly or indirectly involved in such adverse events, also referred to as the "second victims", may suffer from serious emotional harm as a result.**

WORK LOAD

Heavy workload and **lack of health-care personnel** contribute to to more than 20% of MEs, according to estimates (*3*).

MENTAL HEALTH

It is estimated that more than 1 in 10 nurses suffering from **mental and psychosocial health disorders** have been involved in an adverse event with serious consequences for the patient, mainly during the COVID-19 pandemic (*9*).

References

8. Medication without harm: global patient safety challenge on medication safety. Geneva: WHO; 2017 (https://www.who.int/publications/i/item/WHO-HIS-SDS-2017.6, accessed 3 August 2022).

9. Mental and psychosocial health in healthcare; preventing medication errors and adverse events and disorders in healthcare workers. Brussels: European Biosafety Network (https://www.europeanbiosafetynetwork.eu/mental-and-psychosocial-health-in-healthcare-preventing-medication-errors-and-adverse-events-and-disorders-in-healthcare-workers/, accessed 3 August 2022).

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WHEN DO MEs OCCUR?

MEs can happen at any of the following stages – during prescription, transcription, preparation, dispensing, administration and/or monitoring.

29%

29% of patients have unintended medication discrepancies (UMDs) and MEs at admission or at discharge from hospital (*10*).

ERRORS

Distribution of errors in one country by phases of medicine use has been reported as: prescribing (21.3%), transcription (1.4%), dispensing (15.9%), administration (54.4%) and monitoring (7.0%) (*3*).

Reference

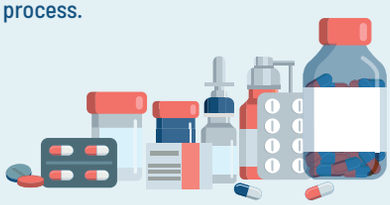
10. Breuker C, Macioce V, Mura T, Casete-Nicolas A, Audurier Y, Boegner C et al. Medication errors at hospital admission and discharge: risk factors and impact of medication reconciliation process to improve healthcare. J Pat Saf. 2021;17(7):e645–e652 (https://journals.lww.com/journalpatientsafety/Abstract/2021/10000/Medication_Errors_at_Hospital_Admission_and.17.aspx, accessed 3 August 2022).

WHAT CAN BE DONE TO PREVENT MEs?

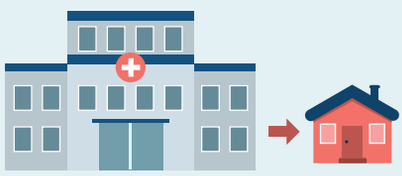
WHO recommends prioritizing the following three areas to avoid MEs and to protect patients from medication harm (*11*).

High-risk situations: understanding situations where evidence shows that there is a higher risk of harm from particular medicines is key. Tools and technologies may help health-care professionals who use high-alert medications, and also enhance patient knowledge and understanding of these medications.

Polypharmacy: the standardization of policies, procedures and protocols is critical in the case of poly-pharmacy. This is applicable from initial prescribing practices to regular medication reviews. Technology can also serve as a useful aid by enhancing patient awareness and knowledge about the medication use process.



Transition of care: transition of care increases the possibility of communication errors, which can lead to serious MEs. Good communication is vital, including a formal comparison of medicines pre- and post-care, so-called medication reconciliation.



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11. Medication without harm: global patient safety challenge on medication safety. Geneva: WHO; 2017 (https://www.who.int/publications/i/item/WHO-HIS-SDS-2017.6, accessed 3 August 2022).

ADDITIONAL WHO RESOURCES

- Medication without harm: global patient safety challenge on medication safety. Strategic Framework. Geneva: WHO; 2017 (https://cdn.who.int/media/docs/default-source/patient-safety/strategic-framework-medication-without-harm86c06fafdf0b4294bd23ec9667dfb95d.pdf?sfvrsn=b5cb2d66_2, accessed 5 August 2022).
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