# Preventing Medication Errors by improving the mental health and wellbeing of healthcare workers, and implementing traceability systems and a just culture, July 2021

## What are Medication Errors?

The United States National Coordinating Council for Medication Error Reporting and Prevention defines a medication error 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. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labeling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use" [1].

## The Problem

Medication errors are a common cause of harm to patients in acute care settings. They constitute the highest adverse events in hospitals, not only in terms of number, but as well in morbidity and mortality.

Despite the lack of consolidated data of medication errors at the European Union level, according to the European Medicines Agency the medication-error rate in the hospital setting varies from between 0.3% and 9.1% at prescription initiation and between 1.6% and 2.1% at the dispensing stage [1].

In Spain, the National Study on Adverse Effects Linked to Hospitalisation (ENEAS 2005) published in 2006 concluded that the incidence of adverse effects in hospitalised patients was 8.4%, the most common adverse effect being medication errors, which accounted for 37.4% of the total [1].

The combination of high-risk patients and high-risk medication is the main driver of medication errors with high morbidity and mortality. That is why Oncology and Intensive Care units are the ones with the highest risk of fatal medication errors.

According to the WHO, medication errors occur when unreliable medication systems and/or human factors such as fatigue and lack of health care workers affect the practice of prescribing, dispensing,

administering and monitoring medication. The most frequent errors occur during the medication administration phase in hospitals [3].

## "High workloads and lack of healthcare personnel contribute to 23% of medication errors."

*The United States National Coordinating Council for Medication Error*

## The Solution

Clinical evidence shows that the introduction of traceability systems in hospitals would allow a significant reduction in medication errors, as well as improve the efficiency and quality of care of nursing staff [1].

A global initiative called "The Third Global Patient Safety Challenge: Medication Without Harm" aims to reduce medication errors and the associated harm in all countries around the world by 50% within 5 years. In this third challenge, health ministers are invited to establish national plans covering four aspects of the safe use of medication: the involvement of patients and the general public; medicines as products; the education, training and monitoring of health professionals; and medication management systems and practices [3].

## The Victims

The main victims of medication errors are the patients who are harmed and their families. However, they are not the only ones affected or who suffer. The health professionals involved directly or indirectly in one adverse event and who suffer emotionally as a consequence, though less visible, are also victims. The term second victim was introduced by Wu in 2000 referring to professionals who are involved in an unavoidable adverse event and who are traumatised by the experience or unable to cope emotionally with the situation. Some years later, Scott et al. (2009) broadened this definition to all health care providers who are involved in an unexpected adverse patient event, medical error or patient-related injury, and become victims in the sense that they are traumatized by it [4].

According to the available research, the most common emotional reactions of second victims include: anxiety, obnubilation, confusion, difficulty concentrating on tasks, depersonalisation, frustration, guilt, sadness, mood changes, insomnia, constant replaying of the incident, lack of professional confidence, and fear of legal action and loss of reputation [4].

## "Fatal errors and those that cause harm are known to haunt health care practitioners throughout their lives."

The impact of the errors is felt in their private lives, in interactions with professional colleagues and **in the context of their social lives.**

''Fatal errors and those that cause harm are known to haunt health care practitioners throughout their lives.''

**"Only 5% of clinicians are not closely or directly involved with adverse events during their entire professional careers."**

In terms of the frequency of such events, a study carried out in the USA and Canada with the largest sample of doctors to date (Waterman et al., 2007) indicates that **only 5% of clinicians are not closely or directly involved with adverse events during their entire professional careers.** [4].

In Spain, the Spanish National Study of Adverse Events (ENEAS; Aranaz et al.,2008) and the Adverse Events in Primary Care Study (APEAS; Aranaz et al., 2012) suggest that **every year, 15%** of clinicians are involved in adverse events with relatively serious consequences for patients (medication errors being the most important adverse event) [4].

In a research project titled "Recommendations for providing an appropriate response when patients experience an adverse evento with support for healthcare's second and third victims", 1087 healthcare professionals were interviewed and among this sample, **62.5**% of those working in primary care and **72.5%** of those working in hospitals reported having gone through the second victim experience in the previous 5 years, either directly or indirectly through a colleague [4].

A study published in the American Association of Critical-Care Nurses, May 2021, Volume 30, No 3 provides strong evidence of a link between poor physical and mental health and the occurrence of medication errors.  Nearly 40% of critical-care nurses reported some degree of depressive symptoms and more than 50% reported anxiety symptoms.  It concludes that the perception of worksite wellness support by critical-care nurses is related to their physical and mental health as well as the number of medical errors made [2].


# Call for Action


1.  **European observatory on the mental health and wellbeing of healthcare workers**
The introduction of EU wide surveillance and the development of a permanent observatory to deliver detailed and updated information and data on mental health, adverse events and medication errors. The European Biosafety Network is planning to launch a survey on the mental health and wellbeing of healthcare workers and its connection with medication errors, COVID-19 and the development of mental or psychosocial disorders.

2.  **Promotion of healthcare workers wellbeing and mental health**
The mental health and wellbeing of healthcare workers directly affects their ability to care for patients. Furthermore, if one healthcare worker is suffering from burnout, this can impact the colleagues around them and other members of the healthcare workforce.

The promotion of healthcare worker's wellbeing will improve staff morale and lead to fewer medical errors among hospital employees. It will also improve the worker's lives emotionally, personally, and professionally.  Improving the wellbeing of staff by fixing system issues known to cause burnout (eg long shifts, poor staffing ratios), creating wellness cultures and providing evidence-based wellness programmes will also improve the quality of healthcare and patient safety.

3.  **Implementation of medication traceability systems** in ALL European hospitals to prevent medication errors and improve efficiency and quality of nursing staff.

The role of medication traceability in preventing such errors in acute care settings is critical [5].

Studies have shown that Medication traceability technology results in the following benefits [1]:

i.) Being able to retrieve a patient back into the health care system who has received a substandard drug (batch recall of a falsified medicine).

ii.) Reduction in the number of medication and human errors in medication prescription.

iii.) Reduction in medication preparation errors. Medication steps are tracked and the process is stopped if an error is detected. The scanning system double checks the information and sends an alert that something is amiss. Lookalike, soundalike medication contributes to 33% of administration errors.

iv.) Acts as a double check for the nurse. The recommended best practice standard is for two nurses to check IV high-risk medications prior to administration (the four eyes principle) to reduce human error. Barcoded Medication Administration (BCMA) reduces the staffing burden for a second physical check and frees up nursing resources. High workloads and low staffing contribute to 23% of medication administration errors.

v.) Reduces distractions. If a nurse is not interrupted to perform a second check on IV medications then there are less distractions. Distractions (e.g. being pulled away, doing two things at once) contribute to medication errors, resulting in an improper "check".

vi.) Reduces manual documentation. After each administration, nurses have to physically document the time, date and the name of the nurse who administers it. With medication traceability systems this can be done automatically. This applies to invoices processing as well.

vii.) Reduces the number of steps required, as manual steps are automated. Up to 40% of nursing time is spent on administrative tasks (such as documentation) instead of clinical activities.

viii.) Barcode medication administration (BCMA) has the ability to track and trace the entire medication journey, such as alerts to the wrong location.

ix.) If an infusion pump is included in this administration process, BCMA can be used to check administration rates are correctly programmed.

x.) Reduce medication dispensing errors to inpatients and outpatients alike.

xi.) Reduce costs and inefficiencies in managing medication inventory and optimise stocks.

xii.) Better track and trace on medication shortages and use of alternative medications.


**4. Promotion of a "Just Culture" environment** vs "Blame Culture" environment, including non-punitive surveillance systems to record medication errors in the European Hospitals (Peter Druker "If you can't measure it, you can't improve it").
One organisational approach has been to seek out errors and identify the responsible individual. Individual punishment follows. This punitive approach does not solve the problem. People function within systems designed by an organization. An individual may be at fault, but most frequently the system is also at fault. Punishing people without changing the system only perpetuates the problem rather than solving it. (NCBI)

# References

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