Goal 2 Enhance medication safety

Rationale

Medication use in children presents unique challenges. Each step of the medication use process carries specific risks for newborns and children. The likelihood of error increases in children because dosing of the medication is based on the child's age and weight, requiring individual calculation each time. Even small dosing errors can pose a greater risk of harm compared to adults. This risk is further heightened by the use of unlicensed or off-label medications. Another challenge is the limited availability of age-appropriate formulations. Consequently, adjusting or manipulating medicines to achieve a suitable dose introduces additional risks related to stability, bioavailability and dosing accuracy.

Suggested actions

People

1. Design and implement measures to enhance patient medication literacy and ensure access to tools that support safe medication use.
2. Train health care workers on reporting medication errors through the available pharmacovigilance and patient safety incident reporting and learning systems.
3. Educate parents or other caregivers on proper medication use, by providing clear instructions, using demonstrations and culturally-sensitive resources to explain dosage, possible side-effects, and when to seek advice, for instance, by using the *5 Moments for medication safety* tool.
4. Educate all concerned health workers on safe medication practices, including paediatric dosing calculations.

Tasks

1. On every prescription, include the prescriber's name and contact details, the patient identifier (neonate/child and parent), date, approved drug name, dose, strength and duration.
2. Ensure the rational use of medicines, prescribing only those that are necessary, effective and tailored to the child's individual needs.
3. Double-check all high-risk medications using an independent, second trained and qualified verifier, before dispensing and prior to administration.
4. Strengthen medication review and reconciliation processes to reduce medication errors.
5. Verify medication authenticity through batch-number checks, tamper-evident packaging and, where available, barcodes to guard against counterfeit or substandard drugs.
6. Always ensure the right patient, right medicine, right dose, right route, right duration, right frequency, right labelling, right storage conditions, during storage, dispensing, preparation and administration of medicines.

Tools and technology

1. Equip every neonatal and paediatric area with age-appropriate weighing scales and electronic calculators, to ensure accurate weight measurement and dosage calculations.
2. Use standardized charts for the dilution of common medications.
3. Implement electronic prescribing with computerized provider order entry and barcoded dispensing, where feasible.
4. Where possible, integrate electronic health records with decision-support tools, such as automated dose calculation pop-ups and alerts.

Workplace environment

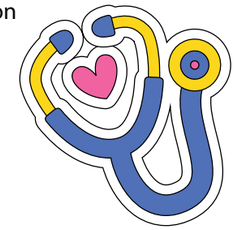
1. Minimize interruptions and distractions for health workers during prescribing, dispensing, preparing and administering medicines, such as by implementing designated "no-interruption" zones.
2. Provide a clear, well-organized workspace with adequate lighting and effective noise protection.
3. Ensure that high-risk medications are stored in a controlled environment with access restricted to authorized staff only.
4. Organize the storage of look-alike, sound-alike (LASA) medicines by placing them in distinct, clearly labelled areas. Use clear labels with "tall man" lettering (TML) for medicines that are easily confused.

Organization

1. Establish mechanisms within the facility to implement the third *WHO Global Patient Safety Challenge: Medication without harm*, starting with assessment and agreement of priority actions, that consider national guidance and priorities.
2. Develop and implement guidelines, protocols and standard operating procedures for the safe and rational use of antibiotics and other medications, tailored to the weight and age of neonates and children.
3. Systematically monitor medication errors using electronic medical records, where possible, especially in high-risk areas like neonatal intensive care units.
4. Establish reliable supply chains by maintaining minimum stock thresholds and conducting regular inventory checks to prevent stockouts and the use of expired products.
5. Monitor progress in reducing medication-related harm across the facility's services.
6. Use paediatric formulations of essential medicines aligned with the *WHO Model list of essential medicines for children*. Ensure the availability of age-appropriate medicines and supplies for children to provide safe and effective treatment.
7. Standardize patient identification across the organization by implementing measures such as using standardized ID bands and mandating the use of at least two identifiers to verify a patient's identity.

Measures

- Proportion of children admitted to the health care facility who experienced a medication error
- Percentage of patients receiving medication reconciliation
- Percentage of patients with at least one outstanding unintentional discrepancy
- Proportion of children seen at the health facility who received unnecessary oral or parenteral medicines.



WHO resources

- Promoting safety of medicines for children
- 5 Moments for medication safety tool
- Medication safety in transitions of care
- Medication safety in high-risk situations
- Medication without harm: Policy brief
- WHO Patient Safety Curriculum Guide: Multi-professional edition
- Medication safety for look-alike, sound-alike medicines
- Web Annex B. WHO Model List of Essential Medicines for Children – 9th List, 2023
- Patient safety solutions

World Health Organization

World Patient Safety Day 17 September 2025