The 10 Key Elements for Reducing Adverse Drug Events

Medication use is a complex process involving prescribing, order processing, dispensing, administration, and effects monitoring. There are 10 key elements that affect the medication use process, and the interrelationships among these key elements form the structure within which medications are used.

1. **Patient information:** Obtaining the patient's pertinent demographic information—such as age and weight—and clinical information—including allergies and lab results—will help practitioners select the appropriate medications, doses, and routes of administration. A significant decrease in preventable adverse drug events (ADEs) can be achieved by having the essential patient information at the time of prescribing, dispensing, and administration.

2. **Drug information:** The number of preventable ADEs can also be reduced by providing accurate and usable drug information to all healthcare practitioners involved in the medication use process. Not only should drug information be readily accessible to the staff through sources such as drug references, formulary, protocols, dosing scale, etc., it is imperative that the drug information be up-to-date as well as accurate.

3. **Communication of drug information:** Miscommunication among physicians, pharmacists, and nurses is a common cause of medication errors. To minimize the number of these medication errors, it is important both to verify drug information and to eliminate communication barriers.

4. **Drug labelling, packaging, and nomenclature:** Drug names that look alike or sound alike and products that have confusing drug labelling or non-distinct packaging significantly contribute to medication errors. The incidence of medication errors can be reduced with proper labelling and the use of unit-dose systems within health facilities.

5. **Drug storage, stock, standardization, and distribution:** Standardizing drug administration times and drug concentrations plus limiting the dose concentration of drugs available in patient care areas will reduce the risk of medication errors or minimize their consequences in the event that an error occurs.

6. **Drug device acquisition, use, and monitoring:** Prior to the purchase or use of drug delivery devices, appropriate safety assessment should be made. A system of independent double-checks within the institution will help prevent device-related errors such as selecting the wrong drug or drug concentration, setting the rate improperly, or mixing the infusion line up with another.

7. **Environmental factors:** A well-designed system offers the best chance of preventing errors; however, sometimes environmental factors in the workplace—such as poor lighting, noise, interruptions, and a significant workload—contribute to medication errors.

8. **Staff competency and education:** Staff education should focus on priority topics including new medications being used in the facility, high-alert medications, medication errors (both those occurring internally and externally), protocols, and policies and procedures related to medication use. Staff education can be an important error prevention strategy when combined with the other key elements for medication safety.

9. **Patient education:** Patients must receive ongoing education from physicians, pharmacists, and the nursing staff about both the brand and generic names of medications they are receiving, their indications, usual and actual doses, expected and possible adverse effects, drug or food interactions, and how to protect themselves from errors. Patients can play a vital role in preventing medication errors when they are encouraged to ask questions and seek answers about their medications before drugs are dispensed at a pharmacy or administered in a health facility.

10. **Quality processes and risk management:** The way to prevent errors is to redesign the systems and processes that lead to errors rather than focusing on correcting the individuals who make errors. Effective strategies for reducing errors include making it difficult for staff to make an error and promoting the detection and correction of errors before they reach a patient and cause harm.

Adapted from the Institute for Safe Medication Practices (ISMP). Frequently Asked Questions (FAQ). Available at http://www.ismp.org/faq.asp#Question_9