Medication errors (MEs) is defined as any preventable events that may cause or lead to inappropriate medication use or patient harm. MEs can be understood as preventable drug events (pADEs).

Costly Events

It is no surprise that costs of medication errors are high in terms of lives affected or taken, as well as lost productivity, wages and additional medical expenses.

At the ISPOR 20th Annual Meeting held in Philadelphia from 18 to 20 May 2015, researchers revealed statistics costs of pADEs associated with MEs. The drew from numerous sources from 2003 to 2014 and converted all cost estimates into 2014 US dollars. According to their findings, cost per ME ranged from US$3,480 to US$6,931 while per hospital cost on pADEs ranged from US$0.6 million to US$5.6 million. The cited national costs to the U.S on pADEs could start from a low of US$0.6 billion to US$4.2 billion.

Bob Wachter, MD of UCSF Medical Center, quoted a 2010 study (using data collected during the pre-digital era) which estimated the yearly cost of medication errors in U.S. hospitals at $21 billion. He has released a new book titled The Digital Doctor: Hope, Hype, and Harm from which we could draw some key learning points.

Preventing MEs: Start Here...

What are the steps we can take to prevent MEs?

Most basic are the ten rights of medication administration:

✓ Right patient (using two identifiers)
✓ Right drug
✓ Right dosage
✓ Right time
✓ Right route
✓ Right reason for the drug
✓ Right documentation
✓ Right to refuse medication
✓ Right evaluation and monitoring

(How to) Protect your patients from (deadly) medication errors
Singapore’s Ministry of Health advocated these steps to reduce errors in their Practice Guidelines & Tools on Medication Safety:

Reduce Reliance on Memory by using:
- Drug-drug interaction checking systems
- Computerized order entry
- Bar-coding on drugs, containers, medication records, patient wristbands
- Computerized patient information
- Guided dose algorithms

Simplify by:
- Eliminating transcription of orders
- Limiting choices of available drugs in pharmacy
- Limiting dosage strengths and concentrations for each drug
- Mixing IVs in the pharmacy
- Automating dispensing on patient care unit

In addition, the MOH also prescribed standardizing prescribing conventions including adopting no error-prone abbreviations.

Prevention is as Complex as Medication Use

If it is assuring, the Institute for Safe Medication Practices (ISMP) has listed ten key elements that most often affect the MU process with a focus on the inter-relationships among these key elements.

The ISMP also suggested that patients receive on-going education from physicians, pharmacists and the nursing staff about the brand and generic names of medications they are receiving, their indications, and doses, expected and possible adverse effects, drug or food interactions, and how to protect themselves from errors. It is acknowledged that patients can play a vital role in preventing medication errors when they have been encouraged to ask questions and seek answers about their medications.

Finally, quality processes and risk management should cover the re-design of systems and processes that lead to errors rather than focus on correcting the individuals who make errors. The emphasis is on detection and correction of errors before they harm a patient.

In addition, the MOH also prescribed standardizing prescribing conventions including adopting no error-prone abbreviations.

Conclusion

Medication errors occur when there are lapses in human, technology, system and environmental factors. The most important thing to remember is be alert. Fatigue does set in. But the thought of a mess-up, and an expensive or tedious clean-up thereafter, could be enough to spur us to take another glance or make one more check.