Barcode Scanning Errors

There are different types of barcodes utilized on products and medications. A linear (1 dimensional) barcode encodes the national drug code (NDC) number. A 2D (2 dimensional) data matrix barcode encodes the NDC, lot number, and expiration date. Most scanners can read both linear and 2D barcodes. Another type of barcode is the Quick Response (QR) code, which is a type of 2D code used to access product information, but it is not used for automated product identification purposes. Over-the-counter (OTC) products must include a Universal Product Code (UPC), a linear barcode that scanners and some QR code readers can analyze. The two types of scanners available are light-based readers for linear barcodes, and image-type readers that can read both linear and 2D barcodes.

The 2004 Title 21 Code of Federal Regulations (CFR), section 201.25, delineates the barcode label requirements. It states that most prescription drugs available in the US must contain a linear barcode that encodes the appropriate NDC number on the product label. The Drug Supply Chain Security Act (DSCSA) of 2014 requires a 2D data matrix barcode on the smallest container for individual sale in addition to a linear barcode. Adding the 2D data matrix barcode to some medication labels has forced linear barcodes to be repositioned. The placement and orientation of barcodes on medications can impact whether they can be read or scanned. If a barcode is positioned in a horizonal orientation around the circumference of a cannister, scanners may not be able to capture the entire barcode due to changes in light reflection, distortion, or angles.

Two barcodes on one label may lead to confusion regarding which barcode should be scanned. For example, the linear barcode on the Flovent HFA inhaler was repositioned from vertical to horizonal around the circumference rendering it unreadable by the scanner. The nurse was forced to scan the 2D data matrix barcode however, the 2D barcode was not associated with the product in their database, and scanning resulted in several incorrect product matches.

All clinicians should be informed of the DSCSA requirement to include a 2D data matrix barcode on certain product labels, in addition to the linear barcode. Be sure all practitioners know which barcode to scan for verification when preparing, dispensing, and administering the drug. Health care institutions should implement processes to program new medication barcodes into information technology databases and ensure they are linked to the correct product before use. All barcode scanning problems should be reported to the Institute for Safe Medication Practice (ISMP) so that the US Food and Drug Administration (FDA) and manufacturer can be alerted.

Drug Stem “-triptan”

“-Triptan” is a suffix drug stem associated with serotonin (5-HT) receptor agonists that are SUMAtriptan derivatives. Drugs that end in “-triptan” are used to treat migraine headaches (with and without aura) and to treat cluster headaches. The medications are most effective when given early in an attack and should only be administered to patients at the first sign of an attack if there is a clear diagnosis of migraine or cluster headaches. Triptans do not prevent migraine or cluster headache attacks.

References

1. Institute for Safe Medication Practices. (2018). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201802.pdf

There are seven 5-HT receptor agonists available in the US as oral tablets, oral disintegrating tablets, nasal sprays/powders, or subcutaneous injections. These include: almotriptan, eletriptan, frovatriptan, naratriptan, rizatriptan, SUMAtriptan, SUMAtriptan plus naproxen and ZOLMitriptan.

Triptans should be taken as prescribed. If the headache has not resolved in 2 hours or has returned after transient improvement, the dose may be repeated once. Patients should not take more than 2 doses within a 24-hour period.

Avoid Triptans in patients with cardiovascular disease (CVD) and use with caution in patients with cardiovascular risk factors. Avoid concomitant use with monoamine oxidase inhibitors (MAOIs) or ergotamines (i.e. dihydroergotamine [MIGRANAL], ergotamine with caffeine [CAFERGOT, MIGERGOT]. Side effects include: tightness/pressure in the chest, throat, neck and/or jaw; nausea; increase in blood pressure; tachycardia; fatigue, burning sensation over the skin; and paresthesia.

References

1. Institute for Safe Medication Practices. (2018). *Nurse Advise-ERR.* Retrieved from Institute for Safe Medication Practices: http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201802.pdf