Patient Safety Notice

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GIG CYMRU NHS WALES

Llywodraeth Cymru
Welsh Government

Reducing the Risk of Inadvertent Administration of Oral Medication by the Wrong Route

To: All NHS Wales Chief Executives, medical directors, directors of nursing, chief pharmacists, medication safety officers, patient safety teams, General Practitioners, community and district nurses, community pharmacists and registered providers of independent hospitals, clinics and medical agencies.

Errors involving the administration of medication by the incorrect route can result in serious patient harm including death. Between 2013 and 2018, 14,149 medication errors involving the wrong route were reported to the National Reporting and Learning System with an annual increase in the number of these errors noted.[1,2] Approximately 12% of errors involving the wrong route of administration resulted in patient harm.[1,2]

All wrong route errors are never events, *"wholly preventable because of guidance or safety recommendations,"* and require a Serious Incident Investigation.[3] Between 1 April 2016 and 31 March 2018, just 69 wrong route of administration never events were reported across England and Wales (England=64; Wales=5).[1,2,3,4] Approximately 60% of these events involved administration of an oral liquid medication parenterally (intravenously n=33; subcutaneously n=6).[1,2,3,4] Of the 31 never events involving parenteral administration of oral medicines reported by organisations in England (2016-2018), 55% (n=17) event involved morphine liquid.[2] Other oral medicines commonly involved in wrong route never events were dispersible aspirin, sodium valproate and oxycodone.[2]

Inappropriate use of intravenous syringes contributed to approximately 40% of never events involving the parenteral administration of oral liquid medicines.[2] In other incidents, oral liquid medicines had initially been withdrawn using an oral/enteral syringe but then transferred into an intravenous syringe for administration[2] as outlined in the following case:

> *"Oral midazolam was administered intravenously to a 9-year-old child prescribed intravenous midazolam at a maximum dose of 10mg for conscious sedation. Despite a second check, midazolam 2.5mg/mL oral liquid was incorrectly selected and prepared in a purple oral syringe labelled as enteral. The doctor could not connect the purple enteral syringe to the cannula and the medication was transferred into an intravenous syringe. The error was detected after the doctor noted resistance when administering the medication and that some leaked medication was sticky and smelled sweet. The child was monitored in hospital, but no adverse effects were observed."*[2]

Actions

Who: All organisations providing NHS-funded care.

When: Actions to be completed as soon as possible and no later than 20th December 2021.

1. Disseminate this notice to all staff responsible for the care of patients prescribed, dispensed/supplied and administered liquid medicines via the oral or enteral route.
2. Consider if immediate action needs to be taken locally and ensure that an action plan is underway, if required, to ensure compliance with this notice.
3. Ensure dedicated oral and ISO80369-3 compliant enteral syringes are available in all clinical settings and provided to patients to support the safe administration of liquid medicines via oral or enteral routes respectively.

Share any learning from local investigations or locally developed good practice resources by emailing: ImprovingPatientSafety@gov.wales

Factors contributing to this error were: inadequate segregation of different formulations of the same medicine; different staff involved in preparation and administration of medication; second check undertaken in collusion with a colleague rather than independently; and lack of understanding of medical staff about oral/enteral syringes. Lack of availability of oral syringes and inadequate segregation of different administration devices (e.g. oral syringes, intravenous syringes, epidural devices etc) in clinical areas have also contributed to wrong route errors through use of an inappropriate administration device.[2]

NHS organisations are required to comply with the requirements of *NPSA/2007/19 – Promoting Safer Measurement and Administration of Liquid Medicines via Oral and Enteral Routes*.[5] Guidance recommends that liquid medicines are administered using an appropriate administration device with:

- Dedicated oral syringes used to administer liquid medicines via the oral route.[6]
- ISO 80369-3 compliant devices must be used to administer medication via enteral feeding tubes. Bottle adapters or medicine straws, provided by enteral syringe manufacturers, must be used to withdraw and measure doses of oral liquid medicines from the medicine bottles to prevent the dead space at the tip of the syringe from filling with medicine, potentially resulting in a medication overdose.[6]
- Catheter tipped, luer-lock tipped, intravenous or epidural syringes must not be used to administer oral liquid medicines.[6]

It is imperative that all health and care staff, patients and/or their carers know how to use administration devices to correctly administer liquid medication via the oral and enteral routes. Instructions on the use of oral/enteral syringes must be supplied to support the correct use of the device to safely administer a liquid medicine, including the exceptional circumstances when intravenous medicines are reconstituted and administered orally (e.g. oral administration of intravenous vancomycin for C. dificile).

4. Instructions on the use of oral/enteral syringes must be supplied to patients, health and care staff to ensure the correct use of the device to safely administer a liquid medicine via the oral/enteral route.
5. Oral, enteral syringes, parenteral syringes and epidural consumables must be stored separately within clinical areas to prevent mis-selection of the incorrect device during medicine administration.
6. Medicines must be stored in accordance with the requirements of PSN055 with distinct storage facilities for oral liquid medicines, injectable medicines etc. Where separate storage facilities are not possible (e.g. controlled drugs), oral liquid medicines must be clearly segregated from injectable medicines using physical barriers.
7. Doses of liquid medicines must be measured and prepared using an oral/enteral syringe only and immediately prior to administration. Preparation must not be carried out in advance of administration. Doses should be administered by or under the direct supervision of the health and care professional that prepares the dose of liquid medicine.
8. Liquid medicines must never be transferred from an oral/enteral syringe into a parenteral syringe or vice versa but discarded and the product prepared again using the correct device.

References and resources

1. NHS Improvement. National Patient Safety Incident Reports 2018.
2. HSIB. Inadvertent Administration of an Oral Liquid Medicine into a Vein I2017/009. www.hsib.org.uk/documents/99/hsib_report_inadvertent_administration_oral_liquid_medicine_vein.pdf
3. NHS Wales & Welsh Government. Never Events List 2018 and Assurance Review Process. www.du.nhs.wales/files/never-events/never-event-list-for-2018-19/
4. Welsh Government. Never Event Reports. www.du.nhs.wales/files/never-events/never-events-publication-2017-18-pdf/
5. NPSA. Patient Safety Alert 19: Promoting Safer Measurement and Administration of Liquid Medicines via the Oral and Other Enteral Routes. NPSA/2007/19. www.webarchive.nationalarchives.gov.uk/20171030131255/www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=59808&p=3
6. Smyth J. The NEWT Guidelines for Administration of Medication to Patients with Enteral Feeding Tubes or Swallowing Difficulties. www.newtguidelines.com

Stakeholder engagement

This notice was developed in consultation with the All Wales Medication Safety Network, All Wales Medicines Information Operational Group, Health Boards and Trusts.