June 2026 | Volume 25 ■ Issue 6

ISMP Institute for Safe Medication Practices
An ECRI Company

Community/Ambulatory Care
ISMP Medication Safety Alert!®
Educating the Healthcare Community About Safe Medication Practices

Patient Access to Appropriately Sized Oral/Enteral Medication Syringes is Needed

Problem: Errors with enteral medication administration can lead to complications and patient harm. The most vulnerable patients include those with feeding tubes who receive enteral liquid medications, and pediatric patients who are prescribed oral liquid medications. We have previously written about these concerns, including in our November 17, 2022 article, Preventing Errors When Preparing and Administering Medications Via Enteral Feeding Tubes. Unfortunately, we continue to receive error reports involving patients who lack access to appropriate syringe types (i.e., oral slip tip or ENFit [oral/enteral]) and sizes for their prescribed volumes.

Drug manufacturers of both prescription and over-the-counter medications sometimes provide dosing devices (e.g., syringes, droppers) in the packaging that cannot be safely used for all possible dose volumes. In some cases, community pharmacies may fail to provide appropriately sized syringes due to limited device inventory. In addition, pharmacy staff may have insufficient training and education on how to determine the correct syringe size for the prescribed volume. Some practitioners may not confirm whether patients have access to dosing devices before discharge, or they may not realize they need to prescribe these devices so they can be provided when prescriptions are filled at the pharmacy. Even when patients receive a syringe, they may still administer incorrect doses due to confusion about measuring the correct volume, particularly when prescription labels do not include the metric volume and they are not shown how to measure a medication dose. Consider the following scenario.

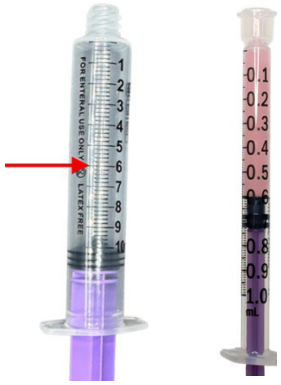

Figure 1. A patient nearly administered 6 mL of medication rather than 0.6 mL via their feeding tube, partially due to the fact that they were provided with a 10 mL ENFit syringe (left) rather than an appropriately sized 1 mL ENFit syringe (right). Photo provided courtesy of GEDSA (www.stayconnected.org).

*A patient was prescribed an enteral medication. The 0.6 mL dose was to be given via their feeding tube using a 10 mL ENFit syringe (**Figure 1**). The 10 mL ENFit syringe can accommodate doses in 0.2 mL increments. However, only the markings denoting full mL doses are labeled with numbers. The patient was confused about which markings to draw up the dose to since the syringe did not have a 0.6 mL labeled marking, but it did have a 6 mL labeled marking. In this case, a 1 mL ENFit syringe would have been much more appropriate for a 0.6 mL dose and would have eliminated the potential for a 10-fold overdose, but the pharmacy did not carry 1 mL ENFit syringes. The patient was not educated about how to prepare the dose using the markings on the 10 mL syringe and they were not provided the appropriate size syringe.*

Survey

To better understand safety concerns and barriers related to enteral medication administration, the Global Engineered Device Supplier Association (GEDSA), in partnership with The Oley Foundation, conducted an anonymous survey in 2025. The survey focused on feeding tube users' experiences with medication administration and product accessibility in the home setting. Survey results follow.

continued on page 2 — Oral/enteral medication syringes >

SAFETY briefs

Another Wrong Drug Error Involving Return-to-Stock Bottle. A pharmacy reported an incident in which a patient inadvertently received **TRADJENTA** (linagliptin) 5 mg instead of **JARDIANCE** (empagliflozin) 25 mg. Both drugs are indicated to improve glycemic control in patients with type 2 diabetes mellitus; however, Jardiance is also approved for other indications, including to reduce the risk of cardiovascular death and hospitalization for heart failure in adults with heart failure and to reduce the risk of cardiovascular death in adults with type 2 diabetes mellitus and established cardiovascular disease. The patient reported taking two doses of the wrong medication. At the time of the discovery, the patient reported no harm from taking the wrong medication.

The error was discovered after a pharmacy technician noticed that the return-to-stock (RTS) vial was labeled as containing 100 tablets of Jardiance 25 mg but instead contained 10 tablets of Tradjenta (5 mg each). The pharmacist investigated which patients may have received the wrong medication and identified the patient noted above. The pharmacist contacted the patient, who confirmed the contents of his vial were not Jardiance 25 mg but Tradjenta 5 mg. The pharmacy determined that during the RTS process, a pharmacy technician mislabeled the RTS vial containing Tradjenta, affixing a label for Jardiance 25 mg. They also identified that the pharmacist verification step failed to intercept the error despite the visual differences between the two drugs. Jardiance 25 mg tablets are yellow and oval with "S 25" debossed on one side and the Boehringer Ingelheim company symbol on the other side. Tradjenta 5 mg tablets are light red and round with "D5" on one side and the Boehringer Ingelheim symbol on the other side.

Due to the ongoing reports of RTS-related errors and the potential for patient harm, we

continued on page 2 — SAFETY briefs >

> Oral/enteral medication syringes — continued from page 1

Respondent Profile

From March through August 2025, 412 patients and parents of children with feeding tubes shared their experiences with medication administration. Most (92%) respondents were from the United States, representing 43 states. Additional responses were also received from Canada (6%), the United Kingdom (<1%), Australia (<1%), and South Africa (<1%). Respondents represented a wide age range—from parents/caregivers of infants to older adults.

Feeding Tube and ENFit Use

Most (97%) respondents administered medications through feeding tubes. Respondents administered either both enteral liquid and crushed medication (76%), or only enteral liquid (18%), or only crushed medication (3%). Most (83%) of the respondents access their feeding tube using an ENFit connector.

Supply Source

Nearly two-thirds (60%) of respondents indicated that they had asked their community pharmacy for oral/enteral medication syringes and bottle adapters. When asked where they obtained their oral/enteral medication syringes, 45% received them from their durable medical equipment (DME)/feeding tube supplier. Some respondents (21%) obtained supplies from hospital staff or through discharge planning during hospitalization. One in five (20%) obtained syringes from online websites. Only 7% of respondents were able to obtain syringes from a hospital outpatient pharmacy or clinic, and 5% from a community pharmacy. Some (2%) reported getting syringes through donations, via a Facebook group, or from a tractor supply company; highlighting patients' desperate need for access to these devices.

Syringe Size and Medication Volume

When asked to select what size oral/enteral medication syringes they used (select all that apply), 66% indicated they used 10 to 12 mL syringes, and 54% used 5 to 6 mL syringes to administer medications through feeding tubes. This was followed by 60 mL syringes (50%), then 2.5 to 3 mL syringes (34%), 20 mL syringes (29%), 1 mL syringes (25%), 35 mL syringes (19%), and 0.5 mL syringes (7%). Others (2%) were unsure what size they used. Despite half of the respondents reporting that they used a 60 mL syringe for medication administration, only 11% of respondents reported having medication doses that exceeded 20 mL. Almost one-third (31%) of respondents who had medication dose volumes of less than 6 mL reported using a 60 mL syringe to administer their dose.

Product Accessibility

More than half (55%) of feeding tube users reported difficulty in obtaining medication syringes. When asked which size syringes were the most difficult to obtain, the 10 to 12 mL size was identified as most difficult (19%), followed by 5 to 6 mL (15%), 2.5 to 3 mL (14%), 1 mL (13%), and 20 mL (13%). Some respondents (2%) reported that all sizes were hard to obtain. Nearly three-quarters (74%) of feeding tube users reported having difficulty obtaining medication bottle adapters, with 33% of respondents indicating they needed to purchase them online. Most (75%) had to pay out of pocket for their medication syringes and bottle adapters. Of those, 61% struggled to afford these supplies.

Product Use

Respondents reported needing a median of 4 medication bottle adapters per month (corresponding to the reported median of 4 enteral liquid medication prescriptions per month),

continued on page 3 — Oral/enteral medication syringes >

>SAFETY briefs

cont'd from page 1

published Best Practice 7, Maximize the use of technology to prevent errors during the return-to-stock (RTS) process, in the ISMP Targeted Medication Safety Best Practices for Community Pharmacy. It is important for both pharmacy software vendors as well as pharmacies to implement the different elements of this Best Practice to prevent these types of errors. For example, pharmacy software should enable generation of specific labels to apply to prescription bottles that require RTS. The RTS labels should include the drug name, dosage strength, expiration date, description (e.g., tablet shape, color, imprint code), and a barcode that can be used when filling a subsequent prescription. Pharmacies should use barcode verification throughout the RTS process to ensure the correct RTS label is placed on the correct RTS prescription and during subsequent prescription fills.

Standardized processes should be developed to guide the pharmacist's final verification of a medication, including a visual check of the physical medication to make sure it matches the tablet description on the pharmacy label and the image of the drug displayed on the computer screen during verification. At the point of sale, have the patient review the pharmacy labels and contents of each prescription container to check that the medication is correct—even if this requires opening the bag and drug container.

Dosing Error While Self-Administering Besremi. **BESREMI** (ropeginterferon alfa-2b-njft) is used to treat adults with polycythemia vera, a chronic blood cancer and type of myeloproliferative neoplasm. It is available in a single-dose prefilled syringe containing 500 mcg/mL of drug. The syringe label has graduation markings in mcg (50 mcg increments from 50 mcg to 500 mcg) (**Figure 1**, page 3). When starting Besremi, the patient's dose will either be 100 mcg subcutaneously every two weeks if they have not been taking hydroxyurea or 50 mcg every two weeks if they are transitioning from hydroxyurea. Doses can then be titrated until the hematological parameters are stabilized (hematocrit less than 45%, platelets less than 400 x 10^9/L, and leukocytes less than 10 x 10^9/L), up to a maximum dose of 500 mcg.

continued on page 3 — >SAFETY briefs >

> Oral/enteral medication syringes — continued from page 2

with most indicating a range between 2 and 10 per month. Respondents reported needing about 30 medication syringes per month, with most indicating they typically needed 10 to 40 syringes monthly. Respondents reported an average of about 7 oral liquid medication administrations per day, with most indicating a range of 2 to 6 daily doses. Although most syringes are not US Food and Drug Administration (FDA)-approved for reuse, respondents reported that they use syringes an average of 32 times before they are discarded. Notably, 19% reported using syringes until product failure (e.g., when they can no longer read the markings on the syringe).

Safe Practice Recommendations: The survey results revealed that patients and parents/caregivers of patients with feeding tubes are not consistently provided with access to appropriate devices or education about how to administer their enteral medications. For any patients who receive enteral medications, organizations should consider the following recommendations:

Complete an FMEA. Convene key stakeholders to complete a failure mode and effects analysis (FMEA) that identifies safety concerns and determines mitigation strategies for patients who require oral/enteral syringes for medication administration. Assess where patients obtain the supplies (e.g., syringes, bottle adapters) they need, product availability and access issues, and the risk of incorrect doses due to inappropriate syringe size selection for the medication volume.

Standardize syringe size. Healthcare organizations and community pharmacies should develop guidelines to ensure that appropriately sized oral/enteral syringes are available and used for dose preparation. When dispensing medications for administration in oral/enteral syringes, use electronic systems (e.g., electronic health record [EHR], pharmacy dispensing system) to determine appropriate syringe size based on dose volume. Dispense a syringe that most closely matches the prescribed dose volume, which should be part of the final pharmacist product check. Refer to resources such as the NCPDP Recommendations for Standardizing Dosing in Metric Units (mL) on Prescription Container Labels of Oral Liquid Medications, Version 2.0, Table 2. Guidance on Selecting Most Appropriate Dosing Device to Measure Volume of Prescribed Dose.

Plan for ENFit conversion. Organizations that have not yet transitioned should prioritize converting to ENFit devices as soon as possible. Partner with device vendors to identify needed products based on the organization's patient population. Create a list of current legacy products and complete a crosswalk to identify new products that will be needed. After identifying potentially needed products, obtain samples including all syringe sizes and product variations such as ENFit bottle adapters in different diameters. GEDSA offers educational tool kits with ENFit device samples which are available for a nominal fee.

Maintain an adequate supply of devices. Purchase, store, and maintain an adequate supply of ENFit devices in all patient care areas where oral/enteral medications are prepared or administered. Pharmacy should verify that syringes are in stock and readily available during monthly unit inspection. Community pharmacies should maintain an adequate supply of syringes to provide to patients.

Educate practitioners. Educate practitioners about the organizational guidelines and the importance of proper syringe size selection to prevent dosing errors. Use huddles and newsletters to communicate the rationale for using ENFit devices as a forcing function to prevent misconnections and wrong route drug administration errors. During orientation, emphasize that parenteral syringes should never be used to prepare or administer oral liquid medications and reinforce this regularly. Ensure pharmacists understand the need to provide patients with syringes that are the appropriate size and type for measuring a dose of enteral liquid medications.

Plan for discharge and outpatient care. Assess all steps in the continuum of care to identify patient supply needs. For organizations that send prescriptions to community pharmacies for

continued on page 4 — Oral/enteral medication syringes >

>SAFETY briefs cont'd from page 2

It is important to note that if the prescribed dose is less than 500 mcg, the patient must discard any extra medication in the syringe prior to administration. Patients are maintained on the two-week dosing interval of Besremi until hematological stability is achieved for at least 1 year; after that, the dosing interval may be extended to every 4 weeks.

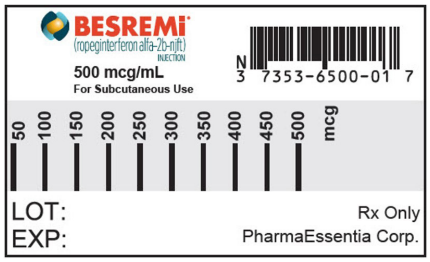

Figure 1. The label on the Besremi prefilled syringe is marked in mcg.

In a recent case, a nurse at an infusion center noticed that a patient was having difficulty measuring the correct amount of drug for administration. As a result, the patient did not consistently administer the prescribed dose despite prior training on self-administration. The nurse arranged for the patient to come back to the infusion center in a few days for repeat labs and to identify any potential adverse effects from the error.

The practitioner who reported this event expressed concern that other patients may also encounter difficulty using this medication correctly. Assessing whether a patient is an appropriate candidate for self-administration is essential. If a patient or caregiver is determined to not be an appropriate candidate for any reason, then Besremi should be administered by a healthcare professional.

Once a patient is deemed appropriate for self-administration, provide thorough education on storage, preparation, administration technique, and drug disposal. This education should include how to measure and discard any extra medication prior to administration. Use the teach-back method to assess the patient's understanding. Reinforce education and reassess the patient's understanding and

continued on page 4 — SAFETY briefs >

> **Oral/enteral medication syringes** — continued from page 3

dispensing, determine what products the pharmacies provide to ensure appropriate patient support. When community pharmacies carry both legacy oral syringes and ENFit syringes, and have EHR access, the pharmacist should use the EHR to confirm the route of administration and the appropriate device that should be used. Based on federal and state laws, identify which devices require prescriptions, and build order sets for oral liquid medication orders that prompt prescribers to order appropriate quantities and sizes of ENFit syringes. For more information about available ENFit devices, refer to: ENFit Product and Supply Resources.

Use metric dosing and devices. The ISMP Targeted Medication Safety Best Practices for Community Pharmacy Best Practice 4 recommends that community pharmacies standardize to the use of the milliliter (mL) unit of measure when dispensing and measuring oral liquid medications. Eliminate the use of "teaspoonful," "tablespoonful," and other nonmetric units of measurement. Purchase and dispense ENFit liquid dosing devices that only display the metric scale.

Educate patients. Educate patients, including those with feeding tubes, about needed devices and safe medication administration practices. Prior to hospital discharge, and when dispensing medications at community pharmacies, staff should confirm the route of administration to ensure patients receive the correct size bottle adapters and syringes for the prescribed volume. Dispense an appropriate metric-only dosing device that most closely matches the prescribed dose volume needed to administer one dose. Community pharmacists should consider marking the syringe to indicate the volume of the prescribed dose or affixing an auxiliary label indicating where to measure the dose. Use the teach-back method to verify that patients and/or caregivers can correctly measure and administer medications. Ensure pharmacists provide patients with educational material on reading syringe markings and measuring prescribed doses.

Report errors. Report close calls and errors involving enteral medication preparation and feeding tube administration internally as well as to device manufacturers, ISMP, and the FDA.

Additional Educational Resources:

GEDSA provides several resources on their website, including the following:

- Procedure for Home Care Settings: Preparing and Administering Medications Using ENFit
- ENFit: Administering Medication in In-Patient Settings
- ENFit: Administering Medication in Home Care Settings
- ENFit Pharmacy Resource Guide

The American Society for Parenteral and Enteral Nutrition (ASPEN), in collaboration with the University of Rochester Medical Center, released an online educational program, Medications Via Enteral Feeding Tubes: An ASPEN Video Series, designed to enhance safety and efficiency when giving medications via enteral feeding tubes—from system-level processes to bedside administration.

Editors: Michael J. Gaunt, PharmD; Shannon Bertagnoli, PharmD; Rita K. Jew, PharmD, MBA, BCPPS, FASHP. ISMP, 500 Virginia Drive, Suite 501, Fort Washington, PA 19034. Email: ismpinfo@ismp.org; Tel: 215-947-7797.

>SAFETY briefs cont'd from page 3

technique each time the patient's dose is changed.

As noted above, the prefilled syringe label is marked in terms of mcg doses. Ensure that patient instructions and prescription labels provide dosing instructions that match the unit of measure on the prefilled syringe. When initiating therapy, emphasize that dose adjustments may occur as frequently as every two weeks.

Patient monitoring is critical, especially during the titration phase. Closely assess for signs of dosing errors, including lack of therapeutic response or adverse effects. The prescribing information recommends performing complete blood counts (CBC) regularly, every 2 weeks during the titration phase and every 3-6 months during the maintenance phase. Monitor CBC more frequently if clinically indicated.

Special Announcements

Join MSB's Clinician Database!

Med Safety Board (MSB), an ISMP company, is actively recruiting US-based clinicians to join its MSB Clinician Database, including pharmacists, pharmacy technicians, nurses, physicians, and medication safety practitioners in outpatient pharmacies and other ambulatory settings. Those who sign up may be invited to participate in **paid** engagements, such as evaluations to assess brand names for look- and/or sound-alike concerns. Joining the database does not guarantee selection but ensures consideration for future projects aligned with your background and interests. For more information and to register, please click here.

Apply for Fellowship Opportunity

ISMP is accepting applications for the **Ochsner Children's and ISMP Safe Medication Management Fellowship**: This opportunity is for a pharmacist to work onsite at Ochsner Health in New Orleans, LA, and remotely with ISMP throughout the year. For more information, please click here.