



## Splitting tablets challenges you and your patients

Most oral medications are available commercially in common dosage strengths, but tablet splitting has become more commonplace for several reasons. Occasionally, a patient may need to take just part of a tablet or more than one tablet when the exact dose isn't commercially available. In some cases, the patient may not be able to swallow tablets whole.<sup>1</sup>

Financial factors also may play a role. For example, different strengths of one medication often cost about the same, so patients on a tight budget may be given a prescription for higher strength tablets and told to take a half or even one-fourth of a tablet for each dose.<sup>2</sup> Even when patients have healthcare coverage, some insurers deny payment for lower strengths of certain prescribed drugs; to get reimbursement, the patients must get higher strength tablets and split them for each dose.<sup>2</sup> Finally, some healthcare organizations don't purchase all commercially available strengths of oral medications, so some drugs may require staff to split tablets for patient-specific doses.

A study by the Veterans Administration looked at 442 reports related to pill splitting. Of these incidents, 38% were considered adverse drug events,

with most occurring in outpatient settings (65%). The study showed that two-thirds of people who were supposed to split tablets forgot to split them and took too much medication.<sup>1</sup> The errors were discovered when the patients tried to refill their prescriptions too early. A quarter of the medications involved were high-alert drugs, and about 9% of patients who took too much medication were harmed by their mistakes; 2% required hospitalization. In more than half of the events, the prescribed dosages had been available commercially.

If you work in a hospital, the pharmacy should split tablets and send them to the unit in patient-specific, labeled unit doses. But if you must split tablets or educate patients how to split their pills, keep in mind the situations that may lead to errors:<sup>2</sup>

- A pharmacist or nurse might misread an order written for "½ tablet" as "1-2 tablets."
- Nurses may overlook directions on the medication administration record to split the tablet and administer the whole tablet in error (a surprisingly common occurrence). If the tablet is split, the remaining half tablet not administered to the patient is either wasted or maintained in makeshift or unlabeled packaging (often a medication cup or ripped package) until the next dose, risking an error.
- If a pill splitter is not cleaned between patient uses, pill residue can contaminate the next patient's medications, risking anaphylaxis if the patient has an allergy to the drug residue.
- Patients may assume that tablets have already been split when they haven't, or they may split tablets that have already been split.
- Patients with visual problems or

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### check it out! ✓✓✓✓

To safeguard tablet splitting for you and your patients:

- ✓ **Let pharmacy split.** In hospitals, the pharmacy staff should dispense exact doses by either splitting tablets and repackaging them or preparing an oral solution in a unit-dose oral syringe.
- ✓ **Verify suitability.** If you must administer half tablets, check drug references or ask a pharmacist to make sure that splitting tablets is safe. For reference, maintain an up-to-date list in patient care units of medications that cannot be crushed or split. If you're unsure, contact the manufacturer.<sup>1</sup>
- ✓ **Provide the right tools.** If patients must split tablets at home, provide them with a tablet-splitting device or advise them to obtain one from their community pharmacy to improve accuracy.<sup>1</sup>
- ✓ **Keep it clean.** Patients and healthcare providers should wash their hands before splitting tablets; healthcare workers should also wear gloves. Whenever possible, use a disposable pill cutter labeled with the patient's name. If disposable cutters are not available, wash the tablet-splitting device with water and dry it after each use to remove powder or particles.
- ✓ **Provide discharge education.** Advise patients who are receiving half tablets in the hospital that their community pharmacy might give them a different strength tablet after discharge. Ensure the patient knows the actual dose of the drug, and to ask their pharmacist whether splitting tablets will be required. For patients who will split tablets, make sure they understand what to do and get a return demonstration to make sure they can do it.<sup>1-2</sup> Enlist the help of a qualified family member if necessary.

Table 1. Medications that shouldn't be split

<input type="checkbox"/> Tablets with enteric or special coating
<input type="checkbox"/> Sustained- and extended-release tablets
<input type="checkbox"/> Drugs with very precise dosing requirements
<input type="checkbox"/> Very small tablets
<input type="checkbox"/> Asymmetrical tablets
<input type="checkbox"/> Capsules
<input type="checkbox"/> Teratogenic medications (such as bosentan)

## Unclear warfarin order falls between the cracks

A patient had been taking warfarin 2.5 mg every other day and warfarin 5 mg on the alternate days. When he was admitted to the hospital, the same regimen was prescribed. The pharmacist who processed the order didn't know which dose to use first and placed the order in a bin reserved for prescribing problems. However, he didn't enter a reminder note in the patient's drug file that follow-up was needed. The pharmacist then called the patient care unit and asked a nurse to find out from the patient the most recent dose he took at home. The nurse didn't call back and the issue slipped the pharmacist's mind. Because the order had not been entered in the pharmacy computer and didn't appear on the computer-generated medication administration record (MAR), it was not filled and no one noticed the omission until 4 days later, when another pharmacist saw the order in the problem bin and discovered the error.

At the hospital where this event happened, pharmacists who need to clarify an order now place an electronic note in the patient's drug file so a reminder appears on the screen and

an alert appears on the MAR to notify nurses of the problem. The notations also alert nurses to important reasons a drug dose hasn't been dispensed and why they shouldn't administer a dose from unit stock without further clarification and information. Some computer systems allow these reminders to be printed daily for follow-up.

An effective 24-hour nursing chart check may have alerted this patient's nurses sooner that the warfarin order had been overlooked. Pharmacy should provide a daily computer-generated list of each patient's medications so prescribers can make sure that ordered medications have been properly processed and that discontinued medications have been stopped. If such a list can't be printed, a copy of the MAR from the previous 24 hours can serve the same purpose; it also lets prescribers review the actual doses administered. Finally, when a medication is prescribed in anything other than a daily dose, directions should indicate when the dose is to begin. This would apply to alternating doses, weekly or monthly doses, and 72-hour patches.

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poor manual dexterity may not be able to split tablets.

- Patients may get confused and split the wrong tablets.

- Patients may tire of splitting tablets and stop taking the medication.

- A patient may be told to split tablets in half, but the directions on the label may indicate "1 tablet" per dose. This can mislead the patient or healthcare providers who use the prescription label to gather information while taking the patient's medication history.

- Split tablets crumble easily, so the patient may not get the correct dose.

- Certain types of medications shouldn't be split (Table 1 on page 1).

See **check it out!** for methods to safeguard tablet splitting for you and your patients.

**References:** 1) Sales MM, Cunningham FE. Tablet splitting. *Veterans Administration. Topics in Patient Safety (TIPS)*. 2006;6(3):1,4. 2) Clark TR. Tablet splitting for cost containment. August 2002. Available at: [www.ascp.com/advocacy/briefing/tablet-splittingcontainment.cfm](http://www.ascp.com/advocacy/briefing/tablet-splittingcontainment.cfm).

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## safetywire

**⚡ Skin product by mouth.** A patient scheduled for open-heart surgery was supposed to swish and expectorate chlorhexidine gluconate oral rinse (0.12%) twice daily. A topical surgical prep with chlorhexidine gluconate antiseptic solution 4% was also prescribed. A nurse preparing to administer the oral rinse didn't find it in the patient's medication cassette. In the patient's room, she found a bottle of chlorhexidine gluconate antiseptic solution 4%, the topical surgical prep agent that had been dispensed by materials management, and assumed it was the oral rinse. She gave it to the patient and instructed him to swish it around his mouth and spit it out. Later, another nurse detected the error. A warning on the label, "For external use only," is in small print and can easily be missed (see below). Although the word **ANTI-SEPTIC** is prominently displayed, you'd expect this on an oral antiseptic. We've asked the company to make the label warning "For external use only" more prominent and to make it clear that the product is intended for use on the skin. If you use the surgical prep product, please affix "For external use only" labels on the bottles for now, or ask materials management to purchase the product with safer labeling from another vendor. In addition, never leave topical products at the bedside. Patients have occasionally mistaken topical products as oral products and ingested potentially harmful substances, particularly if the product has been



poured into a drinking container. In one such case, a patient drank a paper cup containing a white milky topical cleanser intended for use in the shower, believing the cup contained a dose of milk of magnesia. Never place a topical liquid in a container that could be mistaken as a drinking cup or bottle.