

## MEDICATION SAFETY

# Drug Shortages Are Inevitable, So Be Prepared

NATIONAL HARBOR, MD.—During a drug shortage, not having access to a particular medication actually can be just the start of your concerns, given the cascade of events that can follow when using substitutions.

In many cases, the alternative agents aren't ideal matches, which increases the risks for potentially serious medication errors, experts noted during a session on drug shortages at the AMCP Nexus 2019 meeting.

Drug shortages affect everyone, from pharmacists to acute care facilities to prescribers, but in different ways, said Matthew Grissinger, RPh, the director of error reporting programs for the Institute for Safe Medication Practices (ISMP), which provides periodic alerts about shortages. It's wise to monitor for shortages and always have backup plans in place, he stressed.

## A Long-Term Problem

Shortages have been happening for well over 20 years, he said, and some hospitals are now dedicating a full-time employee solely to managing them. Common reasons for shortages include the unavailability of bulk and raw materials used to produce pharmaceuticals, a delay or halt in production in response to an FDA enforcement action, a voluntary recall of a drug after the manufacturer discovers a problem, unexpected increases in demand for a drug, and natural disasters involving manufacturing

## 6 Steps for Scarcity Planning

- 1** Identify a person or team to stay up-to-date on current or potential shortages.
- 2** Have second- or third-line therapies identified.
- 3** Assess your inventory and prioritize patients who are in greatest need.
- 4** Decide how you will monitor for adverse effects of a replacement drug.
- 5** Educate your staff about shortages and your contingency plans.
- 6** Involve your facility risk management or ethics departments if patient care could be compromised due to a shortage.



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—Matthew Grissinger, RPh

facilities. ordering also plays a role, he said, with some hospitals or facilities hoarding drugs they know will be on shortage soon.

Shortages have many downstream effects, potentially affecting nursing staff, pharmacies, prescribers, sterile

compounding, drug storage and administration, Mr. Grissinger said.

"If the drug company can't make it, other [503B] compounders will, and the problem is that others who make it don't have to follow FDA manufacturing guidelines," he said.

Pharmacists' work can be affected by drug shortages in a few ways, Mr. Grissinger said, including during drug utilization reviews. It's difficult to perform these reviews thoroughly if you don't know when patients are switched to a different agent due to a shortage, he said. During shortages, pharmacists also can help patients navigate prior authorizations for more expensive drugs and identify second-line agents to be used if first-line ones become unavailable.

## Managing the Switch

Shortages present challenges to disease management as well, he said. If a plan prefers drug A but that becomes unavailable, what are the steps for monitoring a patient on drug B? And if drug A comes back in circulation, do patients understand what to take at home? Shortages also may result in patients delaying or missing treatments if they can't get their medications, or shopping around for medications.

Pharmacists are in the perfect position to help inform the health care community about the impact of drug shortages on patient outcomes, Mr. Grissinger said. When assessing whether patient disease states are improving or worsening on a particular drug, he said, always inquire if there was a drug shortage in that disease state or drug category that would affect the outcomes. "Second-line drugs are second line for a reason," he said, "but did that have an impact?"

## Medical Ethics a Moving Target in Rx Shortages

The fallout from drug shortages remains a major, well-documented problem for health care systems. The inordinate time pharmacists have to spend finding alternative agents is just one example. But far less attention is being paid to the ethical dilemmas of deciding which patients get these scarce but potentially life saving medications.

"An entire generation of clinicians is practicing during a time when drug shortages require rationing for patients," said Erin R. Fox, PharmD, the senior director of drug information and support services at the University of Utah Health, in Salt Lake City. "This situation is perceived as normal and part of general practice, but we must not accept this situation as normal."

One way to make such rationing a bit less arbitrary is to rely on a hospital ethics committee (HEC) for guidance. HECs can address moral concerns and determine the most appropriate course of treatment when other decision-making tactics provide no clear answer.

But HECs have limitations, in part because the best way to apportion short-supply drugs isn't always black and white. If 10 patients need vincristine, for example, but the hospital only has five vials, who gets those vials? "Unfortunately, I do not have any examples of criteria to delineate who would get the drug first," said Matthew Grissinger, RPh, the director of error reporting programs for the Institute

for Safe Medication Practices (ISMP). "We simply haven't heard of a successful attempt of addressing that question through any ethics committee."

When pharmacists and other clinicians have to decide which patients will receive a drug that is in short supply, they may assign priority to various factors. In such cases, the patients placed at the top of the list are those who are the youngest, have the most critical or rapidly progressing illnesses, stand to benefit most from receiving treatment, and/or are participating in clinical trials (*Australas Med J* 2013;6[11]:556-559).

The task isn't made any easier by the challenges posed by using alternative agents: The second-line therapeutic choices may be less familiar to the clinician; come in a different dosage form, concentration or vial size; or have different preparation and administration requirements (*J Emerg Nurs* 2012;38[5]:466-469).

### The Manufacturers' Responsibility

Do drug manufacturers—and by extension, the FDA, which oversees them—also have an ethical responsibility to intervene during a shortage?

The FDA can advise and assist manufacturers during a short-supply situation and expedite inspections and reviews, but ultimately the companies must fix the problem, Cmdr. Leo Zadecky, PharmD, a senior

program management officer with the FDA Drug Shortage Staff, said during a recent FDA webinar.

First and foremost, manufacturers need to understand the frailties of their supply chains, Dr. Zadecky said, and communicate with the FDA early about potential shortages. In addition, they should provide the FDA with information to post on the agency's website regarding shortages and offer short- and long-term plans for preventing and addressing shortages while maintaining and improving quality.

Early notification has made a difference, Dr. Zadecky said. After a peak in drug shortages in 2011, the agency was able to work with manufacturers to prevent 115 shortages in 2016, 145 shortages in 2017, and 160 shortages in 2018. "It's trending in the right direction," he said.

—Frieda Wiley, PharmD, and Karen Blum

The sources reported no relevant financial relationships.



## Resource Box

- ASHP and the University of Utah have provided guidance on small-volume parenteral solution shortages ([bit.ly/383TCQE](http://bit.ly/383TCQE))
- ASHP Drug Shortages Resource Center ([www.ashp.org/Drug-Shortages](http://www.ashp.org/Drug-Shortages))
- CDC guidance on vaccines in short supply ([www.cdc.gov/vaccines/hcp/clinical-resources/shortages.html](http://www.cdc.gov/vaccines/hcp/clinical-resources/shortages.html))
- FDA Drug Shortages ([www.fda.gov/Drugs/DrugSafety/DrugShortages](http://www.fda.gov/Drugs/DrugSafety/DrugShortages))
- ISMP newsletter on managing drug shortages ([www.ismp.org/node/775](http://www.ismp.org/node/775))

Health care institutions should have a plan to prepare for shortages, including some consideration for the ethical issues raised by scarcities (box).

### 150 Drugs Affected in 2019

Nearly 150 drugs were listed on shortage in 2019, according to the FDA Drug Shortages website. The agency doesn't separate these out by specialty versus traditional drugs but instead evaluates the medical necessity of drugs used to diagnose, treat or prevent a serious disease or medical condition for which there is no appropriate substitute, said Charlie Kohler, an FDA spokesperson. Vincristine injection, a chemotherapy drug used to treat acute lymphoblastic leukemia, is one example of a medically necessary drug recently on shortage. Vincristine production was discontinued by Teva in early June 2019, Mr. Kohler said, leaving Pfizer as the sole supplier. Pfizer was able to set up a direct distribution program to meet patient needs and believes it will be back to normal distribution through wholesalers in January. Teva has decided to resume production in the United States early next year, he said.

### FDA Offers Solutions

A report the FDA issued in October about 2018 drug shortages recommended a few enduring solutions, said Cmdr. Leo Zadecky, PharmD, a senior program manager and chief of staff with the FDA Drug Shortage Staff, during a recent FDA webinar on drug shortages:

- helping others understand the impact of drug shortages on patients and the contracting practices that may contribute to shortages;
- developing a rating system to incentivize drug manufacturers to invest in quality management maturity for their facilities; and
- promoting sustainable private-sector contracts, such as with payors or group purchasing organizations, to ensure a reliable supply of medically important drugs.

Meanwhile, Congress also is concerned. New legislation introduced in October by Sens. Susan Collins (R-Maine) and Tina Smith (D-Minn.),

called the Mitigating Emergency Drug Shortages Act, would mandate several actions to increase the supply of needed drugs. The law would have the FDA prioritize review of drug applications

and inspections, require manufacturers to report expected shortages of both finished products and active ingredients, expand the FDA's drug shortage list to include regional shortages, and require manufacturers to report contingency and redundancy plans to the FDA for drugs that are life-supporting or used in the management of debilitating conditions, among other steps.

ASHP and ISMP were among several organizations supporting the proposed legislation.

"The ongoing shortages of vital,

life-saving medications continue to jeopardize patient care in the United States," said ASHP CEO Paul W. Abramowitz, PharmD, in a statement. "Pharmacists and other health care providers struggle to obtain reliable supplies of essential medications, resulting in delay or prevention of treatment, serious harm to patients and unnecessary added costs to our health care system."

—Karen Blum

*The sources reported no relevant financial relationships.*

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#### References:

1. Data on file, Amgen; [1]; 2018.
  2. Data on file, Amgen; [1]; 2019.
  3. Data on file, Amgen; [2]; 2019.
- OOP, out of pocket; SHS, Symphony Health Solutions.

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USA-003-80525 08/19

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