Issue: PA Health Care

US Dependence on Foreign Manufacturing of Prescription Drugs

What is the Current Situation?

The U.S. pharmaceutical supply chain is a global enterprise. The majority of drugs are manufactured in other countries or use important ingredients from other countries. Approximately 70% of the 100 most-popular brand-name medications are foreign-made. Generic drugs comprise about 90% of all prescriptions dispensed in the US, and 80% of generic drugs use active ingredients from other countries.[1]

Most active ingredients used in U.S. generic drugs are made in China or India—each country accounts for about 40% of active ingredients used in pharmaceuticals in the US.[2] However, India obtains many chemicals from China, so the impact of Chinese provenance is larger than might first appear. While the FDA states that only 31% of active-ingredient manufacturing facilities are located in China and India, this estimate does not account for the production volume of each country.[3] These two countries have 60% of the global market share of active-ingredient manufacturing.[4]

Companies that manufacture generics have moved many operations overseas because of cost considerations. It is estimated that companies can save 30% to 60% when manufacturing active ingredients in China.[5] Common drugs primarily made in China include antibiotics (97% of the U.S. supply), ibuprofen (95%), hydrocortisone (91%), and heparin (40-46%). Other drugs made in China include antidepressants, HIV/AIDS medications, birth control pills, chemotherapy treatments, and medicines for Alzheimer's disease, diabetes, epilepsy, and Parkinson's disease. India also manufactures antibiotics, painkillers, hormones, antiviral drugs, and vitamins B1, B6 and B12.[6] China is not a major source for recently approved branded drugs because the higher prices of branded drugs allow companies to be less cost sensitive.[7]

It is difficult for consumers to know the source of the drugs they are taking because manufacturers are required to list only the location of the final formulation process on the drug's label. For example, Astra Zeneca sources a key ingredient for Seroquel® from China, but the label states it is a product of Belgium. [8,9]

What are the consequences of U.S. dependence on foreign manufacturers? Contaminated medications occasionally result in catastrophic outcomes—including death. Astoundingly, the contamination is sometimes intentional when cheap counterfeit substitutes replace legitimate ingredients.

Heparin imported from China in 2008 was intentionally contaminated for economic advantage by its Chinese manufacturer. This adulterated heparin was found to cause serious allergic-type reactions that resulted in the deaths of 81 people in the U.S. Investigations showed that oversulfated chondroitin sulfate (OSCS) had been added to the heparin during manufacture in China. OSCS is approximately 100 times cheaper than heparin and is so similar to heparin that it was undetected by standard tests. This episode resulted in updated U.S. testing standards for heparin to ensure its safety.[10,11]

In 2018, contamination of the antihypertensive medications losartan and valsartan was found in the active ingredient manufactured in China. In this case, the contamination was not intentional, but resulted from inadequate understanding of the introduction of nitrosamine impurities during the manufacture of the active ingredient. These impurities are probable human carcinogens. The discovery of contamination resulted in several recalls of losartan- and valsartan-containing products.[12,13]

Relying on other countries for our medications is also a national security risk. Because the U.S. has lost vital pharmaceutical manufacturing capability to China, our hospitals could cease to function within months if China chose to stop supplying needed medications. We are subject to whatever pricing decisions the Chinese pharmaceutical manufacturers make for essential medications. The Chinese government could decide to limit the availability of essential medicines as tactical and strategic weapons against the U.S.[14]

The U.S. has completely lost manufacturing capability for antibiotics, with 97% of antibiotics coming from China, leaving us vulnerable to supply chain interruptions.

What are Options for Legislative and Government Action?

There are limited options for either the federal or state governments to intervene in the manufacturing decisions of pharmaceutical companies. The White House recently awarded a $354 million contract to Phlow, Inc., a new privately-held generic manufacturing company based in Virginia, to make essential drugs and their ingredients in the U.S.[15] The company plans to contribute to the national stockpile. It remains to be seen whether this endeavor will have any impact on U.S. reliance on foreign made pharmaceuticals.

Similarly, the Jones Act could be a model for ensuring U.S. manufacturing capability. This 100-year-old act requires all goods transported by water between U.S. ports to be carried on ships constructed in the U.S., owned by U.S. citizens, and crewed by U.S. citizens and U.S. permanent residents. The impetus for this act was to ensure a reliable domestic shipping industry and to serve as a military auxiliary in times of war, assisting in the maintenance of a national defense.[16]

Congress could provide funding to the FDA to increase the number of inspections of foreign facilities and the checks on imported goods. These activities could provide better protection against contaminated products. The FDA could write regulations to require all drug labels identify the country of origin of all important components of pharmaceuticals.

States have even more limited options since the FDA has precedence in regulating drugs. However, states could require manufacturers to report manufacturing information to the state. This information could then be provided to the public.

Since the biggest threat from foreign-made drugs involves generic drugs, states could investigate any leverage they may have over generic companies with headquarters in the state. All of these companies manufacture overseas, but Pennsylvania and New Jersey could leverage their relationships with companies with headquarters in their states (Mylan in PA and Novartis in NJ) to incentivize transparency.

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