



Association for Accessible Medicines
Statement for the Record
Senate Finance Committee
Hearing on “COVID-19 and Beyond: Oversight of the FDA’s Foreign
Manufacturing Inspection Process”
June 2, 2020

The Association for Accessible Medicines (AAM) is pleased to submit the following statement for the record for the Senate Finance Committee’s hearing on “COVID-19 and Beyond: Oversight of the FDA’s Foreign Manufacturing Inspection Process.” As the nation’s leading trade association for the developers, manufacturers and distributors of FDA-approved generic and biosimilar prescription medicines, AAM and our members are committed to the secure and consistent supply of critical medicines to improve the health of America’s patients and as a critical tool in the effort to lower prescription drug costs.

Introduction

As the Finance Committee examines the pharmaceutical supply chain, we wish to stress three points:

- The generic drug industry currently manufactures approximately 70 billion doses in the U.S.;
- AAM and its members strongly support the Generic Drug User Fee Amendments (GDUFA) program enacted in 2012 and reauthorized in 2017, which has provided the resources for FDA to dramatically increase its capacity to inspect facilities, both domestic and foreign, that support an application; and,
- Building on today’s U.S.-based production and FDA’s oversight, AAM and its members have released the [**“Blueprint to Enhance the Security of the U.S. Pharmaceutical Supply Chain”**](#) to provide Congress and the Administration with recommendations on how to further strengthen the pharmaceutical supply chain and enhance the U.S. manufacturing of essential medicines.

The COVID-19 pandemic reminds us of the incredible value offered by the generic and biosimilar industry, the benefits of a resilient and redundant global supply chain, and industry’s daily commitment to manufacturing safe, effective and high-quality medicines.

AAM's members have experienced substantially increased demand for certain medicines that has far exceeded historical trends,¹ navigated export restrictions on active pharmaceutical ingredients (API) and finished dose (FD) generic medicines,² re-routed the delivery of medicine as air travel was significantly curtailed around the globe,³ and absorbed much of the increased costs charged for the transportation of medical products to ensure that America's patients are able to access critically needed medicines during the coronavirus pandemic.⁴ In response, AAM's member companies have stepped up to meet these challenges.⁵

Implementation of the CARES Act will Enhance FDA's Regulation of the Global Supply Chain

We understand why the Finance Committee would raise questions about recent reports that may paint a distorted picture of a global supply chain that is overly reliant on China and other countries for API. Our statement clarifies and provides more accurate analysis of where API and finished dosage form (FDF) facilities are located, according to testimony provided by FDA to Congress last year. Moreover, Congress took important action as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748) enacted in March. The CARES Act includes several important steps intended to help strengthen the pharmaceutical supply chain. Specifically, the CARES Act:

- Increases the transparency of the pharmaceutical supply chain by providing FDA with additional information on potential disruptions in the supply chain, on manufacturers' contingency plans to ensure continued supply and on the volume of medicines manufactured (Section 3112);
- Stresses the importance of air transportation in maintaining well-functioning pharmaceutical supply chains (Section 4005);
- Evaluates U.S. dependence on overseas manufacturing with a forthcoming report from the National Academies (Section 3101); and,
- Strengthens the national stockpile to ensure access to drugs, vaccines and other biological productions (Section 3102).

¹ Ellen Gabler and Michael Keller, "Prescriptions Surged as Trump Praised Drugs in Coronavirus Fight," New York Times, April 25, 2020, Updated May 19, 2020.

² Rajesh Roy, "India Again Allows Export of Antimalarial Drug Touted for Coronavirus," Wall Street Journal, April 7, 2020.

³ Ian Duncan, "Drug Industry Warns That Cuts to Passenger Airline Service Have Put Medical Supplies at Risk," Washington Post, May 2, 2020.

⁴ AAM Survey of Biosimilar and Generic Drug Manufacturers, "Pharmaceutical Shipping Costs Spike in Response to Global COVID-19 Pandemic," April 30, 2020.

⁵ AAM, "Generics and Biosimilars Industry Supply Chain & Response to COVID-19," April 10, 2020.

We believe these provisions will help answer some of the questions raised once implemented and will serve to further inform policymakers about the economic realities of the generic and biosimilar markets. In this statement, we provide additional information on the role of generics and biosimilars in improving patient health, how more affordable treatments enhance patient access, details FDA's oversight role and inspections process, and outline our industry's robust commitment to quality.

Generics and Biosimilars Are Integral to Patient Health

Generic medicines play an integral role in health care and enhance patient access to life-saving treatments. The expiration or invalidation of patents and the resulting introduction of multiple generic and biosimilar manufacturers competing against each other on price result in significant savings for patients and the health care system. Over the last 10 years, manufacturers of generic medicines have delivered savings of nearly \$2 trillion – including \$293 billion in 2018 – to patients and the health care system.⁶

Biosimilar medicines represent another critical step forward in reducing high drug prices. Biosimilars are safe, effective and more affordable versions of costly brand biologics. By the year 2025, over 70 percent of drug approvals are expected to be biological products.⁷ Experts estimate that FDA-approved biosimilars could save more than \$54 billion over the next 10 years.⁸ In doing so, biosimilars will mean greater access to lifesaving cures for an estimated 1.2 million patients.⁹

The introduction of generic and biosimilar competition significantly reduces the price of medicine, and patients benefit from greater, more affordable access to FDA-approved drugs. Experience shows prescription drug prices decline by more than half the first-year generics enter the market.¹⁰ Early experience with the nascent biosimilars market in the U.S. shows that these more affordable alternatives are also providing value and savings to patients, on average priced 40 percent lower than their branded biologic counterparts.¹¹

However, one must also consider the underlying economic realities of the generic and biosimilar markets. Prices for generic drugs are plummeting – falling for 40 of the last 45

⁶ AAM, "The Case for Competition: 2019 Generic Drug & Biosimilars Access & Savings in the U.S. Report," September 2019.

⁷ U.S. Pharmacist, "Biosimilars: Current Approvals and Pipeline Agents," October 2016.

⁸ RAND, "Biosimilars Cost Savings in the United States," October 2017.

⁹ The Biosimilars Council, "Biosimilars in the United States: Providing More Patients Greater Access to Lifesaving Medicines," August 2017.

¹⁰ IMS Institute for Healthcare Informatics, "Price Declines after Branded Medicines Lose Exclusivity in the U.S.," January 2016.

¹¹ AAM analysis of IQVIA WAC Data, December 2018.

months – and creating a market in which many drugs are simply and increasingly not economical to produce.¹² The biosimilars market is still developing with 17 of the 26 FDA-approved biosimilars launched with only a handful regularly prescribed.¹³ Biosimilar manufacturers are increasingly looking to provide Europe’s patients with access first, rather than the U.S., due to the barriers to competition and a policy environment that inadequately supports their uptake and use domestically.¹⁴

Setting the Record Straight on the Global Production of Medicines and the FDA’s Gold Standard of Safety

In testimony before the House Energy and Commerce’s Subcommittee on Oversight and Investigations on December 10, 2019, Dr. Janet Woodcock, Director, Center for Drug Evaluation and Research at FDA, provided a detailed breakdown of where API and FDF of prescription drugs – inclusive of brand-name and generic medicines – are located.¹⁵ The U.S. is home to 47 percent of FDF facilities and 28 percent of API facilities as of August 2019, according to the FDA.¹⁶

As depicted in Figures 1 and 2 from FDA’s testimony, and included below, the number of FDF and API facilities regulated by FDA is as follows:

FDF Facilities, By Geographic Region

- U.S. – 47 percent
- Europe – 18 percent
- India – 11 percent
- China – 7 percent
- Rest of World – 13 percent

API Facilities, By Geographic Region

- U.S. – 28 percent
- Europe – 26 percent
- India – 18 percent
- China – 13 percent
- Rest of World – 13 percent

¹² Morgan Stanley, April 2020.

¹³ Biosimilars Council, “FDA Biosimilars Approvals,” April 2020.

¹⁴ Biosimilars Council, “Failure to Launch: Barriers to Biosimilar Market Adoption,” September 2019.

¹⁵ Janet Woodcock, M.D., Director of CDER, FDA, Testimony, Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, Hearing on “Securing the U.S. Drug Supply Chain: Oversight of FDA’s Foreign Inspection Program,” December 10, 2019.

¹⁶ Ibid.

Percentage of Active Pharmaceutical Ingredient Manufacturing Facilities for All Drugs by Country or Region, August 2019

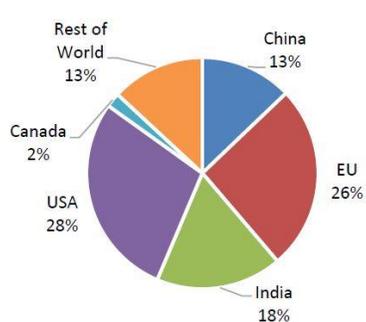


Figure 1: For all FDA-regulated drugs, 28 percent of manufacturing facilities producing active pharmaceutical ingredients (APIs) are located in the United States.

Percentage of Finished Dosage Form Manufacturing Facilities for All Drugs by Country or Region, August 2019

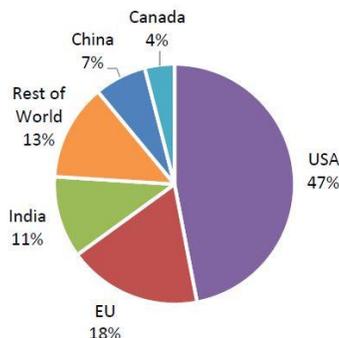


Figure 2: For all FDA-regulated drugs, 47 percent of manufacturing facilities producing finished dosage forms (FDFs) are located in the United States.

Globalization of the supply chain – a market reality for brand-name drug companies and generic and biosimilar manufacturers – is often mentioned as a matter of concern, but the record should in fact bolster confidence in the system. The U.S. has one of the safest drug supply chains in the world.

FDA’s Oversight of the Pharmaceutical Supply Chain

FDA ensures all pharmaceuticals meet the same high-quality standards regardless of where brand-name drugs, biologics, generics and biosimilars are manufactured. All pharmaceuticals, whether generic or brand, must be manufactured in accordance with rigorous regulatory standards that require high levels of diligence and accompanying documentation.¹⁷ FDA and other governmental requirements cover each of the following areas:

- Acquisition of raw materials and drug packaging components, including auditing the manufacturers and suppliers of critical ingredients;¹⁸
- Testing of active ingredients using qualified equipment and validated methods;¹⁹

¹⁷ 21 Code of Federal Regulations Parts 210, 211, 600-680; Inspection of Biological Drug Products, FDA Compliance Program Guidance Manual, Chapter – 45 Biological Drug Products, Section 7345.848.

¹⁸ 21 CFR §211.182.

¹⁹ 21 CFR §211.84.

- Constructing and maintaining manufacturing equipment and facilities that have been constructed and maintained to provide sanitary conditions and to protect against contamination;²⁰
- Appropriate and documented training of manufacturing personnel;²¹
- Validation of manufacturing processes to ensure that they consistently produce safe, effective and uniform medicine;²²
- Thorough contemporaneous documentation of each manufacturing step, with oversight by an employee other than the operator for critical manufacturing steps;²³
- Taking samples of prescription drugs during the manufacturing process at predetermined intervals, and testing the samples for potency and, where appropriate, sterility;²⁴
- Maintaining rigid controls over labels placed on drug containers, to ensure the correct labels are placed on every package;²⁵
- Thorough testing of prescription drugs before packaging to ensure that they are free of microbial contamination or other defects, and that they meet tight specifications for uniformity, potency and lack of impurities;²⁶
- Retention of samples of all manufactured batches of prescription drugs;²⁷
- Routine stability testing to ensure that prescription drugs, including biologics, will remain safe and effective for the duration of their shelf lives;²⁸
- Release of each batch of prescription drugs for distribution only upon review of all batch records and testing data by a quality unit that is independent of manufacturing personnel;²⁹
- Continuous oversight by management and regular audits by an independent quality unit of the manufacturer or outside consultants;³⁰
- Rigorous documentation of every step in the storage and distribution of manufactured prescription drugs;³¹ and,

²⁰ 21 CFR §211.42, §211.56 (facilities), §211.65, §211.67 (equipment).

²¹ 21 CFR §211.25.

²² 21 CFR §211.100.

²³ Ibid., 21 CFR §211.101(c), §211.180(a), §211.186, §211.188(b).

²⁴ 21 CFR §211.110.

²⁵ 21 CFR §211.122, §211.125, §211.130, §211.134.

²⁶ 21 CFR §211.113, §211.165, §211.194.

²⁷ 21 CFR §211.170(b).

²⁸ 21 CFR §211.165.

²⁹ 21 CFR §211.22, §211.142, §211.167, §211.192.

³⁰ 21 CFR §211.180(e), (f).

³¹ 21 CFR §211.150(b), §211.196; Drug Supply Chain Security Act, Title II of the Drug Quality and Security Act of 2013.

- Prompt reporting to FDA and thorough investigation of any complaints about distributed medicines, or any reports that the prescription drugs may have failed to remain safe and effective.³²

When FDA finds any deviation from the strict standards of production, FDA can take swift action. Potential actions include: mass recall of products; issuing public Warning Letters; imposing import alerts and barring the admission into the U.S. of violative API or FDF; seizing violative medicines; seeking court orders suspending distribution of drug products until FDA approves resumption of operations; and pursuing criminal prosecution of individuals and companies when necessary.³³ FDA does not hesitate to exercise these powers, taking action not only when prescription drugs are determined to be defective, but when FDA believes that the system of manufacturing is inadequate to guarantee that all prescription drugs are safe and effective.

GDUFA, originally enacted in 2012 and then reauthorized in 2017, included a \$4 billion commitment from the generic drug industry.³⁴ One primary reason the generic drug industry supported the user fee program for generic drugs was the imbalance between the frequency of inspections for domestic manufacturers and foreign manufacturers, especially those located in China and India. Statistics at the time showed that large generic manufacturers located in the U.S. could expect to be inspected by FDA once every two to three years. In contrast, major suppliers of prescription drugs based in China and India were inspected, on average, less than once every 10 years.

GDUFA has significantly increased and continues to augment the funding of FDA's generic drug review and inspection programs. GDUFA substantially increased FDA's review capacity and the frequency of inspections. FDA hired nearly 1,200 employees to strengthen oversight under GDUFA implementation and 338 additional employees were added as a result of GDUFA II.³⁵

Indeed, GDUFA fees and the foreign drug manufacturer inspections by FDA that the fees enable have dramatically changed where FDA has focused its inspection and enforcement efforts. Until 2012, the majority of FDA Warning Letters relating to manufacturing violations issued to mainstream drug manufacturers were based on inspections at facilities located in the U.S. In 2011, for instance, 45 percent of FDA Warning Letters for drug manufacturing violations were based on inspections of facilities outside of the U.S. More recent data, for 2016, shows 98 percent of FDA Warning

³² 21 CFR §211.198.

³³ FDA Public Databases on Drug Recalls, Warning Letters, and Import Alerts; Ned Sharpless, M.D., "Expanding Criminal Enforcement Operations Globally to Protect Public Health," FDA, October 2019.

³⁴ FDA, Five-Year Financial Plan for the Generic Drug User Fee Amendments, 2018.

³⁵ Kathleen Uhl, Director of Office for Generic Drugs, Presentation: Director's Update, February 2016.

Letters were issued to facilities located outside of the U.S.³⁶ The increase in enforcement actions against drug manufacturing facilities located outside of the U.S. is directly attributable to an increase in the number of FDA inspections. However, it is important to remember that most manufacturers that are inspected are found to be fully compliant with the regulations.³⁷

FDA utilizes a risk-based inspection strategy, established under Title VII of the Food and Drug Administration Safety and Innovation Act (FDASIA), to maintain a robust inspections footprint around the world. FDA has established offices in China and India and uses GDUFA funding to support those offices. FDA's global inspection efforts are prioritized and focused on facilities in a way to prevent, uncover and combat data integrity issues and manufacturing problems. Using a risk-based site selection surveillance inspection model, FDA prioritizes domestic and foreign inspections based on multiple factors carefully selected to appropriately target the agency's resources.

In fiscal year 2017, FDA conducted 935 inspections of generic drug manufacturing facilities in the U.S. and around the world.³⁸ This includes 547 international inspections and 388 domestic inspections. Moreover, the level of inspections increased between fiscal year 2013 and fiscal year 2017 (five years) from a total of 721 inspections. As former FDA Commissioner Scott Gottlieb, M.D., noted at the time, "We expect these trends to continue due to resources from GDUFA II."³⁹

AAM and its members remain committed to ensuring FDA continues to have the resources to perform thorough inspections of facilities that manufacture all medicines approved in the U.S. We are pleased that the number of FDA's foreign inspections continue to rise, in no small part based on funding provided by AAM's member companies through GDUFA and the Biosimilars User Fee Act (BsUFA).

AAM's Blueprint to Strengthen the U.S. Pharmaceutical Supply Chain

As part of the industry's ongoing commitment to patient access, AAM released a six-element framework that lays out concrete actions to ensure that U.S. patients and the U.S. health care system have access to a secure and consistent supply of critical medicines.⁴⁰ AAM's "Blueprint for Enhancing the Security of the U.S. Pharmaceutical Supply Chain" builds upon the existing generic drug supply chain in the U.S., which produces approximately 70 billion doses annually and provides more than 36,000 jobs

³⁶ Independent review of FDA's public database of Warning Letters.

³⁷ FDA, "Facts about the Current Good Manufacturing Practices (CGMPs)," June 2018.

³⁸ FDA, FY2017 Performance Report to Congress for GDUFA, May 2018.

³⁹ Scott Gottlieb, Tweet on FY2013-17 Inspectional Data, January 2019.

⁴⁰ AAM, "A Blueprint for Enhancing the Security of the U.S. Pharmaceutical Supply Chain," April 30, 2020.

in nearly 150 manufacturing facilities across the country. AAM and its members seek to provide solutions that will enable expanded investment in the manufacturing of medicines domestically.⁴¹ Creating the conditions that support and encourage this investment are critical to ensuring the most critical medicines – those most essential to our country’s health and security – are manufactured in the U.S. In order to establish this environment, AAM’s Blueprint recommends the following:

- Identify the list of medicines most critical for U.S.-based manufacturing;
- Provide new grant and tax incentives to secure the U.S. supply chain;
- Supply the Strategic National Stockpile, the U.S. Department of Veterans Affairs, and other agencies with essential medicines on a long-term basis;
- Reduce regulatory inefficiencies to streamline the federal approval for U.S.-based facilities to manufacture medicines; and,
- Promote a global, cooperative approach to diversifying the supply chain.

The Blueprint includes actionable short-term steps to expedite more U.S.-based production of essential medicines, while putting in place a series of incentives to enhance the security of the U.S. pharmaceutical supply chain. Given modern manufacturing facilities can take 5-7 years and cost up to \$1 billion to build, a long-term, consistent commitment from the federal government is critical to building an expanded generic manufacturing base in the U.S.

Importantly, the Blueprint offers a targeted approach to addressing potential vulnerabilities in the U.S. pharmaceutical supply chain, while building on the existing capacity in the U.S. and what is widely recognized as one of the safest drug supply chains in the world. Through its rigorous approval process, manufacturing regulations and continuous inspections of manufacturing facilities, FDA ensures that “medicines at all levels of the supply chain, from active pharmaceutical ingredients (API) to the finished product sold to consumers at the pharmacy counter are safe, effective and high quality.”⁴² This is why every administration of both parties and, including the current Secretary of Health and Human Services Alex Azar, are publicly on record assuring America’s patients that FDA would not approve generics if they were not safe and effective treatments.⁴³

⁴¹ Based on a 2016 survey of AAM’s member companies.

⁴² Statement from FDA Commissioner Scott Gottlieb, M.D., and Director of FDA’s CDER Janet Woodcock, M.D., “FDA’s continuing efforts to maintain its strong oversight of generic drug quality issues domestically and abroad,” February 2019.

⁴³ Alaric DeArment, “FDA commissioner praises generic industry’s efforts on quality, shortages, follow-on biologics in GPhA speech,” Drug Store News, February 2013.

Our Industry's Commitment to Quality and Patient Safety

Patient safety is the number one priority for AAM and its member companies. AAM's members adhere to a code of business ethics and the "Safety of Medicines" is its first principle.⁴⁴ Every AAM member company pledges to "conform to high standards of quality, safety and efficacy as determined by regulatory authorities in each economy in which they operate."⁴⁵ This commitment to quality, safety and efficacy applies regardless of where medicines are manufactured.

Patients should know and be confident in the quality of the generic medicines prescribed and consumed. Generics and biosimilars are just as safe and effective as their brand-name drug counterparts. Independent research consistently demonstrates the clinical equivalence of generic medicines compared to the brand-name drug.⁴⁶

Patients can trust the safety and effectiveness of generic medicines. And it is important that patients take their medicines as prescribed by their physicians. As Secretary Azar has previously stated:

"Every single drug I take is a generic. They are exact copies. They wouldn't get approved by the FDA if they weren't."⁴⁷

While it is not always possible to combat all of the misinformation that exists, we encourage lawmakers to avoid, to the extent possible, repeating and sometimes promoting inaccurate information on quality that can potentially result in placing patients in harm's way by way of promoting non-compliance of their prescribed medication regimen. As FDA has emphasized, not taking one's medicine as prescribed by a doctor or as instructed by a pharmacist, due to unsubstantiated claims on quality, could have the undesired effect of exacerbating a patient's illness or disease, and lead to worse health outcomes.

Moreover, and as described previously, FDA provides regulatory oversight of the manufacturing of generic and biosimilar medicines. Manufacturing facilities located overseas, as well as in the U.S., are routinely inspected by FDA to ensure the medicines are of the highest quality for patients. A standardized, transparent and dynamic system is in place and is working for doctors, pharmacists and patients.

⁴⁴ AAM, Code of Business Ethics, March 2018.

⁴⁵ Ibid.

⁴⁶ FDA, Generic Drugs: Questions & Answers, June 2018.

⁴⁷ Sec. Azar, Interview on Fox & Friends, October 2019.

Quality is Standard

Exacting standards ensure the reliability of the medicines we take. These standards make it possible for us to trust that a pill dispensed from a pharmacy in Oregon in the spring will match, in every way that matters, a pill picked up at a drug store counter the following winter in Miami.

Dr. Jeremy Greene, professor of medicine and the history of medicine at Johns Hopkins University and author of “Generic: The Unbranding of Modern Medicine,” explained in a recent interview with United States Pharmacopeia (USP):

“There’s a mutual interest among manufacturers, whether they are brands or generics, for establishing and disseminating a public standard that helps us determine if a drug is what it says it is.”⁴⁸

The various stakeholders – health care professionals, industry, and government – that keep our drug supply safe agree upon the standards, and USP publishes the standards and the methods that manufacturers and regulators can employ to demonstrate that medicines are what they should be. These standards apply to a drug’s molecular structure, and to the amount of active and inactive ingredients it contains to ensure a drug’s efficacy and safety.

USP strives for comprehensive standards, which is no small task. According to its latest annual report, more than 3,700 reference standards and more than 6,700 documentary standards have been issued.⁴⁹ USP’s collaborative work with FDA to set drug quality standards for nearly 80 years has made drugs marketed in the U.S. the gold standard worldwide for safety and quality.

Transparency Enhances Quality

All of the links along the supply chain have an obligation to be open and transparent about issues related to safety and quality. This is how the system secures the accountability necessary to earn and retain the trust of the medical profession and, ultimately, the patients.

FDA has a robust around-the-clock program for inspecting pharmaceutical manufacturing facilities worldwide. The Office of Regulatory Affairs (ORA) conducts assessments, inspections, research and surveillance of pharmaceutical manufacturing

⁴⁸ Jeremy Greene, “Similarity and difference in the world of drugs,” USP, accessed October 2019.

⁴⁹ USP Annual Report, “USP by the numbers: Fiscal year 2019,” accessed October 2019.

facilities. AAM's member company manufacturing facilities, all over the world, must be ready for FDA inspection whenever they are operating, 365 days a year. Our member companies have established interlocking processes and procedures to ensure the quality and integrity of the medicines manufactured in these facilities.

Generic manufacturers not only readily comply with inspections audits; they also fund this oversight through GDUFA, which supports FDA staffing and best practices in protecting public health and accelerating innovation. These fees total nearly \$500 million annually.⁵⁰ Foreign as well as domestic companies identify and register all facilities involved in the manufacturing of generics and their active ingredients. BsUFA operates on similar principles.

Reports from the public, health care professionals and the industry of potentially defective drug products help FDA identify sites for inspection or investigation. Most companies that are inspected are found to be fully compliant with the regulations.⁵¹ In addition, Post-marketing Surveillance Programs are in place to identify adverse reactions that did not appear during the drug approval process.

Critics may point to product recalls to draw attention to issues in the supply chain, but we believe the rarity of these events demonstrates the system's effectiveness. Indeed, recalls are occasionally required not when a flaw or defect is identified in a medicine, but rather when FDA believes that there is inadequate assurance of adequate quality systems at a plant because manufacturing does not strictly comply with the rigorous regulatory requirements. We would also note that while 90 percent of prescriptions filled in the U.S. are generic medicines, generic drugs account for only 56 percent of any prescription drug recalls.⁵² Brand products on the other hand account for only 10 percent of prescriptions filled, but 44 percent of the total recalls.⁵³

When an issue is discovered, the proper mechanisms are activated, and industry works with FDA to appropriately address it. In the unlikely event that flawed medication does reach a patient, we should take comfort that all medicines can be traced to the manufacturer. The manufacturer of the product immediately notifies stakeholders in the supply chain, and then pharmacists or physicians reach out to notify patients and to determine alternative prescription options. Obviously, these recalls are widely publicized; transparency contributes to quality.

⁵⁰ FDA, "GDUFA II Fee Structure Summary," accessed October 2019.

⁵¹ FDA, "Facts about the Current Good Manufacturing Practices (CGMPs)," June 2018.

⁵² FDA database, "Recalls, Market Withdrawals, and Safety Alerts," 2011-18.

⁵³ Ibid.

The Global Supply Chain is Dynamic

FDA and the industry are constantly adapting to manufacturing innovations. Current Good Manufacturing Practice (cGMP) regulations address methods, facilities and controls used in manufacturing, processing and packaging. The globalization of the supply chain, which is a fact of life for brand, generic and biosimilar drugs, is often mentioned as a matter of concern, but in fact, the record bolsters confidence in the system. While it is true that so-called fake drugs circulate in developing nations through mail-order and online pharmacies, U.S. regulations, guidance and legislation are in place to minimize the possibility that they could reach America's patients.⁵⁴ Further, the only additional method of preventing counterfeit or unapproved medications from reaching the U.S. market would be to rigorously examine and test all incoming parcels and packages that could contain medications – a measure that AAM would support. Only a tiny fraction of incoming parcels and packages are currently examined.

These factors ensure patients can take their medications with confidence. Dr. Michael Kopcha, Director of the Office of Pharmaceutical Quality (OPQ) in FDA's Center for Drug Evaluation and Research (CDER), may have put it best when he said:

“The quality of our drug supply is better than ever before. There is no difference in the quality of drugs based only on where they are made.”⁵⁵

Conclusion

Patients can and should trust in the safety and effectiveness of generic and biosimilar medicines. FDA ensures all pharmaceuticals meet the same high-quality standards regardless of where medicines are manufactured. Globalization of the supply chain – a market reality for brand-name drug companies and generic and biosimilar manufacturers – is often mentioned as a matter of concern, but the record should in fact bolster confidence in the system. The U.S. has one of the safest drug supply chains in the world. And this is the result of the daily commitment to quality from AAM's member companies and FDA oversight. With that said, there are steps that the federal government can take to enhance the U.S.-based production of critical medicines and we look forward to working with the Finance Committee and its members to advance the recommendations outlined in the “Blueprint for Enhancing the Security of the U.S. Pharmaceutical Supply Chain.”

⁵⁴ Fight the Fakes, “US FDA Gives Tips on Spotting Fake Medicines,” June 2014.

⁵⁵ Michael Kopcha, “CDER Conversation: Assuring Drug Quality Around the Globe,” FDA, May 2019.