Substandard Medicines

Pfizer is committed to patient safety and supports policies that ensure consistently high regulatory standards worldwide and effective enforcement, which enable patients to be confident in the quality of the medicines they receive. Substandard medicines are medicines that do not meet appropriate quality requirements and may be ineffective and potentially harmful to patients. A lack of good manufacturing practices, insufficient or inappropriate regulatory standards, and inconsistent enforcement contribute to the growth of substandard medicines. Governments working through international institutions and industry collaborations are increasing oversight and enforcement needed to stem this growing problem adversely affecting patients and global economies.

Background

Substandard medicines are medicines that do not meet appropriate quality standards and/or specifications and may therefore be ineffective and potentially harmful to patients.[1] Substandard medicines may not meet the registered formulation requirements, such as the specified approved amount of active pharmaceutical ingredients (API); may contain ingredients not generally recognized as safe;[2] or may contain impurities in harmful amounts.[3, 4] Furthermore, substandard medicines may result from improper manufacturing, packaging, storage, transportation, or distribution that does not adhere to relevant good manufacturing practices (GMPs).[1, 3, 4, 5] Counterfeit medicines are part of the broader issue of substandard medicines, but the identity and/or source has been intentionally and fraudulently mislabeled.[1, 6] In order to ensure that quality of medicines remains a critical concern, the World Health Organization changed their definition from 'counterfeit medicines', denoting intellectual property infringement alone, to 'substandard and falsified medical products' to enhance health impact concerns.[7]

The manufacture and distribution of substandard medicines is a global issue that threatens patient safety.[1] Substandard medicines can be produced and used domestically or can reach various global markets through trade.[6] Although it is difficult to assess the scope of the issue, no country can be considered immune.[1] In seven studies published in 2015, scientists reported that of 16,800 samples of anti-malarials, anti-tuberculosis medicines, antibiotics, and anti-leishmaniasis drugs tested, an estimated 9 to 41 percent of specimens failed to meet quality standards.[8] Another study of 19 cities in 17 emerging market countries found that domestic pharmaceutical manufacturers in Africa had the highest number of cases of substandard medicines, followed by producers in China and Vietnam.[9] An additional study from 2015 reported on 15,063 sampled drugs and found the proportion that failed quality tests to be 11.5 percent, 10.4 percent, and 2.9 percent for South America, Africa, and Asia, respectively. Of the counterfeit medicines found, the vast majority, 86.4 percent, were in Asia.[10] Cases have also been reported in developed markets.[11, 12]

A lack of quality systems and regulation, inconsistent enforcement, non-GMP-compliant facilities, and opportunities for financial gains may cause substandard medicines to flourish.[3,13] The use of substandard medicines may also lead to the emergence of drug-resistant pathogens and therapeutic failure, thus increasing the loss of medicine efficacy and morbidity and mortality rates.[6,14]

Key Facts and Figures

- Substandard and counterfeit medicines are a global problem but particularly an issue in low-income and lower-middle-income countries with median prevalence of 28.5%.[15]
- In India, a 2015 study found that out of the 205,448 drug samples tested from 36 states and union territories in the prior three years, 9,092 samples were found to be substandard.[16]
- In Africa in 2013, falsified and substandard malaria drugs caused an estimated 122,350 deaths in children.[17]
- In the U.S., negligent production at a Massachusetts compounding pharmacy sickened more than 600 people, killing 44, from September 2012 to January 2013.[18]
- In the U.K. in 2010-11, a study found there were 280 substandard medicines of which 222 were recalled.[19]
- In India in 2011, 12 pregnant women died as a result of contaminated intravenous (IV) fluid.[20]
- In a 2010 study of 1,940 essential medicines in 19 emerging market cities, 14 percent of anti-malarial drug samples, 10 percent of antibiotic drug samples, and 7 percent of anti-mycobacterial samples were deemed to be substandard.[21] In another study, in six African countries, 35 percent of anti-malarial drugs tested were considered substandard.[22]

- In Pakistan, an investigation of a malaria outbreak in which one displaced persons' camp had almost 48 times the disease incidence of nearby areas showed that the use of a substandard medicine was the cause of what appeared as treatment resistance, which led to the epidemic.[23]
- Evidence suggests that failure to adhere to quality standards and deception in the manufacturing process led to the substitution of other pharmaceutical ingredients with diethylene glycol (DEG), an extremely toxic chemical that has been found as the cause of at least 12 mass poisonings in the last 70 years.[24]
- The use of substandard drugs raises overall health systems costs, and it is estimated that counterfeit medicines result in $75 billion in illegal revenue to criminals, while also causing prolonged, severe illness and death worldwide.[25]

Pfizer's Position

Pfizer supports globally consistent standards and international efforts to harmonize regulatory standards with those set by leading regulatory bodies. In countries where substandard medicine prevalence is high, governments should also consider improving policies to increase monitoring, encourage consumer and health care provider awareness, and ensure that physicians and patients are able to retain the right to prescribe and purchase medicines produced pursuant to GMP standards.

While many countries already have high regulatory standards, other countries should consider improvements to ensure consistently high-quality approved medicines. Government actions that strengthen regulatory enforcement capabilities include:

- Increased oversight and targeted inspections of facilities with a higher likelihood of infringement.
- Enforcement of GMP, with the same standards for local and international manufacturers.
- Effective enforcement action against manufacturers found to have supplied or distributed substandard medicines.
- Global cooperation between regulatory authorities to ensure product integrity throughout the drug supply chain.
- A strong pharmacovigilance system that ensures that adverse events and other potential evidence of substandard medicines can be efficiently reported and traced back to the original supplier and/or manufacturer.
- Regular random testing as well as targeted testing of products more likely to be substandard.

How Patients, Health Care Professionals, and Health Systems Benefit

Only 32 percent of prescribers and pharmacists in Turkey feel confident that generic and branded drugs do not differ,[26] and surveys of patients in South Africa found patients to be suspicious of generic medicines, considering them inferior and of poor quality.[27] Medicines that meet their registered quality standards help ensure patient and health care professional confidence, decrease morbidity and mortality rates, prevent downstream consequences of delaying effective treatment (e.g., drug resistant pathogens, exacerbated/additional medical complications, etc.), and avoid additional burden on the health care system.

What It Means for Pfizer

In areas where drug quality is considered poor, Pfizer and other compliant manufacturers face decreasing consumer confidence in medicines. Regulatory authority enforcement and consistent global regulatory standards help retain the public trust in our medicines' quality so patients use them, knowing that they will work as intended.

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