

## 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 regulatory enforcement contribute to the growth of substandard medicines.**

### 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.<sup>1</sup> 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;<sup>2</sup> or may contain impurities in harmful amounts.<sup>3, 4</sup> Furthermore, substandard medicines may result from improper manufacturing, packaging, storage, transportation, or distribution that does not adhere to relevant good manufacturing practices (GMPs).<sup>1, 3, 4, 5</sup> Counterfeit medicines are part of the broader issue of substandard medicines, but the identity and/or source has been intentionally and fraudulently mislabeled.<sup>1, 6</sup>

The manufacture and distribution of substandard medicines is a global concern that threatens patient safety.<sup>1</sup> Substandard medicines can be produced and used domestically or can reach various global markets through trade.<sup>6</sup> Although it is difficult to assess the scope of the issue, no country can be considered immune.<sup>1</sup> 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.<sup>7</sup> 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.<sup>8</sup> Cases have also been reported in developed markets.<sup>9, 10</sup>

A lack of quality systems and regulation, inconsistent enforcement, non-GMP-compliant facilities, and opportunities for financial gains may cause substandard medicines to flourish.<sup>3, 11</sup> 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.<sup>6, 12</sup>

### Key Facts and Figures

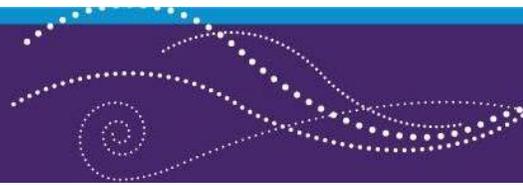
- In India in 2015, a study found that out of the 2,05,448 drug samples tested from 36 states and union territories in the prior three years, 9,092 samples were found to be substandard.<sup>13</sup>
- In Africa in 2013, falsified and substandard malaria drugs caused an estimated 122,350 deaths in children.<sup>14</sup>
- In the U.S. in 2013, negligent production at a Massachusetts compounding pharmacy sickened more than 600 people, killing 44, from September 2012 to January 2013.<sup>15</sup>
- In the UK in 2010-11, a study found there were 280 substandard medicines of which 222 were recalled.<sup>16</sup>
- In India in 2011, 12 pregnant women died as a result of contaminated intravenous (IV) fluid.<sup>17</sup>
- In a 2010 study of 1,940 essential medicines in 19 emerging market cities, 14 percent of antimalarial drug samples, 10 percent of antibiotic drug samples, and 7 percent of antimycobacterial samples were deemed to be substandard.<sup>18</sup> In another study, in six African countries, 35 percent of antimalarial drugs tested were considered substandard.<sup>19</sup>
- In the U.S. in 2007–8, 149 deaths prompted a recall of heparin, which contained contaminated API from China.<sup>10, 20</sup>

### Pfizer's Position

Pfizer supports globally consistent regulatory 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 implementing policies to increase monitoring, encourage consumer and health care provider awareness, and ensure that physicians and patients retain the right to prescribe and purchase medicines produced pursuant to GMP standards.

While many countries already have high regulatory standards, other countries may require improvements to ensure a consistently high quality of approved medicines. An emerging trend among national regulatory authorities developing





abbreviated regulatory pathways for registration of Similar Biotherapeutic Products may result in substandard or “non-comparable biotherapeutics” entering the market. A desire to support local manufacturers can contribute to this, as quality standards may be lowered to local market dynamics, which may result in a lower standard internationally.

Government strategies that strengthen drug regulatory enforcement capabilities help protect patient safety including:

- Increased oversight and targeted inspections of facilities with a higher likelihood of infringement.
- Enforcement of GMP should be undertaken on objective grounds, 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 and Health Care Professionals Benefit

Substandard medicines threaten patient safety and well-being. A robust regulatory regime that includes effective regulatory enforcement will help ensure that patients receive consistently safe, effective, and authentic medications.

### How the Health Care System Benefits

Substandard drugs undermine trust in medications and in the health care system in general. Medicines that meet their registered quality standards help ensure patient confidence, decrease morbidity and mortality rates, prevent downstream consequences of delayed 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, will help retain consumer trust in our medicines quality.

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