1. **what is counterfeit drug?**

the term ‘counterfeit drugs’ has, however, been used as a catch-all term. as such, the who describes certain medical products that do not deliberately misrepresent their identity as either ‘substandard’ (“authorized medical products that fail to meet either their quality standards or specifications, or both”) or ‘unregistered/unlicensed’ (“medical products that have not undergone evaluation and/or approval by the national or regional regulatory authority (nrra) for the market in which they are marketed/distributed or used, subject to permitted conditions under national or regional regulation and legislation”). Counterfeit drugs are the ones which:

• contain the correct active agent, however, either at a dosage that is too high or too low,

• have manipulated expiration dates,

• possess no active agents,

• contain an active agent other than the one specified, or

• are wrapped in forged packaging, blisters and/or contain falsified patient information.

1. **how does counterfeit drug enter to the supply chain?**

**manufacturers**  
the first link in the drug supply chain is the manufacturer. here is the most common place for a counterfeit drug or ingredient to enter circulation, as there are many ways for drugs to be counterfeit. the ingredients could be wrong, in the wrong dosage, or just completely missing. sometimes the wrong drug ends up in bottles, and sometimes placebos are sold instead of actual medicines.

a counterfeit manufacturer can be a small lab or a huge factory operation. often, they produce and package fake medicines to look like real ones, and to most people they are indistinguishable. quality control is incredibly important here, as it protects patients later down the line. while legitimate manufacturers will have their own qa divisions, counterfeit operations will lie about their credentials to distributors.

**distributors**  
now, it doesn’t help the counterfeiters if they make the medicine and can’t sell it. in many countries, the manufacturer does not sell to anyone but a distribution company (and a few other entities, such as government programs and labs), so distribution networks need to be set up to ensure that the fake goods take the place of real ones.

sometimes, these operations are incredibly sophisticated, using tracking technologies to infiltrate existing legitimate networks in places where security isn’t as tight or barcode scams that take advantage of delays in mass scans. sometimes, these operations are incredibly simple, on the level of just shipping the drugs to a pharmacy and getting paid for them, regardless of what the product is or where it came from. there are many ways that drugs can enter between the manufacturer and the distributor, or the distributor and the pharmacy.

**pharmacies**  
the pharmacy is the crux of the problem. chances are if you go to a local pharmacy or a large retail chain and buy name brand (or even store brand) drugs, you’ll be getting the real deal. however, patients are increasingly turning to online pharmacies to buy medicine, as the prices can be vastly lower than the list price. often, the drugs bought from online pharmacies will come from different countries, with promises that the label might look strange, but the medicine is the same. and sometimes it is! but most of the time it isn’t.

1. **statistics:**

* one in 10 drugs sold in the developing world are thought to be fake.
* up to 169,000 children may be dying every year from pneumonia because of fake drugs.
* an estimated 116,000 people die from malaria every year because of substandard falsified medicines.
* they cost health systems $38.5m a year.
* 42 per cent of counterfeit medications are found in africa.
* in 2017 25m illicit medicines worth $51m were seized worldwide.

<https://www.telegraph.co.uk/news/0/global-crackdown-seizes-10m-counterfeit-medicines/>

scale of the problem

it is estimated that 1% of medicines sold in industrialised nations like the uk are counterfeit, compared to 10%-30% in developing countries.2

between 2004 and june 2016, counterfeit versions of 26 pfizer medicines were detected in the legitimate supply chain of at least 60 countries, including the us, canada and the uk.3

however, to put this into perspective, in the uk, over 750 million prescriptions are written each year but only a small number of counterfeit medicines have reached the supply chain since august 2004.

<https://www.pfizer.co.uk/counterfeit-medicines>

illegal trade takes place around the world. the world health organization (who) estimates that counterfeit medicines worth 73 billion euros are traded annually. dubious online pharmacies that conceal their true location deliver globally – reaching countries such as germany, uk, italy, spain etc. or the usa. supplies from illegal internet pharmacies – those without appropriate certification – are up to 50 percent counterfeits.  
  
the extent of the problem varies greatly between regions and individual countries, and also depends largely on temporary supplies. the problem is highly dependent on how tight legal controls are. the who estimates that in some areas in africa, asia, and south america, more than 30 percent of medicines in circulation are fakes. in some countries of eastern europe, the proportion of fake medicines can be more than 20 percent. in europe and in the usa, as well as in other developed countries, less than one percent of the medications sold are counterfeits.

<https://www.bayer.com/en/background-information-on-counterfeit-drugs.aspx>