

Guidance for pharmacists: how to detect and report counterfeit medicines

This article discusses the growing problem of counterfeit medicines and the actions being taken in Britain and internationally to stop their distribution. It explains the steps pharmacists should take to establish the integrity of product sources, to detect counterfeit products that have penetrated the pharmaceutical supply chain and to report any suspected defective products

Counterfeit medicines are those medicines that are described as “deliberately and fraudulently mislabelled with respect to identity and/or source. Counterfeiting can apply to both branded and generic products. Counterfeit products may include products with the correct ingredients or with the wrong ingredients, without active ingredients, with insufficient active ingredients, or with fake packaging” (World Health Organization definition).

Counterfeit medicines can harm patients in two ways: individually and at the societal level. Products that lack active ingredients will be ineffective and taking adulterated substances can cause harm — from unexpected adverse reactions to toxicity and/or anaphylaxis. Counterfeit medicines can also be life threatening and have caused deaths in Africa and Asia. For example, inert antibiotics will not cure an infectious disease, nor will “vaccination” with a counterfeit vaccine protect from illness. Improper treatments risk public health, either through increased disease transmission or through the development of antibiotic resistance.

In addition, the credibility of a national health care system can be harmed if counterfeit medicines get into the legitimate supply chain, which may lead to patients becoming irrationally fearful of perfectly safe treatments.

UK situation

Over 650 million prescriptions are written annually in the UK. Only a small number of counterfeit medicines have reached the legitimate pharmaceutical supply chain since August 2004. This guidance needs to be viewed in that context. The Government, through the Medicines and Healthcare products Regulatory Agency (MHRA), takes each case seriously, investigating all allegations of counterfeit medicines in the UK, the vast majority of which are not associated with the legitimate supply chain. The MHRA will take

regulatory action where breaches are identified — which may take the form of revoking licences or the instigation of criminal proceedings.

Causes of counterfeiting

The following are among the main factors in the increasing incidence of counterfeiting:

- Technology to produce everything from labels to active pharmaceutical ingredients is now widely available
- Blockbuster “lifestyle” medicines have created a demand for illicit use
- Products can be counterfeited in cottage industries using unemployed skilled labour
- Globalisation of markets has made distribution of counterfeit products easier
- The internet provides counterfeiters with easy access to consumers and markets
- There has been an increase in self-prescribing culture
- Weak regulations, in terms of enforcement and penalties, that govern the medicine distribution systems in many countries do not provide a strong enough deterrent for counterfeiters
- Organised crime has become increasingly involved in counterfeiting as it becomes more profitable and has lower risks than other drug crime

Consequences of counterfeiting

Counterfeiting has significant social and economic consequences. Most importantly, patients may not receive safe or effective products and consequently may be at significant risk.

On the economic side, legitimate manufacturers of pharmaceutical products suffer from patent and copyright infringement as counterfeiting, in reality, “hijacks” the brand. Government is affected through loss of taxation revenue and undermining of the national health care system.

Considerable resources are required to combat the practice of counterfeiting. In addition, health plans for the NHS are being defrauded and compromised.

Defective Medicines Report Centre

The MHRA has established the Defective Medicines Report Centre (DMRC) to receive and assess complaints and reports of actual or suspected defects in medicines for human use. It also co-ordinates any necessary

actions resulting from such allegations, including those involving counterfeit medicines.

The centre provides an assessment and communication system operating between suppliers (manufacturers and distributors), users of medicines and other regulatory authorities.

Manufacturers and importers must report any quality defect in their medicine. Others are also encouraged to do this. Under new guidelines, distributors must also report any such defects to the MHRA.

Where a defect is considered a risk to public health, the licence holder withdraws the affected medicine from use and the MHRA issues a “drug alert” letter. Alerts are classified from 1 to 4 depending on the risk presented to the public health by the defective product. Class 1 is the most critical and would include incidents, for example, of serious mislabelling, microbial contamination or incorrect ingredients which present an immediate threat to patients. This would require an immediate recall whereas a Class 4 alert, the least critical, would advise “caution in use”.

The DMRC is also part of the European Rapid Alert System which disseminates information on medicine quality issues within EU member states.

Reporting a suspected defect

Suspected defects can be reported by using an online form available from the MHRA website (www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&nodeId=550) or by telephoning the MHRA (tel 020 7084 2574).

World Health Organization

Counterfeit medicines are currently estimated to make up 6–10 per cent of the world wide market in medicines with annual sales in the region of \$35bn. The WHO has developed a web-based system to track counterfeit medicines which enables countries rapidly to

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Patient information leaflet

A patient information leaflet on counterfeit medicines is being prepared and will be made available to download from the websites of the Royal Pharmaceutical Society and the Medicines and Healthcare products Regulatory Agency.

transmit information regarding sales of fake medicines (website 218.111.249.28/ras/default.asp). The reporting form asks users to enter the country where the medicine was identified, as well as how the medicine was encountered — whether at a hospital or pharmacy or via other means. The form also requires other information about the medicine, such as its name, classification, packaging information and dosage form.

The Rapid Alert System (RAS) aims to:

- Minimise the adverse impacts of counterfeit medicines
- Monitor actions taken by countries
- Rapidly distribute alert notifications about counterfeiting incidents
- Promote intensified surveillance of counterfeit drugs in high-risk areas such as markets, rural areas and unlicensed outlets
- Stimulate swift follow-up action on reported cases
- Encourage public warnings and increased awareness about fake medicines

Action to be taken

Pharmacists worried about a counterfeit medicine need to do certain things to minimise or prevent harm to patients:

- Submit a report to the MHRA, which will conduct definitive tests for counterfeits as quickly as possible
- Await MHRA instructions — conducting unilateral action may prove ill-advised,

unnecessary, confusing and be counter-productive

- If a drug alert and recall notice is received, be prepared to:
 - Check the current stock held in the pharmacy and return any potential counterfeit medicines in line with guidance issued
 - If possible, interrogate the PMR systems to reveal which individual patients are taking that particular medicine and when it was dispensed
 - Contact those patients who have been supplied with that particular medicine within the suggested period to check on the medicine

If a patient is concerned that he or she has a counterfeit medicine then the pharmacist should make a record of this and inform the MHRA immediately.

Dispensing doctors' practices are covered in the same alert system as pharmacies.

Evaluating sources and products

The Panel below sets out tips to help pharmacists evaluate product sources and detect counterfeit medicines. Suspicious approaches from potential suppliers and all information on counterfeits should be reported to the MHRA (tel 020 7084 2574).

Pharmacists should always purchase medicines from reliable, trusted wholesalers and suppliers. Due diligence checks should be conducted regularly and systems reviewed.

Measures to stop trade in counterfeits

National and international bodies are working together to stop the business of counterfeit medicines.

Royal Pharmaceutical Society The Society's Practice Committee recognised the need to provide information about counterfeit medicines to both pharmacists and patients. Although the number of counterfeit medicines entering the legitimate supply chain in the UK is extremely small, pharmacists are closely involved in the repercussions of counterfeiting.

In collaboration with the MHRA, the Society's inspectors are involved in a UK-wide medicine surveillance scheme. Inspectors pick targeted medicines from the shelves of community pharmacies and send them to the MHRA for testing and analysis.

The Society is considering the implications of developing an accredited internet pharmacy logo. More information will be provided to both pharmacists and the public in due course.

MHRA Although the UK legitimate pharmaceutical supply chain is tightly regulated, and has one of the best international records for being difficult to breach, it is recognised that no supply chain is impenetrable — whatever the regulatory and surveillance safeguards that may be in place. The MHRA operates a comprehensive anticounterfeiting strategy, working with partners and stakeholders to ensure that the current safeguards work effectively and that vigilance against counterfeit medicines entering the legitimate supply chain is maintained. The key elements of this strategy include:

- The operation of Europe's largest medicines surveillance scheme in conjunction with the Society to spot check medicines on the UK market and then undertake laboratory analysis to test for authentication
- Increased checks by the MHRA inspectors for counterfeits when inspecting pharmaceutical manufacturers and distributors
- Collaborative international enforcement action and a training and education/awareness raising programme among law enforcement agencies and pharmaceutical stakeholders (conducted domestically, at European level and internationally between respective national medicines regulators)

This is a long-term strategy, which is backed by investment and a significant commitment of resources to minimise the risk of counterfeit medicines reaching patients.

International The European Commission, EU Heads of Medicines Agencies, Council of Europe and WHO are undertaking development of anti-counterfeit strategies. The UK, through the MHRA, is closely involved in all these initiatives.

Evaluating product sources and detecting counterfeit medicines

- Establish the integrity of the source before the medicine is needed. Where possible, establish a list of approved suppliers
- Require that any alternative source of supply provides the following as a minimum:
 - A pedigree back to the previous source
 - Certification that it is not a diverted product
 - Certification that any actions by the alternative source will not alter any original manufacture warranties or guarantees
 - Certification that the product has been stored and handled consistent with product labelling requirements
- If a product is being offered at an unusually cheap price, treat with extra caution
- Consider developing a list of key pharmaceutical products that will not be purchased from sources other than the manufacturer or authorised distribution channel
- Look for signs of removed or switched product labels. One common practice by counterfeiters is to remove the original label and replace it with a counterfeit label. To do this, they use lighter fluid, acetone or some other solvent which may leave a tacky residue on the container. Also, the label may be faded or discoloured along the edges due to the solvent
- Look for an altered expiry date. Counterfeiters commonly purchase "short-dated" products and then alter the labels
- Look for subtle changes in the product's package (compare with previously purchased products), notwithstanding legitimate parallel imported products. Examine the package for differences in paper texture, size and thickness of the labels, also the gloss or finish on the paper. Look for differences in fonts and font sizes, print colour or raised print. Examine all printing on flaps and surfaces of the box in comparison with previously purchased products where possible. Look for overt security features such as holograms or colour shifting inks. Finally, look for breaks or tears in the sealing tape and seals
- Look for variations in the size of the container (compare with previously purchased products), notwithstanding legitimate parallel imported products. Look for differences in container length, diameters and shapes. Examine for variations in diameters of bottle openings or lids. Examine for variations in the thickness of glass or plastic containers and for variations in container colour tints.
- Listen to patients. Most counterfeit medicines are first detected by patients
- Compare the physical characteristics of the product. Look at colour, tablet or capsule markings, shape and thickness of the medicine. You can also weigh the product to see if there are wide variations