

# Search and Stop

## Guidelines to tackle the online trade of falsified medicinal products



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# The growing online trade of falsified medicinal products

It is estimated that 10 per cent of the medicines supplied globally are falsified and that 1 million people die every year after consuming falsified medicinal products. Modern information and communications technologies play a significant facilitating role in the trade and the Internet now acts as the main avenue through which this criminal market is expanding.

In Europe, the online market in falsified medicinal products is expanding at a rapid rate. In 2013, IRACM reported that the trade had increased 90 per cent since 2005, with an estimated turnover of \$200 billion. Therefore, the trade poses great dangers to public health, whilst reaping huge monetary rewards for criminal actors situated around the globe.

Tackling the online trade of falsified medicinal products is a challenge for law enforcement agencies (LEAs) for a number of reasons. The following guidelines, aimed at LEAs, explore these challenges and outline a series of points and techniques to consider when investigating the online trade of falsified medicines.

The guidelines are based on the results of the European project [www.fakecare.com](http://www.fakecare.com), which aims at producing and disseminating knowledge, counterstrategies and tools across the EU to solve and mitigate the online trade of falsified medicinal products.

Each section of the guidelines will include the following:

- **Knowledge from research:** direct knowledge on the topic that has resulted from the project's research activities.
- **Knowledge-based tips:** helpful advice and investigative tips drawn from the project's results aimed at improving detection and investigation of the online trade of falsified medicinal products.

The guidelines also include illustrative boxes with in-depth explanations of key concepts and tools.

The overall aim is to help us to work together in order to protect the public and prevent this growing and ultimately life threatening trade.





## Operation Pangea

Operation Pangea is an international week of action, which aims to tackle the online and offline sale of counterfeit and illicit medicines and highlight the dangers of buying medicines online. Coordinated by INTERPOL, the annual operation brings together customs, health regulators, national police and the private sector from countries around the world. Activities target the three principal components used by illegal websites to conduct their trade – the Internet Service Provider (ISP), payment systems and the delivery service. The operation has gained significant momentum since its launch in 2008:

Operation	Participating countries	Seizures and websites shut down
Pangea VIII (2015)	115	20.7 million medicines seized (estimated value: USD 81 million). More than 2,410 websites taken offline
Pangea VII (2014)	113	9.6 million medicines seized (estimated value: USD 32 million). More than 11,800 websites shut down
Pangea VI (2013)	99	10.1 million medicines seized (estimated value: USD 36 million). More than 13,700 websites shut down
Pangea V (2012)	100	3.75 million medicines seized (estimated value: USD 10.5 million). More than 18,000 websites shut down
Pangea IV (2011)	81	2.4 million medicines seized (estimated value: USD 6.3 million). Almost 13,500 websites shut down
Pangea III (2010)	44	More than 2 million medicines seized (estimated value: USD 6.77 million). 297 websites taken down
Pangea II (2009)	25	Identification of more than 1,200 websites engaged in illegal activity (153 of them shut down)
Pangea I (2008)	10	Several commercial websites taken down. Thousands of medicines seized or identified and withdrawn from circulation

Source: INTERPOL

For further information, please visit: [www.interpol.int](http://www.interpol.int)  
(Home > Crime areas > Pharmaceutical crime > Operations)

## The Project

The European project [www.fakecare.com](http://www.fakecare.com) (hereinafter referred to as “Fakecare”) aims at developing expertise against the online trade of falsified medicinal products by producing and disseminating knowledge, counterstrategies and tools across the EU. The research activities were conducted in the following EU countries: Bulgaria, France, Germany, Italy, Spain, the Netherlands and the United Kingdom.

In order to develop in-depth knowledge on the patterns of the online trade of falsified medicinal products (both the supply-side and the demand-side) traditional and innovative methods have been used, such as:

**Web survey:** an extended web survey was conducted to profile online pharmacies’ customers.

**Virtual ethnography:** researchers interacted in online communities and environments (including social networking sites such as Facebook), taking part in discussions about the online trade of medicines.

**Honey-pot websites:** fake pharmacies were created to attract consumers, automatically monitor their behavior, and acquire further data in order to improve knowledge on the online trade of falsified medicines.

**Legal framework comparison:** an overview of the European legislation regarding the online trade of medicines was carried out in order to highlight vulnerabilities that can be exploited by illegal entrepreneurs involved in the illegal online trade of medicinal products.

**Script analysis of judicial and investigative cases:** a crime scripting approach (e.g. breaking up the crime-commission process into sequential phases) was used to analyse judicial and investigative cases in order to further knowledge of the criminal actors and organisations involved in the trade and to identify potential points of intervention.

**Web content analysis:** a quantitative descriptive analysis was conducted on the content of a number of legal and illegal online pharmacies in order to outline some of the key characteristics that can be used to distinguish between legal online pharmacies and illegal online pharmacies.

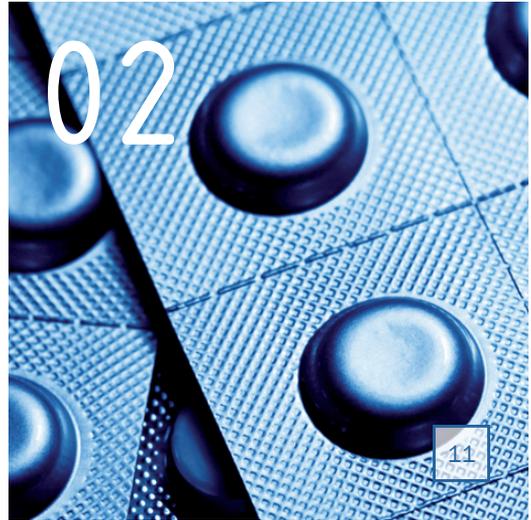
**Interviews with law enforcement agencies, regulatory agencies and private stakeholders:** a number of interviews across Europe were conducted in order to gain firsthand knowledge from national and international regulatory and law enforcement agencies and investigators in the field who are already working to tackle the trade, and from private stakeholders and their in-house teams who were consulted and interviewed about the threat to business the trade poses.

The project is coordinated by eCrime, University of Trento and carried out in partnership with Teesside University, Italian Medicines Agency (AIFA), Centre for Research and Studies on Security and Crime (RiSCC), INTERPOL’s Medical Product Counterfeiting and Pharmaceutical Crime (MPCPC) Sub-Directorate, LegitScript, and the International Institute of Research Against Counterfeit Medicines (IRACM).

For further information, please visit [www.fakecare.com](http://www.fakecare.com).



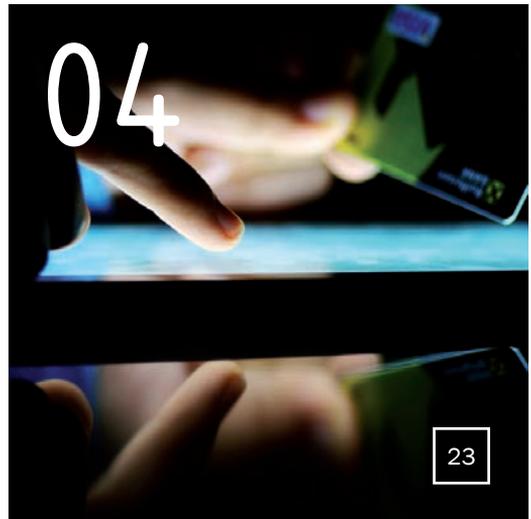
Identifying the most falsified medicinal products



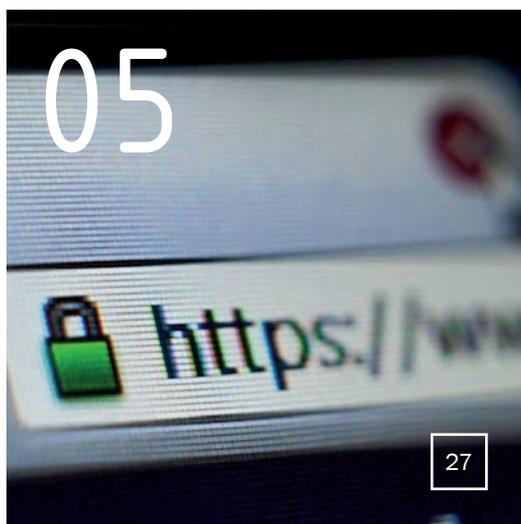
Challenges associated with combating the online trade of falsified medicinal products



Targeting the most popular sites and tactics used to advertise and market falsified medicinal products



Targeting the Internet infrastructure used by suppliers of falsified medicinal products



Staying one step ahead:  
being aware of common  
detection avoidance tactics



How to get informed

## Abbreviations and clarifications



**OTC:** over-the-counter medicine  
**POM:** prescription-only medicine  
**OP:** online pharmacy  
**LEA:** law enforcement agency

*In these guidelines the technical term **medicinal products** and common terms **medicines** and **pharmaceuticals** are used interchangeably.*

## Publication info



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# Identifying the most falsified medicinal products

## Knowledge from research

Research undertaken as part of project Fakecare has shown that depending on the profile of the target market, the most popular falsified products may vary. However, it is possible to categorise the most common falsified medicines being supplied online to European consumers.

For example, research has found that in most European states there is a larger illicit market in so-called *lifestyle medicines*, which are medicines consumed through personal choice and often for cosmetic reasons including hair loss, accelerating weight loss and sexual dysfunction. There is also, however, a growing market in falsified *lifesaving medicines* used to treat serious illnesses including cancer and HIV. Overall, the project has found that the principal categories of medicine being falsified and sold via illicit suppliers online in Europe are:

Medicines to treat erectile dysfunction	Anabolic steroids, both injectable and tablets
Weight loss medicines/appetite suppressants	Hair loss medicines
Sedatives (including Benzodiazepines and Non-Benzodiazepines)	Opioid Analgesics
Antibiotics	Fertility medicines
Antidepressants	Stimulants
Medicines for cancer, HIV	Medicines for diabetes, arthritis and Hepatitis

The list mainly includes prescription only medicines (POMs). However, in some cases over the counter medicines (OTCs) are also falsified. Various categories of falsified medicines can be supplied by the same criminal actors and organisations. For example, the virtual ethnography conducted as part of project Fakecare highlighted that criminal organisations can be involved in selling a wide variety of “hot medicines” via a number of online sites simultaneously.



## Falsified medicinal products

### What are falsified medicinal products?

Several terms are used to identify pharmaceuticals that are not genuine, such as “counterfeit”, “fake”, “false”, “falsified”, “spurious”, etc. In these guidelines, we adopt the definition given by Article 1 of the Directive 2011/62/EU, according to which a falsified medicinal product is “any medicinal product with a false representation of: (a) its identity, including its packaging and labelling, its name or its composition as regards any of the ingredients including excipients and the strength of those ingredients; (b) its source, including its manufacturer, its country of manufacturing, its country of origin or its marketing authorisation holder; or (c) its history, including the records and documents relating to the distribution channels used”. Falsified medical products must be distinguished from other illegal medicinal products and the products infringing intellectual property rights. Indeed, according to the Directive, medicinal products with unintentional quality defects resulting from manufacturing or distribution errors should not be confused with falsified medicinal products.

### Why are falsified medicinal products dangerous?

Falsified medicinal products are dangerous because they are usually lacking ingredients or contain sub-standard or falsified ingredients. Those products could also contain ingredients, including active substances, in the wrong dosage. The number of these products detected in the European Union is increasing and they also enter the legal supply chain. This represents an extreme threat to health and a lack of trust on behalf of the patient. This danger is also recognised by the World Health Organisation (WHO).



## Fakecare Hot Medicines Tool

### How it works

Fakecare Hot Medicines Tool is an user friendly application designed to help law enforcement agencies estimate how high the risk is of a medicinal product being falsified. More specifically, it uses a set of simple questions on product features to assess a product’s falsification risk.

### What is the risk index

The risk index is a multi-weighted methodology of risk assessment based on Fakecare project results and experts’ assessments. Collected from operators working on the frontline against falsified medicinal products, coefficients of the risk index have been developed as an immediate way to detect risk and risk drivers. Modular by design, it is dynamic, updatable and adaptable to other systems. Results are displayed within a 5 risk category scale: low risk (green), mid-low risk (yellow), mid-risk (orange), high risk (light red), extreme risk (red).

For further information, please contact [info@fakecare.com](mailto:info@fakecare.com).

Research results have shown that falsified medicinal products could present some risk indicators. For instance, they may smell and/or taste different when compared to legal products, they may have a different appearance (i.e., colour, texture, shape, packaging), or they may contain an information leaflet in a language different to that of the customer's language. However, criminals' ability to falsify medicinal products is increasing day by day, and it is becoming more and more difficult to distinguish between a legal/genuine product and a falsified product.

In this context, project Fakecare has developed a tool which enables law enforcement and other relevant agencies to determine the risk that a given medicine may be falsified and traded online. The tool outlines what we have called "hot medicines" and it can be used by LEAs to gather intelligence in the fight against the online trade of falsified medicinal products.

## Knowledge-based tips

-  Using Fakecare' list of "hot medicines" above as a starting point, gather intelligence to build an accurate picture of the most common falsified medicines targeting consumers in your country.
-  Use the Fakecare hot medicines tool to gather information regarding the risk that a given medicine may be falsified and traded online. Investigations can subsequently identify common patterns and look for criminal networks forming that are supplying falsified medicines.
-  Obtain up-to-date knowledge on the legal enforcement process and avenues of prosecution available in your country, which can differ according to the type of falsified medicinal product being sold.

02



# Challenges associated with combating the online trade of falsified medicinal products

## Knowledge from research

The research undertaken for project Fakecare has found that combating the online trade of falsified medicines is a difficult job for LEAs for several reasons, among which:

**Lack of resources:** the sheer volume of falsified medicines reaching European countries is leaving national law enforcement and regulatory authorities unable to measure the real extent of the trade and bring perpetrators to justice due to a lack of resources and personnel.

**The online dimension:** the Internet has simplified the process of marketing and selling falsified medicinal products and offered opportunities for those involved in the trade of falsified medicines to widen their scope and customer base. This includes an increased ability for globally dispersed criminal entrepreneurs to make connections in relative anonymity, while it can decrease LEA's capacity to track and trace their activities.

**A transnational market:** the online (and offline) trade of falsified medicinal products is a transnational market, sometimes causing problems of jurisdiction and delays in investigations and prosecutions.

**Legal framework:** until recently, laws on the online trade of medicines in the EU were extremely diverse, which has caused severe difficulties for investigations and prosecutions. Some differences will persist even after the transposition of the Directive 62/2011/EU. Legislative asymmetries create gaps and loopholes that criminals are able to exploit, particularly leveraging on the lack of knowledge on this topic.

Faced with these challenges, it is more important than ever for LEAs across Europe to be aware of and informed about the online trade of falsified medicines and to share responsibility and best practice across borders and across government and industry stakeholders.



## The falsified medicines European Directive

### Directive 2011/62/EU

Currently EU Member States are changing their legal provisions according to the (EU) Directive 62/2011 in an attempt to harmonise the differences among Member States regarding the regulation of sales at a distance of medicinal products. For example, some Member States where online pharmacies were completely illegal, have now to allow the online sales of over-the-counter medicines. Nevertheless, even after the transposition of the Directive, some differences among Member States regulation will persist (e.g. the legal online trade of prescription-only medicines will remain in a few countries only).

### Information on national legislations

According to the Directive 2011/62/EU, each Member State will set up a website providing information on the national legislation applicable to the online trade in medicines, including information on the differences between Member States regarding classification of medicinal products and the conditions for their supply.



## IMPACT

Responding to the growing public health crisis of counterfeit drugs, the World Health Organization launched the International Medical Products Anti-Counterfeiting Taskforce (IMPACT) in February 2006. At its core, IMPACT aims to build coordinated networks across and between countries in order to halt the production, trading and selling of fake medicines around the globe. IMPACT is a partnership comprised of all the major anti-counterfeiting players, including: international organisations, non-governmental organisations, enforcement agencies, pharmaceutical manufacturers associations and drug and regulatory authorities.

Source: WHO

For further information, please visit: [www.who.int](http://www.who.int)  
(Home > Medicines > Services > Counterfeit)

## Knowledge-based tips

-  Ensure your knowledge is up-to-date with regards to evolving and changing legal and regulatory responses at national and international levels. For further information, you can contact your national authority (links available at the end of these guidelines).
-  Build national and international networks and partnership in order to share responsibility and knowledge in the EU and across the globe. When needed, contact international and European coordination institutions such as INTERPOL, IMPACT, Europol and Eurojust.
-  Build partnerships with the pharmaceutical industry, healthcare providers, healthcare professionals and individual pharmacists, licensed packaging companies, importers, wholesalers and retailers, IT companies, and consumer organisations, to track any suspicious cases and share intelligence.



### INTERPOL - MPCPC

At INTERPOL, the Medicinal Product Counterfeiting and Pharmaceutical Crime Sub-Directorate addresses the problem of falsified medicinal products in three main ways:

- Coordinating operations in the field to disrupt transnational criminal networks.
- Delivering training in order to build the skills and knowledge of all those agencies involved in the fight against pharmaceutical crime.
- Building partnerships across a variety of sectors.

Source: INTERPOL

For further information, please visit: [www.interpol.int](http://www.interpol.int)  
(Home > Crime areas > Pharmaceutical crime)

03



# Targeting the most popular sites and tactics used to advertise and market falsified medicinal products

## Knowledge from research

Project Fakecare has identified a number of online (and offline) sites and tactics used by criminals to market and advertise falsified medicinal products. These sites act as initial points of contact with customers who are at risk of buying and consuming falsified medicines. Targeting the most popular sites and tactics is essential for prevention and criminal investigation relating to the online trade of falsified medicines:

### a) Online Pharmacies

The primary site for medicine supply online is Online Pharmacies (OPs). OPs are pharmacies that operate over the Internet and post their products to consumers via a shipping company or the postal service. There are huge numbers of illegal OPs in operation. Having the knowledge and skills to distinguish between legitimate and illegitimate online websites selling medicinal products is crucial. However, it can be very difficult to understand whether an online pharmacy is legitimate or not.

Project Fakecare, following a comparative analysis of the content of a sample of legal and illegal OPs, has identified a number of common features of an illegitimate website:

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They do not require prescriptions for POMs



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They present low prices, huge discounts for larger purchases, and advertisements of promotions and trials



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The text of the website often contains a lot of misspellings and grammatical errors, especially in languages other than English



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The absence of any physical address



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The presence of POMs on the home page of the website



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The promotion of the anonymity warranty



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The use of testimonials





## FAST: ICT tool to automatically detect illegal online pharmacies

### How it works

FAST (Fakecare Alert System Tool) is built on top of advanced data analytics techniques, allowing the automatic identification of recurrent patterns among illegal online pharmacies. The embedded algorithms exploit web content and metadata analysis in order to confer a risk index to each analysed website, starting from its URL. During the project, researchers have worked to refine and update the main modules, wrapping them up inside a user-friendly GUI that has been already tested in the worldwide policing Operation Pangea VII.

The core algorithm has two main phases:

**a) Initialisation:** in this phase the algorithm builds a knowledge-base of recurrent patterns in illegal online pharmacies. To achieve this goal, it needs to be fed with a set of “known” legal and illegal examples of online pharmacy URLs. Throughout project Fakecare, such background knowledge has been built into the tool;

**b) Detection:** once initialised, the user provides a list of suspicious online pharmacies’ URLs as input. The system is then able to identify the illegal online pharmacies within the list by conferring a risk index to each of them.

### What is the risk index

The risk index is a score given by the algorithm to each website to be analysed, representing an indicator of the illegitimacy of the website (i.e., a website with a high risk index has a high probability of being illegitimate). The risk index for a given website takes into account two different features: a) the text contained in the website; b) its network of URLs.

In terms of the first component, the algorithm computes the text similarity between the given website and a set of known legal and illegal websites (knowledge-base).

In terms of the second component, the algorithm creates a network structure based on the URLs contained in the website (outbound links) and compares it with the one backed up on known legal and illegal websites. Text similarities with known websites, as well as common patterns in the URL network structure, are two significant legitimacy indicators.

For further information, please contact [info@fakecare.com](mailto:info@fakecare.com).

In attempt to tackle illegal OPs, the European Commission recently adopted a common logo for legally operating OPs in EU member states to use as a guarantee of authenticity. This is an important innovation provided by the European Directive 2011/62. However, criminological research has shown that criminals are able to adapt their behaviour to circumvent legislative innovation and to exploit any possible loophole or (involuntarily-created) opportunity. Consequently, criminals operating illegal OPs may be able to counterfeit the logo (and even the linked website), and display it on their sites. Indeed, in the past similar logos have been forged.

Project Fakecare has fostered the development of an ICT tool (FAST) which enables law enforcement and other relevant agencies to automatically detect illegal OPs. This tool is already supporting LEAs in Europe in the fight against the online trade of falsified medicinal products (see box above for more information).



## The European Common Logo

By July 2015, online pharmacies and retailers legally operating in the EU should display the following logo (see example from the UK).



The logo has to be displayed on every legitimate online pharmacy in the EU. It links to the websites of national authorities, which contain the list of all legally operating online pharmacies: by clicking on it customers are directed to the national list, in order to complete the verification process.

Be aware that the national flag and the text are an integral part of the logo. The flag to the left hand side of the logo corresponds to the Member State where the online pharmacy or retailer is registered or authorised. Only national flags of the EU Member States, as well as those of Norway, Iceland and Lichtenstein, are included in the scheme.

For further information, please visit: [ec.europa.eu/health](http://ec.europa.eu/health)  
(Home > Medicinal products for human use > EU Logo for online sale of medicines)

## b) Social Media Sites

Social media sites, including Facebook, Twitter and Instagram can act as online sites for supply of falsified medicinal products. For instance, on Facebook, connections between seller and buyer are forged via friends' lists and groups affiliated to prescription medicines, or linked to subcultures wherein prescription medicine use is prevalent and normalised. "Friends" tend to post stock available directly on their wall or on the page of a group, often with photographic evidence of the product alongside their personal or business name, their contact details and the date. Some actors use a variety of social networking sites to advertise their products.

## c) Online Marketplaces and Classified Advertising

Online marketplaces based in Asia, such as Alibaba and TradeIndia, are specifically implicated in the supply of falsified medicines and have been found to be selling large quantities of illicit pharmaceutical chemicals, materials, equipment or finished medicinal products to distributors and consumers. Furthermore, classified advertising sites are also used to sell smaller quantities of falsified medicines. These sites offer business-to-business (B2B) and direct business-to-consumer (B2C) platforms for trade in falsified medicinal products.

## d) Email, Spam and Web Manipulation

Another way illegal pharmacies promote their business and merchandise online is through the use of spam emails. Illegal pharmacies use spam emails to manipulate web search results and promote their business. One of the most prolific known to the authorities is the "Canadian Pharmacy" brand name, which is linked to a large criminal operation also involved in producing falsified medicines. The practice of using spam emails has been used in conjunction with web manipulation. Web manipulation has been viewed as much more efficient a method than spam emails. This process involves using affiliate and sub-affiliate networks in order to infect huge numbers of websites so that they redirect unsuspecting customers to illegal online pharmacies.

## e) Forums

Criminal entrepreneurs involved in the falsified medicine trade online exploit discussions in Internet forums in the knowledge that potential customers tend to be more interested in a product if it is perceived as "authentically" endorsed. Online forums also allow the transmitting of messages and information about products quickly to a much wider audience. This can be manipulated by criminals involved in the trade who pose as consumers, or more directly via the use of affiliates (see discussion of affiliates below).

### f) Darknets on the Deep Web

Designed for online anonymity, Tor, or The Onion Router, offers layered encryption to buyers and sellers. It is a network designed to pass IP addresses and carry out web transactions through numerous relays, using random and anonymised URLs in order to conceal users' locations and internet activities. Once Tor is accessed a buyer and seller trade in digital currencies, such as Bitcoin, and use data encryption and decryption tools to encrypt and decrypt messages. This has provided distributors of falsified medicinal products a relatively anonymous and unregulated online marketplace. Indeed, there are numerous sellers of falsified medicines across various darknet sites on the deep web.

### g) Marketing of online businesses on physical locations

Criminal entrepreneurs also promote their illegal online medicine businesses offline, during pharmaceutical conventions and other relevant events and venues. Cases include gym owners who sell anabolic steroids and other falsified medicinal products used to "bulk up" to their customers. These same individuals sell their products online and promote their illegal businesses during local and national bodybuilding, power-lifting and mixed martial arts events.

### h) Telephone Marketing

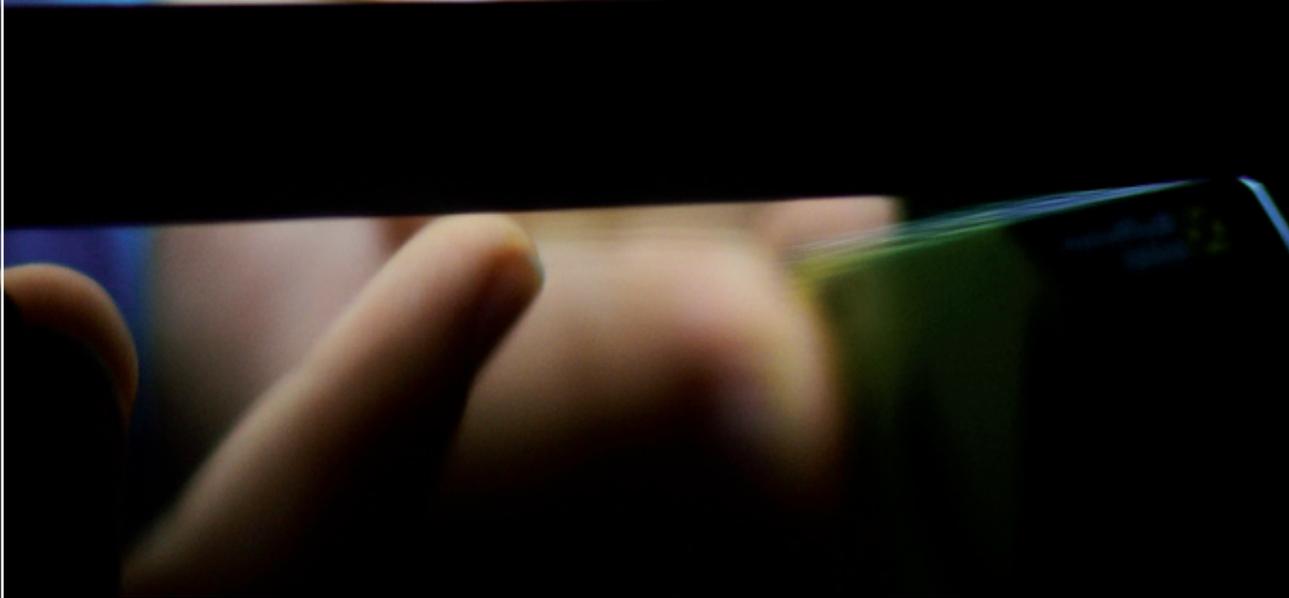
Entrepreneurs selling falsified medicines online market their merchandise by asking for a phone number when collecting billing information from customers making initial orders. The collected numbers are then used to contact customers for repeat business. In order to secure a customer's number the entrepreneurs make the provision of a telephone number compulsory if an online transaction is to be completed. Although an initial connection is made online, future sales can then be made over the telephone without any online interaction.

## Knowledge-based tips

-  Using Fakecare's list above as a starting point, gather intelligence to build an accurate picture of the main online sites of supply being used to trade in falsified medicines in your country.
  
-  If targeting online pharmacies:
  - Use the FAST ICT tool to automatically detect illegitimate online pharmacies (see box above for more information).
  - Check the list of common indicators that can illustrate whether a website is legitimate and target those sites that are acting illegally.
  - Check whether the online pharmacy correctly displays the European common logo and whether the verification scheme correctly works: if not, there is a high probability that the online pharmacy is run by criminals.
  
-  Pay attention to other virtual channels that are popular among criminals involved in the trade, such as social media websites, online forums, and the dark web.
  
-  Use open sources as an initial technique in order to gather intelligence on the supplier, their business or personal network, the product they are selling, and how their trade network works:
  - Bookmark pages and images to help to build an initial picture of the supplier and their business.
  - Gather intelligence from social media, classified advertising sites and spam emails related to the sale of illicit medicines. This information can also be used during Operation Pangea to improve investigations and analysis.
  - Use the pages of suppliers on social networking sites to gather personal details on small scale amateur sellers, and to identify online networks involved in the supply chain.
  
-  If necessary check your agency's capacity to undertake an Internet investigation using an undercover investigator, surveillance and/or deploying covert human intelligence sources.
  
-  Consider investigating legally trading online and offline companies that are sometimes connected to the illegal trade of medicines. E.g. gyms, sex shops, online shops.
  
-  Pay attention to offline events associated with subcultures where "hot medicines" are likely to be popular. E.g. bodybuilding, powerlifting, and mixed martial arts roadshows.



04



# Targeting the Internet infrastructure used by suppliers of falsified medicinal products

## Knowledge from research

In order to identify the tactics used by criminals involved in the online trade of falsified medicines it is crucial to consider the infrastructure required for online sales of medicines. By targeting the online infrastructure used to trade in falsified medicines online, LEAs can help prevent the criminal activity from taking place or, at least, lessen the opportunities for further criminal trading to occur through similar means.

The basic infrastructure required to sell falsified medicines online includes::

**Internet Service Providers:** Internet service providers are commercial, community-owned, non profit or privately owned companies that provide services for using and accessing the Internet (e.g. Virgin Media, BT and Sky in the UK, Freenet AG and T-Online in Germany, Claranet and NLnet in the Netherlands, Tiscali and Telecom Italia in Italy, etc.).

**Registrars:** the Internet Corporation for Assigned Names and Numbers (ICANN) accredits its commercial entities called registrars that are authorised to sell domain names to the public. Registrars are obliged to shut down illegitimate online pharmacies by suspending and “locking” the domain name. However, registrars respond to notifications from law enforcement authorities in various ways. Some cooperate, whereas others do not and are deemed *non-compliant registrars*.

**Payment Processors:** payment processors enable merchants to receive debit or credit card payments online by providing a connection to an acquiring bank. These processors perform a number of functions, which include evaluating whether transactions are valid and approved, and providing anti-fraud measures to assure that a purchase transaction is initiated by the source it claims to be.

**Payment Gateways:** payment gateways send credit card transactions to the payment processors, who are appointed to handle transactions with the acquiring bank. Significantly, payment gateways encrypt merchant and customer information during e-commerce transactions and offer secure pages.



## Knowledge-based tips for LEAs

-  Gather intelligence on the Internet infrastructure being used by criminal operations involved in the illicit medicine trade. Note the website name, URL (domain name), type of medicine(s) advertised, the registrar hosting the site and the payment service being used. Alongside national-based investigations, this can be used during Operation Pan-gea and included on reporting forms available from INTERPOL, including:
  - Daily Activity Reporting Form.
  - Electronic Payment Service Provider (EPSP) Form.
  - Social Media Platform Reporting Form.
-  Use a WHOIS service to gather any information available regarding the infrastructure used by suppliers of illicit medicines, including IP addresses, registrars and company addresses.
-  Gather data on domain names connected to the trade.
-  Check whether an online pharmacy has bought their domain name from a non-compliant registrar.
-  Target non-compliant registrars and sites bought from them.
-  Build relationships with payment processors in order to follow the money and target merchants wherever possible.



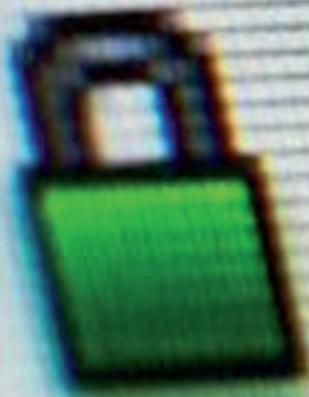
### WHOIS

WHOIS checks the following:

1. The company acting as the “registrar”.
2. The registrant of the domain name (basically the company or individual who has bought the domain name).
3. The registration date.
4. IP address.
5. The company address.

Sites such as [whois.domaintools.com](https://whois.domaintools.com) can be used to perform the check.

05



https.

# Staying one step ahead: being aware of common detection avoidance tactics

## Knowledge from research

The Fakecare research results, specifically from investigative and judicial case files and interviews with national and international law enforcement and health regulatory agencies, have highlighted a number of techniques illegal entrepreneurs use in order to avoid efforts to close them down and bring them before the courts. They include:

**The use of affiliate and sub-affiliate networks to “muddy the waters”:** an affiliate network is constructed in two ways:

- a. By entrepreneurs who are responsible for a number of websites illegally trading in medicines (often the websites have very similar if not identical templates).
- b. By the use of “affiliates”, whereby larger criminal organisations operating OPs pay commercial entities commission to surf the web and post links to their OPs on various online sites.

**Buying domains from non-compliant registrars:** non-compliant registrars tend to ignore law enforcement and regulatory agencies’ requests to block and shut down specific sites deemed to be associated with the illegal sale of medicines.

**Identifying law enforcement and health regulatory agents who are visiting their sites:** Illicit suppliers attempt to identify law enforcement and health regulatory agents posing as customers. Specifically, they check the details of visitors (including the frequency of visits and the debit/credit card used for purchases). If a visitor is found to be making a number of visits to a number of their affiliate sites, as well as using the same card for payment, they will then be blocked or re-directed to another website.

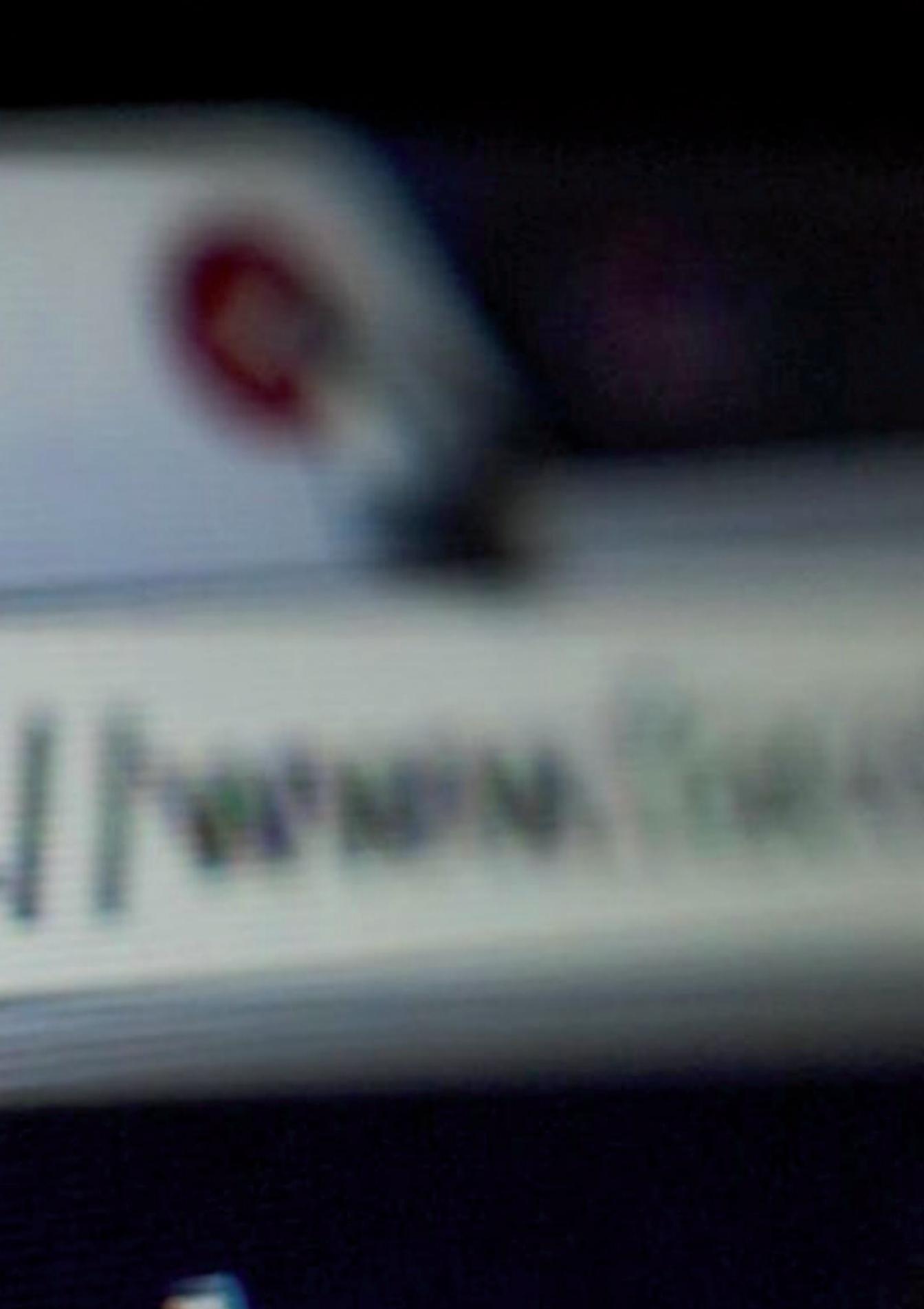
**Avoiding the WHOIS check** that is performed by law enforcement authorities and regulatory agencies in order to identify illegitimate online pharmacies (see box above for more information).

**Re-routing payments between offenders through intermediaries** to hide the link between illegal activities and payments. Illegal entrepreneurs largely avoid asking for bank payments and prefer money transfer services (such as Western Union) because they are extremely easy to conduct, and (for smaller transactions) no identification is required. In addition, illegal entrepreneurs forge multiple banking relationships in numerous ways. They have been known to ask family members, friends and/or acquaintances to borrow their accounts for a number of transactions, or have rented the accounts of others for a short time.

**Avoiding providing any personal information** and details on delivery items accompanying the merchandise they send (such as delivery notes, invoices, leaflets etc.).

## Knowledge-based tips

-  Be aware of the above list of common detection avoidance tactics to “stay one step ahead” of criminals involved in the trade.
-  Look for common images and identical templates used on different sites (this can be done using open sources and domain tools in the first instance).
-  Make note of any sites using non-compliant registrars and report this during Operation Pangea.
-  During investigations do not:
  - Frequently visit known illicit sites via the same domain.
  - Frequently visit known illicit sites using the same device.
  - Use a computer linked to your agency’s web server (it leaves a “fingerprint”).
  - Use the same credit/debit card to make test purchases.
-  Do not rely solely on the WHOIS check. Instead use a variety of investigative techniques in case illicit suppliers are avoiding the check.
-  Although payments between offenders are often re-routed, following the money remains an extremely important part of the investigation. Therefore:
  - Alongside gathering information on unique websites and networks, collect information on the smaller number of payment pages connected to online suppliers of falsified medicines.
  - Make note of payment options and report emerging patterns to INTERPOL via the EPSP form.
  - Target illegal entrepreneurs’ networks with the aim of building a picture of the relationships between the money, payment pages and acquiring banks.
-  Do not trust any personal information provided on delivery items.



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# How to get informed

For any further information and advice, please visit the project website:

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[www.fakecare.com](http://www.fakecare.com)



Furthermore, do not hesitate to contact us using the following email address:

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[info@fakecare.com](mailto:info@fakecare.com)



For information about Operation Pangea and about other international activities carried out by INTERPOL, please visit the official website:

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[www.interpol.int](http://www.interpol.int)

(Home > Crime areas > Pharmaceutical crime)



For information about the legal and regulatory framework in your own or another country, please visit the website of your national medicines and health care products regulatory agency. In the European Medicines Agency website you can find a list of the competent authorities in the European Union that are responsible for human medicines:

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[www.ema.europa.eu](http://www.ema.europa.eu)

(Home > Partners & Networks > EU & the Agency > EU Member States > National competent authorities – human)





### European project

www.fakecare.com. Developing expertise against the online trade of fake medicines by producing and disseminating knowledge, counterstrategies and tools across the EU

### Funding body

European Commission - DG Migration and Home Affairs

### Funding programme

Prevention of and Fight against Crime - ISEC 2011

### Coordinator



eCrime - ICT, law & criminology \ University of Trento

### Co-beneficiaries



Agenzia Italiana del Farmaco (AIFA)



Teesside University



Centre for Research and Studies on Security and Crime (RiSSC)

### Associate partners



Interpol - Medical Product Counterfeiting and Pharmaceutical Crime Sub-Directorate



International institute for the prevention of falsified medicines (IRACM)



LegitScript





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