Counterfeiting the Counterfeiter

European Alliance for
Access to Safe Medicines

www.eaasm.eu

Forewords

Jim Thomson

In 2008, the European Alliance for Access to Safe Medicines (EAASM) investigative report – *The Counterfeiting Superhighway* – exposed the reality of falsified medicines online. In its foreword, I wrote…

"The internet has the power to be the greatest single force for good in history, the capacity to enable each of us to learn about people, places and events that were previously unimaginable. Daily, billions of people use this remarkable resource to communicate, conduct business, buy and sell goods and services. It's hard to remember what daily life was like before the internet and equally to imagine life without it. However, surely, with this capacity comes responsibility."

So, in four years, what has changed? The short answer is, precious little. While there has been progress (the Interpol-coordinated Pangea operations being notable successes) the internet remains a highly lucrative and ever-more sophisticated criminal environment. Search engines still return results for criminal websites. Payment processors still facilitate payments that enable criminals to make huge profits from vulnerable patients. Globally recognised courier and mail services still deliver falsified medicines that can harm or kill patients. Are these organisations trying to resolve this situation? Yes they are. Is it enough? No, it is not, and this report shows why all concerned with online commerce, urgently need to up their game.

"Counterfeiting the Counterfeiter" (CtC) demonstrates three things: How easy it is to set up a relatively sophisticated "fake" website, how easy it is to attract customers to that website and, finally, how much money a criminal could make from such an enterprise. It was astonishingly easy to execute. On this occasion, we had the cooperation of Mastercard, Visa and Google and I would like to take this opportunity, formally, to thank them. In particular, Google is taking steps actively to limit the ability of crooks to advertise using its services. That said, a simple search for any prescription medicine, adding "without prescription" will still give "customers" easy access to the internet's criminal underbelly. It remains very easy to order genuine, but receive falsified, medicines.

That must change. The involvement in this project of those three companies, is a very good start. It must be just that, a start. More action is needed to protect the public – be they genuine patients, buying online for good reason, or so-called "recreational" buyers – from the very real dangers of falsified medicines online.

The EU Falsified Medicines Directive will make tremendous beneficial changes to the conventional supply chain and contains measures addressing the internet. The introduction of an EU logo to identify legitimate websites may be practicable. Certainly, as a stand-alone measure, it will not fully protect patients. That will only happen through education, awareness-raising, and by patients exercising due diligence in their buying habits.

The Directive also calls for innovative programmes to educate and raise awareness of the dangers of falsified medicines online. I believe that *"Counterfeiting the Counterfeiter"* shows exactly how that can be done. It is a phenomenal success story. From a standing start, and although fake, it quickly became the third largest online pharmacy in Germany. Had we really been crooks, we would now be very wealthy indeed. This report tells its story and I commend it to you.

Jim Thomson
Chair, EAASM

Forewords

Professor Harald G. Schweim

Online pharmacy is not legal in every EU Member State, but it is – under restricted conditions – legal in Germany. I found it interesting therefore that the EAASM decided to undertake this piece of research in Germany, where one would imagine that it would be difficult to attract potential customers to an "illegitimate" website.

The EAASM's German project was a remarkably ambitious undertaking, and it is a remarkable success story. The statistics are astonishing and they shine a spotlight on exactly how many people are looking for medicines online, as well as how much money a criminal could make. The EU initiative to introduce a common Trust Mark for legitimate online pharmacies will help but this, and other measures, can only succeed if patients are aware of what to look for. They need to know how to detect an illegitimate online pharmacy, and to be directed to legitimate ones.

To make the Counterfeiting the Counterfeiter project work, the EAASM brought together a number of pharmaceutical companies, the German Institute of Medical Documentation and Information (DIMDI), patient groups, health information providers like Onmeda and Netdoktor, search engines and credit card processors. It is a remarkable achievement and it demonstrates perfectly how stakeholders can come together in the interests of patient safety.

Over 180,000 people visited the website in its nine week active life. 145,000 viewed secondary patient safety and over 12,000 went straight to the official listing of legitimate pharmacies. Those are just some of the statistics but there is much more to this report than mere numbers. What Counterfeiting the Counterfeiter does is show what can be achieved when people are given the facts they require to make an educated decision and all of us concerned with patient safety should take note of the lessons within this report.

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Contents

European Alliance for
Access to Safe Medicines

Executive summary

The multi-billion Euro trade in counterfeited or falsified medicines has burgeoned alongside the global growth in the use of the internet. It is a trade that can have fatal consequences for patients[1] – falsified products have been found to contain mixtures of harmful substances, or not enough or none at all of the declared active ingredient.[2]

This report follows *The Counterfeiting Superhighway*, published by the EAASM in 2008. That report demonstrated the inherent dangers of purchasing prescription-only medicines (POMs) via the internet and the scale of criminal activity in this area. *The Counterfeiting Superhighway* achieved extensive media coverage – its key message was seen by over 21 million people. *Counterfeiting the Counterfeiter* builds on that success and continues the EAASM's efforts to address falsified medicines online.

The *Counterfeiting the Counterfeiter* campaign was designed to directly target and warn people tempted to purchase medicines via the internet, more often than not without a prescription from their doctor. An apparently genuine online pharmacy website was used to deliver safety messages at the point immediately prior to purchase instead of dispensing potentially lethal falsified medicines. In addition, consumers were redirected to a register of legitimate online or high street pharmacies.

The campaign's online pharmacy was heavily promoted for a nine-week period in Germany and attracted over 180,000 unique visitors. Projections show that if the website had operated over 12 months, it would have attracted over one million visitors and could have potentially generated revenues for the illegal traders of between €12 and €35 million. *Counterfeiting the Counterfeiter* shows just how easy it is to set up an illegal online pharmacy and the scale of the potential profits that can be generated by this illegal trade.

The conclusions and recommendations section of this report is a call for action to make the online environment harder for counterfeiters to operate within and therefore safer for consumers.

Glossary

Term	Description
Advert impression	Each time an online advertisement such as a banner advert or search engine text advertisement is displayed.
AdWord	A search engine text advertisement that appears when key words are typed into a search engine search bar. They allow for audience targeted advertising. Text advertisements are short, consisting of one headline of 25 characters and two additional text lines of 35 characters each.
Counterfeit/falsified medicines	Medicines that are deliberately and fraudulently mislabelled with respect to identity, history and/or source. (Falsified Medicines Directive [FMD] 2011/62/EU)
DIMDI	The German Institute of Medical Documentation and Information provides high quality information for all healthcare areas. DIMDI is the publisher of official medical classifications and maintains medical terminologies, thesauri, nomenclatures and catalogues that are important for health telematics and other applications. DIMDI develops and operates database-supported information systems for drugs and medical devices and is responsible for a programme of health technology assessment (HTA).
EAASM	The EAASM is a pan-European patient safety organisation, bringing together all concerned with eliminating counterfeit medicines from the supply chain while at the same time raising public awareness of the issues and campaigning for improvements. With patient safety at its heart, the EAASM is also currently championing positive change in the area of unlicensed/off-label usage of medicines – an issue that is severely compromising patient welfare and rights.
European Medicines Agency (EMA)	The agency is responsible for the scientific evaluation of medicines developed by pharmaceutical companies for use in the European Union
IP address	Numbers unique to each computer connected to the internet.
Key Word	Words or phrases related to the item intended for internet sale.
MHRA	The Medicines and Healthcare products Regulatory Agency (MHRA) is the UK agency responsible for ensuring that medicines and medical devices work, and are acceptably safe. The MHRA is an executive agency of the Department of Health.
Pay-per-click (PPC)	A budget is set by the advertiser and cost is incurred each time an advert is selected and the consumer is redirected to their website.
Prescription-only medicine (POM)	For POM, an authorised prescription has to be supplied, usually by post before a prescription is dispatched.[1] Without a prescription it is illegal for any medicines supplier to sell or provide prescription medicines[1]
Unique visitor	A statistic that measures the number of individuals who have visited a website at least once. This figure counts the initial visit only.
WHO	The World Health Organization is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

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Access to Safe Medicines

Introduction

The EAASM is an inclusive pan-European patient safety organisation with an established record of achievement in anti-counterfeiting. It undertakes innovative projects to raise awareness of falsified medicines and supports initiatives and measures to exclude them from the supply chain. It also campaigns for the safer use of unlicensed and off-label medicines. As a cross-sectoral patient safety organisation, it strives to engage with all relevant stakeholders to ensure that European patient safety is guaranteed.

The EAASM aims to:

★ raise public awareness of the dangers of falsified and substandard medicines

★ create a call for action for improved legislation, enforcement and patients' rights to safe medicines

★ input into existing anti-counterfeiting initiatives where appropriate

★ contribute to European health literacy.

Medicine counterfeiting: a global threat

Falsified medicines are potentially lethal. They may be substandard or poor quality copies of pharmaceutical products. They may contain too much, too little, none or the wrong active ingredient. They may also contain toxic and/or other ingredients such as road paint, floor wax, shoe polish, talcum powder or chalk.[1,3]

Defining the exact extent of the trade in falsified medicines is difficult for a number of reasons; however, global and national agencies consider it to be a considerable and growing threat to public safety. It was once a trade thought to affect only developing nations, but now the trade in falsified medicines extends around the globe. In recent years online transactions for healthcare products has increased dramatically.[4] Alongside the growth in legitimate online trade in healthcare products, the internet has become the most common route through which medicine counterfeiters reach consumers.[4]

Counterfeit drug incidence map[5]

Counterfeit Needles Found in the UK
A batch of counterfeit insulin pen needles emulating those made by Novo Nordisk were discovered in the United Kingdom.

MHRA Seizes Fake Drugs in England
The UK MHRA seized £500,000 worth of fake drugs in Middlesbrough, England.

Fake Pills Removed From UK Pharmacies
Thirty thousand packs of counterfeit life-saving drugs may have been consumed by NHS patients.

Counterfeit Drug Ring Busted in Montreal
Officials seized 15,000 counterfeit pills and arrested nine people during raids in the Montreal region. Counterfeit Viagra™ and cancer drugs were among the seized pills.

Counterfeit Heparin Blamed for Worldwide Deaths
Counterfeit heparin has been linked to the deaths of 81 people and resulted in hundreds of allergic reactions in the United States.

North America

Europe

Africa

South America

The World Health Organization (WHO) estimates that in over 50% of cases, medicines purchased over the internet from sites that conceal their physical address are counterfeit.[2] Along with the increase in the scale of medicines counterfeiting, the scope has also changed. The illegal trade has moved from concentrating on particular types of medicines: typically for erectile dysfunction and weight loss, to now also include life-saving cancer and heart medicines.[1,4]

The changing and global nature of the illegal pharmacy threat is demonstrated by two cases.

★ In June 2011 the US authorities published details of a case where a man was imprisoned for running a number of different illegal pharmacy websites selling 40 different types of counterfeit or misbranded prescription medicines. The websites offered prescription medicines for diabetes, heart problems and depression. The websites had accepted orders from buyers in the US and around the world, via call centres and processing centres in the Philippines and the Netherlands.[6]

★ In July 2011, the UK MHRA detailed its involvement in a case where two men were found to have sold five different types of counterfeit medicines on the internet. The medicines had been sent into the UK from China.[7]

Why do consumers use the internet to buy medicines?

As the global threat from counterfeit medicines evolves it is imperative that consumers are adequately protected. While developing *Counterfeiting the Counterfeiter*, research interviews were conducted to understand how customers of illegitimate pharmacies use the internet and how the campaign could best deliver its warning messages. The interviews were with German men who had purchased medicines previously from an online pharmacy other than that specified by their health insurance company. The research gave an

insight not just into how the men were using the internet to purchase medicines, but also their understanding of the potential risks.[8]

Further research found that purchasers of medicines from illegitimate pharmacies thought they could identify fake products. These beliefs were based on visual observation of the products they received. However, the sophistication of counterfeiting operations means that many fake medicines can be impossible to detect, even by an experienced eye, and at times can usually be identified by forensic testing.

Legitimate online pharmacies can be of great benefit to people unable to access high street pharmacies, and legitimate online pharmacies are permitted to operate in some EU Member States, such as the UK and Germany. However, online purchasing is not permitted in the majority of EU Member States.

In December 2011, a WHO survey of 114 Member States found that the majority of responding countries (66%) have no legislation either allowing or prohibiting internet pharmacy operations.[9] The report found that existing legislation prohibits internet pharmacy operations more often than permitting it (19% versus 7%).[9] In terms of prohibiting the purchase of prescription medicines from other countries, within the WHO European region, 53% of countries have such a policy.[9]

For POM, an authorised prescription has to be supplied, usually by post before a prescription is dispatched.[1] Without a prescription it is illegal for any medicines supplier to sell or provide prescription medicines.[1]

Consumers are attracted to the option of accessing medicines online. However, alongside legitimate online pharmacies, the internet is rife with illegitimate sites. Either wittingly or unwittingly, the internet can be used to side-step the usual healthcare system prescribing and dispensing processes, with their in-built safeguards.

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Access to Safe Medicines

Why do consumers use online pharmacies?[1]

★ speed or convenience
★ embarrassment
★ discretion
★ fear that a doctor will not prescribe a particular medicine
★ the belief that costs are lower.

The Counterfeiting Superhighway

In 2008 the EAASM published the influential report, *The Counterfeiting Superhighway*. The report was commissioned to explore just how prolific illegitimate pharmacies were at that time and to gain an understanding of what proportion of those pharmacies were selling falsified medicines. The research for the report did this through extensive analysis of over 100 online pharmacies and by expert and chemical analysis of over 30 packets of POMs bought online.

The Counterfeiting Superhighway research found that:[1]

★ 63% of medicines purchased online were fake or substandard (including medicines indicated to treat serious conditions such as cardiovascular and respiratory disease, neurological disorders, and mental illnesses)

★ 96% of online pharmacies researched were operating illegally

★ 94% of websites did not have a named, verifiable pharmacist

★ over 90% of websites did not require a prescription to sell POM.

The report called for action by all stakeholders, including search engines, credit card companies, shipping companies, patient groups and regulators. Further details about *The Counterfeiting Superhighway* can be found at www.eaasm.eu.

The Counterfeiting Superhighway

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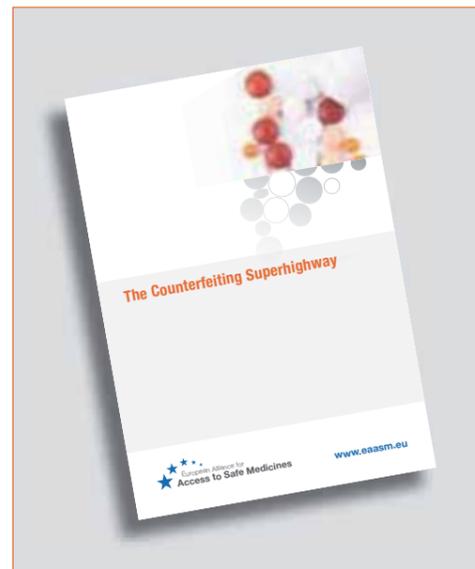
Counterfeiting the Counterfeiter

Campaign overview

As more consumers turn to the internet to buy prescription medicines, and in response to the scale of counterfeiting revealed by *The Counterfeiting Superhighway* research, the EAASM has developed a new campaign entitled *Counterfeiting the Counterfeiter*.

The campaign was designed to engage directly with potential purchasers of fake medicines. It achieved this by developing a website that replicated a typical apparently trustworthy but actually illegal online pharmacy. Instead of falsified medicines, the online pharmacy dispensed safety advice and also redirected visitors to legitimate online or high street pharmacies.

In developing the campaign the EAASM worked with the leading search engine provider, Google. Several meetings were held before launch to discuss policies (global/local), campaign objectives and website content.

The campaign was careful not to mislead website visitors. Its primary aim was to divert potential purchasers of fake medicines and to provide warning information and links to legitimate sources of medicines.

The campaign focussed on the German market, as Germany has a particularly high rate of online purchasing of POMs without authorised prescriptions.[1] Research commissioned by

Campaign aims and objectives

The overarching aims of the *Counterfeiting the Counterfeiter* campaign were to:

★ raise public awareness about online criminal activity related to falsified medicines
★ protect and inform patients
★ direct patients to safe and legitimate sources of medicines
★ recommend actions that organisations (those monitoring the legitimate supply chain and those that are part of it, such as legitimate online pharmacies and pharmaceutical companies) can take to address the issue of illegal online pharmacies.

Pfizer in 2010 showed the extent of the issue in Germany. The *Cracking Counterfeit Europe* research found that 38% of the German population polled admitted to purchasing POMs online without a prescription.[10] Germany's problems are far from unique, however, and the threat of falsified medicines is a global issue. Presented here are the findings from the *Counterfeiting the Counterfeiter* campaign and its website, www.medizin-direkt.com.

Website click through flow

| GOOGLE SEARCH | SEARCH RESULTS | LEGITIMATE ONLINE PHARMACY? | LEGITIMATE OR COUNTERFEIT? |

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The campaign website: how it worked

The *Counterfeiting the Counterfeiter* fake online pharmacy was promoted heavily for nine weeks from 26th September to 27th November 2011. The landing page was designed to replicate a typical illegal online pharmacy site. The site appeared to offer a range of prescription medicines. Once a potential purchaser clicked anywhere on the landing page, a second screen appeared. This screen contained warnings about the dangers of counterfeit medicines, and immediately launched a video of a 'doctor' giving verbal advice. The page also provided:

★ advice on how to buy medicines online safely

★ direct links to legitimate online/offline pharmacies via DIMDI – the German Institute of Medical Documentation and Information

★ direct links to further information about counterfeit medicines, for instance, from the WHO and via the EAASM website, links to pan-European patient groups and German healthcare portals.

Website visuals

Website promoted using AdWords/PPC	Website promoted using banner adverts and email campaign	Warning message
Link to DIMDI	Additional information – Caution	Additional information – Minimising risk

The Counterfeiting the Counterfeiter campaign – development and research

Campaign phase 1 – analysis

The first phase of the campaign involved an analysis of the legitimate and illegitimate online pharmacy market within Germany. This analysis can be broken down into three components:

★ a landscape analysis

★ an overview of pricing

★ mapping the online journey.

Landscape analysis

A landscape analysis of legal and illegal online pharmacy websites in the German market was undertaken over the course of April 2011, to examine actual website traffic to online pharmacy sites. This analysis found that searches for, and use of, online pharmacies within Germany fluctuates considerably compared to patterns seen in other countries. However, even the lowest figures seen are still significant, with large volumes of people using the internet to purchase medicines, either through legal or illegal websites. Monthly searches for online pharmacies in Germany were found to fluctuate from between just below 100,000 to 138,000.

The analysis also examined the typical features of illegitimate online pharmacies so that these could be incorporated into the design of the campaign website.

An overview of pricing

The pricing of key medicines available from legal and illegal online pharmacies was examined. Price is one of the key drivers of traffic to online pharmacies, and illegal sites typically seek to compete with legitimate online pharmacies by offering even cheaper prices or bulk discounts.[1]

Mapping the online journey

Before designing and building the website, it was important to understand the process that people go through when on an 'online journey', and replicate it to maximise hits to the campaign site. The journey tactics can be summarised into three stages.[11]

★ Acquire: this stage involves the acquisition of potential customers and uses different tactics, such as pay-per-click (PPC), emails and web advertising.

★ Engage: content is provided that users want and are interested in.

★ Loyalty: is encouraged, for instance, by including samples of other medicines within an order.

The campaign focused on the "acquire" and "engage" stages above, as it provided safety information only, and a route to legitimate pharmacy. As it was not possible to buy any medicines it was not expected to generate loyalty, and therefore returning visitors.

Campaign phase 2 – website development

Website design and build

The landscape analysis revealed a series of website features, design elements and aspects of functionality typical of illegitimate and legitimate online pharmacies. For instance, illegitimate sites usually have a focus on price.

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Access to Safe Medicines

In order to replicate a typical trustworthy but illegitimate website, the landing page included the following elements:

★ a focus on medicines for:
  ★ allergies
  ★ blood pressure
  ★ diabetes
  ★ epilepsy
  ★ erectile dysfunction
  ★ hair loss
  ★ health and beauty care
  ★ HIV
  ★ mental illness
  ★ pain relief
  ★ sexual health
  ★ sleep disorders
  ★ weight loss
★ a fake "EU licence"
★ a live "doctor online"
★ major credit card company logos and product pack shots: approval was obtained from the credit card and pharmaceutical companies, to use their logos/products
★ the offer of free shipping and no minimum order size
★ text offering reassurance of online security
★ the overall look and feel of the website used design features typical of online pharmacies: it used a fresh green pharmacy-like colour and lifestyle imagery.

At launch the website utilised product pack shots as this aided the visual authenticity of the site. However, a welcomed online advertising policy change by Google mid-way through the campaign meant that websites displaying pack shots would no longer be allowed to use Google AdWords as an acquisition tool. As a result an updated landing page was developed that replaced pack images with lifestyle photographs.

Designing and building both the initial and subsequent landing pages was straightforward, demonstrating just how easy it is for illegitimate online pharmacies to be set up and begin their illegal trade.

Campaign phase 3 – development of acquisition tactics

Acquisition tactics

The acquisition tactics used by the Medizin-Direkt.com website mirror those used by online businesses to drive traffic to a website. These are also used by illegitimate online pharmacies.

★ PPC: popular, relevant keywords that potential visitors use to locate websites are selected. Based on a visitor's text search, and the keywords assigned to the website, a list of suitable results is displayed to the visitor as text descriptions. The website host pays the search engine provider a fee each time a visitor clicks and accesses the website from the text description.

★ Email advertising: a method used by many legitimate businesses but also prolifically by illegal online pharmacies.[1] Anyone with an email account, no matter how good their spam filter, will probably have received so-called "spam" messages offering a variety of different prescription medicines. Most of the medicines for sale through such emails are likely to be falsified.[1] Everyday, billions of these emails are sent and received, so even if a minute proportion result in a sale, a significant number of people are putting themselves and their health at risk.[1]

Email addresses are sourced from legitimate sources where individuals have agreed to their personal details being passed on to third parties. These details are often a result of them registering on a website or taking out a subscription to a magazine/service.

★ Banner advertising: sponsored visual adverts that appear on chosen websites, typically as a banner running across the top or side of a website page.

How the acquisition tactics were used

★ PPC: 11,657 keywords were linked to 8,560 adverts set via search engines/Google AdWords. This ensured that the website appeared as a sponsored link on the first page of all relevant search results.
★ Email advertising: 2.5 million emails were distributed to the key demographic through six phased email campaigns.
★ Banner advertising: on third-party websites. This method was used to target key sporting, news and health-related websites to maximise outreach.

Email advertising examples

Banner advertising examples

Campaign phase 4 – website launch and monitoring

The website went live on 26th September 2011 and was promoted for a period of nine weeks until 27th November 2011. Throughout the nine weeks, the following items were measured using Google Analytics and Google AdWords:

★ the total number of visits to the website
★ the number of unique visits (as opposed to return visits)
★ average length of stay on the website
★ how people interacted with the landing page
★ medicine category clicked on
★ number of views of the safety information provided
★ numbers clicking through to the DIMDI website or to other provided links
★ number of average page views
★ total number of pages viewed
★ number of advert impressions
★ number of clicks to the EAASM website.

Campaign phase 5 – analysis of results

Overview of results

Key statistics*

★ Nine weeks activity from September 26th to November 27th 2011.
★ 360,532 website visitors, of these, 182,602 were unique visitors.
★ 195,657 views of the warning messages, 142,676 of these were unique views meaning many visitors returned to the website.
★ 85% (on average over the nine-week period) of people searching for online pharmacies in Germany visited the Medizin-Direkt website.
★ 21 million advert impressions – opportunities to get people to the website.
★ 55 seconds average visitor time – many visitors spent over 2 minutes viewing the advice and warning pages
★ 19,605 viewed additional advice and information contained on the website, of which 16,378 were unique visitors
★ 14,395 (of which 12,227 were unique visitors) clicked through to a list of legitimate online and high street pharmacies in Germany as verified by DIMDI
★ 593,232 page views

* Data from Google Analytics

European Alliance for **Access to Safe Medicines**

Key statistics continued*

★ **55 seconds** average visitor time – many visitors spent over **2 minutes** viewing the advice and warning pages.

★ **19,605 visitors viewed** additional advice and information contained on the website, of which **16,378** were unique visitors.

★ **14,395** (of which 12,227 were unique visitors) clicked through to a list of legitimate online and high street pharmacies in Germany as verified by DIMDI.

★ **593,232** page views in total.

* Data from Google analytics

During the nine-week campaign, the Medizin-Direkt website received significant web traffic. The initial and subsequent landing pages in total received over 360,500 visitors – with over 182,000 of these being unique, first time (as opposed to return) visitors. Results from Google Analytics show that an average of 85% of people searching for online pharmacies in Germany accessed the Medizin-Direkt.com website.

Over 12,000 unique visitors clicked the link to the advice from DIMDI about buying medicines online from reputable websites. The campaign website was reviewed continuously through the nine weeks. Part of the review determined that the link through to the advice from DIMDI should be made more prominent and so this was changed on the landing page. If the link had been more prominent from the campaign outset projections show that approximately 16,000

Number of unique visitors		Where		Why is this important?
182,602	→	Landing pages	→	Scale of the problem
142,676	→	Warning page	→	Key message delivered
16,378	→	Extra warning information	→	People want to find out more about the dangers of fake medicines
12,227	→	DIMDI website where a list of legitimate German online and high street pharmacies are detailed	→	Behaviour change influenced by people being shown how to buy safely

Monthly searches for online pharmacies vs. CTC unique visitors
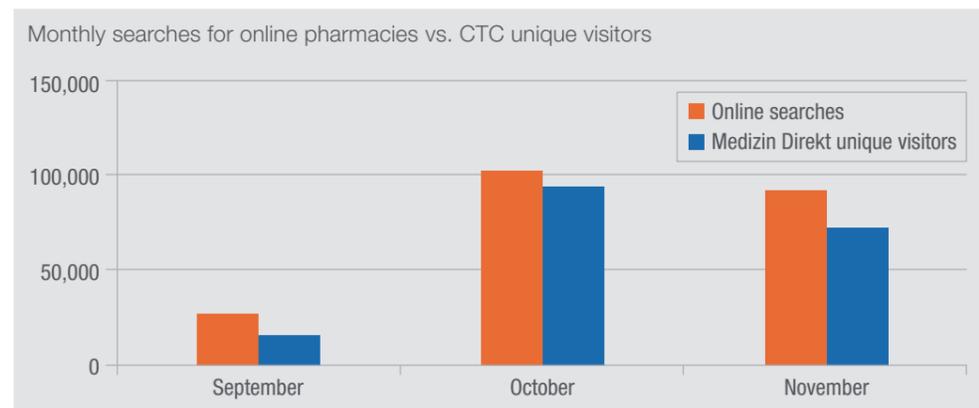
The chart above shows the searches for online pharmacies in Germany alongside unique visitors to the campaign website.

unique visitors could have been directed to DIMDI.

During the nine-week period Medizin-Direkt was the third most viewed online pharmacy in Germany. Legitimate online pharmacies Shop Apotheke and Doc Morris are both very established businesses, notably Doc Morris which also operates in the Netherlands, Ireland and Italy and is therefore likely to attract business from outside Germany as well as

within. This demonstrates that Medizin-Direkt achieved an extremely high profile in what is a very competitive market.

The charts below demonstrate how easily an illegal online pharmacy can acquire potential consumers. During October, when the campaign saw four full-weeks activity, the website was viewed by the vast majority of people searching for online pharmacies/medicine in Germany.

Average unique visitors over 9 week period (000's)

Data source: Google Ad planner

Monthly searches for online pharmacies vs. CTC unique visitors

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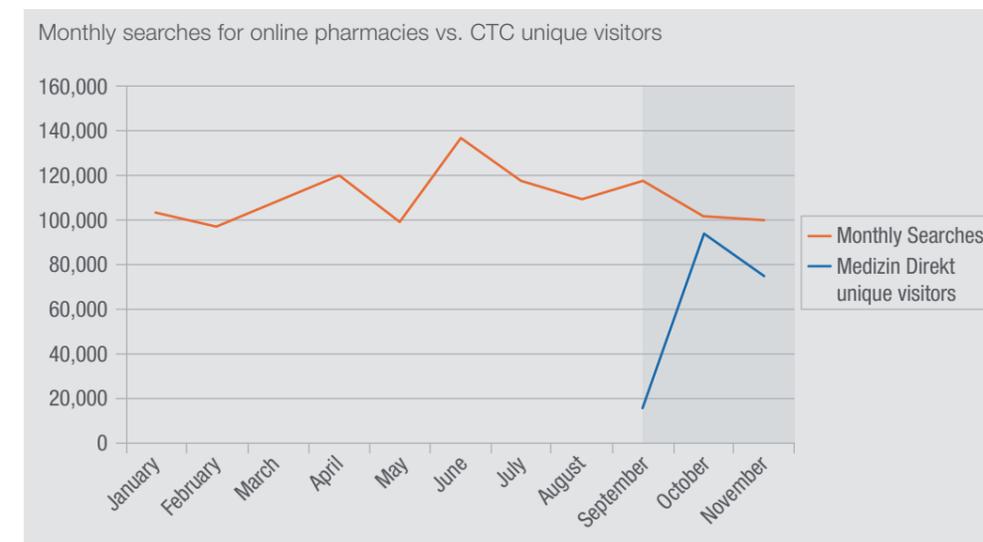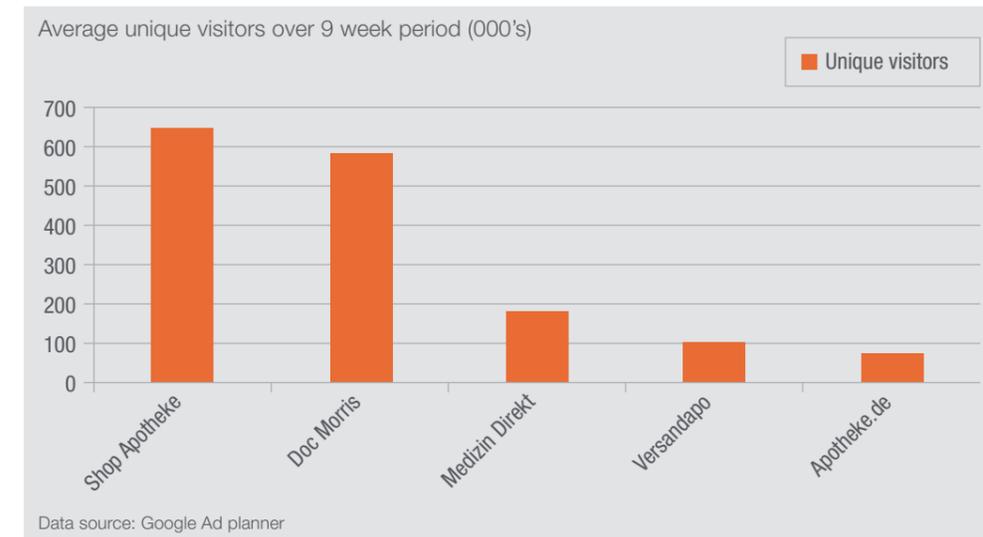
Visitors from 112 countries

To comply with Germany's intellectual property law, the IP addresses of those visiting the campaign website were not captured. However, it was possible to establish the country of origin of the website visitors. Although the clear majority of visitors were from within Germany, visits were recorded from 112 countries. The spread of visitors from across the globe illustrates the cross-border nature of the trade in medicines online. It also shows that in countries where even legitimate online pharmacies are prohibited, this is, in itself, not effective in protecting patients from accessing illegal websites in other countries.

Impact of the warning messages

Over 195,000 visitors clicked beyond the landing page, and so viewed the campaign warning messages – of these, over 140,000 were unique visitors. Of the visitors that viewed the warning messages, over 12,000 went on to click and view DIMDI's approved list of online or high street pharmacies. This means that significant numbers of people were diverted away from potentially purchasing falsified medicines, which could be of poor quality, ineffective or even lethal.
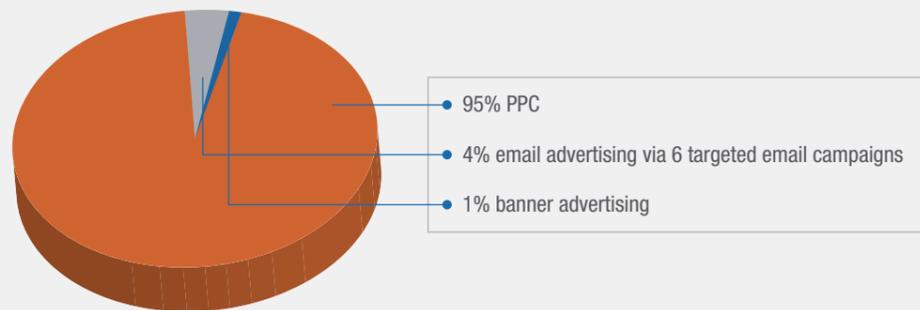
Which acquisition methods worked?

PPC was by far the most successful acquisition method, responsible for 95% of website visits, and attracted over 170,000 unique visitors.

The PPC tactic used 11,657 keywords, and resulted in 8,560 sponsored links appearing in the first page of online searches. The adverts appeared as either the second or third paid advert.

Email advertising and banner advertising were responsible for 4% and 1% of visitors respectively. Of the 2.5 million emails distributed, over 390,000 were opened, with more than 31,000 clicks recorded. As a benchmark, the email marketing industry average click rate in Germany is 5%,[12] whereas the campaign emails achieved almost 8%.

The most popular website features

Once potential customers clicked through to the landing page, an analysis (using Google Analytics) was made of which links were most commonly clicked on. The search bar was the most popular button, followed by a general "medicines" button (this button, if the pharmacy had been real would have brought up an A–Z list of medicines):

★ search bar: 26,709 clicks

★ medicines: 11,057 clicks

★ sexual health: 5,989 clicks

★ weight loss: 3,349 clicks

★ viagra: 3,340 clicks

★ erectile dysfunction: 2,858 clicks

★ cialis: 2,764 clicks.

Easy profits with potentially lethal consequences

If the Medizin-Direkt.com online pharmacy had actually been trading, it is estimated that annual revenue would be between €12 and €35 million.

This revenue has been calculated based on an assumption that the Medizin Direkt website would receive approximately 1 million visitors per year (based on 182,602 unique visitors to the website over the 9 week campaign).

The table below shows how this revenue was calculated. With illegal website finances not being published it is difficult to identify how many visitors make purchases or what the average spend is, therefore a range of spends has been provided. An assumption has been made that 20% of annual website visitors would make between 1 and 3 repeat purchases per annum.

Projected revenue

Beyond customer acquisition costs, Medizin-Direkt.com would still net a considerable estimated return. It is easy to see how a criminal counterfeiting enterprise operating multiple websites could make vast sums, with potentially lethal consequences.

Medizin Direkt: potential annual revenue

Percentage of annual visitors making a purchase	Purchase price (€)	Revenue generated by 1 purchase (€)	Revenue generated by 3 repeat purchases (€)
7%	15	1,050,000	3,150,000
7%	50	3,500,000	10,500,000
7%	100	7,000,000	21,000,000
Total	–	11,550,000	34,650,000

Breakdown of acquisition method success

• 95% PPC

• 4% email advertising via 6 targeted email campaigns

• 1% banner advertising

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Conclusions and recommendations

One of the aims of the *Counterfeiting the Counterfeiter* campaign was to show what can be done to raise awareness and to educate potential purchasers about the dangers of fake medicines purchased on the internet. Germany is by no means unique, and the findings of this research are applicable across the globe.

Advice for patients[13]

★ Don't buy from sites that offer to sell medicines without a prescription.

★ Don't buy from sites that offer bulk discounts/sample packs.

★ If you do source medicines over the internet, check the packaging and the medicine and report any inconsistencies to a pharmacist:

  ★ look for any differences in the packaging, the blister pack, specifically the print and seals

  ★ familiarise yourself with the packaging of your regular medicines

  ★ check the expiry date and dose

  ★ check that the patient information leaflet is included and in the right language

  ★ check the colour and texture of the medicine: look for any tablets that crumble or are inconsistent in colour, appearance, taste or texture in any way

  ★ if you are concerned that the medicine doesn't appear to be working, or there are changed, new or absent side effects, contact your doctor but do not stop taking your medicine.

Recommendations for policy makers

★ Patients should be able to report websites to a professional association for independent review.

★ Quarterly internet audits should be conducted and reporting passed onto suitable country health authorities to ensure the online environment is monitored.

★ Each online pharmacy should display a physical address and named, registered dispensing pharmacist.

★ Randomised inspections should be conducted as an ongoing regulatory measure.

★ EMA approval icon displayed on websites selling EMA approved medicines.

★ Search engines should remove German websites that are not registered by DIMDI.

★ Measures should be introduced, via the Falsified Medicines Directive, to ensure that medicines obtained in the online and offline environments are equally safe and secure.

Recommendations for search engines and other intermediaries

★ Search engines should take responsibility for reviewing websites that appear in their search results for compliance to their policies. Google should enforce its policy of no pack shots of prescription medicines being displayed.

★ Search engines need to develop policies to address loopholes that allow organic search results to display criminal websites.

★ Illegal websites use the main credit card servers to process transactions. The credit card companies should take extra care when contracting with websites in the healthcare arena and implement measures to cease processing payments for illegitimate online pharmacies.

★ Illegal websites use postal and courier services to deliver their products. These service providers should introduce measures to effectively monitor such arrangements, intercept falsified medicines and report them to the relevant authorities, and cease trading with illegitimate online pharmacies.

Recommendations for the healthcare community

★ Falsified medicines fundamentally compromise the relationship and trust between healthcare providers and patients. Doctors, nurses and pharmacists should be made aware of the dangers and communicate these appropriately to patients considering buying online.

★ Patient groups should consider appropriate ways to communicate to their members the patient safety risks of falsified medicines, particularly in the online environment.

Further information

European Alliance for Access to Safe Medicines: www.eaasm.eu

World Health Organization: www.who.int

DIMDI: www.dimdi.de/static/de/index.html

Alliance for Safe Online Pharmacies (US): www.safeonlinerx.com

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Supporting material

To further support the objectives of the *Counterfeiting the Counterfeiter* campaign, 100,000 awareness posters and patient leaflets were produced and distributed to all major pharmacies and doctors' surgeries across Germany. These acted as a reminder to patients of the dangers of buying medicines online, and that purchasing medicines from traditional 'brick and mortar' pharmacies is the safest course of action.

Poster

Patient leaflet

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