



## About OMICS Group

OMICS Group is an amalgamation of [Open Access Publications](#) and worldwide international science conferences and events. Established in the year 2007 with the sole aim of making the information on Sciences and technology 'Open Access', OMICS Group publishes 500 online open access [scholarly journals](#) in all aspects of Science, Engineering, Management and Technology journals. OMICS Group has been instrumental in taking the knowledge on Science & technology to the doorsteps of ordinary men and women. Research Scholars, Students, Libraries, Educational Institutions, Research centers and the industry are main stakeholders that benefitted greatly from this knowledge dissemination. OMICS Group also organizes 500 [International conferences](#) annually across the globe, where knowledge transfer takes place through debates, round table discussions, poster presentations, workshops, symposia and exhibitions.



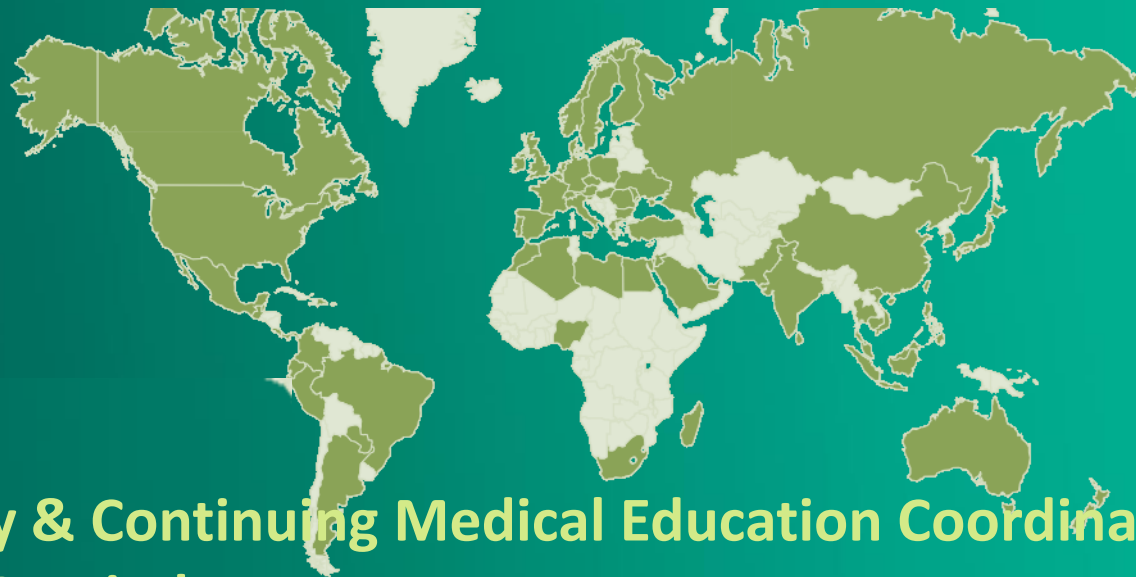
## OMICS International Conferences

OMICS International is a pioneer and leading science event organizer, which publishes around 500 open access journals and conducts over 500 Medical, Clinical, Engineering, Life Sciences, Pharma scientific conferences all over the globe annually with the support of more than 1000 scientific associations and 30,000 editorial board members and 3.5 million followers to its credit.

OMICS Group has organized 500 conferences, workshops and national symposiums across the major cities including San Francisco, Las Vegas, San Antonio, Omaha, Orlando, Raleigh, Santa Clara, Chicago, Philadelphia, Baltimore, United Kingdom, Valencia, Dubai, Beijing, Hyderabad, Bengaluru and Mumbai.



# COUNTERFEIT MEDICINES A GLOBAL THREAT



**Dr. Tarek Kilani**  
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**Emirates French Hospital**  
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# World Health Organization Definition of a Counterfeit Medicine



World Health  
Organization

**A Product that is  
deliberately and  
fraudulently  
mislabelled with  
respect to source  
and/or identity.**



# **World Health Organization Definition of a Counterfeit Medicine**



**World Health  
Organization**

**Counterfeiting  
can apply to both  
generic and  
branded  
products.**



## **World Health Organization Definition of a Counterfeit Medicine**

**Counterfeit Medicine may include products :**

- with the correct ingredients,**
- with the wrong ingredients,**
- without ingredients,**
- with incorrect quantities of active ingredients,**
- with fake packaging.**



## Types of Medicinal Product Affected by Counterfeiting

- High volume (high level of prescribing)
- High price
- Known brand
- “Lifestyle”/non-reimbursed
- Blockbusters
- Parenterals (in developing world)
- All generics
- Off-label use drugs
- Drugs in short supply



# Global Scene





## Global Scene

- The problem of counterfeit drugs is known to exist in both developed and developing countries. However, the true extent of the problem is not really known since no global study has been carried out.



## Global Scene

- The appearance of counterfeit medicines in international commerce was first mentioned as a problem at the WHO Conference of Experts on Rational Drug Use in Nairobi, Kenya, in 1985.



## Global Scene

- Since then, public awareness of the problem of counterfeit drugs has grown. Both government authorities and manufacturers have been concerned with efforts aimed at preventing the problem, and WHO has received reports related to counterfeit drugs from some of its member states on a voluntary basis. According to this information, the problem is known to involve both developed and developing countries.



## Global Scene

- The impact of counterfeit medications on the legitimate global pharmaceutical market has been estimated to reach \$75 billion
- Annual value of counterfeited consumer goods is US\$200 billion equivalent to 6% of world trade
- In 2005 market was US\$32 billion
- In 2006 it was US\$ 40 billion



## Global Scene

- Estimates indicate that less than 1% of prescription medications sold in the United States and Europe and 30% sold in developing nations are counterfeit
- Africa, Asia and Latin America have > 30% of counterfeit medicines
- Other developing markets have < 10%; overall range is 10% to 30% (WHO)



## Global Scene

- Products without active ingredients, 32.1%;
- Products with incorrect quantities of active ingredients, 20.2%;
- Products with wrong ingredients, 21.4%,



## Global Scene

- Products with correct quantities of active ingredients but with fake packaging, 15.6%;
- Copies of an original product, 1%; and
- Products with high levels of impurities and contaminants, 8.5%



## Estimates of Counterfeit Medicines

WHO estimates counterfeit medicines account for 6% of the world market

EU 2 – 10%

Europe (non EU) 2 – 25%

Asia 10 – 80%

Africa 10 – 40%

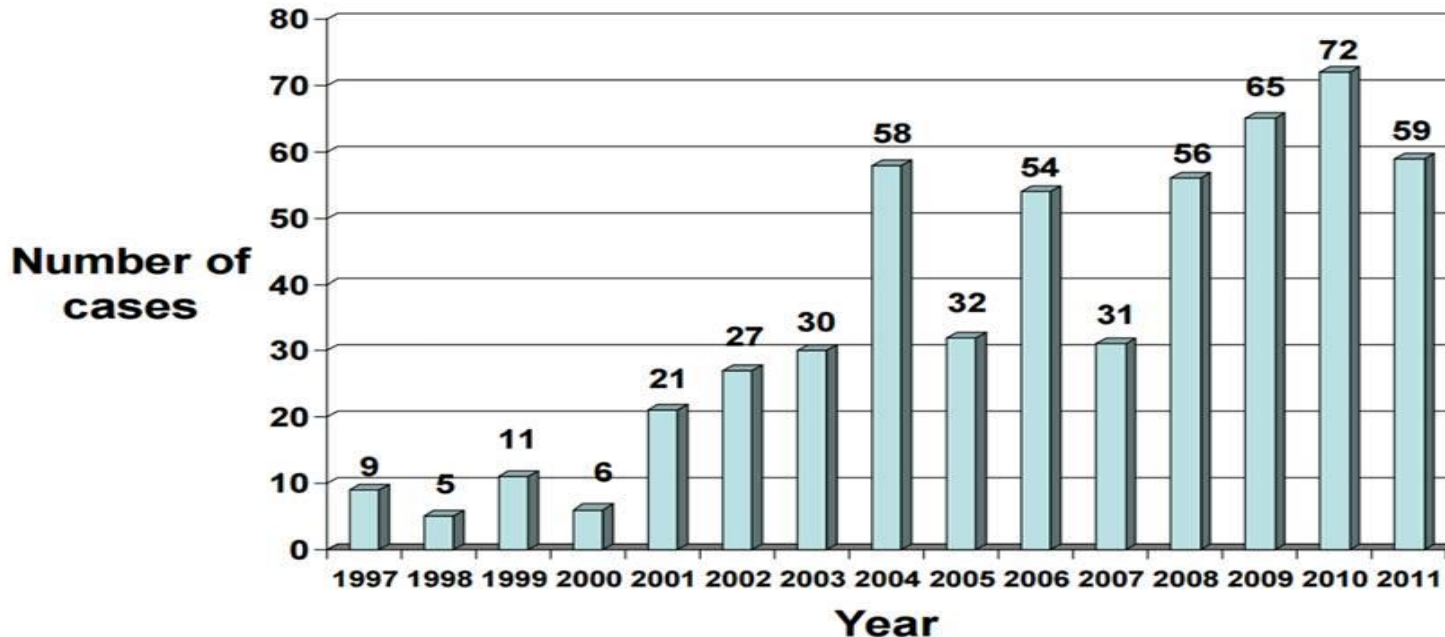
Latin America 5 – 60%





# Counterfeit Drugs Cases Opened By FDA Per Year

**Counterfeit Drug Cases Opened by FDA's  
Office of Criminal Investigations per Fiscal Year**





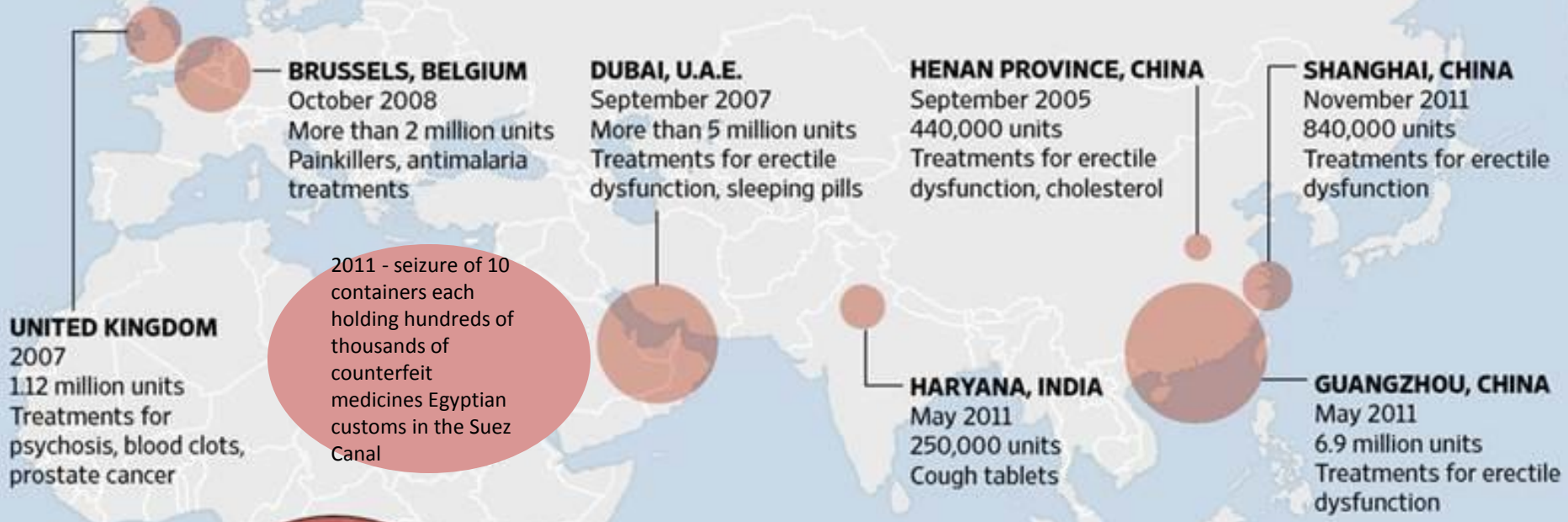
# Counterfeit Drugs Cases Opened By FDA Per Year

Geographic distribution of pharmaceutical crime incidents



Source: Pharmaceutical Security Institute

# Some of the Largest Seizures of Counterfeit Drugs



2011 - seizure of 10 containers each holding hundreds of thousands of counterfeit medicines Egyptian customs in the Suez Canal

**UNITED KINGDOM**  
2007  
1.12 million units  
Treatments for psychosis, blood clots, prostate cancer

**ANGOLA**  
June 2012  
33.2 million dosage units  
Antimalaria treatments



Sources: Pharmaceutical Security Institute; U.K.'s Medicines and Healthcare Products Regulatory Agency; U.S. Food and Drug Administration; The United States Pharmacopeial Convention Inc.; Chinese state media



# Counterfeit Drugs Cases





## Poisons Found in Counterfeit Drugs

- Counterfeit drugs sold online have been made from everything from highway paint, rat poison, arsenic and floor wax.
- Unsuspecting consumers can be exposed to counterfeit drugs by buying from illicit, unlicensed drug sellers on the internet.



## Common Poisons Found in Counterfeit Drugs

Hazardous items, such as *rat poison, boric acid, antifreeze, .....* :

- These poisons can cause kidney damage and failure, cancer, developmental defects, and death.
- Interpol reported that “In Ecuador, boric acid was found as an ingredient in fake medication while sheet rock and rat poison were included in Columbia.



## Common Poisons Found in Counterfeit Drugs

- Methamphetamine was also found in fake medication in Hungary,
- commercial-grade wall paint was used to color fake pills in Montreal.
- Antifreeze was found in cough syrups and other common drugs, resulting in the deaths of hundreds of adults and children in Panama, Haiti, Nigeria and Guanzhou.”



## Common Poisons Found in Counterfeit Drugs

Household items, such as *floor wax, brick dust, house paint, road paint, paint thinner:*

- These can cause vomiting, abdominal pain, dizziness, blurred vision, respiratory difficulty, nervous system disruption, coma, death.
- Investigators have found household items in counterfeit medications. Floor wax gives a nice sheen to mimic an enteric coating; brick dust and paints fake the proper color of pills, and sheet rock can be made into pills.”





## Common Poisons Found in Counterfeit Drugs

Drugs you didn't ask for:

- According to FDA orders over the Internet for Ambien, Xanax, Lexapro and Ativan received products containing what was identified as “foreign versions of Haldol (haloperidol), a powerful anti-psychotic drug. As a result, these customers needed emergency medical treatment for symptoms such as difficulty in breathing, muscle spasms, and muscle stiffness—all problems that can occur with haloperidol.”



## Common Poisons Found in Counterfeit Drugs

### No Drugs at All:

- Even if a medication contains no poisons or wrong medications, a potentially life-saving medication without an active ingredient will cause harm, and potentially death.
- Medications with no active ingredients, or insufficient quantities, can harm you by not correcting your illness. In recent cases, fake medicines with no drugs at all in them have had an impact on cancer patients and asthmatics with dire consequences.



# Correct Drug, Correct Ingredients

- Viagra (not made by Pfizer)
- Cialis (not made by Lilly)





## Wrong Ingredients, but Therapeutically Active

- Cialis (sildenafil instead of tadalafil)



- Levitra (sildenafil instead of vardenafil)



- Lipitor (lovastatin instead of atorvastatin)





## No Active Ingredients

**1995 - Fake meningitis vaccine lead to 3,000 Deaths in Niger**

**1998 - 60% of all malaria deaths attributed to fake quinine sulphate in Uganda.**

**2000 - 30 people died after taking fake malaria drugs being sold as mefloquine or artesunate in Cambodia.**



## Toxic ingredients

1990 - 109 children die after taking a fake preparation containing di-ethylene glycol in Nigeria

1992 - Paracetamol preparation containing di-ethylene glycol believed to have killed hundreds of children in Bangladesh

1995 - 30 children die after taking medicines containing di-ethylene glycol in Haiti

1998 - 30 infant deaths (di-ethylene glycol) in India

2006 - 11 people died from an antibiotic which was not properly sterilised in China



# Cases of Counterfeit Reported

Medicine	Country/Year	Report
Avastin (for cancer treatment)	United States of America, 2012	Affected 19 medical practices in the USA. The drug lacked active ingredient <sup>1</sup>
Viagra and Cialis	United Kingdom, 2012	Smuggled into the UK. Contained undeclared active ingredients with possible serious health risks to the consumer <sup>2</sup>
Truvada and Viread (for HIV/AIDS)	United Kingdom, 2011	Seized before reaching patients. Diverted authentic product in falsified packaging <sup>3</sup>



# Cases of Counterfeit Reported

Zidolam-N (for HIV/AIDS)	Kenya, 2011	Nearly 3 000 patients affected by falsified batch of their antiretroviral therapy <sup>4</sup>
Alli (weight-loss medicines)	United States of America, 2010	Smuggled into the USA. Contained undeclared active ingredients with possible serious health risks to the consumer <sup>5</sup>
Anti-diabetic traditional medicine (used to lower blood sugar)	China, 2009	Contained six times the normal dose of glibenclamide. Two people died, nine people were hospitalized <sup>6</sup>
Metakelfin (antimalarial)	United Republic of Tanzania, 2009	Discovered in 40 pharmacies. The drug lacked sufficient active ingredient <sup>7</sup>





# Identifying Counterfeit Medicines

- Evidence of tampering with packaging
- Switched or altered labels
- Altered expiry dates
- Compare packaging – read labels, font size, colour orientation of label
- Compare containers – size, shape, colour
- Compare products – shape, colour, weight



One of these medicines is fake.  
Can *you* tell which?



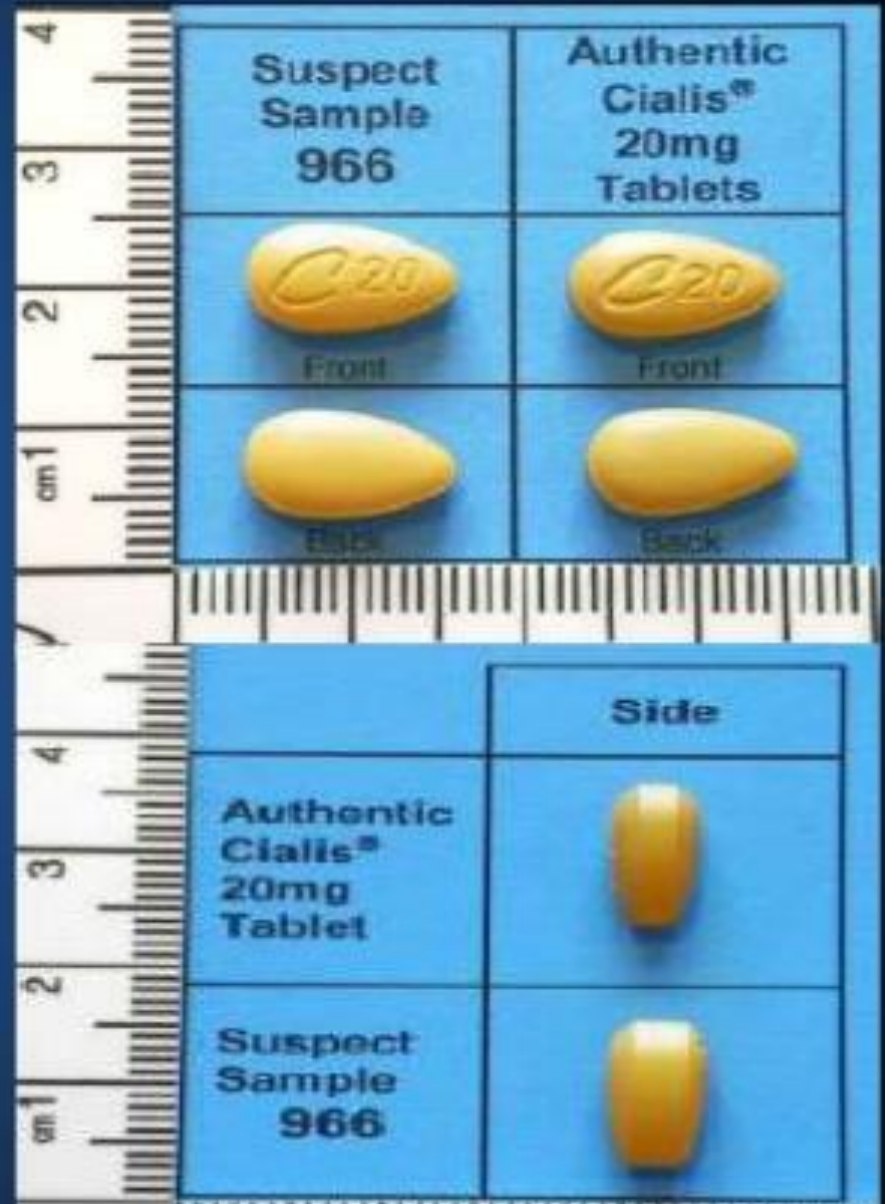
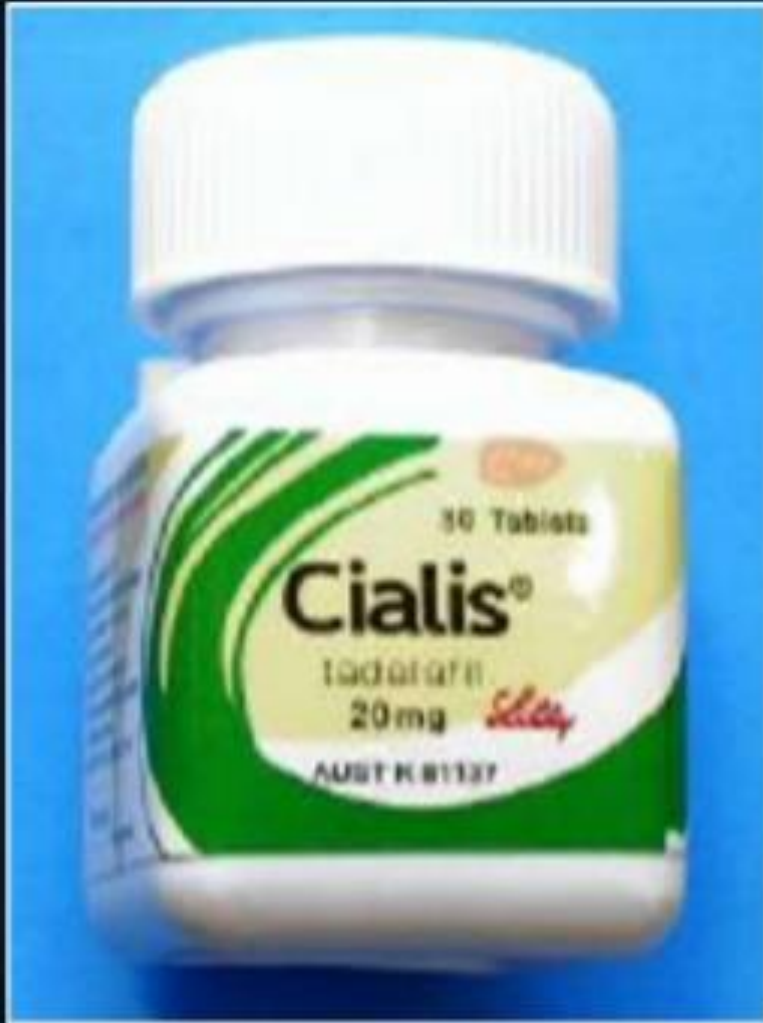


This Viagra pill costs **\$15**.  
To get it, you  
have to go to a  
doctor and talk about  
your erectile issues.



This knockoff costs **\$1**.  
You can order it over the Internet  
without a prescription or  
potential embarrassment.  
It might work.  
It might also contain  
brick dust—or worse.

# Counterfeit Cialis®



# Counterfeit Product

## Counterfeit Viagra found in two California pharmacies

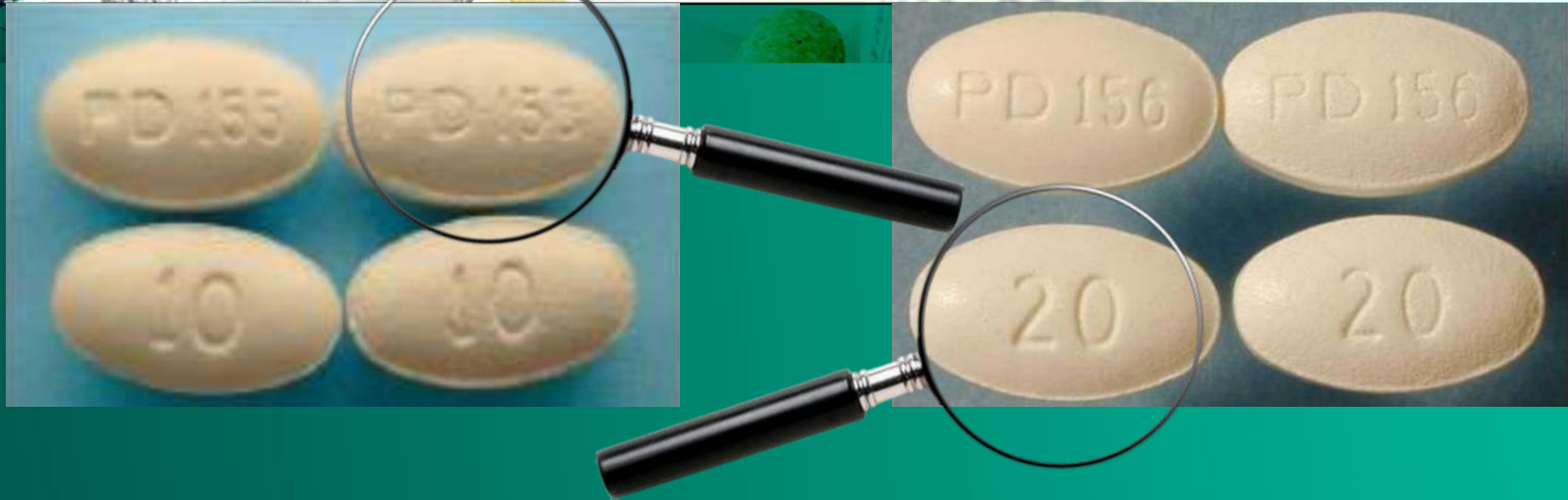


Counterfeit tablets

Counterfeit tablet containing blue speckles



# Counterfeit LIPITOR



- The counterfeit Lipitor tablets on the right are nearly identical from the authentic tablets on the left. Only distinguishable to the consumer by their bitter taste.
- More than 18 million counterfeit Lipitor tablets were removed from the U.S. supply chain in 2003

# Counterfeit ZANTAC

Genuine

Counterfeit



Manufactured in Taiwan, discovered in United Kingdom. Excellent packaging of counterfeit.

## Counterfeit Ponstan, Colombia



**Would you trust Pharmaceuticals Manufactured at This factory?**

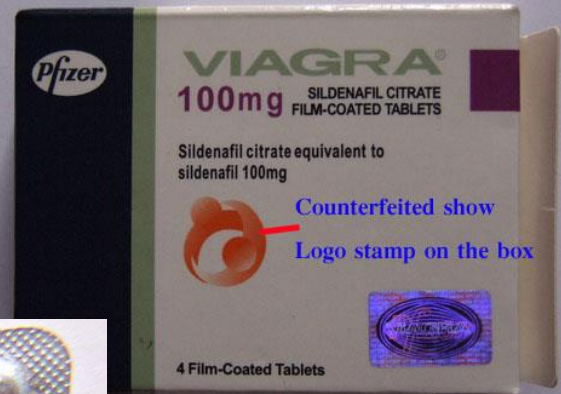
Source: Pfizer Global Security



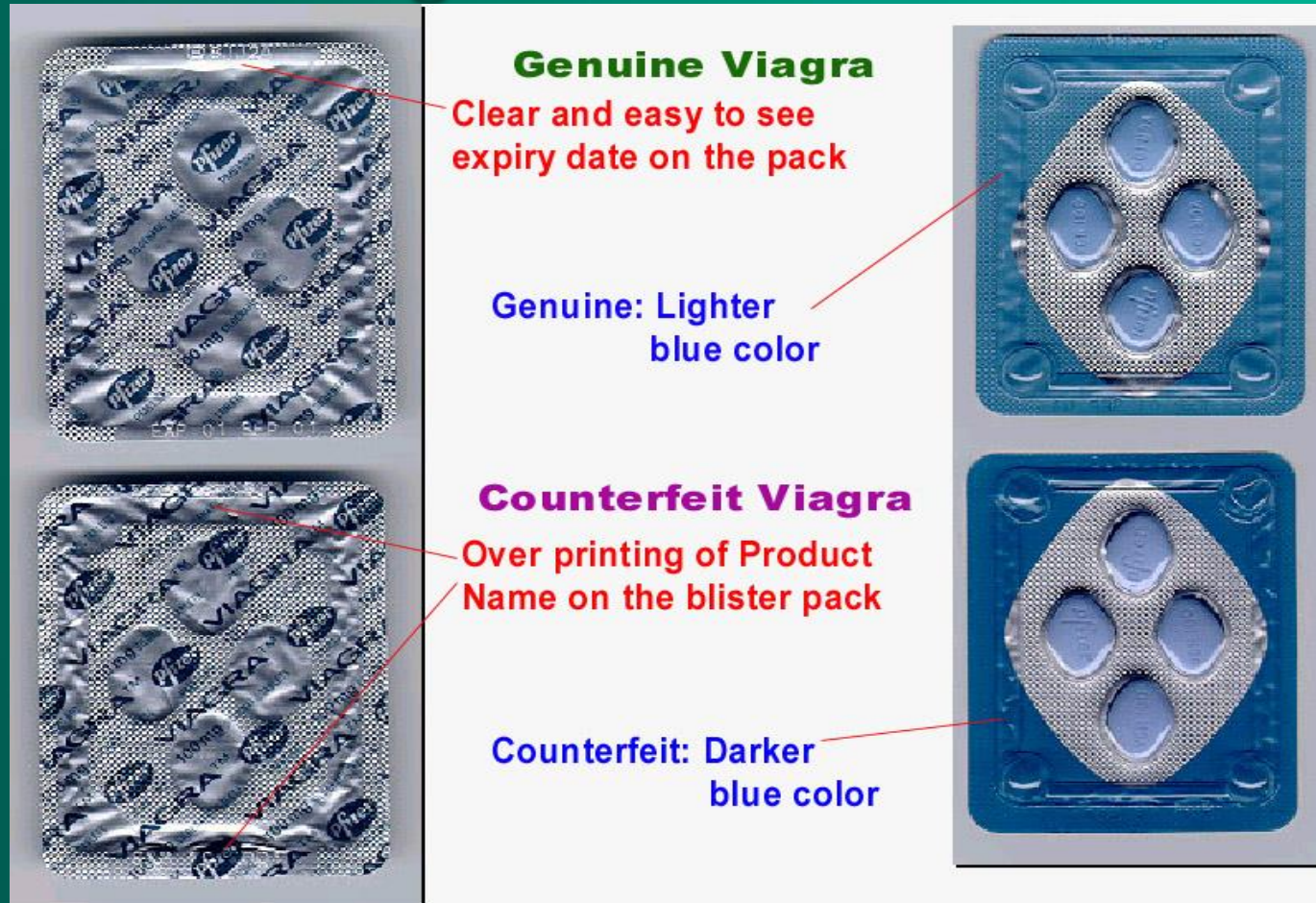
Ponstan is an anti-inflammatory product. This counterfeit was found in Columbia contain yellow powder; it consist of boric acid, floor wax, yellow highway paint.



# Counterfeit Viagra founded in Thailand 2012



# Counterfeit Viagra founded in Thailand 2012





## Causes of Counterfeiting

- There is a lot of money to be made
- Lifestyle medicines are wanted
- Equipment is widely available
- Distribution is now easy, e.g. Internet and postal delivery
- Patients are self-prescribing
- Weak legislation and enforcement
- Organised crime has moved in




## Whose problem is it ?

- Police
- Regional Drug Squad
- Customs
- Trading Standards Office
- Regulatory Agency
- Pharmaceutical company
- Pharmacy organisations
- Pharmacists



# International Collaboration and efforts

- **World Health Organization**
  - International working group
  - WHO/FDA cooperative agreement
    - To support building global capacity for the surveillance and monitoring of counterfeit medicines and supply chain threats
- **INTERPOL led global operation targeting internet websites supplying illegal and dangerous drugs; 81 countries participated**



The World Health Organization (WHO) has established an International Medical Products Anti-Counterfeiting Task Force (IMPACT) in order to bring together all stakeholders on the global level to fight counterfeit medical products.



U.S. Department of Health & Human Services

**FDA** U.S. Food and Drug Administration  
Protecting and Promoting *Your* Health

A to Z Index | Follow FDA | En Español

SEARCH

Home Food **Drugs** Medical Devices Radiation-Emitting Products Vaccines, Blood & Biologics Animal & Veterinary Cosmetics Tobacco Products

**Drugs**  
Home Drugs Drug Safety and Availability

**Drug Safety and Availability**

- Counterfeit Drugs
- Drug Alerts and Statements
- Medication Guides
- Drug Safety Communications
- Drug Shortages**
- Postmarket Drug Safety Information for Patients and Providers
- Information by Drug Class
- Medication Errors
- Drug Safety Podcasts
- Safe Use Initiative
- Drug Recalls
- Drug Supply Chain Integrity

**International Efforts to Combat Counterfeit Drugs**

**World Health Organization's International Medical Products Anti-Counterfeiting Taskforce - IMPACT**

**IMPACT** International Medical Products Anti-Counterfeiting Taskforce

Counterfeit medical products are a major public health risk for all communities. This risk has grown in recent years due to counterfeiting methods becoming more sophisticated and to the increasing amount of merchandise crossing borders.

The World Health Organization (WHO) has responded to the challenge by creating a global coalition of stakeholders called IMPACT (International Medical Products Anti-Counterfeiting Taskforce). The taskforce, created in 2006, has been active in forging international collaboration to seek global solutions to this global challenge and in raising awareness of the dangers of counterfeit medical products.

For more information, please visit the WHO IMPACT Web site at: <http://www.who.int/impact/en/>

# Online Pharmacy



U.S. Department of Health and Human Services



**U.S. Food and Drug Administration**  
Protecting and Promoting *Your* Health

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## Drugs



[Home](#) > [Drugs](#) > [Resources for You](#) > [Information for Consumers \(Drugs\)](#) > [Buying & Using Medicine Safely](#) > [Buying Medicines Over the Internet](#) > [BeSafeRx: Know Your Online Pharmacy](#)

### Resources for You

[Information for Consumers \(Drugs\)](#)

[Buying & Using Medicine Safely](#)

[Buying Medicines Over the Internet](#)

▶ [BeSafeRx: Know Your Online Pharmacy](#)

### Resources for You

- [About BeSafeRx](#)
- [Frequently Asked Questions](#)
- [For Campaign Supporters](#)
- [For Health Professionals](#)
- [Campaign Materials](#)

## BeSafeRx: Know Your Online Pharmacy



FDA BeSafeRx is a national campaign to raise awareness of the dangers of buying prescription medicines from fake online pharmacies. This campaign provides the resources to help consumers:

### Know the Risks

Learn the dangers of buying from a fake online pharmacy.



### Know the Signs

Identify the signs of a fake online pharmacy.



### Know Your Online Pharmacy

Find a safe online pharmacy.





Home

Food

Drugs

Medical Devices

Radiation-Emitting Products

Vaccines, Blood & Biologics

Animal & Veterinary

Cosmetics

Tobacco Products

## Drugs



[Home](#) > [Drugs](#) > [Resources for You](#) > [Information for Consumers \(Drugs\)](#) > [Buying & Using Medicine Safely](#) > [Buying Medicines Over the Internet](#)

### Resources for You

[Information for Consumers \(Drugs\)](#)

[Buying & Using Medicine Safely](#)

▶ [Buying Medicines Over the Internet](#)

[BeSafeRx: Know Your Online Pharmacy](#)

### Resources for You

# Buying Medicines Over the Internet

## Quick Tips for Buying Online

- Make sure the site requires a prescription and has a pharmacist available for questions.
- Buy only from licensed pharmacies located in the United States. [BeSafeRx: Know Your Online Pharmacy](#) has more information about finding safe and legal online pharmacies.
- Don't provide personal information such as credit card numbers unless you are sure the site will protect them.

### Spotlight

- [BeSafeRx: Know Your Online Pharmacy](#)
- [Buying Prescription Medicine Online: A Consumer Safety Guide](#)

### Report Problem Sites

- [Reporting Unlawful Sales of Medical Products on the Internet](#)





Search FDA



- Home
- Food
- Drugs
- Medical Devices
- Radiation-Emitting Products
- Vaccines, Blood & Biologics
- Animal & Veterinary
- Cosmetics
- Tobacco Products

## Drugs



Home > Drugs > Resources for You > Information for Consumers (Drugs) > Buying & Using Medicine Safely > Buying Medicines Over the Internet > BeSafeRx: Know Your Online Pharmacy

### Resources for You

[Information for Consumers \(Drugs\)](#)

[Buying & Using Medicine Safely](#)

[Buying Medicines Over the Internet](#)

[BeSafeRx: Know Your Online Pharmacy](#)

## Know the Signs



### **WARNING! Beware of online pharmacies that:**

- Allow you to buy drugs without a prescription from **your** doctor
- Offer deep discounts or cheap prices that seem too good to be true
- Send spam or unsolicited email offering cheap drugs
- Are located outside of the United States
- Are not licensed in the United States

### **These are signs of a fake online pharmacy.**

### **Tips for identifying safe online pharmacies:**

- Always require a doctor's prescription
- Provide a physical address and telephone number in the United States
- Offer a pharmacist to answer your questions
- Have a license with your state board of pharmacy.

[Find your state's pharmacy licensing database.](#)

**These are signs of a safe, legal online pharmacy.**

# Example of an Online Pharmacy

The screenshot shows an online pharmacy interface. At the top, there are navigation links: ALL PRODUCTS, ABOUT US, HOW TO ORDER, TESTIMONIALS, FAQ, CONTACTS. A banner for 'CIALIS + VIAGRA MEN'S POWER CHARGE' features a '-10% for EVERYTHING!' badge and a price of '\$74.95' with an 'ORDER NOW' button. Below this is a 'Healthcare Online' section with a list of products. The list includes 'Viagra', 'Cialis', 'Viagra Super Active+', 'Levitra', 'Viagra Professional', 'Viagra Super Force', 'Cialis Super Active+', 'Propecia', 'Cialis Professional', 'Cialis Soft Tabs', and 'Viagra Soft Tabs'. Each product listing includes a small image of the pill, the product name, a price reduction (e.g., 'as low as \$0.99 \$0.89'), a brief description, and an 'Order now' button. The 'Order now' buttons are circled in red. The 'Cialis' and 'Viagra Super Active+' listings also have 'More Info' links. On the left, there is a 'MEN'S HEALTH' section with a list of products, some of which are also circled in red. Below that is a 'PAIN RELIEF' section with 'Tramadol' and 'Toradol' listed. At the bottom, there is a 'Classic ED Pack (Viagra+Cialis+Levitra) as low as \$2.95' listing.

USD GBP CAD EUR AUD CHF

**MEN'S HEALTH**

- Viagra
- Cialis
- Viagra Super Active+
- Levitra
- Viagra Professional
- Viagra Super Force
- Cialis Super Active+
- Propecia
- Cialis Professional
- Cialis Soft Tabs
- Viagra Soft Tabs
- Super Active ED Pack

**PAIN RELIEF**

- Tramadol
- Toradol

**Viagra as low as ~~\$0.99~~ \$0.89**  
Generic Viagra, containing Sildenafil Citrate, enables many men with erectile dysfunction to achieve or sustain an erect penis for sexual activity. Since Viagra was first introduced, it has been the prime treatment for erectile dysfunction.  
> More Info

**Cialis as low as ~~\$1.59~~ \$1.49**  
Generic Cialis is a highly effective orally administered drug for treating erectile dysfunction, more commonly known as impotence. Recommended for use as needed, Cialis can also be used as a daily medication.  
> More Info

**Viagra Super Active+ as low as ~~\$2.55~~ \$2.30**  
Viagra Super Active represents the fourth generation of phosphodiesterase inhibitors. This new formulation of a world-known medication provides even more powerful vasodilation, increased stamina and sensitivity to stimulation.  
> More Info

**Levitra as low as ~~\$2.15~~ \$1.95**  
Generic Levitra is an FDA-approved oral prescription medication for the treatment of erectile dysfunction (ED) in men.  
> More Info

**Classic ED Pack (Viagra+Cialis+Levitra) as low as \$2.95**

# Example of an Online Pharmacy

The screenshot shows an online pharmacy interface. At the top, there are navigation links: ALL PRODUCTS | ABOUT US | HOW TO ORDER | TESTIMONIALS | FAQ | CONTACTS. A banner for 'HAPPY EASTER! SAVE ON SPECIAL EVENT! CIALIS+VIAGRA POWERPACK' is visible. A large red question mark and exclamation point are overlaid on the page. On the left, a sidebar lists 'MEN'S HEALTH' products like Viagra, Cialis, and Levitra, and 'PAIN RELIEF' products like Celebrex and Toradol. The main content area shows 'Your Cart' with 'Toradol' (30 pills, 10mg) and a 'Free pills included with your order' section. The 'Free pills' section has three options: '4 pills Viagra 100mg', '4 pills Cialis 20mg', and 'No Bonus'. The '4 pills Viagra 100mg' and '4 pills Cialis 20mg' options are circled in red. A 'Checkout' button is also present. The total amount is \$33.75, with a 10% discount of \$3.38, resulting in an order total of \$30.38. A 'Bonus Policy' section lists several benefits, including free airmail, express courier, and insurance. At the bottom, there is a 'Viagra as low as \$0.89' offer.

USD GBP CAD EUR AUD CHF

**MEN'S HEALTH**

- Viagra \*
- Cialis \*
- Viagra Super Active+ \*
- Levitra \*
- Viagra Super Force \*
- Viagra Professional \*
- Cialis Super Active+ \*
- Propecia \*
- Cialis Professional \*
- Viagra Soft Tabs \*
- Cialis Soft Tabs \*
- Brand Viagra \*

[View all](#)

**PAIN RELIEF**

- Celebrex
- Toradol \*

[View all](#)

**Healthcare Online**

Most Popular Products

Your Cart

**Toradol**  
30 pills (10mg)  
Upgrade to 60 pills for only \$12.15 and Save \$14.85 more!

Total amount: \$33.75  
10% Discount: \$3.38  
Order total: **\$30.38**

Free pills included with your order:

- 4 pills Viagra 100mg
- 4 pills Cialis 20mg
- No Bonus

**Checkout**

**Bonus Policy**

- ✓ 4 free bonus pills for all orders!
- ✓ Free Regular Airmail (10-21 days) for orders starting with \$150.00!
- ✓ Free Express Courier (US Customers Only) (8-14 days) for orders starting with \$300.00!
- ✓ Free insurance (guaranteed reshipment if delivery failed) for orders starting with \$200.00!

Viagra as low as \$0.89

Order now



## Measures to Combat Counterfeit Medicines

- Enacting new drug laws or updating existing drug laws for prohibiting counterfeit medicines;
- Establishing institutions for the regulation of medicines and clearly setting out in the drug laws, the power, duties and responsibilities of the institution(s);



## Measures to Combat Counterfeit Medicines

- Training of personnel, including enforcement officers, for national drug control;
- Making available necessary financial and other resources;
- Ensuring that the drug laws are enforced;



## Measures to Combat Counterfeit Medicines

- Fostering international cooperation in the control of pharmaceuticals and entering into bilateral and multilateral agreements with other governments and with international organizations such as WHO, Interpol and the World Customs Organization (WCO).



## Steps to avoid Counterfeiting

- **Manufacturers' Secure Packaging**
- **Ensuring Security of Distribution**



## Steps to avoid Counterfeiting

- Manufacturers' Secure Packaging
- Ensuring Security of Distribution





## Manufacturers' Secure Packaging

- Tamper-proof outer packaging
- Covert markers eg Cryptoglyph encryption
- Radiofrequency identification (RFID)
- Holograms
- Security Inks
- 2-D Bar Coding
- Medicines Passports (Pedigrees)



## Electronic Solutions: Advanced Bar Coding and RFID

- Advanced bar coding and RFID technologies are potential technologies to enable efficient electronic pedigree
- There are two possible approaches
  - Adding lot number, expiration date and other information to the barcode or RF-ID tag
  - Mass serialization where each package has a unique id number assigned by the manufacturer

# Electronic Solutions: Advanced Bar Coding and RFID

- RFID is emerging as the preferred solution for package level tracking





# AstraZeneca

Packs of Nexium (esomeprazole) are to be sealed with new tamper-proof seals and marked with unique carton numbers using a two-dimensional matrix code.

Is one of the first pharmaceutical companies to make all individual packs of a medicine traceable throughout the supply chain.





## Steps to avoid Counterfeiting

- Manufacturers' Secure Packaging
- Ensuring Security of Distribution



## Steps to avoid Counterfeiting

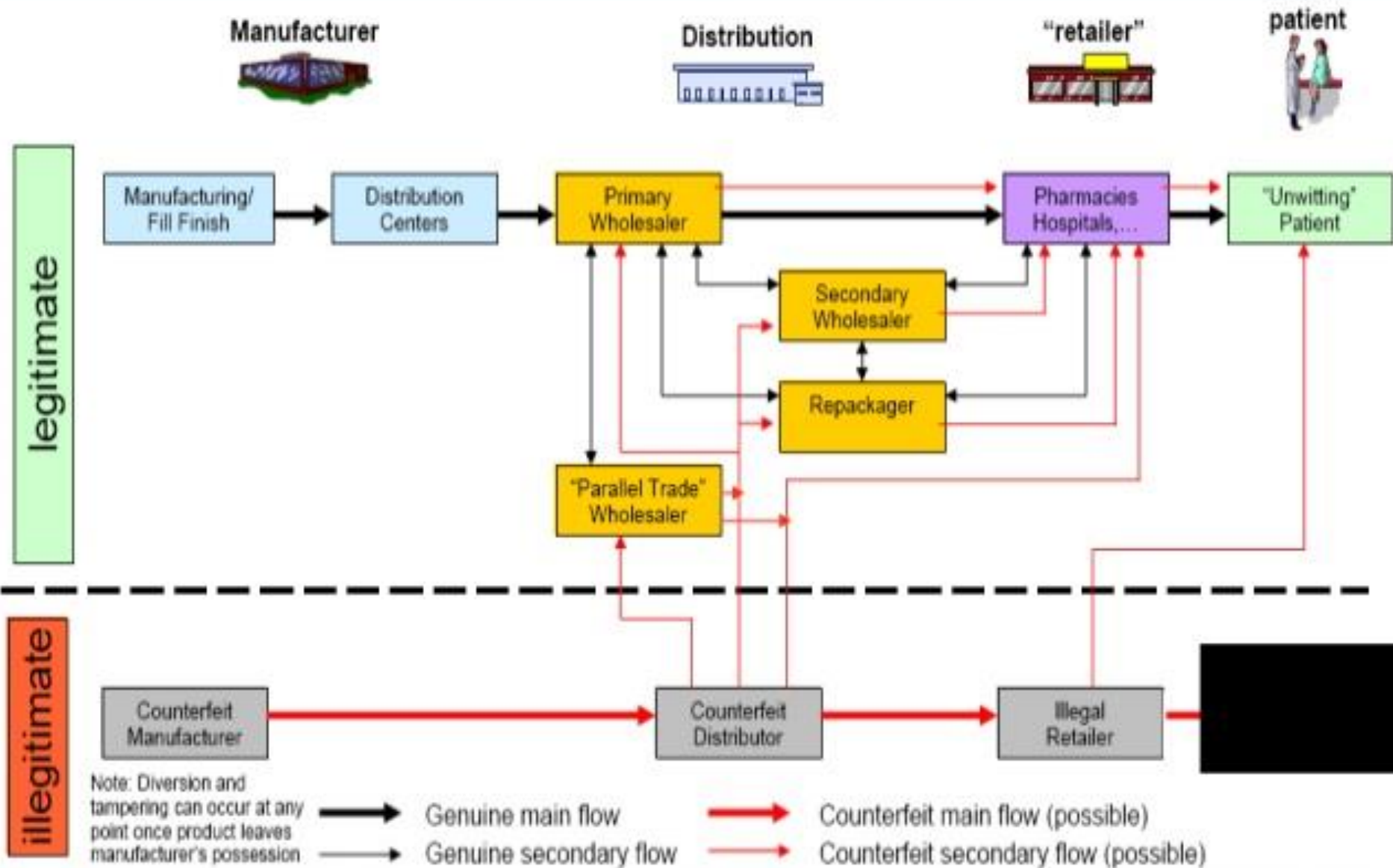
- Manufacturers' Secure Packaging
- Ensuring Security of Distribution



## Ensuring Security of Distribution

- Buy from known sources
- Make a list of approved suppliers
- If using an alternative source obtain the pedigree of the product or a form of certification it is an authentic product
- Be wary of cheap deals
- Check with professional colleagues and the local Pharmaceutical Society if in doubt

# POSSIBLE INFLOW OF COUNTERFEITS TO THE LEGITIMATE DISTRIBUTION CHANNEL







## Effect of Counterfeit

- **Ethics – Increased corruption**
- **Government – Loss of Reputation & Revenue**
- **Consumer**
  - Health Hazard
  - Loss of confidence in the healthcare system
- **Industry**
  - Loss of Reputation & Brand Equity
  - Mistrust of Authorities, Health Practitioners and Consumers



## Pharmacist's Role

- Minimize the risk of and exposure to counterfeit medical products
  - Know who you are doing business with
  - Stay informed
  - Safeguard products
  - Destroy empty packages/containers



## Pharmacist's Role

- Be vigilant
  - Inspect the product and packaging
  - Know high risk products
  - Consider counterfeits if:
    - New/unusual side effects
    - Lack of therapeutic effect
    - Products tastes/smells abnormal
    - Patient experiences pain, burning, redness at injection site



## Pharmacist's Role

- Counseling patients about counterfeit medical products
  - Encourage patients to shop online only at licensed pharmacies.
  - Tell you patient if you dispense a drug that may look different from their previously dispensed drug.
  - If paying for meds is a problem, counsel on assistance program and generics, rather than buying online.



# Thank You

**Dr. Tarek Kilani**  
**Head of Pharmacy & Continuing Medical Education Coordinator**  
**Emirates French Hospital**  
**Abu Dhabi - United Arab Emirates**



Let us meet again..

We welcome you all to our future conferences of OM  
International

4<sup>th</sup> Annual Conference on European Pharma Congre  
June 18-20,2016, Berlin, Germany.

<http://europe.pharmaceuticalconferences.com/>