Substandard and Falsified Medical Products

A Global Overview
Michael Deats WHO Geneva

Definitions

Substandard

- Also called 'out of specification', these are authorized medical products that fail to meet either their quality standards or their specifications, or both.

Falsified

- Medical products that deliberately /fraudulently misrepresent their identity, composition or source.

Unregistered / Unlicensed

- Medical products that have not undergone evaluation and/or approval by the NRRA for the market in which they are marketed/distributed or used, subject to conditions under national or regional regulation and legislation.

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Outline
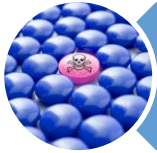
What is the scope, scale and harm?

How can we measure their impact?

Case studies

What does the data tell us?

How can we better prevent, detect and respond?

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Scope

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Scale
(Single container seized by customs)

Coartem – Anti malarial

1.383,528 packs

Postinor 2 – Emergency Contraceptive

4930 packs
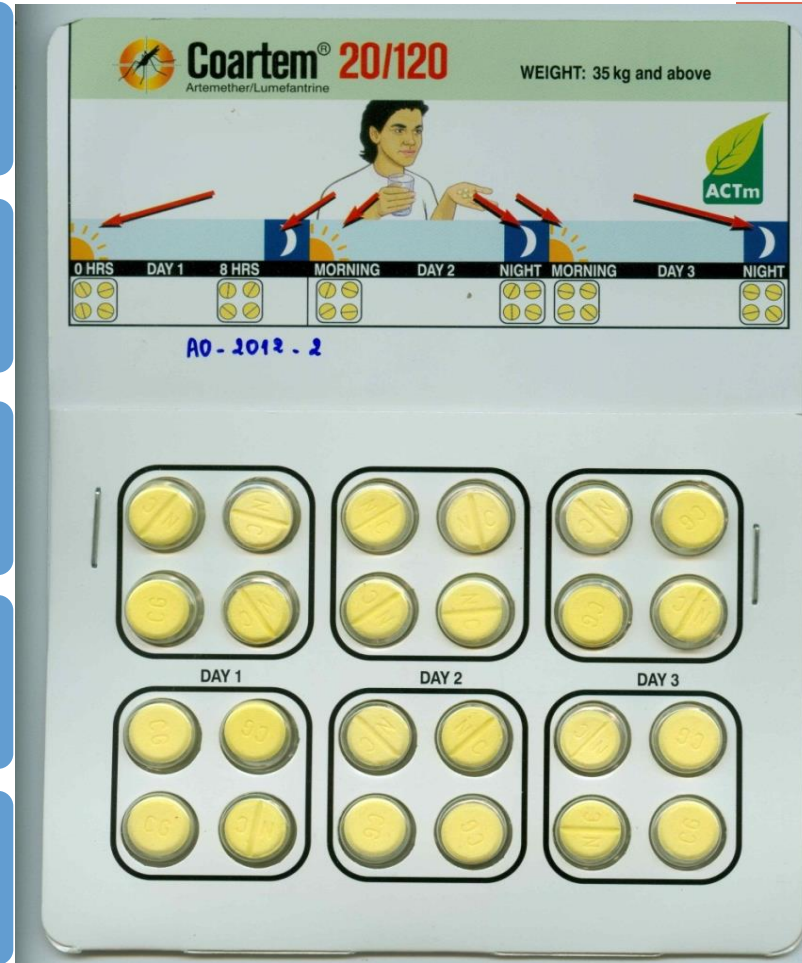
Vermox – Worming treatment

1534 packs

Clomid – Fertility treatment

36,550 packs

Clamoxyl - Antibiotic

744 packs

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Harm

 Patients and Consumers Health

 Damages confidence in medicines, healthcare providers and health systems

 Contribute to development of Anti-microbial resistance

 Undermines immunization campaigns

 Economic damage to health systems, through loss of productivity and prolonged treatment regimes

 Increased out of pocket expenses to consumers

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Measuring the Impact

Improved Reporting

- Public, Healthcare professionals, Supply Chain, Industry, Customs, Police
- Use the data to measure risk, impact and drive increased vigilance

Improved Post Market Surveillance

- Improved efficiency in the use of limited resources
- Risk based surveillance and inspection

Improved regional collaboration

- Concrete and ongoing cross border collaboration
- Regional alerts

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Challenges

- **Substandard and falsified medical products are usually difficult to detect**

- **Falsified packaging is often identical to the genuine medical product**

- **They do not usually cause obvious adverse reactions**

- **They fail to properly treat the disease or condition for which they are intended**

- **An unexpected lack of efficacy is often the only signal of their existence**

- **Current pharmacovigilance systems rarely identify them**

- **If you do not look you will not find**

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WHO Global Surveillance and Monitoring System –rapidalert@who.int

1.Technical Support

- **Laboratory Support**
- **Experts – Specialists Support**
- **WHO Rapid Alerts**
- **National Focal points access to WHO database, photo libraries and laboratory reports**

2.Strategic Support

- **Validated reliable evidence**
- **Identifies vulnerabilities, weaknesses and products most at risk**
- **Enables evidence and risk based policy**
- **Identifies areas for capacity building and investment**

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Globalization = Increased Vigilance

December 2012, Pakistan
50 deaths

WHO Support and International Alert

September 2013, Paraguay
46 patients hospitalised

WHO Support and International Alert

Global Impact
8 Countries
4 Continents

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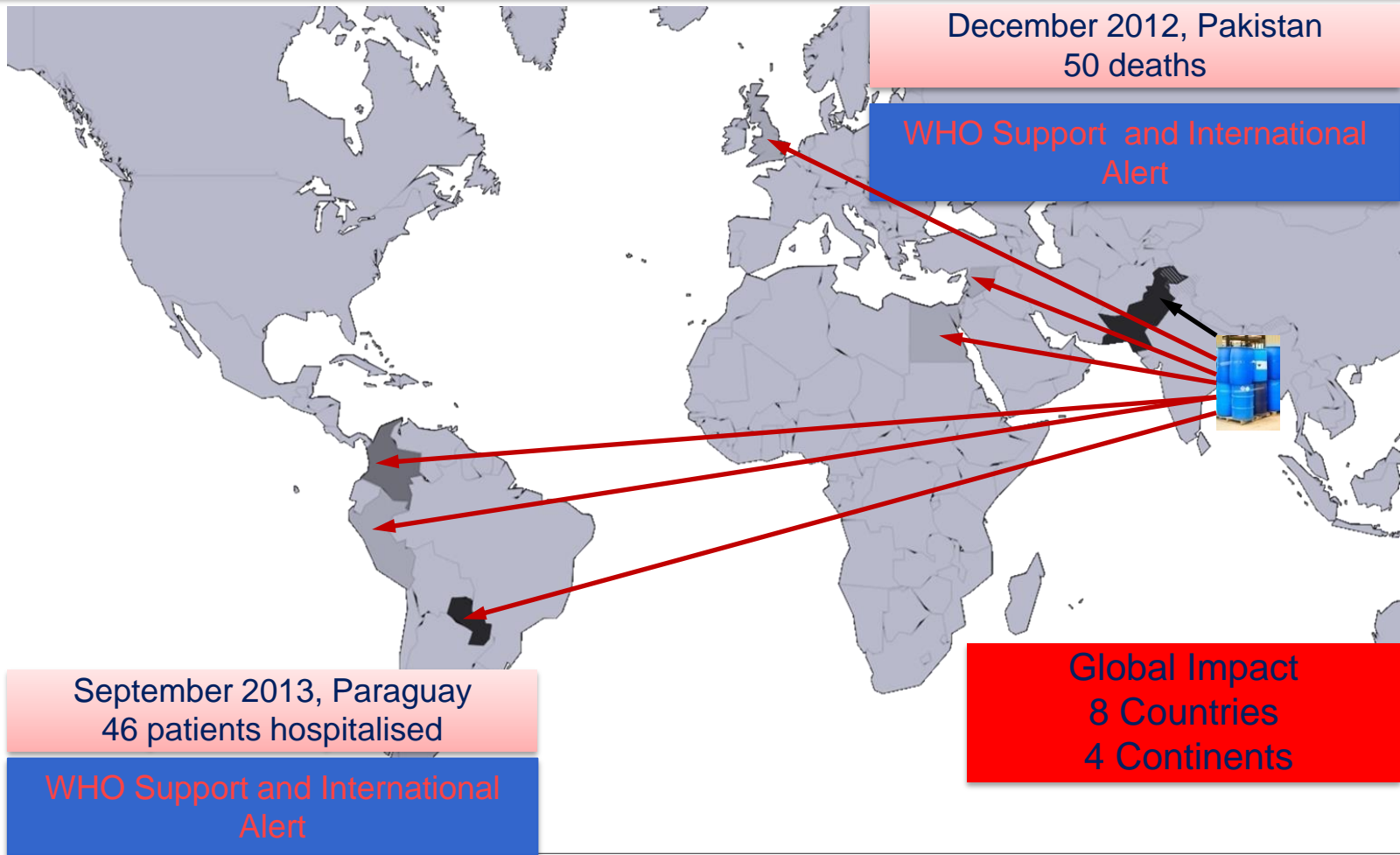
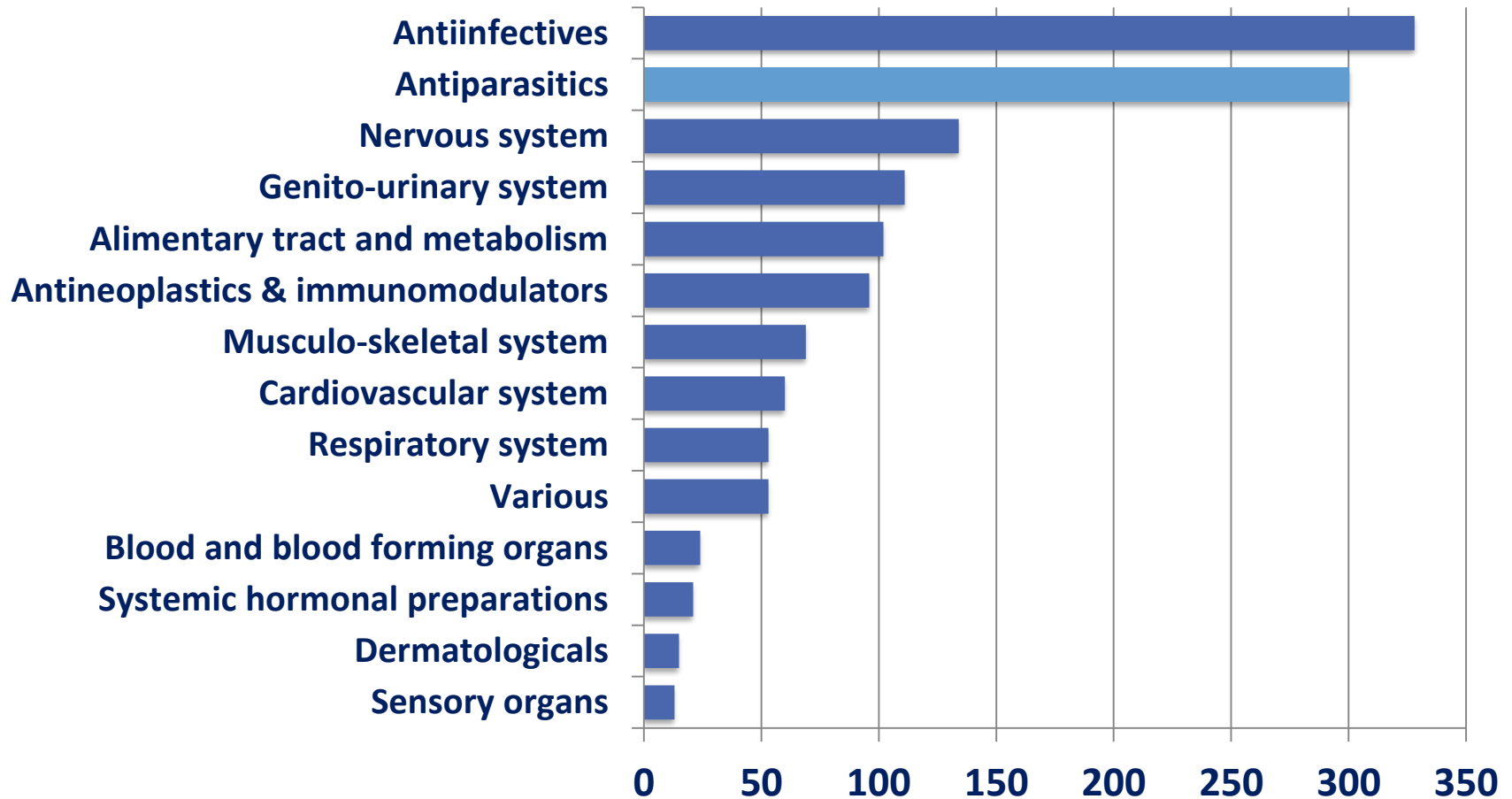# WHO Global Surveillance and Monitoring System – rapidalert@who.int

20 Training events and workshops

126 Member States trained

400 Regulatory personnel trained as focal points

18 large procurement agencies sensitized

1500 Suspect Medical Products Reported Incidents occurred in 100 countries

18 WHO Global Drug alerts and numerous warnings

WHO Technical Assistance in over 100 Cases

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Reporting Levels
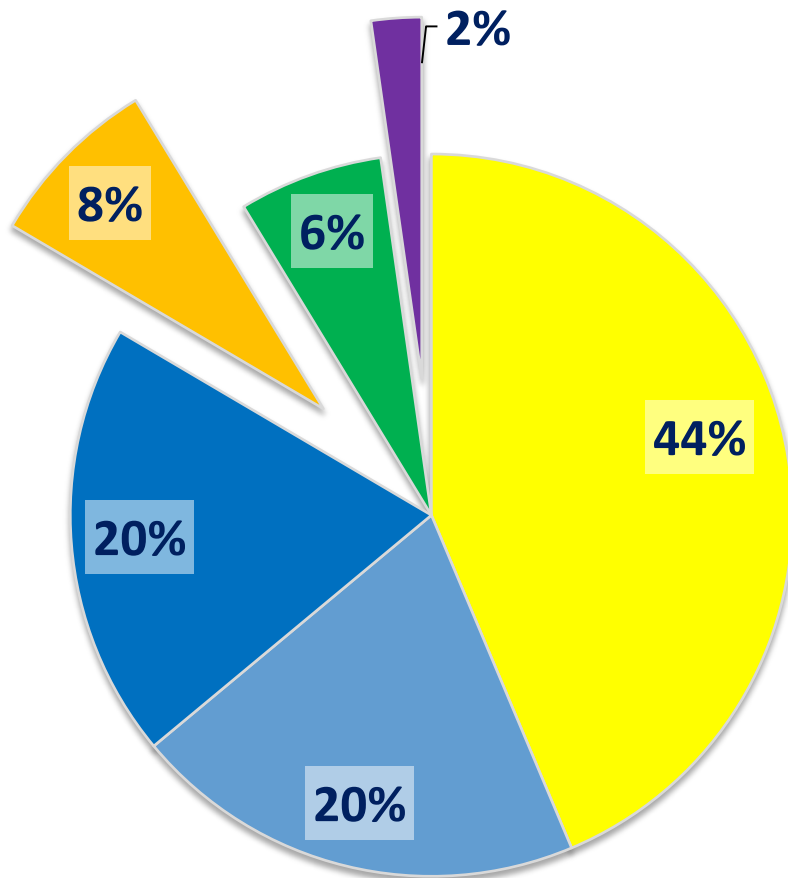
- WHO African Region
- WHO Region of the Americas
- WHO European Region
- **WHO Western Pacific Region**
- WHO Eastern Mediterranean Region
- **WHO South-East Asia Region**

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Medical Products reported to WHO by therapeutic category

Antiinfectives
Antiparasitics
Nervous system
Genito-urinary system
Alimentary tract and metabolism
Antineoplastics & immunomodulators
Musculo-skeletal system
Cardiovascular system
Respiratory system
Various
Blood and blood forming organs
Systemic hormonal preparations
Dermatologicals
Sensory organs

0   50   100   150   200   250   300   350

African Example Antibiotics

- Anti biotic for treatment of infections e.g. pneumonia

- Falsified versions in tablets, syrup and injectable version

- Falsified packaging also discovered

- Found in Nigeria, Cameroon and Cote d'Ivoire

- Some with Zero Active Ingredient,

  some with reduced active ingredient

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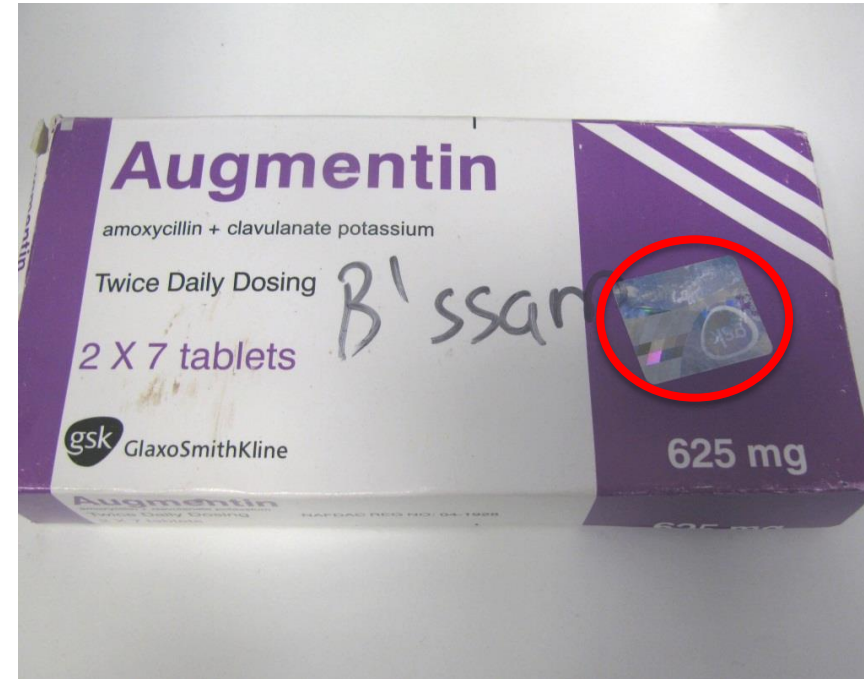
Reproductive Health Products

- Laboratory analysis indicate zero Active Pharmaceutical Ingredient

- Available in public and private health care facilities

- Frequently WHO pre qualified products

- Frequently genuine batch numbers

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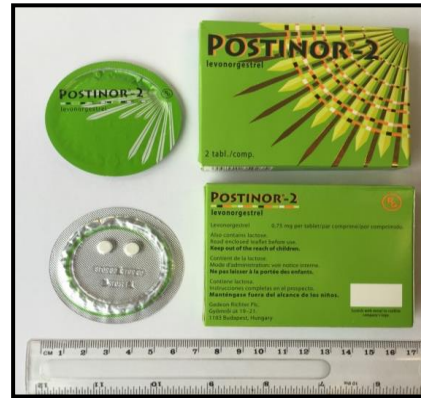
Hepatitis C - Case Study

- **Liver disease caused by bloodborne Hepatitis C virus**

- **Infection caused by unsafe injection practices, inadequate sterilization of medical equipment and unscreened blood products**

- **130-150 million affected globally**

- **350,000-500,000 deaths each year**

- **Antiviral treatment successful in 50%-90% of cases**

- **No vaccine available**

- **Worldwide distribution, but most prevalent in Central and East Asia, and North Africa.**

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Hepatitis C –Innovator Medicines

HARVONI

(Ledipasvir 90mg and Sofosbuvir 400mg)

- Average price $32,138 for 28 Tablets

- 1 Tablet per day, usually 8-12 week course of treatment $64,276 - $96,414

SOVALDI

(Sofosbuvir 400mg)

- Average price $29,756 for 28 tablets bottle

- 1 Tablet per day, usually 12 week course of treatment $89,268

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Japan - Falsified Innovator Version of Harvoni

- Harvoni packaging containing vitamin pills

- Harvoni packaging containing Sovaldi

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Israel – Falsified Innovator version of Harvoni

- **Sovaldi stolen from hospital in Pakistan**

- **Repackaged as Harvoni**

- **Traded through Switzerland and Israel**

- **Israeli patient recognises that tablets are not the usual shape and colour**

Swiss Medic Alert . https://www.swissmedic.ch/aktuell/00673/03287/index.html?lang=en

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Myanmar – Falsified Generic Versions of Harvoni

- **Pharco Corporation, do not manufacture this product**
- **Circulating in Health facilities in Myanmar for $900 per bottle of 28 tablets**
- **WHO Alert issued February 2016**

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Falsified Vaccines

(Source: National Ministries of Health Alerts and Govt Press releases)

1995 Niger
- Meningitis
- 2500 Deaths

2015-2017
- Meningitis
- Shortage
- Public Supply

2010 China
- Rabies
- 1 Death
- 8 Arrests

2013
- Rabies
- 10,800 Doses
- 17 Arrests

2009 Philippines
- Influenza

2013-2016
- Tetanus
- Rabies
- Vaccine Clinics

2016 Indonesia
- Hepatitis B
- Tuberculosis
- Polio
- Tetanus
- 23 Arrests

2010 Cameroon
- Meningitis
- High prices
- Stock Shortage

2016 Bangladesh
- Yellow Fever

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QUALITY   ACCESS   QUALITY   ACCESS   QUALITY   ACCESS   QUALITY

Falsified Yellow Fever Vaccine - 2016

- **Falsified vaccines discovered in Bangladesh**

- **Local wholesaler supplied by a bogus employee pretending to work for the genuine manufacturer**

- **No antigens present**

- **Global WHO Alert Issued**

Falsified Meningitis Vaccines – May 2015

- Largest outbreak of Meningitis C in Africa – Niger 2015

- Shortage of vaccines

- Falsified versions of Mencevax and Menomune

- Niger Focal point informs WHO Surveillance and monitoring system

- 2 WHO Global medical product alerts issued
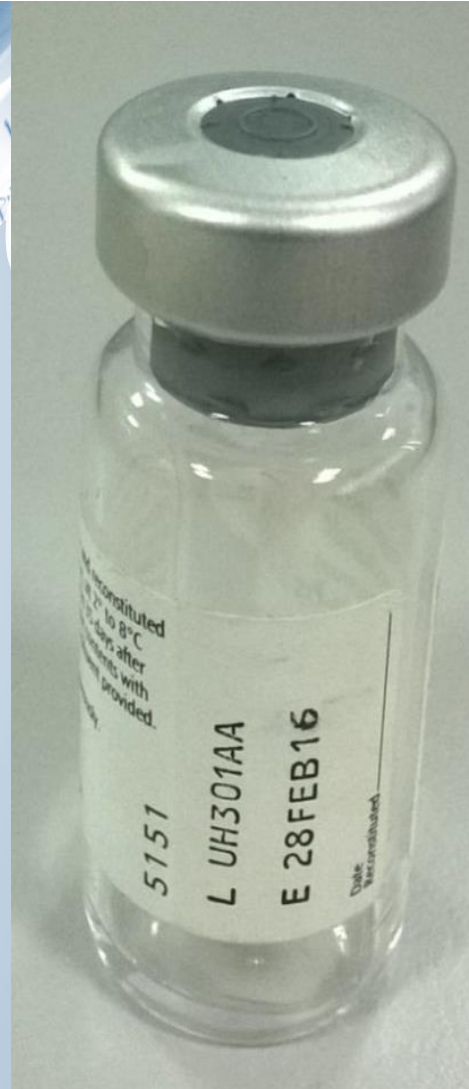
Falsified Meningitis C Vaccine

- Seasonal outbreak could be expected

- Shortage could be identified

- Clear link between shortages and emergence of falsified medicines

- Vigilance and awareness can be increased in these circumstances

- It is very easy to undermine confidence in an immunization campaign
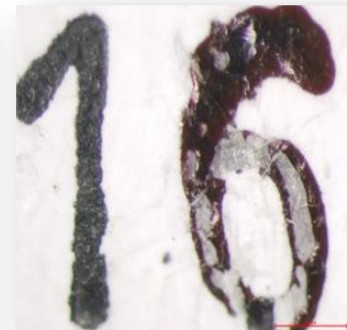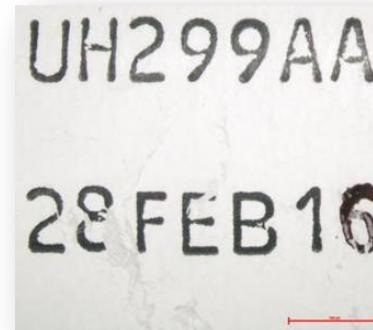
Immunization Programme Indonesia

Diptheria

Pertussis

Tetanus

Polio

HIB Vaccine

Hep B

Snake Venom Sera

TB diagnostic Test kit

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Importance of sub- regional networks
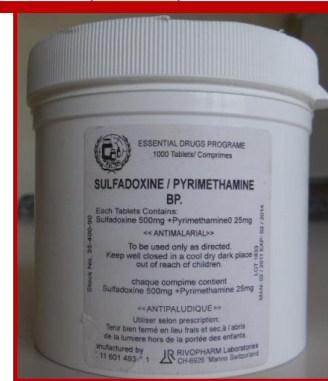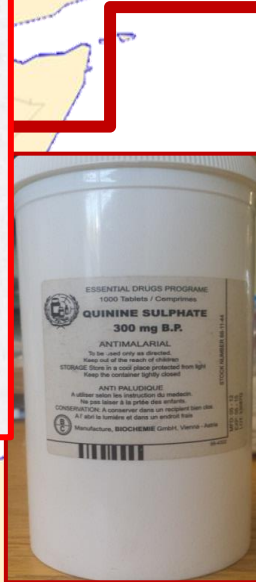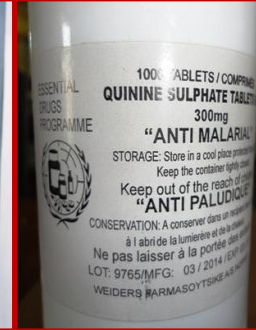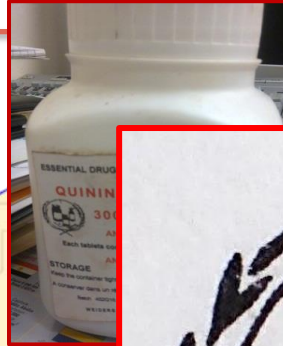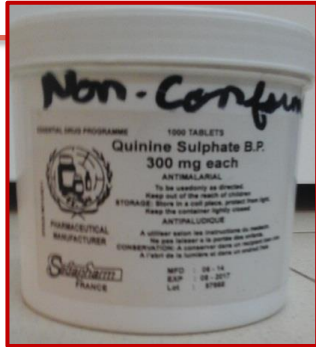
What is the Data telling us?

Poor governance, and corruption lead to SF medical products

Shortages and stock outs lead to falsified products entering the supply chain

Weak regulatory oversight of the supply chain- last mile to the patient

Identification of the Medicines most at risk – Antibiotics and anti- malarials

Risk based inspection and post market surveillance is generally weak

Weak coordination with other stakeholders especially Customs

Low reporting to NMRA's from public and healthcare workers

Weak laboratory capacity in LMIC's

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Member State Mechanism

MANDATE

World Health
Assembly 65.19

2012

PURPOSE

International collaboration from a public health perspective on sub-standard and falsified medical products

GOVERNANCE

1 Chair (Spain)

11 vice Chairs

Regional rotation

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MS Mechanism Steering Committee

	African Region		
	Tanzania	**Togo**	
	Americas Region		
	Brazil	**USA**	
	Eastern Mediterranean Region		
	Iran	**Morocco**	
	European Region		
	Spain (Chair)	**United Kingdom**	
	South East Asia Region		
	India	**Indonesia**	
	Western Pacific Region		
	China	**Malaysia**	

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MS Mechanism Activities

Developing National Strategies

- **Prevention, Detection, Response (WHA 2017)**
- **Training Material Survey**

Global Focal Point Network

- **National Regulatory Authority network of focal points TOR's (WHA 2016)**
- **Linked to existing WHO Surveillance and monitoring system (WHO 2013)**

Technology

- **Track and Trace (WHA 2016), Authentication (WHA 2017)**
- **Field Detection technologies**

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MS Mechanism Activities

Access to medicines

- Availability, Acceptability and affordability
- Linkage to substandard and falsified medical products

Communication

- Education and awareness
- Risk Communication

Public Health and Socio Economic Impact Study

- Prevalence
- Cost

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Prevention, Detection and Response

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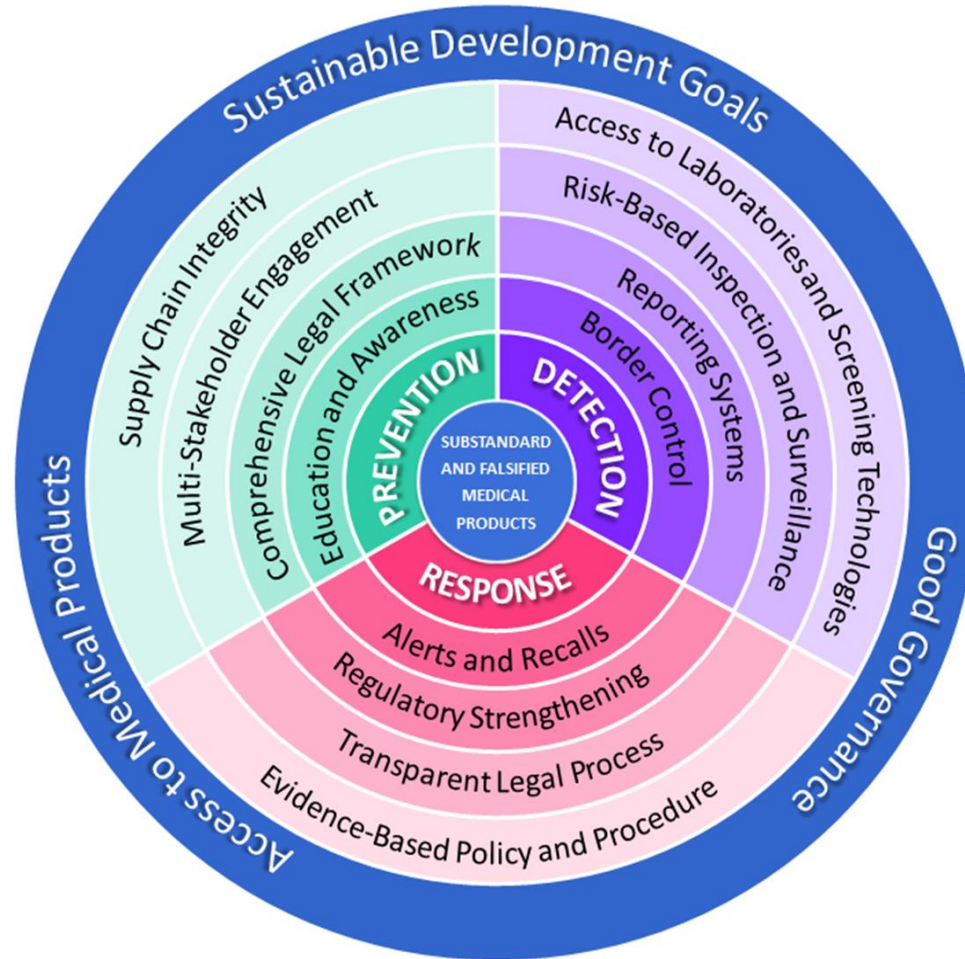
Democratic Republic of Congo – July 2015

- 1100 hospitalizations: up to 40 per week

- Acute dystonic reaction affecting face, neck upper limbs, particularly in young persons

- NE DRC close to Uganda and South Sudan

- MSF investigate root cause and inform WHO Surveillance and Monitoring system
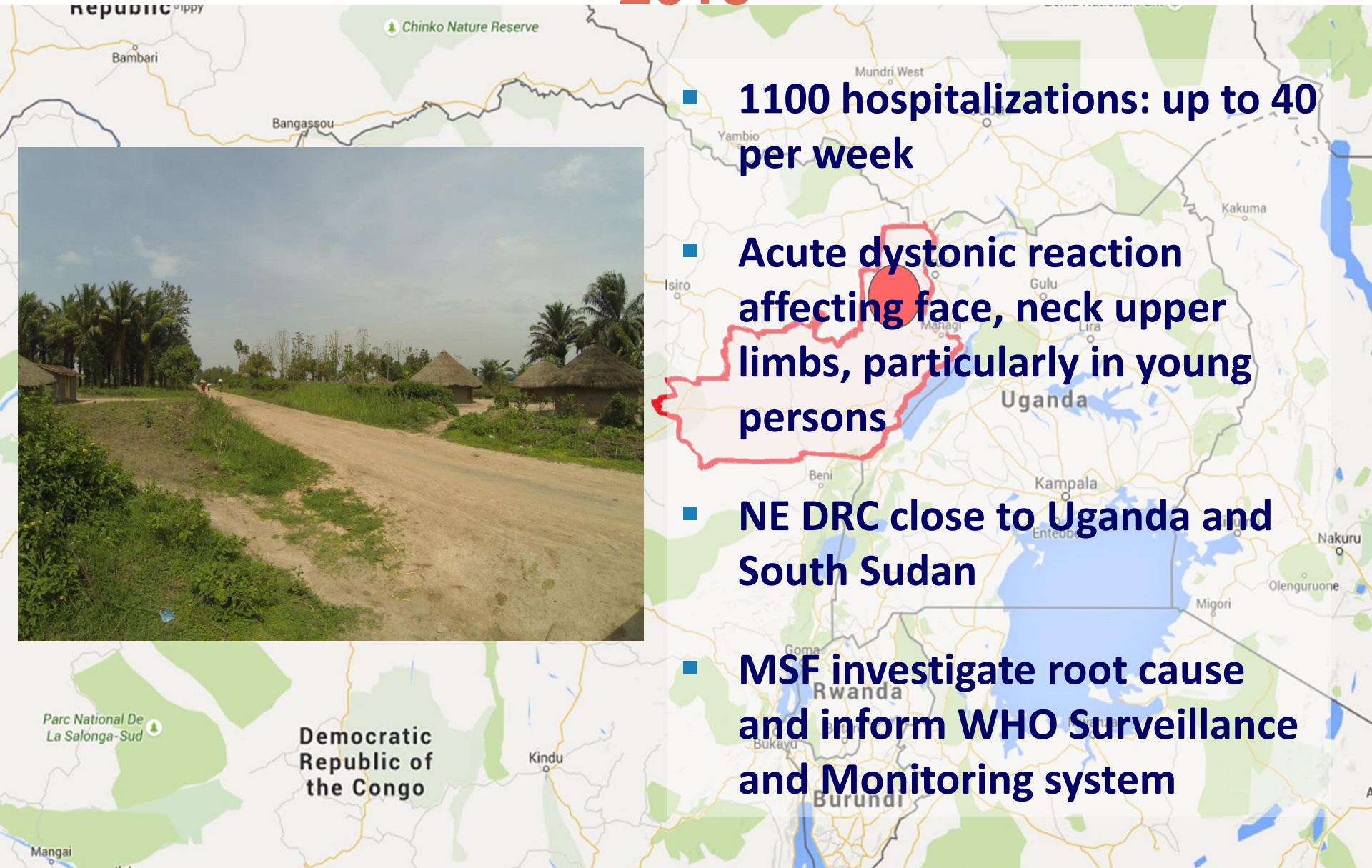
Democratic Republic of Congo – July 2015

- **Clinical samples reveal traces of Haloperidol**

- **Samples of diazepam taken by patients test positive for 10-20mg of Haloperidol**

- **Adverse reactions consistent with overdose of Haloperidol**

- **WHO Alert issued**
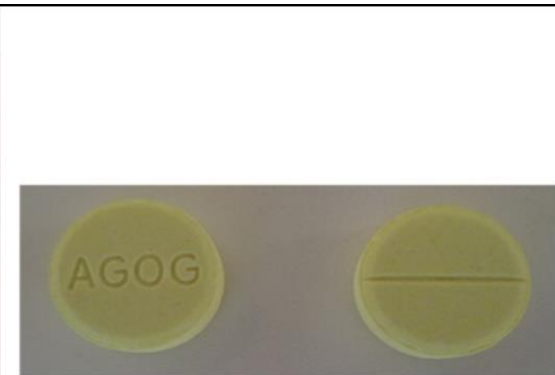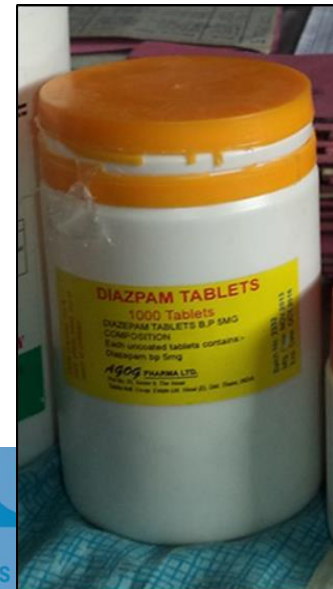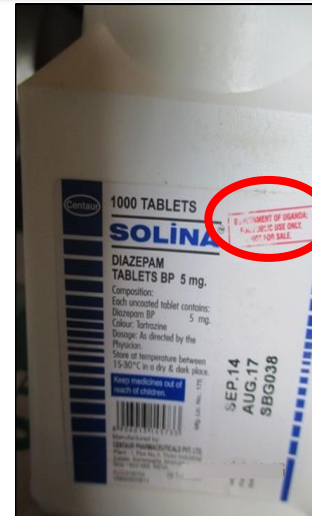
www.who.int/medecines/regulation/ssffc

Thank You

Michael Deats   deatsm@who.int

Group Lead

SF Medical Products

Essential Medicines Department

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