INTERNATIONAL FOOD SAFETY AUTHORITIES NETWORK

CONNECTING FOR SAFER FOOD

INFOSAN

GLOBAL OVERVIEW

INFOSAN Secretariat

Risk Assessment and Management Unit

Department of Food Safety and Zoonoses

World Health Organization, HQ

World Health Organization

Food and Agriculture Organization of the United Nations

ORIGIN OF INFOSAN

- **Resolutions of the WHO World Health Assembly in 2000 and 2002 : 1)improved communication on food safety; 2) WHO to coordinate identification/response to food safety emergencies**

- **Request from FAO/WHO Codex Alimentarius Commission in 2004 for WHO to develop a network for the exchange of information during food safety emergencies**

INFOSAN launched by WHO in 2004 in collaboration with FAO

INFOSAN Today…

Voluntary network of food safety authorities from around the world (181 Member States) managed jointly by WHO and FAO

- Continue to encourage designation of full range of Focal Points
- Process of designation and re-designation continues on a global scale – Not all members are "Active"

World Health Organization

Food and Agriculture Organization of the United Nations

OVERALL GOALS OF INFOSAN

Aims to prevent international spread of contaminated food and foodborne disease and strengthen food safety systems globally, by:

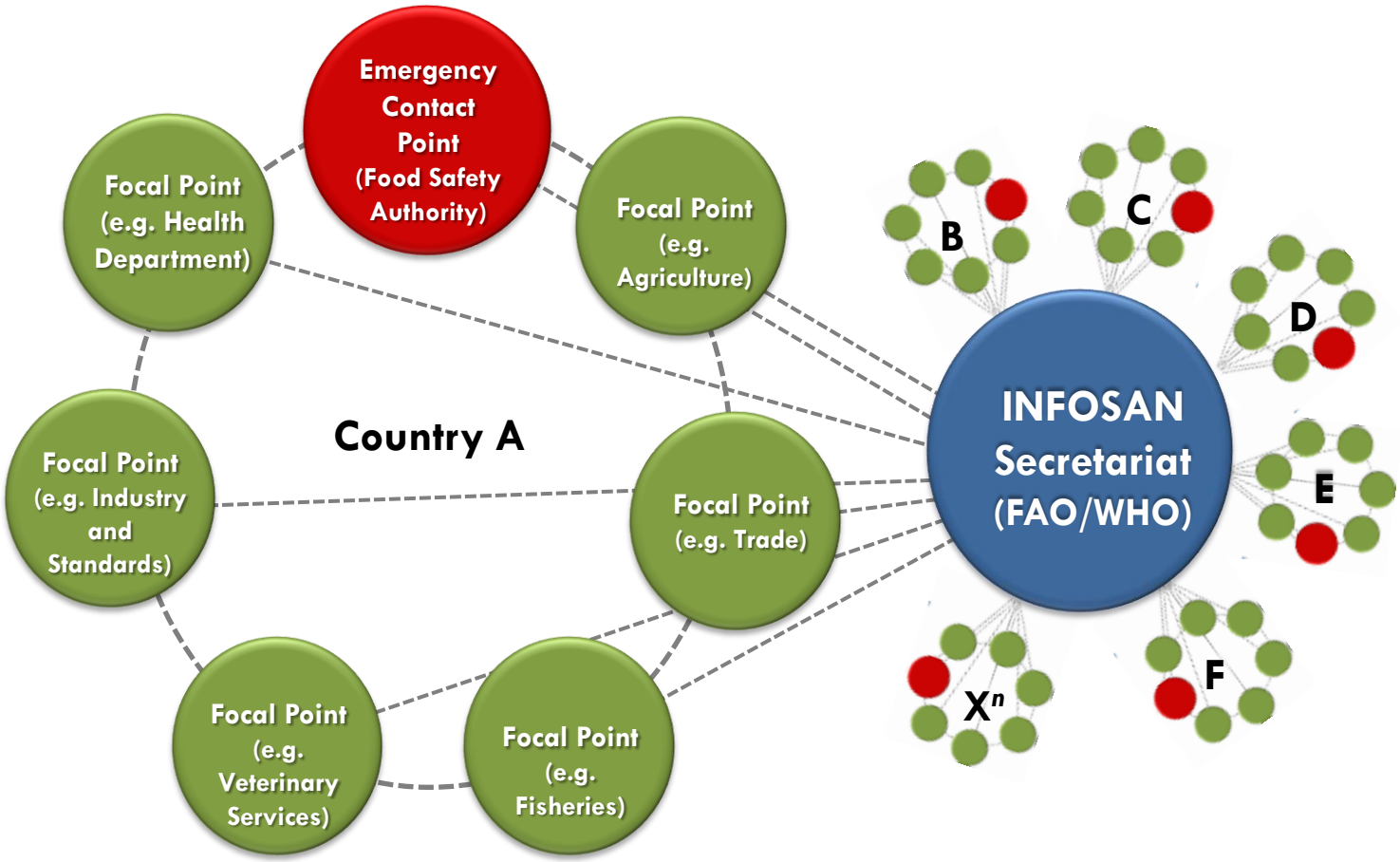
Promoting the rapid exchange of information during food safety incidents/emergencies

Sharing information on important food safety issues of global interest

Promoting partnership and collaboration between countries

Helping countries strengthen their capacity to manage food safety risks

INFOSAN STRUCTURE



INFOSAN
COMMUNITY WEBSITE

World Health Organization | Food and Agriculture Organization of the United Nations

Carmen Joseph Savelli
Log out Help

search...
Search the Document Library

Home | My Page | INFOSAN Secretariat | Find Members | Discussion forums | Groups

Home /

Latest information from INFOSAN Secretariat

INFOSAN Event
Outbreak of Acute Non-Viral Hepatitis Potentially Associated With OxyElite Dietary Supplement Products
November 13, 2013

INFOSAN Alert
Update - Outbreak of Acute Non-Viral Hepatitis Potentially Associated With a range of OxyElite Dietary Supplement Products
November 16, 2013

INFOSAN Document
Teleconference Summary: 20 November 2013 - Outbreak of Acute Non-Viral Hepatitis in multiple countries potentially associated With a range of OxyELITE dietary supplement products
December 3, 2013

INFOSAN Document
Provisional Agenda
November 26, 2013

INFOSAN Document
Information Bulletin No. 2
November 26, 2013

See all information from INFOSAN Secretariat

Latest Discussion Forum Posts

New Zealand case and product information updated
Craig Thornley
November 25, 2013
1 new comment(s)

Australia case and product information
Food Incident Duty Officer / APEC FSIN Secretariat
December 10, 2013

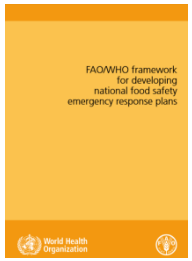
INFOSAN,Thailand activity in 2014
Jongkolnee Vithayarungruangsri
January 9, 2014

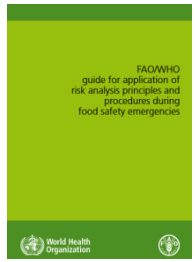
Safety in dairy cllection centers
Nadia Abdalrahman
January 8, 2014

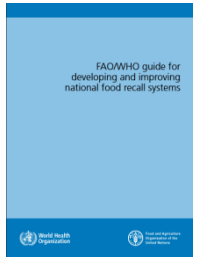
FDA Input on FDA sample analayis, the inspectional observations at USPlabs, and labeling of recalled products
Andrei Perlloni
December 7, 2013

See all discussions

Two main arms of INFOSAN:







1) Emergency Activities:

- Response to food safety events of international concern

2) Non-Emergency Activities:

- Strengthening capacity to manage food safety risks (developing technical guidance documents, INFOSAN Information Notes)

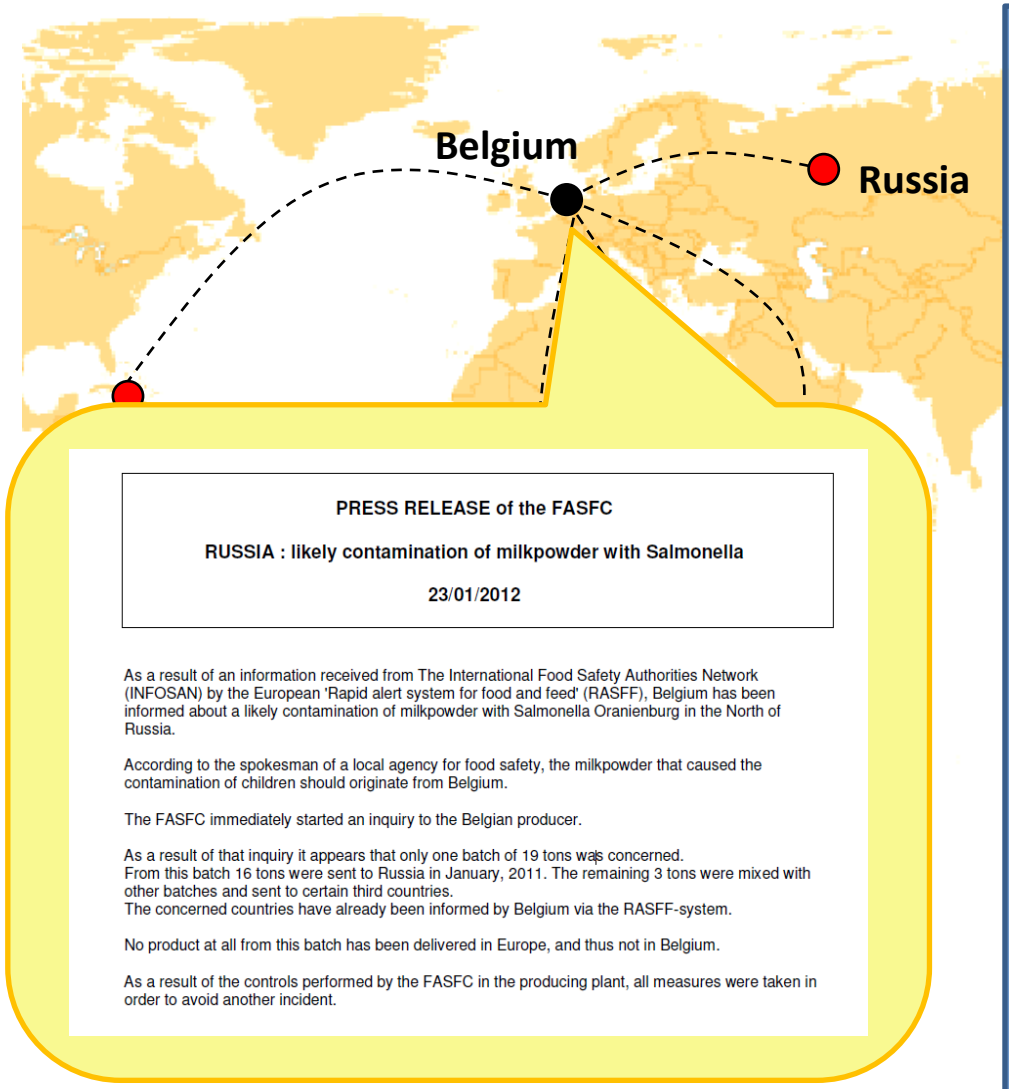
Emergency Activities

- INFOSAN Secretariat has facilitated international communication with INFOSAN members during 44 events in 2013 (compared to 46 in 2011 and 42 in 2012
- Biological hazards were responsible for the largest number of INFOSAN events; most commonly involved *Salmonella* spp; consistent with both 2011 and 2012
- In 2013, events most commonly involved milk and dairy products and vegetables and vegetable products and the average time that the INFOSAN Secretariat remained actively engaged with an event was 19 days (compared to 18 days during 2011 and 2012)
- The majority of INFOSAN events in 2013 involved Members States in Europe, the Americas and the Western Pacific followed by Eastern-Mediterranean, and South-East Asian regions respectively; No countries from the African region were involved in INFOSAN events in 2013

INFOSAN IN ACTION – Example #1

Outbreak of S. *Oranienburg* in Russia linked to powdered infant formula from Belgium, 2012

Outbreak of S. Oranienburg in Russia linked to internationally distributed powdered infant formula from Belgium – January 2012

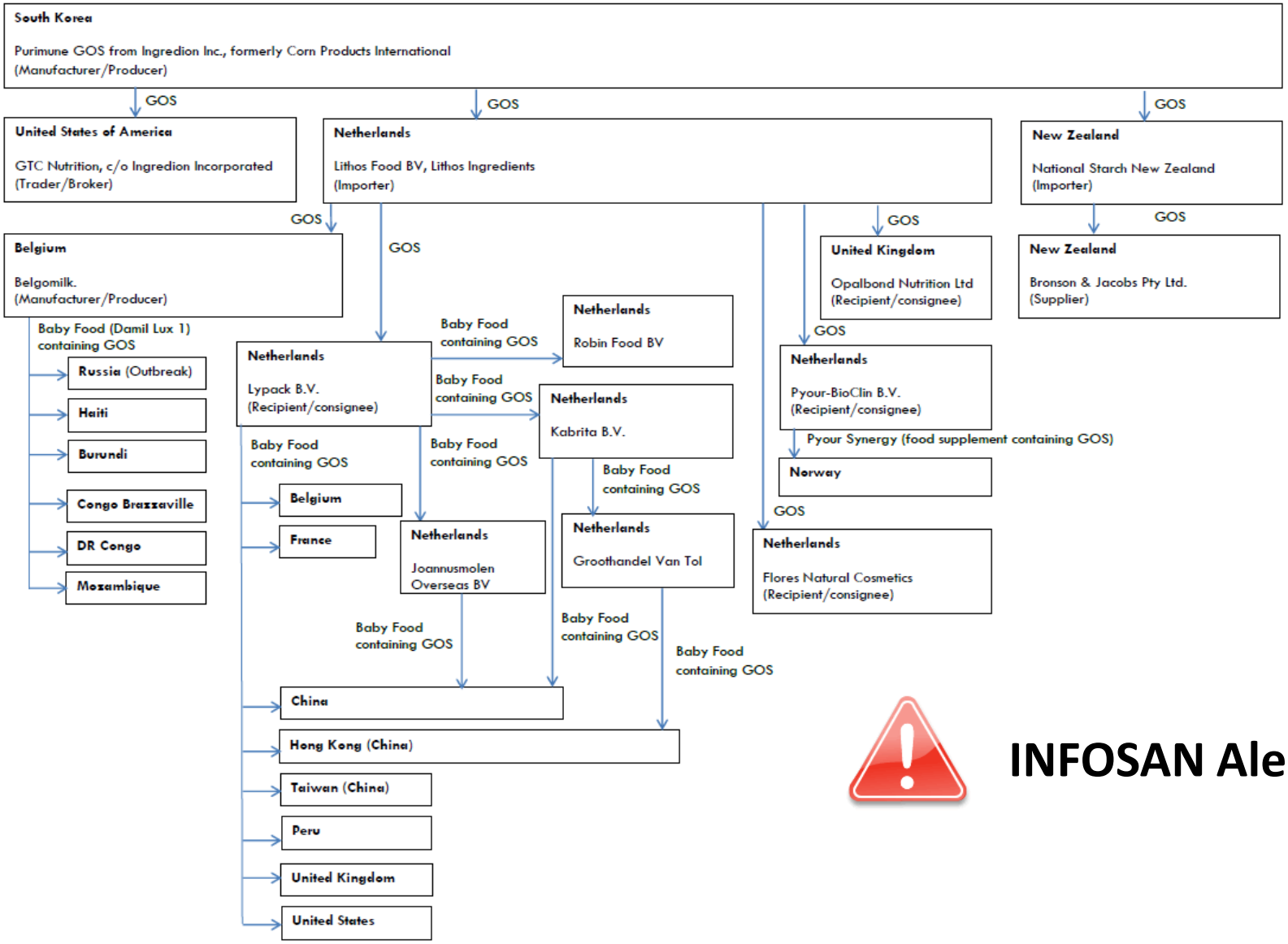


- Russian media report picked up by WHO-EURO and relayed to INFOSAN Secretariat
- INFOSAN Secretariat contacted RASFF Secretariat and colleagues in Belgium
- Belgian Authorities subsequently launched an investigation into the Belgian producer
- Communicated to INFOSAN Secretariat that product was sent to additional countries
- INFOSAN notified national authorities in these countries

Outbreak of S. Oranienburg in Russia linked to internationally distributed powdered infant formula from Belgium – January 2012

International Distribution of GOS and Products Containing GOS from South Korea (+ S. Oranienburg in USA and Netherlands with same PFGE)

International Distribution of GOS and Products Containing GOS from South Korea (+ S. Oranienburg in USA and Netherlands with same PFGE)



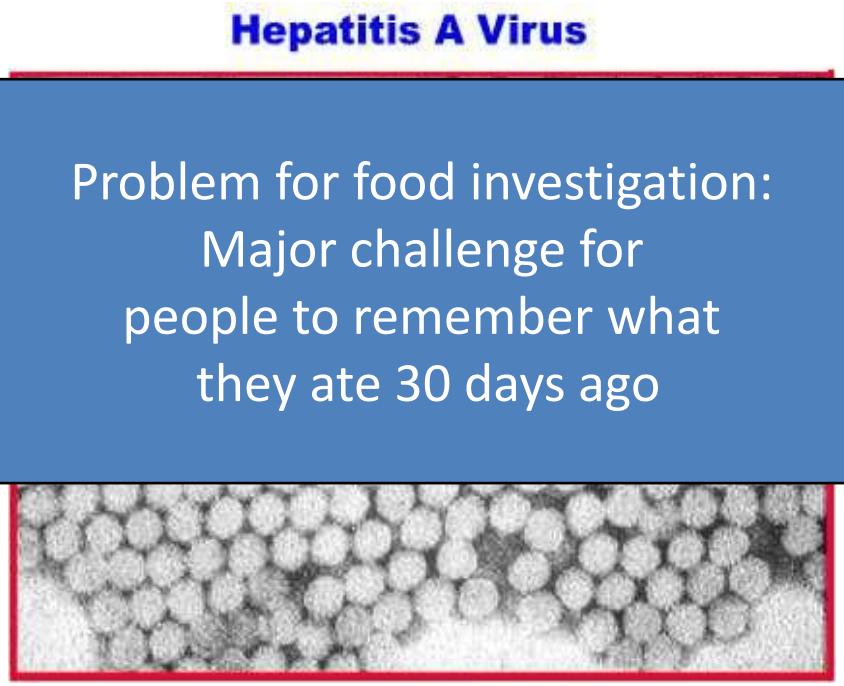
INFOSAN Alert

INFOSAN IN ACTION – Example #2

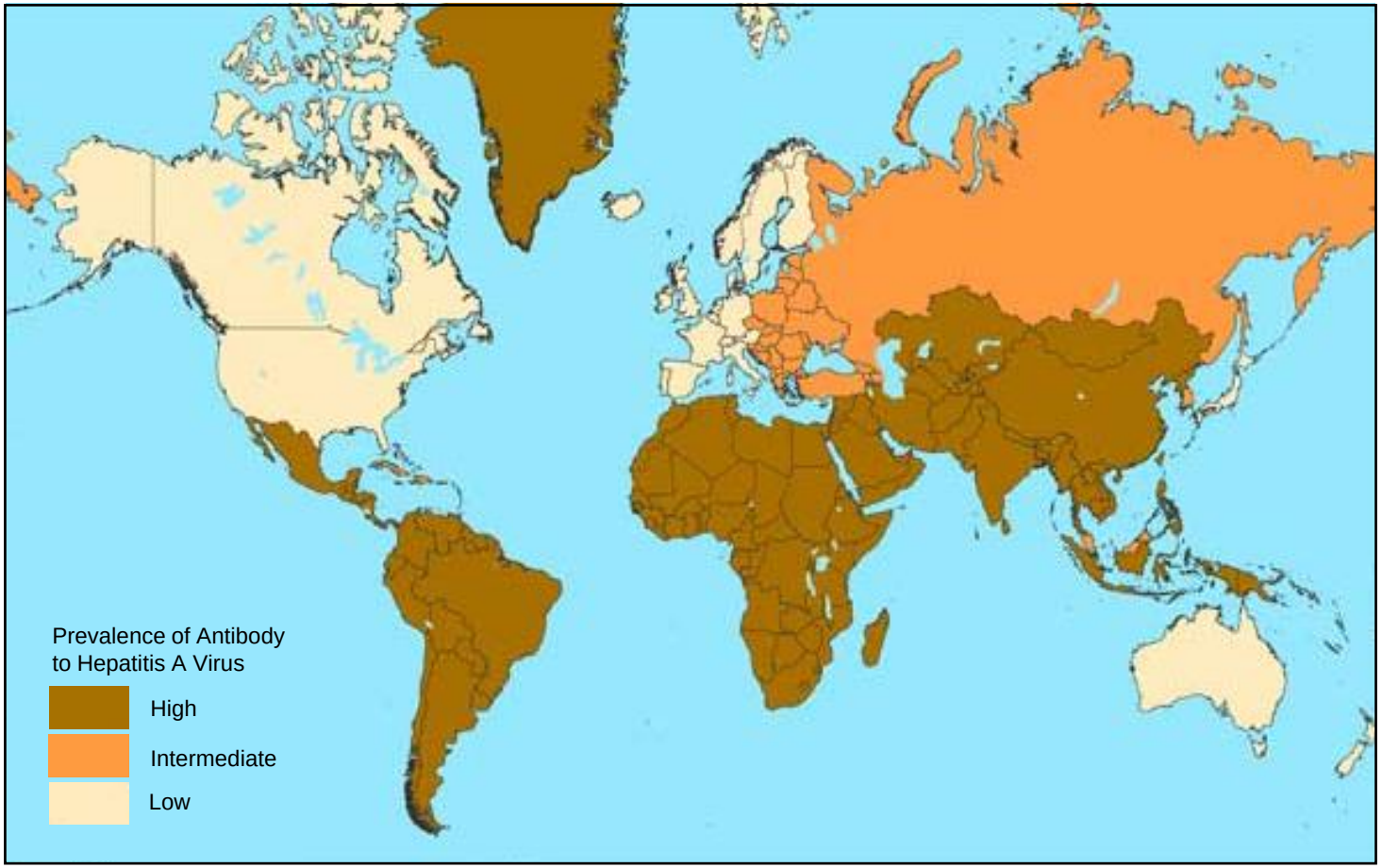
Outbreak of Hepatitis A linked to internationally distributed semi-dried tomatoes - 2009

Background Information: Hepatitis A Virus (HAV)

- HAV is a picornavirus transmitted primarily through the fecal-oral route
- Incubation period: Average 30 days (range 15-50 days)
- Virus is shed in feces before symptoms of illness begin
- Illness ranges from no symptoms to severe hepatitis



Prevalence of Antibodies to Hepatitis A Virus



http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/hepatitis-a.aspx#761

Outbreak of Hepatitis A Linked to Internationally distributed Semi-dried Tomatoes

Initial notification:

- **November 2009**- Australia notified WHO of an outbreak of hepatitis A affecting over 250 people
- Epidemiological evidence implicated semi-dried tomatoes
- Traceback investigation was complex

Action: Alert issued through INFOSAN

France

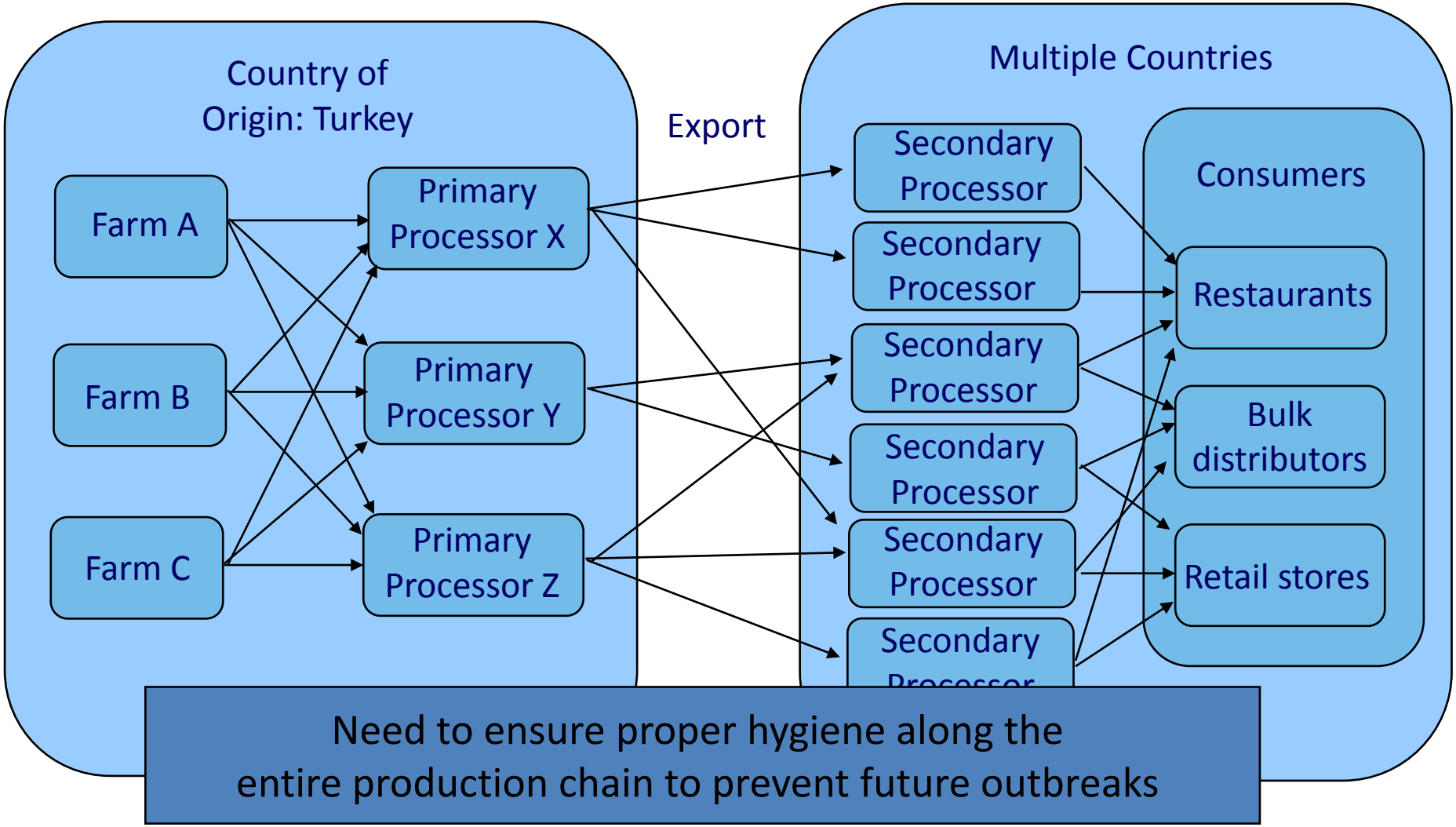
- **February 2010**–France reported investigating an outbreak of HAV infections linked to semi-dried tomatoes

Evidence of outbreaks in other countries

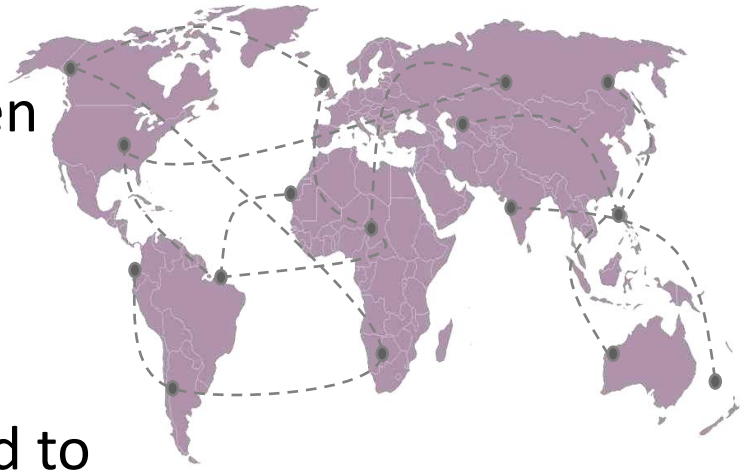
Netherlands

- Through comparison of virus sequences, 5 cases were identified with the identical sequence seen in Australia
- Numbers of cases were not above expected levels
- Two adult patients required liver transplants because of the severity of their liver damage
- Epidemiological investigation also found link to consumption of semi-dried tomatoes
- Semi-dried tomatoes served in sandwiches and salads purchased at sandwich shops

Semi-Dried Tomatoes: Complex Production & Distribution Chain



Conclusions



- This is the first time hepatitis A has been linked to semi-dried tomatoes
- Sharing information through INFOSAN helped to connect different outbreaks
- Sharing of virus sequencing data helped to linked sporadic cases and identify a common source

- In 2013-2014, Multiple outbreaks of HAV and Norovirus linked to frozen berries.
- Frozen berries becoming a major source of virus borne outbreaks (Hepatitis And Norovirus)

World Health Organization

Food and Agriculture Organization of the United Nations

H7N9 Human Exposure to Live Poultry

- Urban and rural population survey in 2013 in China :

2,504 urban residents in 5 cities :

- 47% reported visiting a live poultry market ≥1 times in the previous year (Guangzhou).
- Only 30% supported permanent closure of the markets to control the epidemic

1,227 rural residents in 4 provinces :

- 48% of respondents reported that they raised backyard poultry.

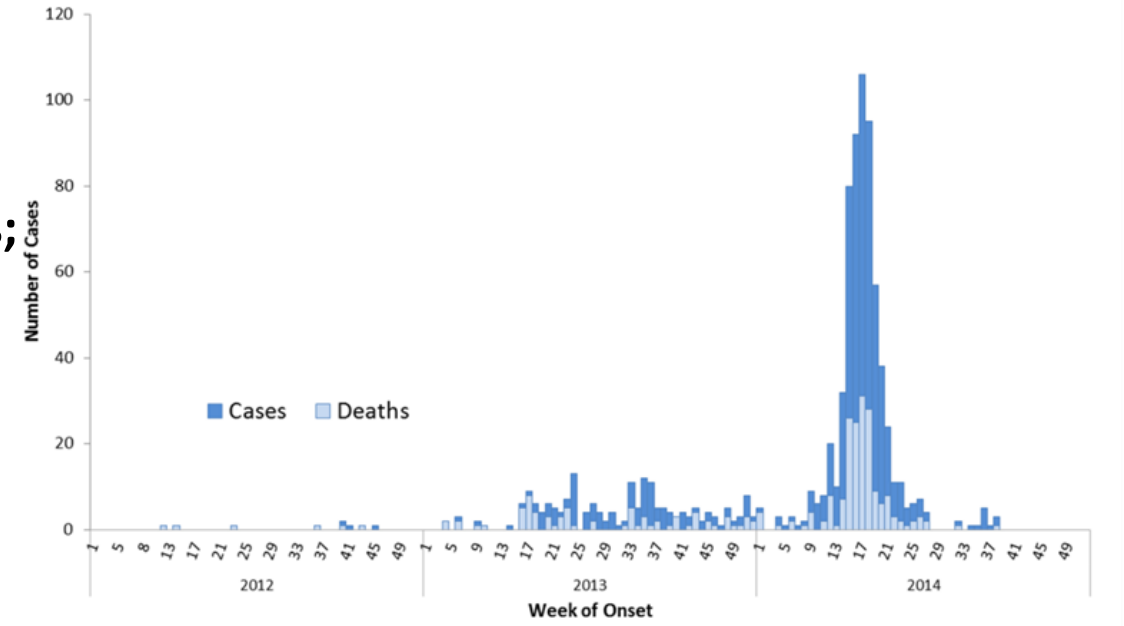
H5N1 systematic review of exposure

- Despite frequent and widespread contact with poultry, transmission of the H5N1 from poultry to humans is rare.

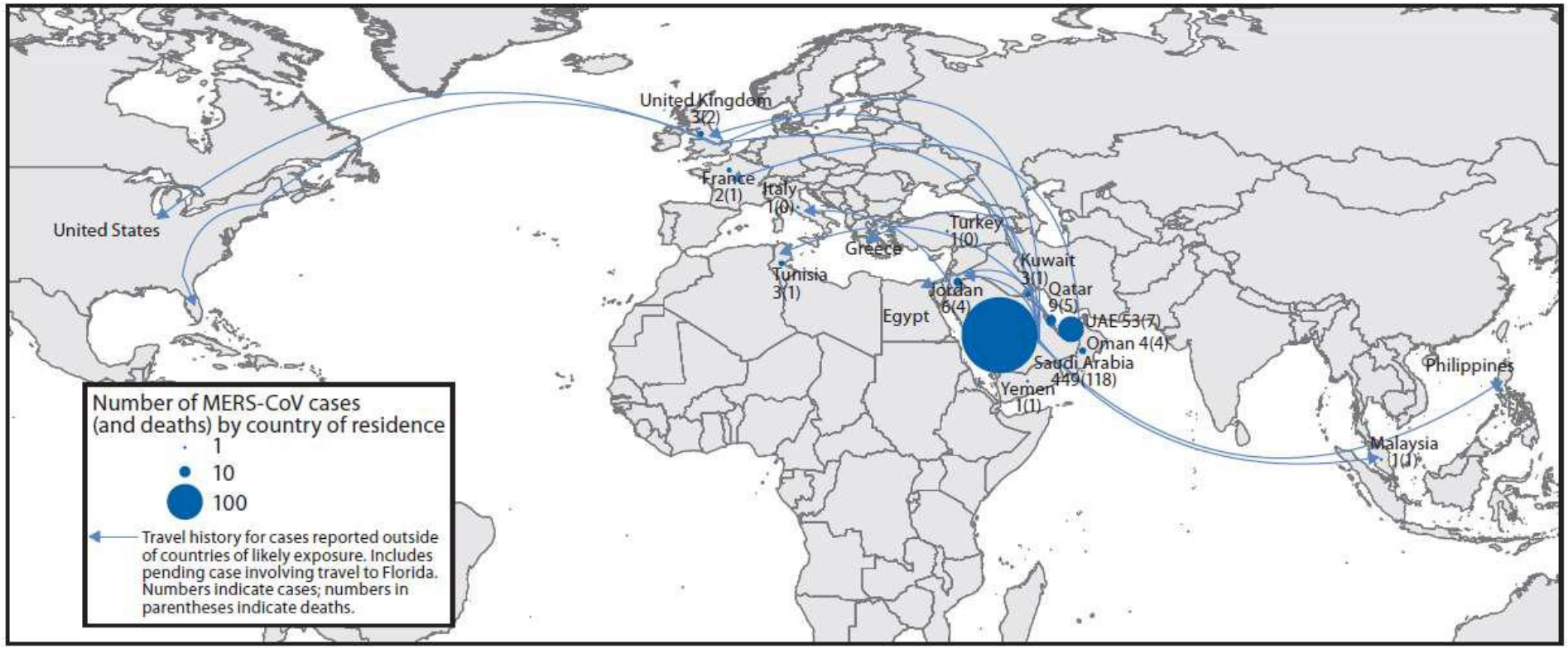
- Risk factors that may be associated with infection:
  - Exposure through contact with infected blood or bodily fluids of infected poultry via food preparation practices
  - Touching and caring for infected poultry;
  - Consuming uncooked poultry products;
  - Exposure to H5N1 via swimming or bathing in potentially virus laden ponds;
  - Exposure to H5N1 at live bird markets.

The Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

- First case: June 2012, KSA
- As of Nov 2014, 909 cases; >330 deaths
- 22 countries have reported cases (all linked to infection in the Arabic Peninsula)



The Middle East Respiratory Syndrome Coronavirus (MERS-CoV)



Transmission

Different modes of transmission are occurring

Community Transmission

Zoonotic transmission from animals, camels, to humans

Primary cases have steadily been reported since April 2013

Camels identified as primary source of exposure - Specific type of exposures to camels resulting in infection are unknown

Human-to-human transmission in the community:

Very little h-to-h transmission is occurring among households members

Nosocomial transmission

Human-to-human transmission in health care settings:

- Nosocomial transmission : health care workers and between patients resulting in large hospital outbreaks
- *Exposures in health care settings that result in infection are due to multiple factors including improper infection control*

Transmission via environmental or fomite contamination

Studies of virus persistence on surfaces show that MERS-CoV can be transmitted via contact or fomite

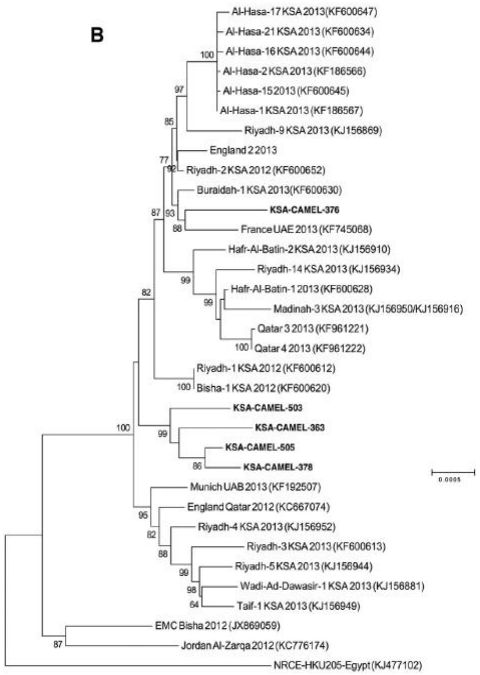
Detection of MERS-CoV in camels

Saudi Arabia, Nov 2013 and 2014

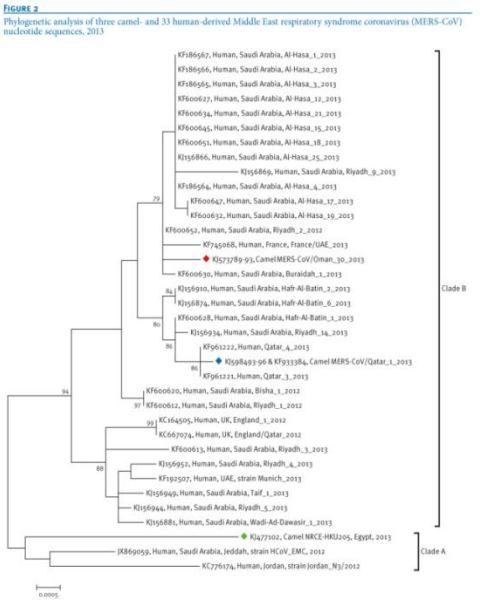
- **2013:** MERS-CoV in a specimen from an ill camel in Jeddah; Owner is MERS-CoV case with contact to the camel
- **2014:** field survey by King Saud University and international colleagues (Bresee et al mBio 2014)
  - Isolated MERS-CoV from nasal swabs of camels
  - Demonstrated that whole–genome sequences of humans and camels are indistinguishable
  - Camels can be infected simultaneously with more than one MERS-CoV

Qatar, Nov 2013

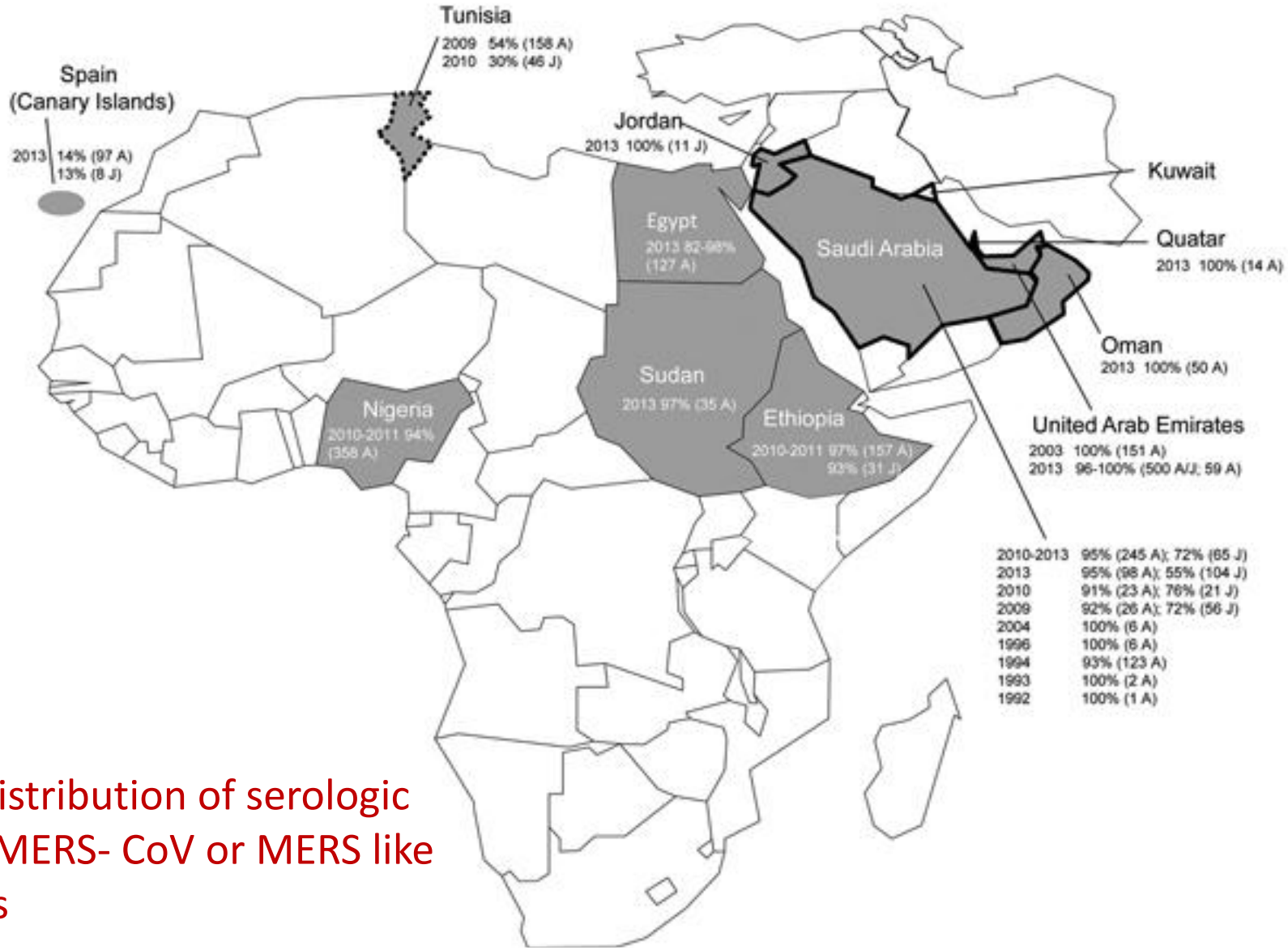
- Presence of MERS-CoV in 3 camels in barns where 2 human cases identified -Result of in-depth investigation (Qatar, WHO, FAO)
- MERS-CoV detected in raw camel milk (excretion or cross contamination)
- **Egypt** and **Oman** (Nowotny et al 2014): Virus detected in camels



Bresee et al mBio 2014



Nowotny et al 2014



Geographic distribution of serologic evidence for MERS- CoV or MERS like CoV in camels

Source: Reusken, Messadi et al. 2014 EID 20, 8 – Aug 2014.

Other Animal Serology

Country	Animals	Number sampled	% Sero+	year
Europe	Cattle	80	0	2013
	Goat	40	0	
	Sheep	40	0	
Jordan	Cows	91	0	2013
	Goats	150	0	
	Sheep	126	0	
Egypt	cows	25	0	2013
	Goats	13	0	2013
	Sheep	5	0	2013
	Water buffalo	8	0	2013
Hong Kong	Swine	260	0	2012-2013
	Wild birds	204	0	2012-2013
KSA	Goats	36	0	2013
	Sheep	112	0	2013

MERS-CoV and animals

- **Camels seem to serve as the primary source of MERS-CoV infecting humans**
- **MERS-CoV is circulating in camels in the region**
  - No systematic surveillance for MERS-CoV in camels → Cannot determine extent circulation or for how long this virus has been circulating in camel populations
- **The apparent seasonality in cases may be due to:**
  - the weaning of young camels from their mothers in the spring of each year
    - Younger animals more susceptible to infection
  - Camels are giving birth in late winter.
    - Young camels from the previous year are separated from their mothers at the same time. These are sold and moved around in markets where they get exposed to MERS, develop infection and possibly contribute to greater exposure to the virus for humans.
- **Routes of exposures from camels to humans remain largely unknown**
  - Excretion of MERS-CoV in challenged camels through nasal excretion
  - Detection of MERS-CoV in milk from infected camels
  - The exact role of milk, urine, meat and offals is currently unknown

Where are we going now?

INFOSAN is a member-driven network and therefore requires active participation in order to disseminate useful and timely output

Current INFOSAN Secretariat workplan is focused on:

1) Promoting cross-sectoral collaboration and information sharing to optimize the food safety emergency response; and

2) Developing countries' capacities to manage food safety risks (which includes establishing systems to monitor, assess and manage food safety events)

Where are we going now?

Some key upcoming activities include:

- Development of WHO's Hazard Detection and Risk Assessment System (HDRAS) to better identify foodborne health threats;
- Publication of guidance documents to assist member states in managing food safety events (e.g. guidance for national authorities regarding provision of food safety advice during various emergency situations (i.e. natural disasters));
- Publication of INFOSAN Information Notes;
- Formalizing links to other regional networks (E.g. EU RASFF and APEC FSIN);
- INFOSAN Community Website: translation of the user interface into French and Spanish (Done);
- **Convening a regional meeting in the region to better understand the food safety aspects of MER-CoV**

THANK YOU

"Only if we act together, can we respond effectively to international food safety problems and ensure safer food for everyone"

INFOSAN Secretariat

Risk Assessment and Management Unit
Department of Food Safety and Zoonoses
World Health Organization, HQ

Peter K. Ben Embarek
benembarekp@who.int
Carmen Savelli
savellic@who.int

Dr Margaret Chan – Director General, WHO