Middle East Consortium on Infectious Diseases Surveillance
MECIDS

Enhanced surveillance for detection and management of infectious diseases

Regional collaboration in the Middle East

MECIDS

Middle East Consortium on
Infectious Disease Surveillance

Global Health and Security Initiative
NTI
Working for a Safer World

Geopolitical circumstances

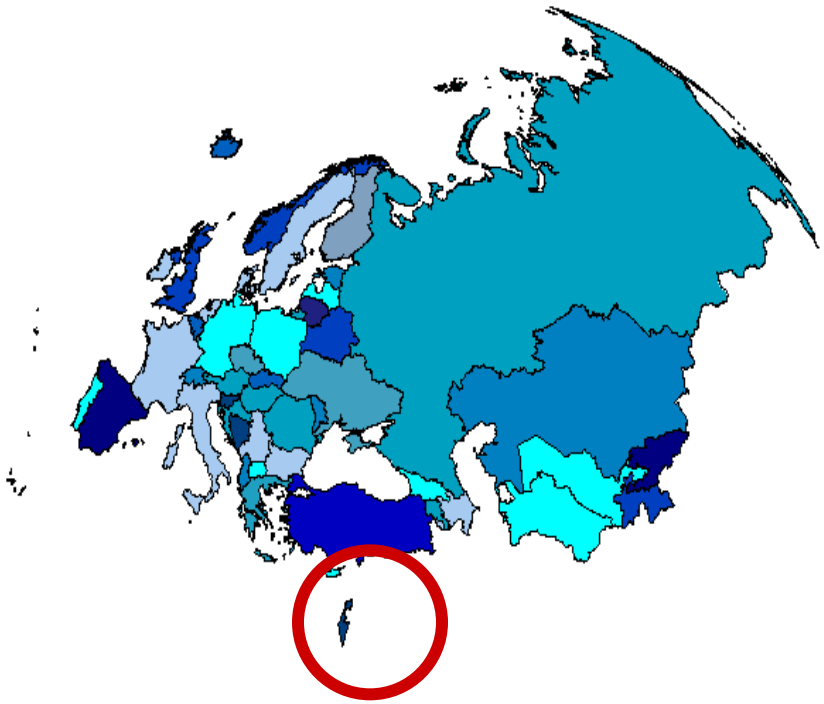
- **National boundaries have little meaning in the face of spread of emerging and re-emerging infectious diseases and the recent SARS, avian and swine flu epidemics are convincing examples.**

- **Jordan, the Palestinian Authority, and Israel border one another. The distance between the three capital cities is less than 80 km.**

The Middle East

Two WHO Regions

WHO EURO



WHO EMRO

Establishment of MECIDS

In 2003, health professionals from the Ministries of Health and academia of Jordan, Palestinian Authority and Israel, convened together by the US Search for Common Ground, formed the Middle East Consortium for Infectious Disease Surveillance (MECIDS) to fulfill the goal of facilitating trans-border cooperation in response to disease outbreaks.

Search for Common Ground

Global Health and Security Initiative

NTI

Working for a Safer World

Palestinian Authority

Kingdom of Jordan

Israel

MECIDS

Middle East Consortium on Infectious Disease Surveillance

On January 2007, MECIDS formed an Executive Board with rotating chairmanship to each country each year.

First targets

- **Food-borne diseases**
- **Avian and pandemic influenza**

Background (1)

- **Globalization of food and centralization of its production have important economic advantages**

- **However, under these circumstances, accidental contamination of food can lead to epidemics that can affect large populations.**

- **Exposure to a high infective dose of enteropathogens may significantly increase complication and fatality rates, especially among young children and aged people.**

Background (2)

- The food exchange that hopefully will increase in the near future among the 3 countries may provide means for transmission of foodborne diseases in the whole region.

Pathogens of interest

- ***Salmonella*** **non-typhi or typhi**
- ***Shigella*** **spp.**
- **Diarrheagenic *E. coli* (including *E. coli* O157)**
- ***Campylobacter*** **spp.**
- ***Cryptosporidium parvum***
- **Noroviruses**

Overall objectives

- To establish or enhance national laboratory-based surveillance networks for foodborne diseases in Jordan, Israel and the Palestinian Authority
- To use harmonized methodology
- To develop a common platform of communication, data sharing and analysis at the regional level
- To coordinate intervention steps when needed.

Specific objectives

To provide baseline information against which clusters of disease can be identified.

- To obtain information on the microbial etiology of the disease and on the phenotypic and genotypic characterization of the recovered agents
- To link laboratory data with variables related to the ill subjects
- To identify the source and mode of transmission of the epidemic agent

Structure of the foodborne diseases laboratory-based surveillance network

National level

Sentinel community and hospital labs

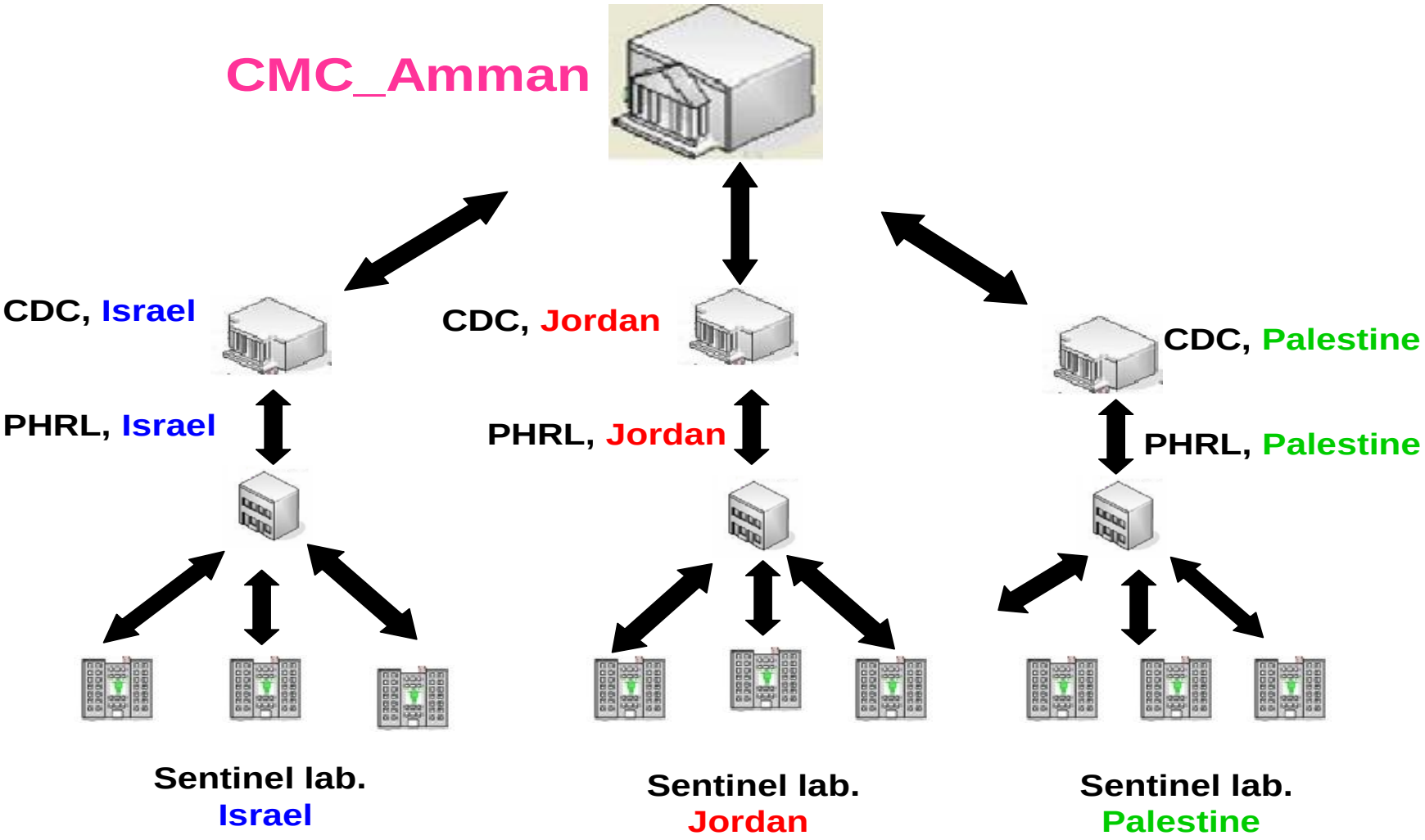
Reference lab

National Data Analysis Unit

Regional level

Regional Data Depository

MECIDS regional network and data flowchart



Training and harmonization of methodologies

1. **Harmonisation of diagnostic and reporting methodologies**

2. **Establishing common training programs (capacity building =narrowing gaps between countries) for:**

- **Foodborne pathogen identification, PFGE, avian and swine flu diagnostics etc.**

- **Training epidemiologists and public health workers in MEPIET –(Middle East Program for Intervention Epidemiology Training)**

Tens of participants from MECIDS partner countries

Selected activities conducted

- Collect Salmonella data at selected sentinel laboratories and improve the transfer of data to the central data analysis unit.

- Improve phenotypic and genotypic characterization of foodborne pathogens.

- Perform a case-control studies to identify risk factors of salmonellosis due to infection with S. Virchow and S. Infantis, which are emergent Salmonella pathogens in Israel, and potentially in the Middle East as a whole.

- Conduct population based surveys to estimate the burden of foodborne infections and assess the level of under reporting

Selected activities conducted (2)

- Perform a survey among physicians to assess their knowledge and practice (KAP) regarding foodborne diseases.

- Transfer electronically national data on a monthly basis to the regional data depositary unit in Amman.

- Share data and analysis on foodborne diseases among all MECIDS participants.

Middle East Consortium on Infectious Diseases Surveillance

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Regional Technical Report

2005-2009

MECIDS

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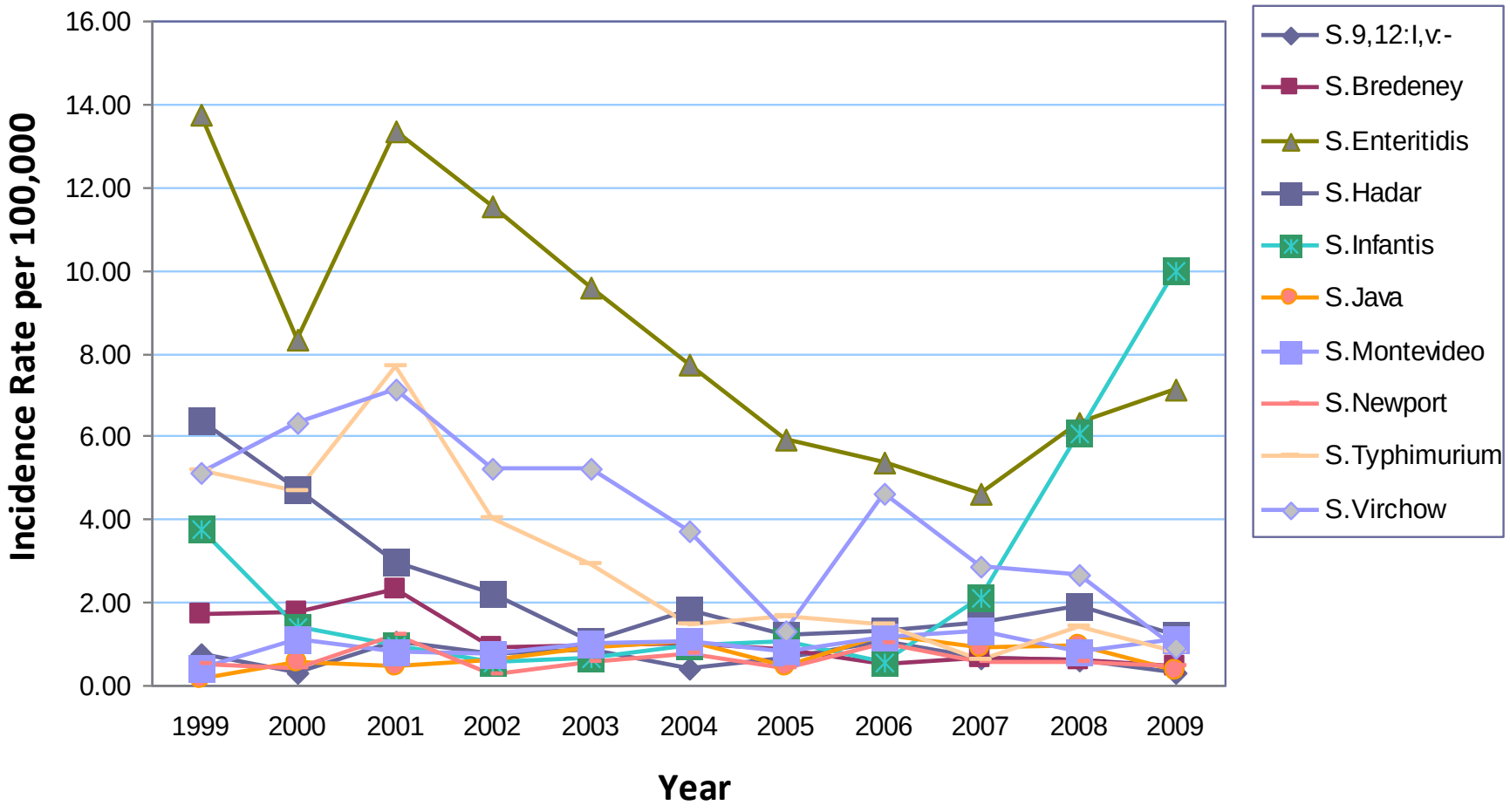
Total "human and non human" Salmonella isolates from MECIDS partners by serogroup and year of isolation

Serogroups	Israel				Jordan				Palastine				Total Israel	Total Jordan	Total Palestin	Grand total
	Total 2005	Total 2006	Total 2007	Total 2008	Total 2005	Total 2006	Total 2007	Total 2008	Total 2005	Total 2006	Total 2007	Total 2008				
Salmonella A	3	9	6	3	0	0	0	0	0	0	0	0	21	0	0	21
Salmonella B	144	141	89	110	11	33	10	18	3	18	18	14	484	72	53	609
Salmonella C	0	23	13	28	0	0	0	0	0	0	0	1	64	0	1	65
Salmonella C1	185	301	254	265	4	7	5	8	4	5	20	16	1005	24	45	1074
Salmonella C2	107	187	138	145	9	25	7	12	2	35	31	26	577	53	94	724
Salmonella C2-C3	5	1	2	4	0	0	0	0	0	0	0	0	12	0	0	12
Salmonella C3	12	6	6	1	0	0	0	0	6	0	0	0	25	0	6	31
Salmonella D	240	250	172	168	19	20	45	9	5	3	1	2	830	93	11	934
Salmonella D1	0	0	1	4	0	0	0	0	0	0	0	1	5	0	1	6
Salmonella E	13	20	24	35	4	12	17	9	0	0	0	1	92	42	1	135
Salmonella E1	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2
Salmonella F	1	1	0	1	0	0	0	1	0	3	14	18	3	1	35	39
Salmonella G	3	9	2	12	0	1	2	1	0	0	0	0	26	4	0	30
Salmonella H	0	1	2	0	0	0	2	0	0	0	0	0	3	2	0	5
Salmonella I	22	3	13	12	0	0	0	0	0	0	0	0	50	0	0	50
Salmonella K	1	1	0	0	0	0	1	1	0	0	0	0	2	2	0	4
Salmonella L	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
Salmonella M	3	5	5	0	0	0	0	1	0	0	0	0	13	1	0	14
Salmonella O	1	1	3	4	0	0	0	0	0	0	0	0	9	0	0	9
Salmonella Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonella Q	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Salmonella R	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	2
Salmonella S	0	2	0	1	0	0	0	0	0	0	0	0	3	0	0	3
Salmonella spp.	34	22	158	131	6	6	8	4	0	0	0	1	345	24	1	370
Salmonella T	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
Salmonella X	1	0	0	2	0	0	0	0	0	0	0	0	3	0	0	3
Salmonella Z	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total number of cultures	70272	69689	42617	31988	14422	33889	37943	43152	21649	12236	4987	6318	214566	129406	45190	389162
Total Salmonella Isolates	776	986	889	929	53	104	97	64	193	129	126	115	3580	318	563	4461
Isolation rate / 1000													16.7	2.5	12.5	11.5

Salmonella isolates in sentinel laboratories (Israel)



Epidemiol. Infect., Page 1 of 6.
doi:10.1017/S0950268810000270

A Middle East subregional laboratory-based surveillance network on foodborne diseases established by Jordan, Israel, and the Palestinian Authority

D. COHEN[1]*, N. GARGOURI[2], A. RAMLAWI[3], Z. ABDEEN[4], A. BELBESI[2], B. AL HIJAWI[2], A. HADDADIN[2], S. SHEIKH ALI[2], N. AL SHUAIBI[3], R. BASSAL[5], R. YISHAI[6], M. S. GREEN[5] AND A. LEVENTHAL[7]

[1] *Department of Epidemiology and Preventive Medicine, School of Public Health, Sackler Faculty of Medicine, Tel Aviv University, Israel*
[2] *Jordan Ministry of Health, Amman, Jordan*
[3] *Palestinian Ministry of Health, Ramallah, West Bank, Palestinian Authority*
[4] *Al-Quds Nutrition and Health Research Institute, Faculty of Medicine, Al-Quds University, Palestinian Authority*
[5] *Israel Center for Diseases Control, Israel Ministry of Health, Israel*
[6] *Central Laboratories, Ministry of Health, Jerusalem, Israel*
[7] *Public Health Services, Israel Ministry of Health, Jerusalem, Israel*

(*Accepted 13 January 2010*)

Response to Avian Influenza and Preparedness towards the Threat of Pandemic Influenza

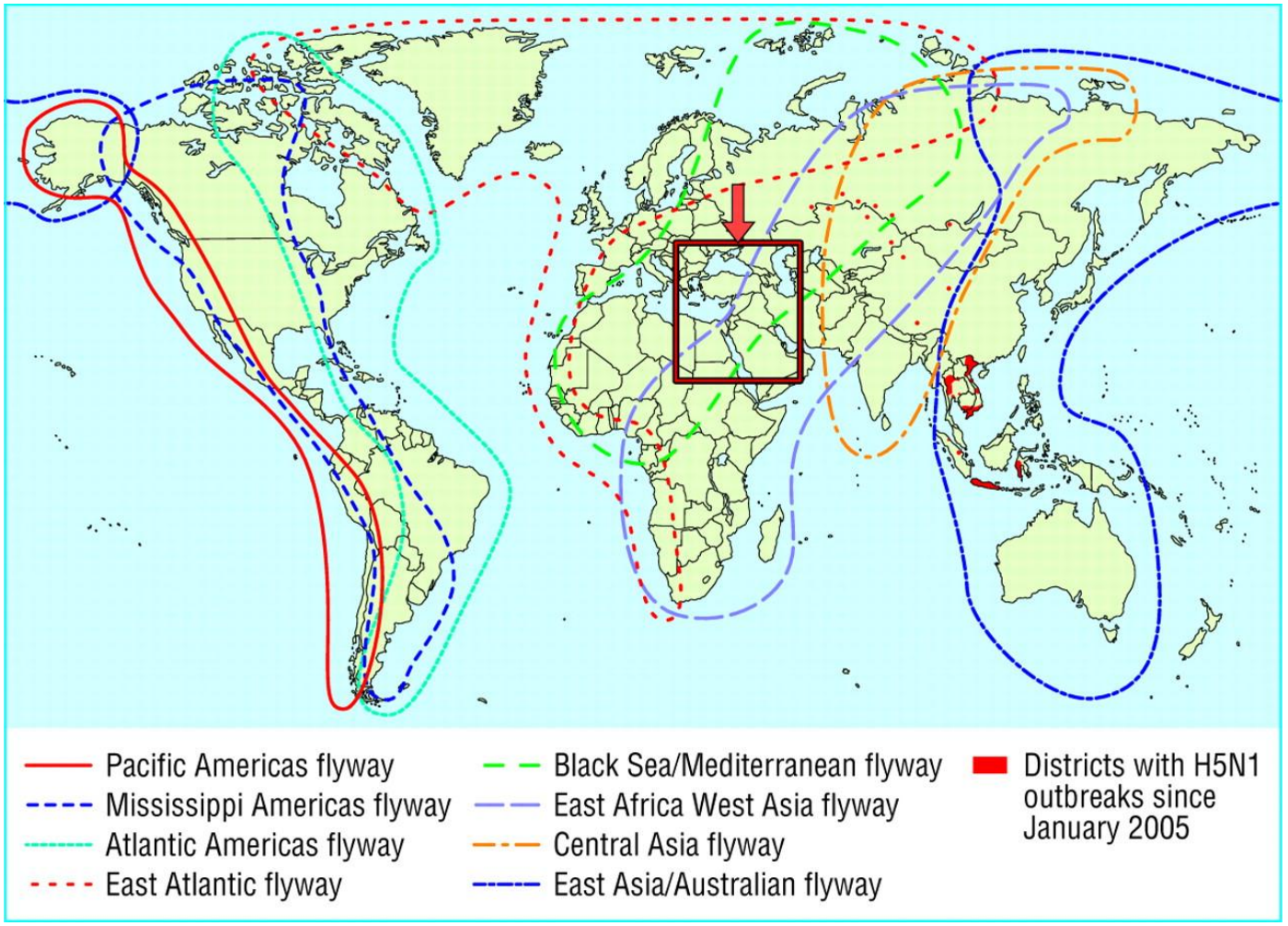
BMJ

Regional collaboration in the Middle East to deal with H5N1 avian flu

Alex Leventhal, Assad Ramlawi, Adel Belbiesi and Ran D Balicer

BMJ 2006;333;856-858
doi:10.1136/bmj.38994.420926.80

H5N1 avian flu outbreaks in 2005 and major pathways of migrating birds, highlighting the position of Jordan, the Palestinian Authority, and Israel at the junction of three continents. Adapted from a publication of the United Nations Food and Agriculture Organization, 2005



Leventhal, A. et al. BMJ 2006;333:856-858

Joint actions before the occurrence of the first avian influenza outbreak in the region

Avian flu event	Date	Regional cooperation	Parties involved
Pre-	23 Nov 2005	Meeting at the Jordan-Israel border crossing	Jordan, Israel, Palestinian Authority
Pre-	14-16 Dec 2005	The Istanbul conference attended by senior officials from health and agriculture ministries	Jordan, Israel, Palestinian Authority, Egypt; experts from WHO and US Centers for Disease Control
Pre-	17 Jan 2006	Coordination meeting in Beth-El (Israel) attended by top officials from health and agriculture ministries	Israel, Palestinian Authority
Pre-	16 Feb 2006	Coordination meeting on avian and pandemic influenza at the Jordan-Israel border crossing	Jordan, Israel, Palestinian Authority; health specialists from the World Bank

First outbreak of avian flu in Egypt

- On February 17, the first outbreak of avian flu in Egypt was detected—backyard poultry, wild birds, and humans were affected.

- Although this outbreak took place hundreds of miles from Jordan, Israel, and the Palestinian Authority, the threat became clearly imminent

Outbreaks of avian flu in Israel

- Overall, 9 outbreaks in industrial poultry coops between 16 and 31 March, 2006 . All due to H5N1 serotype
- 5 outbreaks in coops bordering the Gaza Strip
- 1 outbreak was near Jerusalem, close to the West Bank,
- 1 was in the northern Jordan valley near the border between Israel and Jordan.
- All birds within 3 km of the nine outbreak foci (1.2 million birds) were culled

Culling of poultry within 3 km from the foci

Outbreaks of avian flu in the Palestinian Authority

- **Samples from sick poultry in Gaza sent by the Palestinian Authority veterinary services to the Israeli central veterinary laboratory on 22 March 2006 were positive for H5N1**

- **Next, H5N1 virus was diagnosed in four foci along the Gaza Strip in industrial coops and backyard poultry.**

- **Around 600 000 birds were culled.**

Outbreak of avian flu in Jordan

- On 24 March 2006, Jordan reported an H5N1 outbreak in backyard turkeys in a village east of the Jordan valley, 25 km northeast of the infected Israeli coop in the Jordan valley.

- The Jordanian authorities culled 20 000 birds in the 3 km protective zone.

Joint actions after occurrence of first outbreaks (1)

- Israeli, Palestinian and Jordanian veterinary and health officials took part in periodical and ad hoc coordination meetings at different border locations.

- Protocols for coping with the outbreak and transferring protective personal equipment, Tamiflu, and poison for culling poultry from Israel to the Palestinian Authority were set up.

Joint actions after occurrence of first outbreaks (2)

- Samples from Gaza sent to the Israeli veterinary laboratory

- Joint training sessions at the Central Virology Lab in Israel

Containment of the outbreaks

- **Since 31 March 2006, no further outbreaks of avian flu have been detected in Jordan, Israel, or the Palestinian Authority, whereas outbreaks have continued in neighbouring Egypt**

- **It has been speculated that the disease was spread between flocks in Israel, Jordan and the Palestinian Authority by unintentional mechanical or human driven means.**

- **Cross country cooperation of veterinary and public health services helped contain the outbreaks of avian flu in Israel, Jordan, and the Palestinian Authority**

Preparedness for Pandemic Influenza

(grant from the World Bank)

- **Risk communication workshop with WHO**
- **Israel, Jordan and Palestinian Authority conducted National Table Top Exercises on Avian and Pandemic influenza during 2007-2008**
- **Draft MOU in a workshop concerning regional Pandemic of Influenza following IHR**

MECIDS Regional Pandemic Influenza Tabletop Exercise

Preliminary Summary Report

August 31, 2008

Participants included 32 representatives from multiple sectors in Jordan, Palestinian Authority and Israel as well as officials from WHO and observers from the Ministry of Health of Turkey, the Global Health and Security Initiative and Search for Common Ground

Cooperation on swine flu (A/ H1N1) containment and control

- MECIDS EB convened an emergency teleconference to discuss the outbreak of swine flu (April 2009).

- Palestinians, Israelis and Jordanians Ministry of Health officials, met in Jerusalem to cooperate and share experiences on the outbreak of the swine flu (A/ H1N1).

- The group met at the World Health organization office in Jerusalem on Friday May 1st , with observers from the WHO and the Egyptian Embassy.

- Agreed to coordinate and cooperate their efforts to mitigate, control, and prevent the virus from spreading.

- MECIDS Executive Board conducted periodical conference calls regarding the outbreak of (Swine Flu) Influenza A H1N1.

- MECIDS partners (Israel, Palestine, and Jordan) gave updates on the number of cases and the prevention procedures that each country had taking.

Trust Across Borders: Responding to 2009 H1N1 Influenza in the Middle East

Louise Gresham, Assad Ramlawi, Julie Briski, Mariah Richardson, and Terence Taylor

Biosecurity and Bioterrorism, 2009

In summary

MECIDS is a viable regional network that has far exceeded its set up goals and demonstrates great potential to expand its scope through inclusion of additional infectious diseases and other countries in the region.

MECIDS Regional Pandemic Influenza Tabletop Exercise
Preliminary Summary Report
August 31, 2008

Objectives

- Practice/prepare regional responses to selected aspects of an evolving pandemic emergency
- Increase awareness of the roles and responsibilities of each key ministry/sector
- Strengthen response relationships across MECIDS countries
- Identify gaps in regional and country planning for regional cooperation, and plan initial priority actions to address these gaps
- Develop recommendations to help guide further MECIDS investments in programming