
Influenza A(H1N1) Pandemic: *The Omani Experience (2009)*



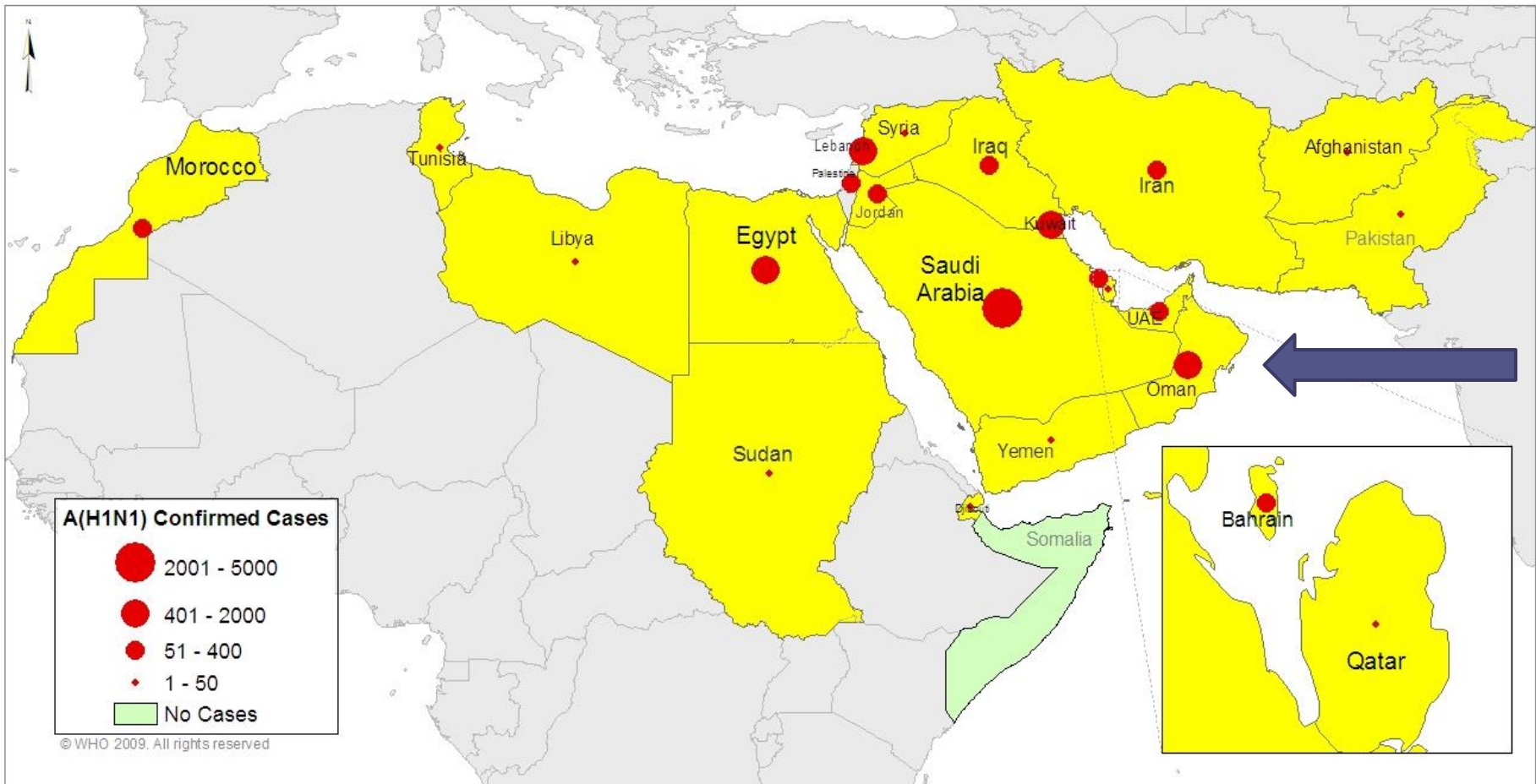
Salah Al Awaidy, MD.
Sultanate of Oman

Outline

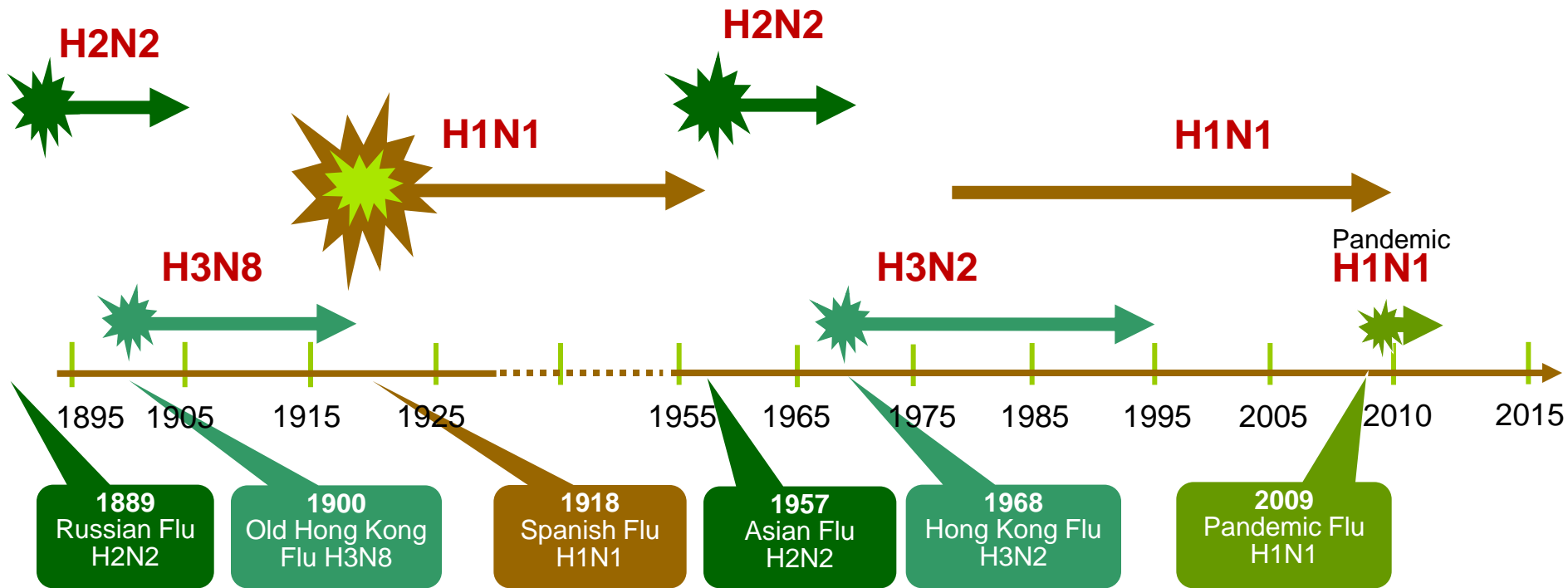
- ***Background***
- ***Pandemic Response in Oman***
 - ***Pre Pandemic Phase***
 - ***Pandemic Phase***
 - ***Post Pandemic Phase***
- ***p(H1N1) vaccination strategy***
- ***Cost of Pandemic***
- ***Impact on Health System***
- ***Lessons learnt***
- ***Conclusions***



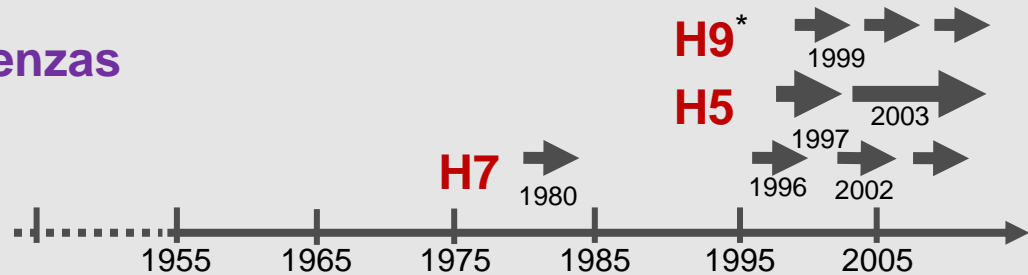
Oman.....



Past Influenza Pandemics



Recorded new avian influenzas



Pandemic Response in Oman

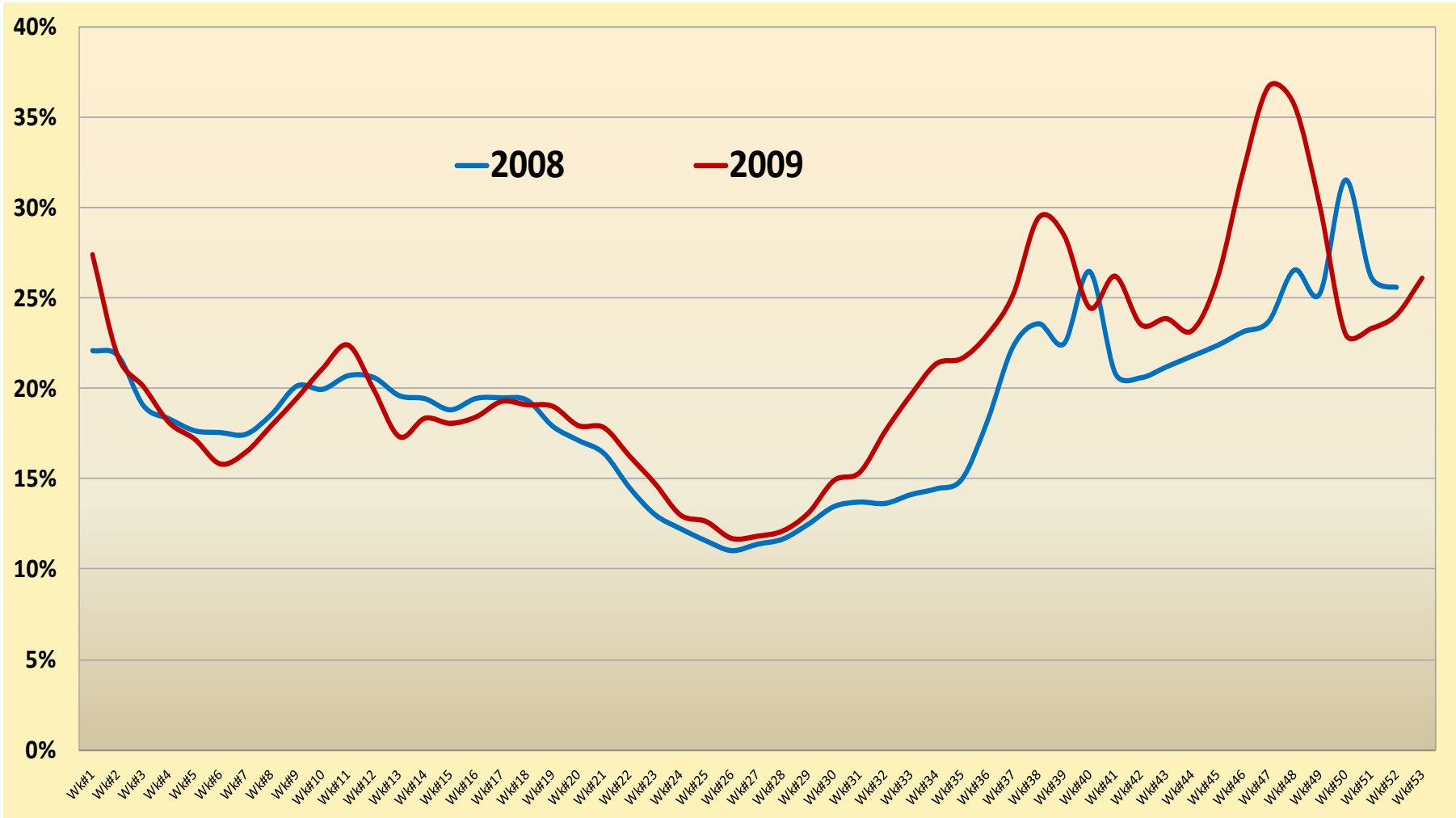


PRE PANDEMIC PHASE: RESPIRATORY ILLNESS SURVEILLANCE

- ◎ Diseases grouped in A, B & C and **Influenza Like Illness (ILI)** included in Group C (PHC), **1990**
 - ◎ Clinical data
- ◎ **Laboratory influenzae surveillance (virological)** was established at **three sentinel** sites (PHC) since **2001**
 - Virus isolation and identification (required for FluNet)
 - **Data generated was useful for monitoring trend of ILI**
 - **Data utilized for Global Influenza Network (for seasonal flu vaccine)**
- Compiled data were available for analysis (through Health Information Section) on regular bases, **useful for real-time monitoring**



Comparison of *ILI* rates (outpatients) from selected online health institutions: 2008 & 2009



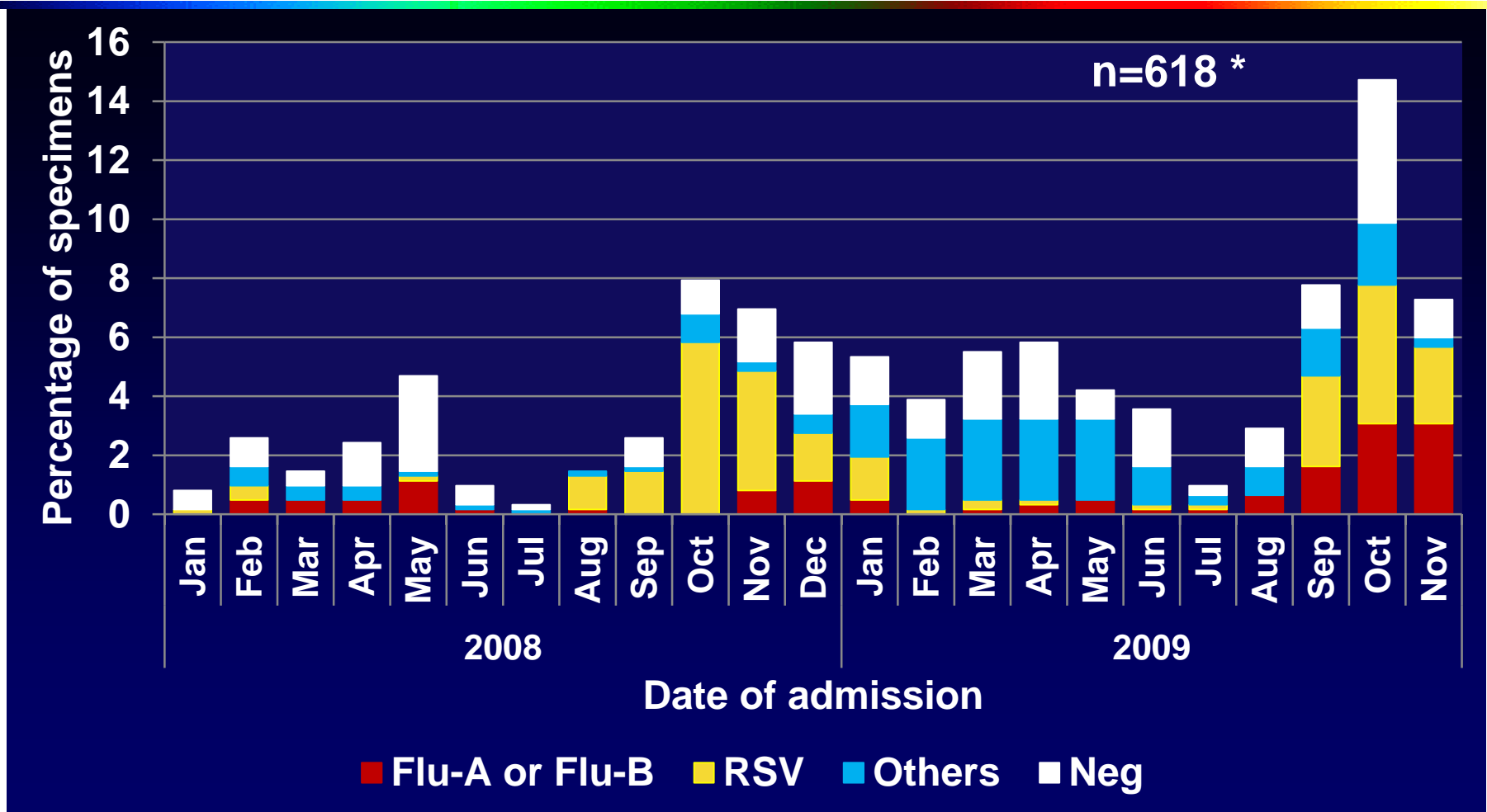
RESPIRATORY ILLNESS SURVEILLANCE

- ◎ Strong need felt for data on **severe respiratory illnesses** during SARS (2003) and the avian flu scare (2005)
- ◎ Hence **Severe Acute Respiratory Infections (SARI) surveillance (Hospitalized)**,
 - ◎ Launched at three sentinel sites (hospitals) in collaboration with NAMRU-3: Sohar (Jan'08), Ibra (Aug'08) and SQH Salalah (Dec'09)
 - ◎ Respiratory virus isolation



SARI Surveillance in Oman (Sentinel Sites)

Respiratory Pathogens by Month, Jan 2008-Nov 2009

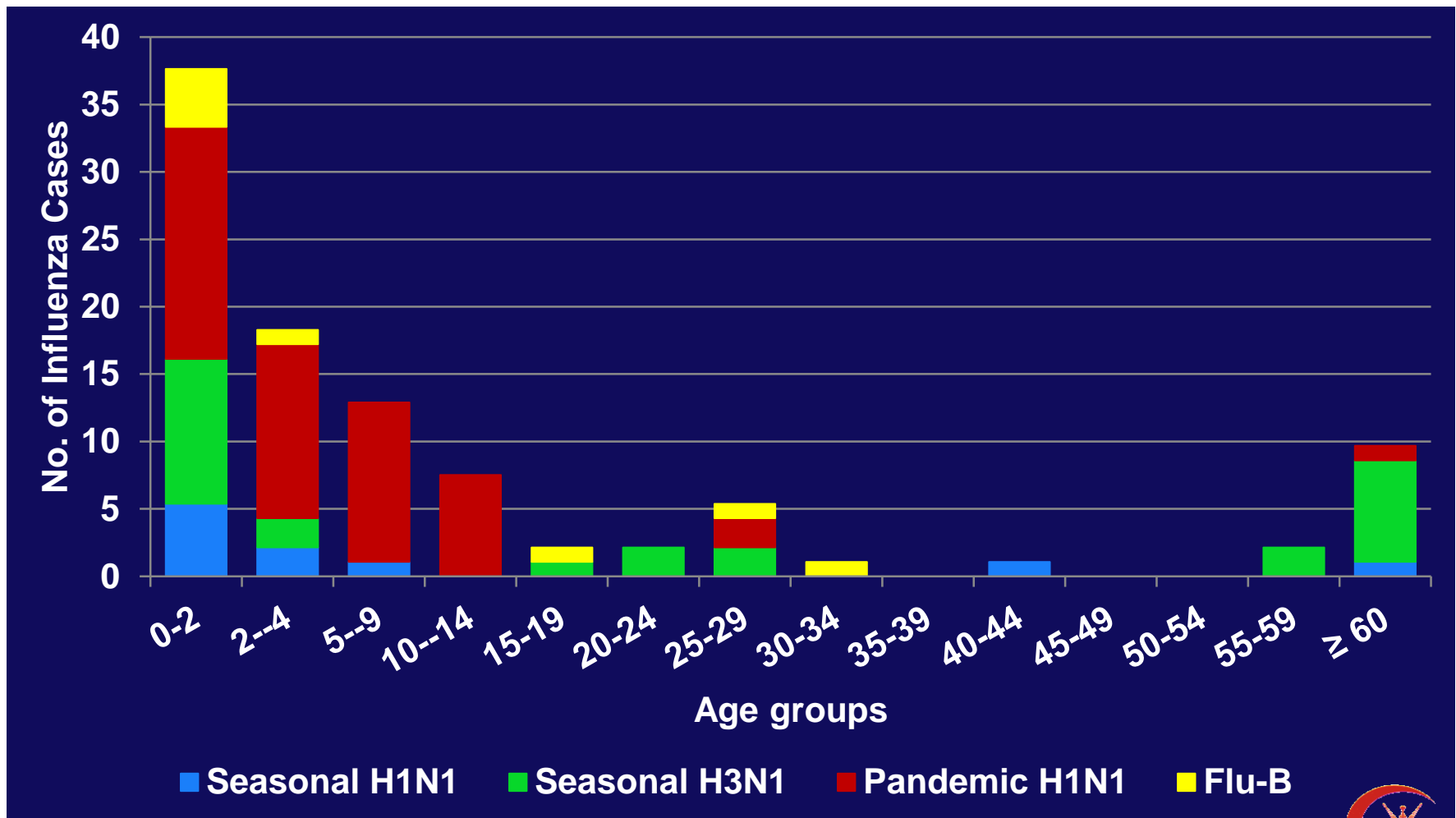


* Date of admission missing for 17 cases



SARI Surveillance in Oman

Influenza Viruses by age, Jan 2008-Nov 2009



Pandemic Phase



THE PANDEMIC EXPERIENCE

- ◎ The H1N1 pandemic of influenza in 2009 was the **FIRST pandemic** (Public Health disaster) experienced in Oman
- ◎ During the pandemic
 - ***Daily*** reporting of admitted SARI cases due to respiratory illnesses was started
 - ***ILI data*** was captured

Major Activities

- Activation of ***National Influenza Preparedness Plan***
- National Influenza A (H1N1) pandemic ***Advisory Committee established***
- “***Supreme Committee***” formed
- Link established with “***Civil Disaster Management Committee***”



National Influenza A(H1N1) Pandemic Advisory Committee

- Policy decisions
- Resources and support
- Liaise with the 'Supreme Committee'

TASK FORCE

'Health System Response'

Chairman: Mohammed Al Hosni

Hospital Case Management

- Hospital preparedness
- Develop guidelines
- Clinical management including ICU
- Equipment & supplies
- Infection control
- Training
- Data collection

- Hamad Al Belushi (Chair)
- Seif Al Abri (Co-chair)
- Nasser Al Busaidi
- Aniza Rasool
- Maher Al Bahrani
- Bassem El Zaid
- SQUH-Zakaria
- AFH-Suleiman Al Mawali
- ROP
- Private Hospital

Primary Health Care & Private Health Sector

- Develop guidelines
- Equipment & supplies
- Infection control
- Data collection
- Monitoring/supervision

- Said Al Lamki (Chair)
- Hamad Al Adawi (Co-chair)
- Najla Jaffer
- DGHS, Muscat
- Medical store
- Private hospital
- Private clinic

School Health

- Develop guidelines
- Outbreak investigation
- Monitoring and follow-up
- Data collection
- Coordination -MoE
- Awareness program

- Sahar Abdou (Chair)
- Halima Al Ghanami (Co-chair)
- Said Al Mukhaini
- MoE
- Health education
- PHC
- Private clinic

Community Awareness & Media

- Assess need & develop dynamic plan
- Identify core messages
- Develop advocacy material, press release, press conference etc

- Halima Al Hinaï (Chair)
- Khalood Al Mafragi (Co-chair)
- Huda Al Siyabi
- Salah Al Harbi
- Hilal Al Sarmi
- Abdullah Al Shuali (TV)
- Mohd. Al Belushi (Radio)
- Other sectors

National Executive Committee

- Follow-up & coordination with subcommittees
- Assess impact of Health System and the Public Health Response
- Develop recommendations for the National Committee

National Executive Committee

- Ali Jaffer Mohammed (Chair)
- Salah Al Awaïdy (Co-chair)
- Jihane Tawilah
- Azhar Al Kindi
- Mohammed Al Hosni
- Hamad Al Belushi
- Said Al Lamki
- Idris Al Abaidani
- Halima Al Hinaï
- Majid Al Maqbali
- Sahar Abdou

TASK FORCE

'Public Health Response'

Chairman: Salah Al Awaïdy

Strategic Health Operation Centre (SHOC)

Communication & Coordination

- Develop plan
- Liaise with all Regional Committees
- Agenda for meetings
- Circulate minutes & Compile reports
- Manage call centre

- Idris Al Abaidani (Chair)
- Ali Al Lawati (Co-chair)
- Muna Al Shukali
- Ahmed Al Julandani
- Fatima Al Ismaili
- Jeffrey Singh
- ROP1
- ROP2

Surveillance & Response and data management

- Risk assessment
- Data analysis & reporting
- Outbreak investigation & containment
- Coordination, monitoring, follow-up
- Laboratory support
- Mitigation activities
 - Vaccine deployment
 - Hajj/Omra

- Salah Al Awaïdy (Chair)
- Suleiman Al Busaidi
- Shyam Bawikar
- Salem Al Mahrooqi
- A Raju
- Khalil Al Hassani
- Marium Al Shaïbi
- Salah Al Muhzami
- Medhat ElSayed
- Ahmed Al Qasmi
- DGIT- Deepak
- Shivakumar

Death classification team



Major Activities

- **SHOC** established (Strategic Health Operations Cell)
- Communication network strengthened (mobile, internet)
- Surveillance of **PoE** established
- Health Care Workers informed – circulars, guidelines
- Antiviral drugs/Infection control equipments & consumables ordered
- Health Education to community & HCW
- **Link** established with DGIT



Planning assumptions for the pandemic – *first wave*, pandemic (H1N1) 2009

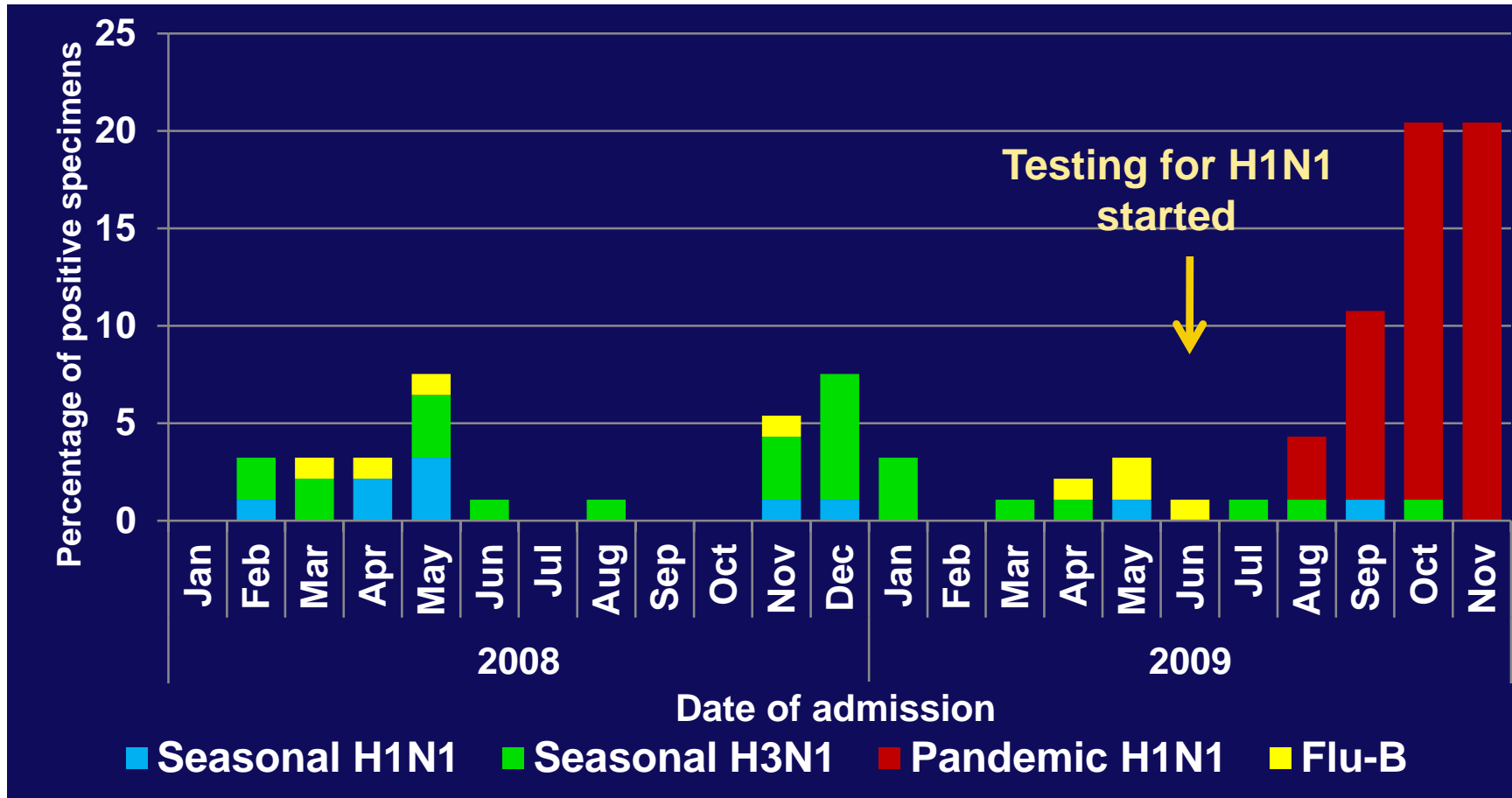
Clinical attack rate	30%
Peak clinical attack rate	6.5% (local planning assumptions 4.5% to 8%) per week
Complication rate	15% of clinical cases
Hospitalisation rate	2% of clinical cases
Case fatality rate	0.1% to 0.2% (cannot exclude up to 0.35%) of clinical cases
Peak absence rate	12% of workforce

These assumptions represent a reasonable worst case applying to one European country (the United Kingdom) with data available as of July 2009. They should not be used for predictions.

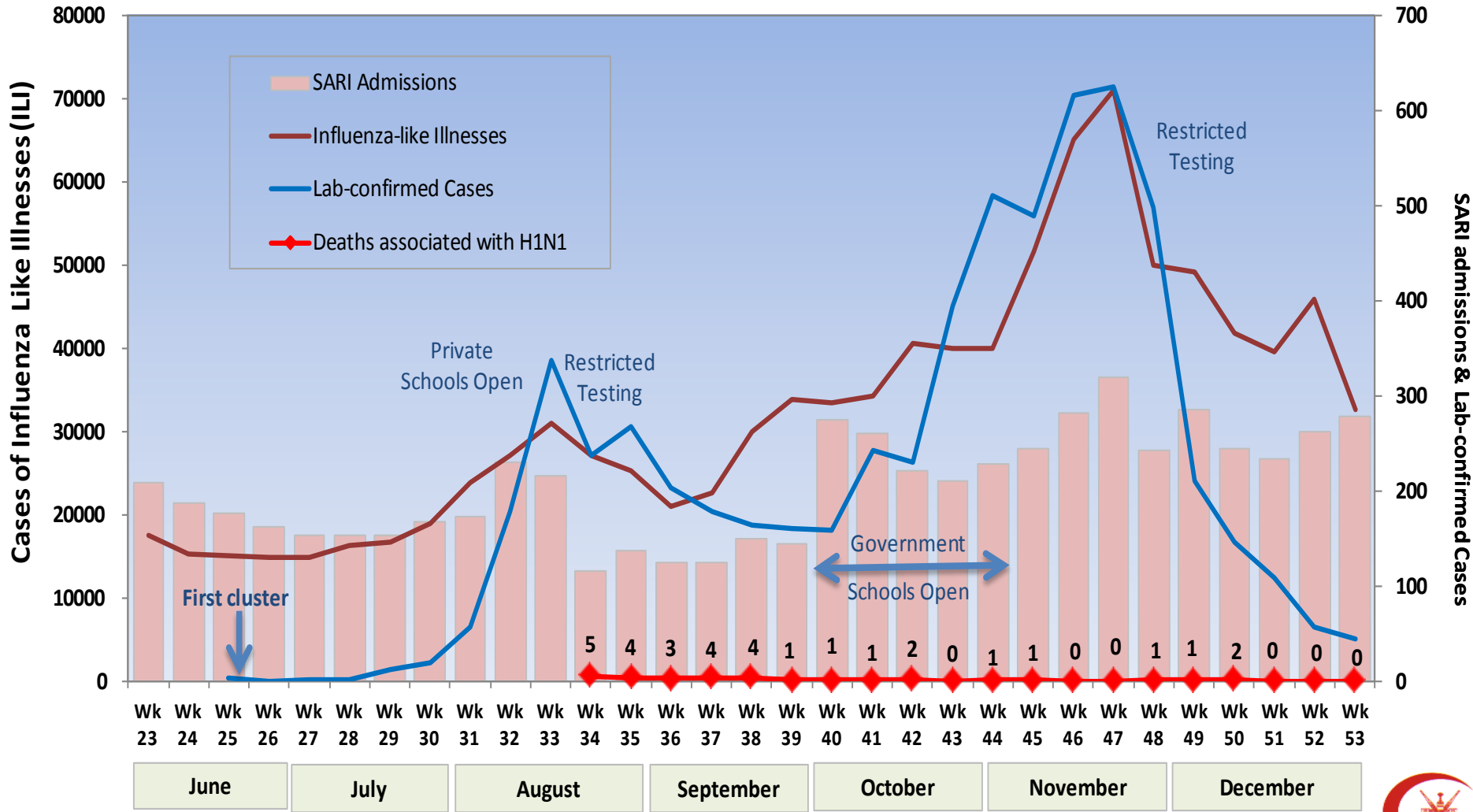


SARI Surveillance in Oman

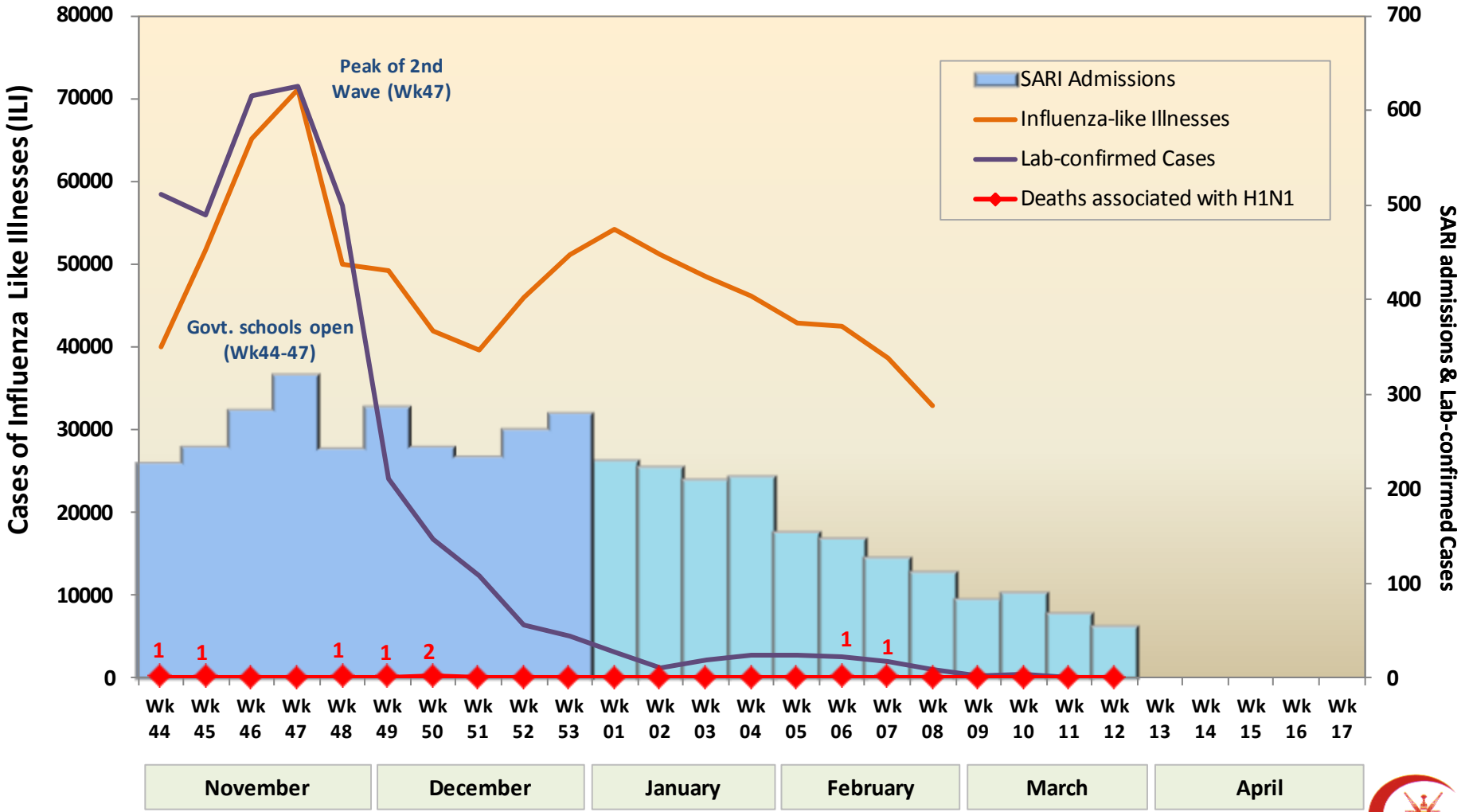
Monthly distribution of influenza SARI cases, sentinel sites
Jan 2008 - Nov 2009



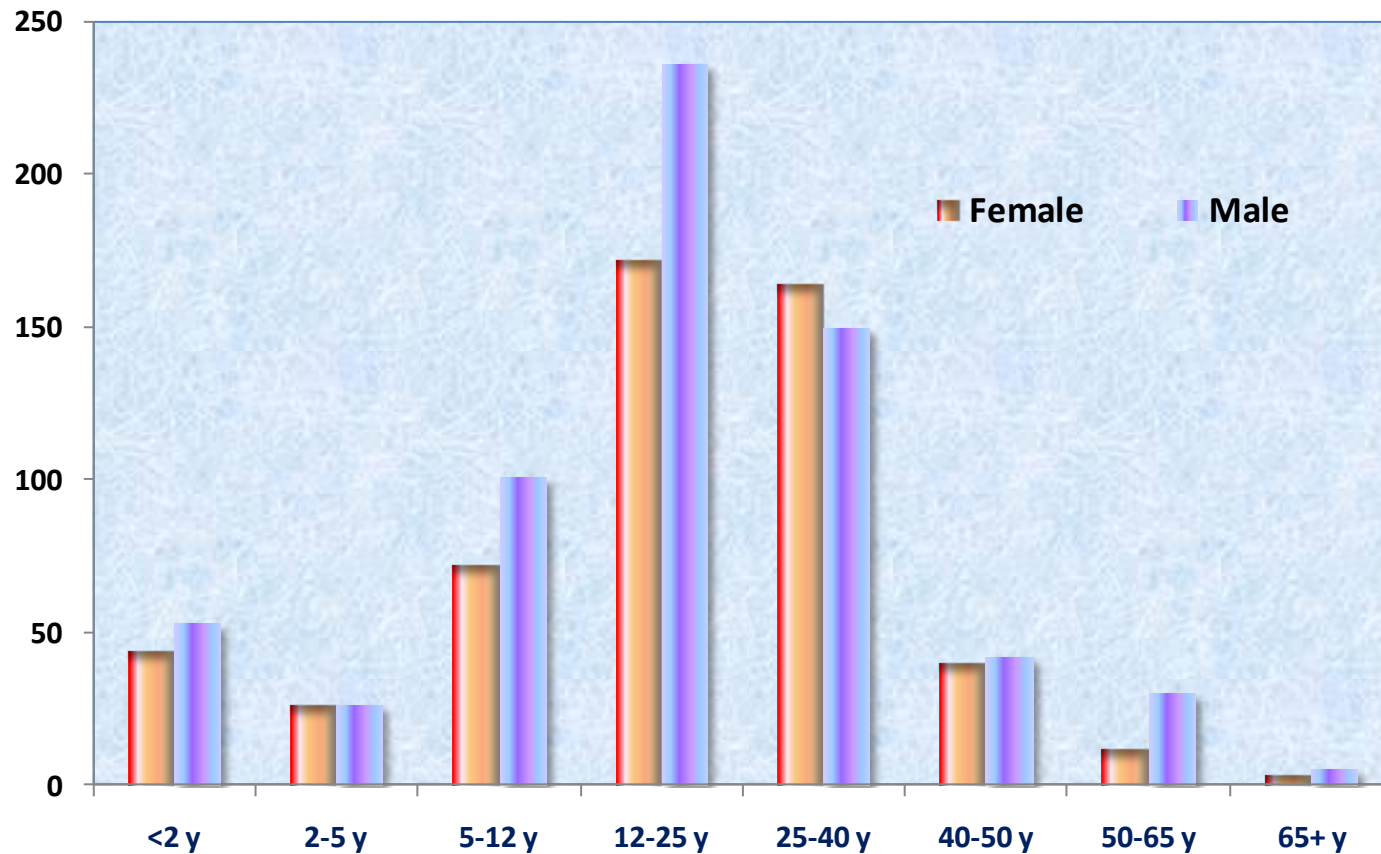
PANDEMIC 2009 PROGRESS



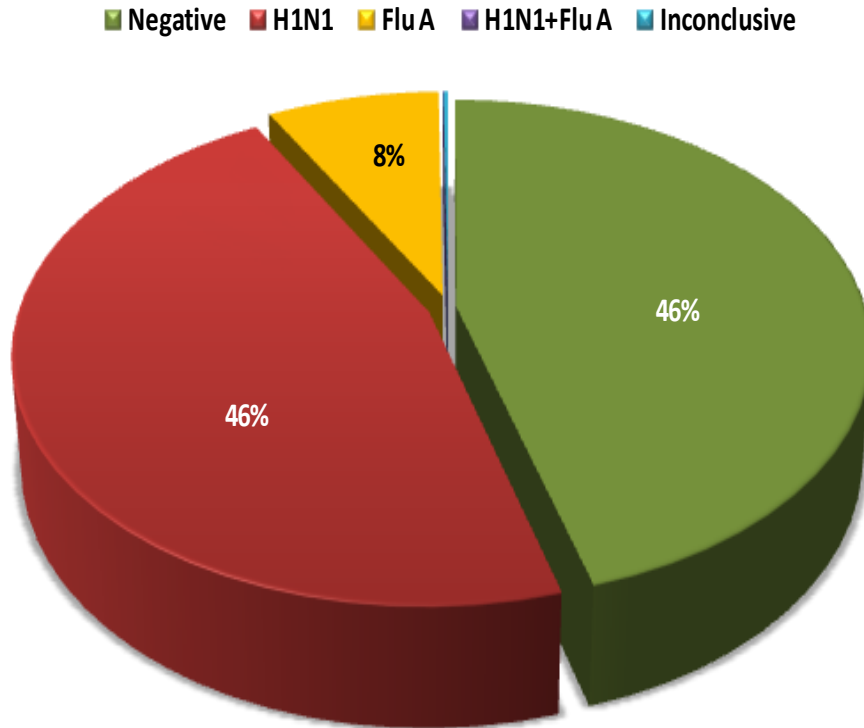
PANDEMIC 2009 PROGRESS



Age & gender distribution ($n=1182$)



The proportion of pH1N1& Flu A positive samples and distribution of Flu A by Governorates

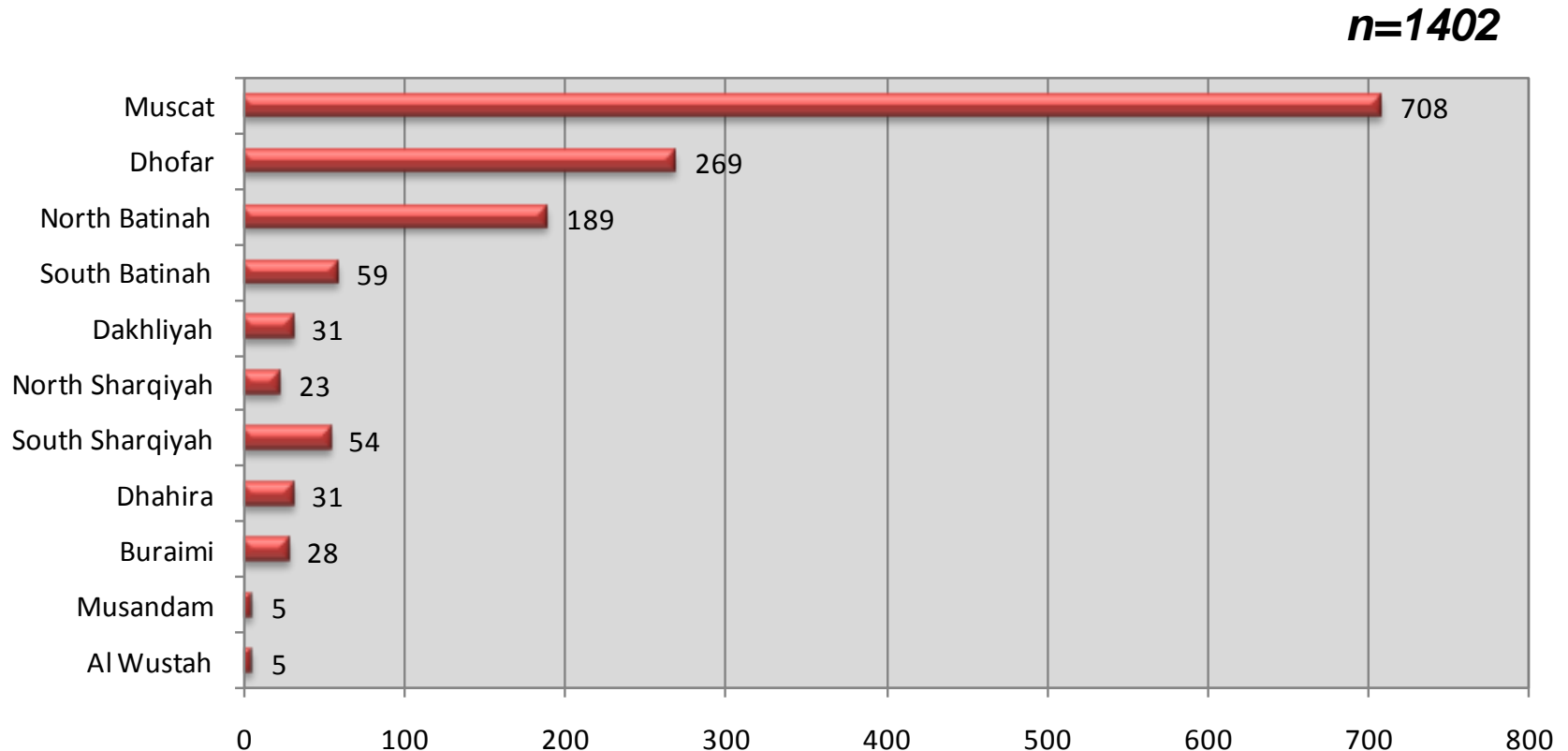


Province	FluA positive
Muscat	293
Dhofar	57
N Batinah	95
S Batinah	22
Dakhliyah	48
N Sharqiyah	24
S Sharqiyah	97
Dhahira	63
Buraimi	3
Musandam	5
Al Wustah	0
Blanks	5
Total	712

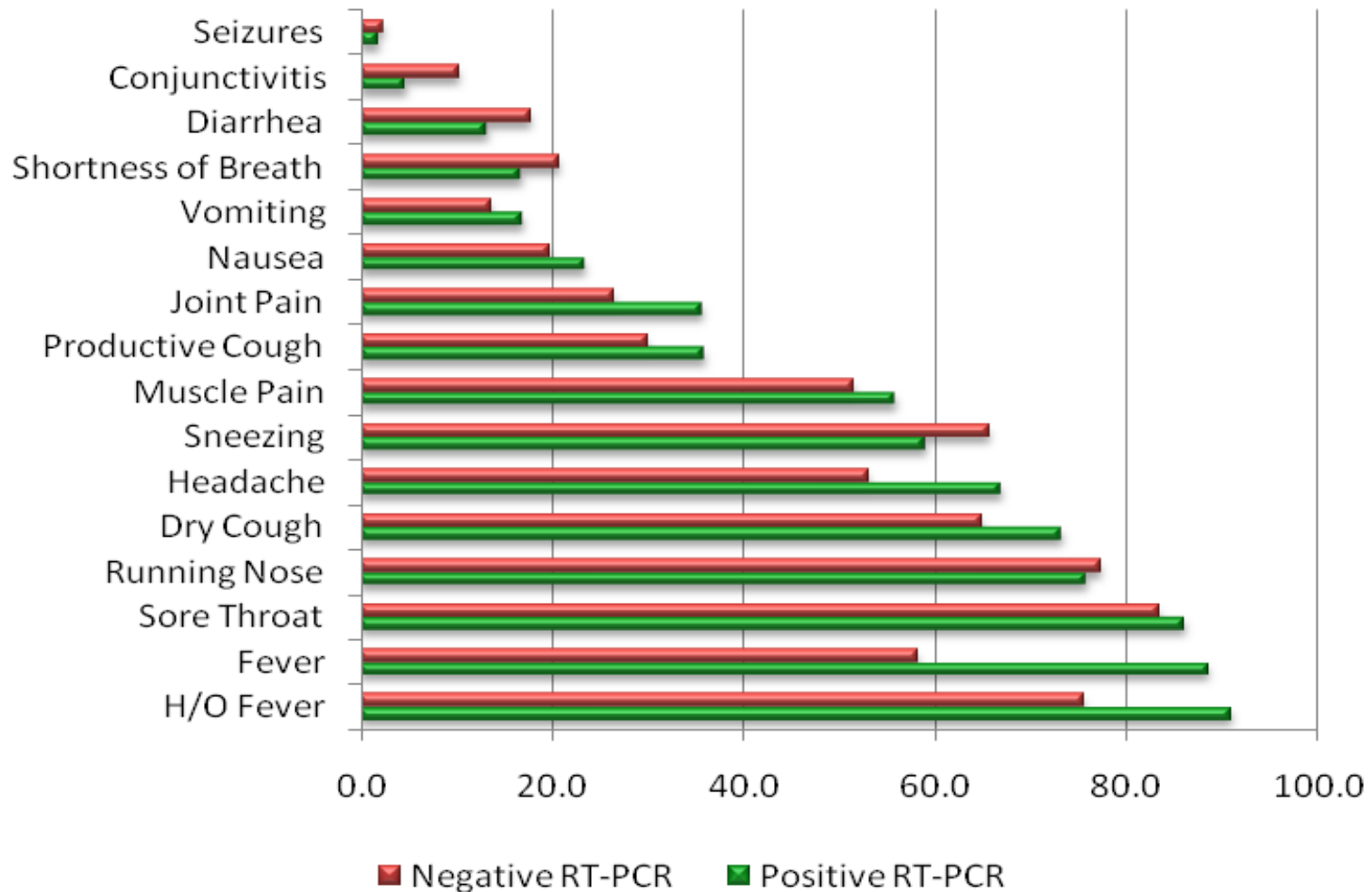


Laboratory-confirmed cases by Regions

(17th June – Dec 2009)

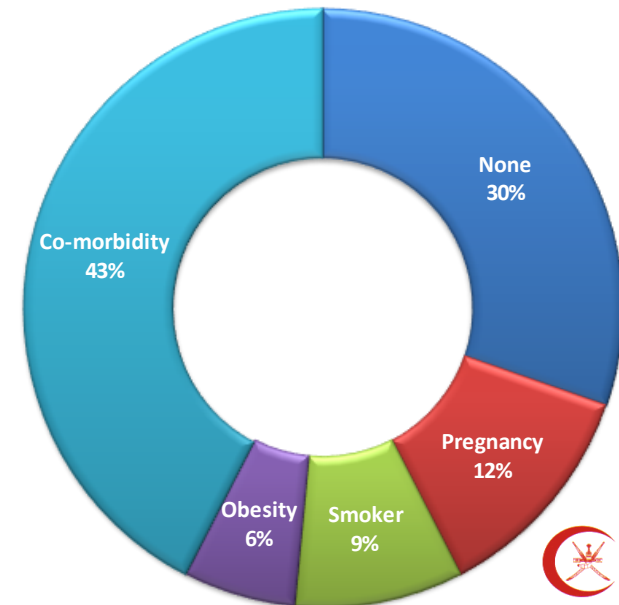
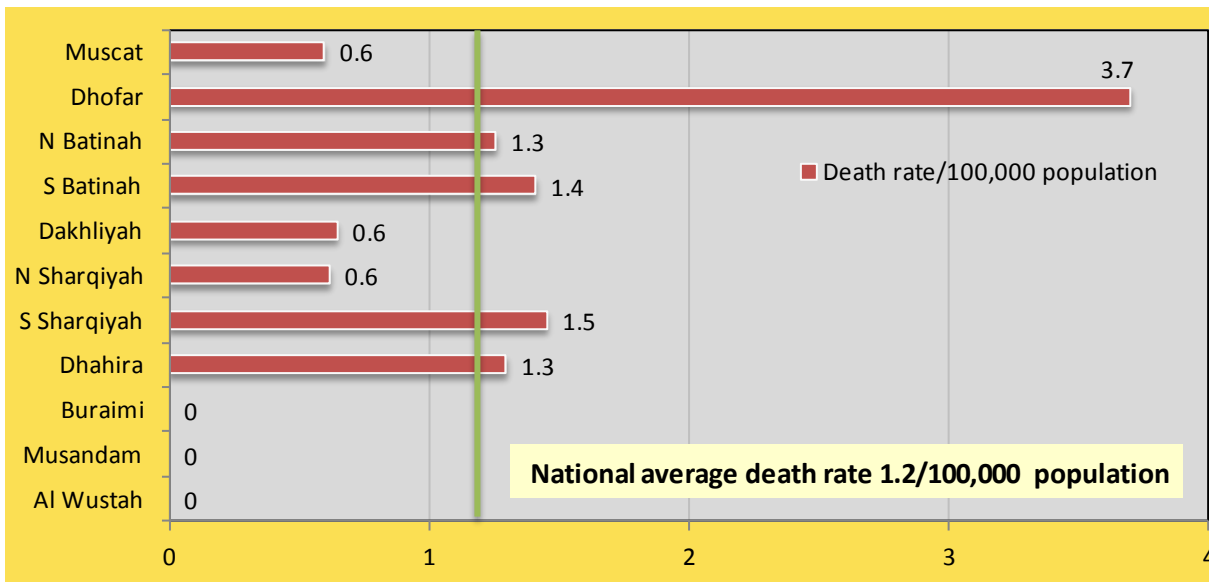
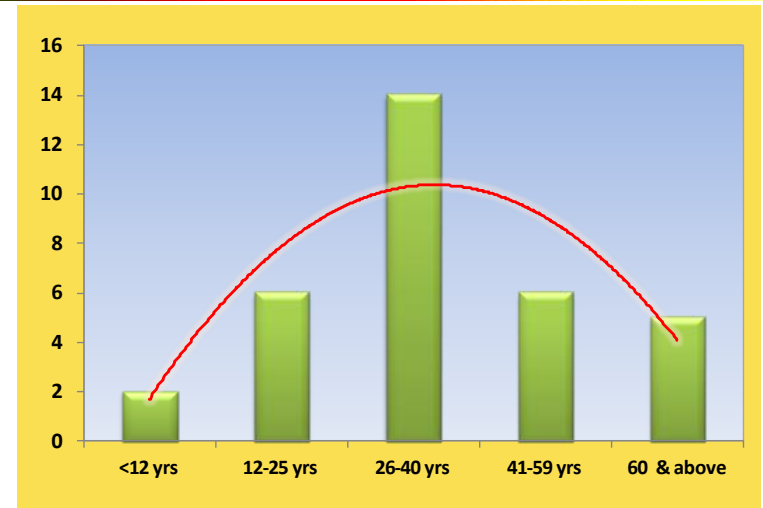
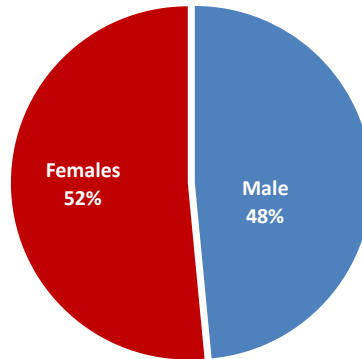
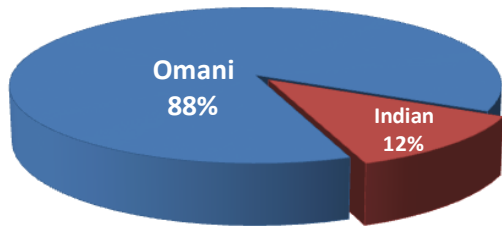


Pattern of presenting symptoms of pH1N1



PANDEMIC 2009: DEATHS

n = 33



p(H1N1) 2009 Vaccination



National Plan



Sultanate of Oman

Ministry of Health

National Pandemic Influenza Vaccination Campaign Plan 2009

25th October 2009

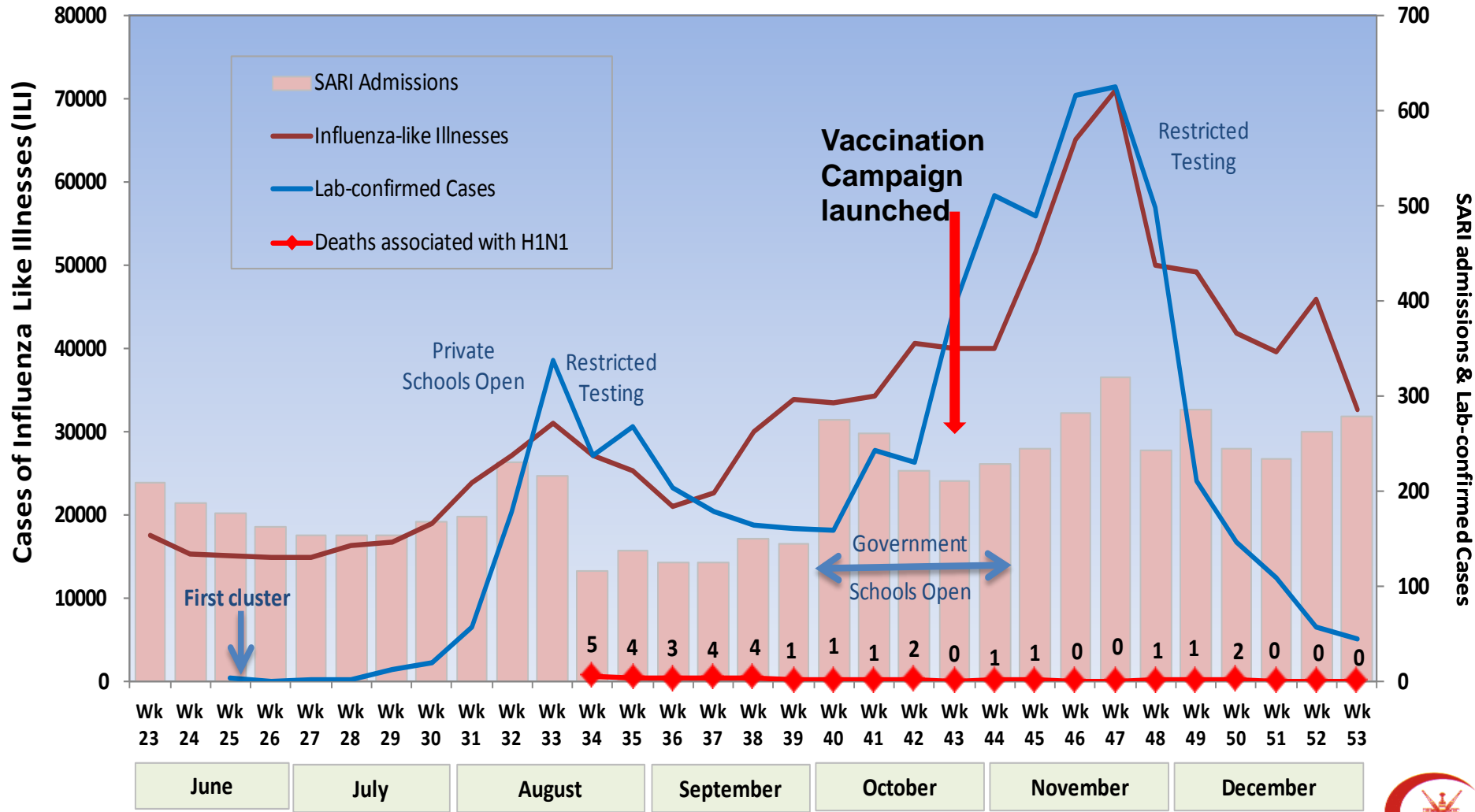
Department of Communicable Disease Surveillance and Control,
Directorate General of Health Affairs

Address for Communication:

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Directorate General of Health Affairs, Ministry of Health HQ,
PO Box 393, MUSCAT 113, Sultanate of Oman
Fax: + (968) 24 601832



PANDEMIC 2009 PROGRESS

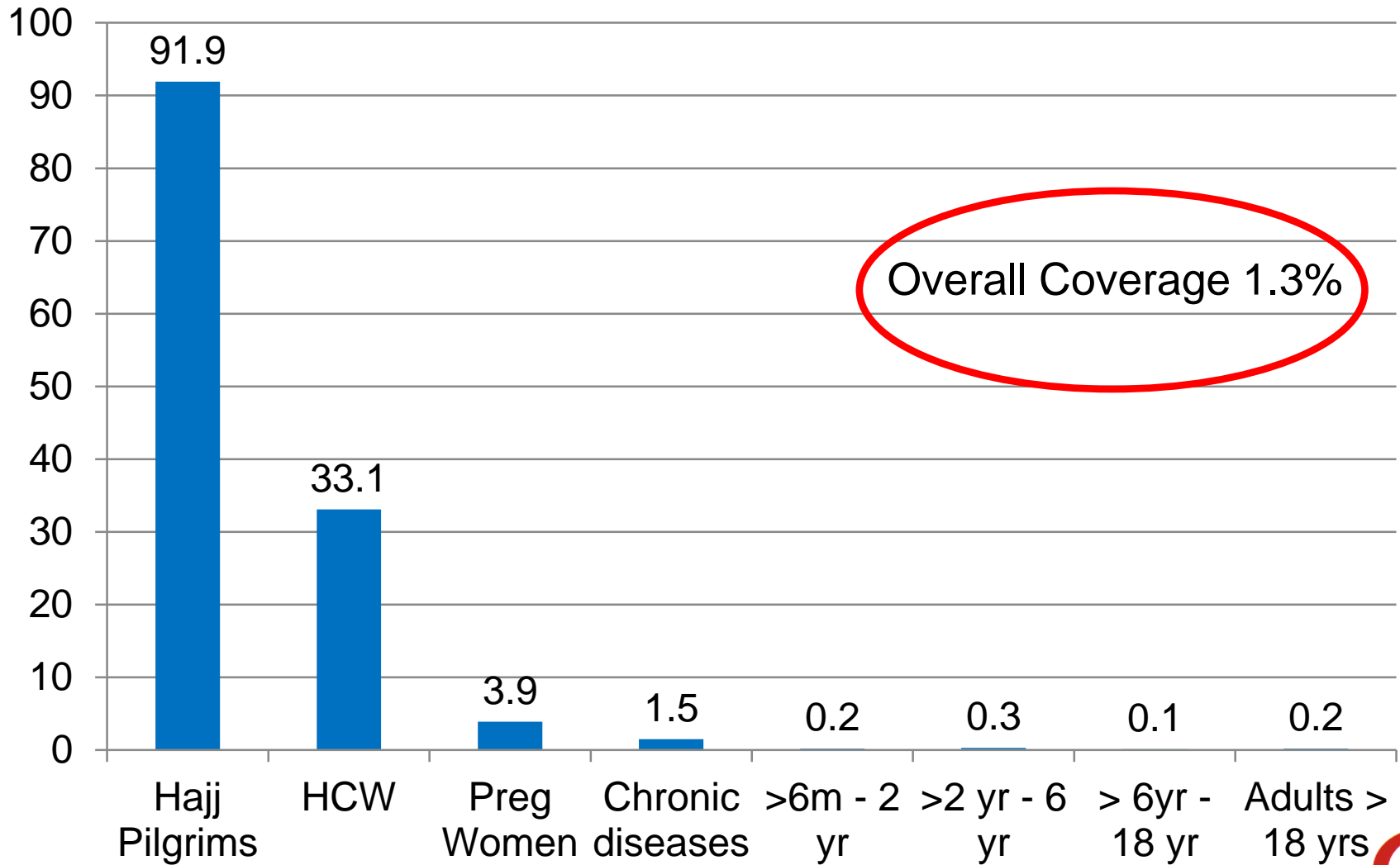


Target Groups for p(H1N1) vaccination in Oman

#	Target Groups	Estimated #
1	Hajj Pilgrims	10,000
2	Health Care Workers	40,551
3	Essential and critical services	36,174
4	Pregnant Women	48,750
5	People with chronic conditions	150,000
6	Age group > 6 m to \leq 2 yrs	76,218
7	Age group > 2 yrs to \leq 6 yrs	244,328
8	Age group > 6 yrs to \leq 18 yrs	643,138
9	Age group above 18 yrs	1,588,269
	Total	2,837,428



Percentage of p(H1N1)2009 Vaccination Coverage among Target Groups



Impact of Pandemic

- High **out patient** turn over
- Disruption of routine appointment clinics
- Shortage of **isolation rooms / ICU** beds
- Shortage of wards requiring ventilator support
- Overburdening of lab with samples
- Shortage of laboratory reagents
- Shortage of Staff
- Closure of Schools
- Postponement of Muscat Festival



Cost of Influenza A(H1N1) 2009 Pandemic Response (MOH) in Oman

#	Item Head	Cost in RO	
1.	Vaccine	12,236,700	
2.	PPE	662,952	
3.	Drugs	Antiviral	2,256,025
		Others	159,500
4.	Laboratory	153,456	
5.	Equipment	2,971,609	
6.	Administration and Finance	Communication material printing	200,766
		Mobile telephone	2,000
		Telephone bills	3315
		Computers	1500
7.	Total	\$50,000,000	18,647,823



Lessons learnt from Influenza p(H1N1)



Issue	Lesson
Optimal preparedness was lacking	The action template (generic preparedness plan) should be updated annually Simulation exercises needed
Need for consensus decisions based on field experiences	Need for forming task force with specific responsibilities at the provincial level
Communication hierarchy	To have a more open access of communication in pandemic situation
Non-availability of dedicated lines for communication (Fax & Phone)	Unhindered communication achievable if the MoH supplies mobiles AND Provision of allowance for communication for health centres in such situations.



Issue	Lesson
<p>The need for data entry & management person at regional level. At present inadequate supporting infra structure</p>	<p>Need to revisit the staffing for surveillance</p>
<p>The need of an effective feedback system that can be easily disseminated</p>	<p>Priority area: To strengthen established e-mail communication channels and to be used for surveillance</p>
<p>Capacity building for swab collection.</p>	<p>Can be used for effective influenza surveillance in future</p>
<p>The need for utilizing private sector in surveillance & pandemic management in Muscat</p>	<p>Strengthen and sustain the strategy for successful participation of private sector in surveillance activities.</p>



POST PANDEMIC

- ⦿ Continued surveillance of respiratory illness
- ⦿ Launched ***National ARI Surveillance*** in place of SARI
- ⦿ Launch of ***national health emergency response plan*** (centre)
- ⦿ ***National STRATEGIC FRAMEWORK (Medical and Public Health Response)***

SUMMARY AND CONCLUSIONS

- ◎ Pandemic highlights the importance of surveillance and preventing its severity and spread
- ◎ Epidemiological findings are consistent with the findings reported by other countries and WHO
- ◎ Impact of a pandemic on health care system varied from low to severe
- ◎ Handle the subsequent pandemic/outbreaks efficiently (Avian influenza, MERS-CoV, Ebola.. Etc)



Epidemiology of Pandemic H1N1 in Oman and Public Health Response, 2009

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Tribute to “Team Work”

- Cabinet of Ministers
- H E The Minister's of Health
- H E The Undersecretaries of Health Affairs/ Planning/Administrative/Financial Affairs/Advisors
- Ministries (Education, Information, Social affairs, etc)
- DGHA
- DCDSC
- CPHL
- Departments of Health Education/School Health/Primary Health Care/ Hospital Affairs
- Directorate of General of Royal Hospital / SQUH / AFH
- Directorate General of Drug Supply / Information Technology
- Civil Defence, Royal Oman Police
- All DGHS / DHA of Governorates
- All Executive Directors of Regional Hospitals
- Country Office, WHO
- Private Sectors
- All Health Care Workers
- Others who directly or indirectly helped in controlling the Pandemic



Shukran

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