



PROGRESS TOWARDS MEASLES & RUBELLA ELIMINATION

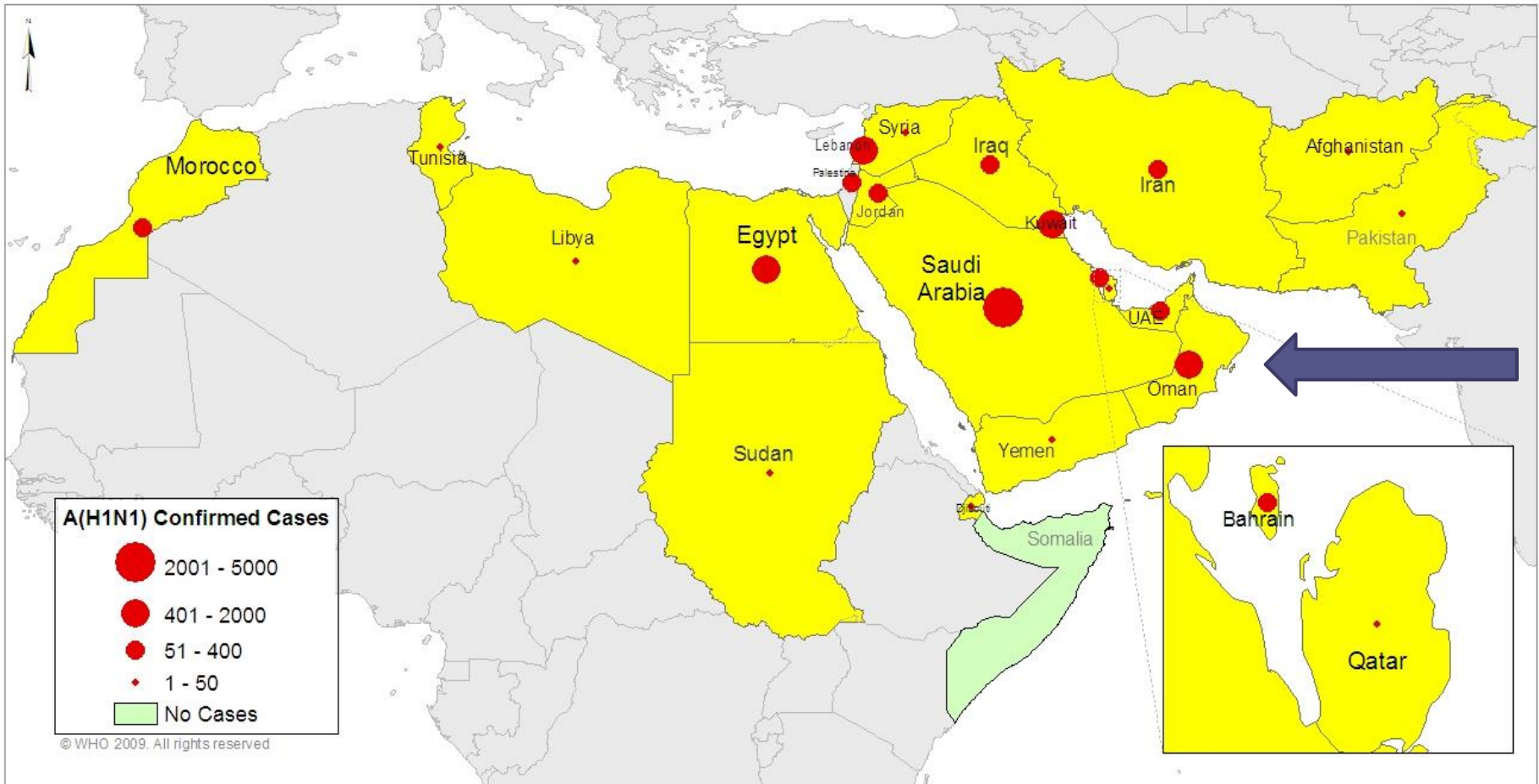
EXPERIENCE FROM OMAN

SALAH AL AWAIDY, MD
COMMUNICABLE DISEASES ADVISOR
MOH, OMAN
Salah.awaidy@gmail.com

Outline

- **Background**
- **Status of Measles, Rubella & CRS Elimination in Oman**
- **Lesson learnt**
- **Summary and conclusions**

Oman.....



Background

- **Target**

- 2015, EMRO, *Measles eliminating*
- 2010, *Rubella and CRS Elimination*

- **Regional strategies**

- **Achieving high population immunity:**

- Achieving at least 95% coverage with 2 doses of measles and single dose of rubella (MMR/MR) **at national & every district** through:
 - Routine vaccination
 - Supplementary immunization activities (SIAs) where needed

- **Strong case-based laboratory surveillance**

- **Proper case management**

- **Community engagement**

Elimination Definition

“0” endemic cases of measles/rubella and are reporting no endemic measles virus transmission for the last three years or more, in the presence of a well-functioning nationwide measles/rubella case-based surveillance system



Strategies Implementation

■ Immunization Policy

- Catch-up (SIAs) campaign conducted in 1994
 - Age :12-18 months Coverage: 94%
- Oct 01, MMR at 12 and 18 months

■ Case-Based Laboratory Surveillance

- April 1996, ***fever and rash*** cases (all age group) are subjected to serological confirmation by IgM ELISA
- ***Both*** measles and rubella IgM simultaneously
- ***Public and private*** mandatory reporting
- Surveillance indicators as well as ZERO reporting are monitored

■ Proper Case Management

■ Community Engagement

Fever & Rash Illness Investigation Algorithm

All Primary Secondary as well as Tertiary Care Health Institutions in Government & Private Sector are responsible for Fever & Rash surveillance under the **"Measles & Rubella Elimination Initiative in Oman"**

Fever & Rash Illness Case Definition:
Any individual of **any age** developing Sudden onset of fever with rash (rule out chickenpox) should be considered as a suspect case of **"Fever & Rash Illness"** (syndrome)

Preliminary Case Investigation & Reporting

Attending Doctor in Health Care Facility should elicit relevant history (travel) & conduct clinical examination

- Check immunization status
- Check the travel history within 21 days
- Collect the clinical samples immediately

Feedback Report

Mandatory notification within 24 hours

Mandatory collection of samples and notification form

Regional Directorate Epidemiologist Or Focal point

DCDSC
Tel: 24601921 ,24607524
Fax: 24601832

Separated Serum 0.5–1 ml
Nasopharyngeal or throat swab in VTM
"Oracol" swabs (only at Sentinel sites)
Urine at least 20 ml (centrifuge & suspend pellet in 0.5 ml of VTM)

Store & Transport at 4° to 8° C

DO NOT FREEZE !

Epidemiological Investigation

- History of similar illness within the family and/or immediate contacts (neighborhood)
- Identification of probable source of infection
- Follow-up of the collection and shipment of the specimens
- Receive results and update data

Essential Documents

1. Case Notification Form (PR-14)
2. Mandatory Information Form
3. Immunization Record

DCDSC , MoH HQ

- Coordinate surveillance activities
- Compile & Analyze Data
- Monitor surveillance indicators
- Inform WHO-EMRO

Central Public Health Laboratory, Darsait

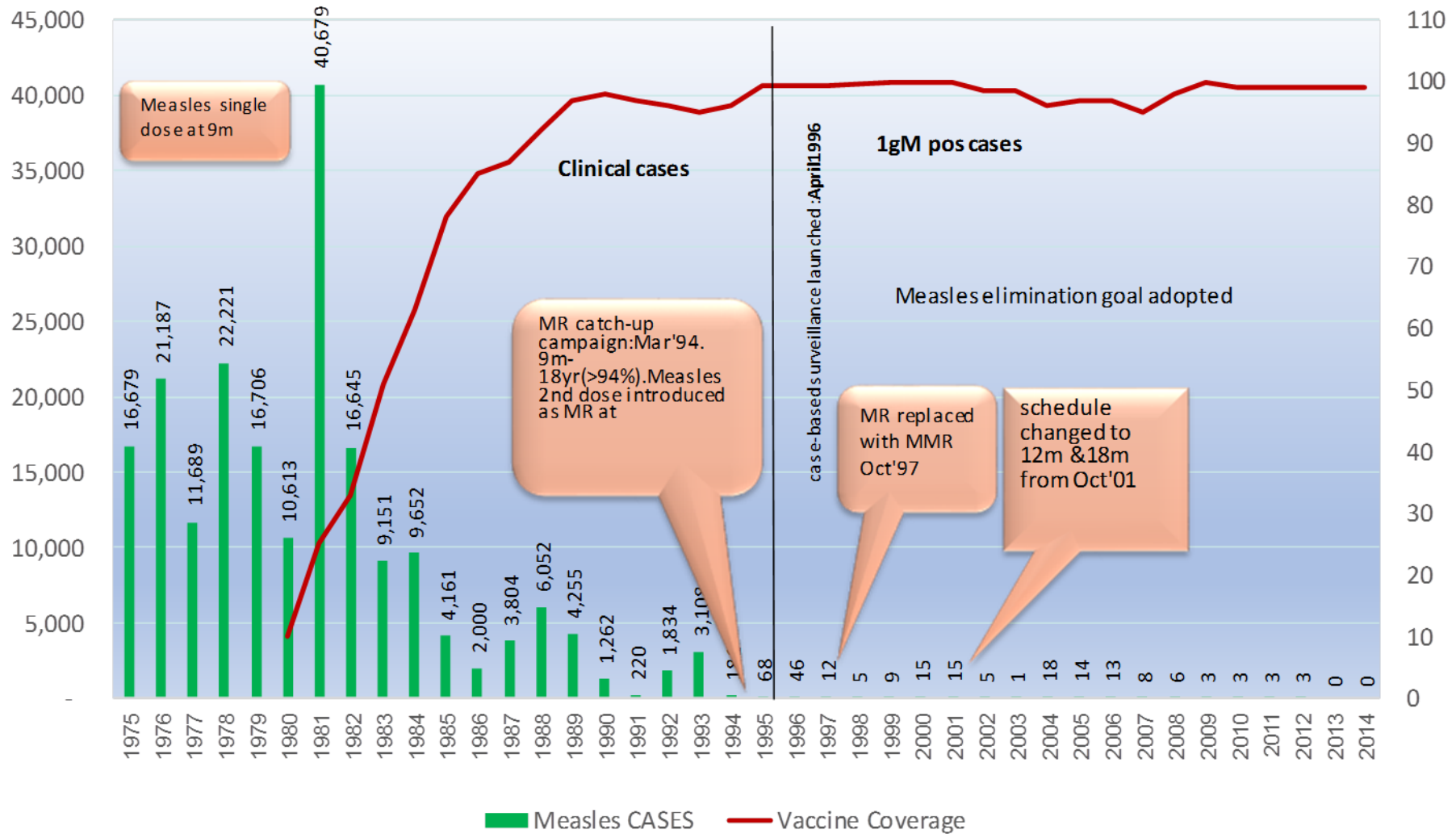
Tel: 24705740, 24705943
Fax: 24793899

Discarded if...
IgM Negative for Measles & Rubella


Serologically Confirmed
IgM Positive for Measles or Rubella

Clinically Confirmed
If 'NO' OR inadequate Samples were collected

Measles incidence and coverage by year, Oman, 1975- 2014



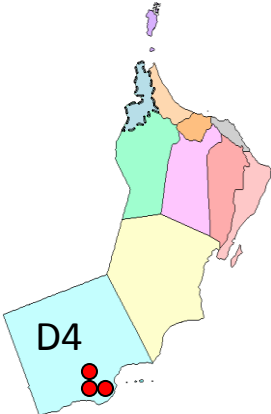
Measles Surveillance indicators, Oman, 2000-2014



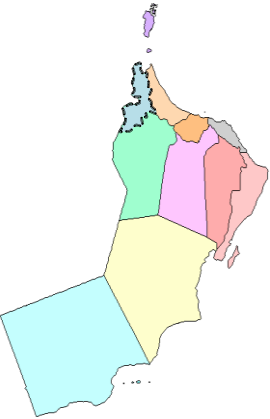
Surveillance indicators & Cases Investigated	WHO Criteria/ Targets	Year														
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Incidence of confirmed endemic measles case per million per year population		6.5	6	0.8	0.4	7.4	5.6	5	3	2	0.9	1	1.4	0.8	0	0
Sites reporting weekly or monthly (%)	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non measles, suspected measles reporting rate per 100,000 population	≥ 2	2.8	2.3	1.6	0.8	29.9	26.6	27.2	27.2	29.7	18.7	14.2	22.5	19.2	24.5	30
Suspected cases reported<48h from onset (%)	≥80%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cases investigated <48h after notification (%)	≥80%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cases with adequate specimens collected (%)	≥80%	100	100	98	94	99		98	98	99	97	96	98	99	99	99
Laboratory results reported<7 d (%)	≥80%	*	*	*	*	*	*	648	736	860	579	436	769	718	776	1170
Sufficient samples should be collected for virus detection in a proficient laboratory from 80% of identified transmission chains (outbreaks).	≥80%	*	*	*	*	*	*	96%	97.6%	98%	99.7%	98.2%	98.8%	98.5%	89.6%	98%
Suspected measles cases reported(n)	NA	68	58	41	18	723	667	700	746	866	595	459	793	696	699	1206
Cases measles IgM positive (n)	NA	15	15	2	1	18	14	13	8	6	3	3	5	3	0	0
Non-measles, non- rubella cases (n)	NA	60	58	40	16	723	637	680	738	856	589	454	787	690	699	1206

Geographical distribution of confirmed measles cases by province, Oman, 2010 - 2015

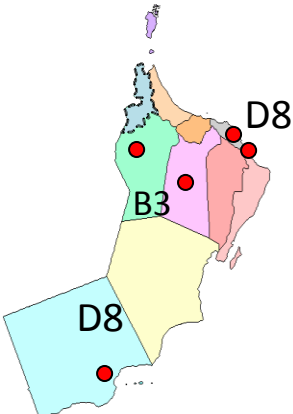
2010



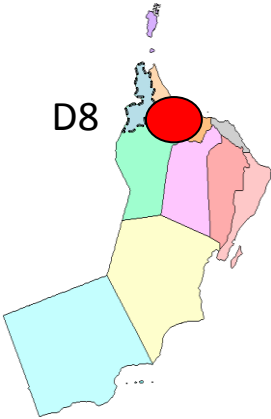
- 2013
- (0 incidence)



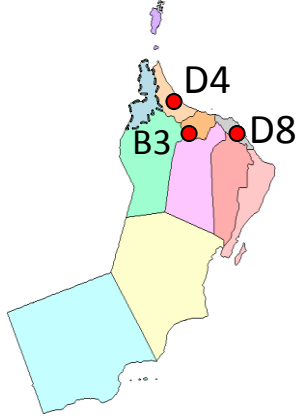
2011



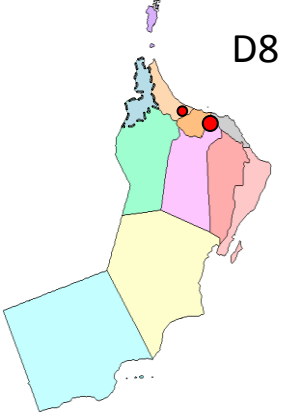
- 2014 (14 cases D8)



2012



- 2014 (14 cases D8)



Classification of Measles cases, and virus genotypes, 2010-2015*

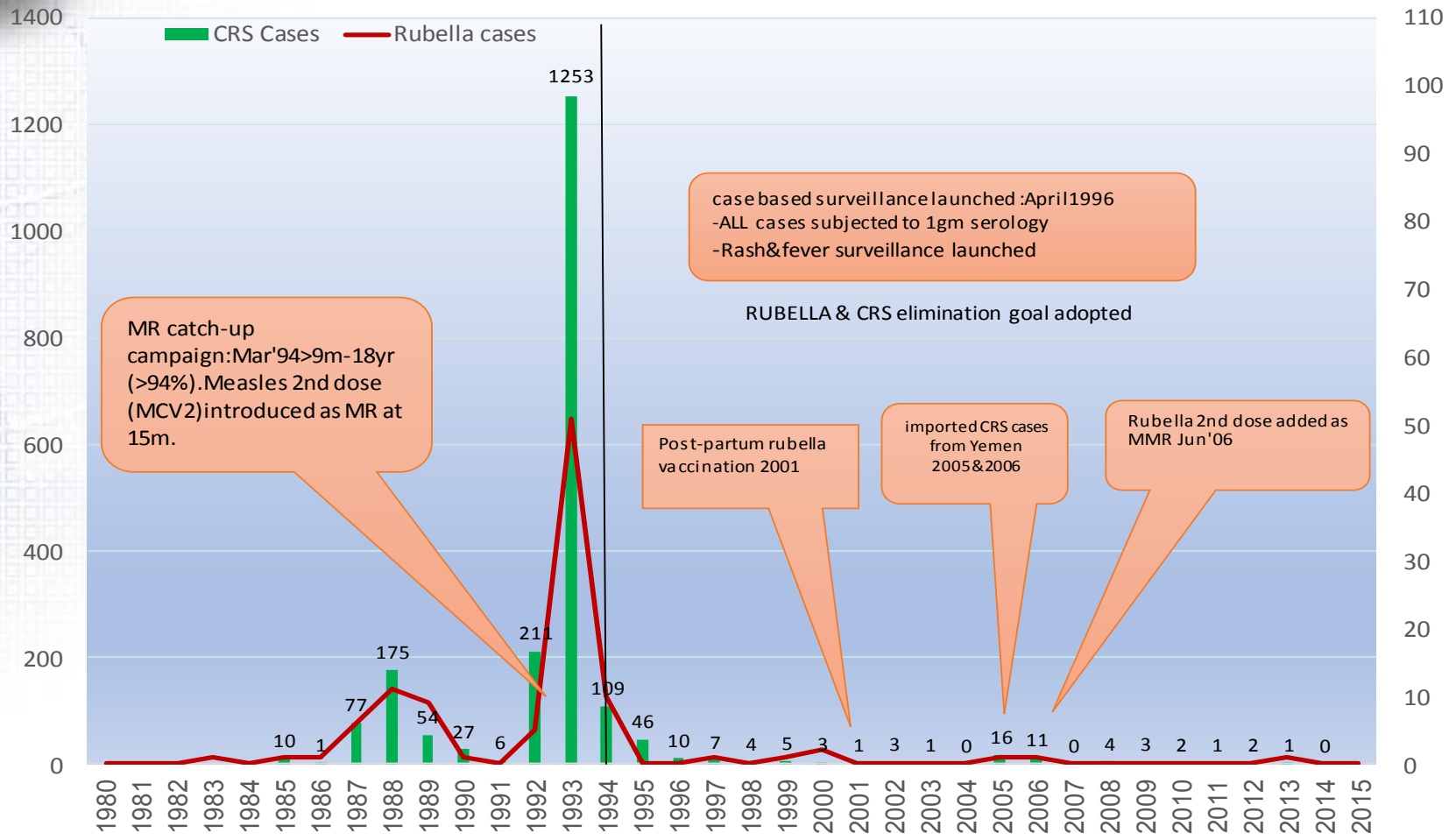
Year	Total number of Suspected Cases	Total Measles cases				Detected Genotype (s)
		Lab confirmed	indigenous	Imported/ Importation Related	Vaccine related	
2010	459	14	3	3	8	A, B3, D4
2011	793	16	5	3	8	A, B3, D8
2012	696	17	3	7	7	A, D4, D8, B3
2013	862	29	0	11	11	A, B3, D8
2014	1229	51	14	8	29	A, D4, D8, B3
2015	1230	47	2	15	30	A, D9, D8, B3

* 2015: year to date





Rubella & CRS incidence and RCV coverages, 1985-2015

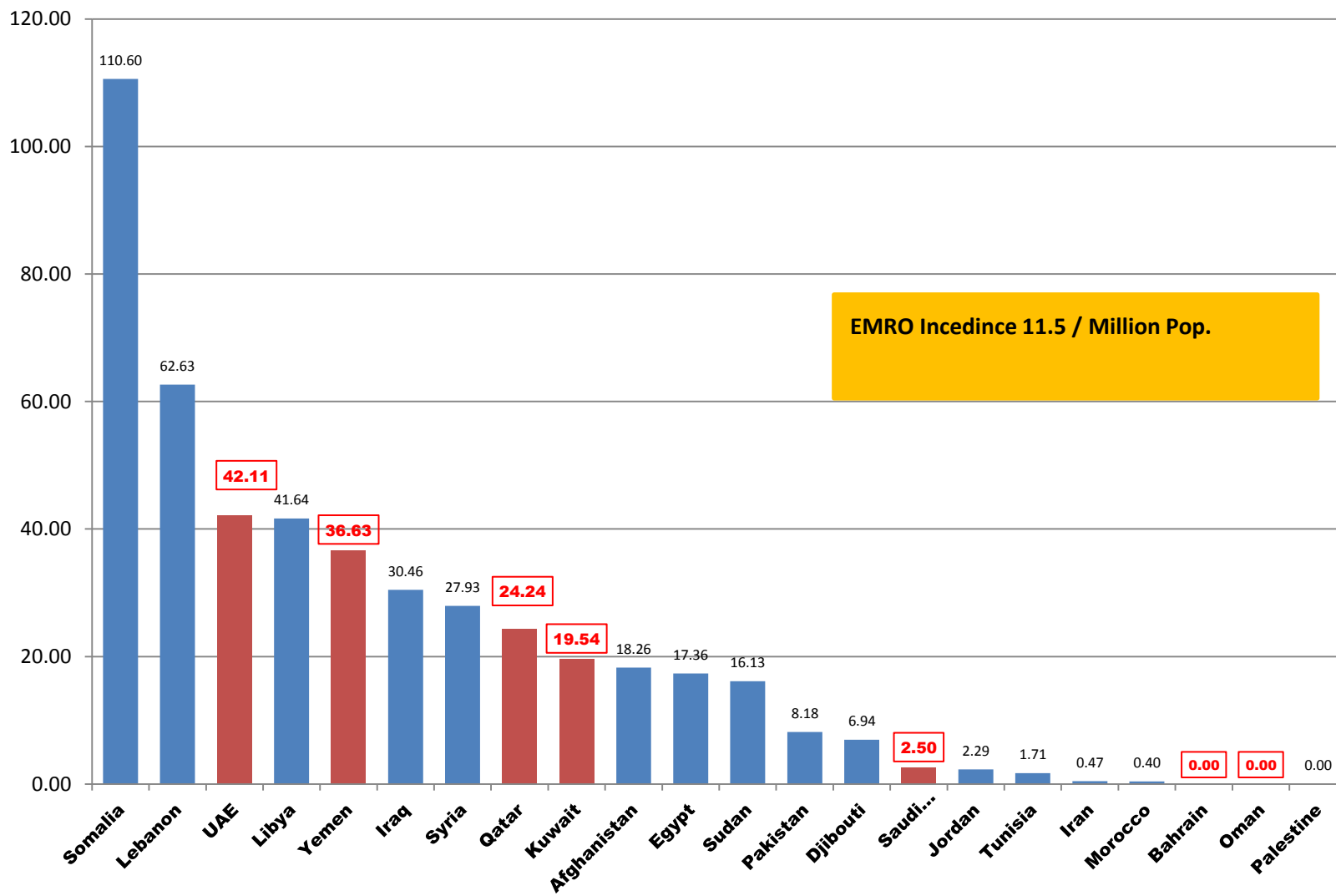


Rubella Surveillance Indicators and Rubella Cases, Oman, 2000-2014

Surveillance indicators & Cases Investigated	WHO Criteria/ Targets	Year														
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Suspected Rubella cases reported(n)	NA	68	58	41	18	723	667	700	746	866	595	459	793	696	699	1206
Cases rubella IgM positive (n) (Classification by the TMEC**)	NA	3	1	3	1	0	16	11	0	4	3	2	1	2	0	0
Non-measles, non- rubella cases (n)	NA	53	43	39	17	705	653	687	738	860	592	456	788	693	699	1206
Incidence of confirmed endemic rubella case per million per year population	zero	1.2	0.4	1.2	0.4	0	6.4	4.3	0	1.4	0.9	0.7	0.3	0.6	0	0
Sites reporting weekly or monthly (%)	NA	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non rubella, suspected rubella reporting rate per 100,000 population	≥ 2	2.8	2.3	1.6	0.8	29.9	26.6	27.2	27.2	29.7	18.7	14.2	22.5	19.3	18	30
Suspected cases reported<48h from onset (%)	≥80%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cases investigated <48h after notification (%)	≥80%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cases with adequate specimens collected (%)	≥80%	100	100	98	94	99	98	98	98	99	97	96	98	99	99	99
Specimens received by laboratory <5 days (%)	≥80%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Laboratory results reported<7 days (%)	≥80%	*	*	*	*	*	*	100	100	100	100	100	97	100	100	100
Sufficient samples collected for virus detection in a proficient laboratory from 80% of identified transmission chains (outbreaks).	≥80%	*	*	*	*	*	*	96	97.6	98	99.7	98.2	98.8	98.5	89.6	98



EMRO countries Measles Incidence , October 2013 - 2015





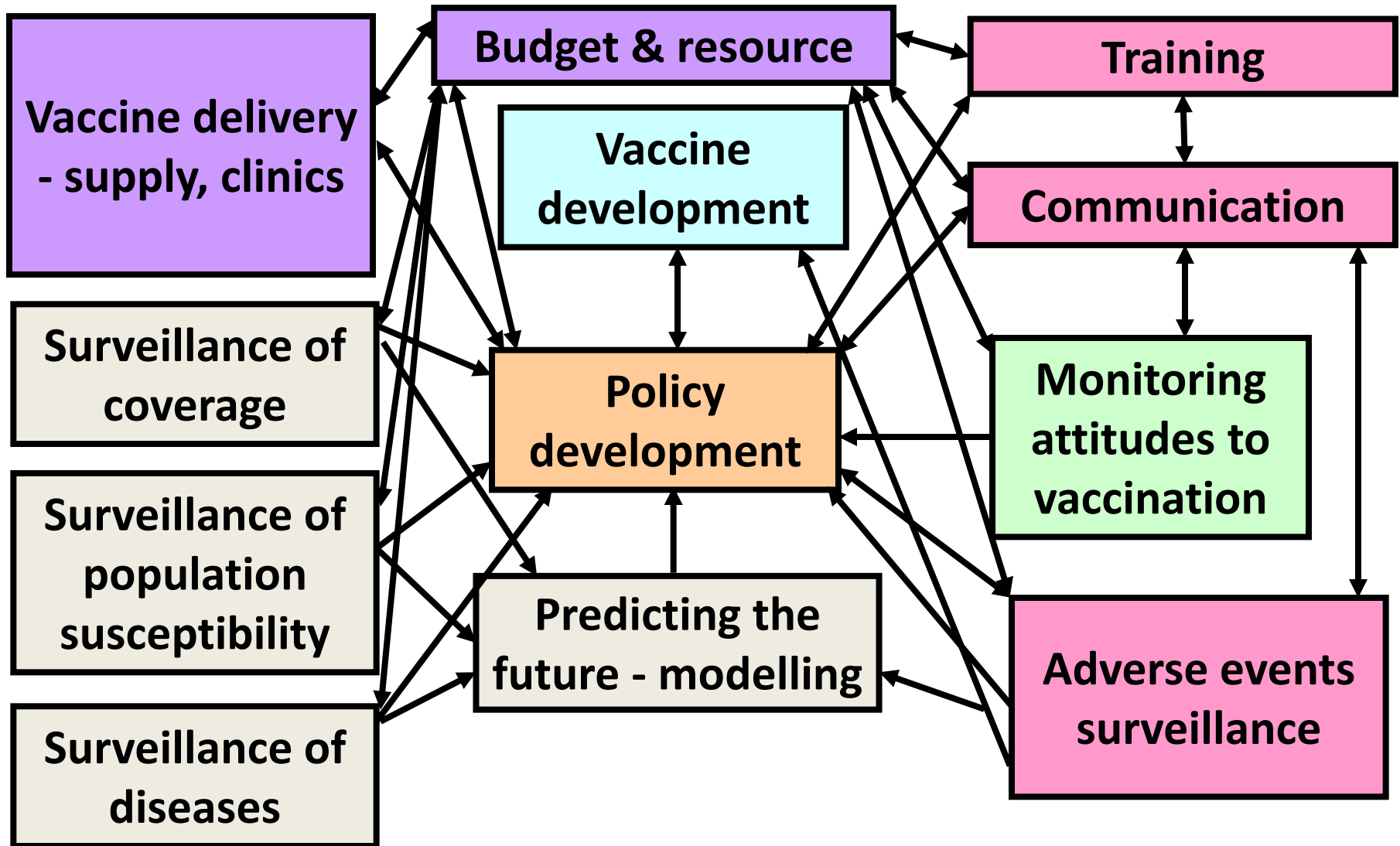
Lesson learned and way forward

- Sustaining high immunity profile
- Continue investigated and documented all of the confirmed cases/clusters
- Field researches; sero-survey/coverage survey
- Establishment of non-national vaccination system follow-up (45% non-nationals)
- Adult vaccination adopted and the health care worker vaccination
- Working with border country, coordination & communication



Summary

- Oman, had achieved **measles/rubella elimination** standards (“0” endemic case)
- **CRS elimination**



Jacobs Journal of Vaccines and Vaccination

Original Article

Rubella and Congenital Rubella Syndrome Elimination, the Oman Experience

Salah T. Al Awaidy^{1*}, Salim Al Mahrouqi³, Hosammudin Mohammed Nwar Al Den³, Suleiman Al Busaidi¹, Badder Al Rawahi³, Maryam Al Shaibi³, Idris Al Obaidani³, Said Al Baqlani²

¹*Office of H.E. of Health Affairs, Ex/EPI National Manager and Director of Communicable Diseases Surveillance and Control, 1996-2011, Ministry of Health, Muscat, Oman*

²*Central Public Health Laboratory, DGCDSeLC, Ministry of Health, Muscat, Oman*

³*Department of Communicable Disease Control, DGCDSeLC, Ministry of Health, Muscat, Oman*

**Corresponding author: Dr. Salah T. Al Awaidy, Office of H.E. of Health Affairs, Ex/EPI National Manager and Director of Communicable Diseases Surveillance and Control, 1996-2011, Ministry of Health, Muscat, Oman, Tel: +968 99315063; Fax: +968 24946381; Email: salah.awaidy@gmail.com*



**SM Vaccines
and Vaccination
Journal**

Review Article

Progress Towards Measles Elimination: Oman Experience

**Salah T Al Awaidy^{1*}, Said Al Baqlani², Salim Al Mahrouqi³, Badder Al Rawahi³,
Suleiman Al Busaidi¹, Idris Al Obaidani³, Maryam Al Shabibi³, Hosammudin
Mohammed NwarAl Den³, Adil Mohammed Al Barwani⁴, Aisha Said Al Amri and
Nadia Teleb⁵**

¹Office of HE of Health Affairs, Ex EPI National Manager and Director of Communicable Diseases and Control, Ministry of Health, Oman

²Central Public Health Laboratory - Ministry of Health, Oman

³Department of Communicable Disease Surveillance & Control, DGCDS & C, Ministry of Health, Oman

⁴Central Public Health Laboratory, DGCDS & C, Ministry of Health, Oman

⁵VPI Regional advisor EMRO, WHO

Acknowledgments

H.E. Dr. Ali bin Moosa

Late Dr Ali Jaffer

Late Dr Ahmed Al Ghasani

H.E.Dr Mohammed Al Hosani

Mr. Salem Al Mahroqi

Mr. Badder Al Rawahi

Mrs. Maryam Al Shaibi

Mr. Hossam Alden

National EPI & Surveillance Teams

Governorates EPI & Epidemiologists

**Director, Department of communicable
Diseases**

Dr. Suleiman Al Busaidy

Dr. Said Al Baqlani

Dr. Hanan AL Kindi

Mrs Rupa MV

Mr Adel Al Barwani





Salah.awaidy@gmail.com