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Community Health & Disease Surveillance Newsletter

Sultanate of Oman *Ministry of Health*

Inside this issue:

Priority Communicable Diseases : Revision 2005

Background

Effective communicable disease control relies on an efficient surveillance system. A functioning national surveillance system essentially generates appropriate actions on the diseases of 'priority'. Thus prioritization based on current needs forms the foundation of an effective and efficient system.

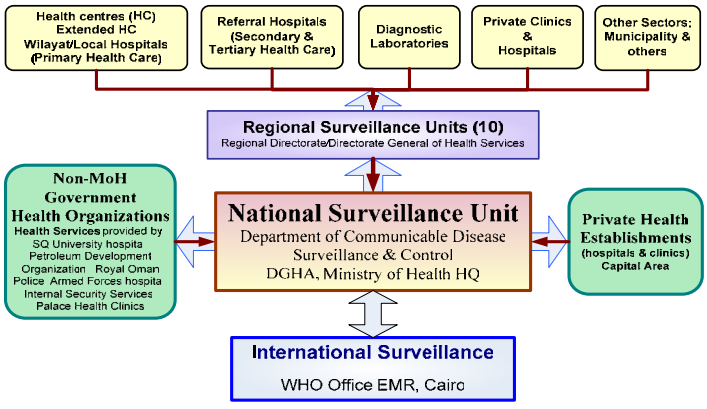
The formal communicable disease surveillance system in Oman was launched in March 1991. Substantial progress has since been made in the control of several of the priority diseases in . Thus the surveillance needs have altered in the last decade. The list of the priority communicable diseases is therefore being updated from January 2005 to reflect these newer trends. More emphasis is now being placed on the syndrome reporting rather than specific diseases to accelerate reporting as well as control actions.

The process of regionalization was initiated in Oman from 1990 along with the decentralization of health services. Technical manpower (epidemiologists) was recruited in the regional directorates to facilitate the process of the communicable disease surveillance at the provincial level.

The Surveillance Needs

Surveillance is an ongoing, continuous and systematic process of collection, compilation, collation, and the analysis of disease related data to generate action in order to control the disease.

Fig. 1
National Communicable Disease Surveillance Organization



Disease surveillance is based on collecting only the information that is required to achieve the objective of control i.e. *information for action*. The data required may differ from disease to disease. Specialized surveillance systems are important, especially where surveillance is complex and has specific information needs. Eradication and elimination programmes may require an active and case-based surveillance. Programme

should then aim at detecting every case (case-based). In other situations, information on outcome may be important. For example, the rate of treatment completion and the cure rate are essential indicators in TB surveillance. Some diseases may require surveillance only in a few representative sentinel sites.

Despite the variety of information needs, many elements of data collected in surveillance are very similar and the data source is often the same individual or health care facility. There may however, be differences in:

- *The specific case detection method used (active vs. passive case detection)*
- *The speed at which data need to flow through the system (immediate vs. routine)*
- *The rapidity of response required (immediate investigation of cases or clusters of cases vs. analysis of data on a regular basis to monitor the trend)*

"The national surveillance systems should reflect national & global goals for communicable disease control as also the WHO regional surveillance plans."

For the system to function as an early warning system the reporting, confirmation, decision-making and response must be rapid.

In some situations a syndromic approach is appropriate whereas in others a disease specific approach is preferable. There may be a requirement to report the disease or syndrome immediately on suspicion. This is especially true for diseases that may lead to epidemics. Similarly the diseases under elimination or eradication programme deserve a special mention since their surveillance needs are entirely different.

It is essential that feedback loops be built into the system. It is also crucial that the personnel involved in surveillance activities be trained at all levels (*preferably ongoing in-service training*).

Disease Prioritization

The priorities should be appropriate to the disease epidemiology, infrastructure and resources. The national surveillance systems should reflect national and global goals for communicable disease control as also the WHO regional surveillance plans. The rationale for prioritizing diseases depends on the "answers" to the following series of questions:

- *Does the disease have a high impact on public health?* (high morbidity, mortality or disability e.g. TB, rabies, CRS)
- *Does it have a significant epidemic potential?* (e.g. cholera, meningococcal meningitis)
- *Is it a specific target of a national, regional or international control/elimination/eradication programme?* (e.g. Global polio eradication, measles elimination)
- *Is the disease notifyable under the International Health Regulation*s (IHR)? (e.g. yellow fever, plague, SARS)
- *Will the information to be collected lead to significant public health action?* (mop-up immunization campaign for imported polio, or specific control measures to be provided by the central level such as for a suspect case of SARS).

Disease Grouping

The type of information required and the speed with which it needs to be reported is very much dependent on the disease and the action that would be taken for its control. The grouping system was designed and utilized for surveillance since 1991. The grouping has now been extensively revised with more emphasis on syndrome reporting.

The old and the current (*effective from January 2005*) grouping of communicable disease under surveillance is as follows.

Group 'A' Diseases & Syndromes

The diseases included in this group are considered a high priority and are required to be notified within 24 hours, by telephone or fax. The list includes internationally notifyable diseases viz. cholera, plague and yellow fever. Highly fatal human rabies and meningococcal infections that has a potential of widespread outbreak are also included in this group.

Severe acute respiratory syndrome or SARS an emerging disease of the 21st century has been included Group 'A' due to concern over its fast spread and mortality.

Neonatal tetanus elimination target has been achieved since 1992, hence has been deleted from the priority list. The last case of NNT from *Mussana*, South Batinah, 1995 fulfilled the elimination criterion i.e. less than 1 case per 10,000 live births per district. With the high coverage of maternal TT5 the elimination is expected to remain sustained in the years to come.

Acute poliomyelitis was not reported in Oman since the last case in December 14th, 1993. The *Acute Flaccid Paralysis* (AFP) a Group 'A' syndrome, has been under surveillance 1990.

The last case of Diphtheria in Oman was reported in 1992. Due to high immunization coverage the elimination of Diphtheria is sustainable hence omitted from the list.

Oman during the last decade has also achieved elimination of Measles and Rubella. In this phase of elimination every case of rash-illness is presumed to be either measles or rubella unless proved otherwise (case-based surveillance). Fever & rash-illness has therefore been included under Group 'A' syndromes along with CRS due to its elimination goal (by 2005).

Louse-borne typhus was never reported and only 3 cases of relapsing fever were reported during the last decade of surveillance hence both have been deleted from Group A.

With the introduction of Hib vaccine and strengthening surveillance of Haemophilus influenzae type b meningitis, the disease from Group 'B' has been upgraded to Group 'A' for case-based surveillance.

Acute haemorrhagic fever syndrome includes haemorrhagic diseases of viral &/or rickettsial origin e.g. Crimean Congo Haemorrhagic, Rift Valley Fever, Dengue/ DHF, West Nile Fever, Ebola-Marburg fever , Lassa fever, Yellow fever, Hantavirus infection etc.

Sputum positive tuberculosis & malaria have also been included in Group 'A'.

(Continued on page 8)

Group 'A' Diseases (Mar 1991-Dec 2004)

- Cholera
- Plague (never reported)
- Diphtheria (last case 1992)
- Meningococcal infection
- Acute poliomyelitis (last case 1993)
- Measles (added in 1993)
- Rubella (introduced in 1993)
- Yellow fever (never reported)
- Rabies
- Louse-borne typhus (never reported)
- Relapsing fever (last case 1992)
- Tetanus neonatorum (last case 1995)
- Viral haemorrhagic fever (added in 1995)

Group 'A' (Jan 2005 onwards)

Diseases

- Cholera
- Plague
- Yellow fever
- Meningococcal infection
- Hib meningitis
- Rabies
- Malaria
- Pulmonary tuberculosis (sputum positive)

Syndromes

- Acute flaccid paralysis (AFP)
- Fever & rash-illness
- Congenital rubella syndrome (CRS)
- Severe acute respiratory syndrome (SARS)
- Acute haemorrhagic fever syndrome
- Food poisoning (infectious origin)

*"Oman during the last decade has also achieved elimination of **Measles & Rubella.** In this phase of elimination every case of rash-illness is presumed to be either measles or rubella unless proved otherwise."*

Poliomyelitis Outbreak in Yemen: 2005

Background

Only a few decades ago, polio was among the world's most feared diseases found in nearly every corner of the globe. On the other hand the campaign against polio eradication has been among the most successful in the medical history, ranking close to the eradication of smallpox. As a result polio was almost extinct just two short years ago. But its re-emergence in Africa and Asia is now a global threat.

The global progress of eradication was threatened by the resurgence of polio in Africa in 2003–2004 that spread from the *Nigeria–Niger* endemic reservoir into previously polio-free countries, including *Ethiopia* and *Saudi Arabia* and the *Sudan* experienced an outbreak with over 120 cases. Genetic sequencing data indicate that importations have re-established local chain of transmission in the six African countries viz. *Burkina Faso, Central African Republic, Chad, Côte d'Ivoire* and *Sudan* in 2004, and *Mali* in 2005.

"The first indication of the outbreak of polio in Yemen was the confirmation of 4 wild polio cases on 20th April 2005 (onset 25 Feb.'05) from Al Hudaidah governorate, in the south-western part of the country on the Red Sea coast."

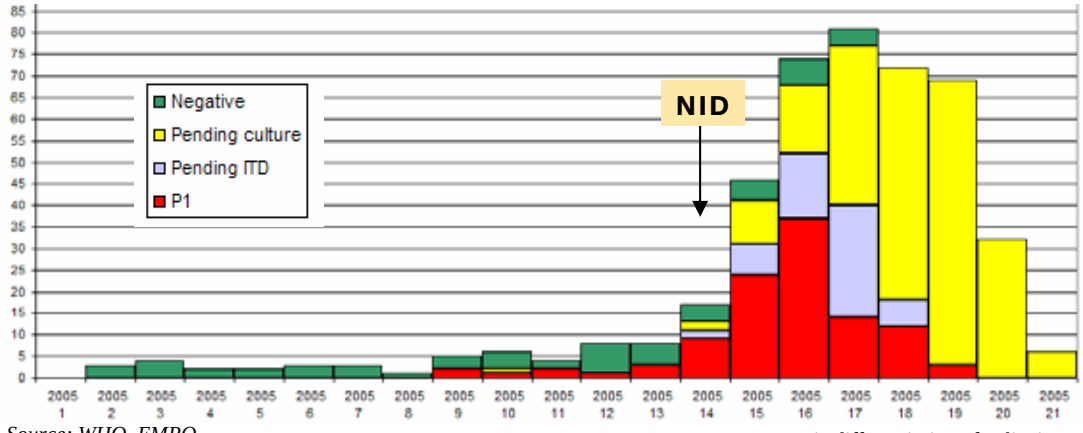
Polio Outbreak in Yemen

The first indication of the outbreak of polio in *Yemen* was the confirmation of 4 wild polio cases on 20th April 2005 (onset of paralysis on 25 February) from *Al Hudaidah* governorate, in the south-western part of the country on the Red Sea coast. The child was 7 years old and was vaccinated with 9 doses of OPV (routine + 6 NID). The index case was from *Al Zaileya* village, 180 km from *Al Hudaidah* town. The other 3 cases were from 3 different districts viz. *Al Hali, Beit Al Fakheih* and *Al Mansouria* from the same governorate. With onset dates of 26th, 27th February and 8th March respectively. Prior to this outbreak, *Yemen* had never detected a wild poliovirus since acute flaccid paralysis (AFP) surveillance began in 1996.

As of 24th May 2005, total 447 AFP cases were notified. Out of the 166 in whom the laboratory testing was finalized, 108 cases were confirmed as wild poliovirus type-1 while 58 cases were confirmed negative.

The Fig.-1 represents the weekly distribution of 58 (13%) negative AFP cases, 108

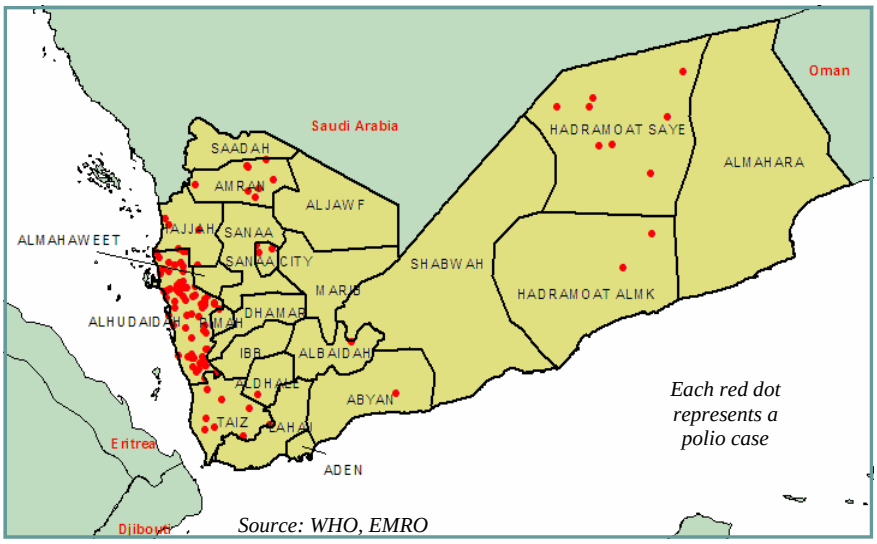
Fig. 1
Distribution of Wild Polio Cases amongst the AFP Cases in Yemen from Week # 1 to 21
(*cases plotted by date of onset of paralysis*)



Source: WHO, EMRO

ITD = Intratypic differentiation of poliovirus.

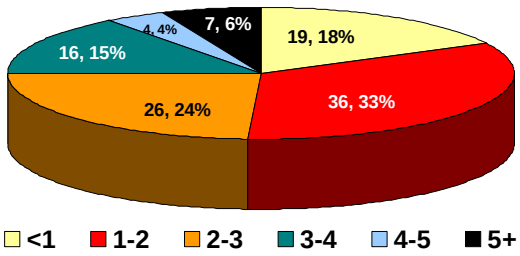
Fig. 2
Geographical Distribution of Polio Cases in Yemen
(25/02/05 to 24/05/2005)



Source: WHO, EMRO

(24.1%) confirmed wild polio P1 cases , 224 (50.1%) cases with pending culture and 57 (12.8%) culture positive pending intra-typic differentiation (ITD). The cases have been plotted on the basis of date of onset of paralysis and starting from the 1st to the 21st week (ending 25th March) of 2005.

Fig. 3
Age Distribution of Polio Cases in Yemen
n =108 (24/05/2005)



Source: WHO, EMRO

Age Distribution

Fig.3 shows the age distribution of 108 confirmed polio cases. About one fifth cases were amongst the infants and almost half the cases were in the age group of 1 to 3 years. Only a minority (6%) were above the age of 5 years .

Geographical Distribution

Currently, 11 governorates in *Yemen* (Fig.-2) are known to be affected by the outbreak. The majority of the cases (65.7%) are from the same governorate as the index case i.e. *Al Hudaidah* governorate. As of 25th of May, the Ministry of Health of *Yemen* confirmed 108 polio cases. The virus is believed to have travelled to *Yemen* from West Africa via *Sudan*. Laboratory investigations have confirmed that the virus responsible for the *Yemen* outbreak is genetically very closely related to wild poliovirus currently circulating in *Sudan*. *Yemen* is thus one of 16 countries to be re-infected by polio spreading out of West Africa.

NID Campaign: April 2005

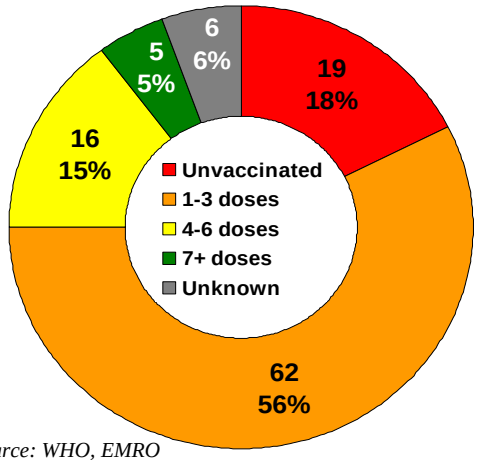
Yemen had conducted one national immuni-

"Laboratory investigations have confirmed that the virus responsible for the Yemen outbreak is genetically very closely related to wild poliovirus currently circulating in Sudan."

zation round from 11 to 14 April 2005 prior to confirmation of the outbreak, as the country was considered to be at high risk of importation of wild poliovirus from nearby *Sudan*, where an outbreak of polio was continuing.

About 4.25 million doses were given with a national coverage of 94.5%.

Fig. 4
Polio Immunization Status of the Polio Cases in Yemen (n=108)



Source: WHO, EMRO

"The Ministry of Health has planned a nationwide immunization campaign on 29 May 2005 that will reach an estimated 5 million children under 5 years in more than 320 districts."

Polio Immunization Status

Immunization status of the polio cases revealed that 19 (18%) had not been vaccinated while 62 (56%) had received less than 1 to 3 doses (Fig.-4). In 6 cases the status was unknown. About 20% cases had received adequate immunization (4 and above).

Situation Analysis

- As of 24th May 2005, 447 AFP cases were reported from Yemen and out of them 108 were confirmed as polio type-1 cases.
- The outbreak of polio spread to Yemen from the neighbouring Sudan. There is a large population movement legal as well as illegal across the Red Sea.
- Most of the polio cases were infected before the NID campaign. The investigations revealed that many of the polio cases in fact came from the area not covered in the April NID campaign.
- Although 17 provinces in Yemen were affected, the *Al Hudaidah* governorate which reported the index case also reported majority of cases (65.7%). Out of 57 polio isolates pending intra-typic differentiation, 75% belong to the *Al Hudaidah* governorate. The outbreak did not spread extensively throughout the country probably due to the effect of April NID.
- Amongst the 90% of the polio cases the paralysis was precipitated by an injection in the buttock. The *Al Hudaidah* area is holo-endemic for malaria and giving Fansidar injections is a common practice.

Outbreak Containment

Past experience shows that as long as high-quality immunization campaigns (targeted to reach every child aged under 5 years) are implemented rapidly, such outbreaks can be stopped relatively quickly.

The Ministry of Health has planned a nationwide immunization campaign on 29 May 2005 that will reach an estimated 5 million children under 5 years in more than 320 districts. Nationwide social mobilization was initiated to stimulate the media support and active involvement of local councils, schools, mosques, community leaders and artists to use every possible channel for countering the threat of polio outbreak in *Yemen*. It has been planned to use the recently developed monovalent oral polio vaccine type 1 (mOPV1). This new vaccine enables a precisely tailored immu-

nological response to the type 1 poliovirus that is causing the outbreak. Compared with the commonly used trivalent OPV, which offers protection against all 3 types of wild poliovirus, mOPV1 provides a greater immunity to type 1 wild poliovirus with fewer doses.

Yemen has simultaneously strengthened active AFP surveillance throughout the country to determine the spread and extent of the outbreak.

Concerns

- Each known case of polio typically represents up to 200 undetected infections, so the virus is far more widely distributed than the statistics indicate. With the summer approaching - the high season for polio transmission global effort is facing its most serious challenge.
- With strong international support and high-quality immunization campaigns, the global polio eradication partners are optimistic that polio can be stopped in *Yemen* soon. Present concern, though, is about preventing the virus from spreading into surrounding countries that are currently polio-free.
- If, despite current efforts, polio transmission continues throughout Africa and Asia through 2006, the additional financial cost required to contain the outbreak is estimated to be at least US$650 million.

"With strong international support & high-quality immunization campaigns, the global polio eradication partners are optimistic that polio can be stopped in Yemen soon."

National Polio Immunization Campaign in the Sultanate of Oman in Response to the Outbreak of Polio in Yemen: May & June 2005

Group 'B' Diseases

The Group B represents an intermediate priority. Every case under this group is notified and investigated, but with less urgency of action and reporting i.e. usually within one week, due to the less emergency actions required to control the spread of the disease. Individual case notification form (PR-14) should be dispatched to the regional Directorate after receiving additional clinical details or laboratory results. Seven days period is permissible since there is no urgent action required. However early reporting is always welcome.

*"Every case under the **Group B** is notified & investigated, but with less urgency of action & reporting i.e. usually within one week, due to the less emergency actions required to control the spread of the disease."*

Group 'B' Diseases (Mar 1991-Dec 2004)

- Typhoid fever
- Paratyphoid fever
- Food poisoning
- Anthrax (never reported)
- Brucellosis
- Leprosy
- Pertussis
- Tetanus
- Dengue (moved to gr. A)
- Viral hepatitis (Australia antigen positive)
- Viral hepatitis (Australia antigen negative)
- Viral hepatitis (unspecified)
- Leishmaniasis
- Schistosomiasis
- Filariasis (elimination certificate awaited)
- Dracunculiasis (elimination certified by WHO)
- Haemophilus meningitis (moved to gr. A)
- Malaria
- Tuberculosis
- Syphilis
- Gonorrhoea

Group 'B' (Jan 2005 onwards)

- Bacterial meningitis (other than Hib & Nm)
- Viral Meningitis
- Other meningitis (unspecified)
- Acute viral hepatitis A
- Acute viral hepatitis B
- Acute viral hepatitis C
- Acute viral hepatitis D (amongst B positive)
- Acute viral hepatitis E
- Acute viral hepatitis (unspecified)
- Typhoid & paratyphoid fever
- Pertussis
- Trachoma (active)
- Brucellosis (human)
- Leishmaniasis cutaneous
- Leishmaniasis visceral
- Schistosomiasis (intestinal)
- Pulmonary Tuberculosis (sputum negative)
- Extra-pulmonary tuberculosis
- Leprosy
- HIV [AIDS]

From the earlier (March 1991) classification of Group B diseases some have been taken out of the category or moved into another category as described below:

- Oman has been certified by WHO as free from Dracunculiasis (guinea worm) in 1994 hence the disease was deleted from the list.
- *Hib* vaccine was introduced in 2001. Hence to critically monitor the incidence of Hib meningitis (impact evaluation) it was upgraded to Group A.
- Anthrax was never reported in Oman hence removed from the priority list.
- Dengue is included under the 'Acute Haemorrhagic Fever Syndrome' and included in Group A.
- Food poisoning was upgraded as a Group A syndrome because of the urgency for action (epidemiological investigation & control).
- The active Trachoma (trachoma-follicular in children under 10 years) has been upgraded to Group B due to a great reduction in the overall incidence and a drive towards its elimination (case-based surveillance).
- All types of meningitis except those due to *Meningococci* or *Haemophilus influenzae type b* are included in this group. All efforts should be made to identify the responsible pathogen either by culture or by antigen test. In case all the results are negative the case should then be classified into the two broad categories of either bacterial or viral meningitis based on laboratory criteria (CSF examination).

- Under the objectives of the 6th 5-year plan to assess the burden of viral hepatitis all acute viral hepatitis cases would be furthermore classified into serotypes A, B, C, D & E.
- A small focus of intestinal schistosomiasis (*schistosoma mansoni*) exists in the southern region of Oman. Initiative on *'Elimination of Schistosomiasis in Oman (Dhofar)'* has been recently launched.
- The status of lymphatic filariasis in Oman was considered doubtful. Hence an ICT-card survey was conducted amongst the target population in early 2004 to detect *lymphatic filariasis antigenaemia*. None of the samples (n=2802) tested positive. The certification process on the absence of indigenous transmission of LF in Oman has been initiated.
- HIV & AIDS reporting has now been included in Group B reporting.

Clustering of cases

Clustering of cases in time and place (outbreak) of a disease or syndrome from Group B or C should automatically be considered a high priority and investigation & actions should be initiated as if the disease was from the high priority Group A. For example there may be clustering of cases of leishmaniasis or brucellosis OR an outbreak of watery diarrhoea amongst children or unusually large number of influenza-like illnesses (ILI) are being reported from the elderly population.

Emerging & re-emerging Diseases

A new emerging OR old re-emerging disease although unlisted in the priority diseases should by default be considered a top priority & should therefore be immediately reported & investigated. For example a case of the disease that was never reported in Oman such as yellow fever or leptospirosis or increased cases of hydatid disease would be classified as an emerging disease. On the other hand diphtheria or neonatal tetanus, the diseases that were eliminated start to appear again should be classified as re-emerging diseases and considered a top priority.

Group 'C' Diseases & Syndromes (under sentinel surveillance)

The diseases and syndromes included in this group are under surveillance in Oman only at the selected sentinel sites. This group are considered a priority due to the burden imposed by these conditions on the resources of the health system. Although detailed case investigations are not required pertinent information on these diseases is gathered from sentinel sites to understand and monitor their trends and other epidemiological parameters. Specific outbreak situation or clustering of cases in time and place should be investigated by the regional health authorities.

Group 'C' Diseases (Mar 1991-Dec 2004)

- Shigellosis
- Amoebiasis
- Acute gastroenteritis & diarrhoea
- Chickenpox
- Mumps
- Trachoma
- Influenza

Group 'C' (Jan 2005 onwards)

Diseases

- Chickenpox
- Mumps

Syndromes

- Influenza like illnesses (ILI)
- Acute watery diarrhea (< 5 children)
- Acute lower respiratory tract inf. (< 5 children)

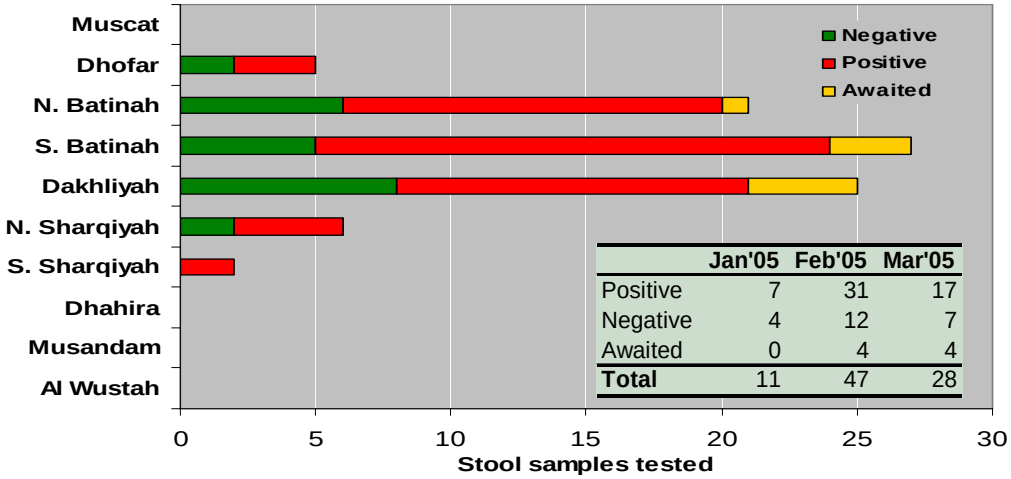
Sentinel Surveillance

One or more major health institutions in

*"A Clustering of cases in time & place (outbreak) of a disease or syndrome from **Group B** or **C** should automatically be considered a high priority & investigation & actions should be initiated as if the disease was from the high priority **Group A.**"*

Rotavirus Sentinel Surveillance Monitoring: 1st Quarter

Results of Stool Samples Tested for Rotavirus Sentinel Surveillance by Provinces January to March 2005



	Jan'05	Feb'05	Mar'05
Positive	7	31	17
Negative	4	12	7
Awaited	0	4	4
Total	11	47	28

Note: Stool samples not collected from sentinel sites of Muscat, Dhahira, Musandam & Al Wustah regions.

"The priority diseases list would not be static but dynamic. From time-to-time minor or major changes would be introduced either in the list or the grouping based on the surveillance needs & reflecting the changing epidemiology of the diseases."

each region will be assigned as the sentinel site. The activities for the sentinel surveillance are as under:

At the Sentinel site

- Standard case notification forms (PR14) should 'NOT' be used for reporting instead the information should be compiled in a specified format.
- 'NO' public health action is required.
- The monthly report should be sent to Regional Epidemiologist or focal point.

At the Regional Headquarters

- The information from the monthly reports should be compiled and analyzed at the regional HQ to identify outbreaks or changes in the trend.
- The monthly report should be sent to the national level with appropriate feedback to the reporting institutions within the region
- Appropriate action should be initiated if required in liaison with national HQ.

At the national level:

The data from the regions will be collated and national trends identified on a monthly and annual basis with dissemination of pertinent information and feedback to all the regions. In future specific activities or interventions would be planned based on the trends.

Future Revisions of the Priority Communicable Diseases

The priority diseases list would not be static but dynamic. From time-to-time minor or major changes would be introduced either in the list or the grouping based on the surveillance needs and reflecting the changing epidemiology of the diseases.

As patterns of disease change, they may be moved from one group to another. A new disease or syndrome would be added due to its emergence or re-emergence.

Frequently Asked Questions (FAQ): Avian Influenza

Q1: What is avian influenza (bird flu)?

Ans.: Avian refers to birds and influenza is commonly known as flu. The avian influenza is a communicable disease of the birds occasionally infecting pigs and humans. The wild birds carry the viruses in their intestines but usually they are not infected. However the bird flu is very contagious and kills some domesticated birds like chickens, ducks and turkeys.

Q2: What causes the bird flu?

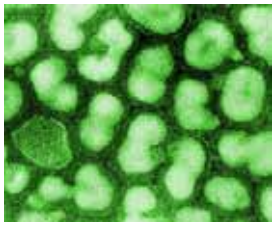
Ans.: It is caused by influenza virus type A subtype H5 or H7. These subtypes cause a severe disease in birds especially chicken and turkey. They do not usually infect humans.

Q3: How does the disease spread?

Ans.: Infected birds shed the viruses in their saliva, nasal secretions, and faeces. Susceptible domesticated birds get infected after coming in contact with contaminated excretions or surfaces. Although the risk of spread to humans is low the virus may spread through handling and contact with infected birds.

Q4: Does the flu get transmitted from person-to-person?

Ans.: So far the spread of H5N1 from person-to-person has been rare and never beyond one person. However because the flu viruses are notorious for undergoing changes, in future they may jump the species and infect humans. It is feared that the lack of immunity in population worldwide an influenza pandemic may start.



Bird Flu virus under EM

Q5: In which countries cases have been reported ?

Ans.: Outbreaks of H5N1 occurred among the poultry in 8 Asian countries viz. Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand and Vietnam since late 2003. Over a 100 million birds in the affected countries either died of the flu or were killed. Human infections have been reported from Thailand, Vietnam and Cambodia.

Q6: How the disease crosses country borders?

Ans.: The virus spreads either by bird trade or through migratory birds (wild ducks).

Q7: Are there any travel advisory?

Ans.: Travellers to countries in Asia with known outbreaks of H5N1 should avoid poultry farms, contact with animals in live food markets and surfaces contaminated with faeces of poultry or other animals.

Q8: Is there a vaccine available for humans ?

Ans.: There is currently NO vaccine to protect humans against the H5N1 virus infection.

Q9: How to prevent the bird flu?

Ans.: Personal protection measures and ensuring food safety are the best ways to protect against the bird flu. There is NO evidence that the bird flu is a food borne disease.

Q10: Is bird flu reported in Oman?

Ans.: NO. Avian influenza has so far not been reported in Oman either in the birds or humans. However enhanced influenza surveillance is ongoing in the Sultanate in collaboration with the Ministry of Agriculture & Fisheries.

For more information visit : *http://www.who.int/csr/disease/avian_influenza/en/*
http://www.cdc.gov/flu/avian/index.htm

Communicable Diseases Quarterly Report

First Quarter (January to March 2005)

ICD Code	Priority Communicable Diseases	2005 First Quarter Jan	Feb	Mar	Total	2004 Q1 Jan-Mar	Q2 Apr-Jun	Q3 Jul-Sep	Q4 Oct-Dec
Group 'A' Diseases									
A00	Cholera	-	-	-	**0**	-	-	-	-
A20	Plague	*Never reported*							
A95.9	Yellow Fever	*Never reported*							
A39, 39.0, 39.2-39.4	Meningococcal Infection	-	-	-	**0**	2	-	2	-
G00.0	H. influenzae type b, meningitis *(Hib)*	-	-	-	**0**	-	-	-	-
A82	Rabies	-	-	-	**0**	-	-	-	-
B50-54	Malaria	28	29	20	**77**	80	175	249	249
A-15	Pulmonary Tuberculosis (sputum positive)	6	5	8	**19**	30	27	34	28
	Gr. 'A' Syndromes								
-	Acute Flaccid Paralysis (*AFP*)	-	2	2	**4**	9	8	7	7
-	Fever & Rash-Illness	53	43	44	**140**	12	293	214	204
B05	Measles (*IgM+*)	2	-	-	**2**	-	16	3	1
B06	Rubella (*IgM+*)	2	-	1	**3**	-	9	3	1
P35.0	Congenital Rubella Syndrome (*CRS*)	-	-	-	**0**	-	-	-	-
U04, 04.9	Severe Acute Respiratory Syndrome *(SARS)*	*Never reported*							
A99	Acute Haemorrhagic Fever Syndrome	-	-	-	**0**	-	-	-	-
A02	Food Poisoning (*Infectious origin*)	14	-	12	**26**	156	178	234	133
Group 'B' Diseases									
G00.1-9	Bacterial Meningitis *(other than Hib & Nm)*	1	1	-	**2**	11	9	5	10
A87	Viral Meningitis	-	-	-	**0**	2	3	2	4
G03	Other Meningitis (*unspecified*)	6	4	3	**13**	15	11	3	10
	Acute Viral Hepatitis (*Total*)	**71**	**82**	**54**	**207**	**228**	**185**	**147**	**109**
B15	Acute Viral Hepatitis A	18	25	2	**48**	136	83	43	25
B16	Acute Viral Hepatitis B	8	5	2	**15**	8	9	11	5
B17.1	Acute Viral Hepatitis C	1	3	-	**4**	2	3	3	3
B17.0	Acute Viral Hepatitis D (*amongst B positive*)	-	-	-	**0**	-	-	-	-
B17.2	Acute Viral Hepatitis E	-	-	-	**0**	9	3	3	-
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	**44**	**49**	**47**	**140**	**73**	**87**	**87**	**76**
A03.0, 01.4	Typhoid & Paratyphoid Fever	4	3	3	**10**	5	10	21	12
A37	Pertussis (*clinical*)	-	1	1	**2**	29	22	13	12
A71	Trachoma (*active*)	-	-	-	**-**				
A23	Brucellosis *(human)*	9	7	6	**22**	32	30	28	17
B55.1	Leishmaniasis Cutaneous (CL)	-	1	-	**1**	1	-	-	-
B55	Leishmaniasis Visceral (VL)	-	-	-	**0**	-	-	-	2
B65	Schistosomiasis (*intestinal*)	-	-	-	**0**	0	13	2	-
A16	Pulmonary Tuberculosis (*sputum negative*)	1	2	3	**6**	9	9	11	10
A17-19	Extra-pulmonary Tuberculosis	9	4	7	**20**	23	16	18	22
A30	Leprosy	-	-	-	**0**	1	1	-	1
B20-24	HIV [AIDS]	7 [8]	7 [3]	3 [8]	**17 [19]**	9 [10]	12 [7]	13 [8]	2 [6]
Group C Diseases & Syndromes									
J10-11	Influenza Like Illnesses (*ILI*)	236	312	510	**1058**				
-	aLRTI & Pneumonia *(childhood)*	886	1,110	1,365	**3,361**				
-	Acute 'Watery' Diarrhoea *(childhood)*	3,747	5,113	4,302	**13,162**				
B01	Chickenpox	1,790	2,140	1,535	**5,465**	16,204	18,608	6,291	5,947
B26	Mumps	59	74	64	**197**	235	253	174	167

Communicable Diseases Quarterly Report by Regions

First Quarter (January to March 2005)

ICD	Priority Communicable Diseases	Total	Muscat	Dhofar	Dakhliyah	North Sharqiyah	South Sharqiyah	North Batinah	South Batinah	Dhahira	Musan-dam	Al-Wustah
Group 'A' Diseases												
A00	Cholera	**0**	-	-	-	-	-	-	-	-	-	-
A20	Plague	*Never reported*										
A95.9	Yellow Fever	*Never reported*										
A39, 39.0,	Meningococcal Infection	**0**	-	-	-	-	-	-	-	-	-	-
G00.0	H. influenzae type b, meningitis *(Hib)*	**0**	-	-	-	-	-	-	-	-	-	-
A82	Rabies	**0**	-	-	-	-	-	-	-	-	-	-
B50-54	Malaria	**77**	38	7	5	5	7	6	5	3	-	1
A-15	Pulmonary Tuberculosis (sputum+)	**19**	9	2	1	2	-	1	3	1	-	-
	Gr. 'A' Syndromes											
	Acute Flaccid Paralysis (*AFP*)	**4**	2	-	1	-	-	-	1	-	-	-
	Fever & Rash-Illness	**140**	9	5	20	2	14	22	58	6	4	-
B05	Measles (*IgM+*)	**2**	-	-	1	-	-	-	1	-	-	-
B06	Rubella (*IgM+*)	**3**	-	-	1	-	-	-	2	-	-	-
P35.0	Congenital Rubella Syndrome (*CRS*)	**0**	-	-	-	-	-	-	-	-	-	-
U04,04.9	Severe Acute Respiratory Syndrome	*Never reported*										
A99	Acute Haemorrhagic Fever Syndrome	**0**	-	-	-	-	-	-	-	-	-	-
A02	Food Poisoning (*Infectious origin*)	**26**	-	-	7	5	6	8	-	-	-	-
Group 'B' Diseases												
G00.1-9	Bacterial Meningitis *(except Hib & Nm)*	**2**	-	1	-	1	-	-	-	-	-	-
A87	Viral Meningitis	**0**	-	-	-	-	-	-	-	-	-	-
G03	Other Meningitis (*unspecified*)	**13**	1	2	1	-	-	7	1	1	-	-
	Acute Viral Hepatitis (*total*)	**207**	**40**	**9**	**17**	**7**	**45**	**52**	**15**	**11**	**11**	**0**
B15	Acute Viral Hepatitis A	**48**	18	-	-	-	2	20	4	4	-	-
B16	Acute Viral Hepatitis B	**15**	5	-	6	-	-	1	-	1	2	-
B17.1	Acute Viral Hepatitis C	**4**	1	1	**-**	-	**-**	-	2	**-**	**-**	**-**
B17.0	Acute Viral Hepatitis D (*amongst B+*)	**0**	-	-	-	-	-	-	-	-	-	-
B17.2	Acute Viral Hepatitis E	**0**	-	-	-	-	-	-	-	-	-	-
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	**140**	16	8	11	7	43	31	9	6	9	-
A03.0,	Typhoid & Paratyphoid Fever	**10**	-	1	1	-	3	5	-	-	-	-
A37	Pertussis (*clinical*)	**2**	-	1	-	-	-	-	-	1	-	-
A71	Trachoma (*active*)	**-**	-	-	-	-	-	-	-	-	-	-
A23	Brucellosis *(human)*	**22**	-	22	-	-	-	-	-	-	-	-
B55.1	Leishmaniasis Cutaneous (*CL*)	**1**	-	-	-	-	-	1	-	-	-	-
B55	Leishmaniasis Visceral (*VL*)	**0**	-	-	-	-	-	-	-	-	-	-
B65	Schistosomiasis (*intestinal*)	**0**	-	-	-	-	-	-	-	-	-	-
A16	Pulmonary Tuberculosis (*sputum neg.*)	**6**	3	-	-	2	-	-	-	-	1	-
A17-19	Extra-pulmonary Tuberculosis	**20**	5	9	-	-	2	2	1	-	1	-
A30	Leprosy	**0**	-	-	-	-	-	-	-	-	-	-
B20-24	HIV [AIDS]	**17**	6 [7]	2 [0]	1 [1]	0 [1]	1 [0]	6 [7]	1 [1]	0 [2]	0 [0]	0 [0]
Group C Diseases & Syndromes												
J10-11	Influenza Like Illnesses (*ILI*)	**1,058**	-	9	504	379	-	108	10	35	13	-
-	aLRTI & Pneumonia *(childhood)*	**3,361**	602	283	281	346	297	898	546	7	74	27
-	Acute 'Watery' Diarrhoea *(childhood)*	**13,162**	1488	1357	2735	1140	1879	2185	1653	347	261	117
B01	Chickenpox	**5,465**	622	731	891	552	900	472	619	621	46	11
B26	Mumps	**197**	74	17	15	20	17	18	18	12	6	-

Selected Communicable Diseases by Wilayat

First Quarter (January to March 2005)

Region	Wilayat	AFP	Measles	Rubella	Meningo-coccal Infection	Hib Meningitis	TB (Total)	TB Sputum Positive	Viral Hepatitis A	Viral Hepatitis B	Malaria (All)	Pertussis	Leprosy
MUSCAT	Muscat						1	1			4		
	Seeb	1					2		2	2	11		
	Muttrah	1					7	4			5		
	Bowsher						3	1	1	2	16		
	Al Amerat						2	2	1		2		
	Quriyat						2	1	14	1			
DHOFAR	Salalah						7	2			7		
	Thumrait											1	
	Taqah						1						
	Mirbat												
	Sadah						2						
	Rakhyut												
	Dhalqut												
	Muqshan												
	Shaleem						1						
NORTH BATINAH	Sohar		1						1	1	4		
	Shinas										1		
	Liwa								17				
	Saham						2				1		
	Khabura												
	Suwaiq						1	1	3				
SOUTH BATINAH	Rustaq			2			2	2					
	Nakhl	1									1		
	Wadi Maawil												
	Al Awabi												
	Musanah						1		3		1		
	Barka						1	1			3		
DAKHLIYAH	Nizwa		1	1			1	1		4			
	Bahla									1			
	Adam										5		
	Al Hamra												
	Manah												
	Samail	1											
	Izki												
	Bid Bid									1			
DHAHIRA	Ibri									1	2	1	
	Yanqul												
	Dhank										1		
	Al Buraimi						1	1	4				
	Mahda												
NORTH SHARQIYAH	Ibra						1						
	Al Mudhaibi						1				2		
	Bidiyah										1		
	Al Qabel						2	2			1		
	Dima Al Tayeen										1		
	Wadi Bani Khalid												
SOUTH SHARQIYAH	Sur								1		6		
	Masirah												
	Al Kamil Wa Al Wafi						1						
	Bilad Bani Bu Ali						1		1				
	Bilad Bani Bu Hassan										1		
MUSANDUM	Khasab						2						
	Dibba												
	Bukha												
	Madha									2			
AL-WUSTAH	Haima												
	Duqum												
	Mahoot												
	Al Jazer										1		
NATIONAL TOTAL		**4**	**2**	**3**	**0**	**0**	**45**	**19**	**48**	**15**	**77**	**2**	**0**

Age Distribution of Communicable Diseases

First Quarter (January to March 2005)

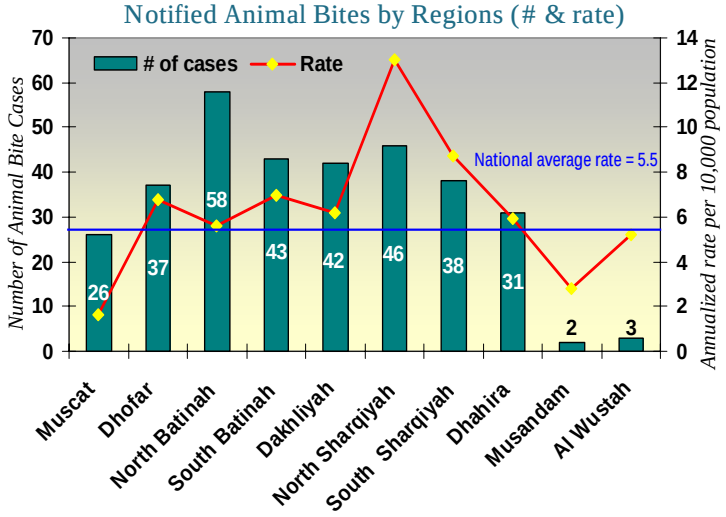
ICD Code	Priority Communicable Diseases	Total	Age Groups in Years								
			< 1	1-4	5-9	10-14	15-19	20-24	25-34	35-45	45+
Group 'A' Diseases											
A00	Cholera	**0**	-	-	-	-	-	-	-	-	-
A20	Plague	*Never reported*									
A95.9	Yellow Fever	*Never reported*									
A39, 39.0, 39.2-39.4	Meningococcal Infection	**0**	-	-	-	-	-	-	-	-	-
G00.0	H. influenzae type b, meningitis *(Hib)*	**0**	-	-	-	-	-	-	-	-	-
A82	Rabies	**0**	-	-	-	-	-	-	-	-	-
A-15	Pulmonary Tuberculosis (sputum+)	**19**	-	-	-	1	1	4	4	2	7
	Gr. 'A' Syndromes										
	Acute Flaccid Paralysis (*AFP*)	**4**	-	3	-	1					
	Fever & Rash-Illness	**140**	39	70	23	5	-	1	1	-	1
B05	Measles (*IgM +*)	**2**	-	1	1	-	-	-	-	-	-
B06	Rubella (*IgM +*)	**3**	-	3	-	-	-	-	-	-	-
P35.0	Congenital Rubella Syndrome (*CRS*)	**0**	-	-	-	-	-	-	-	-	-
U04, 04.9	Severe Acute Respiratory Syndrome	*Never reported*									
	Acute Haemorrhagic Fever Syndrome	**0**	-	-	-	-	-	-	-	-	-
A02	Food Poisoning (*Infectious origin*)	**26**	1	3	7	5	3	2	2	2	1
Group 'B' Diseases											
G00.1-9	Bacterial Meningitis *(except Hib & Nm)*	**2**	1	1	-	-	-	-	-	-	-
A87	Viral Meningitis	**0**	-	-	-	-	-	-	-	-	-
G03	Other Meningitis (*unspecified*)	**13**	5	1	3	2	2	-	-	-	-
	Acute Viral Hepatitis (*Total*)	**207**	**1**	**59**	**67**	**21**	**6**	**11**	**20**	**10**	**12**
B15	Acute Viral Hepatitis A	**48**	-	12	25	7	2	1	1	-	-
B16	Acute Viral Hepatitis B	**15**	-	-	1	1	-	2	10	-	1
B17.1	Acute Viral Hepatitis C	**4**	-	-	-	-	-	-	3	-	1
B17.0	Acute Viral Hepatitis D (*amongst B +*)	**0**	-	-	-	-	-	-	-	-	-
B17.2	Acute Viral Hepatitis E	**0**	-	-	-	-	-	-	-	-	-
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	**140**	1	47	41	13	4	8	6	10	10
A03.0, A01.4	Typhoid & Paratyphoid Fever	**10**	-	1	2	3	-	-	1	1	2
A37	Pertussis (*clinical*)	**2**	2	-	-	-	-	-	-	-	-
A71	Trachoma (*active*)	**-**	-	-	-	-	-	-	-	-	-
A23	Brucellosis *(human)*	**22**	-	5	6	5	4	-	1	-	1
B55.1	Leishmaniasis Cutaneous (*CL*)	**1**	-	1	-	-	-	-	-	-	-
B55	Leishmaniasis Visceral (*VL*)	**0**	-	-	-	-	-	-	-	-	-
B65	Schistosomiasis (*intestinal*)	**0**	-	-	-	-	-	-	-	-	-
A16	Pulmonary Tuberculosis (*sputum Neg.*)	**6**	-	-	-	1	-	-	2	1	2
A17-19	Extra-pulmonary Tuberculosis	**20**	-	-	-	-	2	1	7	3	7
A30	Leprosy	**0**	-	-	-	-	-	-	-	-	-
B20-24	HIV [AIDS]	**17 [19]**	-	-	-	-	1 [0]	3 [1]	3 [4]	10 [8]	0 [6]

Note:

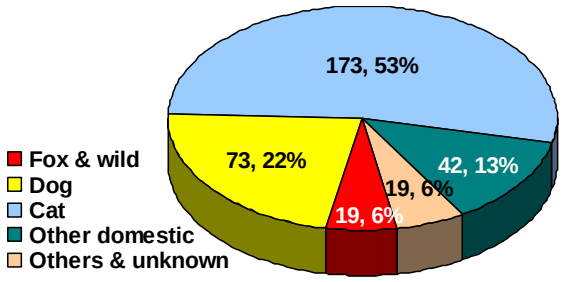
- *The quarterly data are 'provisional' & should be scrutinized & verified by the focal point of communicable diseases (Epidemiologist) at the provincial level. After receiving feedback the data would be finalized.*
- *The Group C data should be carefully checked & verified for accuracy. Ensure that the case definitions are strictly followed .*
- *Tuberculosis, Leprosy & HIV [AIDS] data are for nationals only.*
- *Unspecified cases of acute viral hepatitis are due shortage of diagnostic kits and would be subsequently tested in the next quarter.*
- *Active Trachoma surveillance will commence from July 2005.*
- *(i) = imported case.*

Animal Bite Surveillance *First Quarter (January to March 2005)*

Notified Animal Bites by Regions (# & rate)



Notified Animal Bites by Type of Animal (#, %)



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