Volume 15, Issue 3

July – September 2006

Community Health & Disease Surveillance Newsletter

Sultanate of Oman Ministry of Health

Inside this issue:

New Child Growth Standards: 2006
(World Health Organization)

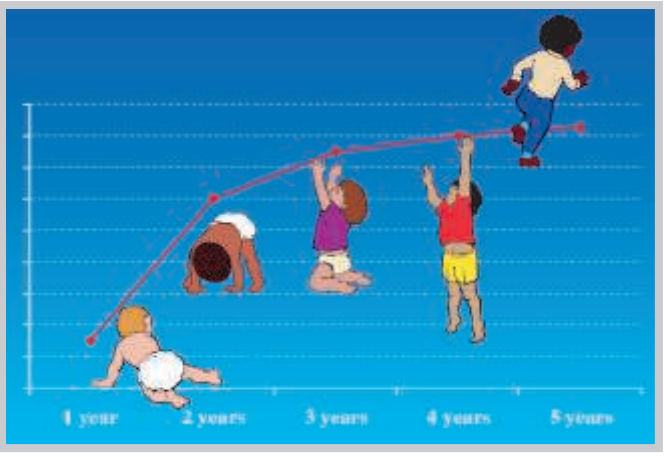
Background

In 1993 the World Health Organization (WHO) undertook a comprehensive review of the uses and interpretation of anthropometric references. The review concluded that the NCHS/WHO growth reference, which had been recommended for international use since the late 1970s, did not adequately represent early childhood growth and that new growth curves were necessary. The World Health Assembly endorsed this recommendation in 1994. In response WHO undertook the Multicentre Growth Reference Study (MGRS) between 1997 and 2003 to generate new curves for assessing the growth and development of children the world over. The MGRS combined a longitudinal follow-up from birth to 24 months and a cross-sectional survey of children aged 18 to 71 months. Primary growth data and related information were gathered from 8440 healthy breastfed infants and young children from widely diverse ethnic backgrounds and cultural settings (Brazil, Ghana, India, Norway, Oman and USA). The MGRS is unique in that it was purposely designed to produce a standard by selecting healthy children living under conditions likely to favour the achievement of their full genetic growth potential. Furthermore, the mothers of the children selected for the construction of the standards engaged in fundamental health-promoting practices, namely breastfeeding and not smoking.

Introduction

On April 27, 2006 the World Health Organization launched new global Child Growth Standards for infants and children up to the age of five.

With these new WHO Child Growth Standards it is now possible to show how children *should* grow. They demonstrate for the first time ever that children born in different regions of the world and given the optimum start



in life, have the potential to grow and develop to within the same range of height and weight for age.

The WHO Child Growth Standards will be widely used as a tool in public health, medicine and by governmental and health organizations for monitoring the well-being of children and for detecting children or populations not growing properly or under- or overweight and may require specific medical or public health responses. Normal growth is an essential expression of health and a way to measure efforts designed to reduce child mortality and disease. The new charts therefore provide a simple tool to assess the effectiveness of such efforts.

"The WHO Child Growth Standards go beyond the current references. They allow important growth measurements, such as body weight and length/height of infants and children to be assessed against a standard optimum value."

They will be in use around the world in doctors' offices, clinics and other health facilities, and by research institutions, child health advocacy organizations and ministries of health.

The New Growth Charts

Parents, caregivers and health workers around the world are familiar with growth references. They are the values of weight and height for each age against which they measure the growth of the children under their care. The current references do not indicate how children should grow for the best health outcome, however, rather they simply describe how the average child grows.

The WHO Child Growth Standards go beyond the current references. They allow important growth measurements, such as body weight and length/height of infants and children to be assessed against a standard optimum value. There are charts for boys and for girls, and for infants to one year, and for children up to five years.

These measurements are important indicators of health and help determine whether a child or a population of children is healthy and growing well. For example, children who are short for their age (below the red line on the length/height chart) or underweight (below the red line on the weight chart) indicate that their health may be compromised - the further from the red lines, the more indicative of a health problem. In clinical practice, these measurements help with early diagnosis of illness and help monitor progress during treatment.

Importantly, for the first time there now exist standardized Body Mass Index - BMI - charts for infants to age five, which is particularly useful for monitoring the increasing epidemic of childhood obesity.

Additionally, the new Child Growth Standards also include *Windows of Achievement* describing the range and timeline for six key motor development milestones for children, such as sitting, standing and walking.

There are more than 30 Child Growth Standard charts in all. Most doctors, healthcare providers and parents will use only a few of these charts regularly (height/length, weight, BMI, for e.g.) but researchers and those working at the population level will use a broader range of charts for measurement and evaluation.

These include:

- *Length/height-for-age*
- *Weight-for-age*
- *Weight-for-length/height*
- *Body mass index-for-age*

How the new standards differ?

The new WHO Child Growth Standards differ from any existing growth charts in a number of innovative ways:

For the first time they describe "how children *should* grow," which is a prescriptive approach, not just descriptive. These charts show that all children across all regions can attain a similar standard of

height and weight and development with correct feeding practices, good healthcare and a healthy environment. It is, then, a more proactive way of measuring and evaluating child growth, setting out normative conditions and evaluating children and populations against that standard.

As such, a key characteristic of the new standard is that it establishes breastfeeding as the biological "norm" and the breastfed infant as the standard for measuring healthy growth. Previous reference charts were based on the growth of a random mixture of breastfed and artificially-fed children.

Furthermore, the pooled sample from the six participating countries allows the development of a truly international standard, which is in contrast to the previous international reference based on children from a single country.

The development for the first time of standardized Body Mass Index (BMI) charts for infants to five years of age is a major innovation in assessing healthy weights of children.

Additionally, the development of *Windows of Achievement* for six key motor development milestones will provide a unique link between physical growth and motor development.

How the Standards were Developed?

The new WHO Child Growth Standards are the result of an intensive study initiated by WHO in 1997 to develop a new international standard for assessing the physical growth, nutritional status and motor development in children from birth to five years of age.

As a result, *The Multicentre Growth Reference Study (MGRS)* has been a community-based, Multicountry project conducted in Brazil, Ghana, India, Norway, Oman, and the United States.

Crucially and by design of the research project, the 8,440 children included in the study were raised in environments that promote healthy growth such as breastfeeding, good diets and prevention and control of infections. In addition, their mothers followed health practices such as not smoking during and after pregnancy, and ensuring adequate healthcare for the children.

This project was lead by WHO and supported by several governments, non-governmental organizations and the United Nations University and other UN agencies. It was supported financially by the governments of Brazil, the Netherlands, Norway, Oman, USA, and the Bill & Melinda Gates Foundation.

When and how will the new WHO Child Growth Standards be available to countries and healthcare providers?

They will be available from the day of the launch (27 April, 2006) at the WHO website (www.who.int/childgrowth) for consultation, download and use. Ministries of Health, national pediatric associations and other key health decision makers will determine whether and when they will be officially adopted by their country.

Epidemiological aspects of the standards

As expected, there are notable differences with the NCHS/WHO reference that vary by age, sex, anthropometric measure and specific percentile or z-score curve. Differences are particularly important in infancy. Stunting will be greater throughout childhood when assessed using the new WHO

"The Multicentre Growth Reference Study (MGRS) has been a community-based, Multicountry project conducted in Brazil, Ghana, India, Norway, Oman, & the United States."

standards compared to the NCHS/WHO reference. The growth pattern of breastfed infants will result in a substantial increase in rates of underweight during the first half of infancy and a decrease thereafter. For wasting, the main difference is during infancy when wasting rates will be substantially higher using the new WHO standards. With respect to overweight, use of the new WHO standards will result in a greater prevalence that will vary by age, sex and nutritional status of the index population.

In summary the growth standards provide a technically robust tool that represents the best description of physiological growth for children under five years of age. The standards depict normal early childhood growth under optimal environmental conditions and can be used to assess children everywhere, regardless of ethnicity, socioeconomic status and type of feeding.

"The standards depict normal early childhood growth under optimal environmental conditions & can be used to assess children everywhere, regardless of ethnicity, socioeconomic status & type of feeding".

Endorsement of the New Growth Standards

The new growth standards have been endorsed by following organizations:

UNITED NATIONS SYSTEM
Standing Committee on Nutrition

1. Standing Committee on Nutrition
April 27, 2006
www.unsystem.org

international pediatric association
association internationale de pédiatrie
asociación internacional de pediatría

2. nternational Pediatric Association
April 20,2006
www.ipa-world.org

3. International Union on Nutrition Sciences

IUNS International Union of Nutrition Sciences

www.iuns.org April 24, 2006

Endorsement by the Ministry of Health, Sultanate of Oman

Oman was one of the countries in the world to participate in the study on the development of the new standards (Multicentre Growth Reference Study).

Oman was also one of the first countries to endorse the standards and the Ministry of Health has adopted the new standards into the system to monitor the child growth.

References

- *WHO Child Growth Standards: Backgrounder*
- *WHO Child Growth Standards:: Methods & Development, ISBN 92 4 154693 X (NLM classification: WS 103)*
- *Community Health & Disease Surveillance Newsletter, WHO Multicentre Growth Reference Study, 1999, Vol. 8, Issue 4: 1*
- *Community Health & Disease Surveillance Newsletter, WHO Multicentre Growth Reference Study: Part 2, 2000, Vol. 9, Issue 1: 1*

Revised Child Health Card: Oman

(Adopting the New Growth Standards)

Background

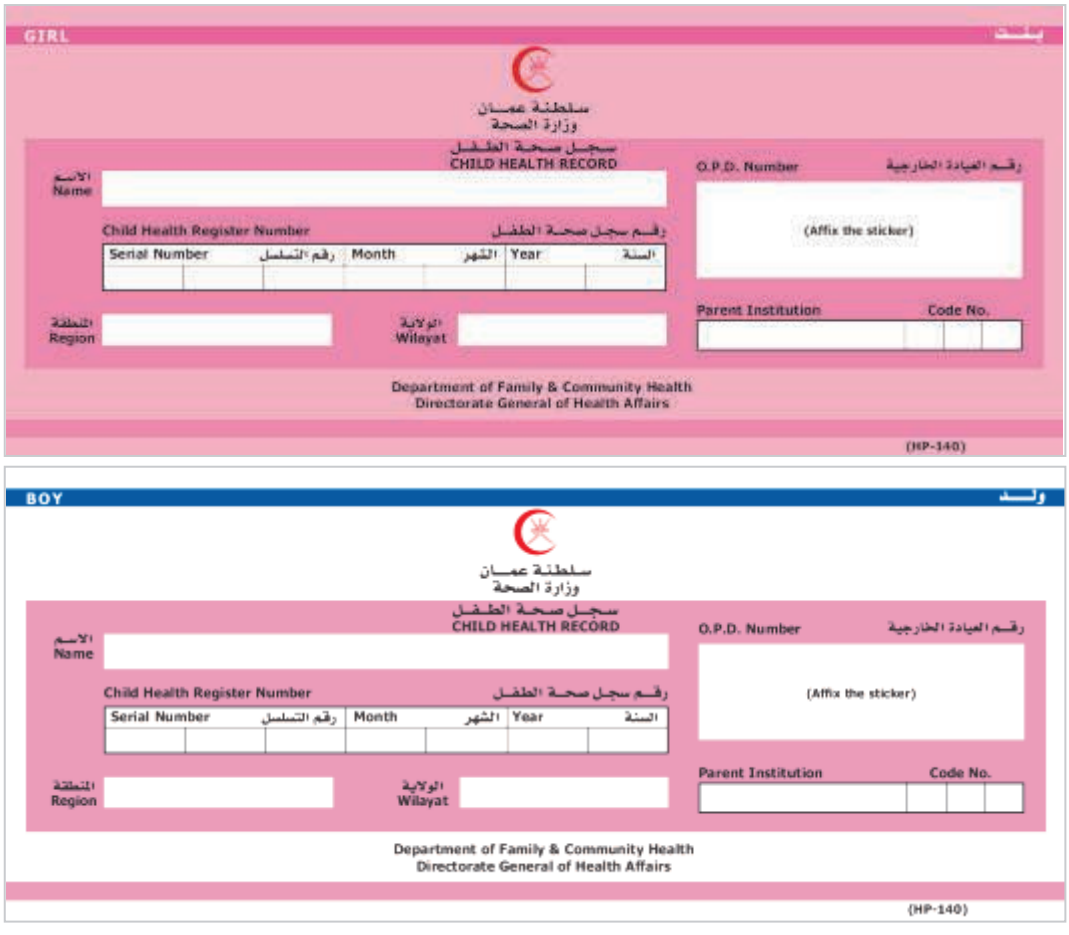
The child health card popularly known as the pink card was introduced in 1980s and was used then as immunization record and growth monitoring tool. The card was periodically revised and in 2004 was made compatible with the policies of IMCI. It serves as an information source for the parents as well as the health care worker and is a documentation of the key health-related events in early childhood.

The revised new child health card (Fig-1) is proposed introduced in Oman from January 2007 and will be integrated into the comprehensive health care services provided to the vulnerable age group of under-five children.

The card was extensively revised from its earlier version after discussions with all the stake holders (task force).

The additional information included in the new version was field-tested. A pilot study was conducted in the Governorate of Muscat in September/October 2006. A training workshop conducted later finalized the contents based on the experience and feedback. CHR was found to be acceptable to both providers & the health care givers

Fig-1
The Front Face of the New Child Health Card: Girls & Boys



"The revised new child health card is proposed introduced in Oman from January 2007 & will be integrated into the comprehensive health care services provided to the vulnerable age group of under -five children."

Fig-2
Weight-for-age Charts in the New Child Health Card: Girls & Boys

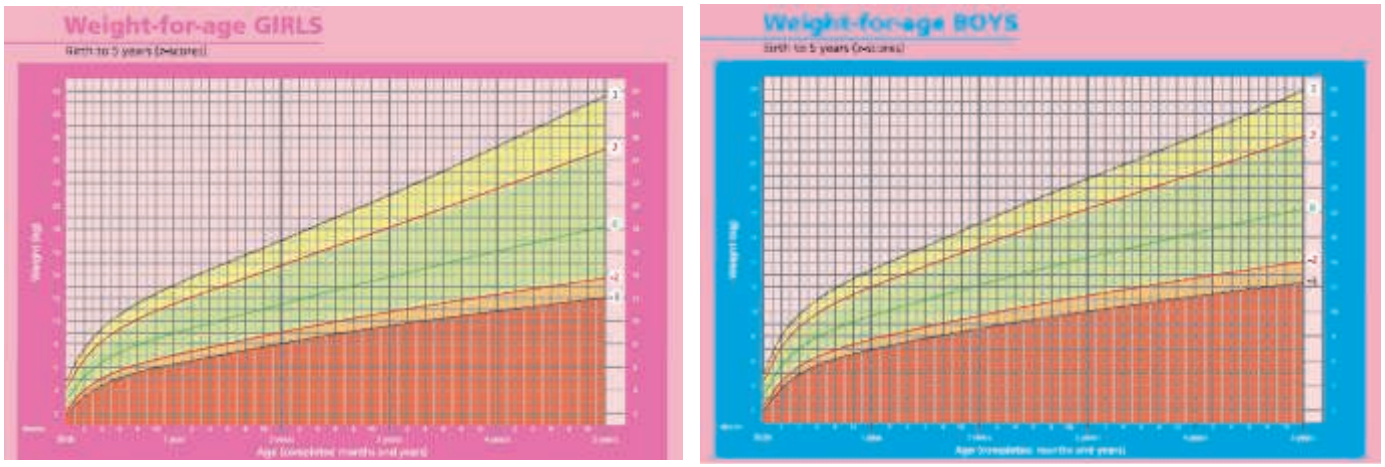
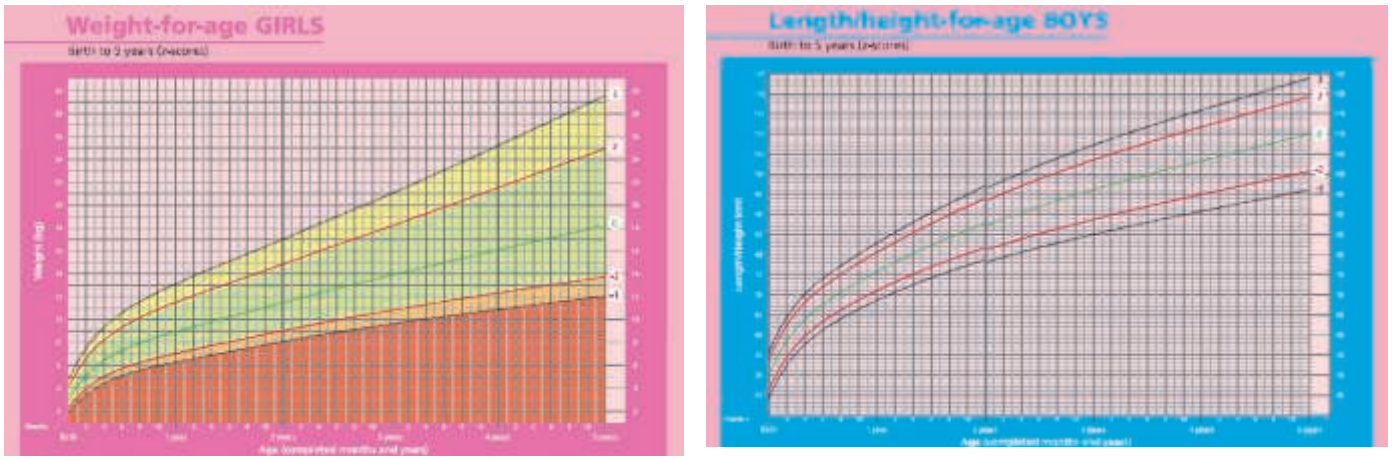


Fig-3
Length/height-for-age Charts in the New Child Health Card: Girls & Boys



New Version Changes

- Organized structured visits: For the first two years of life coinciding with the visits for immunization. The components are:
  - Immunization
  - Feeding assessment
  - Psychosocial assessment
  - Routine checks including growth monitoring

  Thereafter the child will be followed till five years through periodic visits.
- Parents information page in Arabic for each visit: The doctor should encourage the parents to read this information to make them understand the purpose
- Record of screening tests done
- Record of clinic attendance
- Special pages for hospital admissions and special investigations
- New WHO growth charts (weight & height for age) Figures 2 & 3

The inclusion of a graph for length/height-for-age is a new addition to the card.

It is expected that the new child health card will provide an effective management tool for providing better health care to the children in Oman.

Chikungunya Fever

The name "chikungunya" is derived from the *Makonde* dialect meaning *"that which bends up"* in reference to the stooped posture developed as a result of the arthritic symptoms of the disease. The disease was first described following an outbreak on the *Makonde* Plateau, along the border between Tanganyika and Mozambique, in 1952.

Introduction

CHIKV was first isolated in Tanzania in 1953, and has since been identified repeatedly in west, central and southern Africa and many areas of Asia responsible for numerous human epidemics in those areas . Fever cases are sometimes clinically misdiagnosed as dengue infections, therefore the incidence of chikungunya fever could be much higher than what has been previously reported. No deaths, neuroinvasive cases, or hemorrhagic cases related to CHIKV infection have been conclusively documented in the scientific literature.

Epidemiology of Chikungunya Fever

The Host: Humans, primates, other mammals and birds are the hosts. The virus circulates throughout much of Africa, with transmission thought to occur mainly between mosquitoes and monkeys.

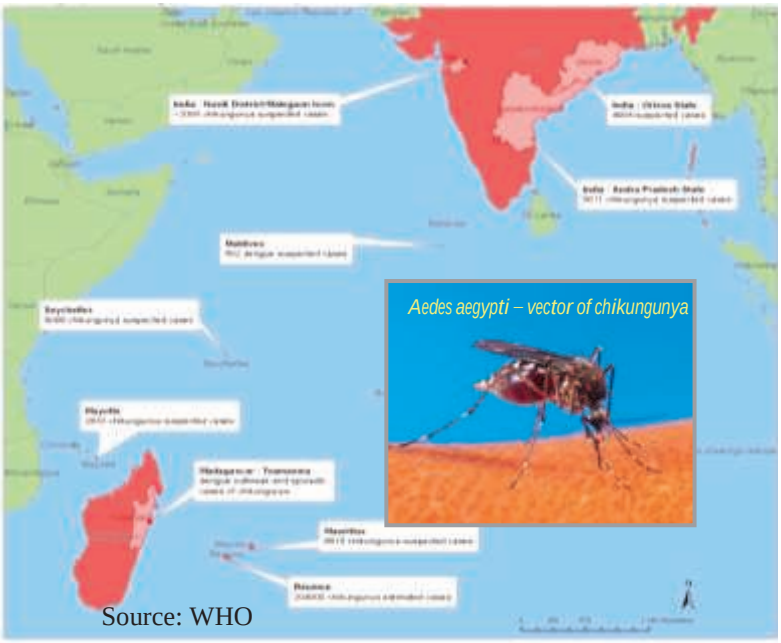
Females are more affected than males, a feature probably associated with the daytime and indoor feeding habits of the mosquito vector. All age groups are evenly represented.

The Virus: Chikungunya virus (CHIKV) is RNA virus and is a member of the genus *Alphavirus*, in the family Togaviridae. The CHIKV is closely related to O'nyong'nyong virus.

The Vector: *Aedes aegypti* (the yellow fever mosquito), a household container breeder and aggressive daytime biter which is attracted to humans, is the primary vector in humans. *Aedes albopictus* (the Asian tiger mosquito) may also played a role in human transmission in Asia, and various forest-dwelling mosquito species in Africa have been found to be infected with the virus. Among monkeys, the disease is transmitted by *Aedes furcifer and africanus*.

The mosquitoes that transmit the Chikungunya virus in Africa and Asia are the same that transmit yellow fever and dengue fever in many parts of the world--which raises the possibility that the chikungunya virus could spread and cause disease elsewhere.

Pathogenicity: Self limiting febrile viral disease; characterized by arthralgia or arthritis typically in the knee, ankle and



Source: WHO

"The fever cases are sometimes clinically misdiagnosed as dengue infections, therefore the incidence of chikungunya fever could be much higher than what has been previously reported".

small joints of the extremities, high fever, followed by a maculopapular rash; buccal and palatal exanthema can occur; nausea and vomiting may occur; mild haemorrhages may be present especially in children; inapparent infections are common.

Mode of Transmission: By bite of an infective mosquito.

Communicability: No evidence of person-to-person transmission

Incubation: The incubation period can be 2-12 days, but is usually 3-7 days. "Silent" CHIKV infections do occur; but how commonly this happens is not known.

"Aspirin should be avoided during the acute stages of the illness & the infected persons should be protected from further mosquito exposure so that they will not contribute to the transmission cycle".

Diagnostic test: A serological test for Chikungunya is available from the *University of Malaya in Kuala Lumpur.* Detecting presence of CHIKV specific RNA (*through demonstration of the virus-specific 500 bp amplicon*) by reverse transcription-polymerase chain reaction (RT-PCR) is an alternative test.

Case Management: No vaccine or specific antiviral treatment for Chikungunya fever is available. Treatment is symptomatic i.e. rest, fluids, and ibuprofen, naproxen, acetaminophen, or paracetamol may relieve symptoms of fever and aching. Aspirin should be avoided during the acute stages of the illness. Infected persons should be protected from further mosquito bites.

Disinfection: Sensitive to 70% ethanol, 1% sodium hypochlorite, 2% glutaraldehyde, Also sensitive to lipid solvents and heat.

Immunity: CHIKV infection (clinical or silent) confers life-long immunity.

Mortality: Chikungunya is generally not considered to be fatal disease. To date, no deaths have been directly attributed to acute chikungunya infection in the scientific literature. Patients with underlying medical conditions, however, are vulnerable and prone to developing complications and organ failure.

Prevention: The best way to avoid CHIKV infection is to prevent mosquito bites. There is no vaccine or preventive drug.

- Use insect repellent containing *DEET* or another active ingredient on exposed skin. Always follow the directions on the package.
- Wear long sleeves and pants (ideally treat clothes with *permethrin* or another repellent).
- Have secure screens on windows and doors to keep mosquitoes out.
- Get rid of mosquito breeding sites (artificial collection of water) by emptying standing water from flower pots, buckets and barrels etc.

Travel Advisory: It is advised that pregnant women, immunocompromised and people suffering from a severe chronic illness should consult their physicians prior to travel in areas with known transmission of Chikungunya fever in order to assess their risk and get specific recommendations on personal preventive measures to minimise the exposure to mosquito bites while in these areas.

Outbreak in Indian Ocean

In recent years, extensive CHIKV activity also has been documented in Southeast Asia. From May'04-May'06, approximately 300,000 suspected CHIK fever cases were reported on islands in the Indian Ocean. Imported cases were documented in France, UK, USA and other countries. Risk exists that CHIKV might be introduced into previously non-endemic areas by travellers with viraemia, leading to local transmission of the virus, especially in tropical or subtropical areas.

ProMED Digest; <http://www.promedmail.org> <promed@promed.isid.harvard.edu>

Oman IPV study 2006-07

Background

In 1988, polio paralysed nearly 1000 children every day worldwide. The world embarked that year on a programme to eradicate the poliovirus, which cripples permanently. By 2000, fewer than a thousand children had been paralysed in the entire year. Today, 18 years after its inception, the Global Polio Eradication Initiative has reduced cases of polio by 99% and spared 5 million children from paralysis.

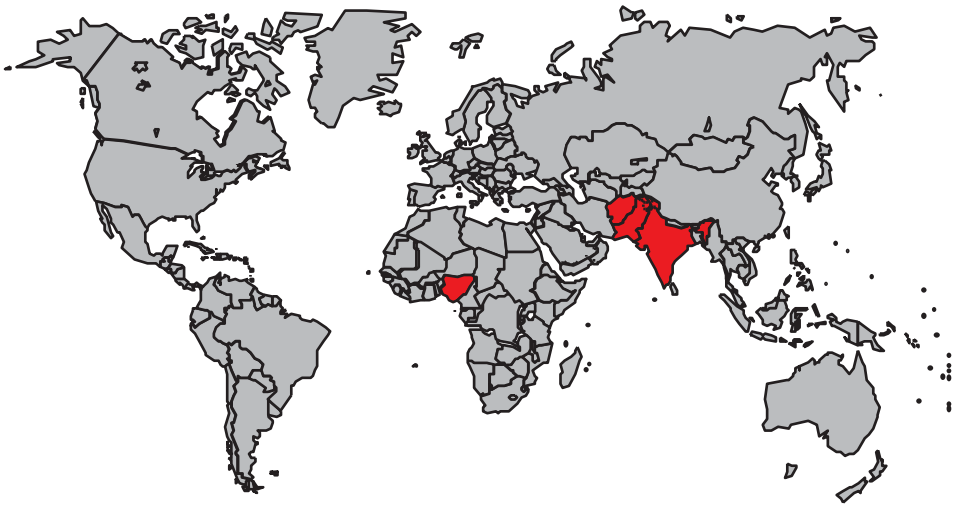
With polio eradication making rapid progress, at the beginning of 2005, only 4 countries remain endemic for serotypes 1 and 2 of wild poliovirus viz. Afghanistan, India, Nigeria, and Pakistan (Fig-1). With speedy response activities, 21 previously polio-free countries that were re-infected in 2003–2005 have all almost stopped their outbreaks.

Therefore a high priority is assigned to the preparations for the post-eradication era.

The most important decision would be to stop use of trivalent oral poliovirus vaccine (tOPV) as soon as feasible after eradication is ensured.

However, before OPV can be stopped globally, the following six prerequisites must be met to minimize the risks of poliovirus re-introduction or re-emergence:

Fig-1
The Shrinking World of Polio in Early 2005



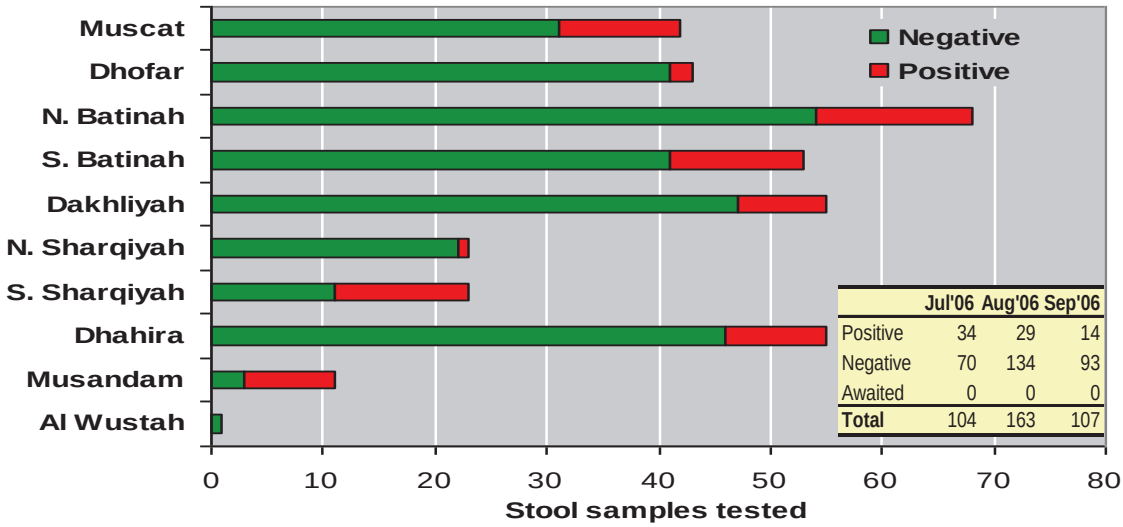
1) confirmation of interruption of wild poliovirus transmission globally and appropriate bio-containment of wild polioviruses
2) maintenance of the global surveillance and notification capacity
3) establishment of a global stockpile of mOPVs and a global response mechanism
4) implementation of IPV requirements in countries that retain poliovirus in laboratories or in production
5) synchronization of OPV cessation globally
6) appropriate bio-containment of Sabin polioviruses.

Refer: www.polioeradication.org

"With speedy response activities, 21 previously polio-free countries that were re-infected in 2003 –2005 have all stopped their outbreaks."

Rotavirus Sentinel Surveillance Monitoring: 3rd Quarter

Results of Stool Samples Tested for Rotavirus Sentinel Surveillance by Provinces
July to September 2006



	Jul'06	Aug'06	Sep'06
Positive	34	29	14
Negative	70	134	93
Awaited	0	0	0
Total	104	163	107

Note: Muscat Governorate samples were from SQUH & Royal Hospital.

"WHO estimates that 2-4 cases of VAPP occur for each million doses of OPV. IPV, on the other hand, does not cause VAPP, & has an extensive safety record".

Two WHO IPV position papers provide additional guidance to OPV-using countries and for the post-OPV cessation era. While IPV will be part of the requirements for countries electing to retain poliovirus in the post-OPV era, other countries may determine that they may be a risk for intentional use (bioterrorism) of poliovirus in the post-OPV era, and may elect to maintain population immunity against polioviruses. However, IPV is expensive, and many middle-low-income countries may not be able to afford it.

WHO is therefore pursuing two approaches which could make IPV vaccination more affordable:

1) dose-reduction strategy
2) schedule requiring fewer doses.

The proposed study in Cuba and Oman is a dose-reduction trial of a licensed IPV administered by needle-free device (Fig-3). If successful it could lead to substantially more affordable IPV, and could drive global policy recommendations on IPV for middle-to-low-income countries.

Introduction

IPV was initially developed and licensed by Dr Jonas Salk in the United States in 1955. IPV was the only vaccine against poliomyelitis from 1955 until the early 1960s, and used very widely in industrialized countries. IPV lead to interruption of wild poliovirus transmission in Finland, Iceland, Netherlands, and Sweden. IPV was replaced by tOPV in the early 1960s, mainly because it is easier to administer, less expensive, provides better mucosal immunity, and through secondary spread indirectly vaccinates some close contacts of vaccinees.

With the progress towards polio eradication, more countries are switching from tOPV to IPV, primarily to prevent the main adverse event associated with tOPV use, the rare occurrence of vaccine-associated paralytic poliomyelitis (VAPP) in an era where the threat of wild poliovirus impor-

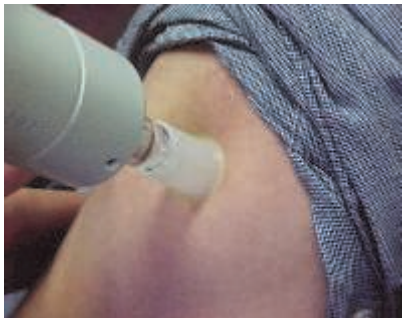
Fig-2
Multi-case cVDPV Outbreaks, 2000-6
(Circulating Vaccine-derived Polioviruses)

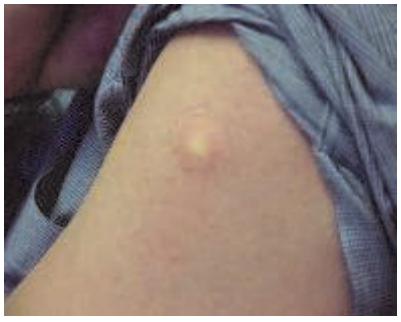
Country	Year	Cases
Hispaniola	2000	22
Philippines	2001	3
Madagascar	2002 & 2005	7
China	2004	2
Indonesia	2005	46

tation has been greatly diminished (Fig-2). WHO estimates that 2-4 cases of VAPP occur for each million birth cohort. IPV, on the other hand, does not cause VAPP, and has an extensive safety record. In the late 1960s, an enhanced-potency IPV was developed, licensed, and replaced the "old" IPV. This enhanced-potency IPV is substantially more immunogenic. IPV is licensed in >80 countries. More than 30 million doses of IPV are used worldwide in industrialized countries. There are no serious adverse events associated with IPV use.

Fig-3
The Needle-free Device to Administer IPV Intradermally

Fig-4
Intradermal Administration by Jet-injector





IPV Study in Oman 2006-07

The principal purpose of the study is to demonstrate the non-inferiority of a schedule of three fractional doses of IPV compared with full doses of IPV. The data generated by this clinical trial are intended to facilitate the regulatory approval of fractional doses of IPV, specifically to support a label change permitting fractional dose IPV administration intradermally.

This is a randomized controlled clinical trial of IPV. One study arm receives only fractional doses (0.1 ml or 1/5 of a dose), the other study arm receives only full doses (0.5 ml). The fractional dose will be administered by a new tested and safe device in the market called Biojector 2000 (Fig 3 & 4)

Total 400 children will be enrolled in the study at birth and followed for 7 months. Serial serological studies will determine the immune response to IPV in the control and study group.

A challenge dose of mOPV1 at the end of this period will help in determining local gut immunity in both study arms.

The study is planned at four sites in Oman viz. Rustaq, Salalah, Nizwa and Sur Hospital and will be launched in January 2007.

"The data generated by this clinical trial are intended to facilitate the regulatory approval of fractional doses of IPV, specifically to support a label change permitting fractional dose IPV administration intradermally".

Communicable Diseases Quarterly Report

Third Quarter (July to September 2006)

ICD Code	Priority Communicable Diseases	2006 Third Quarter Jul	Aug	Sep	Total	2005 Q3 Jul-Sep	Q4 Oct-Dec	2006 Q1 Jan-Mar	Q2 Apr-Jun
Group 'A' Diseases									
A00	Cholera	-	-	1*	**1***	-	-	-	-
A20	Plague	*Never reported*							
A95.9	Yellow Fever	*Never reported*							
A39, 39.0, 39.2-39.4	Meningococcal Infection	-	-	-	0	-	1	2	-
G00.0	H. influenzae type b, meningitis *(Hib)*	-	-	-	0	-	1	1	-
A82	Rabies	-	-	-	0	-	-	-	-
B50-54	Malaria	51	47	43	141	196	110	67	125
A-15	Pulmonary Tuberculosis (sputum positive)	9	11	7	27	21	25	32	30
	Gr. 'A' Syndromes								
-	Acute Flaccid Paralysis (*AFP*)	1	1	2	4	5+2(Polio)	7	3	5
-	Fever & Rash-Illness	57	52	40	149	116	142+5(i)	151	202
B05	Measles (*IgM+*)	-	-	-	0	3	1	6	6
B06	Rubella (*IgM+*)	2	1	-	3	3	-	2	2
P35.0	Congenital Rubella Syndrome (*CRS*)	-	-			-	1 (i)	1 (i)	-
U04, 04.9	Severe Acute Respiratory Syndrome *(SARS)*	*Never reported*							
A99	Acute Haemorrhagic Fever Syndrome	-	-	-	0	-	-	-	-
A02	Food Poisoning (*Infectious origin*)	169	92	96	357	184	111	107	96
Group 'B' Diseases									
G00.1-9	Bacterial Meningitis *(other than Hib & Nm)*	-	2	2	4	2	7	4	6
A87	Viral Meningitis	-	1	-	1	1	2	1	2
G03	Other Meningitis (*unspecified*)	3	3	4	10	15	7	8	13
	Acute Viral Hepatitis (*Total*)	83	49	92	224	239	260	484	507
B15	Acute Viral Hepatitis A	64	20	45	129	44	174	275	55
B16	Acute Viral Hepatitis B	3	6	4	13	20	11	13	10
B17.1	Acute Viral Hepatitis C	1	-	2	3	5	2	6	5
B17.0	Acute Viral Hepatitis D (*amongst B positive*)	-	-	-	0	-	-	0	0
B17.2	Acute Viral Hepatitis E	1	1	-	2	7	2	2	1
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	14	22	41	77	163	71	188	436*
A03.0, 01.4	Typhoid & Paratyphoid Fever	5	8	4	17	19	13	9	8
A37	Pertussis (*clinical*)	2	3	3	8	8	8	19	6
A71	Trachoma (*active*)	1	1	4	6	6	7	1	14
A23	Brucellosis *(human)*	11	8	2	21	43	25	19	18
B55.1	Leishmaniasis Cutaneous (CL)	-	1	-	1	1	4	0	3
B55	Leishmaniasis Visceral (VL)	-	-	-	0	1	-	0	0
B65	Schistosomiasis (*intestinal*)	-	-	-	0	-	-	1	0
A16	Pulmonary Tuberculosis (*sputum negative*)	3	4	2	9	10	10	6	7
A17-19	Extra-pulmonary Tuberculosis	11	3	14	28	26	16	33	24
A30	Leprosy	-	-	-	0	2	1	0	0
B20-24	HIV [AIDS]	4 [3]	1 [3]	2 [3]	7 [8]	19[4]	9[6]	16 [6]	8 [1]
Group C Diseases & Syndromes									
J10-11	Influenza Like Illnesses (*ILI*)	2776	1963	3488	8227	676	1256	388	2570
-	aLRTI & Pneumonia *(childhood)*	736	940	1483	3159	2386	4188	9997	2590
-	Acute 'Watery' Diarrhoea *(childhood)*	1817	3588	3002	8407	6893	10277	6716	6050
B01	Chickenpox	1721	1489	1506	4716	3063	4235	7719	7654
B26	Mumps	85	58	54	197	200	233	291	464

**Cholera local case- . Atypical*

Communicable Diseases Quarterly Report by Regions

Third Quarter (July to September 2006)

ICD Code	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	1*	-	-	-	-	-	-	-	1*	-	-
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	-	-	-	-	-	-	-	-	-	-
B50-54	Malaria	141	63	3	15	4	1	30	12	10	-	3
A-15	Pulmonary Tuberculosis (sputum+)	27	9	3	1	-	2	5	3	4	-	-
	Gr. 'A' Syndromes											
	Acute Flaccid Paralysis (*AFP*)	4	3	-	-	-	-	-	1	-	-	-
	Fever & Rash-Illness	149	17	11	39	3	21	34	19	4	1	-
B05	Measles (*IgM+*)	0	-	-	-	-	-	-	-	-	-	-
B06	Rubella (*IgM+*)	3	-	1	-	-	1	1	-	-	-	-
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*)	357	73	6	33	38	-	3	64	138	-	2
Group 'B' Diseases												
G00.1-9	Bacterial Meningitis *(except Hib & Nm)*	4	1	1	-	-	-	2	-	-	-	-
A87	Viral Meningitis	1	-	-	-	-	1	-	-	-	-	-
G03	Other Meningitis (*unspecified*)	10	3	-	-	1	-	5	1	-	-	-
	Acute Viral Hepatitis (*total*)	224	23	12	26	44	36	52	5	12	11	3
B15	Acute Viral Hepatitis A	129	2	3	24	34	23	39	3	-	1	-
B16	Acute Viral Hepatitis B	13	3	-	1	-	1	1	1	-	5	1
B17.1	Acute Viral Hepatitis C	3	-	1	1	-	-	-	1	-	-	-
B17.0	Acute Viral Hepatitis D (*amongst B+*)	0	-	-	-	-	-	-	-	-	-	-
B17.2	Acute Viral Hepatitis E	2	-	-	-	-	-	1	-	-	1	-
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	77	18	8	-	10	12	11	-	12	4	2
A03.0, A01.4	Typhoid & Paratyphoid Fever	17	3	1	2	-	3	6	1	-	1	-
A37	Pertussis (*clinical*)	8	2	-	-	2	-	2	1	1	-	-
A71	Trachoma (*active*)	6	-	-	-	6	-	-	-	-	-	-
A23	Brucellosis *(human)*	21	-	20	1	-	-	-	-	-	-	-
B55.1	Leishmaniasis Cutaneous (*CL*)	1	1	-	-	-	-	-	-	-	-	-
B55	Leishmaniasis Visceral (*VL*)	0	-	-	-	-	-	-	-	-	-	-
B65	Schistosomiasis (*intestinal*)	0	-		-	-	-	-	-	-	-	-
A16	Pulmonary Tuberculosis (*sputum neg.*)	9	2	1	-	-	-	3	3	-	-	-
A17-19	Extra-pulmonary Tuberculosis	28	8	7	1	-	1	7	4	-	-	-
A30	Leprosy	0	-	-	-	-	-	-	-	-	-	-
B20-24	HIV [AIDS]	7 [8]	5 [1]	1 [0]	1 [0]	-	-	0 [5]	-	0 [2]	-	-
Group C Diseases & Syndromes												
J10-11	Influenza Like Illnesses (*ILI*)	8227	-	144	125	7831	-	11	10	106	-	-
-	aLRTI & Pneumonia *(childhood)*	3159	177	1001	269	252	228	552	649	1	22	8
-	Acute 'Watery' Diarrhoea *(childhood)*	8407	807	3168	1596	22	489	1505	225	310	226	59
B01	Chickenpox	4716	794	338	764	275	461	772	521	675	55	61
B26	Mumps	197	49	17	21	21	9	33	15	29	3	-

**Cholera local case- . Atypical*

Selected Communicable Diseases by Wilayat

Third Quarter (July to September 2006)

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						4	3					
	Seeb	1					5	2		2	24		
	Muttrah	2					6	1	1		17		
	Bowsher										22		
	Al Amerat												
	Quriyat						4	3	1	1			
DHOFAR	Salalah			1			10	3	3		3		
	Thumrait												
	Taqah												
	Mirbat												
	Sadah												
	Rakhyut						1						
	Dhalqut												
	Muqshan												
	Shaleem												
	Mazyoona												
NORTH BATINAH	Sohar						4	2	4		18	2	
	Shinas						1		13				
	Liwa			1					8		3		
	Saham						3		2		5		
	Khabura						2		7	1	1		
	Suwaiq						5	3	5		3		
SOUTH BATINAH	Rustaq	1					4		1	1	4		
	Nakhl						2	1					
	Wadi Maawil												
	Al Awabi												
	Musanah						4	2			4		
	Barka								1		4	1	
DAKHLIYAH	Nizwa								6	1	5		
	Bahla										1		
	Adam						1		5		5		
	Al Hamra												
	Manah										1		
	Samail						1	1	9		3		
	Izki								2				
	Bid Bid								2				
DHAHIRA	Ibri						2	2			3	1	
	Yanqul										1		
	Dhank												
	Al Buraimi						2	2			6		
	Mahda								1				
NORTH SHARQIYAH	Ibra								1				
	Al Mudhaibi								27		4	2	
	Bidiyah								3				
	Al Qabel								1				
	Dima Al Tayeen								1				
	Wadi Bani Khalid								1				
SOUTH SHARQIYAH	Sur								13				
	Masirah						1		1				
	Al Kamil Wa Al Wafi										1		
	Bilad Bani Bu Ali			1					2				
	Bilad Bani Bu Hassan						2	2	7	1			
MUSANDUM	Khasab								1	4			
	Dibba									1			
	Bukha												
	Madha												
AL-WUSTAH	Haima									1	2		
	Duqum												
	Mahoot												
	Al Jazer										1		
NATIONAL TOTAL		**4**	**0**	**3**	**0**	**0**	**64**	**27**	**129**	**13**	**141**	**6**	**0**

Age Distribution of Communicable Diseases

Third Quarter (July to September 2006)

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	1*	-	-	-	-	1*	-	-	-	-
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+)	27	-	-	-	3	4	1	10	1	8
	Gr. 'A' Syndromes										
	Acute Flaccid Paralysis (*AFP*)	4	-	3	-	1					
	Fever & Rash-Illness	149	59	69	15	4	-	1	-	-	1
B05	Measles (*IgM +*)	0	-	-	-	-	-	-	-	-	-
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*)	357	13	44	58	47	64	51	47	18	15
Group 'B' Diseases											
G00.1-9	Bacterial Meningitis *(except Hib & Nm)*	4	-	2	-	-	-	-	1	-	1
A87	Viral Meningitis	1	-	1	-	-	-	-	-	-	-
G03	Other Meningitis (*unspecified*)	10	5	1	2	-	-	-	2	-	-
	Acute Viral Hepatitis (*Total*)	224	5	64	82	23	9	9	9	7	16
B15	Acute Viral Hepatitis A	129	3	47	62	11	3	-	1	-	2
B16	Acute Viral Hepatitis B	13	-	-	-	-	1	5	1	5	1
B17.1	Acute Viral Hepatitis C	3	-	-	-	1	-	-	-	-	2
B17.0	Acute Viral Hepatitis D (*amongst B +*)	0	-	-	-	-	-	-	-	-	-
B17.2	Acute Viral Hepatitis E	2	-	-	-	-	1	1	-	-	-
B19/B17.8	Acute Viral Hepatitis (*unspecified*)	77	2	17	20	11	4	3	7	2	11
A03.0, A01.4	Typhoid & Paratyphoid Fever	17	2	2	3	1	2	2	-	2	3
A37	Pertussis (*clinical*)	8	6	1	-	-	-	1	-	-	-
A71	Trachoma (*active*)	6	-	1	-	1	2	2	-	-	-
A23	Brucellosis *(human)*	21	-	2	5	10	1	3	-	-	-
B55.1	Leishmaniasis Cutaneous (*CL*)	1	-	-	-	-	-	-	1	-	-
B55	Leishmaniasis Visceral (*VL*)	0	-	-	-	-	-	-	-	-	-
B65	Schistosomiasis (*intestinal*)	0	-	-	-	-	-	-	-	-	-
A16	Pulmonary Tuberculosis (*sputum Neg.*)	9	-	-	1	1	2	1	2	-	2
A17-19	Extra-pulmonary Tuberculosis	28	1	-	1	1	5	4	5	2	9
A30	Leprosy	0	-	-	-	-	-	-	-	-	-
B20-24	HIV [AIDS]	7 [8]	-	-	-	-	-	2 [0]	4 [5]	1 [3]	-

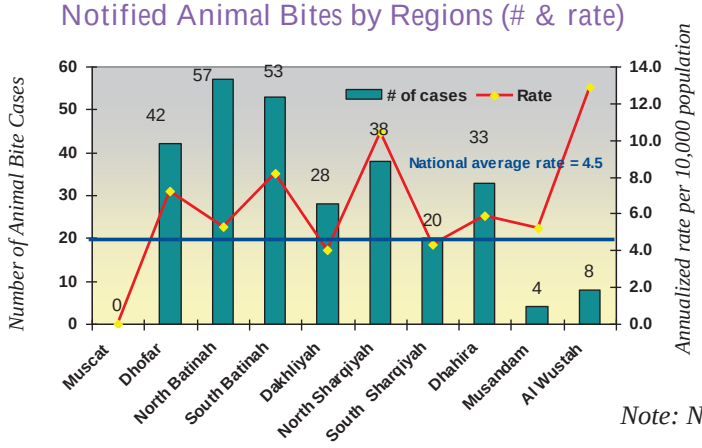
Note:

- *The quarterly data are 'provisional' & should be scrutinized & verified by the focal point of communicable diseases (Epidemiologist) at the provincial level. The data would be finalized after receiving feedback . Similarly the Group C data should also be carefully checked & verified for accuracy ensuring that the case definitions are strictly followed .*
- **Cholera local case- . Atypical*
- *Tuberculosis, Leprosy & HIV [AIDS] data are for nationals only.*
- *Unspecified cases of acute viral hepatitis are due to shortage of diagnostic kits and would be subsequently tested in the next quarter.*
- *(i) = imported case.*

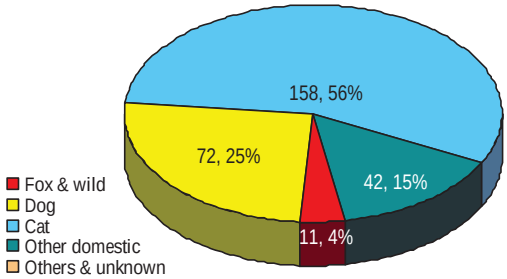
Animal Bite Surveillance Data

Third Quarter (July to September 2006)

Notified Animal Bites by Regions (# & rate)



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



Note: No data on animal bites from Muscat Governorate.

Your opinion matters to us:
Any suggestions to improve upon the contents & the design of this Newsletter will always be gratefully received.

Your contribution is valuable to us:
Please write to us concerning your ideas & experiences, both good & bad, sharing them with a wider audience could benefit others, leading to new ideas, techniques & policies & helping to avoid struggling with problems others have already solved.

Editorial Board

Sultanate of Oman
Ministry of Health

Directorate General of Health Affairs
Phone: + (968) 24600808
Fax: + (968) 24696099
E-mail: dg-ha@moh.gov.om

MoH-HQ, PO Box 393, PC 113, MUSCAT
http://www.moh.gov.om

Direct all your comments & queries to...

Department of Communicable Disease Surveillance & Control
Phone: + (968) 24601921, 24607524
Fax: + (968) 24601832
E-mail: awadymoh@omantel.net.om

Back issues of the Newsletters in PDF format are posted at...
http://www.emro.who.int/emrinfo/CountryProfiles-oma-news.htm

This quarterly Newsletter is published by Directorate General of Health Affairs, Ministry of Health, Oman