

Report on Newborn Screening in Oman

Dr. Surendra Nath Joshi
Sr. Consultant, IEM & Child Health
Sultan Qaboos University Hospital, Muscat, Oman

Strengthening Newborn Screening Program in Middle East & North Africa.
Morocco, November 13-15 2006

Sultanate of Oman



Demographic Data

- Population: 2.5 millions
 - Expatriate: 0.5 million
- Desert & Mountains.
 - 97% population lives in small pockets of <100 people
- Total Births (2005): 45,000
- Consanguinity:
 - All 52%
 - First degree 38%

Health services in Oman

- Good health care network
- 57 Hospitals (2 tertiary care Hospitals)
- Network of 136 Health Centers
- In 2000, WHO presented Oman as number 1 in overall health care and vaccination program.
- 99% vaccination coverage and well baby follow-up program

National Newborn Screening Program

- Still in fledgling state
- Hypothyroidism Screening: for the last 2 years
 - TSH on cord blood samples
 - Test is performed locally within the country
 - 16 cases in 2004-05 (Est. incidence 1:2750)
 - Recall and treatment is undertaken by MOH

Other Newborn screening

- Isolated, at the University Hospital:
- Sickle cell disease and G6PD screening:
 - 10 years
 - All inborn babies at University Hospital (approx. 3000/Year)
 - Cord blood sample
 - 3% SCD and 30% G6PD
 - High risk newborn screening for IEM:
 - 7 years
 - Based on certain criteria high risk babies are referred from all areas to SQUH
 - On site TMS testing
 - 38 cases have been identified out of 166 samples
 - Plan for pilot project for mass screening

Birth defects registry

- Maintained by MOH since 2003
- Most commonly reported problems are:
 - Musculoskeletal and
 - Genitourinary defects

What should we be screening?

- Hematological diseases:
 - SCD, Thalassemia, G6PD
- Metabolic diseases:
 - Phenylketonuria
 - Tyrosinemia
 - Homocystinuria
 - Isovaleric acidemia
 - 3 Keto thiolase def.
 - Galactosemia
 - Biotinidase deficiency
 - HMG CoA Lyase deficiency
 - ?MCAD
- Endocrine diseases:
 - Congenital Adrenal Hyperplasia

Barriers to Screening

- Cost of the screening and treatment
- Test can not be performed at birth
- Difficult to reach geographical location

Single helpful intervention

- Technical, Financial support and Regional collaboration

Tracking of positive cases

- Through the network of Primary Health Centers

Available resources for Genetic disease cases

- Organized IEM services and TMS at University Hospital
- Genetic disease services at University and MOH



Research in newborn screening

- Pilot project is planned for IEM screening by TMS
- To assess the whole program



Screening
Saves Life
&
Prevents
Handicap