

Strengthening Quality in Primary Health Care Delivery

Reducing Mortality Rate in Infants and Children With Heart Disease

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Problems in Developing Countries

- Limit or no access to cardiovascular surgical care due to
 - :Limit personnel and maldistribution
 - :Limit budget-high cost
 - :Too many health problems
- Early death
- High infant mortality

Heart Diseases in Infants and Children

Congenital heart disease is most common cause of heart disease in infants and children

Represent over 90%.of heart diseases in infants and children

Over 95 percent are unpreventable

Most common congenital anomalies causing death in infant

Incidence of Congenital Heart Disease

- One percent of live born infant
- The most common serious birth defect
- Almost all of the defects are correctable
- 25% may not survive first year of life
- 25% who died in the first week before the diagnosis was made (Kuehl et al, Ped, 1999)
- 10% of infants with CHD who died in the first year did not have a diagnosis made before death.

Thailand

- Total population 65 million
- Birth rate 13.4 per 1000
- Total live born infant 800,000 per year
- Infant mortality year 2005, 20.48:1000
- Parents may not report to the authorities if infant died within 15 days after birth
- Death from congenital heart disease, 14% of infant death

Thailand(1991-92) Ramathibodi Hospital

- CHD screening from birth to one year
- Incidence of CHD 8:1000
- Detected within the first week 52%
- 1-4 weeks 31 %
- 1-6 months 11%
- Over 6 months 2%
- 25 percents died within the age of one year

Cases Demonstration

Case 1

- Infant born at a university hospital
- Age 2 weeks arrived in emergency room and needed resuscitation
- Admitted, on ventilator for one week
- Death: Autopsy there is a hypertrophy RV
- Final diagnosis :Co-arctation of aorta
- Careful physical exam. or pulse oxymetry will help in early diagnosis and treatment

Case2

- Infant full term, birth weight 3 Kg.
- Age one month, seen by a local health officer because of poor weight gain
- Age 2 months developed pneumonia admitted to local hospital and transferred to a regional hospital on ventilator for one month
- Age 3 months, weigh 3 Kg, diagnosed as a large ventricular septal defect, was sent for surgical repair
- If local nurse or public health personnel learn how to listen heart murmur, early diagnosis and treatment could be done early
- Congenital heart disease is a major risk factors causing death in infant with pneumonia

Case 3

- A 7 years old primary school child was diagnosed as a congenital heart disease and was referred to a heart center in Bangkok but loss to follow up. She had recurrent bronchitis and pneumonia and shortness of breath
- A trained nurse practitioner found her on a school heart survey and sent her for surgery
- Too many appointments and long surgical list is the reason for her dropout.

How to reduce mortality of infants and children with CHD?

- Early detection
- Early treatment
- Critical CHD that are more likely to be missed in the NB are those that had low oxygen saturation in the lower limbs.
- Pulse oxymeter is helpful
- How to achieve greater efficiency from existing resources?

How to reduce mortality from CHD in infants and children, Thailand experience

- Training program for community nurses and health officers for early detection
- Mobile and extended pediatric cardiac clinic to the rural and urban communities
- Increase the number of cardiac surgery to reduce the surgical waiting list by supporting the surgical team to do weekend or evening surgery

Sukhothai Project(2002)

- Training program for community nurses and health officers(70 persons)
- Lecture and demonstration
- Evaluation 90% passed ,passing score 70%
- Screened primary school children 51,201
- Suspected cases 461
- Number after local M.D. screening 188
- Confirmed cases of heart disease by pediatric cardiologists and echocardiogram 66,prevalence 1.19:1000
- Incidence of CHD 1.1:1000,Rheumatic 0.09:1000

Sukhothai Project

Among CHD 39/61 (64%) are known cases, 22(36%) new cases .

Of 22 new cases, 59% need surgery
65% of total CHD detected, needed surgery











Mobile and Extended Pediatric Cardiac Clinic

- Started in 1993
- Number of trips over 83
- Number of children seen over 5000
- Number with heart disease 70 percents
- Over 90 percents are CHD
- Number needed surgery 60 percents

The Benefits of Mobile Pediatric Cardiac Clinic

- Reduce the cost of traveling, lodging
- 50% of the cases can be followed by local physicians
- Increase local MD. skill
- Early referral, early surgery or intervention
- Created networking and partnership among, government, private, community and NGO















Weekend Cardiac Surgery

- Started in 2003
- With the objective of reducing surgical waiting list
- Only elective and less complicated cases were done
- 17 public and 4 private hospitals
- Over 6000 cases were operated with a mortality less than 2 %
- Represented 40 % of all cardiac surgery in infants and children

Thailand

- Number of infants born with CHD 8,000
- Number of CHD who need surgery 4,000
- Number of regular cardiac surgery 2,500
- Number of week end surgery 1,370

The Organizations Involve

- The Cardiac Children Foundation of Thailand Under the Royal Patronage
- National Health Security Office
- Government and private hospitals
- Ministry of Public Health

