Neonatal Screening Models: Australia & Hong Kong

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Australia

- 20 million population spread over an area just slightly smaller than USA
- Health care system organized mainly on a 6 state and 2 territory basis
UNHS in Australia: Queensland

• Queensland Hearing Health Program targets UNHS from 6/2006. $A22 million provided by state for set-up costs.

• Based on the principles of
  No new screening workforce
  Integrated into everyday business
  Nurse screeners
  Hospital based + Flying Doctor Service + Indigenous Health Care Workers
Queensland UNHS

- Queensland will use a two stage AABR screening program
- State divided into 3 zones with a coordinator in each zone
- 50,000 births/year over an enormous area
- Anticipated problem of making UNHS truly “universal”
Western Australia UNHS

- UNHS commenced in the Perth area 2/2000
- UNHS program terminated 7/2004 and only a high-risk register approach now
- Program only funded $A350,000/year
- Used two stage screening (1) TEOAE and (2) AABR
Western Australia
UNHS

• Prevalence hearing loss in NiCU graduates 2.08/1000
• Prevalence in well-baby population 0.31/1000
• Low prevalence … program deemed “ineffective”
Victoria UNHS

- No state-wide UNHS program
- Number of smaller, regional programs
- 3 country regions use OAE: 1 x 1 stage TEOAE; 1 x 2 stage TEOAE; 1 x 2 stage DPOAE
- All at-risk register infants screened AABR
Victoria UNHS

• Melbourne hospitals $A6.8 million in 2004-2008 to initiate UNHS programs.
• Programs fragmented and using different refer criteria/methodologies
• By 2008 estimated 25% of births will have access to NHS
Northern Territory UNHS

- Trial UNHS has commenced in Darwin
- Small population and < 4,000 births/year
- Large proportion of the population is Indigenous Australian
- Very high prevalence of otitis media
- Often OME begins by 3 weeks
- OAE not appropriate; AABR program
Tasmania UNHS

- UNHS
- DPOAE screen > 2nd stage DPOAE screen > refer SSEPs
- Hospital-based program
New South Wales UNHS

• In June 2002 NSW government gave $A8 million to set up state-wide UNHS program
• Money to be spent and program started by December 2002
• AABR protocol with 2 referral pathways: Bilateral fail > 2\textsuperscript{nd} screen > bilateral fail > diagnostic audiology
  Unilateral fail > general practitioner follow-up
New South Wales UNHS

- Prevalence rate 0.8/1000 births
- 55% of “significant” h/loss cases have risk factors
- Average h/aid fitting age 3.8 months; 85% < 6 months; 96% < 12 months
- 6 cochlear implant cases with implant at 8-10 months
- 95% coverage rate
Australia UNHS summary

• Political hazards
  *Too much too soon*
  *Lack of understanding of prevalence*
• Fragmentation of services causes confusion and service delivery breakdown
• Diversity of techniques
  *Screener training*
  *Referral criteria*
  *Technical problems*
Hong Kong UNHS
Hong Kong UNHS

- 7 million population spread over an area 6x Washington, DC
- 50,000 births/year
- Health care system organized mainly on a Hong Kong wide basis by HK government agencies
- Paediatric hearing health care provided by Hospitals Authority, Maternal & Child Health Care Centres, and Education & Manpower Bureau
Hong Kong UNHS

- **Hospitals Authority**: 2 pilot studies of UNHS using (1) two stage, in-patient AABR procedures and (2) three stage DPOAE [1 in-patient screen; 2 outpatient screens]; High program uptake 99.3%

- **MCH**: pilot study of 4,000 babies, 1-3 months, 3.8% screen-refer rate but only 72% program uptake
Hong Kong UNHS

- What agency to screen? In a hospital-based study 20% mothers preferred MCH – ease of access
- What agency to screen? Hospital before discharge or Hospital as outpatients at routine 1 month follow-up or MCH Clinic at 1-2 months?
- Cultural factors? Babies remain at home 1 month after birth
Hong Kong UNHS

• Which procedure in which HA regions? OAE or AABR? Still unresolved
• Liaison between HA and MCH and EMB still needs further planning
• Lack of government commitment to UNHS