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SINGAPORE NEONATAL RESUSCITATION COURSE (SNRC) – JOURNEY TO A NATIONAL PROGRAMME & THE ROAD AHEAD

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Neonatal Resuscitation Training

Importance

- 15% of term infants at birth require some resuscitative support¹
 - 10% respond to drying & stimulation
 - 3% after positive pressure ventilation
 - 2% require intubation
 - 0.1% require chest compressions &/or medications
- Neonatal deaths due to birth asphyxia²
 - Globally - 22%
 - Southeast Asia - 20%
- Crucial to ensure trained healthcare providers are present at each delivery

History

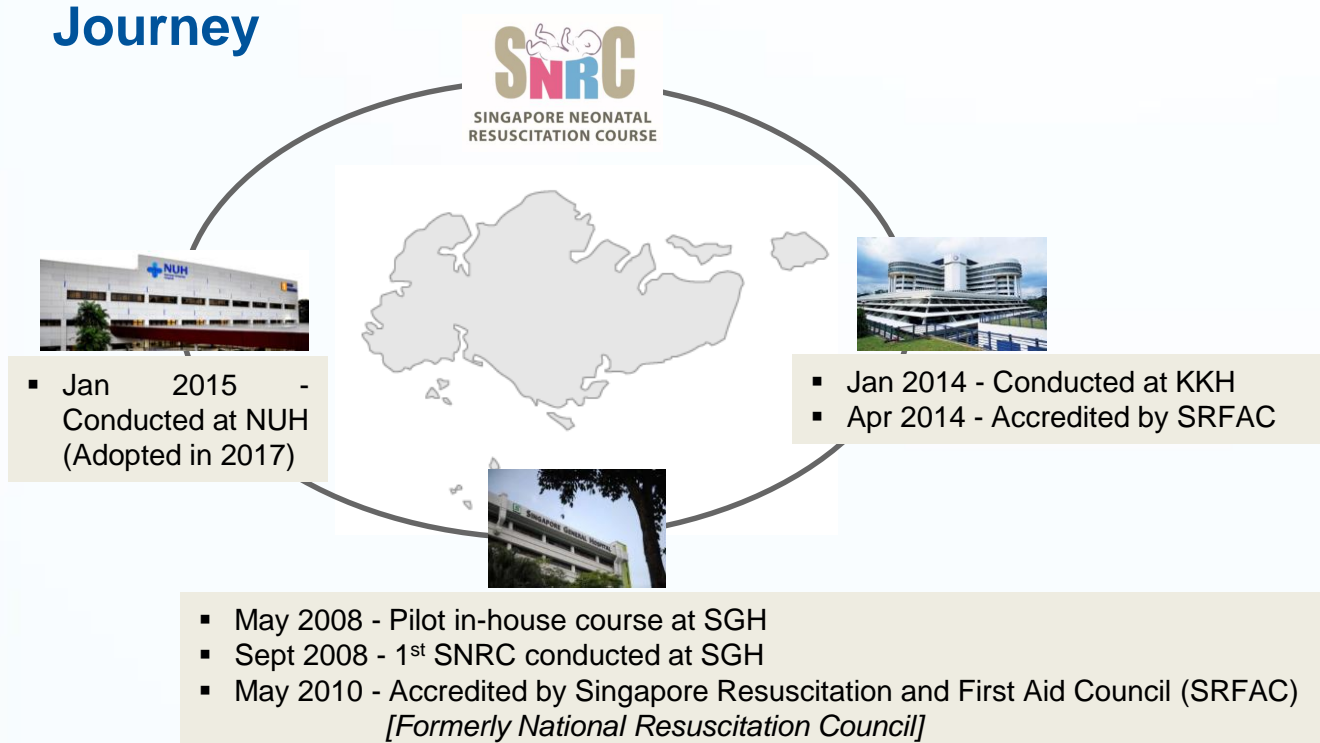
- Standardised basic & advanced national resuscitation training programmes for adults & children were established in Singapore in the 1980s & 1990s
 - Basic Cardiac Life Support (BCLS): 1983, SGH (1st structured course in cardiopulmonary resuscitation)
 - Advanced Cardiac Life Support (ACLS): 1985, SGH
 - Advanced Paediatric Life Support (APLS): 1995, SGH [Formerly Advanced Resuscitation in Children (ARC)]
- Traditionally, neonatal resuscitation training was provided in isolation at the individual neonatal units of the 3 restructured hospitals (KKH, NUH, SGH) & the private institutions Sessions were often
 - Targeted for rotating junior medical staff
 - Ad-hoc for nursing staff
 - Variable across institutions but generally encompassing didactic lectures, practical skills training, varying exposure to simulation, use of low fidelity manikins

Journey to a National Programme

Aim

- To extend beyond serving the training needs of in-house medical & nursing staff
- To have a qualified individual equipped with the basic resuscitation skills at every delivery & a qualified team for advanced resuscitation
- To teach updated, evidence-based approach of newborn resuscitation to staff who care for newly born infants

Journey



Challenges

- Each of the centres faced similar challenges to develop & sustain the programme
- Lack of funding - for manikins, equipment, sponsorship of staff training
 - Insufficient manpower - lack of instructors, intensive preparation needs
 - Resource limitations - space, appropriate rooms, need to develop standardised learning & training materials
 - Time constraints - instructors lack dedicated time, balance duration of course with sufficient training time, meet re-training needs

Several initiatives & factors helped to overcome these challenges

- Donations of old manikins & equipment
- Funding from various stakeholders
- Simulation centres providing expert technical & logistic support
- Introduction of an online learning module (Oct 2013) - allowed more time for on-site training
- Strong support from senior neonatologists
- Dedicated administrative support
- Support from hospital administration & senior management for funding high fidelity manikins
- Advocacy to obtain sponsorship for staff training
- Committed instructors
- Gradual increase in instructor numbers

Current Status

- At all the 3 centres
- Common national neonatal resuscitation guidelines collaboratively developed are used³
 - Provider & Recertification courses are conducted regularly throughout the year with certification valid for 2 years & mutual recognition of training at the different centres
 - Blended learning
 - Participants complete a common online learning module & pass an online quiz prior to attending the on-site course
 - On-site course is focussed on
 - Practical & integrated skills training including crisis resource management
 - Simulation-based learning using simulator manikins in an immersive environment & video-assisted debrief
 - Participant feedback is obtained at each course & reviewed regularly

Over time, the programme has become self-sustaining & provided for

- Acquisition of more manikins & equipment
- Growth of active instructor pool to include 34 physicians, 22 nurses & 3 respiratory therapists
- Instructor training (local & overseas)
- Updating & development of standardised educational materials
- Innovative re-training initiatives

Since inception, 1695 healthcare providers, from local & overseas centres, have been trained

The Road Ahead

- Collective collaboration & shared vision of neonatal healthcare workers across institutions in Singapore have contributed to the successful development of a national neonatal resuscitation training programme
- Ongoing & future initiatives include
 - Focus on improving re-training as well as knowledge & skills maintenance
 - Enhancing educational materials
 - Addition of a formal assessment component
 - Research & educational collaborations
- These initiatives will allow SNRC to continue to contribute to improving training in neonatal resuscitation



*Current Instructors (Previous instructors):-

- KKH: Abdul A, Anand AJ, Batilando MJP, Chang ASM, Fadhillah N, Fernandez RM, Geetha O, Goh A, Hartini, Hooi YZR, Jayagobi AP, Jitendrakumar VS, Khurana S, Kong JY, Lim BL, Maniaul RO, Osman SB, Prakash PR, Rajammal, Salvee T, See YY, Tan PL, Visrusthan NK, Yeo KT, Yip WY
- NUH: Aurora P, Bonus S, Capistrano A, Chandrasekharan P, Chinnadurai A, Jasm M, Kalaimathy V, Khairani N, Krishnamoorthy N, Lee SY, Othman R, Rahman S, Ramchand BR, Wang X
- SGH: Arunachalam S, Baral V, Bharadwaj S, Chan DKL, Edison PE, Ereno IL, Foo SJ, Ibrahim M, Ker EHP, Khong KC, Lai HL, Lian WB, Liew PS, Mohamed Saini NS, Neo AH, Ho LY, Poon WB, Ngeow AJH, Tagamolila VC, Tan MG, Seto DLK, Shah VA, Siew YM, Tay YY, Yatiman SZ, Yeo KC

Acknowledgments:-

KKH - KK Hospital Simulation Centre; NUH - Centre for Healthcare Simulation, Yong Loo Lin School of Medicine, National University of Singapore; SGH - SingHealth Duke-NUS Institute of Medical Simulation, SGH Postgraduate Medical Institute

References:-

- Neonatal Resuscitation: 2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations. *Circulation* 2015;132(16 Suppl 1):S204-41
- Global, regional, and national causes of child mortality in 2008: a systematic analysis. *Lancet* 2010;375(9730):1969-87
- Yeo CL, Biswas A, Ee TT, Chinnadurai A, Baral VR, Chang AS, Ereno IL, Ho S, Poon WB, Shah VA, Quek BH. Singapore Neonatal Resuscitation Guidelines 2016. *SMJ* 2017; 58(7):391-403

ORGANISER



SECRETARIAT

