

# RESUS4KIDS: Using Innovative e-learning & Simulation to Teach Interdisciplinary Paediatric Life Support to Healthcare Rescuers

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- Phase 2 (Sept 2010 – June 2011) project team – Kathryn Green, Kelly Dart, Melinda Simpson-Collins
- Phase 3 (Current) project team - Anne Sivell, Natalie Law, Jessica Hennessy, Danielle Boss, Cassandra Styles, Anna Pascoe, Luke Marks, Margaret Allwood, Kathryn McGarvey
- Phase 1, 2 and 3 Steering Committees
- New South Wales Child Health Network Clinical Nurse Consultants
- **RESUS4KIDS instructors (the enthusiastic experts) and their managers**
- Funding for all 3 stages of the project has been provided by NSW Health

# Presentation Outline

- Is e-Learning the answer?
- National Safety & Quality Health Service Standards
- Overview of the RESUS4KIDS Program
- RESUS4KIDS in the rural setting
- RESUS4KIDS Testimonial videos

# Alison's Story



# Paediatric Resuscitation

- Required competency of healthcare workers is the **recognition** and **response** of a paediatric collapse
- Staff may **lack the knowledge and clinical skills** to respond to these rare events due to a lack of paediatric nursing experience or infrequent paediatric presentations
- The responsibility for being trained in paediatric cardiopulmonary resuscitation rests both with the **employer** and the **employee**

# Is e-Learning the answer?

- Cost effective
- Flexibly accessed
- Self – paced
- Interactive
- Improves ability, knowledge & confidence in delivering paediatric life support
- Improves time to rhythm recognition & first defibrillation

# Paediatric resuscitation training: Is e-Learning the answer? A before and after pilot study (JPCH 2011)

- Resuscitation e-learning module improved participant's **ability** to perform BLS by 51% & ALS by 65%
- 97% of participants agreed or strongly agreed that the e-learning module had improved their **knowledge**
- 92% of participants agreed or strongly agreed that the e-learning module had improved their **confidence**



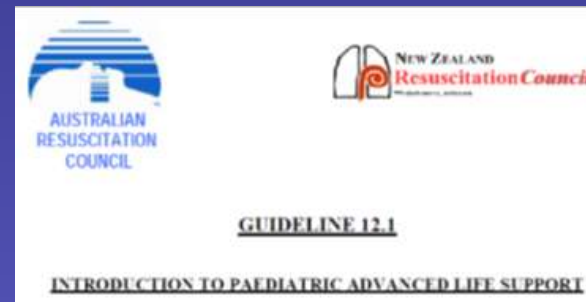
# Guideline

Guideline: The Australian Resuscitation Council (ARC)

Guideline 12: **Paediatric Advanced Life Support**

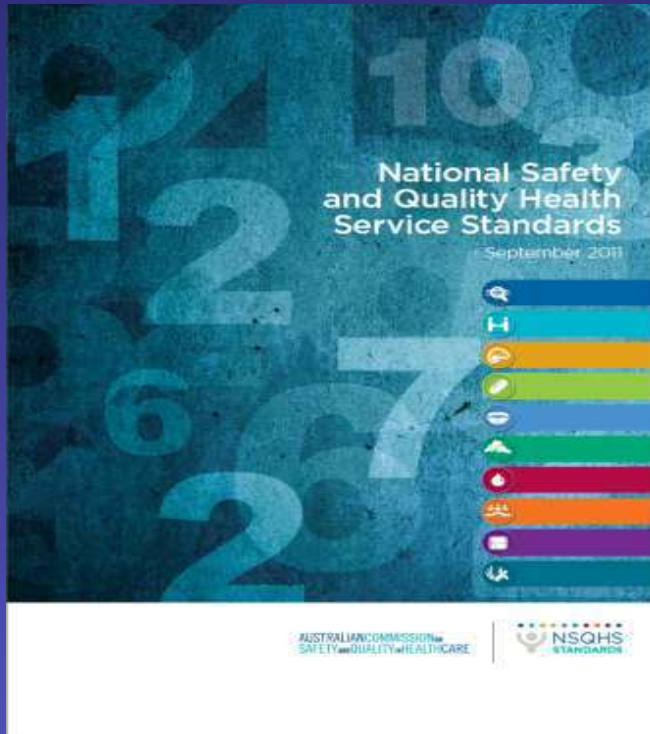
**Advance life Support:** resuscitation with the aid of equipment and drugs to restore and maintain airway, breathing and circulation to infants and children in a hospital or other environment where cardiopulmonary arrest may be encountered.

Guideline 12.1 ARC 2010





# National Safety & Quality Health Services Standards



- 10 standards
- Primary aims of the standards are to protect the public from harm and to improve quality of health service provision



# RESUS4KIDS

- Satisfies the ARC 2010 guideline 12.1
- Fulfils NSQHS Standards 9.6.1 :-

“All clinicians must be capable of implementing basic life support measures while awaiting emergency assistance. Poor-quality resuscitation has been reported both in and out of hospital. If internal training is not available there are many external training agencies who offer certification in basic life support skills”.

# RESUS4KIDS

- Also incorporates the further statement in NSQHS standard 9.6.1 :-
- “Improving non-technical skills such as leadership, teamwork, task management and structured communication is also recommended to help improve patient care and the performance of resuscitation providers. Simulation training can assist in improving both technical and non-technical skill, which may help to improve patient survival and reduce potential for error”.

# RESUS4KIDS

- Focusing on the first **10 minutes** of a paediatric collapse
- Non-mandatory training; however Resus4kids or a similar program, is a pre-requisite for DETECT Junior and Paediatric Sepsis education
- **Free** to all NSW Health employees
- Delivered in two components: an **e-learning** module followed by a **short practical course** which is taught using low fidelity simulation by local trainers
- Includes human factors or crisis resource management training



# THE RESUS4KIDS PROGRAM

## Mandatory e-Learning (90 minutes)

### Learning objectives:

- Respond to an emergency involving a child or infant using the seven steps in the DRSABCD Paediatric Life Support for Healthcare Rescuers model
- Understand the techniques required to provide effective rescue breaths and cardiac compressions
- Respond to a choking child
- Apply a range of advanced airway/life support devices including: self inflating bag and mask, nasopharyngeal airway and oropharyngeal airway
- Correctly identify the three main cardiac arrest rhythms
- Follow advanced life support procedures using defibrillation and drugs

## Optional e-Learning (90 minutes)

- Intraosseous access  
To understand the theory of how to establish intraosseous access to the circulatory system in order to administer drugs and fluids
- 4Hs and 4Ts  
To extend learners knowledge from the RESUS4KIDS e-learning in relation to the reversible causes of paediatric arrest
- Abnormal cardiac rhythms
  - stable bradycardia
  - unstable bradycardia
  - sinus tachycardia
  - supraventricular tachycardia
  - ventricular tachycardia

## The Short Practical Course (90 minutes)

### Human factors training (30 minutes)

#### Learning objectives:

- Displaying and using names wherever possible
- Recognising a team leader
- Team member participation
- Allocating and accepting roles
- Concise, clear communication, closed loop communication

### Pause and discuss scenario based teaching (60 minutes)

#### Learning objectives

- Manage an infant's/ child's airway
- Perform effective breathing
- Demonstrate effective cardiac compressions
- Recognition and initial management of shockable/ non shockable cardiac rhythms
- Demonstrate a knowledge of safe defibrillation

## Train the Trainer Course (90 minutes)

To enable educators to teach the Short practical course  
Facilitated by a Super Trainer

## Super Trainer Course (60 minutes)

To enable RESUS4KIDS trainers to teach the Train the Trainer course  
Facilitated by a Chief Trainer

## Train the Trainer e-Learning refresher Course (30 minutes)

Optional e-Learning module for trainers to refresh course content and specific learning objectives prior to teaching a short practical course

## RESUS4KIDS Instructor Development day (8 hours)

A simulation centre based course for RESUS4KIDS Trainers and Super Trainers who have taught at least three short practical courses

- Learning objectives:
- Understand the educational basis and structure of the short practical course
  - Be familiar with the content of the new train the trainer course
  - Update paediatric resuscitation skills
  - Be able to deliver the short practical course to a variety of participants, including those with challenging behaviours

# RESUS4KIDS e-Learning



**EStats** NSW HEALTH

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**Paediatric Life Support for Healthcare Rescuers Menu**

Welcome to the RESUS4KIDS Paediatric Life Support for Healthcare Rescuers e-learning program. It is the intention of RESUS4KIDS that Health Care Workers complete this program before attending the practical course. Please select a lesson from the list below.

Introduction	Completed on - 11/01/2012
Pre-Course Test	Completed on - 12/01/2011
Paediatric Life Support	Completed on - 12/01/2011
Cardiac Compression Techniques	Completed on - 12/01/2011
The Choking Child	Completed on - 02/05/2012
Advanced Airway Support	Completed on - 01/05/2011
Advanced Cardiac Support	Completed on - 24/05/2011
Cardiac Arrest Rhythms	Completed on - 12/01/2011
Shockable Rhythms - Pulseless VT & VF	Completed on - 24/05/2011
Non-shockable Rhythms - Asystole & PEA	Completed on - 24/05/2011
Reversible Causes	Completed on - 24/05/2011
Post-Course Test	Completed on - 20/01/2011

The remaining advanced lessons are optional

**Advanced - Intraosseous Access**  
Advanced - Intraosseous Access - Test

**Advanced - The 4 Hs and 4 Ts**  
Advanced - The 4 Hs and 4 Ts - Test

**Advanced - Abnormal Cardiac Rhythms**  
Advanced - Abnormal Cardiac Rhythms - Test

- Essential pre-learning
- New knowledge
- Revise Knowledge
- Simple skill practice
- Interactivity
- Knowledge test
- Optional lessons
  - EZ-IO Drill
  - 4Hs and 4Ts
  - Abnormal rhythms
  - Tracheostomy emergencies
- Train the Trainer e-Learning

# Paediatric Life Support for Healthcare Rescuers Paediatric Life Support



## Open Airway

Infants (less than 1 year old) and children (1 to 14) have very different airways compared to adults.

It is particularly important to remember that tilting an infant's head back, as you would in an adult or older child, will actually close the infant's airway.



➤ Move the arrow up and down the bar to see how a slight head tilt of an infants head can affect the airway.

When you are ready to move on, click Next.

Step 15 of 34

[Back](#) [Topics](#) [Menu](#) [Help](#) [Next](#)



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NSW Child  
Health Networks

Paediatric Life Support for Healthcare Rescuers  
**Paediatric Life Support**



**Open Airway**



**D**  
**R**  
**S**

Open Airway

**B**  
**C**  
**D**

▶ When you finish watching the video you can review it again by clicking the Play button on the video controls.

When you are ready to move on, click Next.

Back Topics Menu Help Next

Step 17 of 34



# Further e-Learning

Train the Trainer module

Tracheostomy emergencies

Intubation and Laryngeal mask airway



# The Short Practical Course

- Two Components
  - Team work and communication (30minutes)
  - Pause and discuss scenario based teaching (60 minutes)



# Team work and Communication

- Recognisable Team Leader
- Use names
- Use concise, clear communication
- Allocate & accept roles
- Anticipate & plan
- Situational awareness

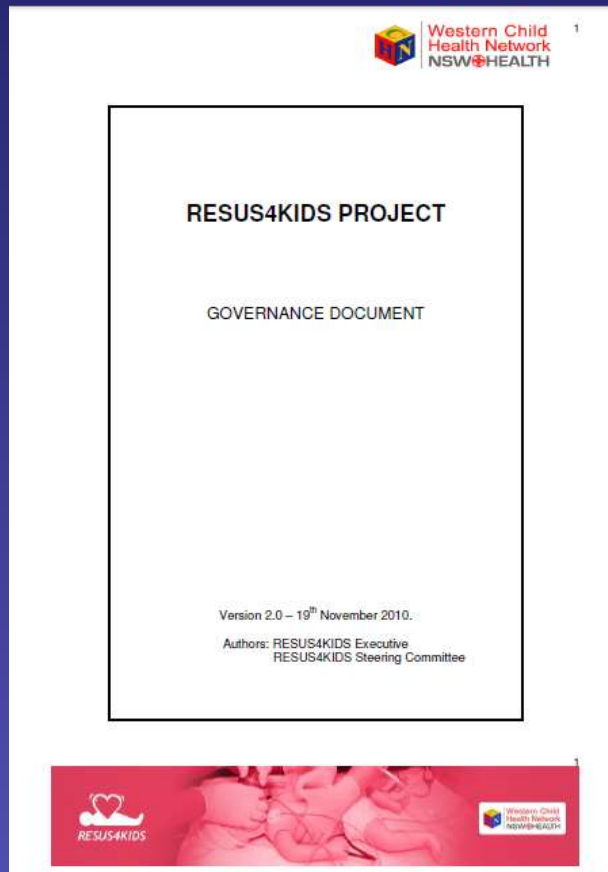


# Pause and Discuss



- Round the Table Teaching ensures all participants can perform DRSABCD according to their work environment & escalation system; whether MET call or CERS Assist.

# Governance



- Participant course
- Train the trainer course
- Super trainer course
- RESUS4KIDS Instructor Development Day

# Barriers

- Knowing who to engage
- Releasing staff for courses
- Competition with 'mandated' courses
- Model for sustainability

# Facilities that have implemented RESUS4KIDS

- All Local Health Districts in New South Wales
- New South Wales Ambulance Service
- Sunshine Coast Hospital and Health Service, Queensland
- Metro South Hospital and Health Service, Queensland
- The Women's and Children's Hospital, South Australia
- University of Newcastle – Undergraduate Medicine and Nursing
- University of Sydney – Undergraduate Medicine and Nursing

# RESULTS

As of July 2013

- 15,812 e-Learning
- 8,500 Short Practical Course
- 801 RESUS4KIDS Instructors
- 43 Super Trainers

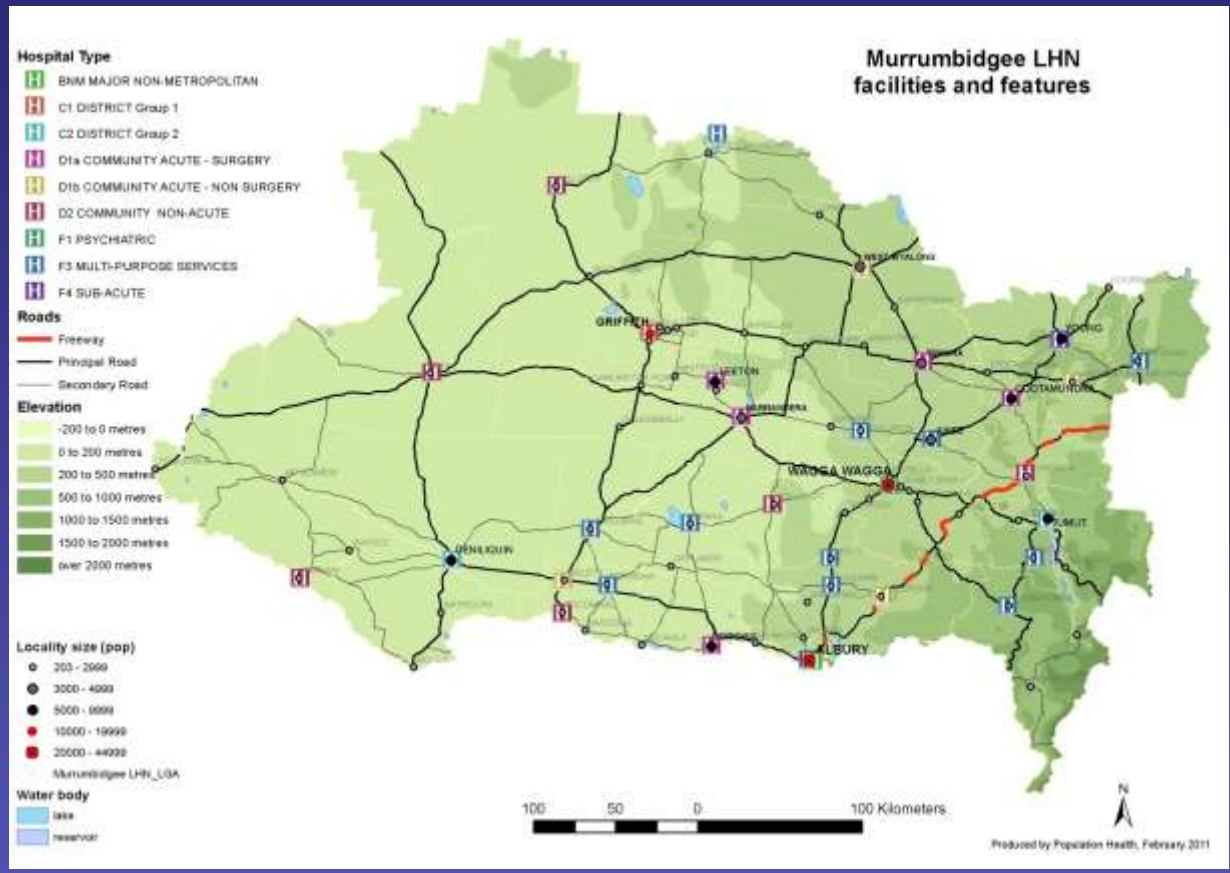




# Rural & Regional NSW Local Health Districts



# Murrumbidgee Local Health District



# Combined Local Health Network's



# Geography

*166,000 sq. kilometres*

*32 Public Hospitals*

*2 Affiliated Private Hospitals*

*13 Multi Purpose Services*

*62 Community Health Centres*



# Murrumbidgee Local Health District RESUS4KIDS Educators

- Since 2011 Lesley Jeffries, Paediatric CNC, has educated over 500 people, out of 900. Includes RNs, ENs, AINs and medical staff.
- There are 16 RESUS4KIDS trainers in MLHD, 3 CNCs, 2 MOs cover WWHS, Riverina, Border and MIA areas
- Program educator for last 6 months



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# MLHD R4K Implementation

- Trainers have been selected their paediatric qualifications and experience
- Trainers preceptored until ready to go solo
- Barriers to training



- Northern NSW  
Local Health District  
( 25,000 square kilometres)

### Facilities:-

- 13 public hospitals
- 1 multi-purpose centre
- 20 community health centres



# Implementation

- Support from the NNSW Between The Flags & Safe Clinical Handover Implementation Committee
- Support from NNSW Paediatric CNC
- Facility based training
- Develop local training programs
- Medical engagement across the LHD





# RESUS4KIDS Trainers

- 1 RESUS4KIDS Program Officer/Educator
- 29 Registered Nurses
- 8 Medical Officers
- 1 Ambulance Paramedic



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# Barriers to becoming an active trainer

- Lack of creditability in paediatric knowledge
- Manager buy in
- Equipment resources



# The Future - Elsewhere

- RESUS4KIDS is available to other Australian jurisdictions for public health employees for minimal set up costs.
- Commercial arrangements for private healthcare facilities and overseas institutions

# Paul's Story



# Questions ?



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For more information on RESUS4KIDS  
please visit our website

[www.resus4kids.com.au](http://www.resus4kids.com.au)

Or email

[resus4kids@chw.edu.au](mailto:resus4kids@chw.edu.au)



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