Disability specific CPR and basic life support

A LITERATURE REVIEW, WHAT IS CURRENTLY AVAILABLE TO GUIDE PRACTICE AND EDUCATION?
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Disability is defined by the International Classification of Functioning and Health (ICF) as being an ‘umbrella term for impairments, activity limitations and participation restrictions.

18% of Australians – 5.7% with severe or profound limitation

4.4% of people with a disability use a wheelchair

ARC guidelines

- BLS for general population - 39
- ALS for Adults - 12
- ALS for Paediatrics - 7
- ALS for neonates - 10
- Acute Coronary Syndromes - 5

‘What information is currently available to guide people in performing BLS for individuals with atypical chest shape or for those in wheelchairs?’

(ANZCOR 2017, Clayton & Ellis 2015)
Searches conducted

1. Resuscitation Council guidelines
2. Hospital protocols, policies and guidelines
3. Databases for previous research
Resuscitation Councils Searched
Australian Resuscitation Council – including members only literature
Resuscitation Council of the United Kingdom
American Heart Association
International Liaison Committee on Resuscitation
European Resuscitation Council
Heart and Stroke Foundation of Canada
Resuscitation Council of South Africa
Resuscitation Council of Asia
Resuscitation Council of New Zealand
Hospitals Searched
Mayo Clinic - USA
Cleveland Clinic - USA
Singapore General Hospital - Singapore
Charite Hospital – Berlin
John Hopkins Medicine - USA
Massachusetts General Hospital – USA
Toronto General Hospital – Canada
University of Tokyo Hospital – Japan
Lausanne University Hospital – Switzerland
Sheba Medical Centre – Israel

Children’s Hospitals Searched
St Jude’s Children’s Research Hospital – USA
St Louis Children’s Hospital – USA
Monroe Carell Jn. Children’s Hospital – USA
Birmingham Women’s and Children – UK
Benioff Children’s Hospital – USA
Royal Children’s Hospital – Australia
National Centre for Child Health and Development – Japan
Dana-Dwek Children’s Hospital – Israel
The Royal Belfast Hospital – Northern Island
Hospital for Sick Kids – Canada

(Miller 2019) (Stone 2016)
<table>
<thead>
<tr>
<th>Author/year</th>
<th>Country</th>
<th>Type: document or study</th>
<th>Focus or sample*</th>
<th>Level of evidence</th>
<th>Relevant findings</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Pitcher</td>
<td>United Kingdom</td>
<td>Guideline</td>
<td>Working group of 12 experts on manual handling</td>
<td>Level 5 Expert Opinion</td>
<td>Guidance for safer manual handling during CPR including removal of patient from chair to floor</td>
<td>No provisions for complex wheelchair or atypical chest shape</td>
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<tr>
<td>S. Cash and A. Shinnick-Pages</td>
<td>United Kingdom</td>
<td>Discussion paper</td>
<td>Expert opinion of 2 clinical skills lecturers</td>
<td>Level 5 Expert consensus</td>
<td>Discovered lack of guidelines to provide BLS to people with profound disabilities. Authors identified key areas for extension of learning, including locating sternum and correct place for compressions. Authors query the possibility of seated CPR similar to that used by airline staff. Authors propose extending additional BLS from the current Learning Disability Nursing students to all nursing student streams.</td>
<td>Authors where seeking input from colleagues regarding appropriateness of discussion points and further teaching.</td>
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<tr>
<td>A. Page and S. Cash</td>
<td>United Kingdom</td>
<td>Symposium report</td>
<td>Symposium and opinion from colleagues, numbers attending not stated</td>
<td>Level 5 Expert consensus</td>
<td>Continuing lack of guidelines. High level of fear amongst health care staff when presented with scenarios involving patients with profound disabilities.</td>
<td>Identification that introduction of specific BLS and CPR could reduce mortality.</td>
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<tr>
<td>G. Sharittief P. Hostetter P. Silva</td>
<td>United States of America</td>
<td>Pilot Study</td>
<td>Eighteen Foster parents of medically fragile children. Inclusion criteria: FFT, DD, CP, seizures, asthma and ventilator dependence</td>
<td>Level 2 pre-test-post-test control group study.</td>
<td>Importance of foster parents of medically fragile children to have individual CPR and Foreign body removal (FBR) lessons. Foster parents were taught standard CPR and FBR skills, all parents had current BLS certification. Confidence levels were self-rated.</td>
<td>FBR demonstration for children ≤ 1 year was most difficult prior to intervention. Teaching was applied 4 times in real life situation post intervention.</td>
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<td>L. Knight S. Wilch A. Nicols V. Arnold A. Schroeder</td>
<td>United States of America</td>
<td>Observational study</td>
<td>Families of 117 high risk children. Inclusion criteria: prem, neonates with apnoea or BC, solid organ transplant recipients, CHA, CHF, CM, life-threatening arrhythmias, patient’s recovering from cardiac surgery and patients with O2, ventilator, or tracheostomy</td>
<td>Level 3 Observational study without a control group</td>
<td>The provision of the CPR Anytime Kit™ to family’s with medically fragile children improved their retention of CPR knowledge, skills, comfort and confidence Of the families participating 53% had previously undertaken CPR training.</td>
<td>The author’s definition of medically fragile did not include disabled</td>
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</table>

*FFT = Failure to thrive, DD = Developmental delay, CP = Cerebral Palsy, Prem = premature birth (< 37 weeks), BC = bradycardia, CHA = cyanotic heart disease, CHF = congestive heart failure, CM = cardiomyopathy O2 = Oxygen

(The Joanna Briggs Institute Levels of Evidence and Grades of Recommendation Working Party 2013)
Why do we need more research? What will it change?

(Fletcher et al. 2012)
Evidence in the literature of the need for improved guidelines.

- Ombudsmen reports
- Avoidable deaths in disability
- Not a localised issue

(Barbour 2007; Barnes 2018; Griffiths-Cook 2016; Mencap 2007)
The honours research

- Mixed methods pre test post test study
- Discussion and scenarios during BLS and CPR classes
- Determine if there is a relationship between increased education and confidence
- Initial data has been collected
- Six month follow up has commenced
What are we doing so far?

- Embedded specific training into our standard First Aid and CPR classes
- Provided students with practical scenarios and equipment to test techniques on
- Using CPR Cubes /Randy / CPR Meter to give students feedback and a chance to test the techniques
Where to from here........

Just because it does not exist does not mean that it can not

More research, more experimentation, more trials, more exposure, more work!
REFERENCES:


