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Australian Resuscitation Outcomes Consortium

Cabrini

# Incorporating cardiopulmonary resuscitation training into a cardiac rehabilitation program: A feasibility study


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GROUP OF EIGHT AUSTRALIA

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# Why CPR training for cardiac patients and families?

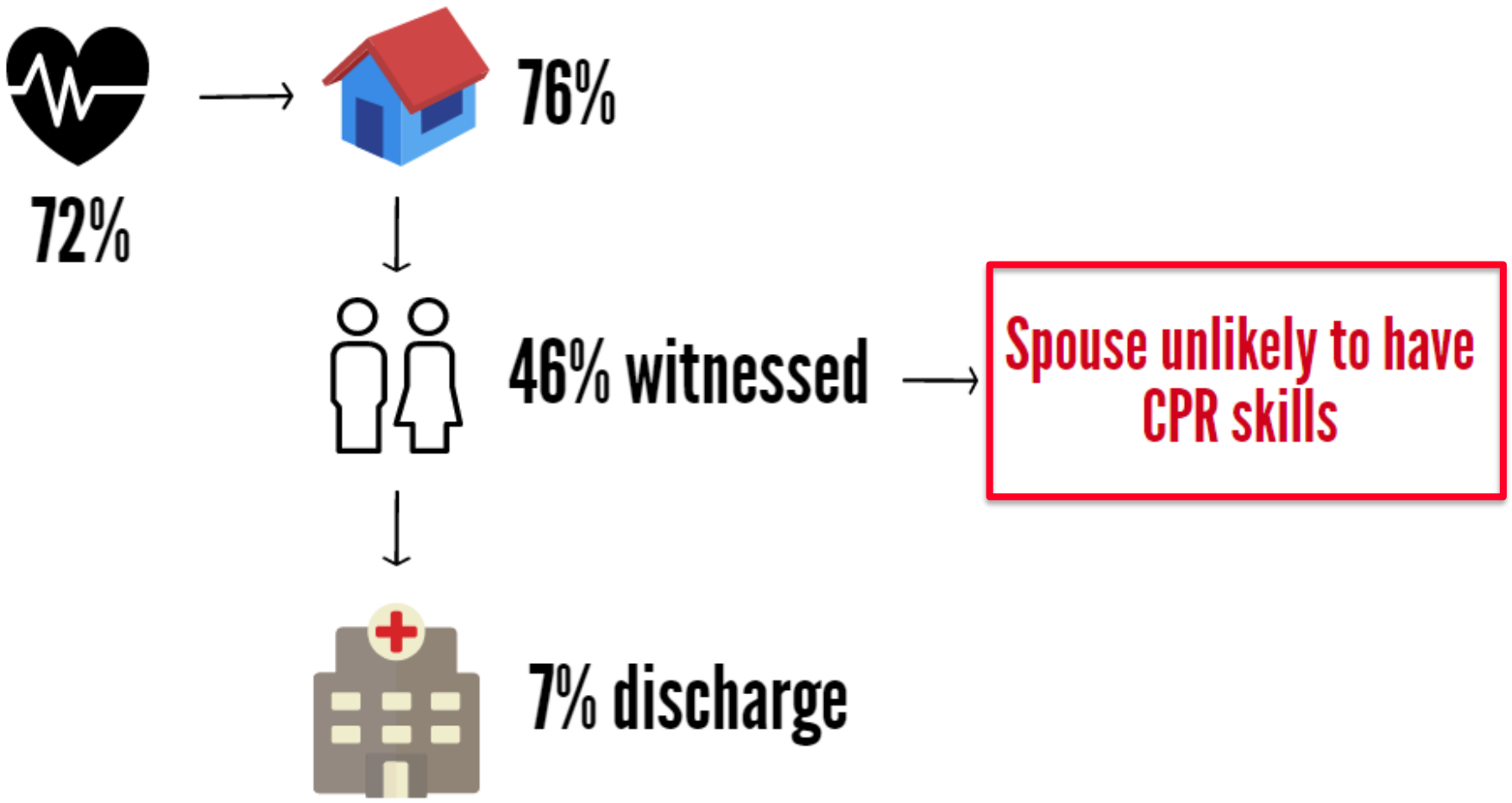
- Cardiac patients are a high-risk population
  - Cardiac aetiology most common underlying cause of cardiac arrest
  - Cardiac patients are at 7 x higher risk of cardiac arrest
  - 76% of cardiac arrests occur in the home



Ambulance Victoria, Victorian Cardiac Arrest Registry Annual Report
Rea, Pearce, Raghunathan et al. 2004. Am J of Cardiology. 93(12):1455-60

# Chain of Survival

# Out of hospital cardiac arrest

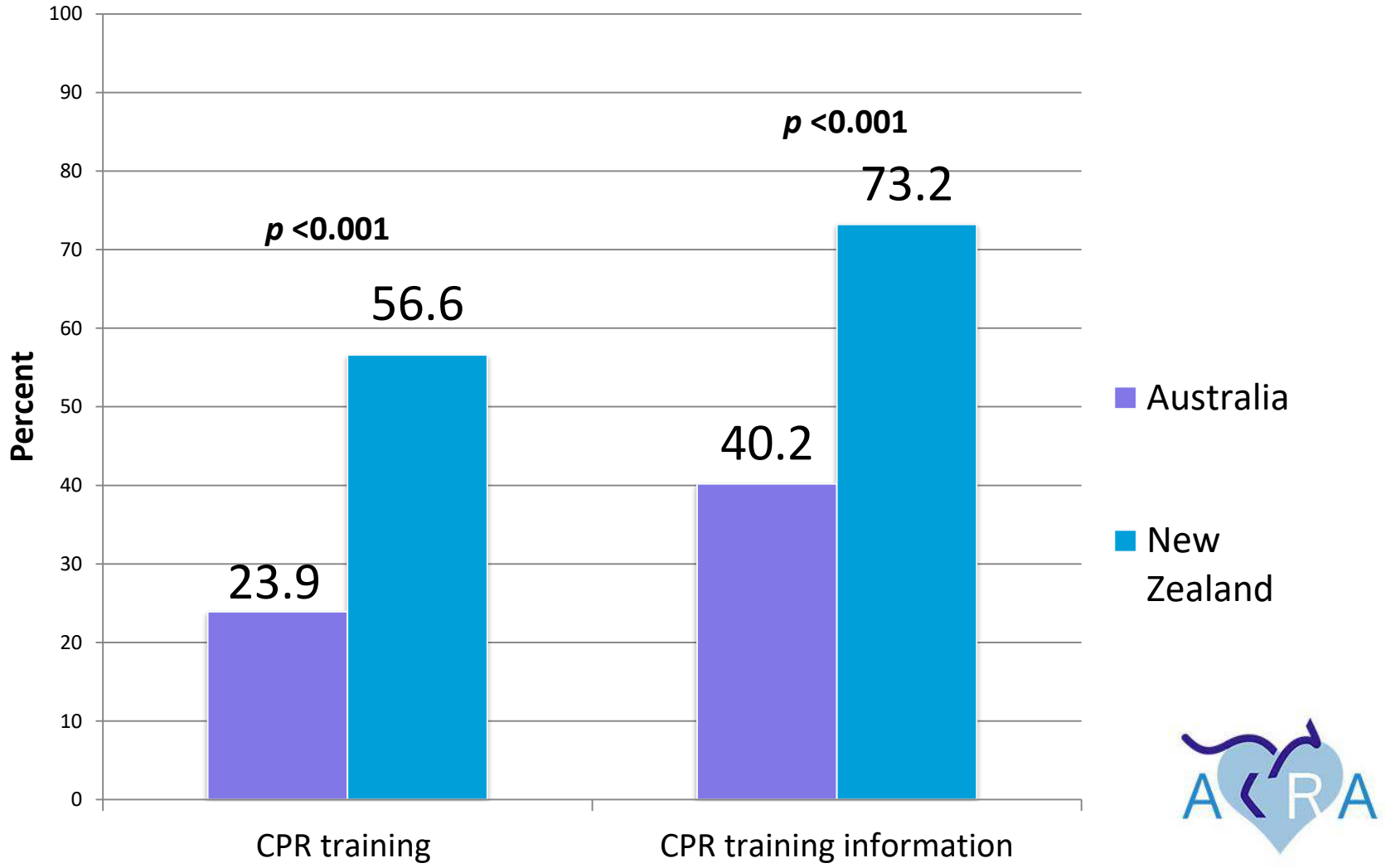



Ambulance Victoria, 2017

# Historically

- Targeted CPR training research pioneered by Dracup & Moser (USA) over 30 years ago
  - Patients accepting of CPR training
  - Capable and willing to use CPR skills
  - Does not increase anxiety
- Environments previously tested for targeted training:
  - Inpatients
  - Outpatients
  - Community
- No research OR targeted CPR training programs in Australia

# Currently: CPR training in cardiac rehabilitation



# Aim & Methods

To determine if cardiac rehabilitation is a feasible environment for CPR training to patients and family members

- Uptake of training
- Confidence and willingness
- Skills
- Rate of secondary training

Methods

- Single centre, prospective pre-test, post-test study
- Data collected pre-training, post-training and one month

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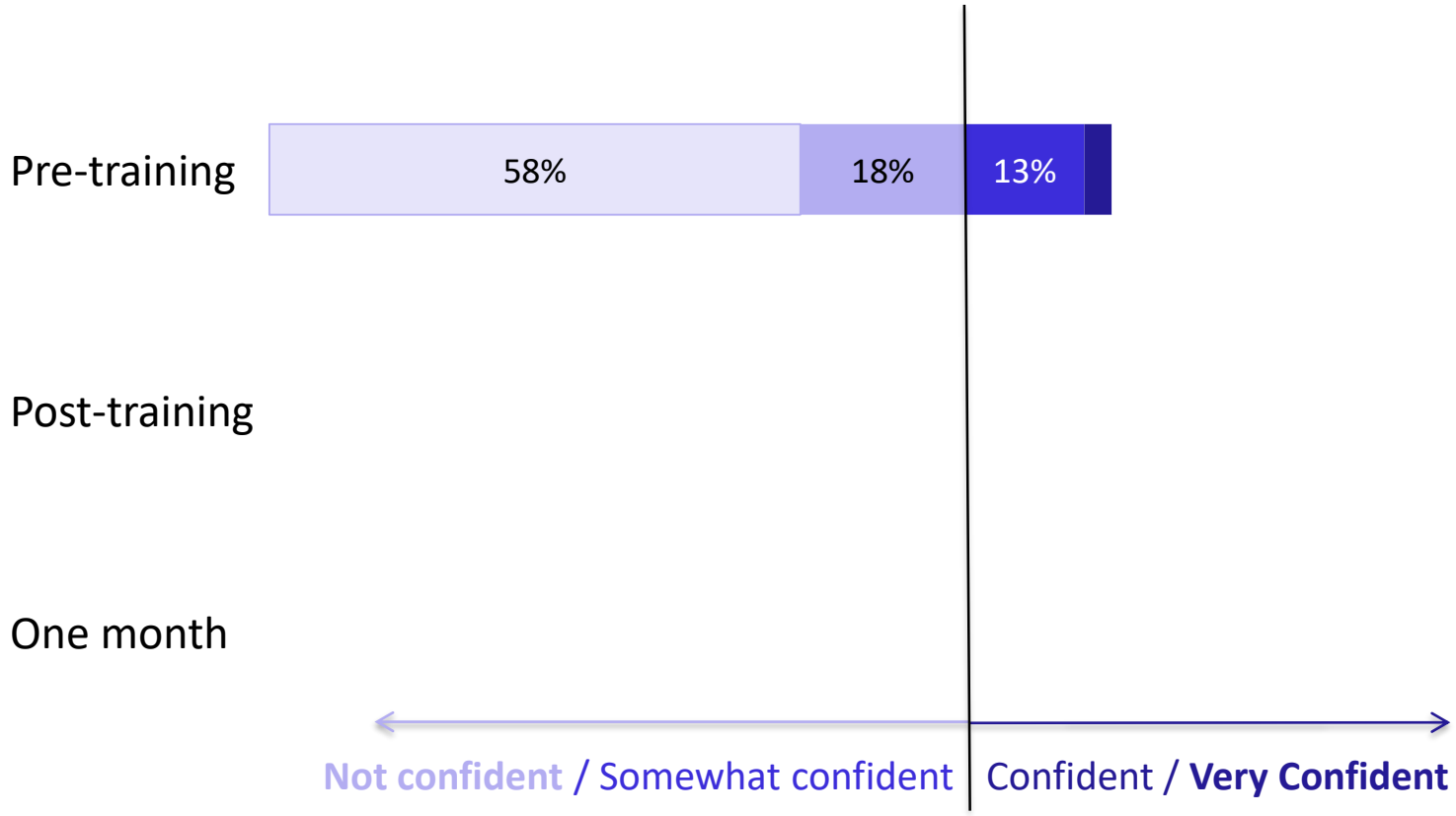
# Self instructional video training


# Results: Demographics

| | Patients n = 56 | Spouses n = 27 | Total n = 83 |
|---|---|---|---|
| Enrolment rate | 56 (73%) | 27 | 83 |
| Male | 45 (80%) | 5 (19%) | 50 (60%) |
| Age, years (mean,SD) | 65 (10) | 65 (12) | 65 (11) |
| Previous CPR training | 24 (43%) | 14 (52%) | 38 (46%) |
| Self rated CPR knowledge: Poor/Fair | 36 (64%) | 19 (70%) | 55 (66%) |

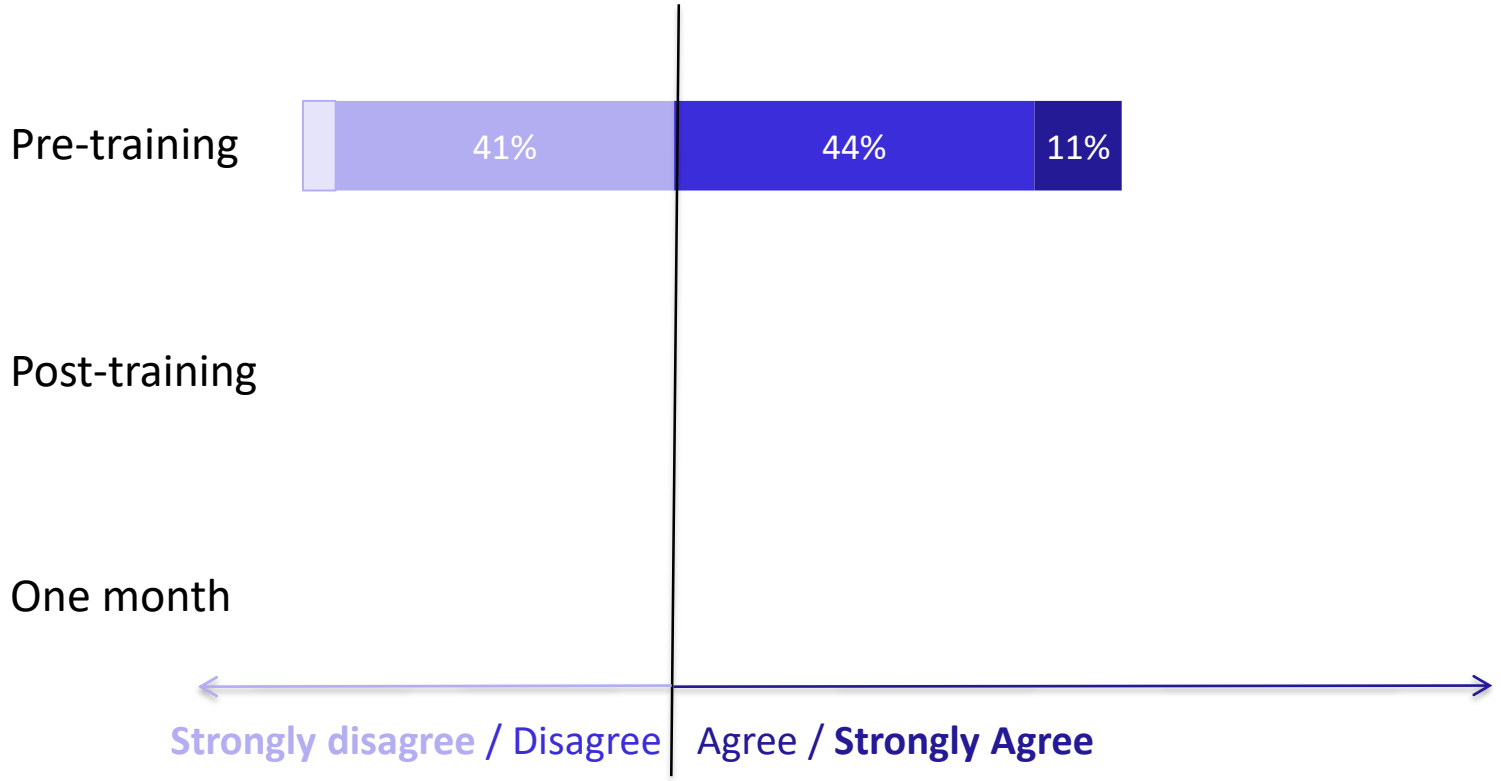
# Results: Confidence

## How **confident** do you feel to provide CPR in an emergency?



# Results: Willingness

## How **willing** are you to use CPR skills?

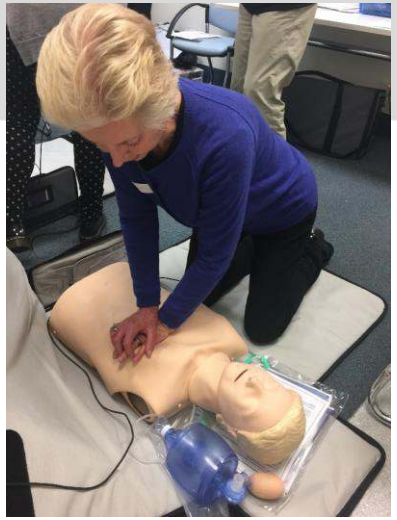


# Results: Anxiety & Depression

| Kessler 10: Anxiety & Depression scale | Total n = 80 | Patients n = 54 | Spouses n = 26 |
|---|---|---|---|
| **Pre**-training score (median, IQR) | 14 (5) | 14 (6) | 12 (4) |
| **Post** training score, one month follow up (median, IQR) | 11 (3)* | 12 (3) | 11 (3) |

**Scores <15** = low psychological distress
* $p < 0.001$

# Results: Skills



Skill reporting

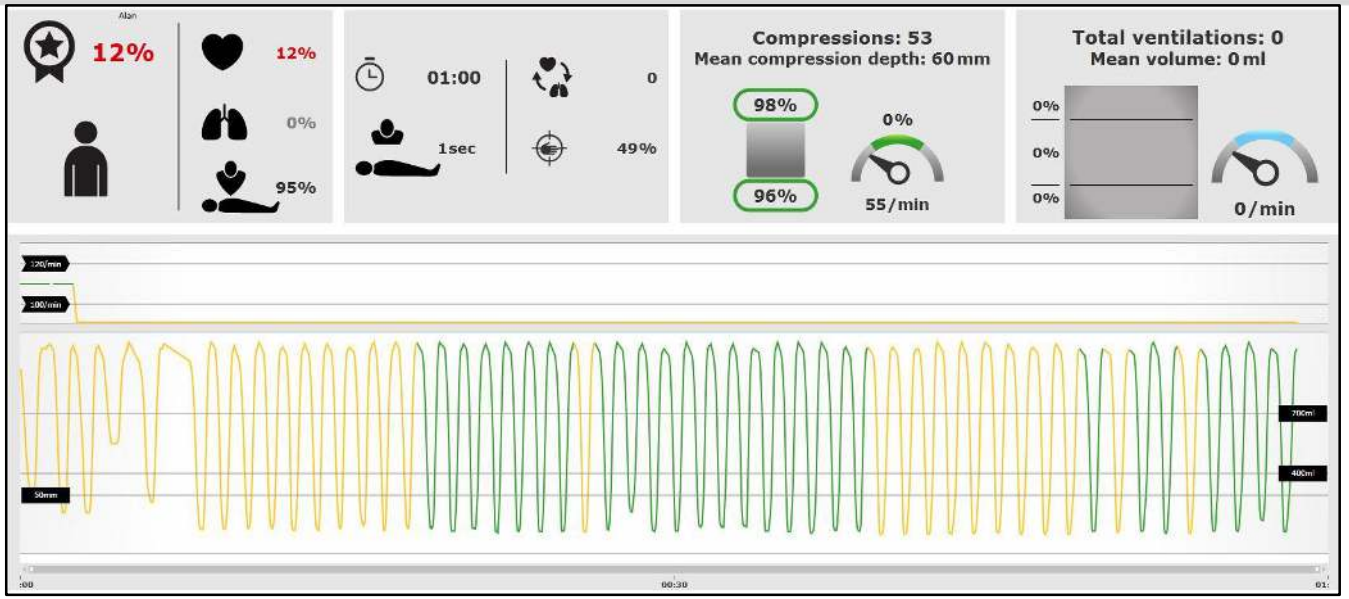
- 54% participants completed
- 1 minute, un-coached, compression only CPR

| 1st attempt | Patients n = 27 | Spouses n = 18 | Total n = 45 |
|---|---|---|---|
| Average mean rate | 110bpm | 116bpm | 112bpm |
| Average mean depth | 50mm | 45mm | 48mm |
| Correct hand position | 84% | 85% | 84% |

# Feasibility study: results

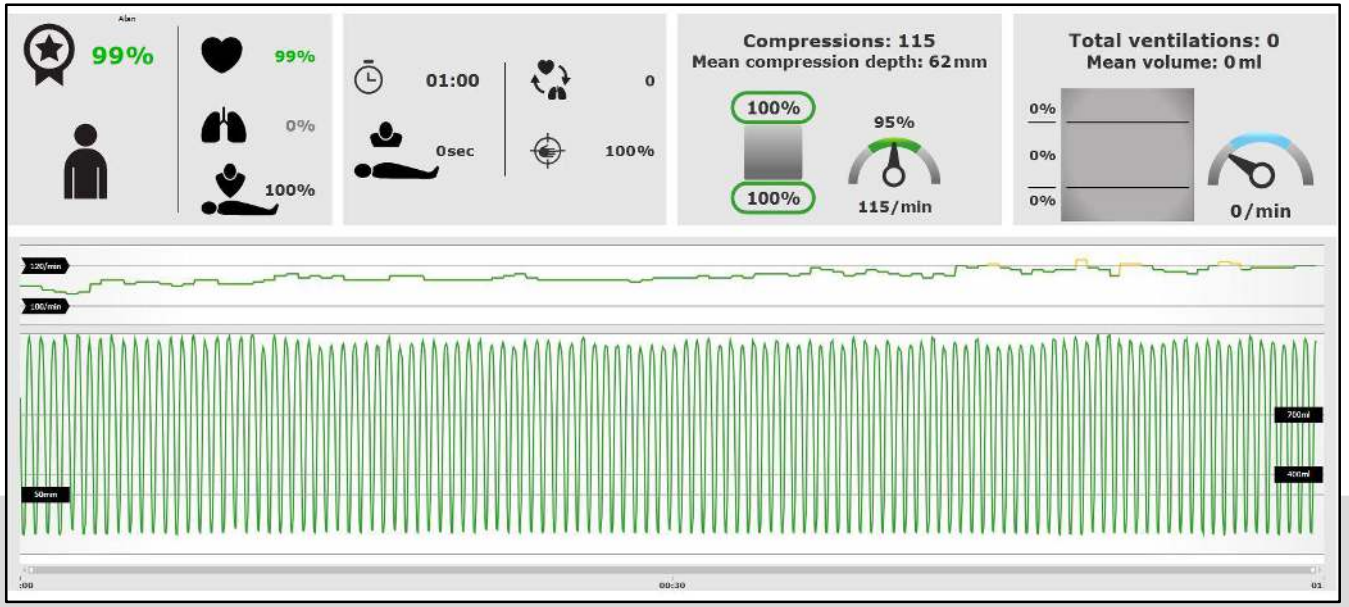
1st attempt: no coaching

12%




2nd attempt: coached

99%

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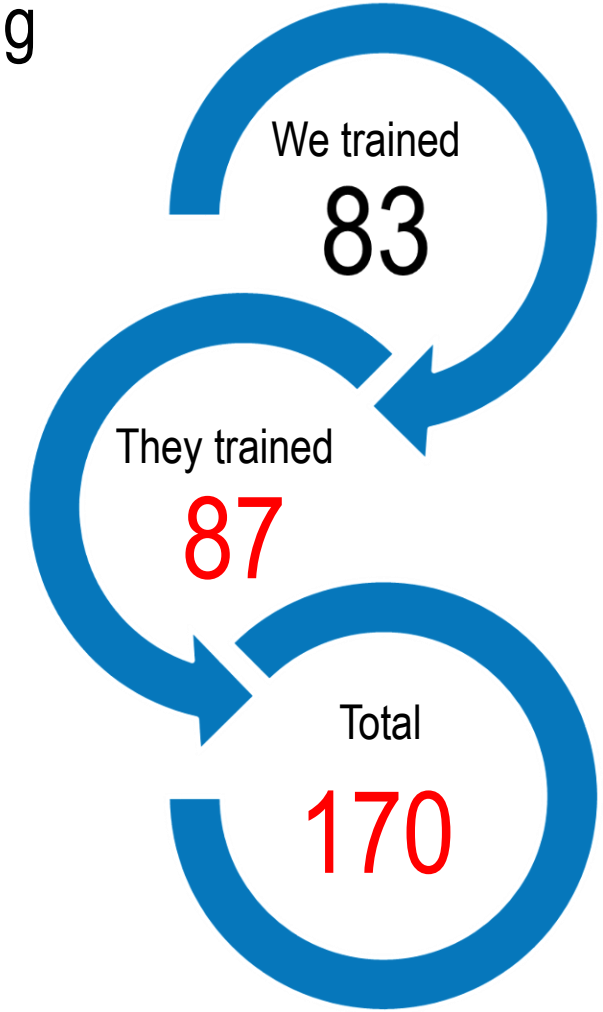
# Feasibility study: results

## Secondary training




Average: 3
Maximum: 15

## Limitations

- Feasibility study- therefore no control comparator
- One site
- Private hospital

## Future Directions:

- Multicentre, randomised controlled trial
- Victorian cardiac rehabilitation programs
- Test best method for coordinators to include CPR training

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# Conclusions

- First Australian perspective of targeted training
- First research of targeted training in cardiac rehabilitation
- Cardiac patients and their spouses are interested in CPR training
- Cardiac rehabilitation is **feasible** and an **acceptable** environment for targeted CPR training
  - Patients are interested
  - Environment is feasible
- Self-instructional video CPR training kits
  - Increases confidence and willingness
  - Skills are near guideline standard
  - Needs face to face support

MALVERN

**Pumped up to save more lives**

RESUSCITATION RESEARCH LEADING THE WAY

Life saving CPR skills

# Acknowledgements


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  - Dr Dion Stub
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    - Aus-ROC PhD Scholarship
  - Laerdal Australia: in-kind support for training kits


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Australian Government
National Health and Medical Research Council

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# Questions?

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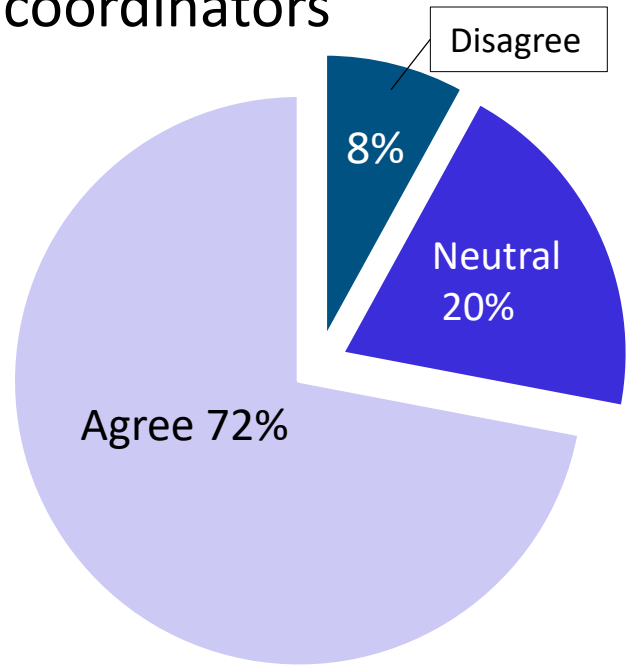
# Results: Staff responses

| | | n = 5 |
|---|---|---|
| Appropriate topic | ✓ | 100% strongly agree or agree |
| Suitable training length | ✓ | 100% strongly agree or agree |
| Suitable modality | ✓ | 100% strongly agree or agree |
| Running training: | | |
| Feel comfortable | ✓ | 75% agree |
| Feel confident | ✓ | 75% agree |

# Study 4: Cardiac rehabilitation survey

## Determine current prevalence of CPR training in cardiac rehab

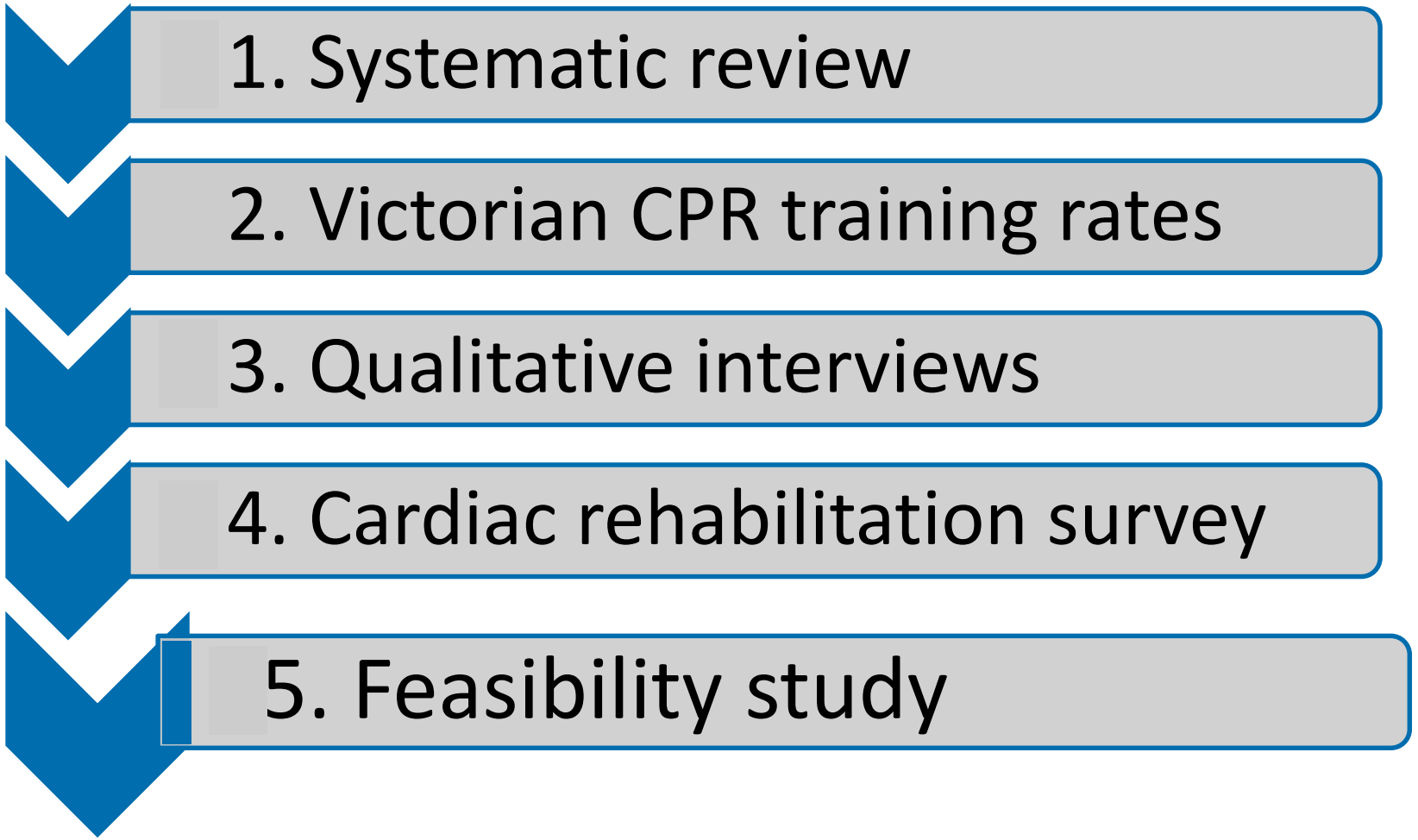
- Online national survey, cardiac rehabilitation coordinators
- 47% response rate (n = 253)
- 24% Australian programs provided some form of CPR training
- Barriers to providing CPR training:
  - Lack of resources
  - Lack of time
  - Lack of awareness



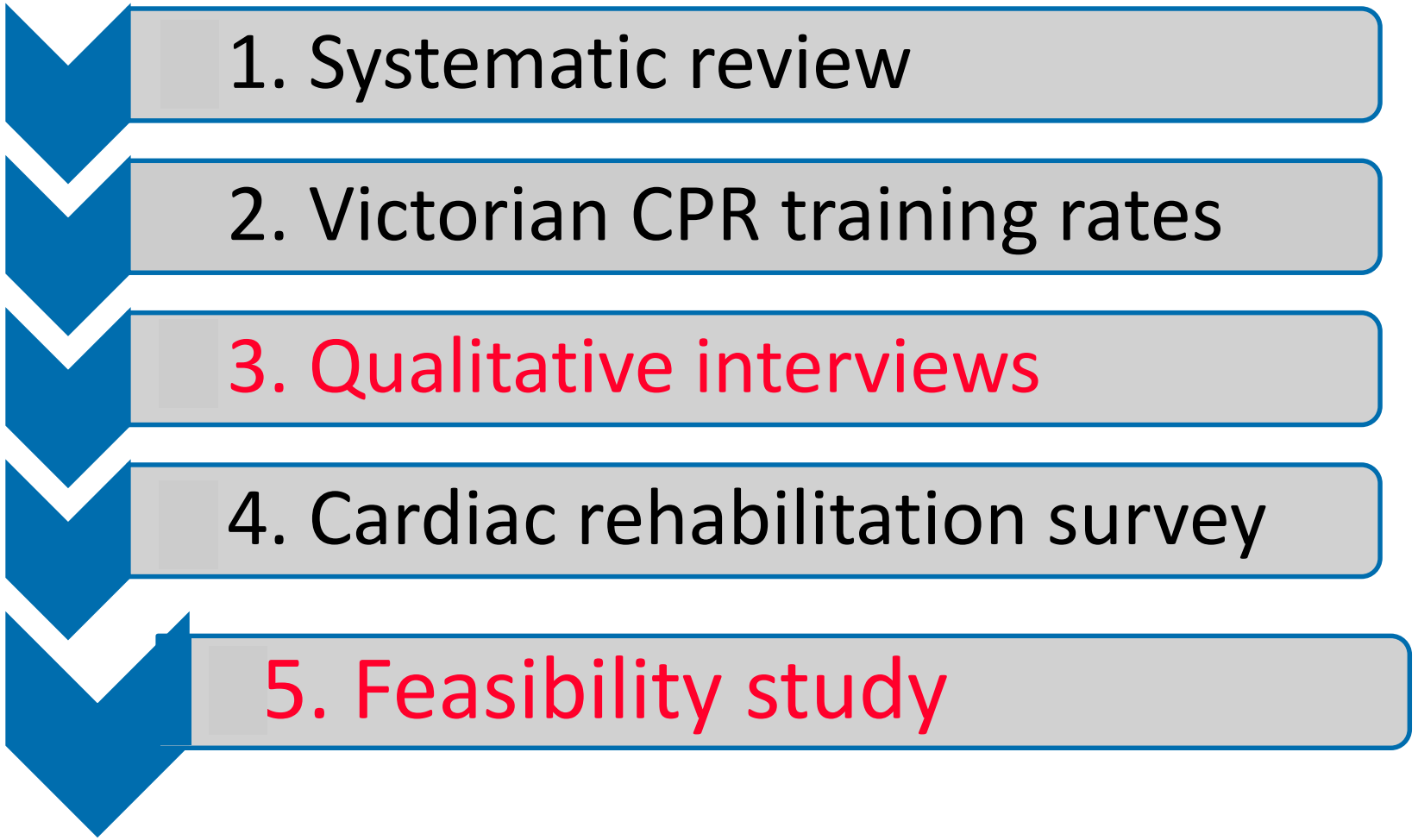

Q: CPR training should be offered as part of the rehab program

Cartledge, Bray, Stub, Krum, Finn. 2016. Heart, Lung & Circulation. 25: 607-612.

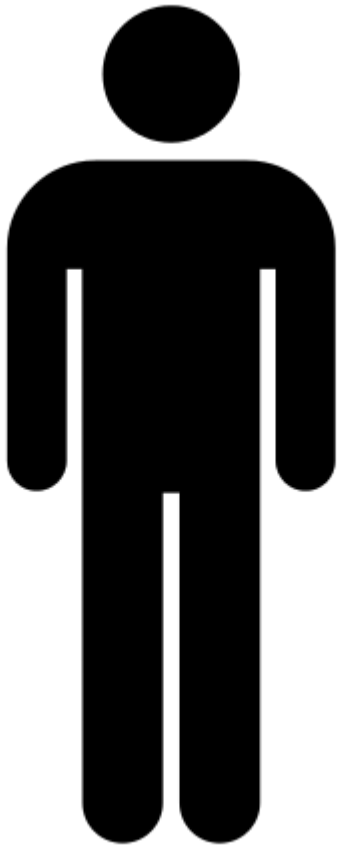
# Program of PhD research



# Program of research



# Out of hospital cardiac arrest (OHCA)



~ 30,000 cardiac arrests in Australia

66% males

Median age 68 years

75% thought to be cardiac aetiology

# Iceland!!!

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