Snapshot of cardiac rehabilitation services in NSW: Results of a pilot study using a minimum dataset.

NSW Cardiac Rehabilitation Data Sub Working Group
(NSW Cardiac Rehabilitation Working Group)

NSW CR Data Sub Working Group

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2. Heart Foundation (HF) NSW Division
3. Cardiovascular Health and Rehabilitation Association (CRA) NSW & ACT
4. Northern NSW LHD
5. Hunter New England LHD
6. Therapeutic Advisory Group (TAG) NSW
7. Mid-North Coast LHD
8. Agency for Clinical Innovation (ACI) NSW
9. University of Sydney

Background

- There is a paucity of data for CR services and associated outcomes across Australia, and in particular NSW.

- NSW CR services were required to provide monthly reports to the NSW Ministry of Health (MoH), but otherwise provided very limited information.

Background

- NHF - develop national key performance indicators for secondary prevention services and implement systems to collect standardised outcome.
  Secondary prevention of cardiovascular disease: A call to action to improve the health of Australians (2010).

- NHF - establishing uniform quality performance measures, data collection and routine reporting.
  The Heart Foundation's Cardiac Rehabilitation Advocacy Strategy - Improving the delivery of cardiac rehabilitation in Australia (2014).

- ACRA - Core Component 5: All CR services must collect a minimum set of data and report on key performance indicators to ensure and promote continuous quality improvement of services and benchmarking
  Stephen Woodruffe et al. Core Components of Cardiovascular Disease Secondary Prevention and Cardiac Rehabilitation 2014. Heart, Lung and Circulation (2015).

The quality of cardiac rehabilitation in Canada: a report of the Canadian Cardiac Rehab Registry.

Grace SL et al Can J Cardiol. 2014 Nov;30(11):1452-5.

Results: There were 5447 patient records from 11 CR programs in the CCRR. Wait times exceeded the 30-day QI target, at a median of 84 days from referral to enrolment. Assessment of QIs of blood pressure (90%) and adiposity (85%) were high, however assessment of QIs for lipids (41%), blood glucose among patients with diabetes (23%), and depression overall (13%) were low. A majority of the participants (68%) achieved the half metabolic equivalent increase in the exercise capacity QI from CR program entry to exit. Of smokers, only 61% were offered smoking cessation therapy. Thirty percent of participants were offered stress management. The CR program completion QI was met in 90% of patients.

Does the timing of cardiac rehabilitation impact fitness outcomes? An observational analysis.

Fell J, Dale V, Doherty P. Open Heart 2016;3:e000369.

Results: This was particularly pronounced in the medically managed post-MI group, median wait time 40 days. Furthermore, statistical analysis revealed that delayed CR significantly impacts fitness outcomes. For every 1-day increase in CR wait time, patients were 1% less likely to improve across all fitness-related measures ($p<0.05$).

Conclusions: With the potential for suboptimal patient outcome if starting CR is delayed, efforts should be made to identify and overcome barriers to timely CR provision.

A systematic review of cardiac rehabilitation registries

Alison Poffley[1,*], Emma Thomas[2,*], Sherry L Grace[3], Lis Neubeck[4], Robyn Gallagher[5], Josef Niebauer[6] and Adrienne O'Neil[2]

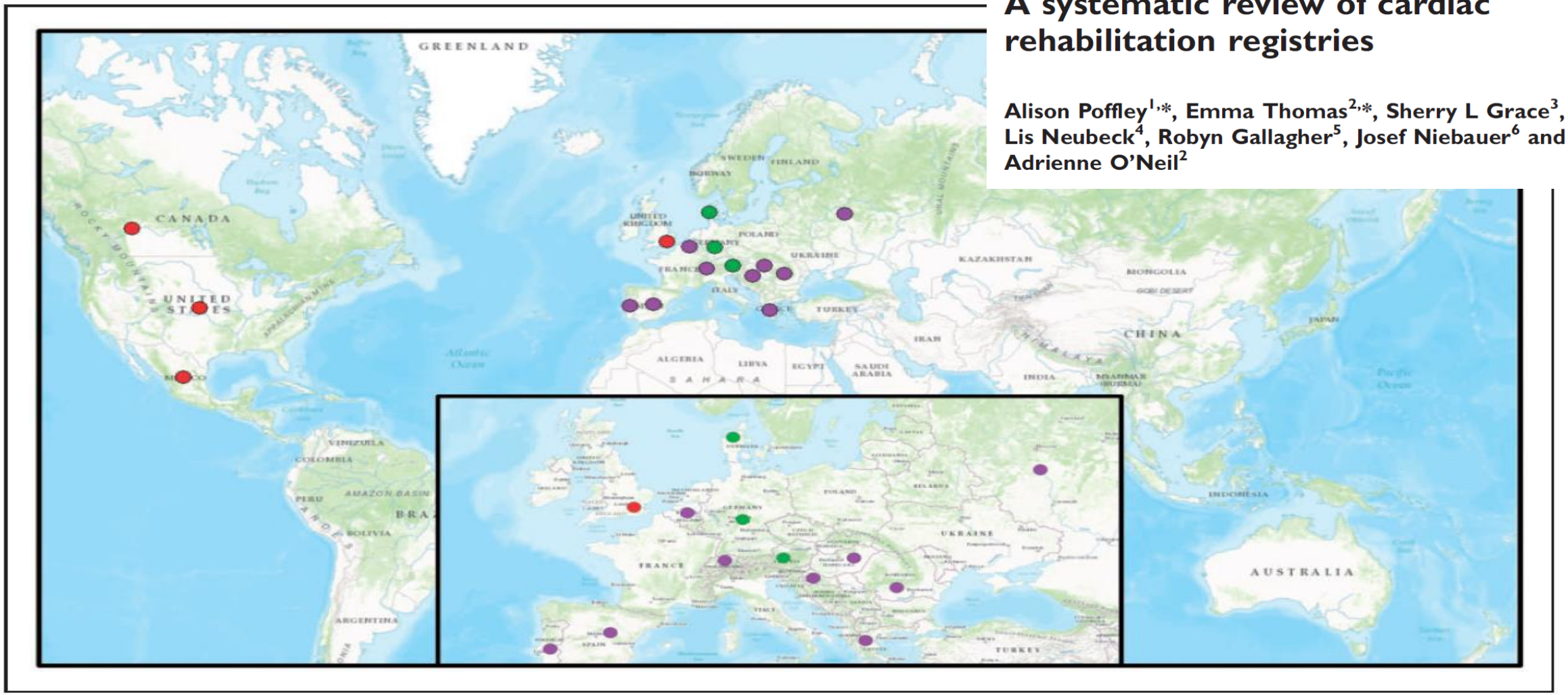

Figure 2. The location of included studies with national and international-level cardiac rehabilitation (CR) registries. Inset: Location of European CR registries. Red pin: identified national-level registries; purple pin: countries involved in the international-level EuroCaReD database; green pin: country has both a national-level CR registry and is involved in the EuroCaReD. Developed using ArcMap 10.5.

European Journal of Preventative Cardiology 2017 (in press)

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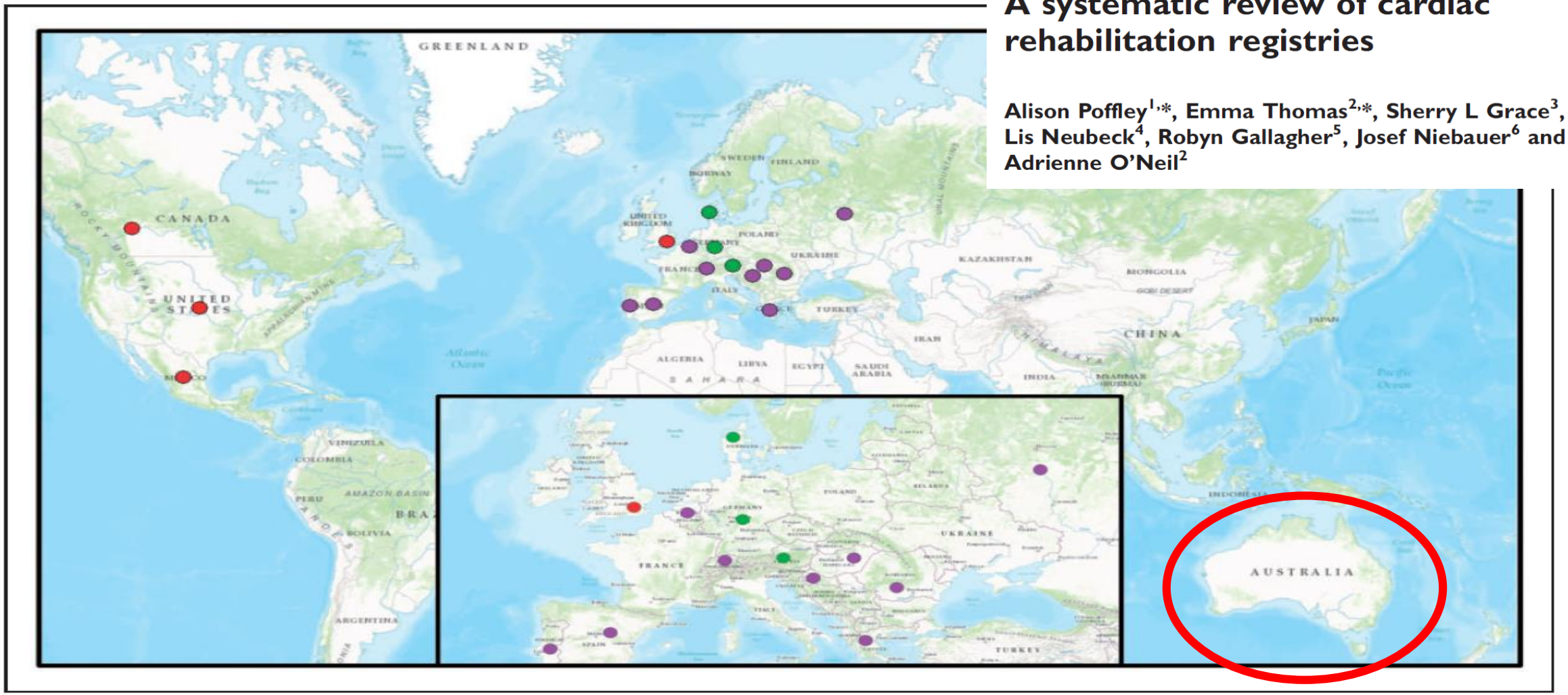

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Methodology

- NHF surveyed current CRMDS practices in NSW in May 2014.
- CRMDS Working Group was established by HF NSW, CRA NSW/ACT and ACI and used a process of review, deliberation, and consensus to formulate a minimum dataset and a supporting data dictionary.

A proposed dataset for CR in NSW should:

- Start with a small number of indicators
- Ensure an evidence-base linkage between data collection and outcomes
- Use standard definitions/develop a data dictionary
- Link data items with the following Acute Coronary Syndromes Clinical Care Standard and National Safety and Quality Standards to ensure/facilitate uptake.
- Able to compare between datasets – both national and internationally

Methodology

- A minimum dataset (MDS) of 11 quality indicators for CR services in NSW, was developed by this expert working group and piloted to assess rigour and functionality.

- The MDS and standardized electronic data sheet were piloted at 16 CR sites for 3 months (1st March – 30th May) in 2016 in NSW.

Aim

To describe the results and the lessons learnt from the pilot MDS.

Study Results

Sites (n =)	16
Total number of patients:	983
Mean Age (years) ± SD	65 ± 12
Gender	72% male
CALD/NESB	21%
Aboriginal/Torres Strait Islander	2.2%

Program Characteristics

Characteristic	%
Program type	
Comprehensive cardiac rehabilitation	77
Telephone based (2 or more calls)	14
Telephone based (1-2 calls)	2
Education session only	5
Home based (assessment and outcome)	2
Program base	
Tertiary referral hospital	60

Quality Indicator 1

Principal/referral diagnosis	%
Cardiac surgery	26
ACS NSTEMI	18
ACS STEMI	18
ACS (without infarction)	14
Elective PCI	8
CCF/cardiomyopathy	6
Arrhythmia +/- ICD/PPM	5
Interventions/complications	60
Elective/Staged PCI	21
1^{o}PCI for STEMI	16
Cardiac surgery	11
Cardiogenic shock/CCF	6
Arrhythmia	7
ICD/PPM	3

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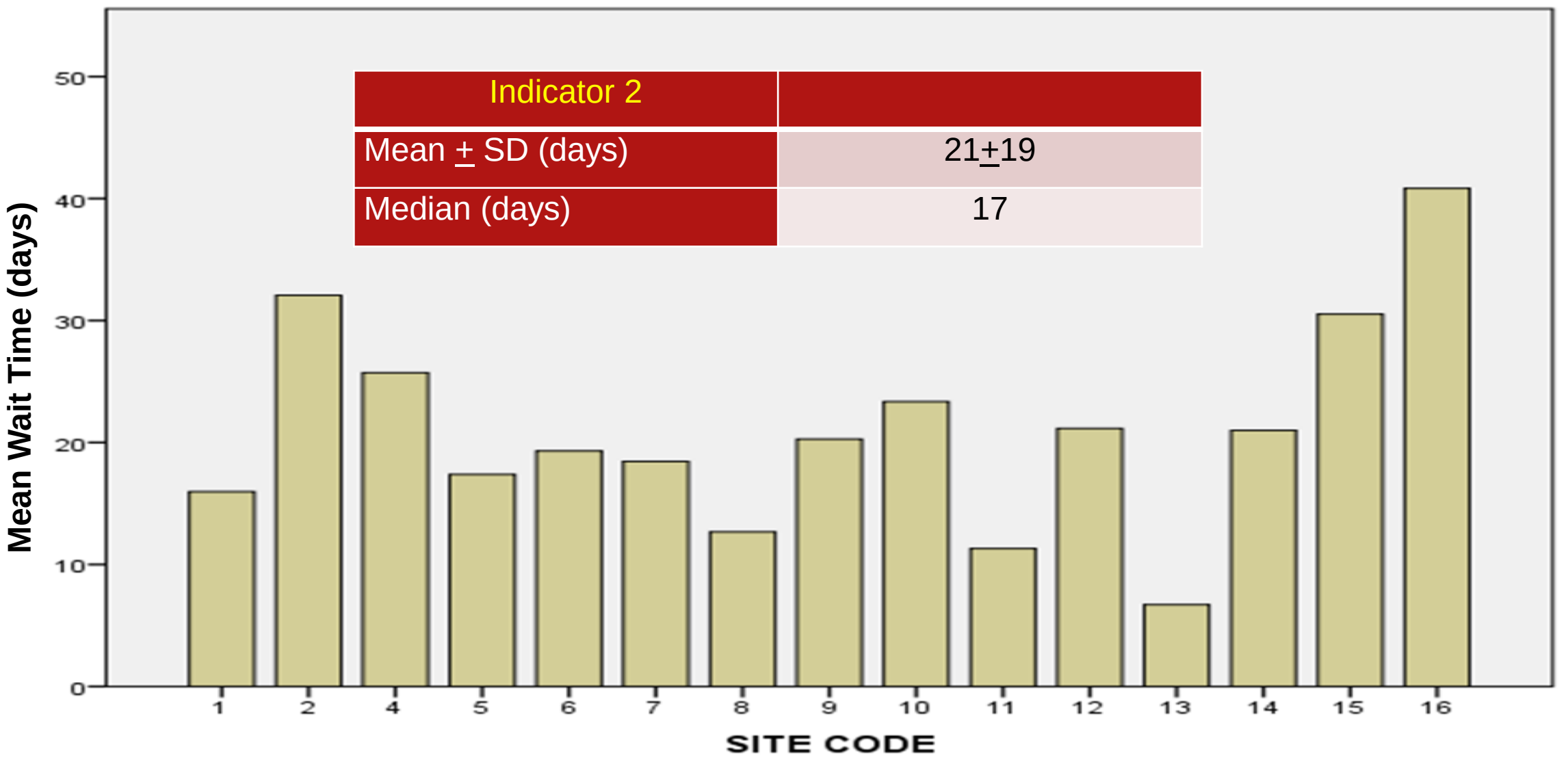
Quality Indicator 2

CR Wait Times

Indicator 2	
Mean ± SD (days)	21±19
Median (days)	17



Quality Indicator 3 & 5

Changes in waist circumference and functional capacity

Indicator 3 & 5	Entry		Discharge		Change (95%CI)	p-value
	Mean	SD	Mean	SD		
Waist circumference (n = 486; cm)	101.35	14.15	100.37	13.71	-0.98 (-0.62, -1.35)	<0.001
6MWT# (n = 350; metres)	415.38	103.83	470.13	110.24	54.75 (48.8, 60.7)	<0.001
METS^ (n = 113)	7.04	3.22	9.60	3.50	2.55 (2.2, 2.90)	<0.001

p-value for paired t-test

6MWT six-minute walk test, ^METS metabolic equivalents

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Quality Indicator 4

Assessment of evidence-based ACS and/or CCF medication pre CR and post CR

Indicator 4	Entry	Change at post CR p-value
Antiplatelet (oral)	95%	NS
Betablocker	78%	NS
ACE-I/ARB[+]	66%	NS
Lipid lowering	93%	NS
S/L nitrates	46%	<0.001 (increased usage)

[+] ACE-I/ARB angiotensin converting enzyme inhibitor and angiotensin receptor blocker medications

Quality Indicators 6, 7 & 8

Indicator 6 & 7	%
Depression screened at:	
Entry	87
Discharge	77
Positive Screen	26
Referral for positive screen:	%
Referred	21
Receiving treatment	19
Refused	9
Not referred	51
Indicator 8	%
Current smoker	9
Referral for smoking cessation:	
Referred	83
Refused	13
Not referred	4

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Quality Indicator 9

Indicator 9	%
Symptom management plan	77

Definition: The percentage of patients in the CR program who received symptom-management education either individually or within a group prior to program discharge.

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Quality Indicator 10 & 11

CR program completion + ongoing care.

Indicator 10 & 11	%
Completion	66
Not completed	28
Not applicable	3
Unknown	3
Ongoing care	%
At least one referral	79
GP	79
Specialist	76
CR follow-up	36
CR Phase III	16
Walking group	8
Private gym	8
Health coaching	8
Other	13

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Discussion

Quality Indicator 2
CR Wait times

CR Wait Times Comparisons

	NSW[1]	Canada[2]	UK[3]
Years	2016	2011-13	2012-2015
No. of Sites	16	12	257
No. of Patients	983	4 546	32 899
Age (years)	65±12	66±11	65±11
Gender (male)	72%	71%	77%
Wait Times			
Mean ± SD (days)	21±19	68±64	-
Median	17	54	39

1 = Current Study 2017

2 = SL Grace et al Rehabilitation Research and Practice 2015

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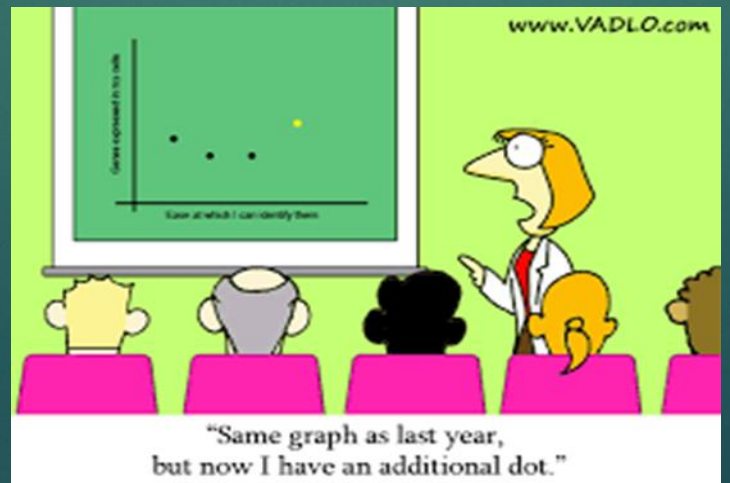
Where to from now!

- Feedback from sites informed changes to the MDS and data dictionary.
- 2nd MDS survey attended in same time period in 2017 with > 50 sites across NSW, ACT and Tasmania included.
- Awaiting results!



Conclusion

This study provides contemporary data for CR clinicians to review services, identify gaps and improve the quality of care in NSW.