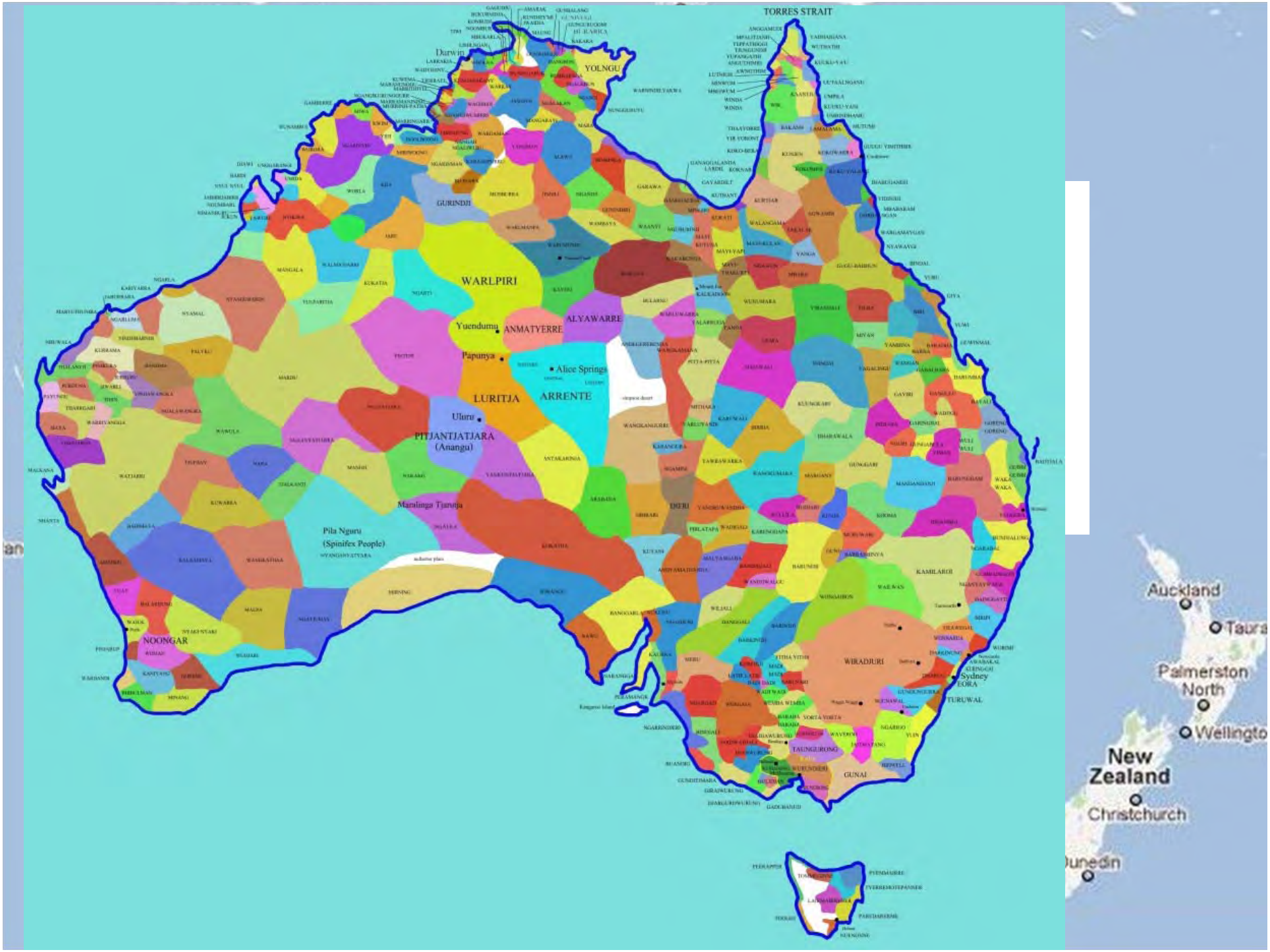
Building systems to reduce health disparities: Lessons from remote health in Australia

Vermont
April 17, 2015
Paul Burgess

Outline

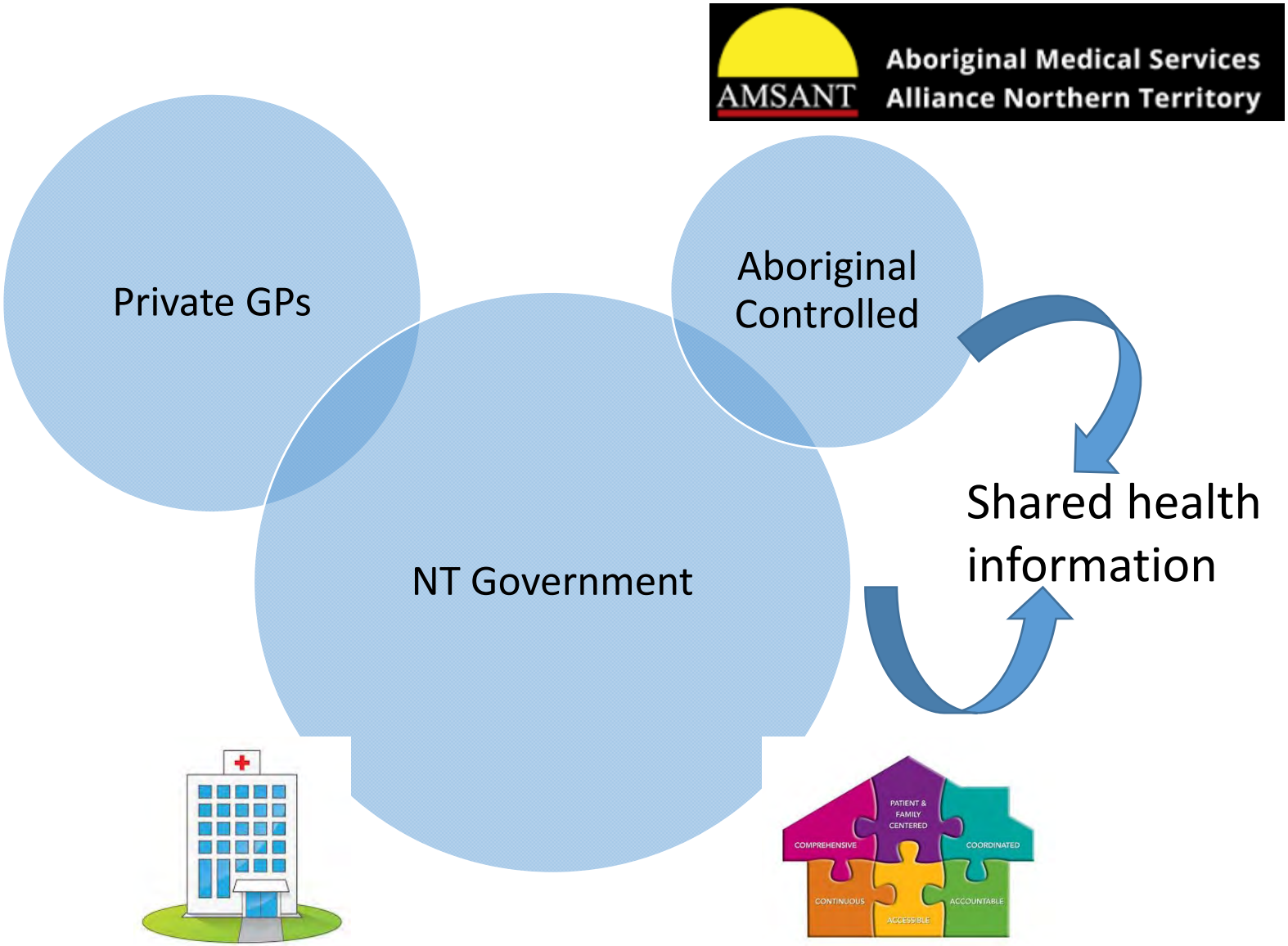
- Where I come from
- Progress on health equity


TORRES STRAIT
Darwin
YOLNGU
GURINDJI
WARLPIRI
Yuendumu
ANMATYERRE
ALYAWARRE
Papunya
Alice Springs
LURITJA
ARRENTE
Uluru
PITJANTJATJARA
(Anangu)
Maralinga Tjarutja
Pila Nguru
(Spinifex People)
DIERI
NOONGAR
WIRADJURI
Sydney
TURUWAL
TAUNGURONG
GUNAI
Auckland
Palmerston
North
Wellingto
New
Zealand
Christchurch

Where I’m from

The world’s worst newspaper

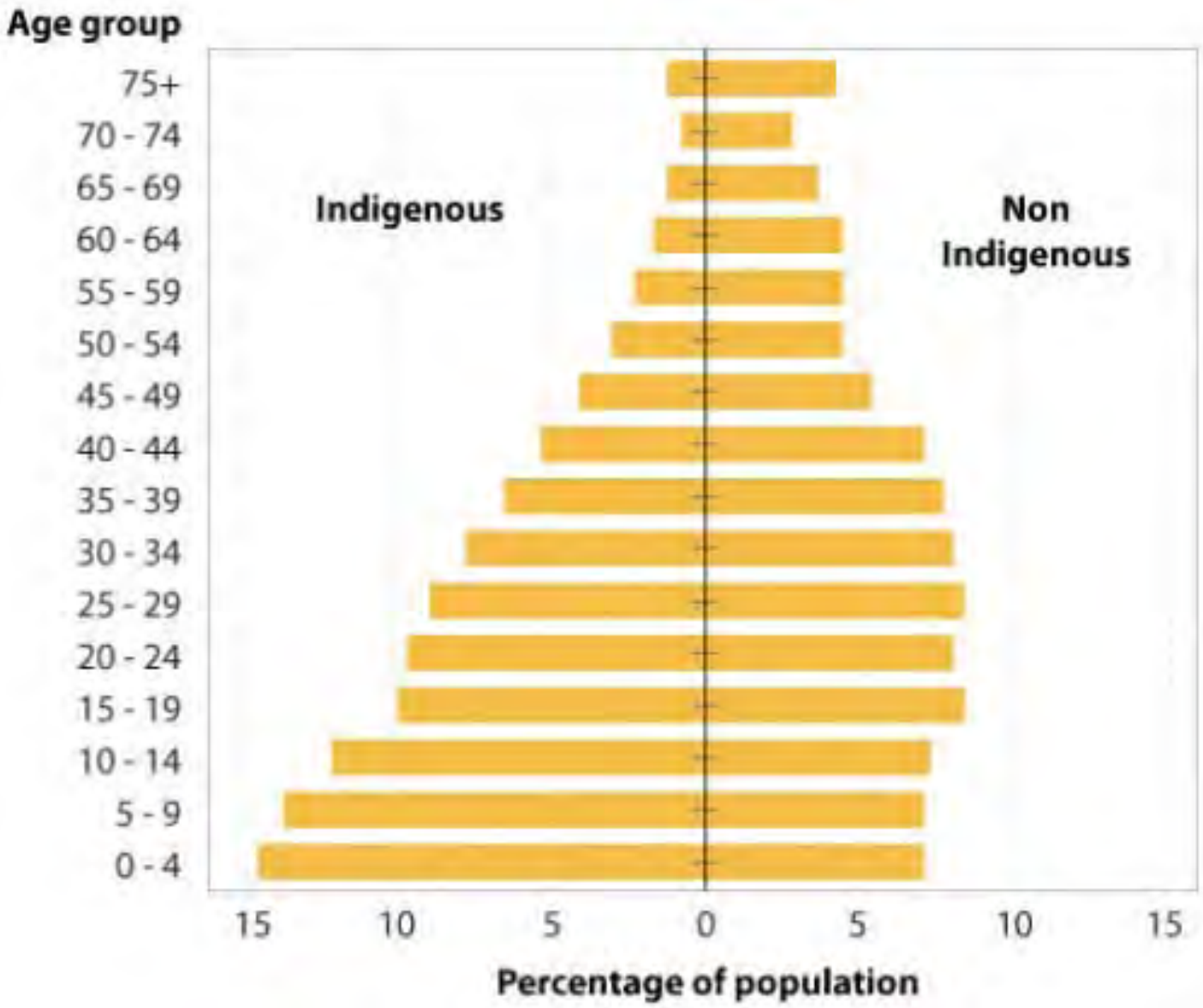
NT Health Providers



Clinical context – tough job

- 34,000 mobile patients over 1.4 million Km^2
- Triple whammy: IFD/Low SES/Chronic diseases
- Nurse led primary care + Aboriginal workers
- High staff turnover (non-Aboriginal)
- Language/Cultural barriers
- Evolving IT
- Distance!

Indigenous Demography



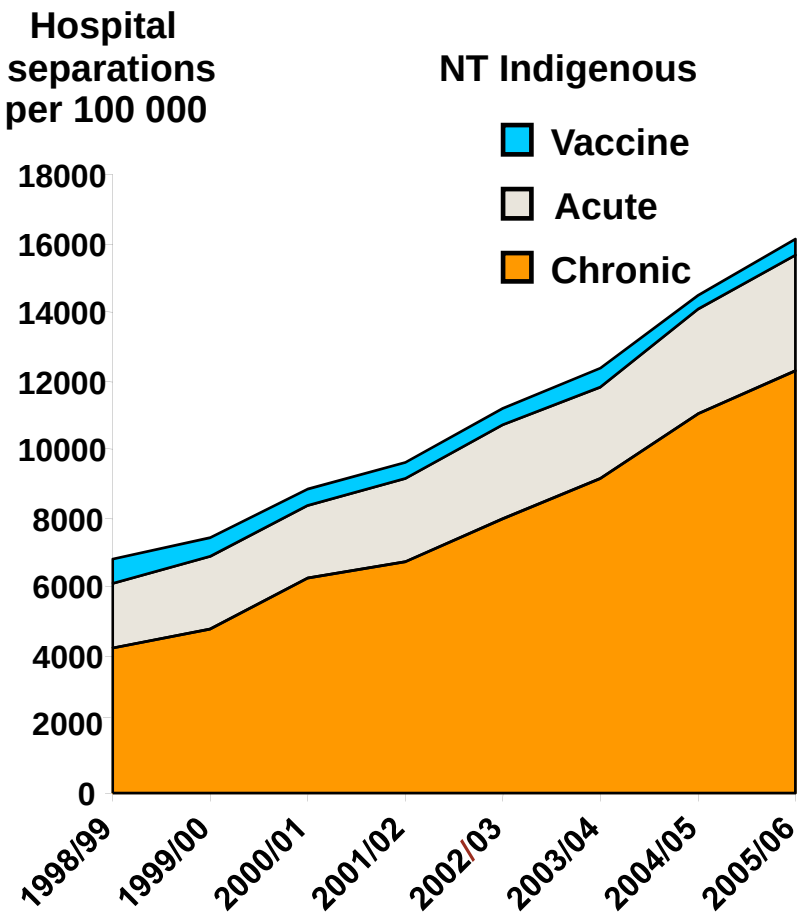
Social Determinants of Health dominate

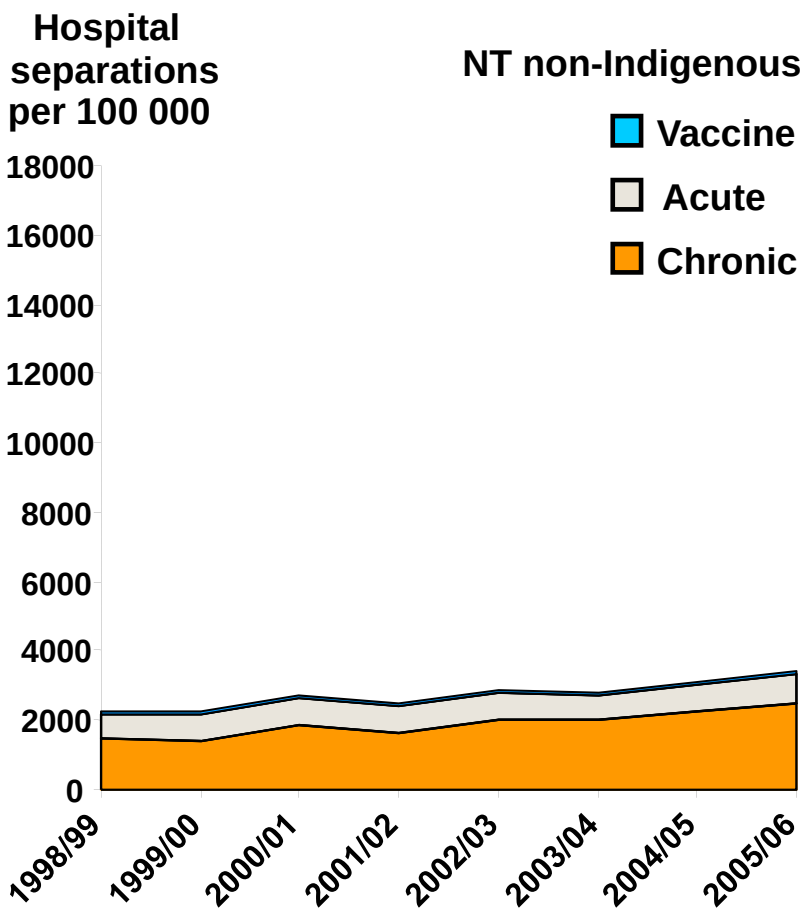
Major health risk factors and contribution to the total burden of disease in NT

Risk Factor	Attributable Proportion
Low socio-economic status	26.8%
High body mass	11.1%
Physical inactivity	11.0%
Tobacco	8.1%
Alcohol	4.5%
High blood cholesterol	4.2%
High blood pressure	3.9%
Low fruit and vegetable intake	3.3%

Source: Zhao Y, You J and Guthridge S 2008. Burden of Disease and Injury in the Northern Territory, 1999-2003 (Draft) Unpublished.[14]

NT Trends in avoidable hospitalisation 1998-2006

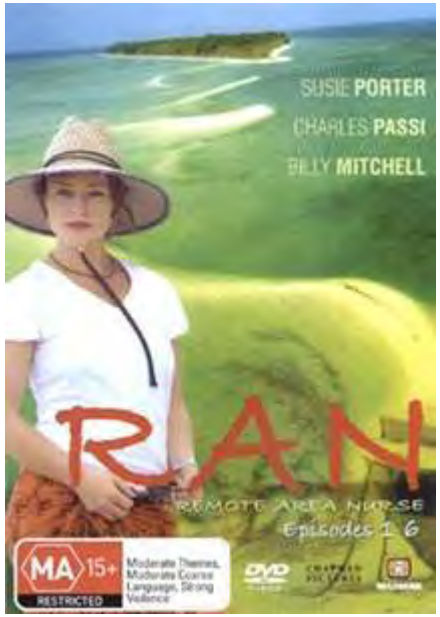




Li SQ et al. (2009) Avoidable Hospitalisation in Aboriginal and non-Aboriginal people in the Northern Territory MJA

Medical/Nursing Workforce

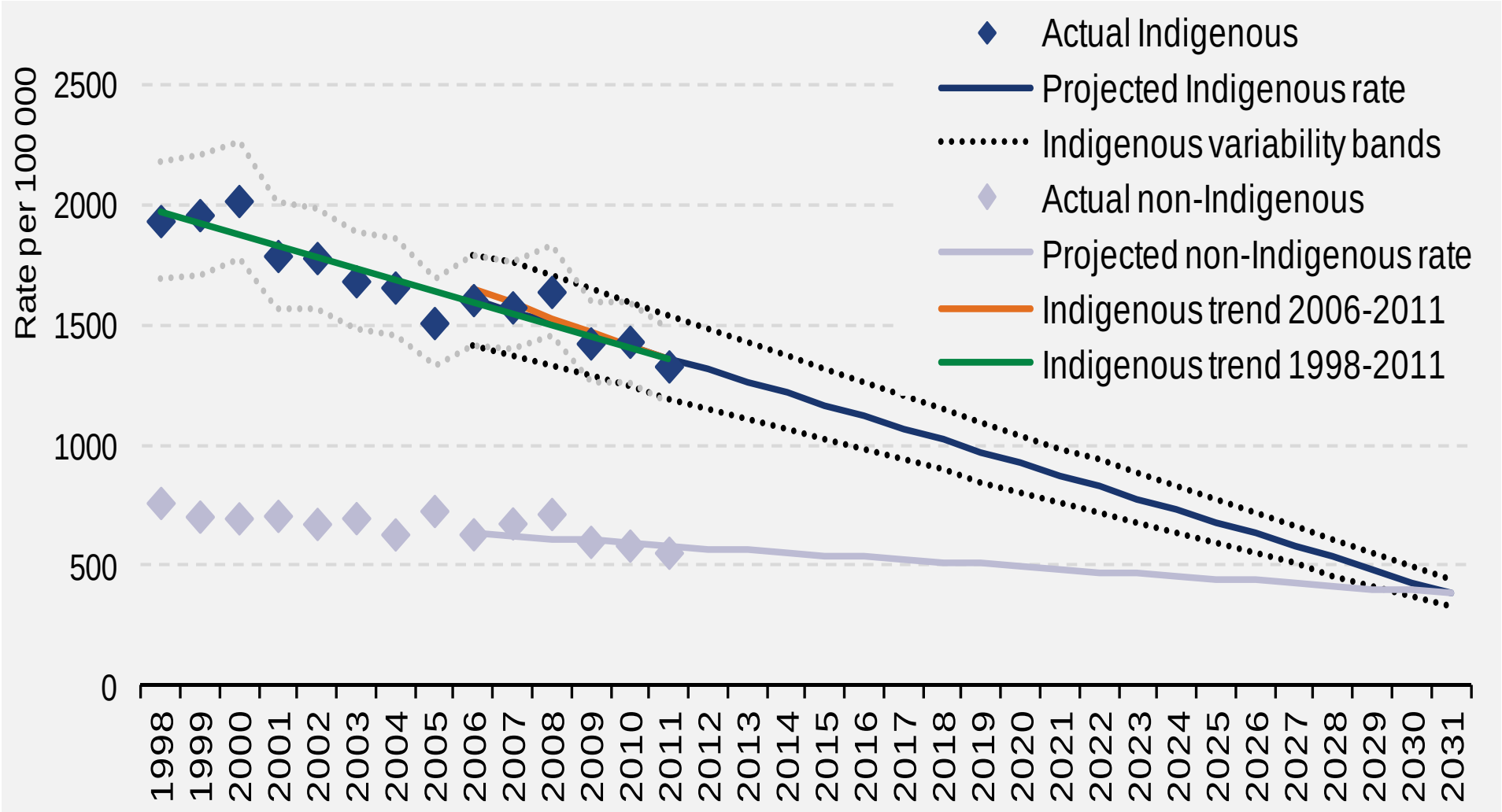
- Multiple strategies implemented over decades
  - Undergraduate
    - Rural Health clubs, Rural training schools, Rural student intake
    - Bonded medical school placements
    - Rural training rotations, John Flynn Scholarships
  - Prevocational
    - Electives
    - Placements in rural medicine
  - Vocational
    - Regional training providers
    - Flexible training, Incentives



February 13, 2008

Significant Health Improvements

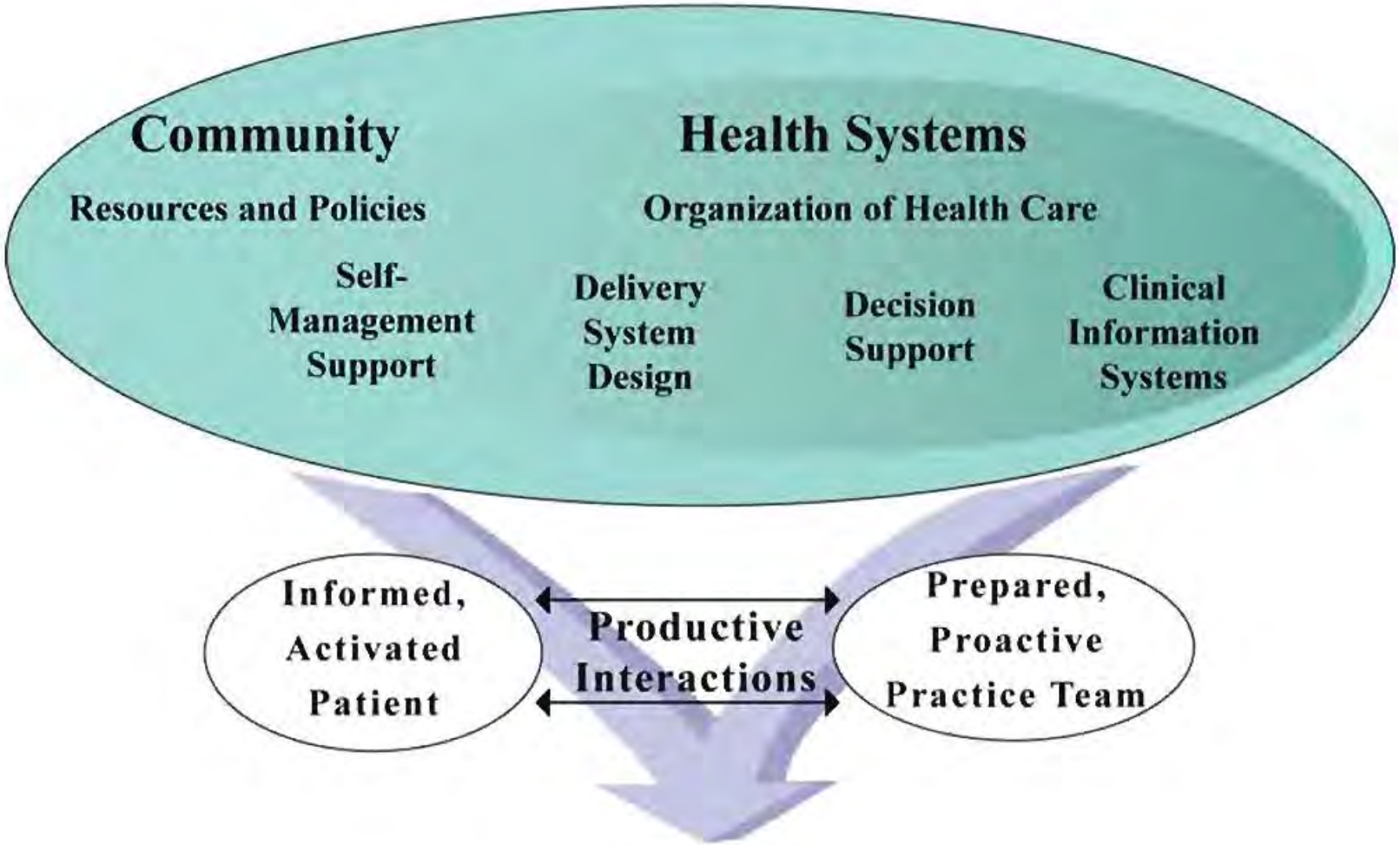
Figure A.6 Death rates per 100 000 standard population, 1998–2031, Northern Territory



Source: ABS and AIHW—see Appendix D.

Take-home Messages?

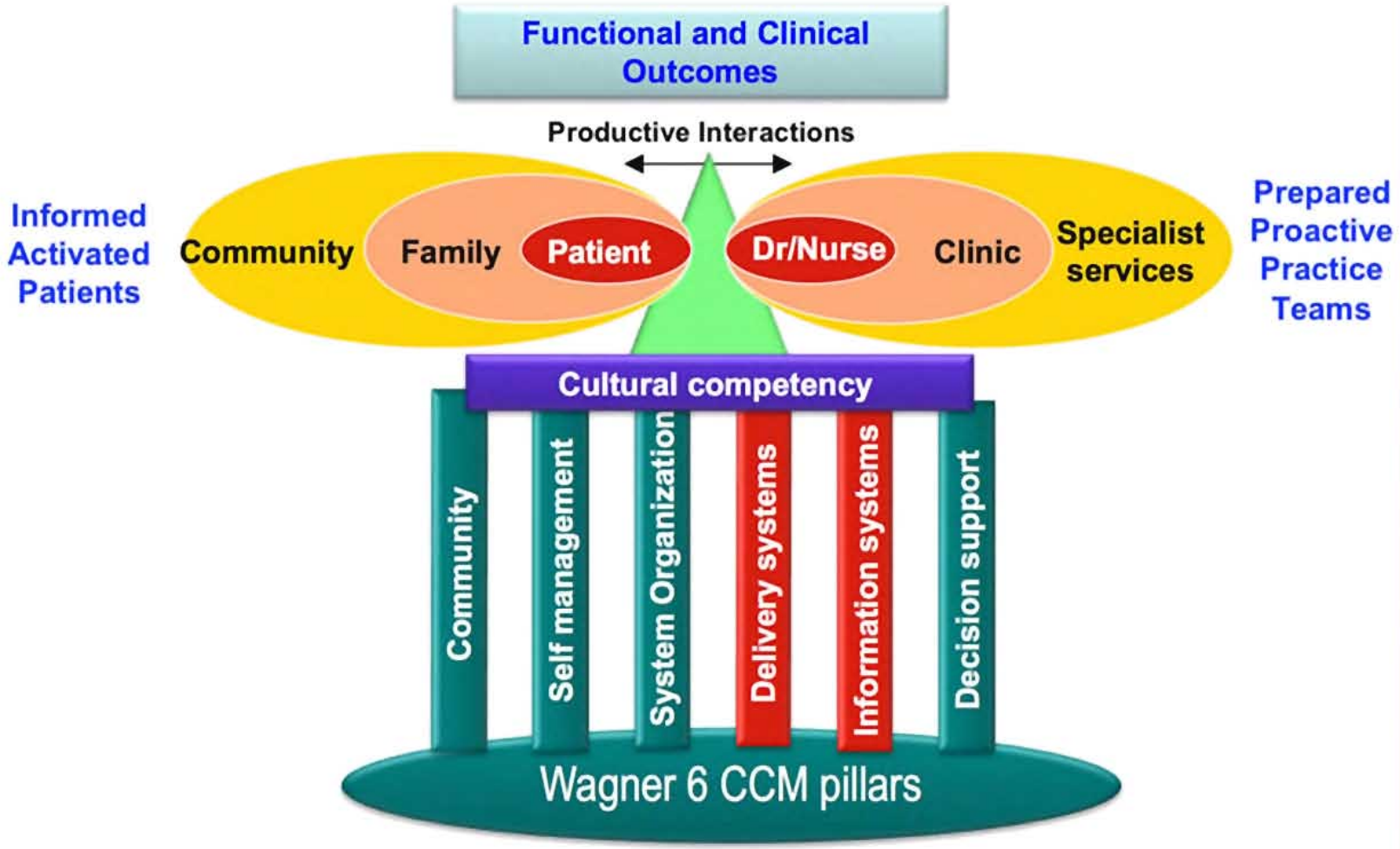
The Chronic Care Model



Improved Outcomes

Developed by The MacColl Institute
® ACP-ASIM Journals and Books

Chronic Care Management Model



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2
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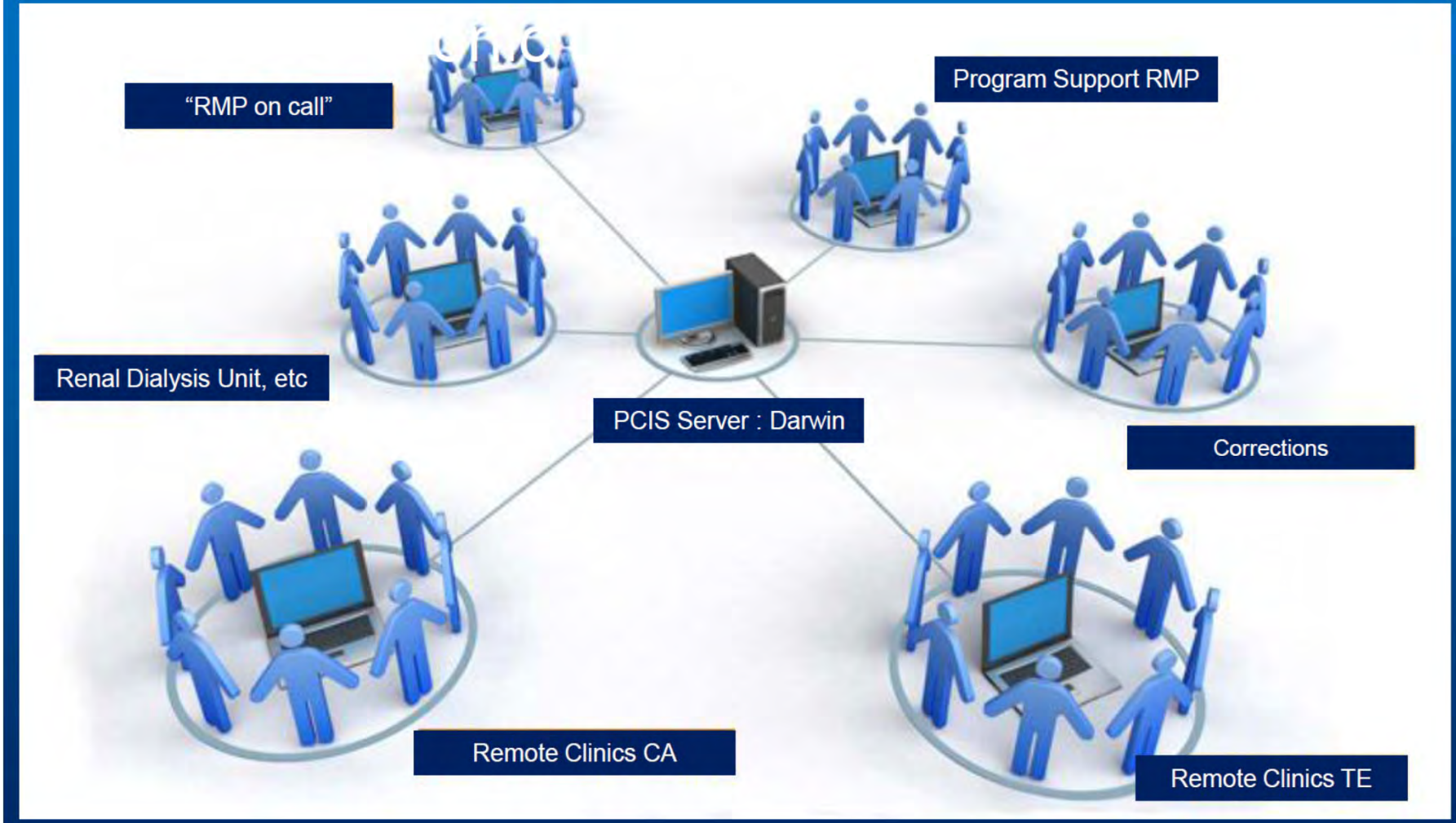
Policy & Community Environment

- Free healthcare
- Free medication
- Aboriginal governance
- Local health networks
  - Hospital + PHC
- Primary Health Care
- NGO collaborations
- Specialist integration & outreach

RED LILY HEALTH BOARD

WORKING TOGETHER FOR BETTER HEALTH IN WEST ARNHEM

IT system + Data linkage



Decision Support

- Standard treatment manuals
  - Standing orders
  - EBM – peer reviewed
  - Care plan protocols
- Electronic prescribing
  - Safety functions
- Electronic FFS billing
- 24/7 phone support

Delivery System

- Team based PHC
  - Womb to grave
  - Cross-training
- Care pathways
  - STM – common conditions
- Integrated specialist care
  - E –consults
- Outreach support
  - allied health
- Telemedicine
- 24/7 access to care
- Radiology

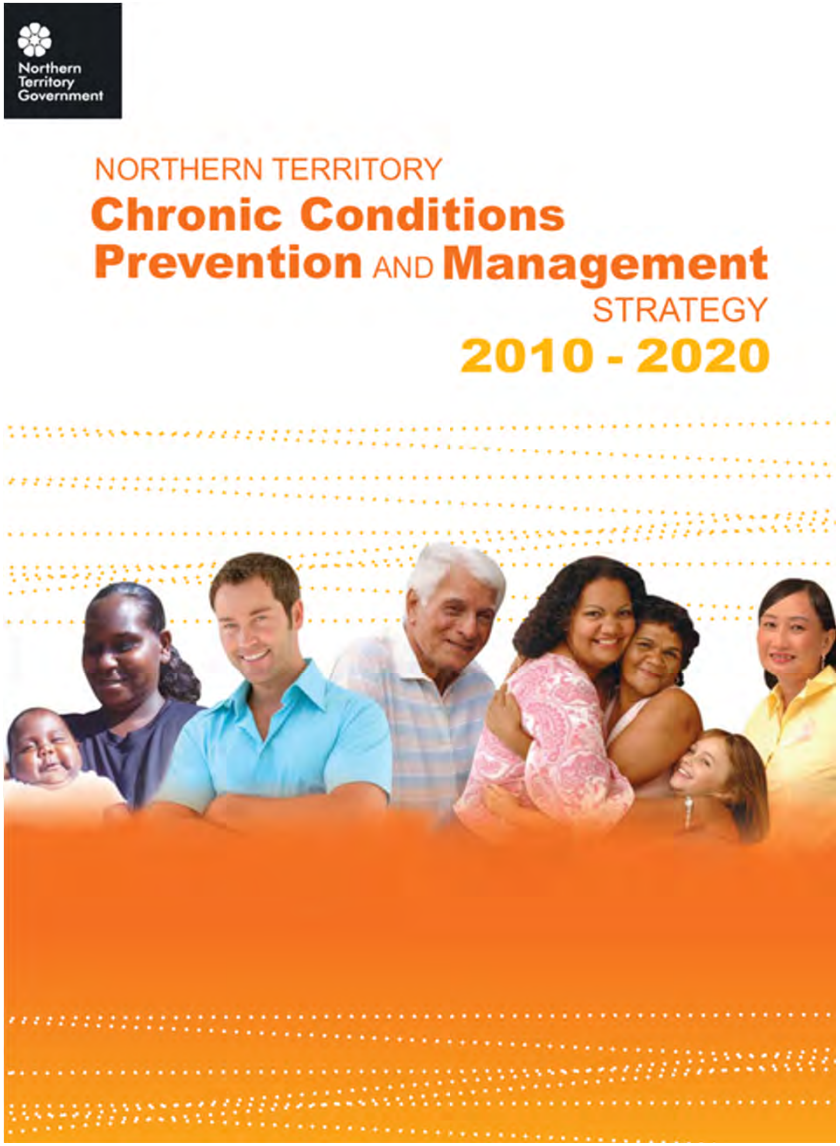
Self-management

Step 2. Things that help to keep me strong (spiritual, cultural, physical, family, social, mental and emotional)

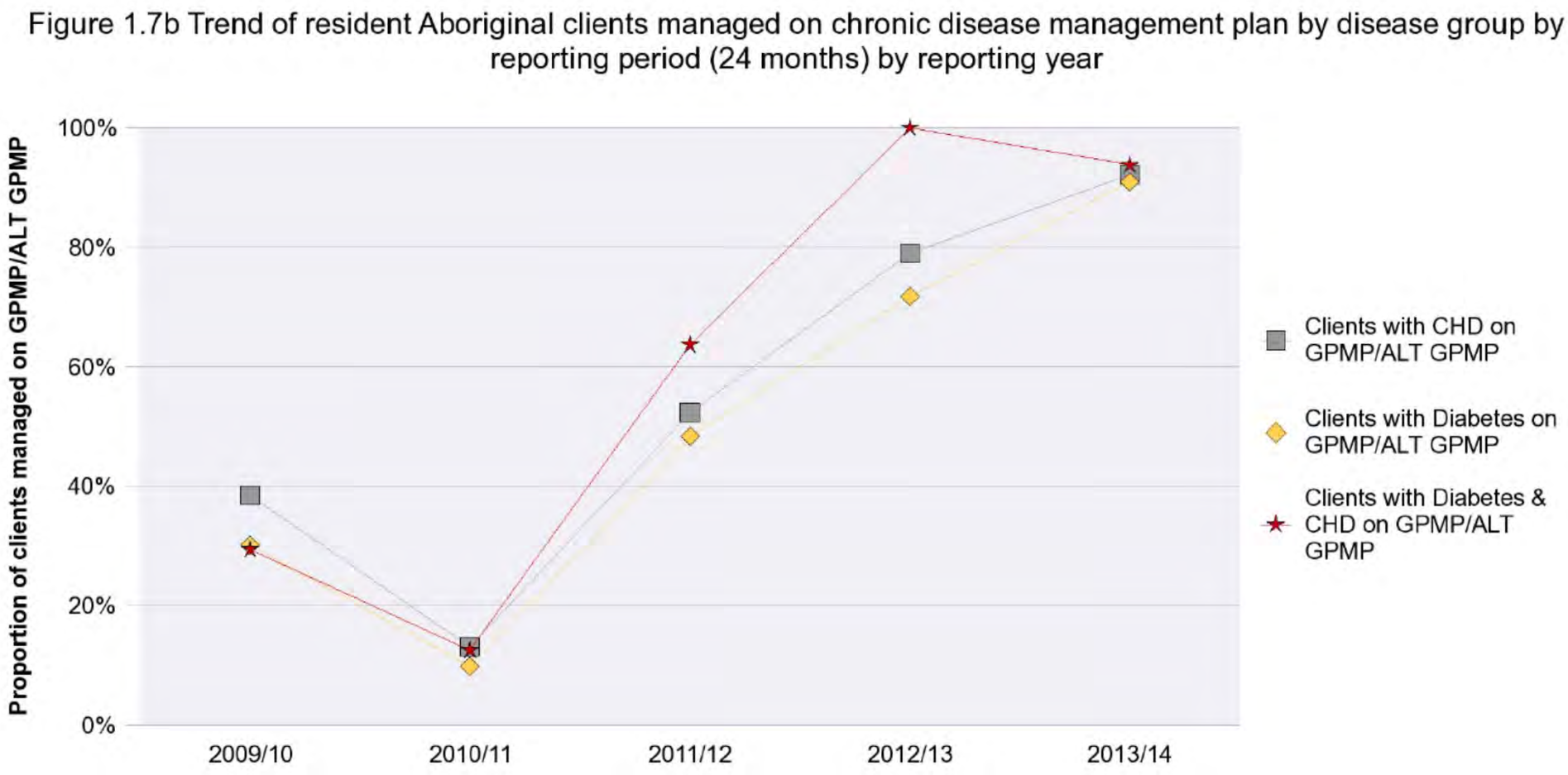
Circle or tick or write in strengths

Organisation of Care

- Strong leadership
- Strategic policy work
- Collaborations
- Teaching
- Data driven improvements
  - AHKPIs
  - CQI
  - Functional reporting
- Data linkage/Research

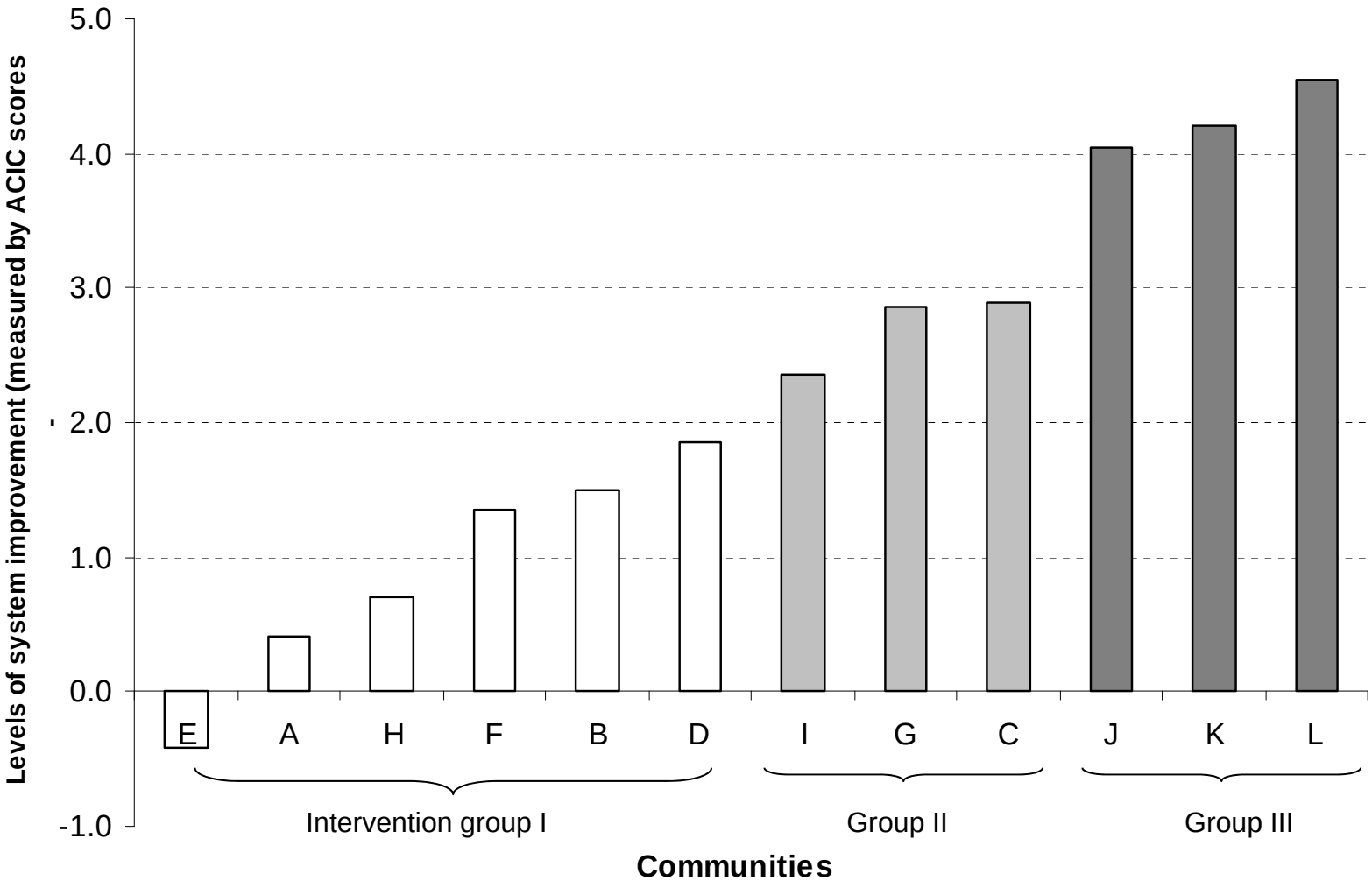


Key Performance Indicators (N=22)



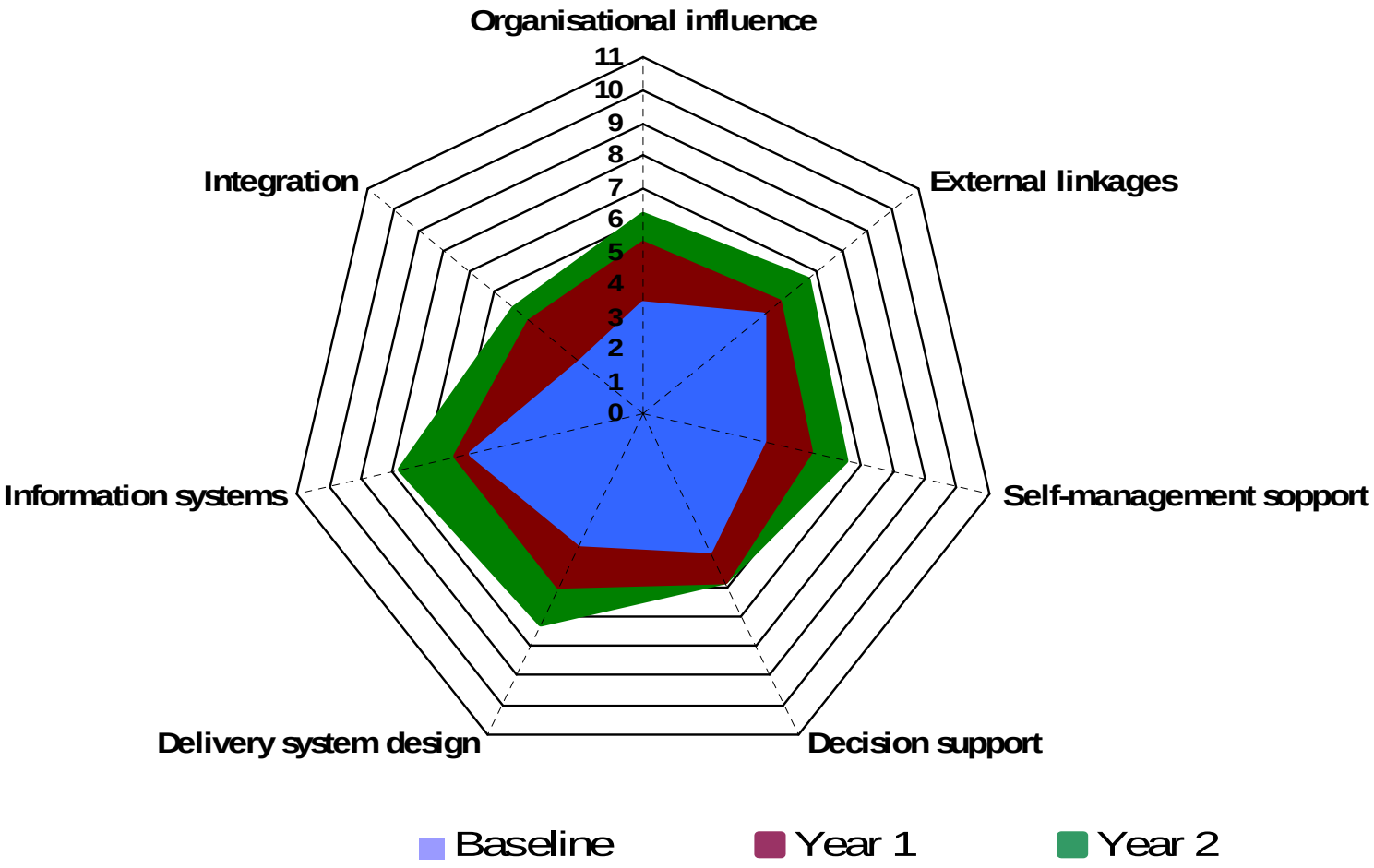
Quality Improvement

Improvement of systems by health centre



Systems assessment tool

Staff ratings of health centre systems



Traffic Light Report

Version 8.2

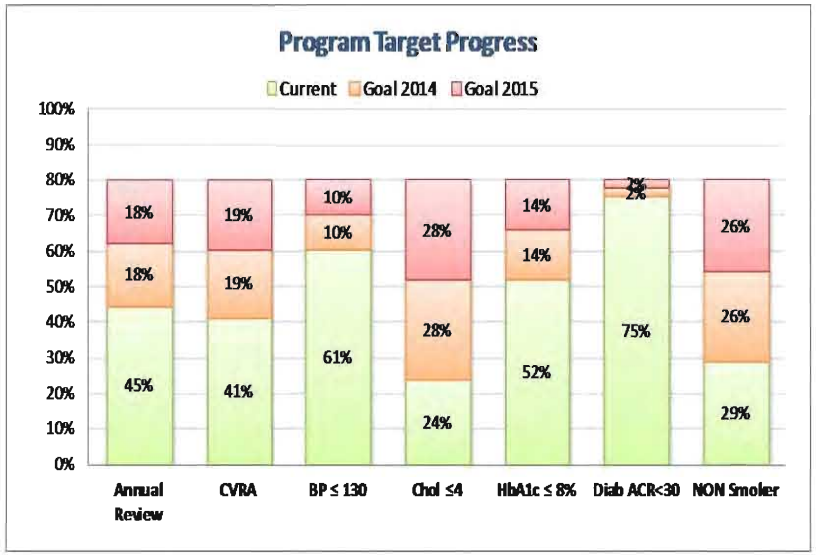
CONFIDENTIAL INFORMATION : Restricted to use in Remote Health Clinics

Total Population :	1574
ATSI Population :	1359
Non-ATSI Population :	215

Data Extract : Nov-13

Program Targets

	Current	Program Goal
PCD Annual Review past year :	44.7%	80%
Cardiovascular Risk Assessment :	41.5%	80%
CVRA High and BP ≤ 130 :	60.6%	80%
CVRA High and Total Chol ≤4 :	23.8%	80%
Diabetic and HbA1c ≤ 8% :	52.0%	80%
Diabetic and ACR<30 :	75.3%	80%
NON Smoker :	29.0%	90%



Known Data Issues

1. Some Care plans which have "completed" as opposed to being "de-activated" may still appear on list as active.
2. A few AHC plans which have been recently de-activated may still appear on list as active. This will be rectified with next Business Objects load

Traffic Light Table

≥ 75%	
50% - 74%	
25% - 49%	
< 25%	

NT AHKPI's

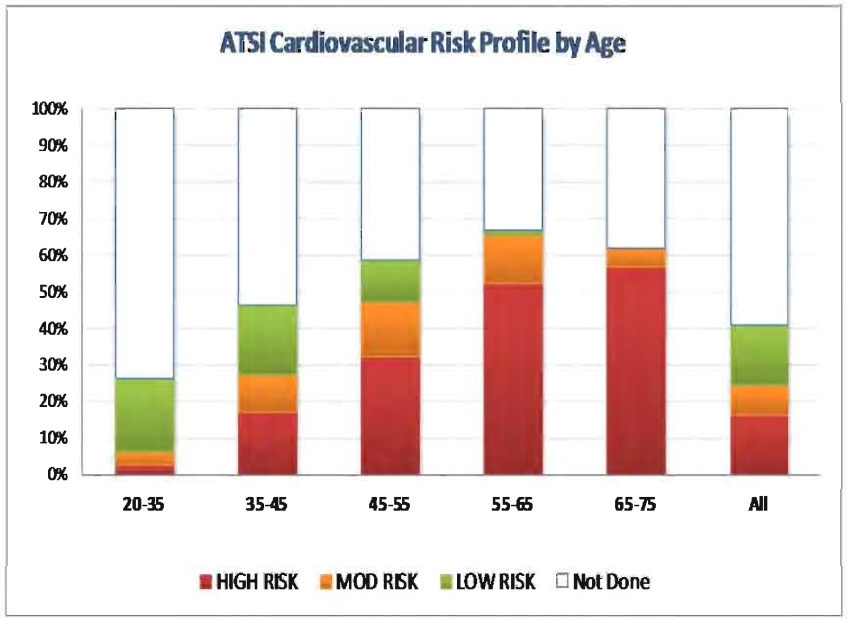
	Current
KPI 1.7 (Diab/IHD GPMP last 2 years)	80.0%
KPI 1.8* (Diabetics & HbA1c past year)	89.1%
KPI 1.9 (Diabetes, ↑ ACR on ACEorARB)	66.7%
KPI 1.10 (AHC 15-55 years age)	11.7%
KPI 1.11 (AHC 55 years and older)	23.4%

Cardiovascular Risk

ATSI Clients age 20 and over:	791
ATSI Clients with CVRA last 2 years :	328

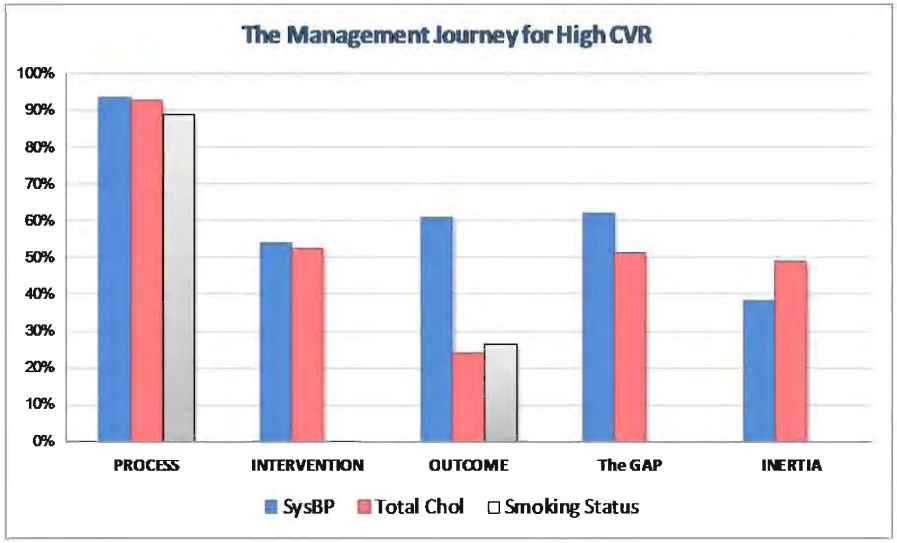
41.5%

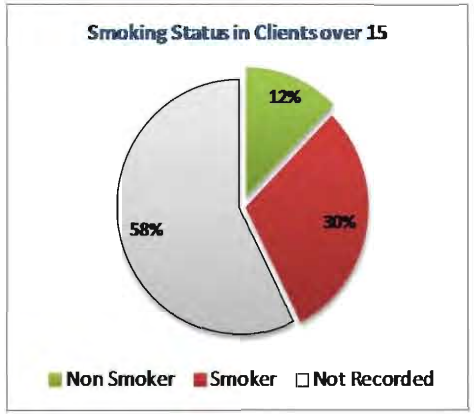
Cardiovascular Risk Category	All clients	PCD Clients	Non PCD
HIGH RISK :	136	132	4
MOD RISK :	63	37	26
LOW RISK :	129	33	96
NO CVRA ASSESSMENT :	463	34	429
Total CVRA Assessments :	328	202	126
	41.5%	86%	23%

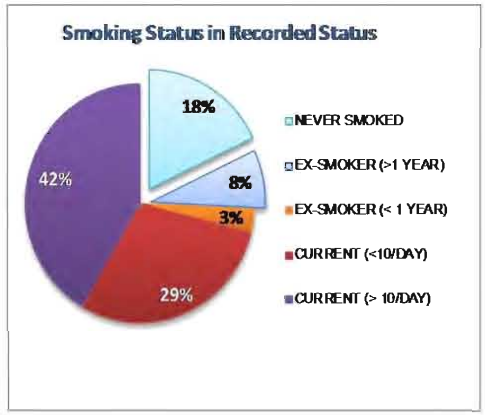


CVR Management Journey

	PROCESS	INTERVENTION	OUTCOME	The GAP	INERTIA
Cardiovascular Risk - HIGH : 136	Measured	On Rx	To target	>target on Rx	> target no Rx
Systolic BP (target ≤ 130) :	127	73 on BP meds	77	31 out of 50	19 out of 50
Total Cholesterol (target ≤ 4.0) :	126	71 on statin	30	49 out of 96	47 out of 96
Smoking Status :	121	-	32	-	-
Diabetes AND Hi CVRA : 76 patients		50 on aspirin	50	-	26



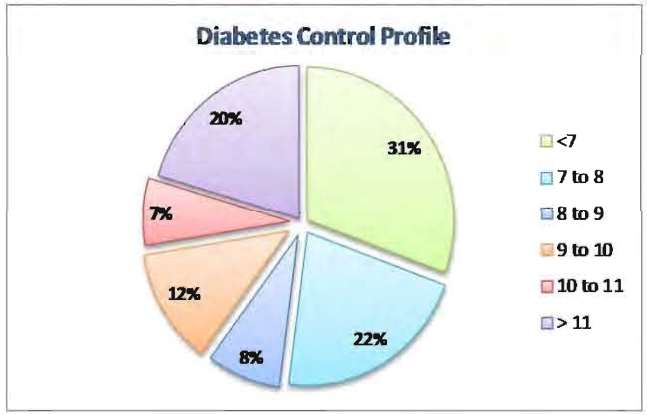


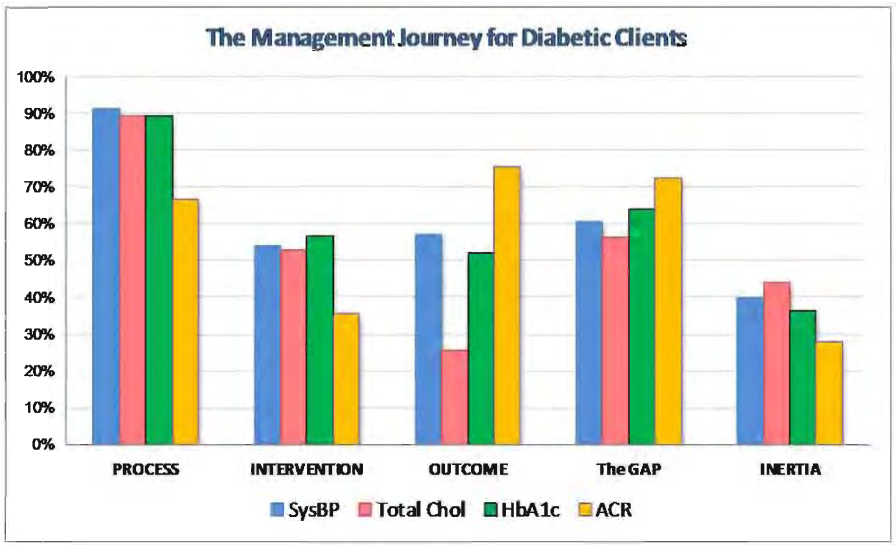


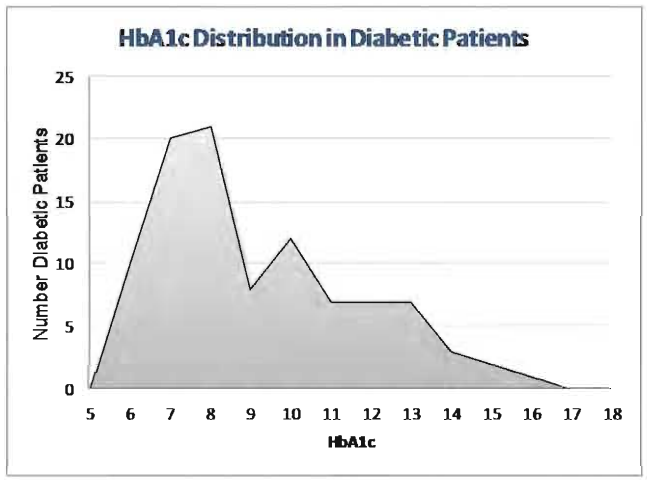
Diabetes

Diabetes Management Journey

	PROCESS	INTERVENTION	OUTCOME	The GAP	INERTIA
Number of Diabetics : 110	Measured	On Rx	To target	>target on Rx	> target no Rx
Systolic BP (target ≤ 130) :	100	59 on BP meds	57	26 out of 43	17 out of 43
Total Cholesterol (target ≤ 4.0) :	98	58 on statins	25	41 out of 73	32 out of 73
HbA1c (interim target ≤ 8%) :	98	62 on diab drugs	51	30 out of 47	17 out of 47
Diabetes & Raised ACR : (target <30)	73	39 on Ace_ARB	55	13 out of 18	5 out of 18







Functional reporting

Demographics			PCD Care Plan			CVRA	Chronic Disease PLAN status		Most Recent Result					Annual Review	KPI 1.7		EXCEPTION
HRN	Gender	Age	Start Date	Status	Plan Type	Outcome	PCD	No PCD -ON Pla	BM	Sys B	HbA1	ACR	eGF	Seen Statu	One Yea	Two Year	Missed Dx
0397861	female	21	20/07/2010	Overdue	*LoCVR+ Diab +/- CVD		ON PLAN		29.76	115		3.2	90	NOT SEEN		Reviewed	
0487410	female	23	17/08/2010	Overdue	*LoCVR+ Diab +/- CVD			CHECK Dx		120				NOT SEEN			
0601803	female	59	15/05/2011	Overdue	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		31.25	112	6	2.57	90	Reviewed	Reviewed	Reviewed	
0609596	female	43	7/06/2010	Overdue	*HiCVR+ Renal5 +/- CVD		ON PLAN			102			3	NOT SEEN			
0621627	female	52	1/06/2011	Overdue	*LoCVR+ Diab +/- CVD	MOD RISK	ON PLAN		26.33	113	6.5	2.1	90	Reviewed	Reviewed	Reviewed	
0697150	female	59	1/06/2011	Overdue	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		30.06	128	8.2	9.45	89	Reviewed	Reviewed	Reviewed	
2053405	male	82	1/06/2011	Overdue	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		27.37	156	9.7		77	Reviewed	Reviewed	Reviewed	
2076132	male	23	27/05/2011	Overdue	*LoCVR +/- CVD	LOW RISK		CHECK Dx	31.78	142				Reviewed			
2076222	male	59	1/06/2011	Overdue	*HiCVR +/- CVD	HIGH RISK		CHECK Dx	27.61	125			69	Reviewed			
2076287	male	24	1/05/2011	Overdue	*LoCVR +/- CVD	LOW RISK		CHECK Dx		144				NOT SEEN			
2076299	male	53	1/02/2011	Overdue	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN			160				NOT SEEN		Reviewed	
2138830	female	66	1/05/2011	Overdue	*LoCVR +/- CVD	MOD RISK	ON PLAN							NOT SEEN			
0442055	male	23	1/01/2012	Current	*LoCVR+ Diab +/- CVD	LOW RISK	ON PLAN		19.94	116	9.4	0.55	90	Reviewed	Reviewed	Reviewed	
0398048	female	21	1/06/2012	Current	*LoCVR+ Diab +/- CVD	MOD RISK	ON PLAN		29.86	102	10.3	1.21	90	NOT SEEN		Reviewed	
0397869	male	22	30/11/2011	Current	*LoCVR +/- CVD	LOW RISK		CHECK Dx	21.53	107		0.3	90	NOT SEEN			
0397867	female	19	30/01/2012	Current	*LoCVR+ Diab +/- CVD	LOW RISK	ON PLAN			119	12.4	2.3	90	NOT SEEN		Reviewed	
0184862	male	54	17/08/2011	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		28.21	108	6.7	0.79	89	Reviewed	Reviewed	Reviewed	
0600870	female	63	6/07/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		20.24	151	8.7	69.3	62	Reviewed	Reviewed	Reviewed	
0492804	male	82	17/08/2011	Current	*HiCVR+ Diab+ Renal4 +/-CVD	HIGH RISK	ON PLAN		25.01	164	5.8		32	Reviewed	Reviewed	Reviewed	
0484694	female	79	13/01/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		25.52	148	7.9	8.24	64	Reviewed	Reviewed	Reviewed	
0602406	male	81	16/04/2012	Current	*LoCVR +/- CVD		ON PLAN			121		0.64	65	NOT SEEN			
0657367	female	49	1/12/2011	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		31.79	114	9.1		90	NOT SEEN		Reviewed	
0621628	female	52	1/12/2011	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		30.07	110	6.5	3.75		Reviewed	Reviewed	Reviewed	
0656834	male	32	20/10/2011	Current	*LoCVR+ Diab +/- CVD	LOW RISK	ON PLAN		17.31	93	11.6	1.32	90	Reviewed	Reviewed	Reviewed	
0696011	female	23	1/12/2011	Current	*LoCVR+ Diab +/- CVD	LOW RISK	ON PLAN		32.79	153	9.1	24.5	90	Reviewed	Reviewed	Reviewed	
0602012	female	73	15/08/2011	Current	*HiCVR+ Diab+ Renal5 +/-CVD	HIGH RISK	ON PLAN			168	6.8		6	Reviewed	Reviewed	Reviewed	
0603285	female	77	30/11/2011	Current	*HiCVR+ Diab+ Renal3 +/-CVD	HIGH RISK	ON PLAN		19.11	142	5.9	1.81	57	NOT SEEN			
0603627	female	60	1/11/2011	Current	*HiCVR +/- CVD	HIGH RISK	ON PLAN			132	9.8	17.7	77	Reviewed	Reviewed	Reviewed	
0603828	female	80	1/07/2011	Current	*LoCVR +/- CVD	MOD RISK		CHECK Dx		150	5.9	6.09	55	Reviewed			
0603878	female	57	20/09/2012	Current	*LoCVR+ Diab +/- CVD	MOD RISK	ON PLAN			109	9.5	0.5	90	Reviewed	Reviewed	Reviewed	
0604357	female	46	22/07/2011	Current	*HiCVR+ Diab+ Renal5 +/-CVD	HIGH RISK	ON PLAN		21.46	124	7.2	20	12	Reviewed	Reviewed	Reviewed	Missed CKD5
0604699	male	44	19/10/2011	Current	*HiCVR+ Diab+ Renal5 +/-CVD	HIGH RISK	ON PLAN		31.11	135	6.2	100	11	Reviewed	Reviewed	Reviewed	Missed CKD5
0604872	male	45	21/02/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		32.11	110	9.6	23.5	80	Reviewed	Reviewed	Reviewed	
0607921	female	58	16/04/2012	Current	*LoCVR +/- CVD	MOD RISK		CHECK Dx	20.87	138		3	90	NOT SEEN			
0607978	female	59	14/12/2011	Current	*LoCVR +/- CVD	LOW RISK		CHECK Dx	31.33	179		100	71	NOT SEEN			
0613284	female	40	12/01/2012	Current	*LoCVR+ Diab +/- CVD	HIGH RISK	ON PLAN			126				NOT SEEN			
0621283	male	54	17/03/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		27.15	132	6.7		67	NOT SEEN		Reviewed	
0649253	female	48	1/12/2011	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		44.38	118	14	7.55	80	Reviewed	Reviewed	Reviewed	
0650899	female	33	23/02/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		24.24	115	13.8	83	77	Reviewed	Reviewed	Reviewed	
0651392	male	33	1/10/2011	Current	*LoCVR+ Diab +/- CVD	LOW RISK	ON PLAN		24.24	117	6.5		89	Reviewed	Reviewed	Reviewed	
0652677	female	46	23/11/2011	Current	*LoCVR +/- CVD	LOW RISK		CHECK Dx	27.21	125	6.7	0.96	90	Reviewed			Missed Diabetes
0653706	female	50	1/06/2012	Current	*LoCVR +/- CVD	LOW RISK		CHECK Dx	19.25	136				Reviewed			
0655036	male	33	23/11/2011	Current	*LoCVR+ Diab +/- CVD		ON PLAN		36.5	128	9.5	2.69	90	Reviewed	Reviewed	Reviewed	
0657180	male	28	30/03/2012	Current	*HiCVR+ Diab +/- CVD	HIGH RISK	ON PLAN		25.37	140	9.3	2.44	90	Reviewed	Reviewed	Reviewed	

Heart, Lung and Circulation (2014) xx, 1–8
1443-9506/04/$36.00
http://dx.doi.org/10.1016/j.hlc.2014.11.008

ORIGINAL ARTIC

Strengthening Cardiovascular Disease Prevention in Remote Indigenous Communities in Australia's Northern Territory

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Gary Sinclair, MBBCh, FRACGP [a], Mark Ramjan, RN, RM [a],
Patrick J. Coffey [a], Christine M. Connors, MPH, FAFPHM [a],
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Journal of Paediatrics and Child Health

doi:10.1111/jpc.12852

ORIGINAL ARTICLE

Impact of perinatal health and socio-demographic factors on school education outcomes: A population study of Indigenous and non-Indigenous children in the Northern Territory

Steven Guthridge,[1] Lin Li,[1] Sven Silburn,[2] Shu Qin Li,[1] John McKenzie[2] and John Lynch[3]

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Aim: This study investigated the association between early-life risk factors and school education outcomes.

Methods: This is an historical cohort study of 7601 children (61% were Indigenous) born in the Northern Territory between 1999 and 2004. Information was linked, for each child on: perinatal health, student enrolment and National Assessment Program – Literacy and Numeracy (NAPLAN) Year 3 results. Logistic regression was used to estimate the association between selected risk factors and a NAPLAN result 'below' the national minimum standard (NMS) in reading and numeracy.

Results: Indigenous children had much higher odds, than non-Indigenous children, of a result below the NMS for both reading (odds ratio (OR): 8.58, 95% confidence interval (CI): 7.55–9.74)) and numeracy (OR: 11.52, 95% CI: 9.94–13.35). When adjusted for all other variables, the increased odds were attenuated for both reading (OR: 2.89, 95% CI: 2.46–3.40) and numeracy (OR: 3.19, 95% CI: 2.65–3.84). Common risk factors for Indigenous and non-Indigenous children included higher birth order, maternal smoking in pregnancy and being a boy. There were gradients of decreasing risk with increasing education level of primary care giver and increasing maternal age. Among Indigenous children only, risks increased when living in remote areas, with younger age (<8 years) and low birthweight.

Conclusions: The study highlights that many of the risk factors associated with poor education outcomes among Indigenous children are shared with the general population. The results inform a targeted, cross-agency response to address modifiable early-life risk factors for educational disadvantage. Data linkage, using existing administrative datasets, provides a useful addition to methods that identify priority areas for prevention and early intervention.

Key words: educational measurement; Indigenous population; Northern Territory; perinatal care; socio-economic factor.

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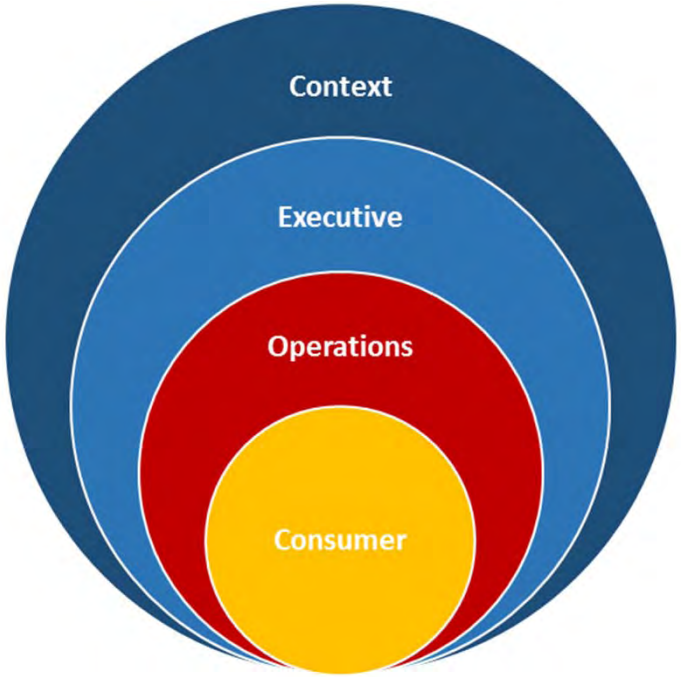
- Aboriginal communities

The COMMONWEALTH FUND

Harkness Project

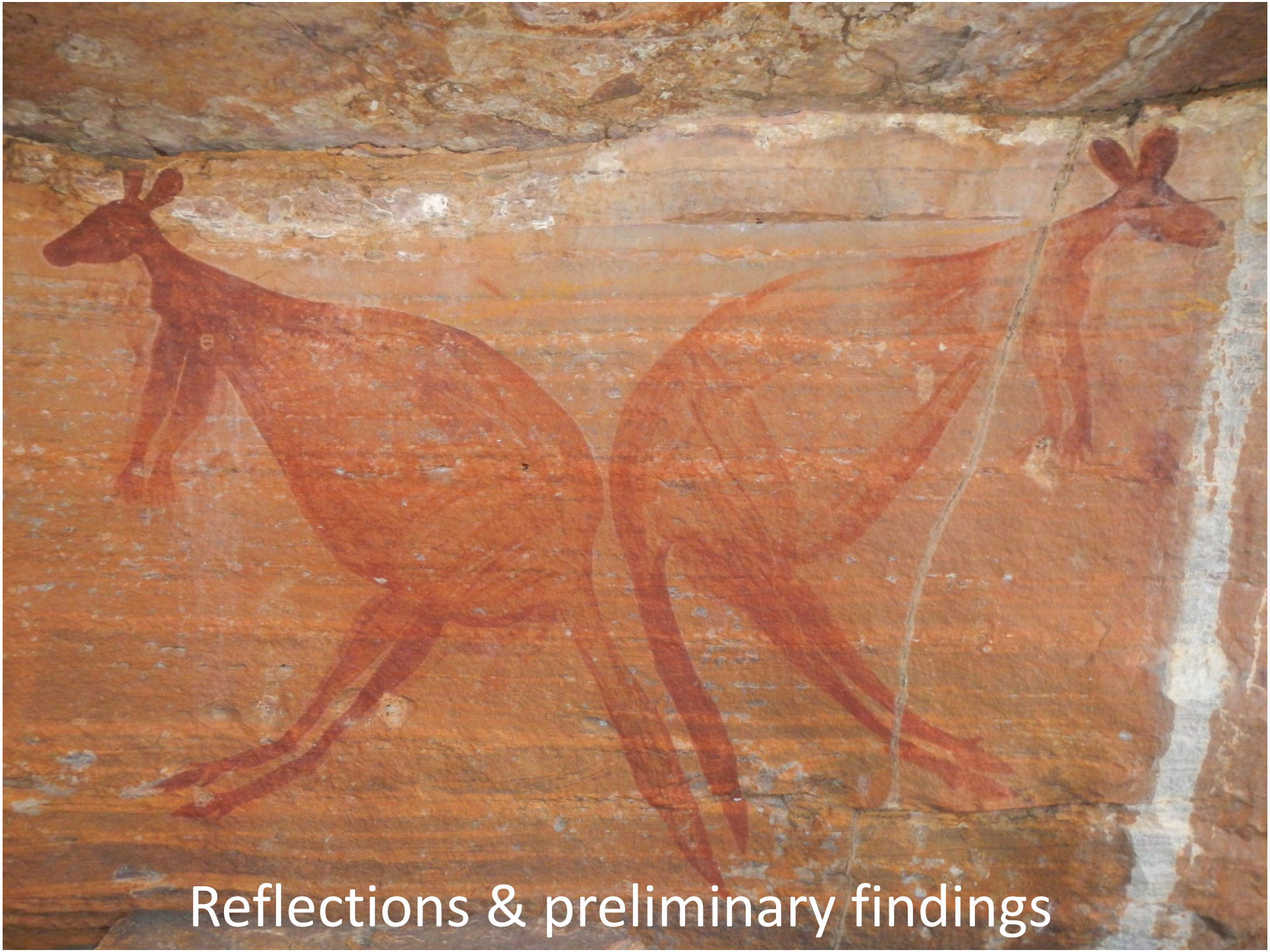
- How have health organisations extended upon the medical home to proactively identify and address the needs of vulnerable populations?

- Multi-level case study analysis
  - Context: policy/funding/ACA
  - Leadership
  - Operational
  - Consumer experience



Case study sites

- North Carolina
- Oregon
- Vermont
- Alaska



Reflections & preliminary findings