Chronic Conditions Management Model

‘Closing the Gap’ through innovative data use

AHHA Data & Innovation Meeting

Darwin, July 26, 2016

Paul Burgess – Top End Health Service

Acknowledgements

* Gary Sinclair
* Mark Ramjan
* Patrick Coffey
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* Primary Health Care teams in 49 health centers
  * Aboriginal community workers & drivers
  * Nurses
  * Doctors
  * Visiting support staff

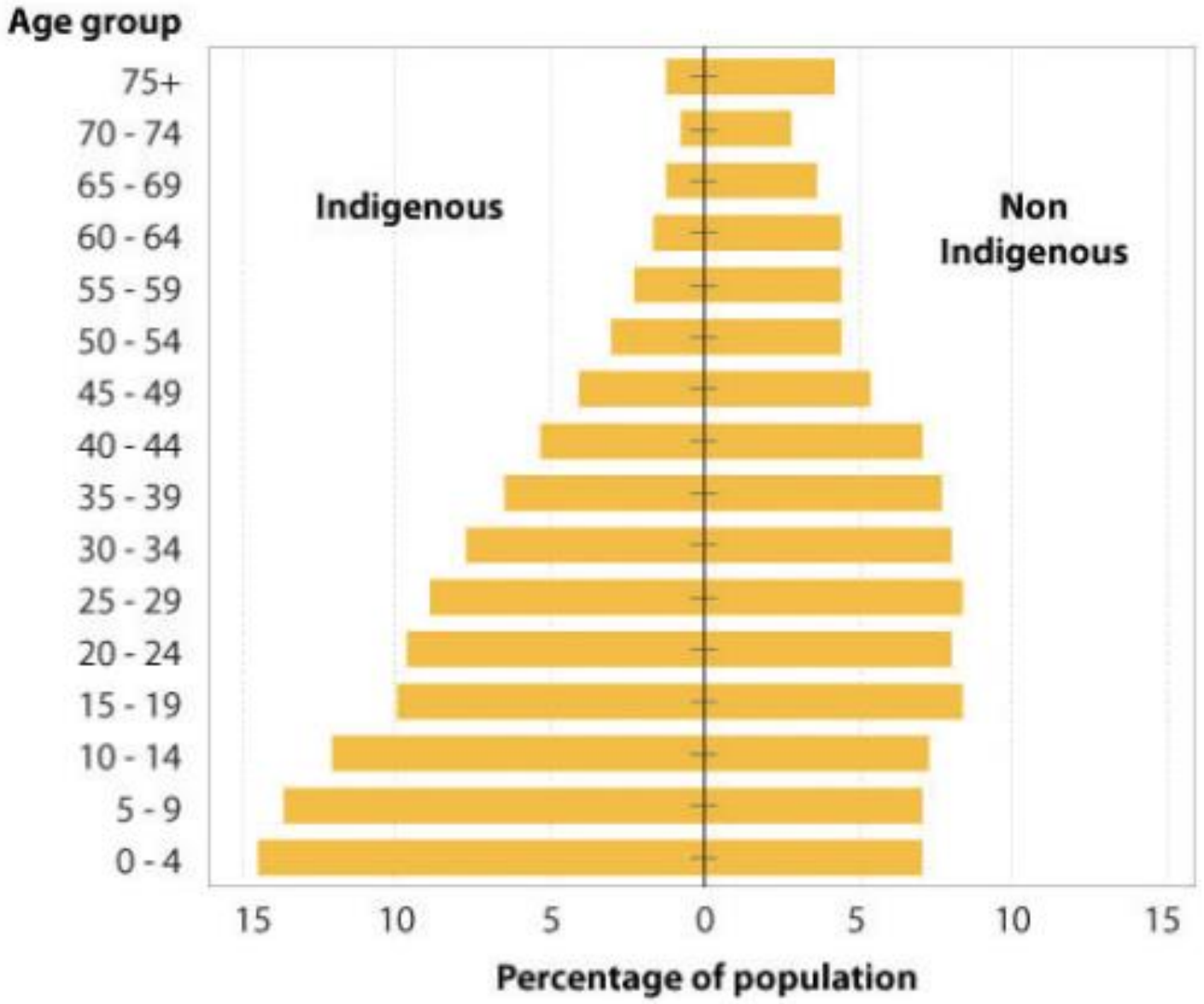
Outline

* Background
* CCMM Functional Reporting
  * Monthly recall list
  * Quarterly traffic light report
  * Quarterly management report
* Next steps

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



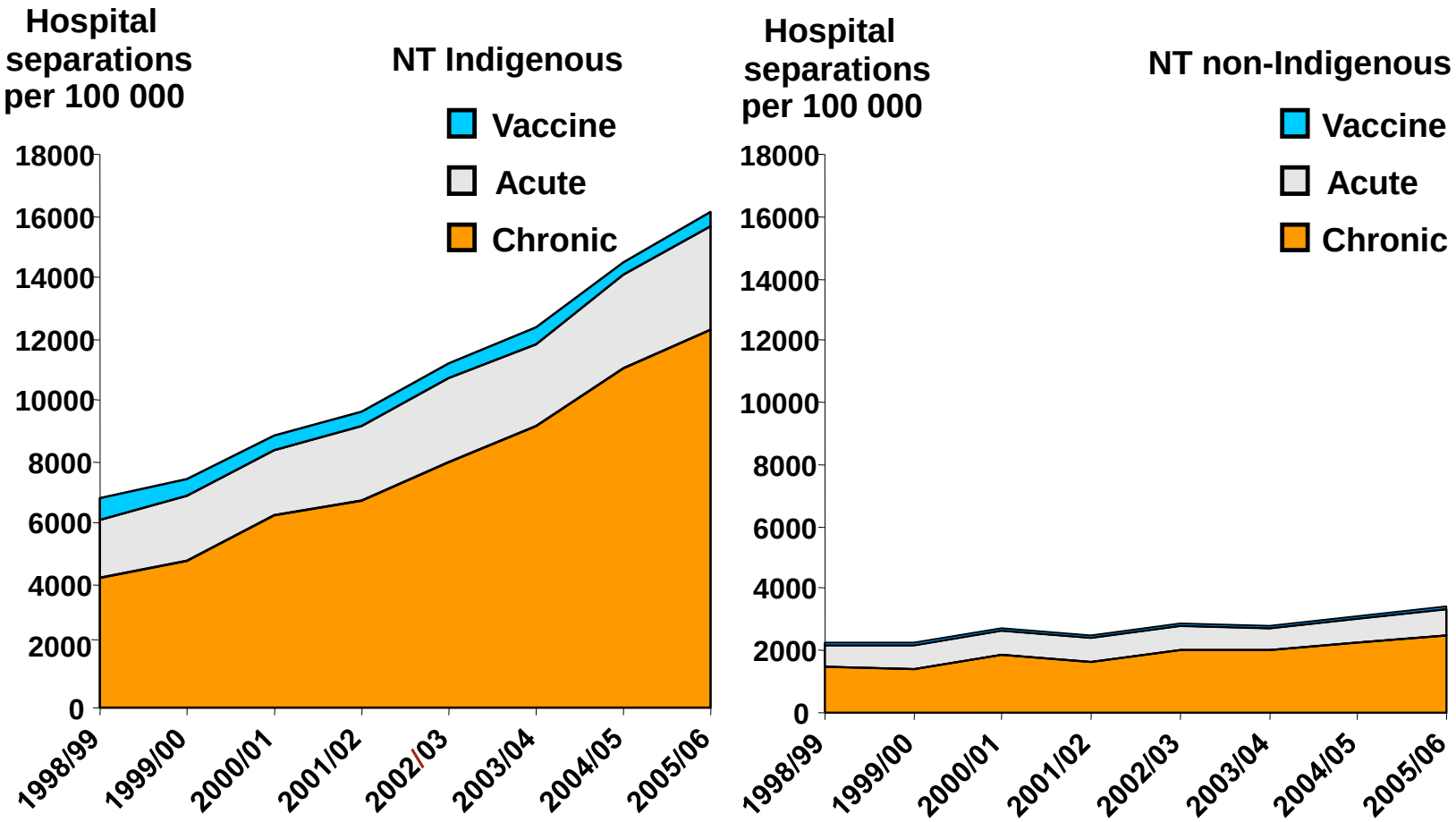
Social Determinants of Health dominate

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 Burden of Disease and Injury in the Northern Territory, 1999-2003 (Draft) Unpublished.[14]

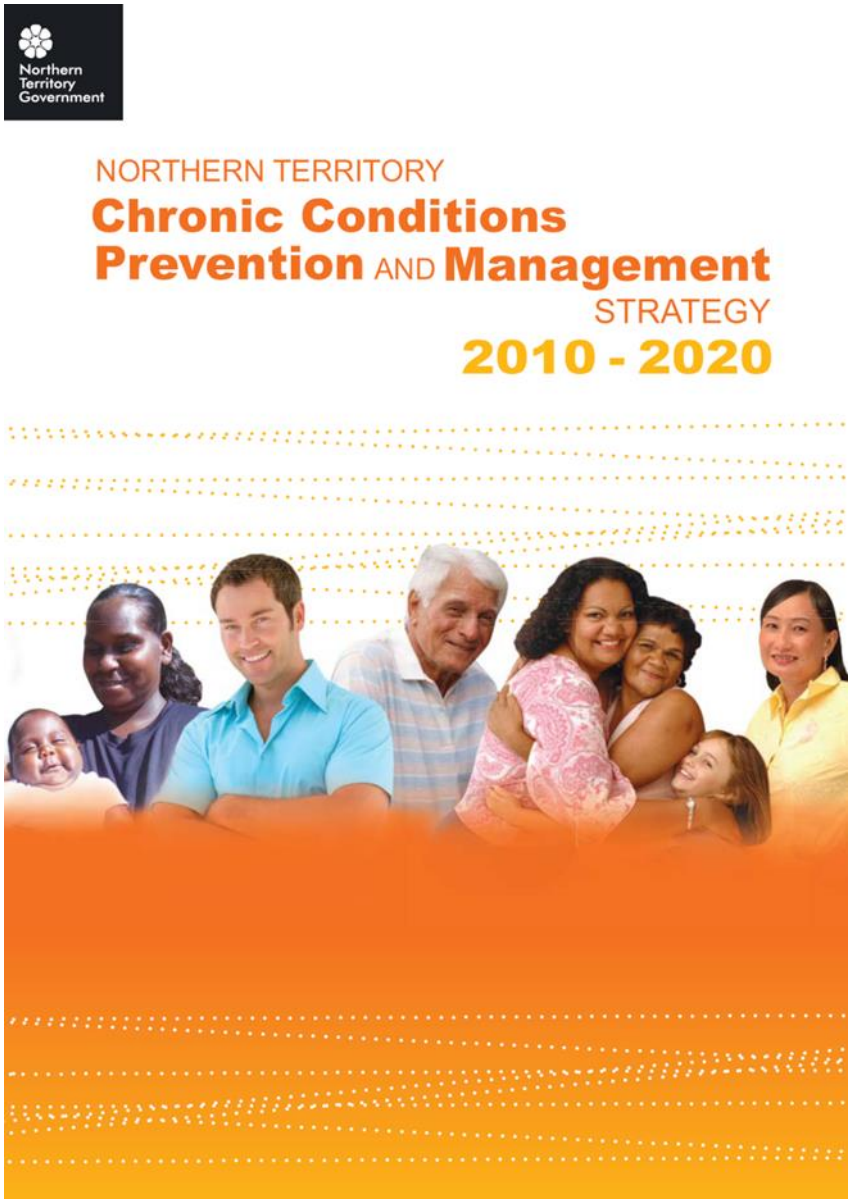
NT Trends in avoidable hospitalisation 1998-2006



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

Organisation of Care

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

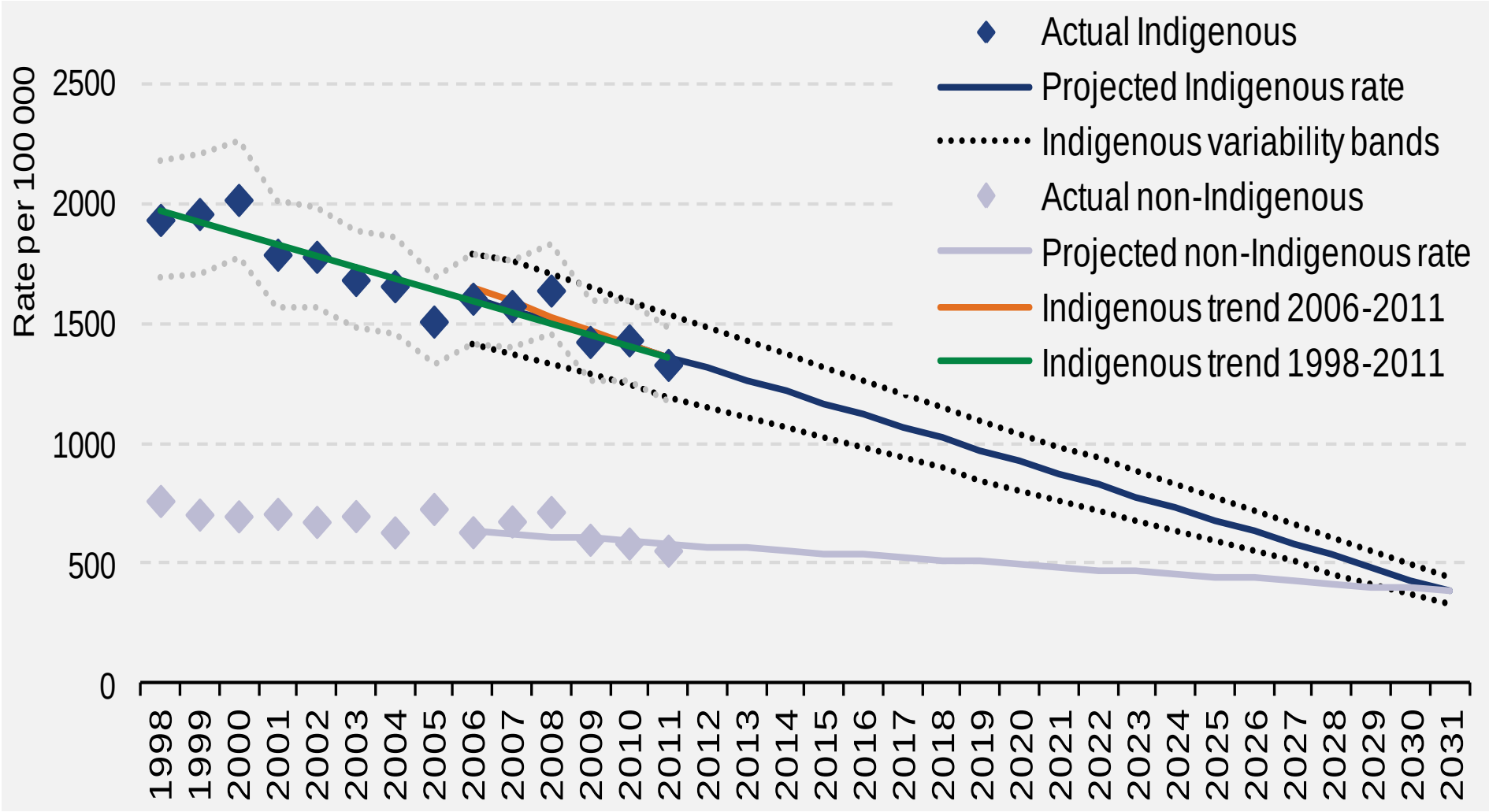


Health Care Home Delivery System

- 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

Significant Health Improvements

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

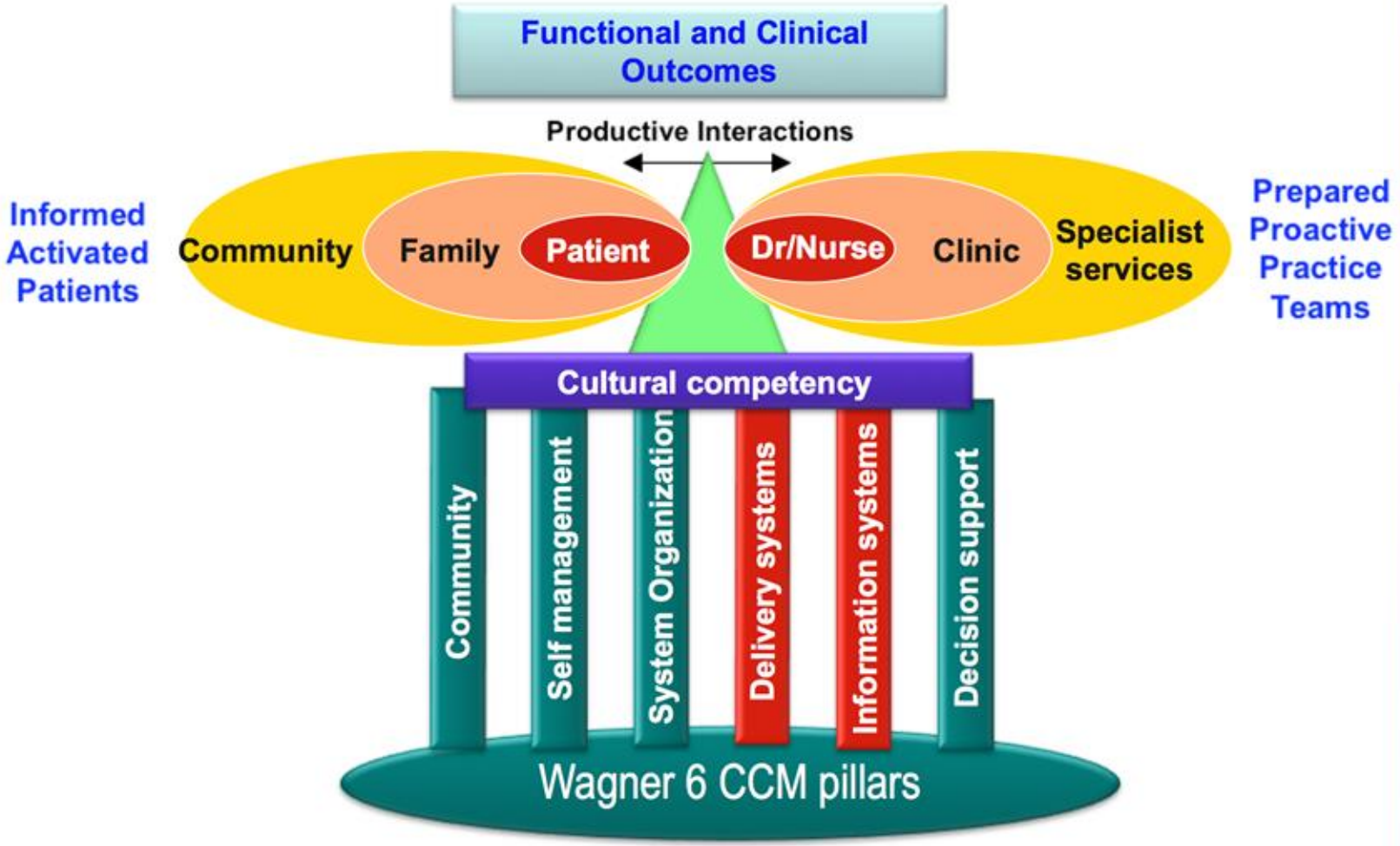


Source: ABS and AIHW—see Appendix D.

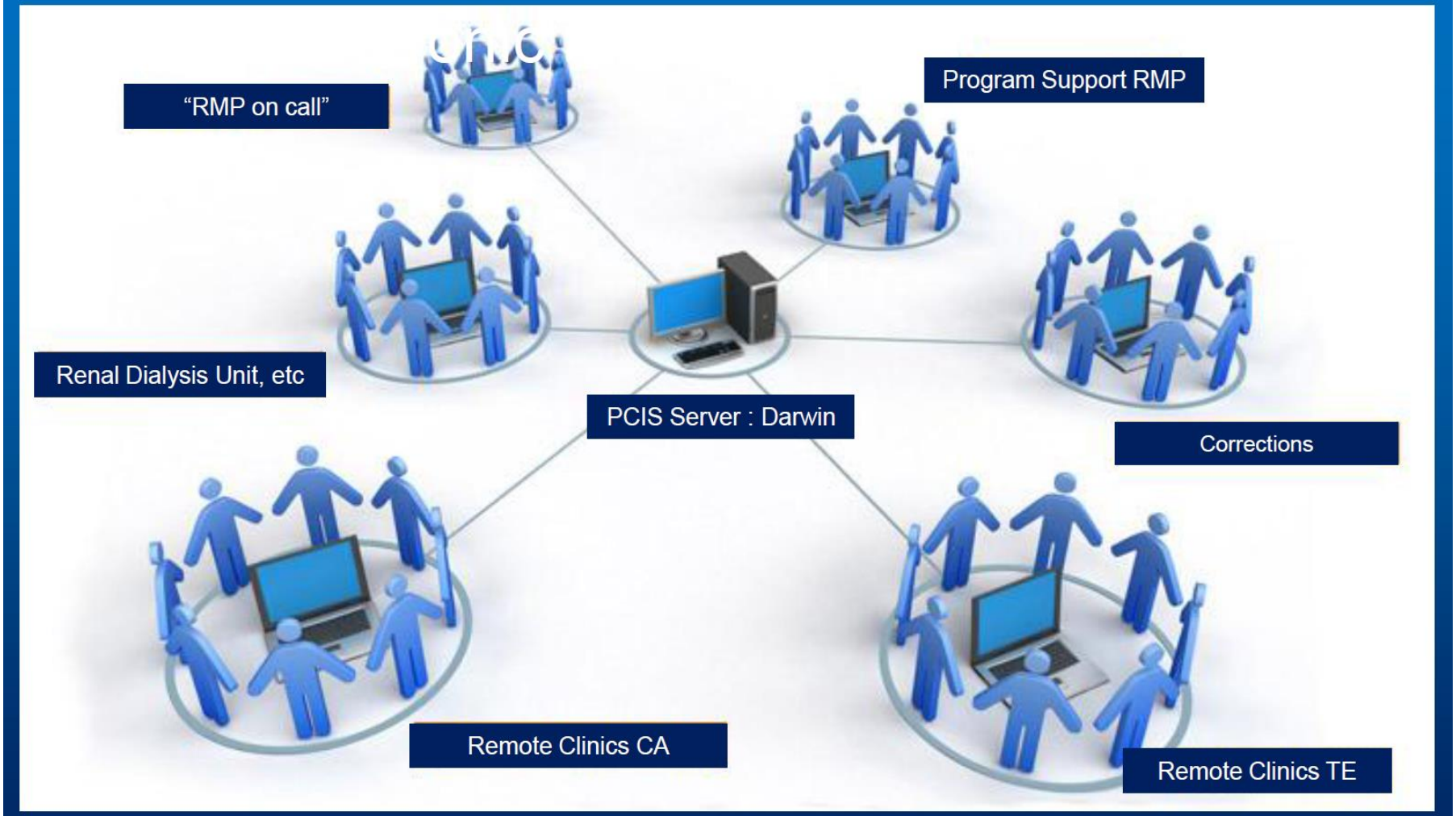
CCMM Background

* 10 year history of CQI with noted limitations:
  * Sample size, manual audit, time delay, patient identification
* Functional reporting commenced August 2012
  * Based on Chronic Care Model (Wagner et al.)
  * "Chronic Conditions Management Model"
* November 2012 - commenced NT-wide distribution of functional reporting to NT government primary care services (N=49)

Chronic Care Management Model



Primary Care EHR



Primary Care EHR functions

- Decision support
  - Structured care plans based on diagnostic groups
  - Annual cycle of care delegated to team members
  - Electronic prescribing
  - Electronic billing (fee for service)
  - 5Y Cardiovascular risk calculation (Framingham + 5%)
- Coordination of care
  - Secure messaging, Lab/Radiology and discharge summaries
  - Electronic referrals

Chronic Conditions Management Model

* Inputs – one project manager, part-time data analyst
  * Orientation and training, project governance, quality assurance
  * Report production

* Outputs – 'functional' reporting
  * Monthly patient recall lists
  * 3-Monthly service-level report
  * 3-Monthly management report

GP / SRMP, Monthly Visit List, Community Health Centre, 05-14

Client Name	Client Id	DOB	Age	Item Description	Due Date
	HRN	10/1/1964	49 yrs	PCD GP Midyear REVIEW	4/2/2014
	HRN	3/8/1964	50 yrs	PCD GP Annual REVIEW	4/2/2014
	HRN	2/20/1986	28 yrs	PCD GP Midyear REVIEW	4/2/2014
	HRN	4/24/1957	57 yrs	PCD GP Midyear REVIEW	4/7/2014
	HRN	10/3/2000	13 yrs 7 mths	Echocardiogram	4/8/2014
	HRN	4/20/1998	16 yrs	RHD Consult by GP/RMP	4/10/2014
*	HRN	8/15/1965	48 yrs	PCD GP Annual REVIEW	4/15/2014
	HRN	10/18/1969	44 yrs	PCD GP Midyear REVIEW	4/18/2014
	HRN	9/17/1969	44 yrs	PCD GP Midyear REVIEW	4/21/2014
	HRN	8/23/1983	30 yrs	PCD GP Midyear REVIEW	4/23/2014
	HRN	2/15/1979	35 yrs	PCD GP Midyear REVIEW	4/27/2014
	HRN	2/27/1991	23 yrs	Echocardiogram	4/30/2014
*	HRN	2/11/1954	60 yrs	PCD GP Midyear REVIEW	5/1/2014
	HRN	5/1/1965	49 yrs	PCD GP Midyear REVIEW	5/1/2014
	HRN	1/1/1954	60 yrs	PCD GP Annual REVIEW	5/3/2014
	HRN	9/8/1966	47 yrs	PCD GP Midyear REVIEW	5/5/2014
	HRN	4/15/1984	30 yrs	RHD Consult by GP/RMP	5/6/2014
	HRN	6/17/1981	32 yrs	PCD GP Midyear REVIEW	5/7/2014
	HRN	1/1/1945	69 yrs	PCD GP Midyear REVIEW	5/8/2014
	HRN	7/4/1987	26 yrs	PCD GP Midyear REVIEW	5/8/2014
	HRN	3/14/1957	57 yrs	PCD GP Midyear REVIEW	5/9/2014
	HRN	1/1/1937	77 yrs	PCD GP Midyear REVIEW	5/10/2014
	HRN	4/6/1983	31 yrs	RHD Consult by GP/RMP	5/12/2014
	HRN	2/5/1972	42 yrs	RHD Consult by GP/RMP	5/13/2014
	HRN	7/1/1951	62 yrs	PCD GP Midyear REVIEW	5/14/2014
	HRN	10/31/1989	24 yrs	PCD GP Annual REVIEW	5/16/2014
	HRN	7/1/1948	65 yrs	PCD GP Annual REVIEW	5/20/2014

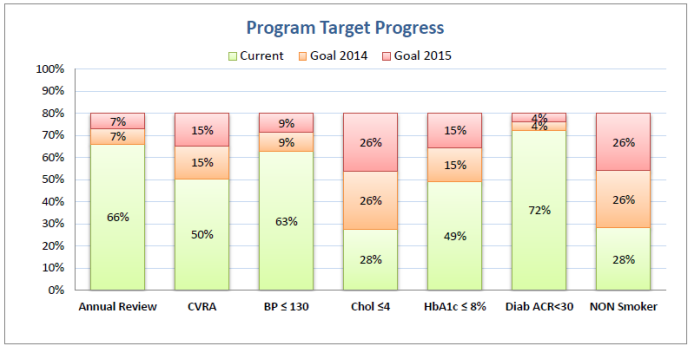
Version 8.2

Total Population :	1432
ATSI Population :	1308
Non-ATSI Population :	124

Data Extract : May-14

Program Targets

	Current	Program Goal	
PCD Annual Review past year :	66.1%	80%	
Cardiovascular Risk Assessment ;	50.4%	80%	
CVRA High and BP ≤ 130 :	62.8%	80%	
CVRA High and Total Chol ≤4 :	27.7%	80%	
Diabetic and HbA1c ≤ 8% :	49.0%	80%	
Diabetic and ACR<30 :	72.3%	80%	
NON Smoker :	28.2%	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

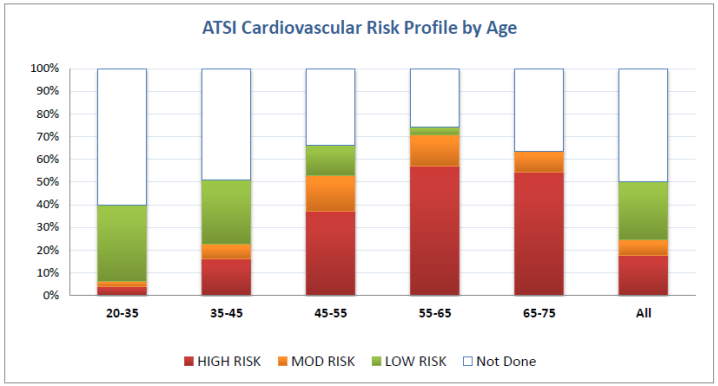
	Current	
KPI 1.7 (Diab/IHD GPMP last 2 years)	87.5%	
KPI 1.8* (Diabetics & HbA1c past year)	94.5%	
KPI 1.9 (Diabetes, ↑ ACR on ACEorARB)	70.7%	
KPI 1.10 (AHC 15-55 years age)	25.4%	
KPI 1.11 (AHC 55 years and older)	24.1%	

Cardiovascular Risk

ATSI Clients age 20 and over:	754
ATSI Clients with CVRA last 2 years :	380

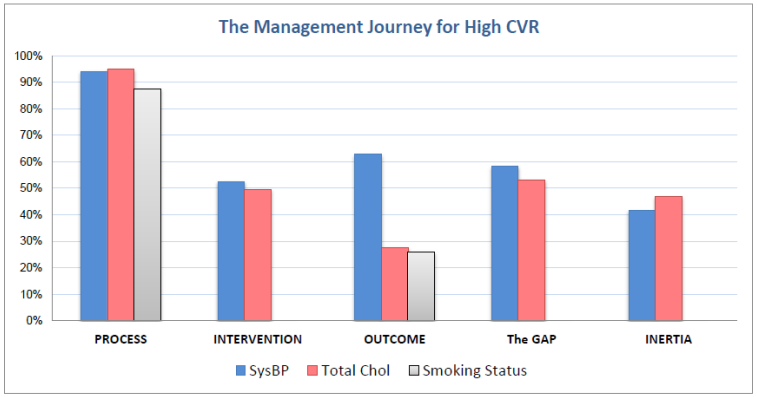
50.4%

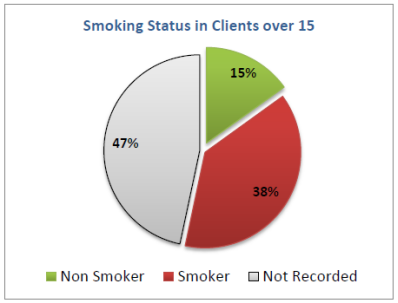
Cardiovascular Risk Category	All clients	PCD Clients	Non PCD
HIGH RISK :	137	131	6
MOD RISK :	50	23	27
LOW RISK :	193	20	173
NO CVRA ASSESSMENT :	374	46	328
Total CVRA Assessments :	**380**	**174**	**206**
	50.4%	79%	39%

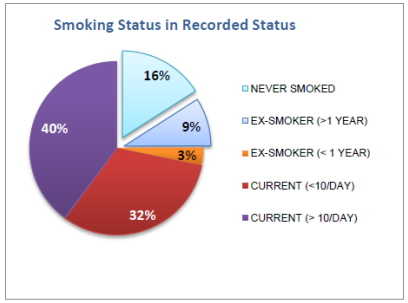


CVR Management Journey

Cardiovascular Risk - HIGH : 137	PROCESS Measured	INTERVENTION On Rx	OUTCOME To target	The GAP >target on Rx	INERTIA > target no Rx
Systolic BP (target ≤ 130) :	129	72 on BP meds	81	28 out of 48	20 out of 48
Total Cholesterol (target ≤ 4.0) :	130	68 on statin	36	50 out of 94	44 out of 94
Smoking Status :	120	-	31	-	-
Diabetes AND Hi CVRA : 76 patients		55 on aspirin	55	-	21



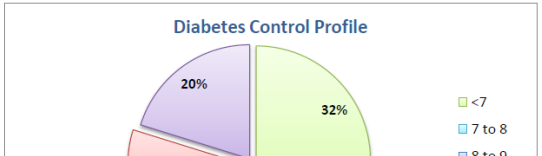




Diabetes

Diabetes Management Journey

Number of Diabetics : 110	PROCESS Measured	INTERVENTION On Rx	OUTCOME To target	The GAP >target on Rx	INERTIA > target no Rx



Program goals

Program Targets

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PCD Annual Review past year :	66.1%	80%
Cardiovascular Risk Assessment ;	50.4%	80%
CVRA High and BP ≤ 130 :	62.8%	80%
CVRA High and Total Chol ≤4 :	27.7%	80%
Diabetic and HbA1c ≤ 8% :	49.0%	80%
Diabetic and ACR<30 :	72.3%	80%
NON Smoker :	28.2%	90%

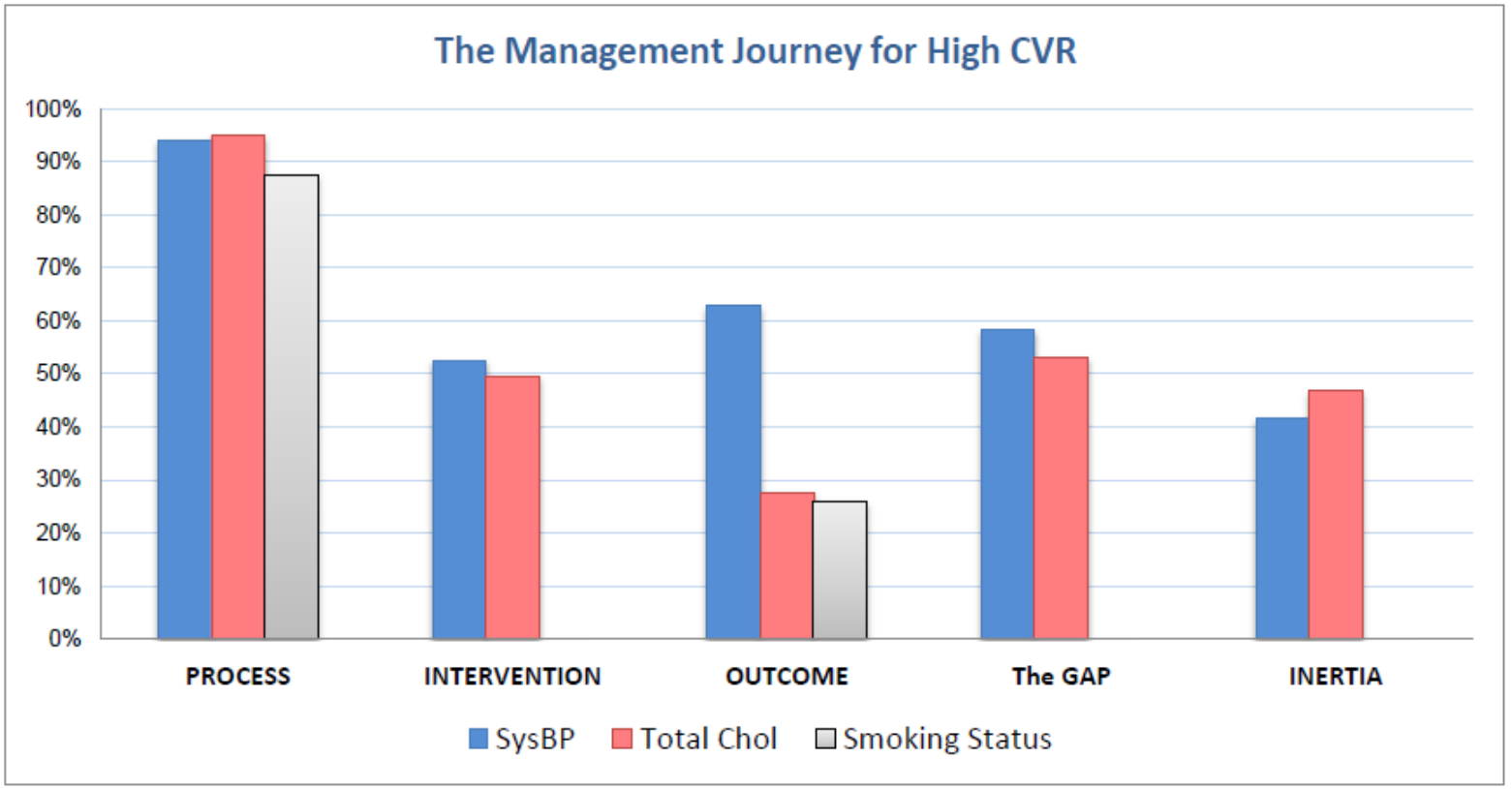
NT AHKPI's

	Current
KPI 1.7 (Diab/IHD GPMP last 2 years)	87.5%
KPI 1.8* (Diabetics & HbA1c past year)	94.5%
KPI 1.9 (Diabetes, ↑ ACR on ACEorARB)	70.7%
KPI 1.10 (AHC 15-55 years age)	25.4%
KPI 1.11 (AHC 55 years and older)	24.1%

Management journey

CVR Management Journey

	PROCESS	INTERVENTION	OUTCOME	The GAP	INERTIA
Cardiovascular Risk - HIGH : 137	Measured	On Rx	To target	>target on Rx	> target no Rx
Systolic BP (target ≤ 130) :	129	72 on BP meds	81	28 out of 48	20 out of 48
Total Cholesterol (target ≤ 4.0) :	130	68 on statin	36	50 out of 94	44 out of 94
Smoking Status :	120	-	31	-	-
Diabetes AND Hi CVRA : 76 patients		55 on aspirin	55	-	21

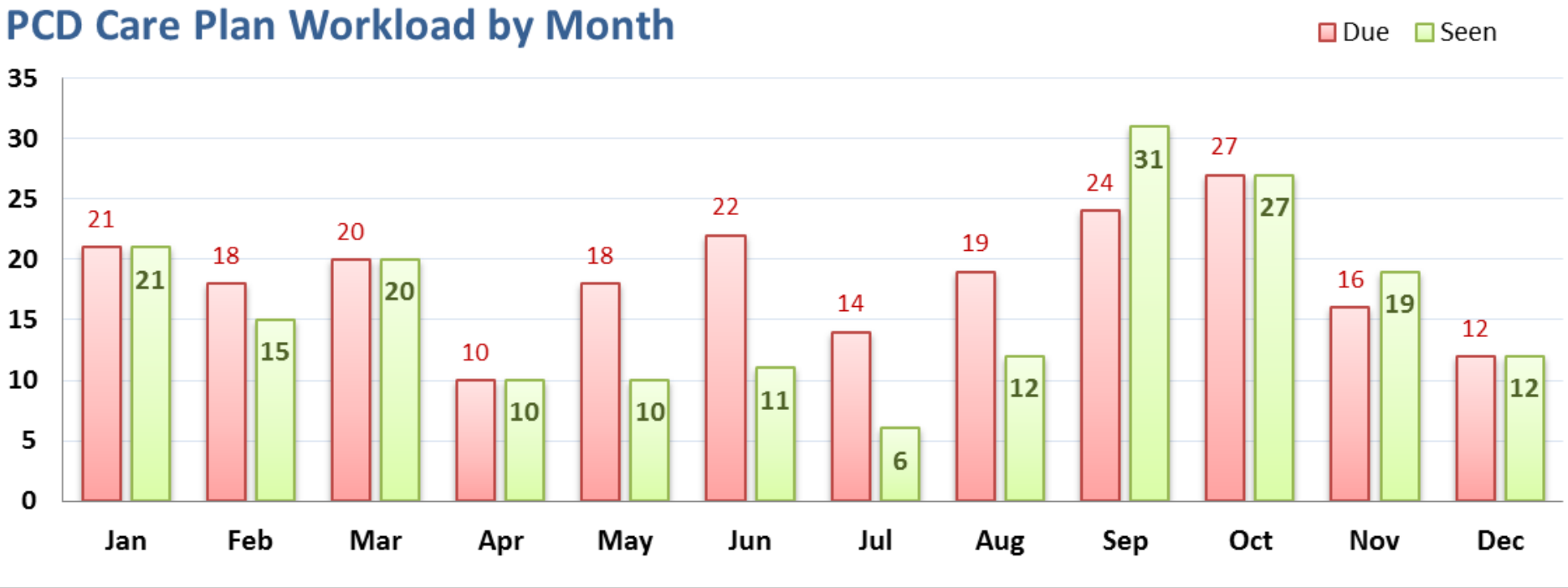


Medication safety

Medication Reports

Medication Exception Reports	No. Patients	
On ACE and ARB :	1	**Review and ? STOP either**
CVD : NO aspirin :	17	
Diab & High CVR: NO aspirin :	21	
Metformin with eGFR ≤ 50 :	3	Review and ? Reduce Dose
Metformin with eGFR ≤ 30 :	**0**	

Workload planning



Drill down to find people in gaps

Community Health Centre

Full Community List

	Demographics			Core Care Plans							Care Plan Review				
HRN	Age	Gende	Ethnicit	AHC	Start AH	PCD	Start PC	Plus RH	Start RH	Plan Mont	715	721	GPMP	Rev_Mont	732
identifier	90	male	ATSI			CKD3	6/05/14			5	8/02/13	1/05/13	30/04/14	4	6/02/14
identifier	84	female	ATSI			iabetes_HiCVI	9/01/14			1		9/01/14	9/01/14	1	9/10/12
identifier	77	female	ATSI			HiCVR	24/03/12			3					5/10/12
identifier	77	female	ATSI			iabetes + CKD	19/09/13			9		11/09/13	11/09/13	9	
identifier	74	female	ATSI			iabetes + CKD	4/09/13			9	4/09/13	25/09/13	25/09/13	9	3/09/12
identifier	74	female	ATSI			iabetes_HiCVI	19/09/13			9		19/09/13	19/09/13	9	7/04/14
identifier	74	female	ATSI			HiCVR	1/04/14			4			3/07/13	7	
identifier	74	male	ATSI			HiCVR	7/02/14			2					
identifier	73	female	ATSI			iabetes_HiCVI	10/01/14			1	27/06/13	10/01/14	10/01/14	1	
identifier	73	male	ATSI			HiCVR	9/08/13			8		9/08/13	9/08/13	8	
identifier	72	male	ATSI									21/08/13	21/08/13	8	
identifier	70	male	ATSI												
identifier	70	female	ATSI			HiCVR	26/06/13			6			26/09/13	9	22/01/14
identifier	70	female	ATSI			CKD3	17/06/13			6	3/09/12	4/09/13	4/09/13	9	22/01/14
identifier	70	female	ATSI	AHC	1/07/12										
identifier	70	male	Non ATSI												
identifier	69	female	ATSI			iabetes + CKD	24/10/13			10	22/08/12	24/10/13	24/10/13	10	23/01/13
identifier	69	male	ATSI			iabetes_HiCVI	2/12/13			12		2/12/13	2/12/13	12	2/05/13
identifier	68	female	ATSI								2/10/12				
identifier	68	male	ATSI			CKD3	25/07/13			7		25/07/13	25/07/13	7	12/02/14
identifier	68	male	ATSI			iabetes_HiCVI	17/03/14			3	31/05/13	1/06/12	15/04/14	4	

Chronic Conditions Management Report

Northern Territory — Quarterly Report

This report derives from 49 Remote Health PCIS Clinics

Report Date: Feb-15

Total Population :	28562
ATSI Population :	22329
Non-ATSI Population :	6233

Traffic Light Table	
≥ 75%	
50% - 74%	
25% - 49%	
< 25%	

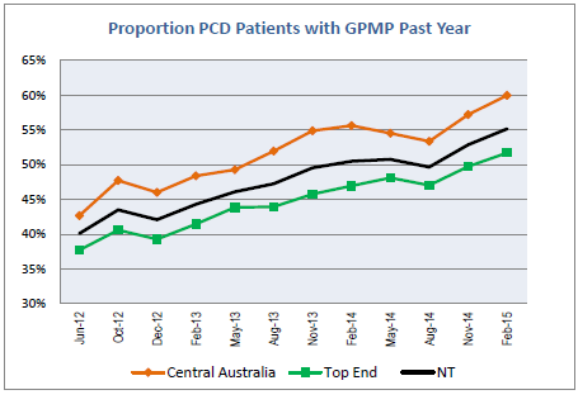
Program Targets

	Current	Program Goal	NT (All)	TE	CA
PCD Annual Review past year :	55.1%	80%	55.1%	51.7%	59.9%
Cardiovascular Risk Assessment :	64.5%	80%	64.5%	63.5%	66.1%
CVRA High and BP ≤ 130 :	60.0%	80%	60.0%	60.7%	59.2%
CVRA High and Total Chol ≤4 :	38.8%	80%	38.8%	35.9%	42.6%
Diabetic and HbA1c ≤ 8% :	50.6%	80%	50.6%	56.5%	44.7%
Diabetic and ACR<30 :	66.5%	80%	66.5%	66.1%	66.9%
NON Smoker :	45.0%	90%	45.0%	36.3%	58.8%

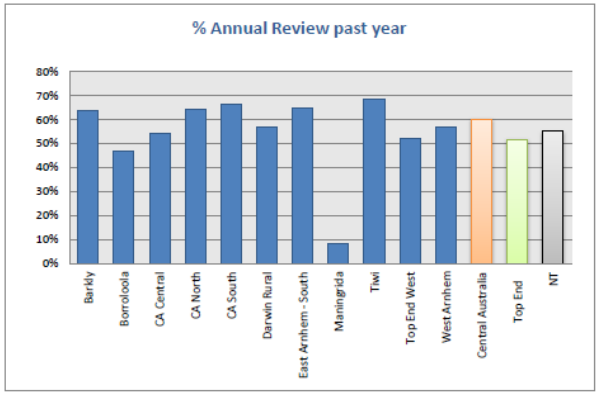
NT AHKPI's

	Current	NT (All)	TE	CA
KPI 1.7 (Diab/IHD GPMP last 2 years)	79.2%	79.2%	80.6%	77.7%
KPI 1.8* (Diabetics & HbA1c past year)	81.4%	81.4%	82.7%	80.1%
KPI 1.9 (Diabetes, ↑ ACR on ACEorARB)	85.2%	85.2%	86.5%	84.0%
KPI 1.10 (AHC 15-55 years age)	32.0%	32.0%	32.3%	31.4%
KPI 1.11 (AHC 55 years and older)	39.2%	39.2%	36.8%	42.6%

Trend Graph



Benchmark Graph

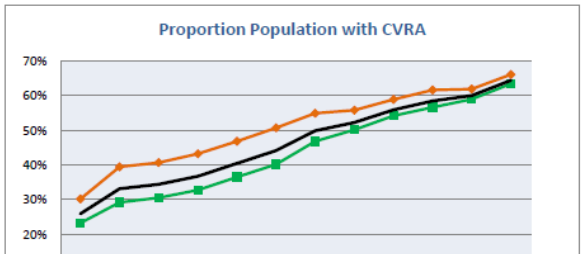


Cardiovascular Risk

ATSI Clients age 20 and over:	12458
ATSI Clients with CVRA last 2 years :	8030

64.5%

Trend Graph



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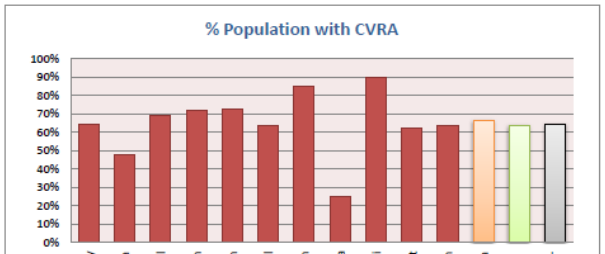


Population wide data

Program Targets

	Current	Program Goal	
PCD Annual Review past year :	55.1%	80%	
Cardiovascular Risk Assessment :	64.5%	80%	

Adult Health Checks

		AHC Review	
Population 15 years and older :	14658	4805	33%
Population < 5 :	1974	849	43%
Population 5 to 15 :	5282	827	16%
Population 15 -55 :	13049	4174	32%
Population >55 :	1609	631	39%

KPI 1.8* (Diabetics & HbA1c past year)	81.4%
KPI 1.9 (Diabetes, ↑ ACR on ACEorARB)	85.2%
KPI 1.10 (AHC 15-55 years age)	32.0%
KPI 1.11 (AHC 55 years and older)	39.2%

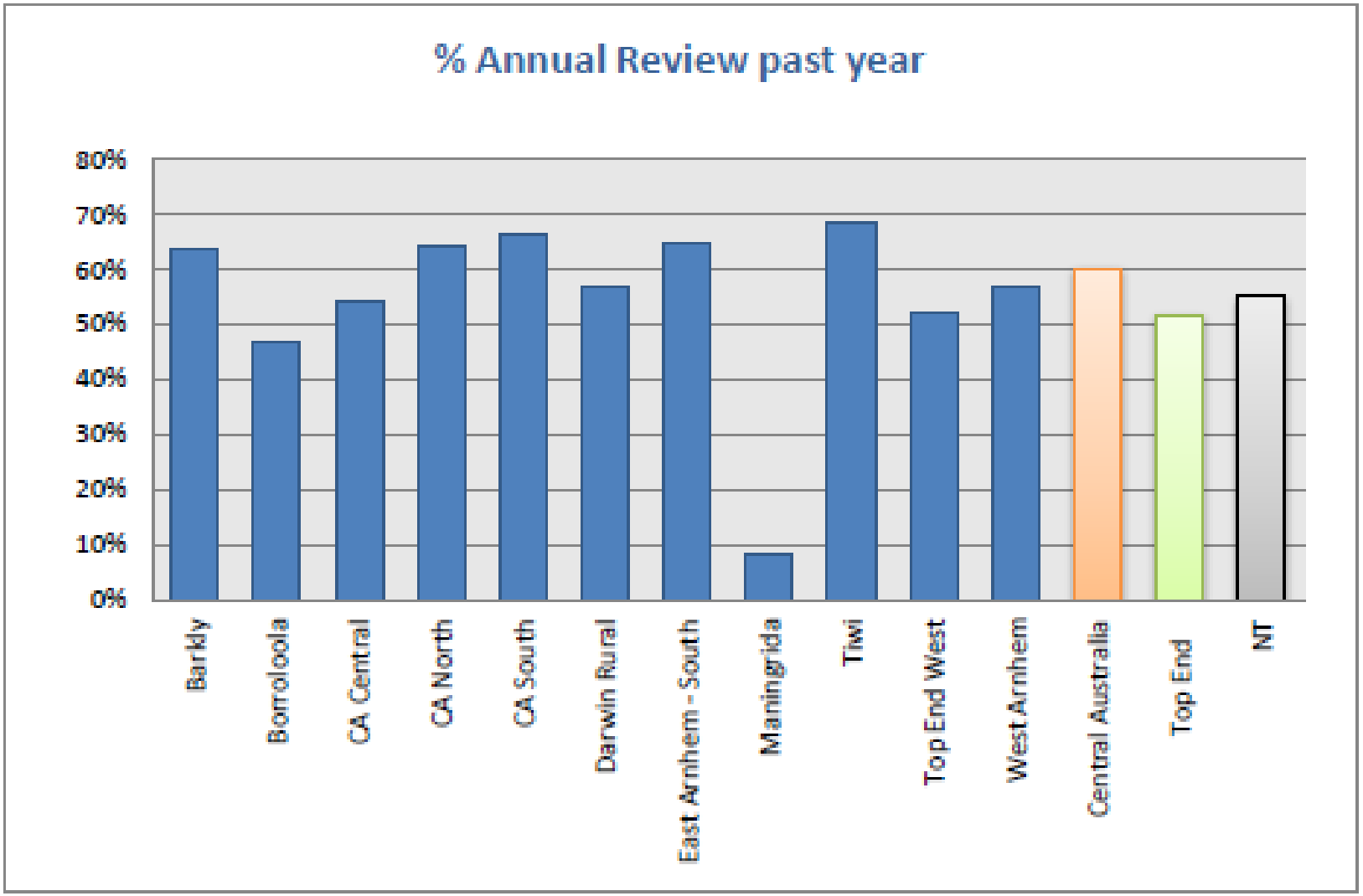
Chronic disease profile

Chronic Disease Profile

	Clients	ON Plan	NO Plan	Review 1 yr	Review Rate
All Chronic Disease	4828	4038	790	2662	55%
Diabetes	2579	2379	200	1736	67%
Cardiovascular Disease	861	722	139	575	67%
No PCD with HIGH CV Risk	1757	1579	178	1243	71%
Chronic Kidney Disease (3-5)	685	627	58	473	69%
Chronic Lung Disease	1009	546	463	471	47%

Chronic conditions care

Benchmark Graph



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1443-9506/04/$36.00
http://dx.doi.org/10.1016/j.hlc.2014.11.008

ORIGINAL ARTICL

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

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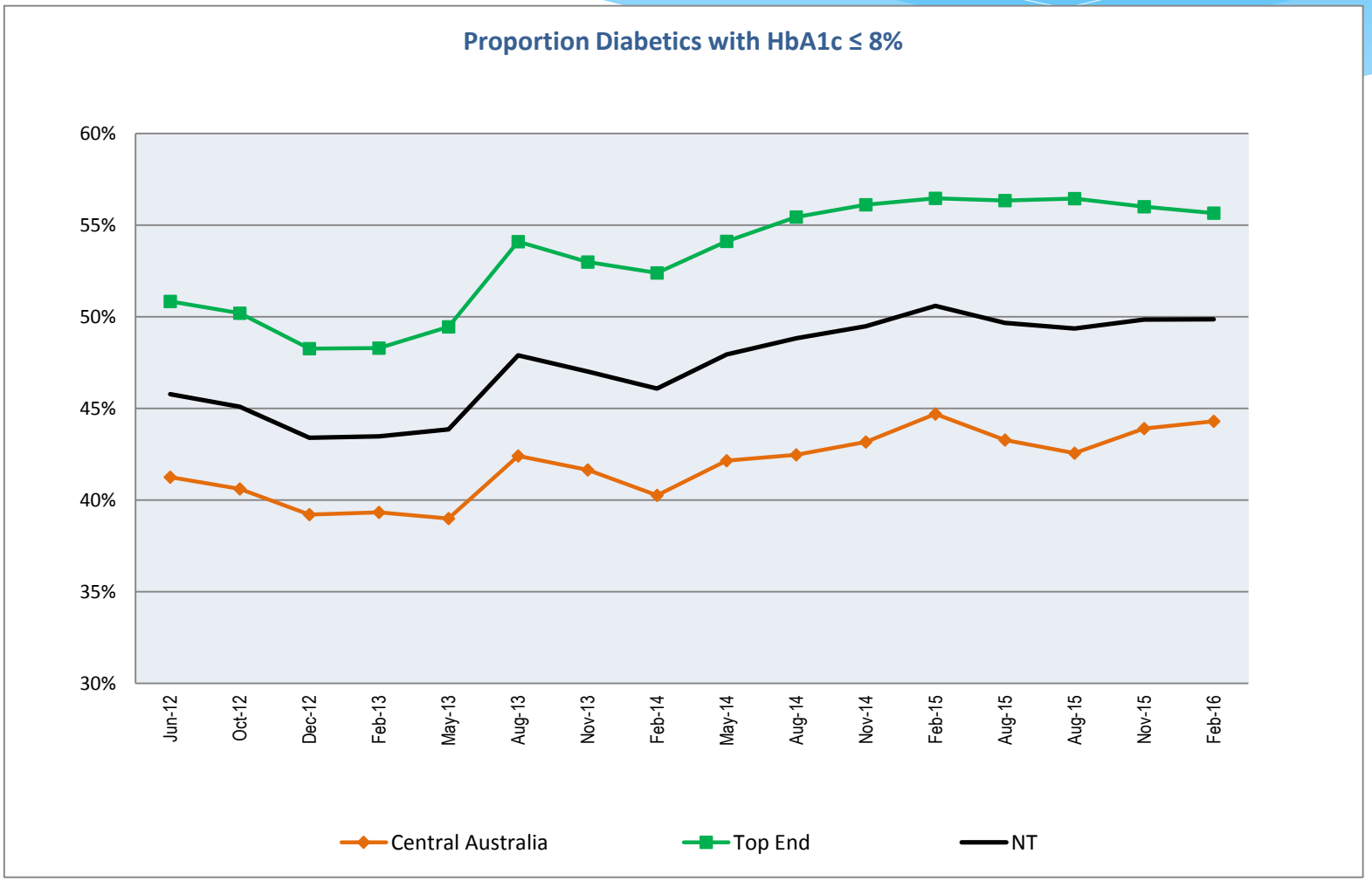
Population outcomes



Identified benefits of the CCMM

Chronic condition care improved through:

* **Better coordination of care**
* **Alignment and integration of care providers using data**
* **Pro-active outreach to close evidence-practice gaps**
* **Medication safety**
* **Regular reporting to stimulate innovation and learning**
* **Management for quality not targets**

CCMM Lessons

* KISS principle
* Reports need to be ‘actionable’ (identify patients in care gaps) to engage busy frontline providers
* ‘Creative commons’ enabled by good quality data
* Leverage of internal motivations of care providers

Next steps

* Extension of functional reporting to children < 5Y program
* More robust reporting format and ‘real-time’ reporting
* Expand reporting to include medication dispensing
* More technical assistance:
  * service re-design (clinical microsystems)
  * Collaboratives
  * Capacity to respond to variations in practice

Thank You

* **Questions?**