menzies
school of health research

Priority Evidence-Practice Gaps in Aboriginal and Torres Strait Islander Preventive Health Care

Phase 1 Current Status Data (2012-2014)

Phase 2 Trend Data (2005-2014)

Engaging stakeholders in identifying priority evidence-practice gaps and strategies for improvement in primary health care (ESP project)

To be read in conjunction with the Preventive Health Care Final Report

Bailie J, Matthews V, Laycock A, Schultz R, Bailie R. Preventive Health Care for Aboriginal and Torres Strait Islander People: Final Report. ESP Project: Priority Evidence-Practice Gaps and Stakeholder Views on Barriers and Strategies for Improvement. Menzies School of Health Research. June 2016.

ABCD NATIONAL RESEARCH PARTNERSHIP | Improving practice through research

One21seventy
National Centre for Quality Improvement in Indigenous Primary Health Care

Table of Contents

The ABCD National Research Partnership is led by Menzies School of Health Research and funded by the National Health and Medical Research Council (ID No.545267) and the Lowitja Institute. The Partnership includes Aboriginal Community Controlled Health Organisation peak bodies and members services, government health departments, academic institutions, and primary health care services in five states and territories: the Northern Territory, Queensland, South Australia, Western Australia and New South Wales. Ethical approval has been granted by the Human Research Ethics Committees in all jurisdictions where there are participating health services.

1 Phase 1 data report – identifying priority evidence-practice gaps

Ninety-five health centres last used the preventive health audit tool in 2012, 2013 or 2014 (Table 1). These health centres had used the audit tool for varying numbers of CQI cycles (Table 2). The preventive health audit tool had been used mostly by health centres in Qld and the NT. The data included in the analysis for this report were extracted in July 2014. A total of 3,571 records were audited in the 95 health centres. Twenty-one health centres last used the preventive tool in 2012 (758 records audited), 54 health centres in 2013 (2,128 records audited) and 20 health centres in 2014 (685 records audited). To date, 71 of these health centres recorded a completed systems assessment in the One21seventy database.

Table 1 Most recent preventive health audit and systems assessment completed in 2012, 2013 or 2014 (number of client records audited, number of health centres)

		2012	2013	2014	Total
QLD	#Records	392	1116	161	1669
	#Centres	12	29	4	45
	#SATs	12	27	1	40
NT	#Records	309	821	497	1627
	#Centres	7	22	15	44
	#SATs	6	15	7	28
SA	#Records	57	154	27	238
	#Centres	2	2	1	5
	#SATs	1		1	2
WA	#Records		37		37
	#Centres		1		1
	#SATs		1		1
Total	#Records	758	2128	685	3571
	#Centres	21	54	20	95
	#SATs	19	43	9	71

Table 2 Most recent preventive health audit completed, by audit cycle in 2012, 2013 or 2014 (number of health centres)

	Last Audit Cycle Completed								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
QLD	5	2	16	10	7	5			45
NT	10	8	6	6	11	1	2		44
SA	1	2	2						5
WA								1	1
Total	16	12	24	16	18	6	2	1	95

The majority of health centres are in remote communities and are government managed (Table 3). Eighty-nine percent of records audited were for Aboriginal or Torres Strait Islander clients. Ninety-five percent of audited records showed a record of attendance at the health centre within the previous 24 months and almost half of these attendances were for acute care. Less than 15% of attendances were for a well person's check. National data shows that initial assessment at the health centre was most commonly conducted by a nurse, with general practitioners (GPs) and Aboriginal or Torres Strait Islander Health Workers (ATSIHWs) being the next most common professionals to do the initial assessment.

Table 3 Characteristics of health centres and clients whose records were last audited during 2012-2014 (number and (%))

		QLD	NT	SA	WA	Total
Primary Health Care Centres		**45**	**44**	**5**	**1**	**95**
Location	Urban	3 (7)	1(2)	2(40)	1(100)	6(6)
	Regional	5 (11)	2(5)	2(40)		10(11)
	Remote	37 (82)	41(93)	1(20)		79(83)
Governance	Government	44 (98)	36(82)	3(60)		83(87)
	Community Controlled	1 (2)	8(18)	2(40)	1(100)	12(13)
Size of population served	≤500	23 (51)	25(57)	2(40)		50(53)
	501-999	9 (20)	6(14)	2(40)		17(18)
	≥1000	13 (29)	13(29)	1(20)	1(100)	28(29)
Completed preventive audit cycles	Baseline	5 (11)	10(23)	1(20)		16(17)
	1-2 cycles	18 (40)	14(32)	4(80)		36(38)
	≥3 cycles	22 (49)	20(45)		1(100)	43(45)
Number of audited records		**1669**	**1627**	**238**	**37**	**3571**
Age (mean & range)		31 (15-55)	30 (15-55)	31 (15-55)	30 (16-51)	31 (15-55)
Gender	Males	842(50)	808 (50)	138(58)	20(54)	1808(51)
	Females	827(50)	819 (50)	100(42)	17(46)	1763(49)
Indigenous status	Indigenous	1344(81)	1568 (96)	236(99)	33(89)	3181(89)
	Non-indigenous	186(11)	52 (3)	2(1)	4(11)	244(7)
	Not stated	139(8)	7 (1)			146(4)
Reason for last attendance	Well person's check	140(8)	225 (14)	93(39)	7(19)	465(13)
	Acute care	882(53)	793 (49)	40(17)	28(76)	1743(49)
	Mental Illness	27(2)	52 (3)	1(0.5)		80(2)
	Immunisation	171(10)	122 (7)	9(4)		302(8)
	Antenatal	6(1)	12 (1)	1(0.5)		19(0.5)
	Sexual Health	161(10)	103 (6)	9(4)		273(8)
	Other	174(10)	292 (18)	56(23)	2(5)	524(15)
	N/A (did not attend last 24 months)	108(6)	28 (2)	29(12)		165(4.5)
Profession patient first seen by	ATSIHW	227(14)	172 (11)	127(53.5)	33(89)	559(16)
	Nurse	823(49)	1127 (69)	70(29)	1(3)	2021(56)
	GP	422(25)	216 (13)	2(1)	2(5)	642(18)
	Specialist	13(0.8)	27 (2)			40(1)
	Allied Health	21(1)	41 (2)	2(1)	1(3)	65(2)
	Other	4(0.2)	15 (0.9)	8(3.5)		27(1)
	Not stated	51(6)	1 (0.1)			52(1)
	N/A (did not attend last 24 months)	108(6)	28 (2)	29(12)		165(5)
Attended within past 24 months		1561(94)	1599 (98)	209(88)	37(100)	3406(95)

1.1 Identifying priority evidence-practice gaps

The priorities for improvement, or priority evidence-practice gaps, reported here were determined by identifying items in the national clinical audit and systems assessment data that reflected:

a) basic aspects of clinical care that were being delivered and recorded at a high level of performance by the majority of services, but that were being delivered at a much lower level by a proportion of services;

b) aspects of care where there was more general wide variation in recorded delivery of care;

c) important aspects of comprehensive PHC that were generally recorded at low levels; and,

d) components of PHC centre systems that were relatively poorly developed.

These criteria were used by the ABCD Project team in conjunction with a clinical expert to identify a preliminary set of priorities. The preliminary priorities are presented in the body of the report, and are also presented below for summary purposes.

Vascular and metabolic risks

- Absolute cardiovascular risk assessment (median level of delivery is zero)
- Plan for follow-up of abnormal BP, BGL and lipid profile (median level of delivery is <20%)
- Record of BMI, waist circumference, lipid profile (median level of delivery is 30-50%)
- Provision of advice on nutrition and physical activity (median level of delivery is 40-50%)
- Recording of alcohol use and of smoking status (median level of delivery is 50-60%)
- Record of urinalysis (median level of delivery is ~50%)

Sensory functions and oral health

- Record of visual acuity check (median level of delivery is <40%)
- Record of check of oral health, ears and hearing (median level of delivery is around 40%)

Sexual and reproductive health

- Pap smear (median level of delivery is < 50%) and mammography (median level of delivery is zero)
- Recording of discussion of sexual and reproductive health (median level of delivery is < 50%)
- Record of enquiry regarding continence (median level of delivery is zero)

Social and emotional wellbeing

- Emotional wellbeing screening (median level of delivery is <20%)
- Record of enquiry regarding environmental and living conditions, family relationships, substance use (median level of delivery is 35% or less)
- Improving capability to provide appropriate support and follow-up for clients identified as being at risk.

Completion of adult health Checks with appropriate follow-up

MBS item 715 adult health checks (median level of delivery is approximately 20%)

Assessment of Health Centre Systems to support best practice

System components that were scored ***relatively low*** by most health centres were:

- *Links with the community, other health services and other services and resources* component to inform service and regional planning (in particular 'Communication and cooperation on regional health planning and development of health resources' and 'Communication and cooperation on governance and operation of the health centre')
- *Self-management support* component referring to structures and processes that support clients and families to play a major role in managing and maintaining their health and achieving safe and healthy environments
- 'Team structure and function' and 'Continuity of care' - within the *Delivery System Design* component.

1.2 Presentation of audit data: horizontal box and whisker plots

The presentation of audit findings follows the structure of the preventive health audit tool, with sections on recording of key client information; risk factors and brief interventions, scheduled services, documentation of follow-up of abnormal results and emotional wellbeing screening and care.

Each section of the report includes:

- A summary of key findings from the national audit data;
- Preliminary priority evidence-practice gaps (preliminary priorities for improvement) based on the national data; and
- Box and whisker plots for each of the items in the audit tools, which show the level of adherence to best practice guidelines, and variation between health centres.

Box and whisker plots

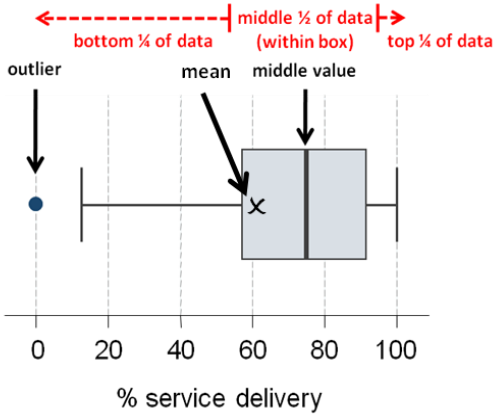
The mean percent delivery of each service item is calculated for each health centre and displayed within a 'box and whisker plot' to show the distribution (or variation) in delivery of that item across health centres.

Box and whisker plots show (Box 1):

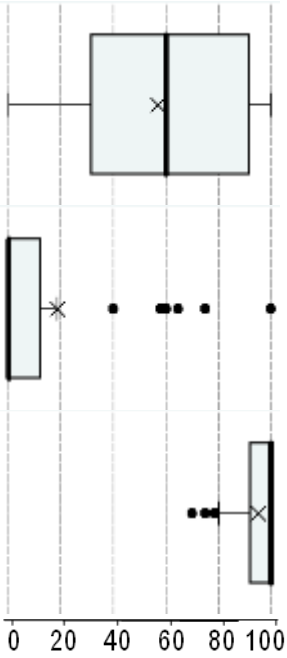
- the minimum and maximum values (ends of whiskers if no outliers);
- outliers which are values far away from most other values in the data set (or a distance that is greater than 1.5 times the length of the box);
- the range of service item delivery by dividing the dataset into quarters:
  - the box represents the middle 50% of the dataset (or interquartile range), and the line within the box represents the median (or middle value);
  - the right hand whisker (and outliers if present) represents the top 25% of the data
  - the left hand whisker (and outliers if present) represents the bottom 25% of the data; and
- the longer the box plot, the greater the range (or variation).

Box 1: How to interpret box and whisker plots

Interpretation:



Examples:

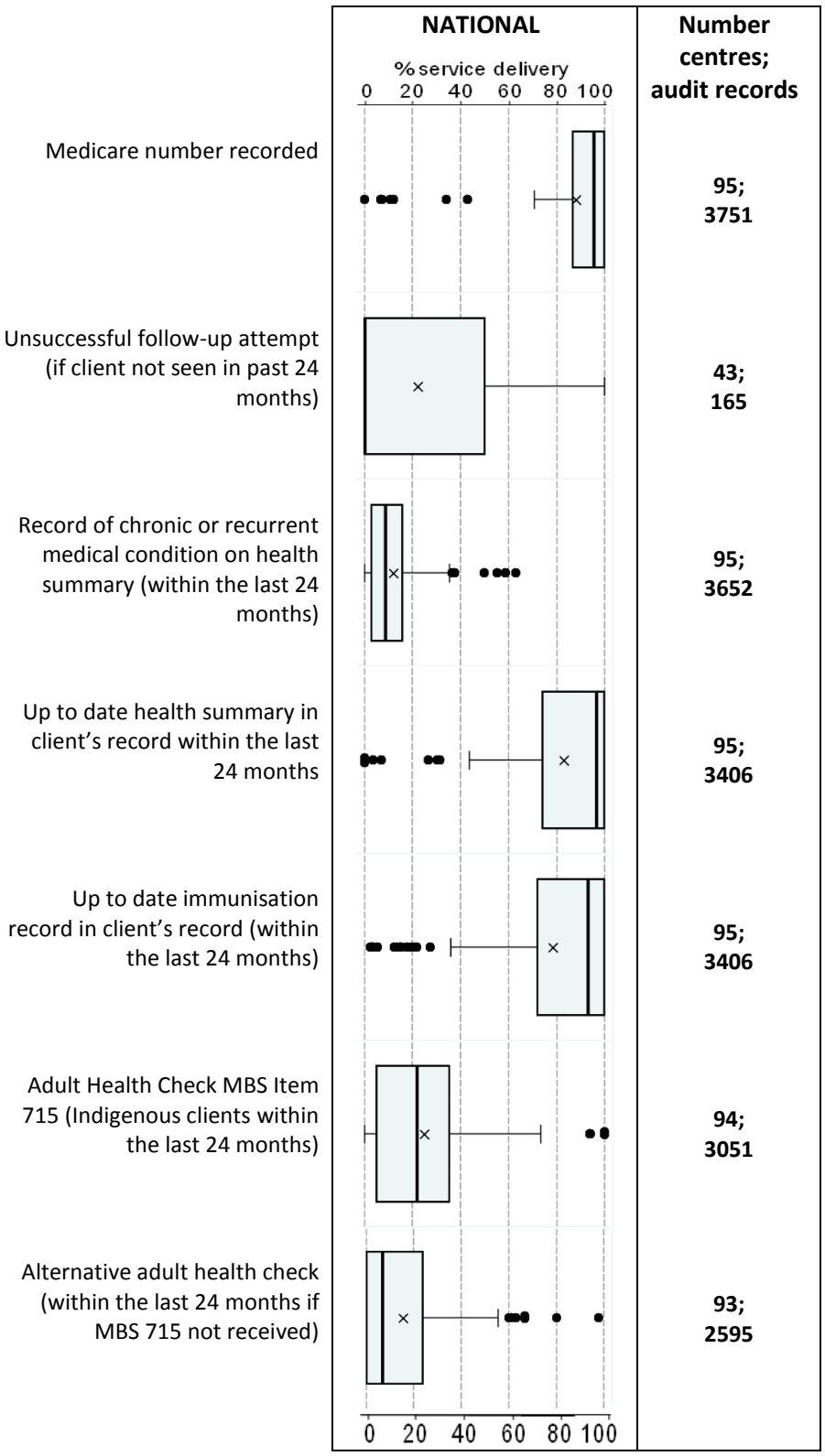


- Wide variation in service delivery (range 0-100%).
- Health centres relatively equally dispersed across the range. 25th to 75th centile is 30-90%.
- Majority of centres at lower end of range (between 0-20%) with a few health centres at higher levels – up to 100%.
- Smaller variation in service delivery (range 70-100%).
- All centres at higher end with 75% of centres in the 90-100% range.

1.3 Client records & health summaries

This figure shows mean health centre percentages of well clients who have a record of key information in medical records such as up to date health summaries, immunisation records and health checks.

Figure 1 ***Mean health centre percentages of well clients with a record of key information in client records***



1.4 Risk factors and brief interventions

The figures in this section show mean health centre percentages of well clients with a record of a range of risk factor and brief intervention discussions.

Figure 2 ***Mean health centre percentages of well clients with a record of the following substance use risk factor and brief intervention discussions within the last 24 months***

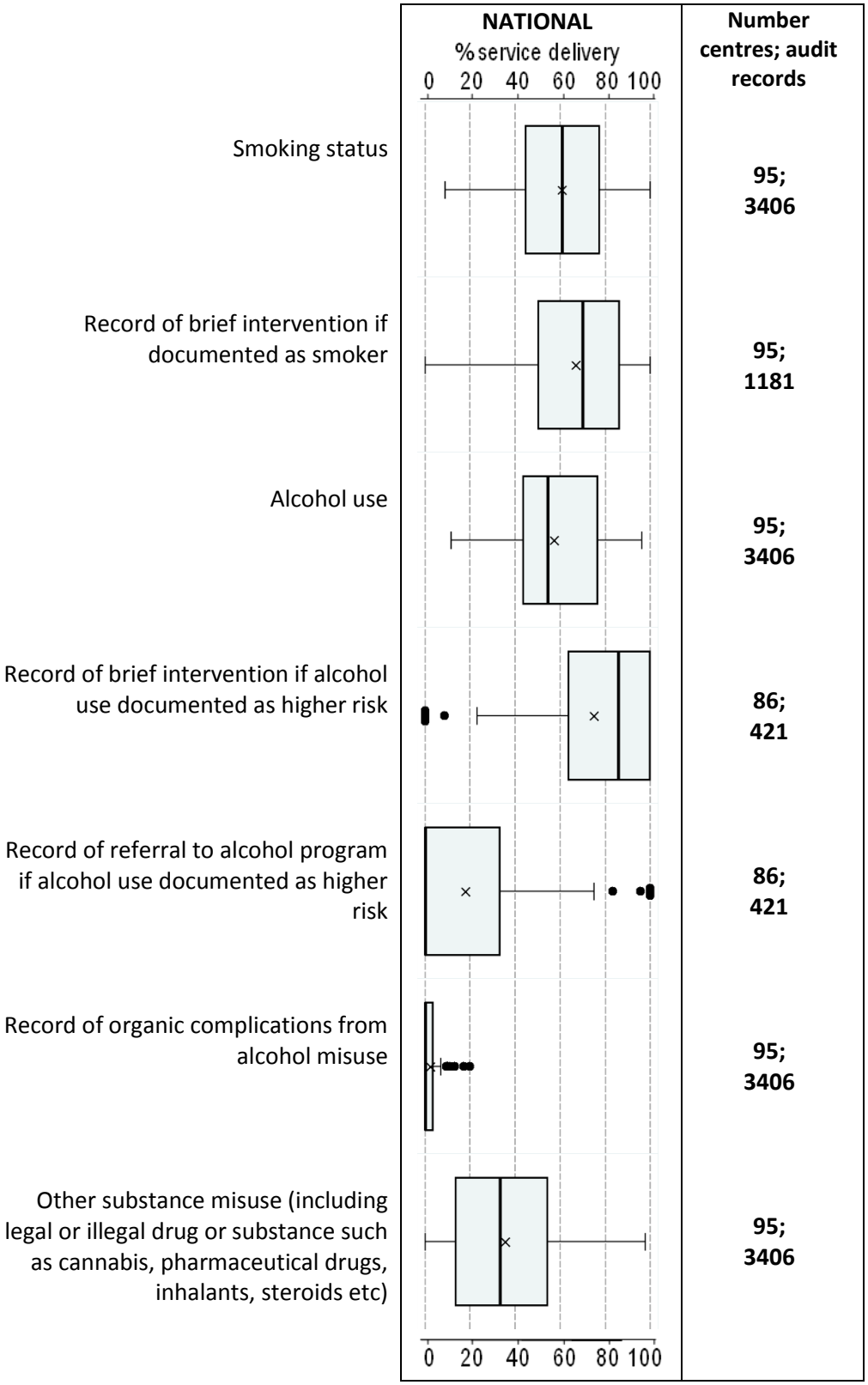


Figure 3 ***Mean health centre percentages of well clients with a record of the following nutrition and lifestyle risk factors and brief intervention discussions within the last 24 months***

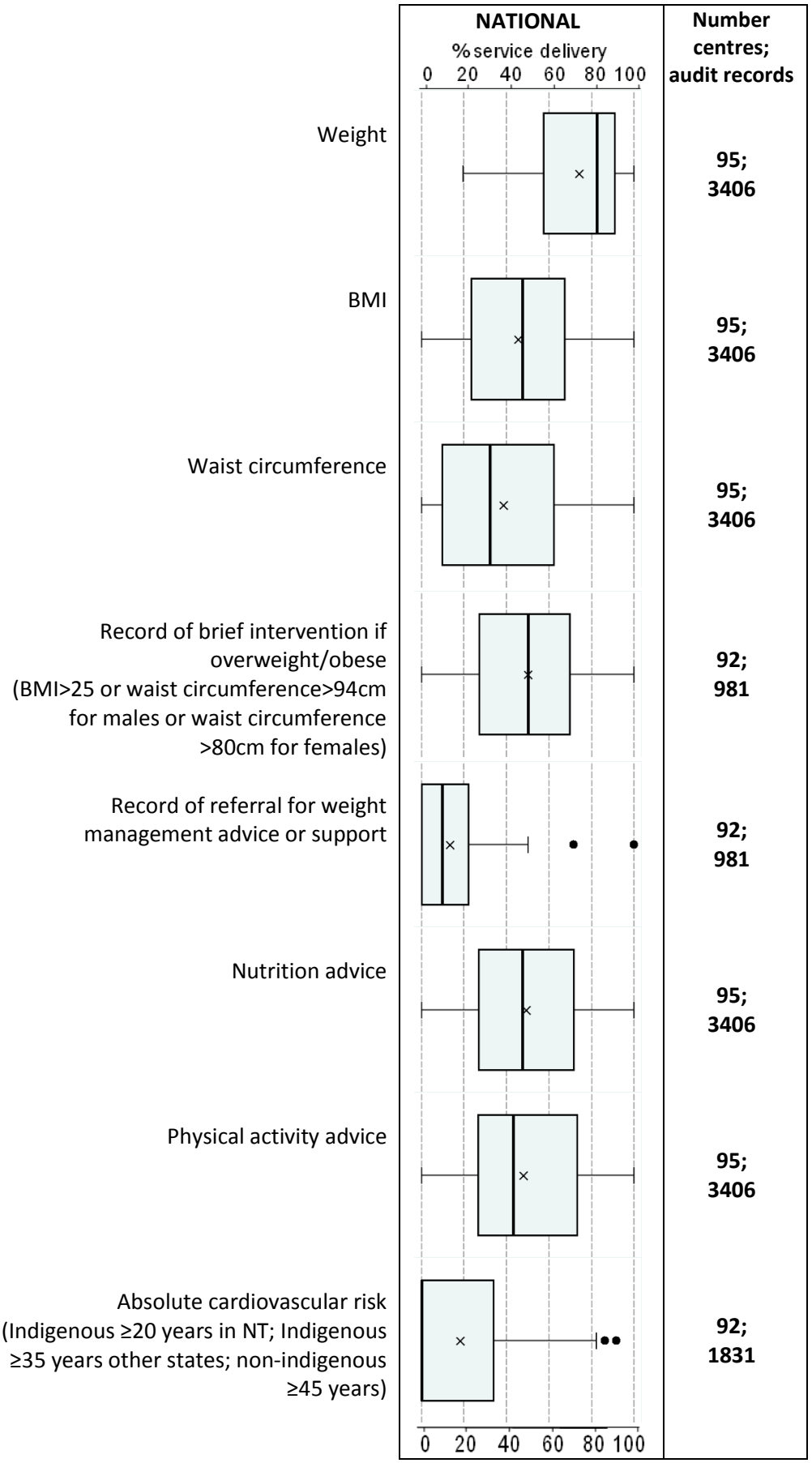
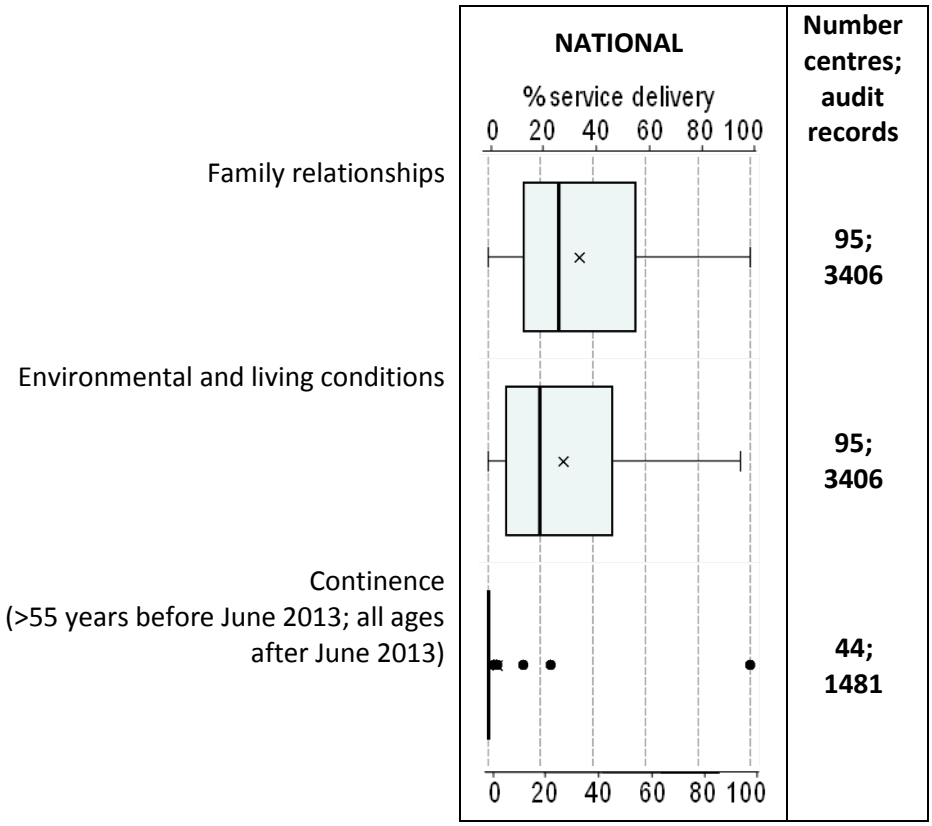


Figure 4 ***Mean health centre percentages of well clients with a record of the following risk factor and brief intervention discussions within the last 24 months***



1.5 Scheduled services

The figures in this section show mean health centre percentages of well clients with a record of scheduled services received within the last 24 months.

Figure 5 ***Mean health centre percentages of well clients with a record of sexual health checks received within the last 24 months***

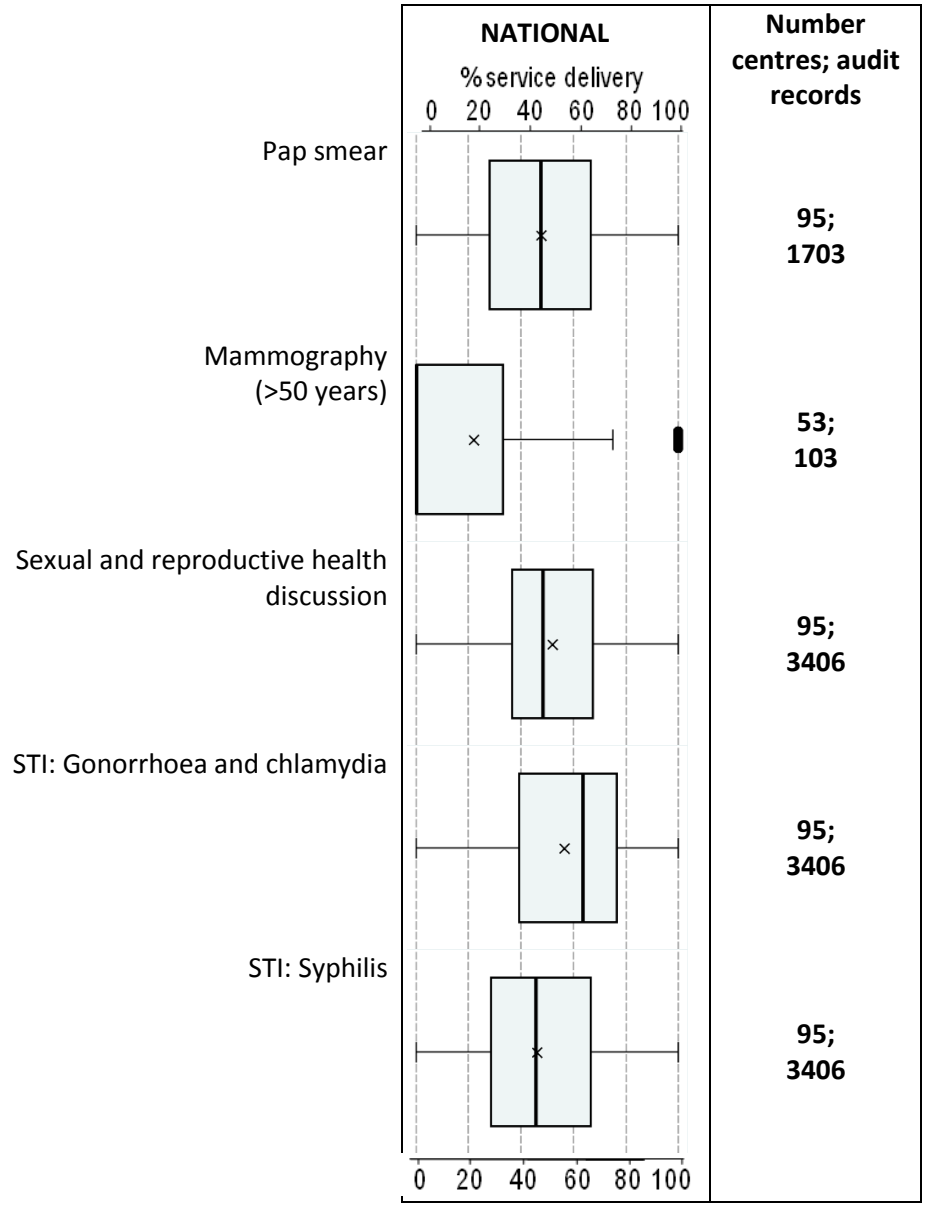
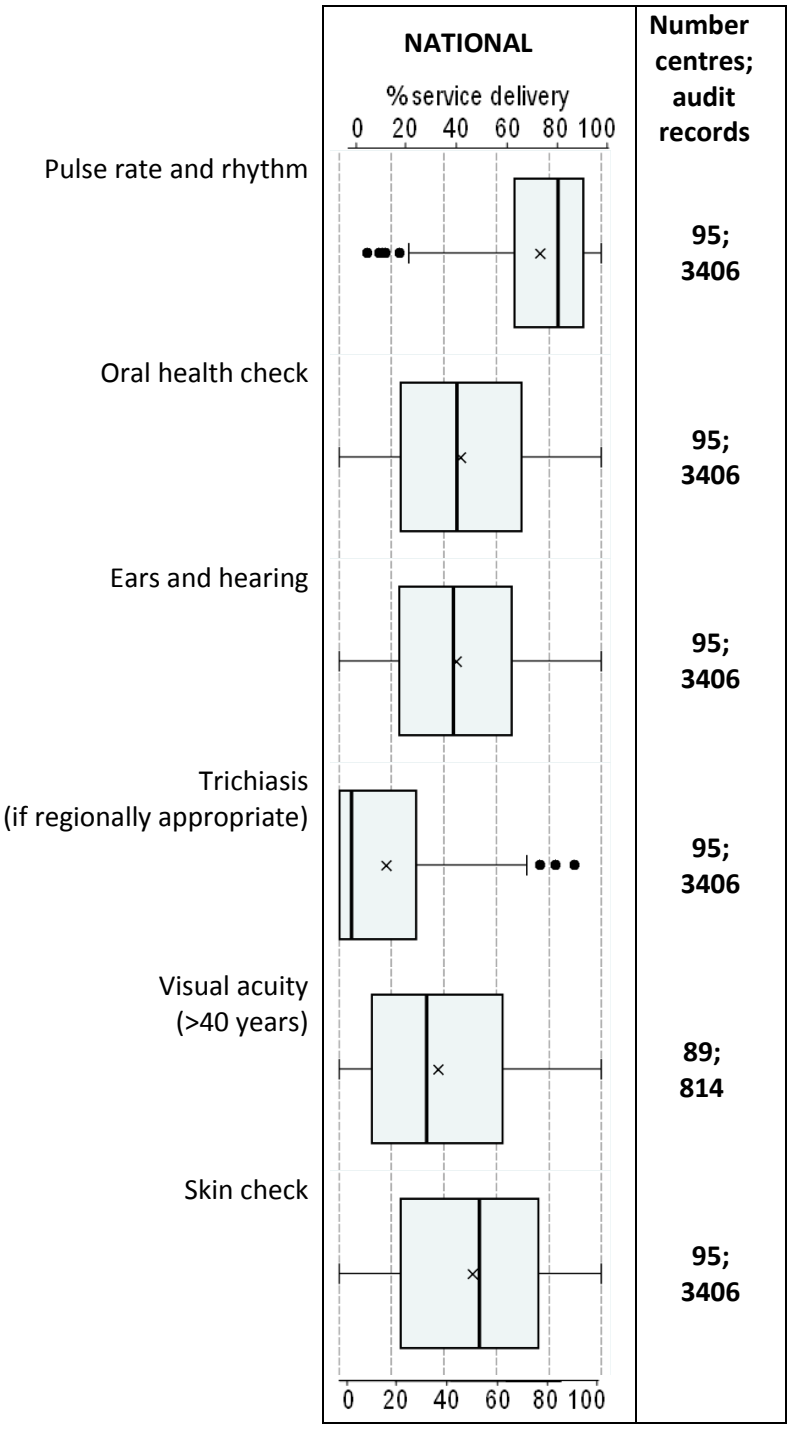


Figure 6 ***Mean health centre percentages of well clients with a record of scheduled services received within the last 24 months***



1.6 Schedule services with assessment of follow-up of abnormal findings

The figures in this section show mean health centre percentages of well clients with a record of follow-up action if abnormal finding from scheduled service within the last 24 months

Figure 7 ***Mean health centre percentages of well clients with a record of scheduled service within the last 24 months and follow-up action if abnormal finding***

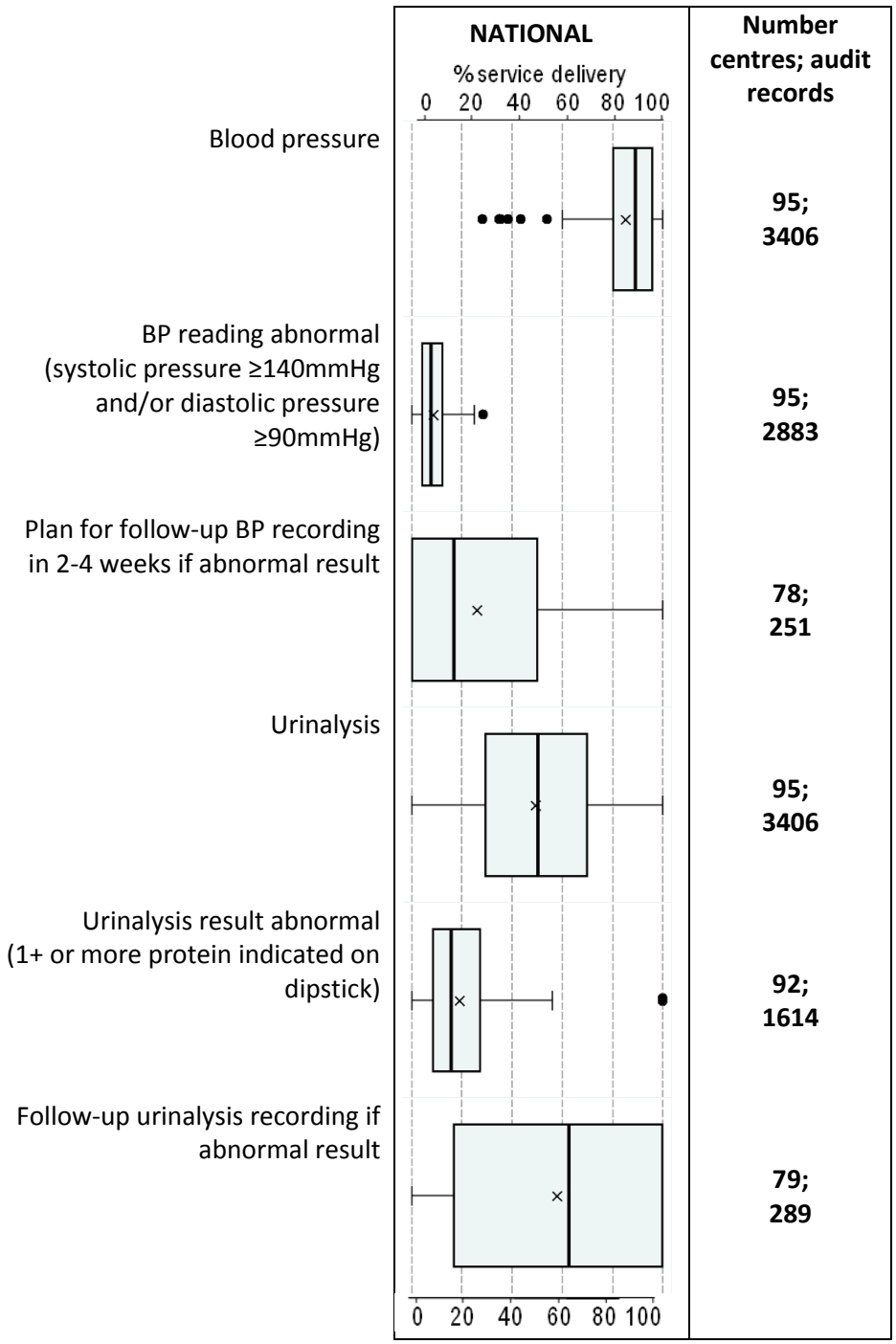
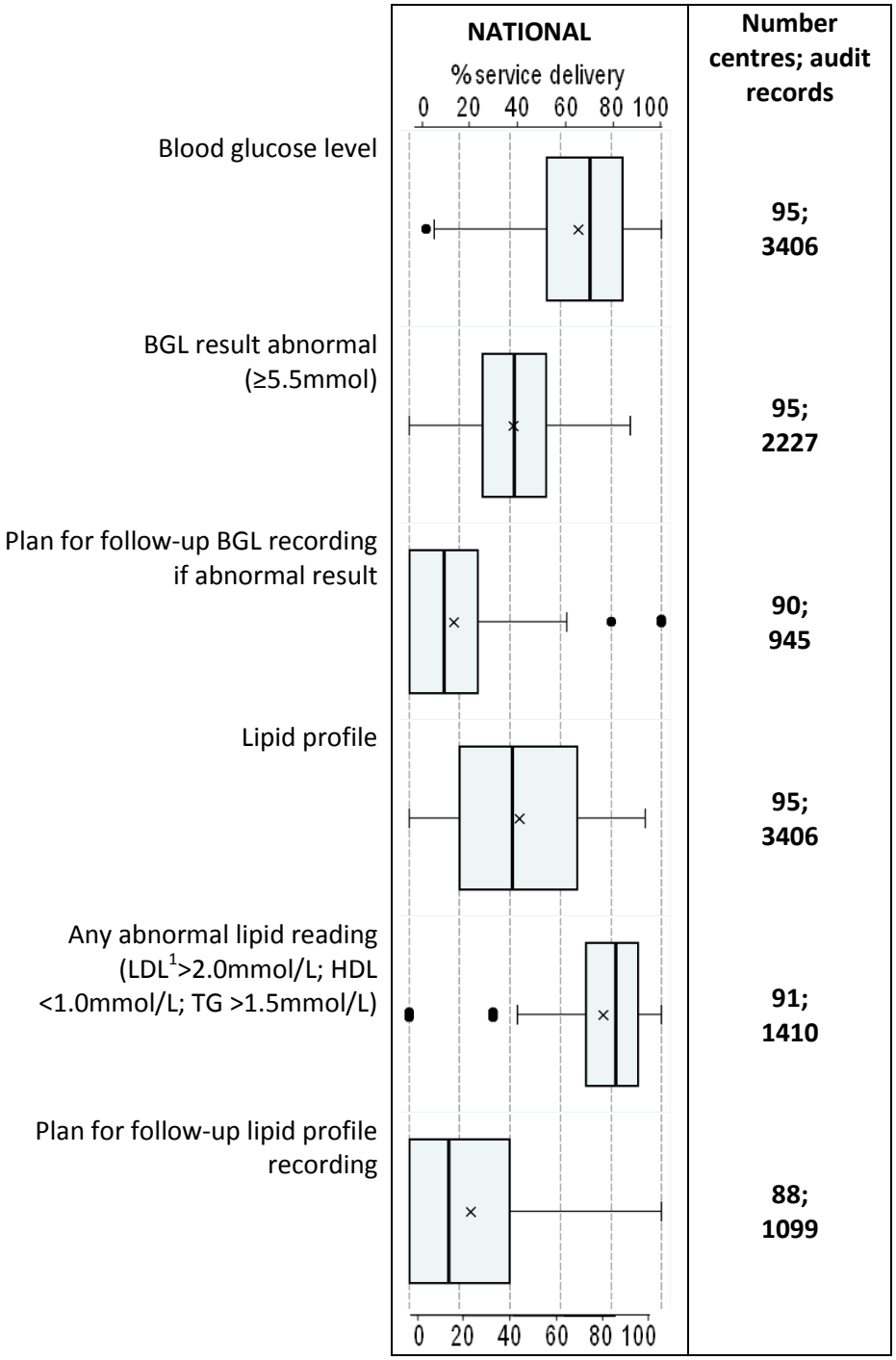


Figure 7 cont: ***Mean health centre percentages of well clients with a record of scheduled service and follow-up action if abnormal finding.***



[1] The level used to define abnormal is lower than what would normally be used for primary or secondary prevention, and should not be used as a guide for the level at which treatment is required. However, the general trend based on this level provides an indication of trends over time in lipid levels for the service population.

1.7 Emotional wellbeing screening and care

This figure shows mean health centre percentages of well clients with a record of emotional wellbeing screen and follow-up action if identified at risk within the last 24 months.

Figure 8 ***Mean health centre percentages of well clients with a record of emotional wellbeing screen and follow-up action if identified at risk***

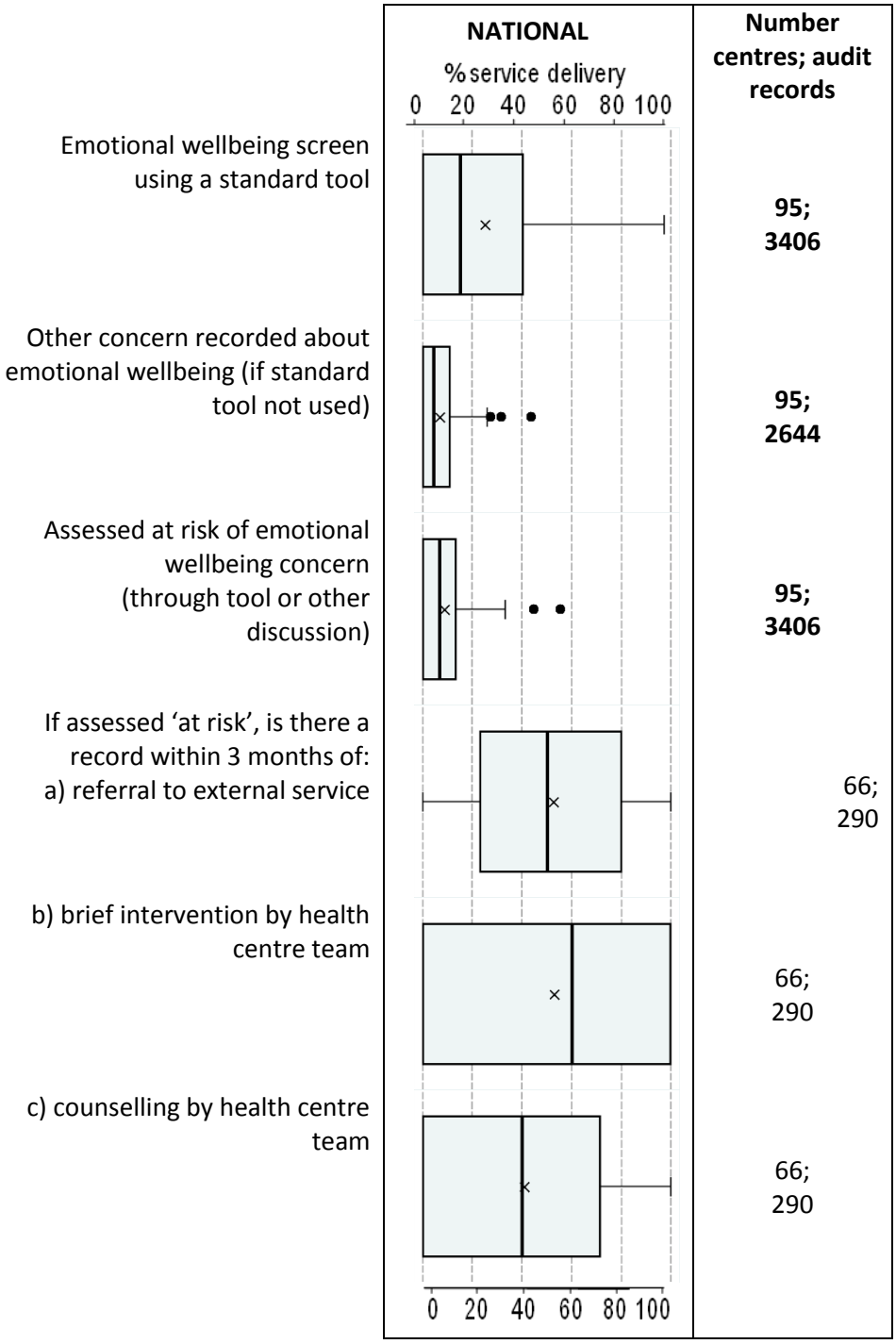
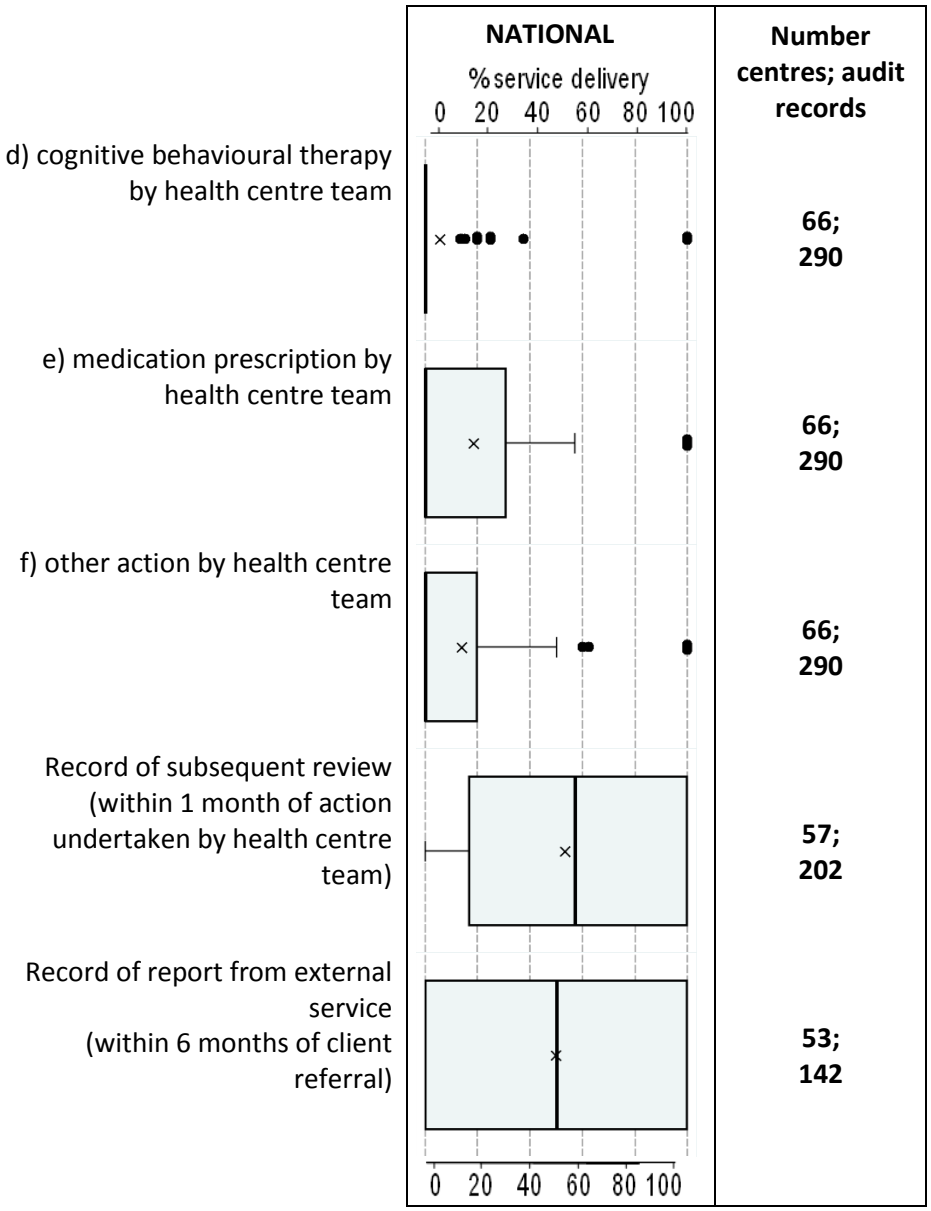
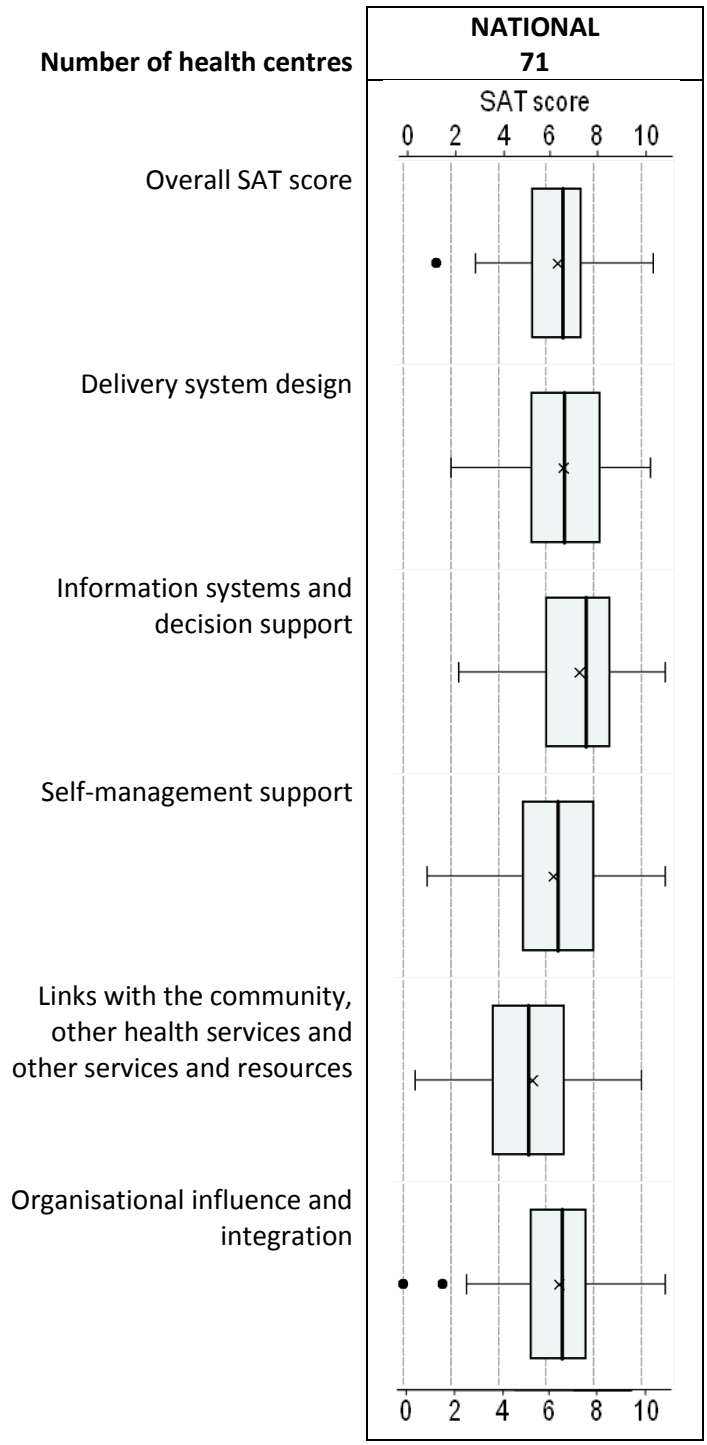


Figure 8 cont: ***Mean health centre percentages of well clients with a record of emotional wellbeing screen and follow-up action if identified at risk***



1.8 Health centre systems

Figure 9 ***Mean system component scores as assessed by health centres***



Scores for the individual items within each system component, aggregated for all health centres nationally, are shown below in Figures 11 – 15.

Figure 10 Delivery system design component scores as assessed by health centres

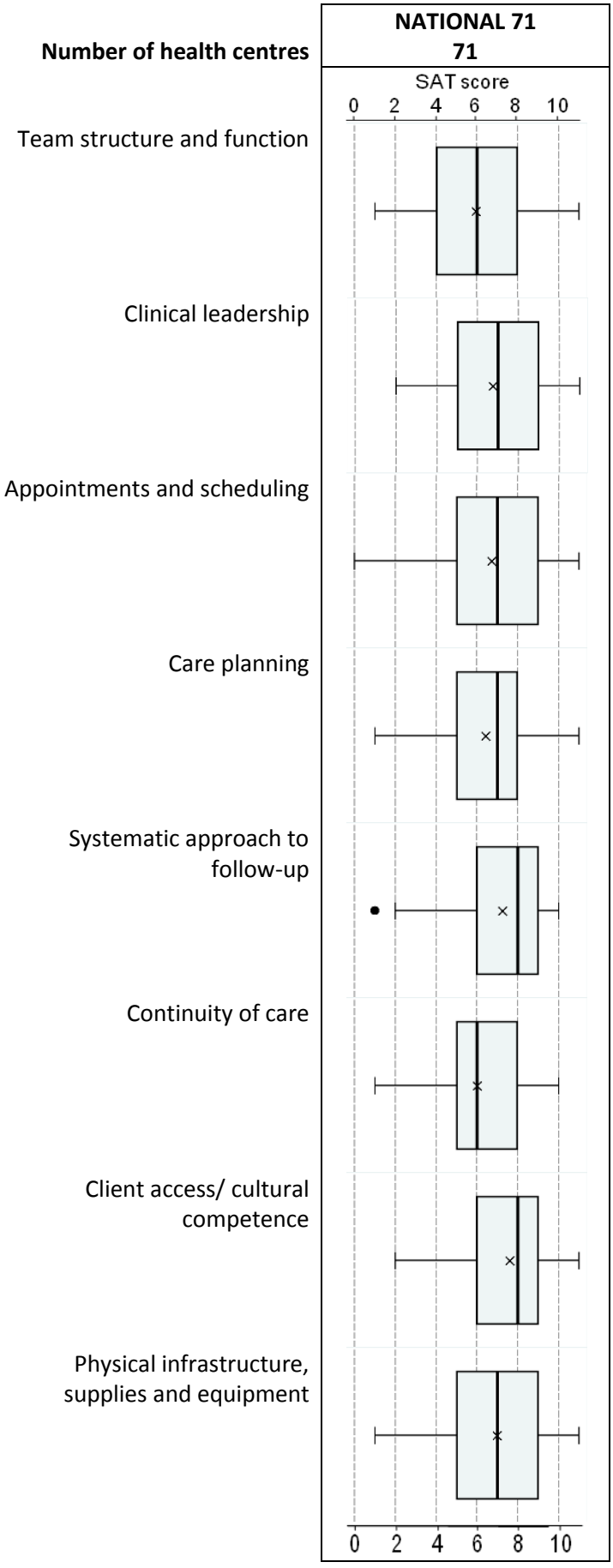


Figure 11 Information systems and decision support component scores as assessed by health centres

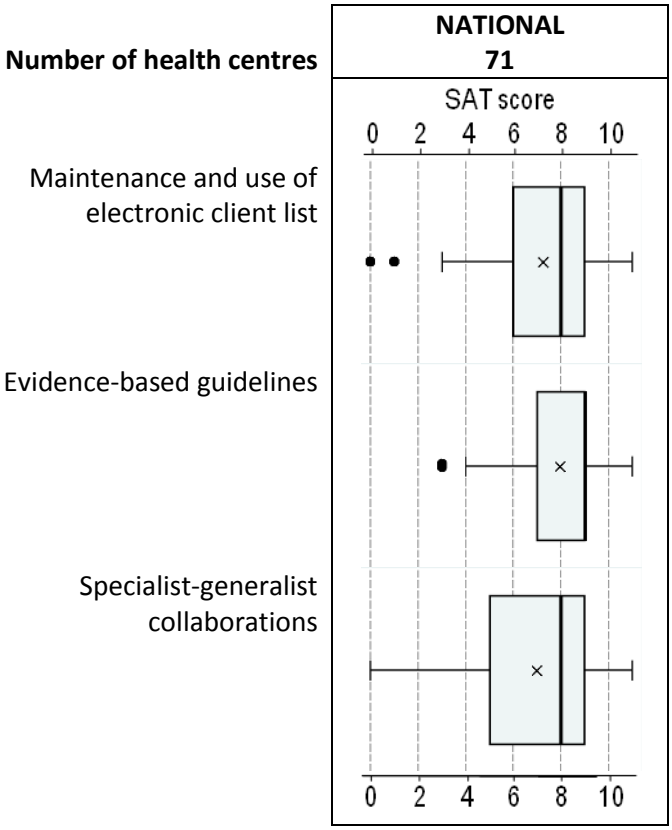


Figure 12 Self-management support component scores as assessed by health centres

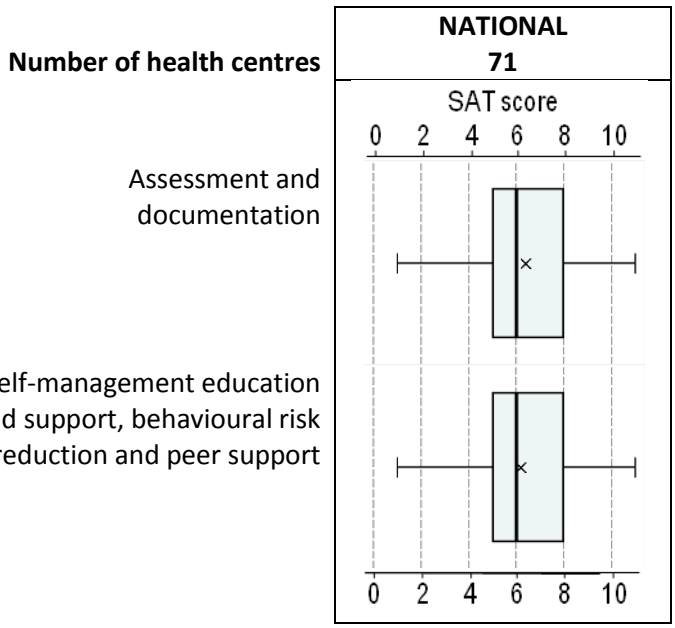


Figure 13 Links with the community, other health services and other services and resources component scores as assessed by health centres

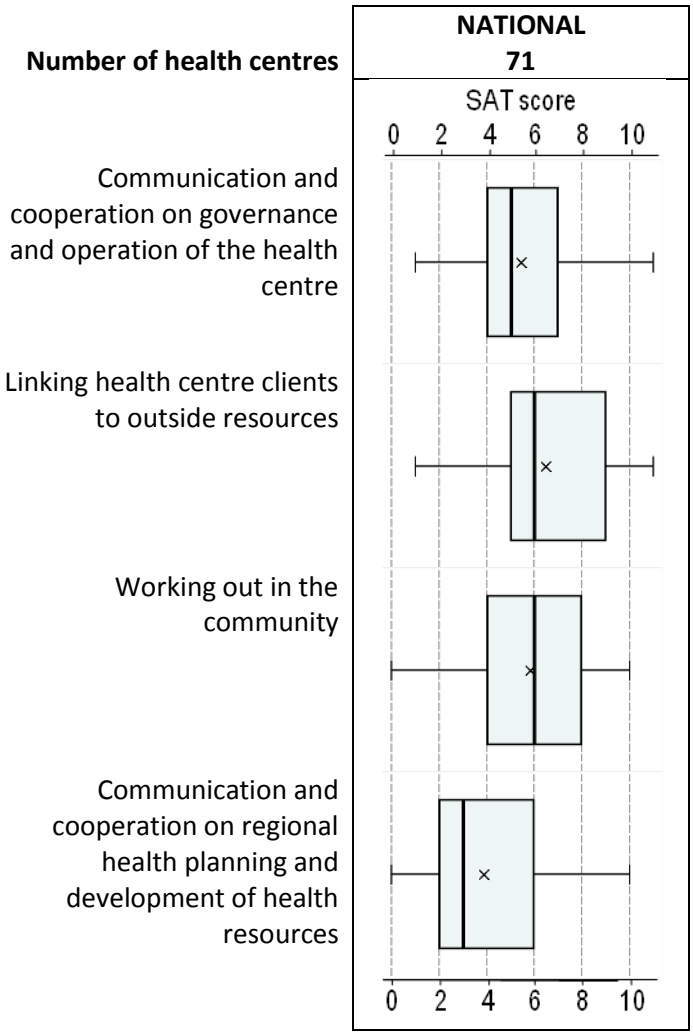
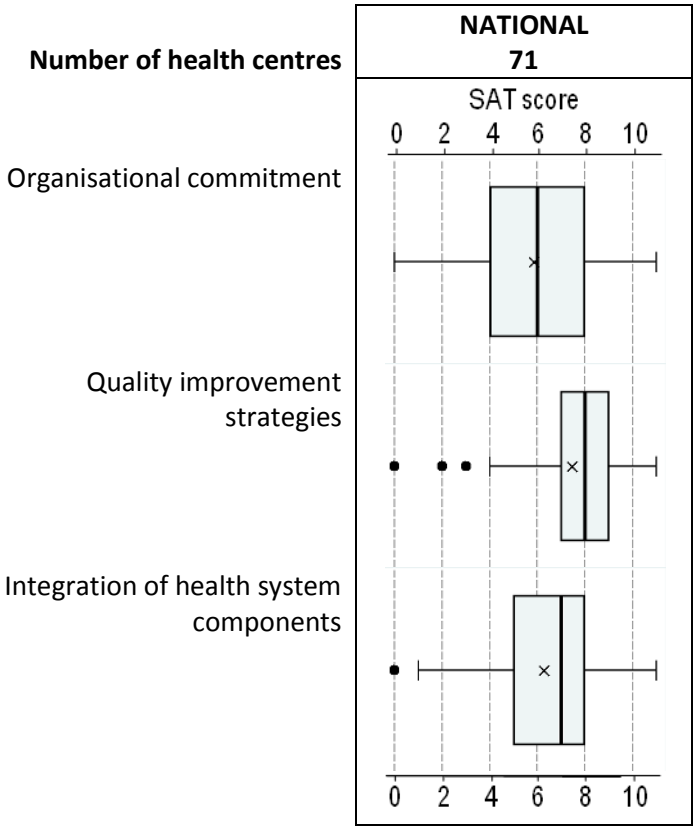


Figure 14 Organisational influence and integration component scores as assessed by health centres



2 Phase 2 data report – identifying barriers and enablers

The focus of this report is on priority areas for improvement. However, it is notable that the trends for many of the areas identified as priorities for improvement already show substantial improvement over time and across audit cycles. There are other aspects of care that are being done relatively well, or that have shown marked improvement over time, and these will be covered in other reports.

Health centre characteristics

The data presented in this report are from health centres that conducted preventive health audits between 2005 and 2014.

A total of 17,108 patient records were audited in 137 health centres.

The number of health centres using the preventive health audit tool increased from 35 in 2006 (1,015 records audited) to 79 (3,557 records audited) in 2011. The number declined to 28 health centres in 2014 (991 records audited) (Table 4).

There were 60 health centres that conducted at least four audit cycles, with a smaller number conducting five or more cycles (Table 5).

Overall, 79% of health centres were in remote locations and 73% were government managed (Table 6).

National data show that initial assessment at the health centre was most commonly conducted by a nurse, with Aboriginal or Torres Strait Islander Health Workers (ATSIHWs) and general practitioners (GPs) being the next most common professionals to do the initial assessment (Table 6).

Patient characteristics

The data presented relate to aspects of care relevant to patients between 15 and 55 years with no documented diagnosis of a chronic illness.

Ninety-four percent of audited records showed a record of attendance at the health centre within the previous 24 months and almost half of these attendances were for acute care. About 11% of attendances were for a well person's check.

Table 4 Preventive health care audit and systems assessment completed between 2005-2014 (number of patient records audited, number of health centres and number of SATs)

		Audit Year										
		2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**Total**
FWNSW	#Records	180	180	180	180	130	293	300	0	0	0	1,443
	#Centres	6	6	6	6	4	4	4	0	0	0	6
	#SATs	6	6	6	6	4	0	0	0	0	0	28
QLD	#Records	58	0	0	225	536	744	2,146	1,976	1,494	178	7,357
	#Centres	2	0	0	7	17	23	43	42	31	4	49
	#SATs	0	0	0	6	16	21	40	37	27	1	148
SA	#Records	0	0	0	0	0	0	173	164	261	127	725
	#Centres	0	0	0	0	0	0	4	4	2	3	8
	#SATs	0	0	0	0	0	0	4	1	0	2	7
WA	#Records	30	267	120	318	259	70	80	0	79	0	1,223
	#Centres	1	10	4	10	7	2	2	0	1	0	12
	#SATs	1	9	4	10	7	2	2	1	1	0	37
NT	#Records	90	582	715	697	629	309	858	753	1,041	686	6,360
	#Centres	3	20	25	23	22	9	26	20	27	21	62
	#SATs	0	16	21	18	13	7	21	19	17	15	147
Total	#Records	358	1,029	1,015	1,420	1,554	1,416	3,557	2,893	2,875	991	17,108
	#Centres	12	36	35	46	50	38	79	66	61	28	137
	#SATs	7	31	31	40	40	30	67	58	45	18	367

Table 5 Preventive health care audit completed between 2005 and 2013 by audit cycle (number of patient records audited and number of health centres)

		Audit Cycle								
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
FWNSW	#Records	180	180	180	180	130	293	300	0	1,443
	#Centres	6	6	6	6	4	4			6
QLD	#Records	1,918	1,805	1,846	1,048	499	241	0	0	7,357
	#Centres	49	42	39	23	12	5			49
SA	#Records	386	153	186	0	0	0	0	0	725
	#Centres	8	4	2						8
WA	#Records	327	302	255	110	70	80	39	40	1,223
	#Centres	12	10	7	3	2	2	1	1	12
NT	#Records	2,032	1,392	1,068	911	702	153	102	0	6,360
	#Centres	62	47	36	28	18	4	2	0	62
Total	#Records	4,843	3,832	3,535	2,249	1,401	767	441	40	17,108
	#Centres	137	109	90	60	36	15	7	1	137

Table 6 Characteristics of participating health centres and patients whose records were audited between 2005 & 2014 (number & %)

		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Overall	
Primary Health Care Centres		**12**		**36**		**35**		**46**		**50**		**38**		**79**		**66**		**61**		**28**		**137**	
		N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Location	Urban	0	0	4	11	0	0	4	9	1	2	1	3	4	5	5	7.58	1	2	5	18	11	8
	Regional	5	42	10	28	6	17	9	20	5	10	2	5	5	6	5	7.58	5	8	3	11	18	13
	Remote	7	58	22	61	29	83	33	72	44	88	35	92	70	89	56	84.85	55	90	20	71	108	79
Governance	Community-controlled	8	67	25	69	22	63	22	48	20	40	11	29	13	16	7	11	7	11	7	25	37	27
	Government	4	33	11	31	13	37	24	52	30	60	27	71	66	84	59	89	54	89	21	75	100	73
Population Size	<=500	5	42	10	28	15	43	14	30	19	38	16	42	44	56	36	55	39	64	13	46	67	48.9
	501-999	3	25	7	19	8	23	10	22	12	24	7	18	13	16	12	18	6	10	7	25	24	17.5
	>=1000	4	33	19	53	12	34	22	48	19	38	15	39	22	28	18	27	16	26	8	29	46	33.6
CQI Experience	Baseline	12	100	28	78	10	29	8	17.4	9	18	8	21	41	51	7	10.61	6	9.7	8	29	28	20
	1 or 2 cycles	0	0	8	22	25	71	31	67.4	26	52	18	47	18	23	36	54.55	32	51.6	4	14	49	36
	>3 CQI cycles	0	0	0	0	0	0	7	15.2	15	30	12	32	21	26	23	34.85	24	38.7	16	57	60	44
Number of audited records		**358**		**1,029**		**1,015**		**1,420**		**1,554**		**1,416**		**3,557**		**2,893**		**2,875**		**991**		**17,108**	
Age (mean & range)		32 (15-55)		32 (15-63)		32 (15-61)		34 (15-65)		35 (15-65)		35 (15-65)		33 (15-65)		33 (15-65)		33 (15-65)		31 (15-65)		33 (15-65)	
Sex	Male	176	49	504	49	503	50	713	50	786	51	720	51	1,836	52	1,473	51	1,433	50	507	51	8,651	51
	Female	182	51	525	51	512	50	707	50	768	49	696	49	1,721	48	1,420	49	1,442	50	484	49	8,457	49
Indigenous status	Yes	250	70	962	93	907	89	1,286	91	1,476	95	1,183	84	3,015	85	2,447	85	2,485	86.43	897	91	14,908	87
	No	98	27	40	4	67	7	63	4	31	2	113	8	371	10	265	9	234	8.14	42	4	1,324	8
	Not recorded	10	3	27	3	41	4	71	5	47	3	120	8	171	5	181	6	156	5.43	52	5	876	5
Attended within last 24 months		295	82	958	93	952	94	1,293	91	1,454	94	1,312	93	3,395	95	2,786	96	2,727	95	969	98	16,141	94

		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		Overall	
Reason for last attendance	Well Person's Check	8	2	118	11.5	107	11	133	9.4	104	6.7	149	10.5	381	11	375	13.0	423	14.7	120	12.1	1,918	11.2
	Acute care	151	42	509	49.5	528	52	717	50.5	750	48.3	657	46.4	1,780	50	1,356	46.9	1,418	49.3	462	46.6	8,328	48.7
	Mental Illness	10	3	18	1.8	21	2	42	3.0	40	2.6	56	4.0	83	2	58	2.0	72	2.5	37	3.7	437	2.6
	Immunisation	12	3	15	1.5	44	4	62	4.4	192	12.4	155	11.0	327	9	248	8.6	223	7.8	65	6.6	1,343	7.9
	Antenatal	3	1	14	1.4	11	1	12	0.9	14	0.9	8	0.6	23	1	16	0.6	16	0.6	5	0.5	122	0.7
	Sexual Health	15	4	50	4.9	75	7	87	6.1	75	4.8	86	6.1	289	8	292	10.1	198	6.9	79	8.0	1,246	7.3
	Other	146	41	242	23.5	219	22	356	25.1	367	23.6	226	16.0	512	14	441	15.2	377	13.1	201	20.3	3,087	18.0
	Not recorded	13	4	63	6.1	10	1	11	0.8	12	0.8	79	5.6	162	5	107	3.7	148	5.2	22	2.2	627	3.7
Profession patient first seen by	ATSIHW	53	15	269	26	195	19.2	335	23.6	293	19	265	19	674	19	617	21	534	18.6	154	16	3,389	20
	Nurse	127	35	362	35	473	46.6	582	41.0	774	50	610	43	1,899	53	1,494	52	1,458	50.7	579	58	8,358	49
	GP	71	20	227	22	245	24.1	329	23.2	272	18	292	21	573	16	514	18	584	20.3	188	19	3,295	19
	Specialist	2	1	12	1	14	1.4	28	2.0	20	1	28	2	27	1	26	1	28	1.0	13	1	198	1
	Allied health	5	1	10	1	11	1.1	24	1.7	36	2	18	1	69	2	36	1	72	2.5	29	3	310	2
	Other	8	2	17	2	15	1.5	27	1.9	20	1	25	2	36	1	13	0	21	0.7	6	1	188	1
	Not recorded	92	26	132	13	62	6.1	95	6.7	139	9	178	13	279	8	193	7	178	6.2	22	2	1370	8

2.1 Presentation of data

Audit data on indicators relevant to the identified evidence-practice gaps in preventive care are presented over time in two ways - by year and by audit cycle.

By year - includes data for all participating health centres and provides an indication of influences on clinical performance that may be occurring at different times in the general health system environment. These influences might include changes in CQI processes, changes in the number and types of participating health centres and various other influences on the CQI data that are generated through the use of One21seventy tools.

By audit cycle - includes data for the same cohort of health centres that have conducted preventive health audits in at least three audit cycles. This presentation provides an indication of the impact of duration of participation in CQI on delivery of care according to best practice guidelines. Note that 'Audit Cycle 1' represents baseline audit data, 'Audit Cycle 2' represents the first follow-up audit and so on.

Box plots are used to show variation between health centres

An important focus of the Partnership is understanding variation between health centres and over time in delivery of care in accordance with best practice guidelines. 'Box and whisker plots' (or box plots) are a useful way of presenting data on variation in a graphical form that should assist with interpretation.

In the analysis of the audit data, the mean (average) percent delivery of items of clinical care relevant to each indicator is calculated for each health centre. These mean percentages are displayed in a box plot for a given year or audit cycle to show the distribution or range in recorded delivery of care between health centres.

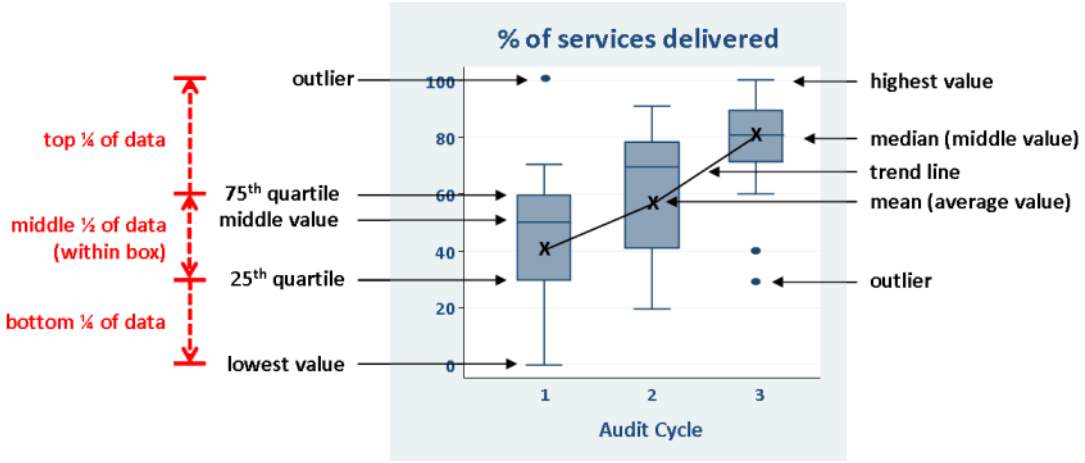
We explain how to interpret box plots on the next page.

How to interpret box and whisker plots

Box and whisker plots show (Box 2):

- health centres with the minimum and maximum mean percentage in recorded delivery of care in accordance with best practice guidelines (ends of whiskers show highest value if no outliers);
- outliers – health centres that are far away from most others in the data set (or a distance that is greater than 1.5 times the length of the box); and
- the level of variation between health centres in recorded delivery of care by dividing scores into quarters:
  - the box represents the middle 50% of health centres, and the line within the box represents the median (or middle health centre);
  - the 'whisker' at the top of the box (and outliers if present) represents the top 25% of health centres
  - the 'whisker' at the bottom of the box (and outliers if present) represents the bottom 25% of health centres;
  - the longer the box plot, the greater the range of care delivery (or variation) between health centres.

Box 2: How to interpret boxplots



In assessing data trends for indicators relevant to the priority evidence practice gaps, it is helpful to focus on:

a) **the trend for the mean (average) and median (middle) values for health centres** – in particular whether the mean and median are increasing, staying steady or decreasing; and

b) **the trend in the variation between health centres** – in particular whether the variation is getting less (shorter boxes, shorter whiskers), and importantly, whether there is an improvement in the values for the health centres at the lower end of the range (higher level for the bottom end of whiskers under boxes).

2.2 Overall service delivery

Stakeholder feedback on the priority evidence-practice gaps highlighted the importance of continuing attention to holistic care, and of ensuring that focus on specific indicators does not detract from the importance of providing high quality care across the scope of best practice. Figure 15 shows trends in a composite indicator of overall service delivery to well clients in accordance with best practice guidelines. The composite indicator includes services such as physical checks, clinical examinations and brief interventions. Indicators that reflect follow-up actions for abnormal findings have not been included in the composite indicator as they relate to specific subgroups of the patient population.

Summary of trends (Figure 15)

Over years

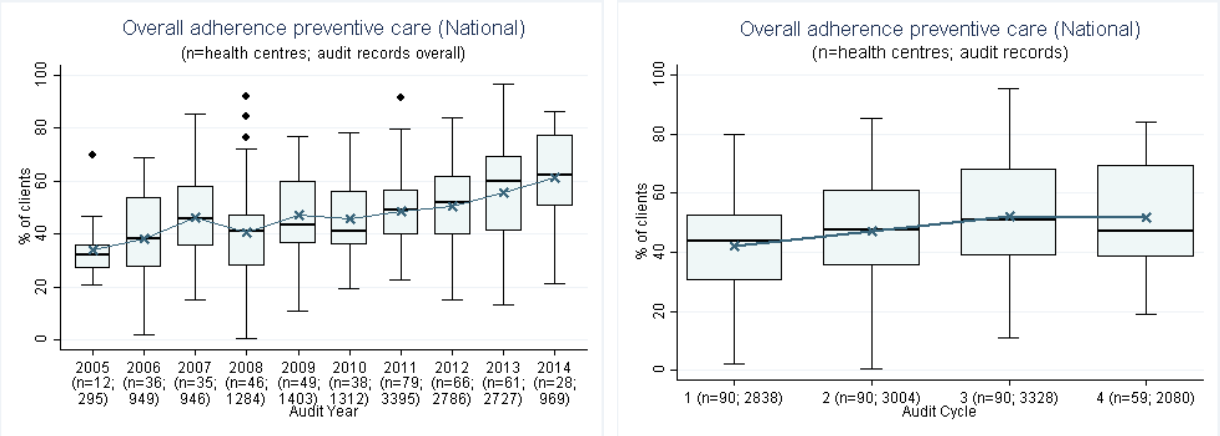
- There are clear improvements in the overall service delivery of preventive health care. The mean and median level of care delivery improved 30-35% in 2005 to about 60% in 2014.
- There was no reduction in variation in service delivery between health centres.

Over successive audit cycles

- For health centres that completed three or more audit cycles for preventive health, there were improvements, albeit small, in the mean level of care according to best practice guidelines.
- There was little evidence of narrowing in the variation between health centres over successive audit cycles.

Figure 15 ***Mean health centre overall service delivery to well clients[2], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients records audited who attended in previous 24 months)***

Year **Audit Cycle**



[2] Overall preventive care service delivery composite figure includes: weight, waist circumference, blood pressure, urinalysis, blood glucose level, sexually transmitted infections (gonorrhoea and chlamydia; syphilis), pap smear, oral health, nutrition, physical activity, smoking and alcohol status recorded, brief intervention if smoker and/or high risk alcohol user.

2.3 Overall health centre systems

Figure 16 shows the average component scores within the relevant system domain for health centres that undertook a systems assessment (SAT) between 2005 and 2015. Nationally, 119 of the 137 health centres that completed a preventive health audit undertook a systems assessment at least once over this period. Table 4 provides more information on the frequency of SAT completion over years. In brief, each item is scored separately on a scale of 0 - 11. System domain scores are derived from the average of the scores for each component within the system domain. Higher scores reflect better function.

Summary of trends (Figure 16)

Over years

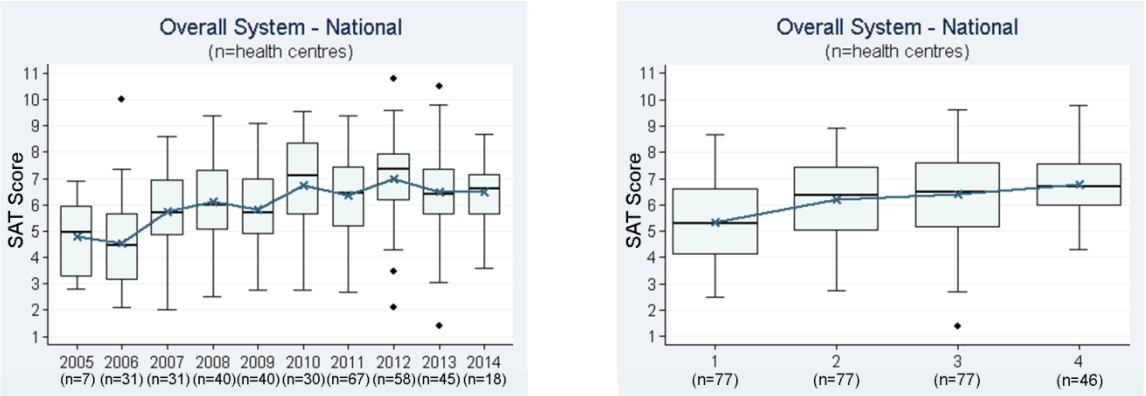
- There is a general overall improvement in the average overall health centre SAT component scores.
- There was wide variation amongst health centres for all years with no clear trend in variation.

Over successive audit cycles

- For health centres that completed three or more systems assessments for preventive health, there were improvements in the average overall SAT score.
- There was no clear trend in variation for all health centres that had completed at least three audit cycles. However, there was less variation between health centres that had completed four audit cycles compared to all health centres that had completed three cycles.

Figure 16 ***Overall system assessment score[3], by year for all health centres and by cycle for health centres that have at least 3 years of systems assessment data (n=number of health centres that conducted a systems assessment)***

Year **Audit Cycle**



[3] Overall score is the average of each of the five domain scores that make up the total systems assessment (ie, delivery system design, information systems and decision support, self-management support, links with the community, other health services and other resources and organisational influence and integration.

2.4 Record of plan for follow-up of abnormal blood pressure, blood glucose level and lipid profile

Figure 17 shows the mean health centre record of plan for follow-up of abnormal blood pressure, blood glucose level and lipid profile, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data.

Summary of trends (Figure 17)

Over years

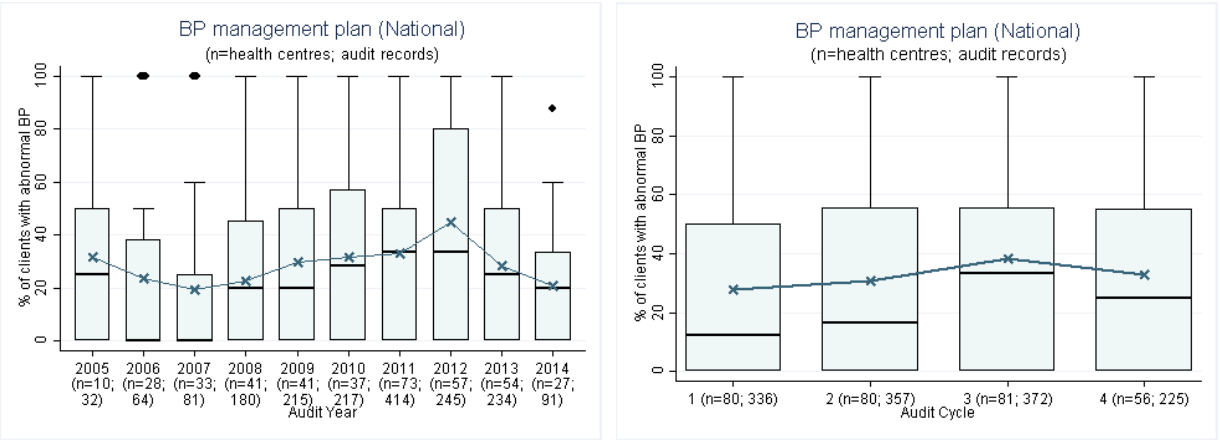
- There was some evidence of improvement from 2007 – 2012 for BP management plans; BGL and lipids management remained relatively steady.
- There was wide variation amongst health centres for all years with no clear trend in variation.

Over successive audit cycles

- There were small improvements in median and mean recording for health centres undertaking 3 cycles of auditing; there was a decrease in the fourth cycle for BP and BGL follow-up management plan. This coincides with a reduced number of health centres auditing four times for this indicator.
- There was wide variation amongst health centres across the audit cycles with no clear trend in variation.

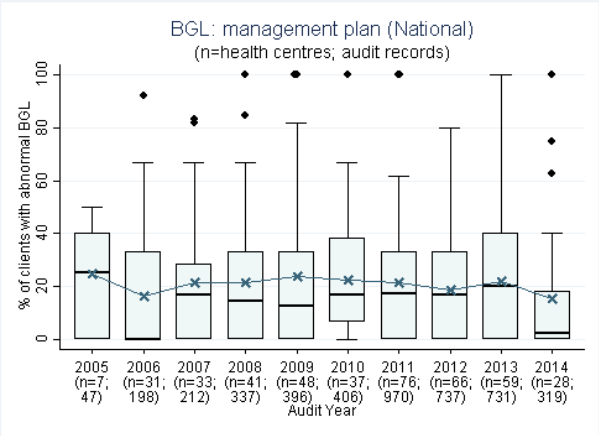
Figure 17 ***Mean health centre record of plan for follow-up of abnormal blood pressure, blood glucose level and lipid profile[4], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients)***

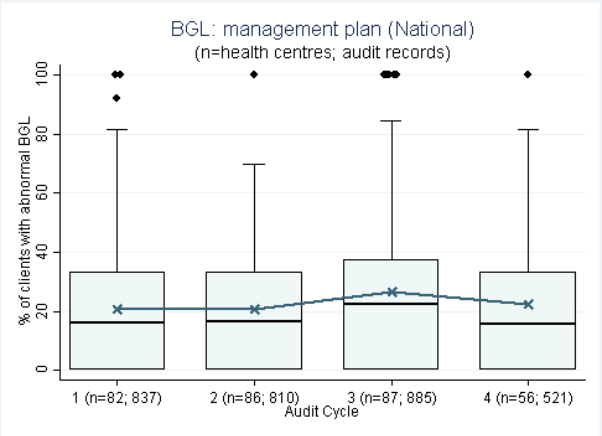
Year **Audit Cycle**

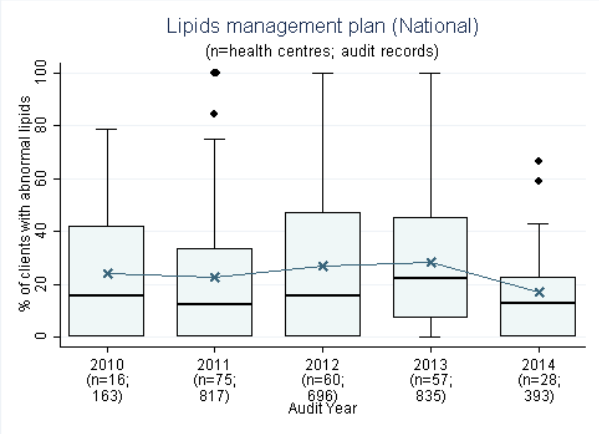


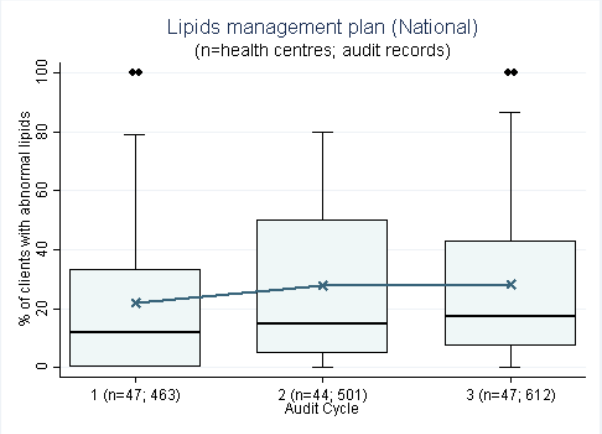
[4] These indicators apply to those clients with abnormal readings, hence the varying number of health centres across the first three audit cycles. Some health centres may not have had any clients with abnormal readings within their sample selection of client records.

Figure 17 cont: ***Mean health centre record of plan for follow-up of abnormal blood pressure, blood glucose level and lipid profile[5], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients)***









[5] These indicators apply to those clients with abnormal readings, hence the varying number of health centres across the first three audit cycles. Some health centres may not have had any clients with abnormal readings within their sample selection of client records.

2.5 Record of absolute cardiovascular risk assessment

Figure 18 shows the mean health centre recording of cardiovascular risk assessment, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data.

Summary of trends (Figure 18)

Over years

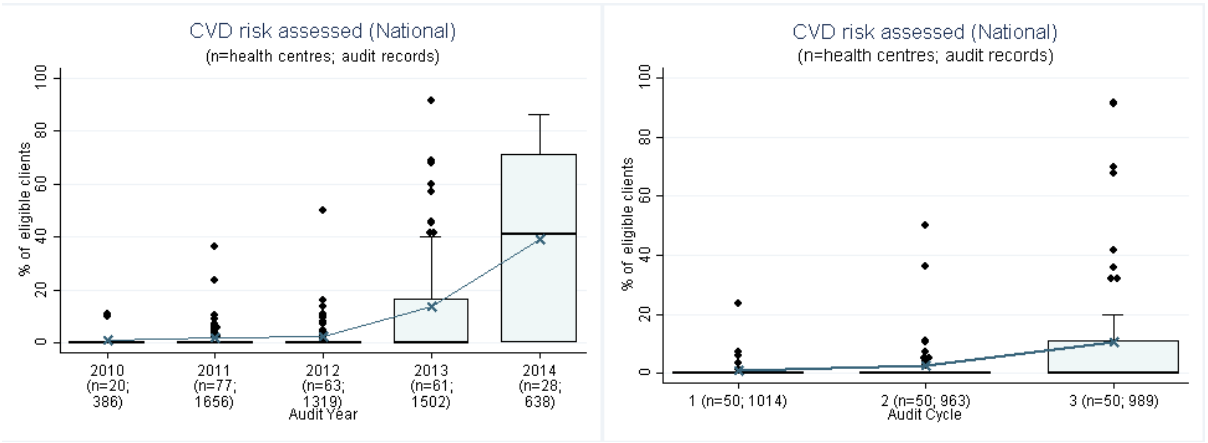
- For CVRA there was a clear improving trend in the delivery levels from 2012 - 2014.
- There was an increase in variation over successive years as some health centres increased delivery of CVRA.

Over successive audit cycles

- There was an improving trend in the delivery levels of CVRA
- There was an increase in variation over successive audit cycles as some health centres increased delivery of CVRA.

Figure 18 ***Mean health centre recording of cardiovascular risk assessment[6], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients)***

Year **Audit Cycle**



[6] This item was introduced in the audit tool in August 2010. According to best practice guidelines, clients eligible for absolute cardiovascular risk assessment if: Indigenous, ≥35 years of age and not a resident of the Northern Territory; or Indigenous, ≥20 years of age and a resident of the Northern Territory; or non-Indigenous and 45 years and over. For the cycle graphs, the audit number has been 'reset' so that cycle 1 reflects the first audit when this indicator was introduced.

2.6 Record of urinalysis

Figure 19 shows the mean health centre record of urinalysis, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data.

Summary of trends (Figure 19)

Over years

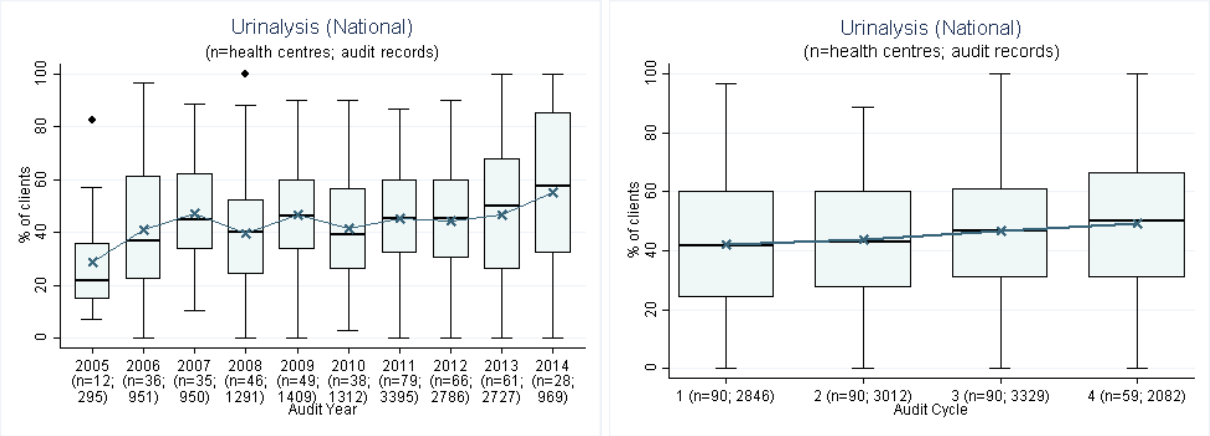
- There were some improvements in the record of urinalysis but this was not consistent across the years.
- There was wide variation amongst health centres for all years with no clear trend in variation.

Over successive audit cycles

- There was a small improving trend in the delivery levels.
- There was wide variation amongst health centres across audit cycles with no clear trend in variation.

Figure 19 ***Mean health centre record of urinalysis, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients)***

Year **Audit Cycle**



2.7 Record of lipid profile

Figure 20 shows the mean health centre record of lipid profile, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data.

Summary of trends (Figure 20)

Over years

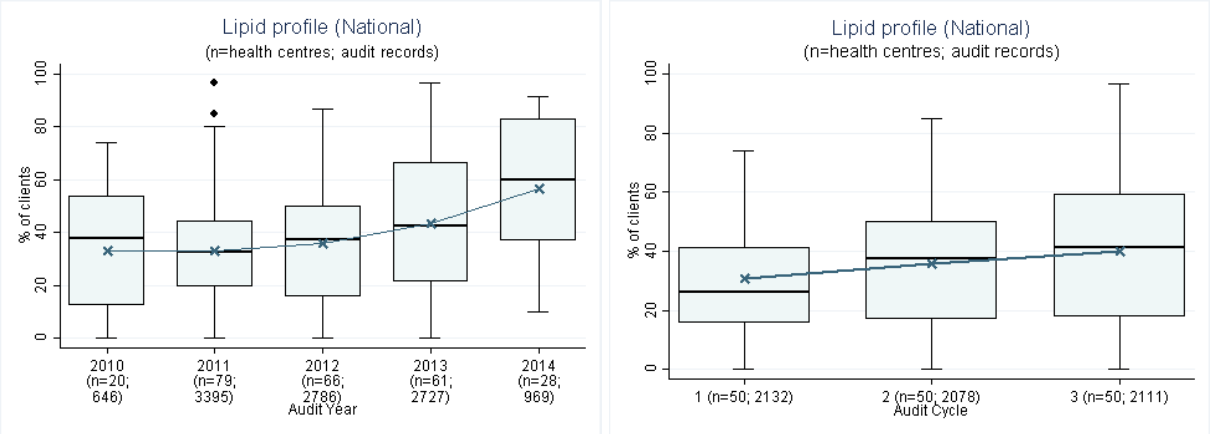
- There were clear improvements in the record of lipid profile across audit years.
- There was no clear trend in variation over successive years.

Over successive audit cycles

- There was a small improving trend in the delivery levels.
- There was an improvement for health centres at the upper end of the range with an associated increase in variation between health centres.

Figure 20 ***Mean health centre record of lipid profile[7], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of client).***

Year **Audit Cycle**



[7] Lipids test introduced to the audit tool in August 2010. For the cycle graph, the audit number has been 'reset' so that cycle 1 reflects the first audit when this indicator was introduced.

2.8 Record of enquiry regarding environmental & living conditions, family relationships & substance abuse

Figure 21 shows the mean health centre percentage of clients with record of enquiry regarding environmental and living conditions, family relationships and other substance use, by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data.

Summary of trends (Figure 21)

Over years

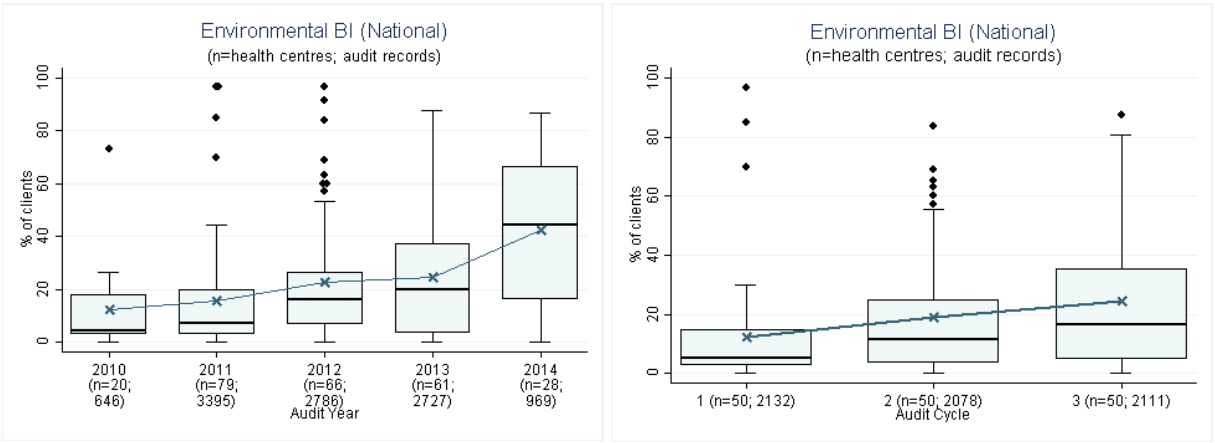
- A clear trend in improvement was evident in record of enquiry regarding environmental and living conditions, family relationships and substance abuse indicator over audit years.
- There was an improvement in performance for these indicators for many health centres across the range over successive years, with no improvement for health centres at the bottom of the range and an associated increase in variation.

Over successive audit cycles

- A clear trend in improvement was evident in record of enquiry regarding environmental and living conditions, family relationships and substance abuse indicator over successive audit cycles.
- There was an improvement in performance for these indicators for many health centres across the range over successive audit cycles, with no improvement for health centres at the bottom of the range and an associated increase in variation.

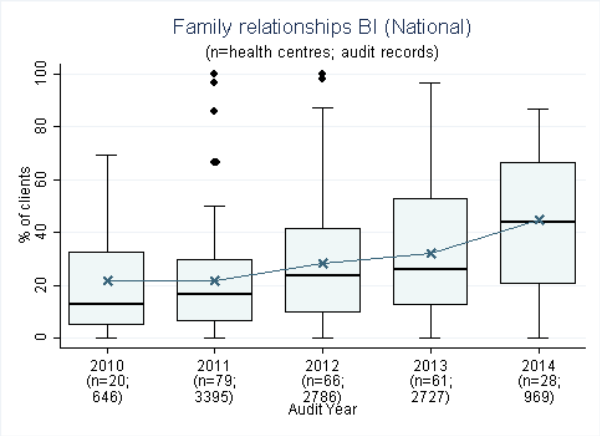
Figure 21 ***Mean health centre percentage of clients with record of enquiry regarding environmental and living conditions, family relationships and other substance use[8], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients).***

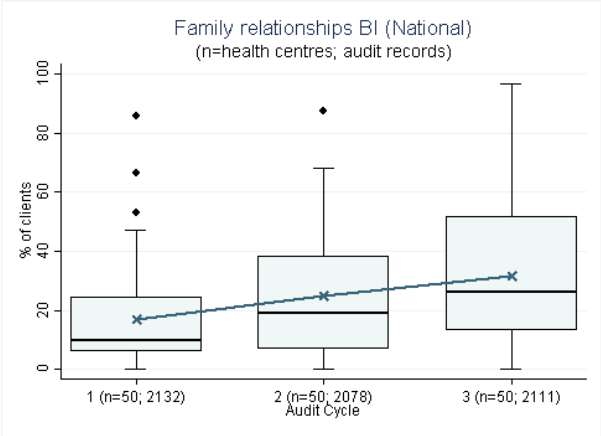
Year **Audit Cycle**

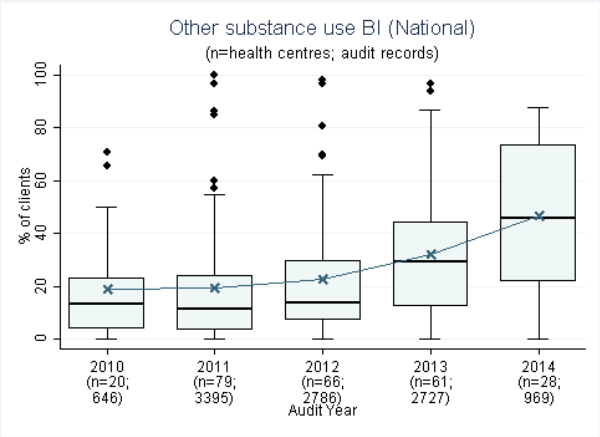


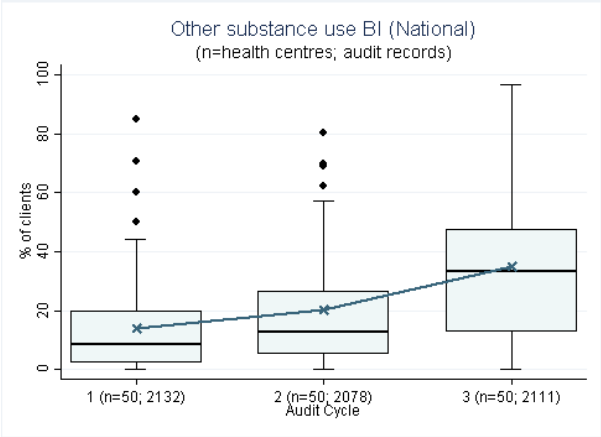
[8] These items were introduced to the audit tool in August 2010. For the cycle graphs, the audit number has been 'reset' so that cycle 1 reflects the first audit when these indicators were introduced.

Figure 21 cont: ***Mean health centre percentage of clients with record of enquiry regarding environmental and living conditions, family relationships and other substance use[9], by audit year for all health centres and by audit cycle for health centres that have at least 3 years of audit data (n=number of health centres; number of clients).***









[9] These items were introduced to the audit tool in August 2010. For the cycle graphs, the audit number has been 'reset' so that cycle 1 reflects the first audit when these indicators were introduced.

2.9 Improving capability to provide appropriate support and follow-up for clients identified as being at risk of an emotional wellbeing issue

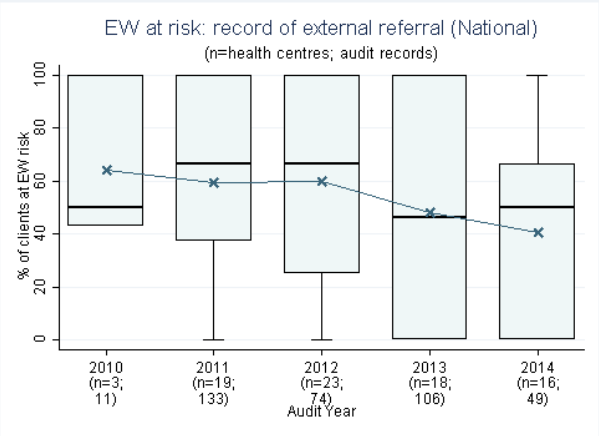
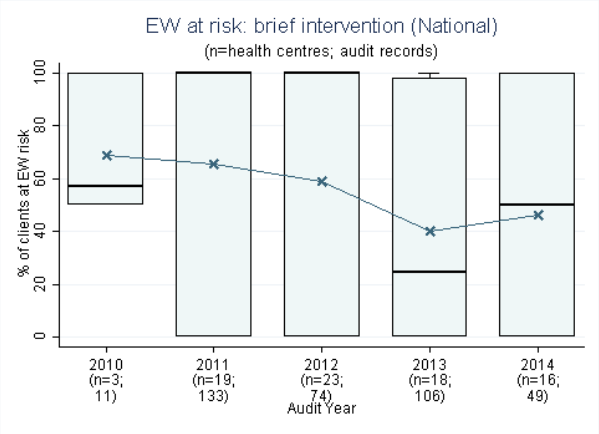
Figure 22 shows the mean health centre record of emotional wellbeing follow-up action if identified at risk using a standard tool, by audit year for all health centres. There is no data available by audit cycle due to a small number of health centres completing 3 audit cycles.

Summary of trends (Figure 22)

Over years

- There was no evidence of improvement across indicators on emotional wellbeing follow-up for clients identified as at risk.
- There was wide variation amongst health centres for all years with no clear trend in variation.

Figure 22 ***Mean health centre record of emotional wellbeing (EW) follow-up action if identified at risk[10] using a standard tool, by audit year for all health centres (n=number of health centres; number of clients)***

Year	Audit Cycle
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.

[10] These indicators were introduced in the audit tool in August 2010 and apply to those clients that had a record of being at risk of an emotional wellbeing issue.

Figure 22 cont: ***Mean health centre record of emotional wellbeing (EW) follow-up action if identified at risk using a standard tool, by audit year for all health centres (n=number of health centres; number of client).***

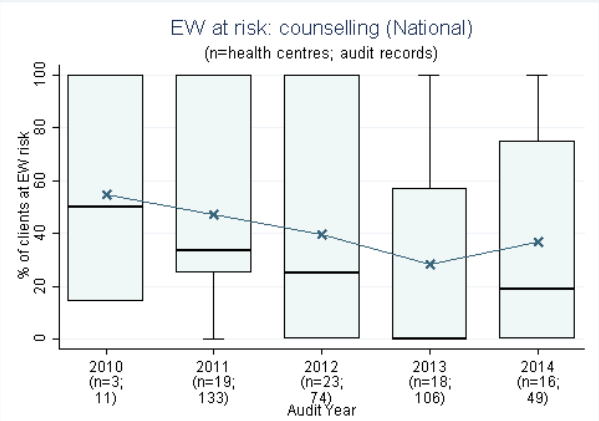
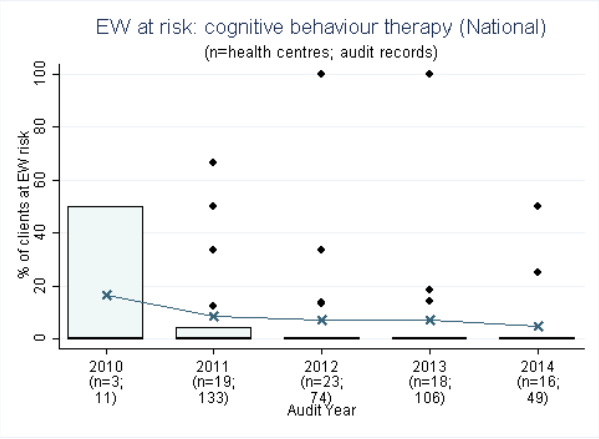
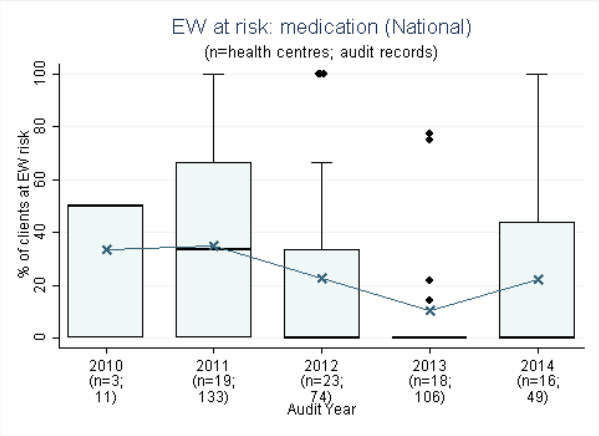
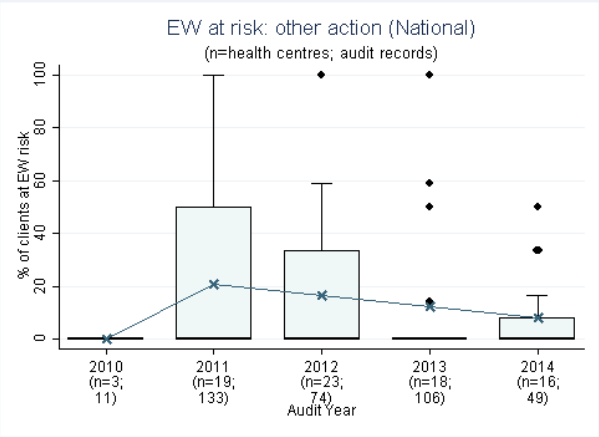
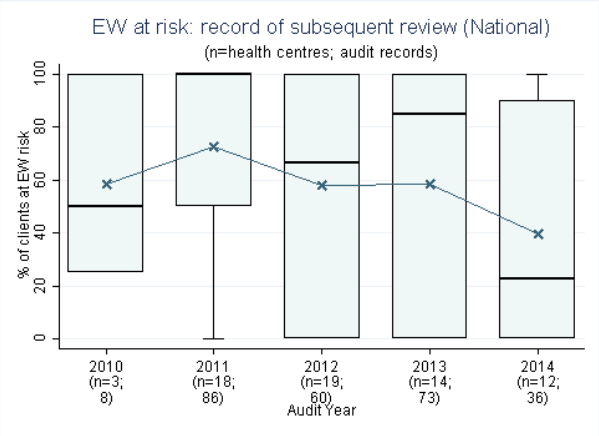
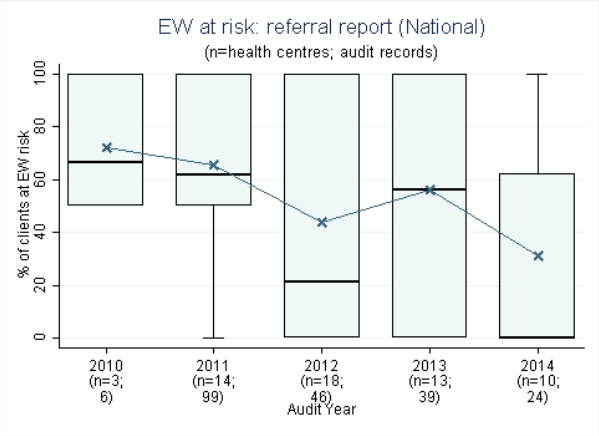
Year	Audit Cycle
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.

Figure 22 cont: ***Mean health centre record of emotional wellbeing (EW) follow-up action if identified at risk using a standard tool, by audit year for all health centres (n=number of health centres; number of client).***

Year	Audit Cycle
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.
	Insufficient data to assess trends due to small numbers of health centres completing 3 audit cycles.

2.10 'Team structure and function' and 'continuity of care'

This priority has been identified from the systems assessment data for preventive health. It refers to the extent to which the staffing profile and allocation of roles and responsibilities, and client flow and care processes maximise the potential effectiveness of the centre.

For more information on the systems assessment tool and processes, please refer to final report. In brief, each item is discussed by health centre teams and they come to a consensus score on a scale of 0-11.

System domain scores are derived from the average of the scores for each component within the system domain. Higher scores reflect better function.

Figure 23 shows 'team structure and function' and 'continuity of care' component scores, by year for all health centres and by cycle for health centres that have at least 3 years of systems assessment data.

Summary of trends (Figure 23)

Over years

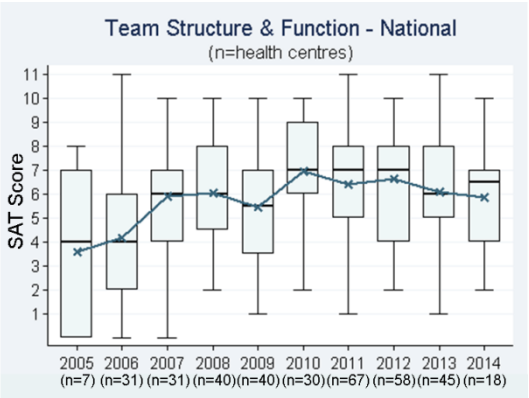
- There has been an improvement over time in the median and mean score.
- There was wide variation amongst health centres for all years with no clear trend in variation.

Over successive audit cycles:

- For health centres that participated in three or more systems assessments, the mean delivery has improved over time.
- There was wide variation amongst health centres over successive audit cycles with some indication of improvement at the bottom of the range.

Figure 23 ***Team structure and function and continuity of care component scores, by year for all health centres and by cycle for health centres that have at least 3 years of systems assessment data (n=number of health centres that conducted a systems assessment).***

Year **Cycle**



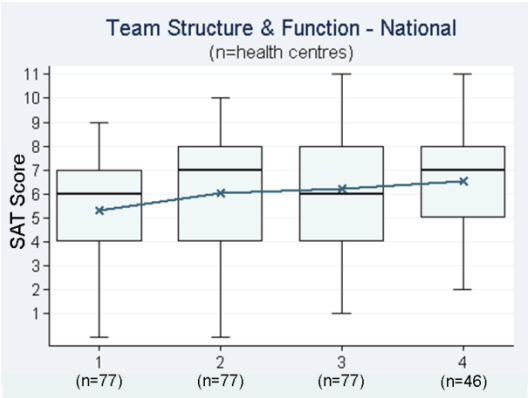
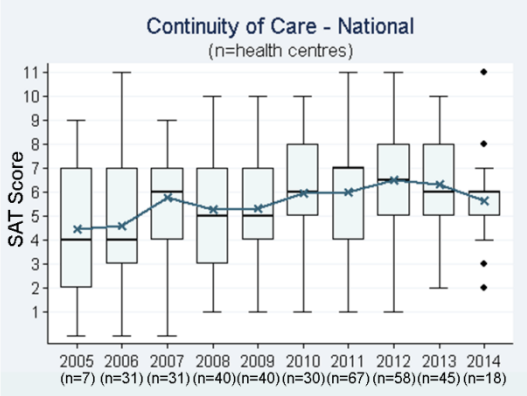


Figure 23 cont: ***Team structure and function and continuity of care component scores, by year for all health centres and by cycle for health centres that have at least 3 years of systems assessment data (n=number of health centres that conducted a systems assessment).***

Year



Cycle