ABCD NATIONAL RESEARCH PARTNERSHIP
NATIONAL CHILD HEALTH REPORT: 2012-2013

Purpose of this report:

1. To provide information on the extent to which recorded delivery of care to children is consistent with widely accepted best practice guidelines for ABCD participating services in your state or territory and for all services nationally.
2. To generate discussion and feedback on priority areas for service and system improvement.
3. To generate discussion and feedback on improvement in the presentation of the data in this report; to enable refinements in the report design to meet the needs of groups who can make use of this type of quality improvement (QI) data for the purpose of regional or state/territory level planning.

Your contribution to analysis and further development of this report. The report presents data from health centres participating in the ABCD National Research Partnership that completed their last child health audit and/or SAT in either 2012 or 2013†. Each data table is annotated to highlight the difference in standards across jurisdictions. The report presents data for all participating services together from Far West New South Wales, Northern Territory, Queensland, South Australia and Western Australia. Separate reports that present data for services in states/territories in comparison to the national data have been provided to the ABCD Project Steering Committees in each state/territory.

For the purposes of starting discussion on this report, we have made suggestions on key priorities for improvement based on analysis of **the national data**. A **summary of these priorities** is presented in the next section as well as in boxes in the relevant subsections of the report. The priorities for each state/territory may differ from the priorities based on the national data.

We are specifically requesting your comments and suggestions, based on the evidence from this report, on priority areas for improvement in delivery and organisation of child health care. We would especially value your comments on the identified priorities – whether you agree with the identified priorities, and whether you can suggest refinement of these priorities based on your interpretation of the data presented in the report.

Specific questions on this report:

1 a) Are there too many priorities identified?
b) If so, what do you regard as the top priorities? Why do you regard these as the top priorities?

2 a) Are there any points that are not covered in the identified priorities that should be included?
b) If so, what are these? Why do you regard these points as high priority?

3 a) Are the priorities for your state/territory different to the national priorities?
b) If so, please specify how they should be different and your reasons for saying they should be different.

Link to on-line survey on identified priorities

Below is a link to an on-line survey through which you can provide feedback on this report. To enable timely distribution of feedback to participants, please provide your comments by **Friday 6 December 2013.**
https://www.surveymonkey.com/s/CHILDHEALTHREPORT

Incorporating your feedback and reporting back to you

A refined version of this report will incorporate the feedback received from all stakeholders on the priority areas for improvement. The refined report will be provided to all groups and individuals who provide feedback on this report, and who provide an email contact address (preferred), or a mailing address (if you are not able to provide an email address) to the ABCD Project Coordinating Centre at abcd@menzies.edu.au.

Suggestions for improving presentation of the report
Please also give us suggestions for refinement of the presentation of the report to make it most useful for supporting system and service planning and management. A key aim of this project is to gather feedback for the purpose of refining the content and presentation of this report so that it meets the needs of groups who can make use of this type of QI data for the purpose of regional or state/territory level planning and improvement.

Questions to be covered in future phases in the development of this report
When we circulate the version of this report that incorporates your feedback, we will be asking for comments on the barriers and enablers to achieving improvement in the priority areas. In a subsequent version of the report we will also be asking for comments on key strategies for achieving improvement.

---

†***Where do the data in this report come from?*** The report is based on analysis of audits of clinical records of children who attend services that are ***engaged with One21seventy*** **AND** ***participating in the ABCD National Research Partnership***. The child health audit tool was developed by an expert working group, with participation of child health experts and health service staff from a number of States and the Northern Territory. The tool is designed to enable services to assess their actual practice against best practice standards, and is accompanied by a protocol that includes reference to the guidelines and standards that form the basis of the tool (the reference list is included at the end of this report). The tool was made available to services in 2007 to assist health centres assess service delivery to children aged 3 months to 6 years. A review of the tool in 2011 extended the age range to <15years. The audit data are supported by a summary of system performance as assessed by staff in health centres that completed a systems assessment tool (SAT) related to child health service delivery.

How have the data been reported to health centres? The data collected through One21seventy audit and systems assessment tools and entered into the One21seventy web-based information system are analysed and made available to health centres in real time through the web-based information system. Reports of aggregated data for clusters of health centres, by region or by state are also available through the One21seventy web-based information system in order to support regional or state/territory level QI efforts.

Restrictions and limitations on the data presented. The data in this report are not expected to be representative of all health centres nationally or for specific jurisdictions because participation of health centres is either through self-selection or through regional decision making processes. In jurisdictions where a high proportion of health centres are participating, the data may be more generalisable; for jurisdictions where there are relatively few health centres participating, the data are less generalisable.

Criteria for inclusion of records in the audit: A child's health record is eligible for audit if the child has been resident in the community for 6 months or more of the past 12 months (or if the child is <12 months, resident in community for at least half of the time since birth) and has no major health anomaly such as Down Syndrome, cerebral palsy, heart defects or inherited disorders. Where the eligible population is 30 children or less, the audit protocol recommends including all records. Where the eligible population is greater than 30, the protocol provides guidance on the number of records depending on the precision of estimates required by health service staff. The samples are intended to be stratified by age group and gender with equal numbers of males and females in the following categories: 3-<12mths; 12mths-<3yrs; 3-<6yrs; 6-<9yrs; 9-<12yrs; and 12-<15yrs.

SUMMARY OF PRELIMINARY PRIORITIES BASED ON NATIONAL DATA

Immunisations

1. Improve systems for systematic recording of immunisations in child health records. A significant number of records do not include a chart for recording of immunisations, and there is wide variation between health centres in the proportion of children with an immunisation chart in their clinical record.
2. Improve delivery and recording of immunisations scheduled for delivery at birth. There is wide variation in the recording of these immunisations between jurisdictions and between health centres.
3. Improve delivery and recording of immunisations scheduled for delivery at 2 years and older. While there is room for improvement in coverage in all age groups and all jurisdictions, there appears to be a progressive fall off in coverage for children aged 2 years or more. This is particularly marked for immunisations scheduled for delivery to children over the age of 10 years.

Clinical examinations

4. Improve systems for systematic recording of essential measures such as weight in child health records. Weight is an important indicator of growth, development and general health in children. A significant number of records do not include a recent record of the child's weight, and there is wide variation between health centres in the proportion of children with a recent measure of weight. Low levels and wide variation of recording between health centres appears to be more marked among participating health centres outside of the NT.
5. Improve monitoring and recording of haemoglobin according to regional best practice guidelines. Aboriginal and Torres Strait Islander children in many areas suffer from high rates of anaemia, which impacts on their general health and development. The causes of anaemia in many children should be remediable through following recognised clinical guidelines. A significant number of records do not include a recent record of haemoglobin monitoring, and there is wide variation between health centres in the proportion of children with a recent record.
6. Improve monitoring and recording of developmental milestones – including for vision and hearing. Many children do not have a record of assessment of developmental milestones according to regional best practice guidelines, and there is wide variation between health centres in the proportion of children with a record.

Advice and brief interventions on common risks to health

7. Improve delivery and recording of advice on child nutrition – including on breastfeeding. Poor nutrition is an underlying factor for many aspects of poor child health. While social and environmental factors contribute to poor nutrition, it is important to provide appropriate advice to carers for providing the best possible diet for their children in any given situation. Many children do not have a record of relevant advice being provided, and there is wide variation between health centres in the proportion of children with a record of advice.
8. Improve delivery and recording of advice on the risks of passive smoking, infection prevention and hygiene, and injury prevention. Children in many communities live in houses where a number of adults smoke, and where they have high exposure to infection and injury due to environmental conditions. Recording of advice on these issues is generally low.
9. Improve attention of clinical staff to domestic/social and environmental conditions, including food security, financial resources, housing conditions, social and family support. These conditions have important implications for clinical care of individual patients, as well as for the health of communities and populations. Recording of discussion on these issues is generally low.
10. Improve attention of clinical staff to factors relevant to child development, including physical and mental stimulation, physical activity, social and emotional wellbeing, education progress. These factors contribute to, or may be reflective of, mental and physical health. Recording of discussion on these issues is generally low.

Enquiry and advice on use of alcohol tobacco and other drugs

11. Improve enquiry - and recording of enquiry - regarding use of cigarettes, alcohol and illicit drugs, and discussion and/or advice provided on risks to children in the relevant age ranges. Many children do not have a record of relevant enquiry or advice being provided, and there is wide variation between health centres in the proportion of children with a record of advice.

Follow-up of abnormal clinical findings and identified risks to health

13. Improve recording of ***growth faltering/failure to thrive***. Growth faltering/failure to thrive is a key indicator of poor and deteriorating health in children, and should prompt investigation and action. There is wide variation between jurisdictions and between health centres in the proportion of children with a record of growth faltering or failure to thrive, with records being much less than would be expected from other evidence on the population incidence of these conditions.
14. Improve follow-up action for children identified with growth faltering or failure to thrive. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including clinical assessment, development of an action plan, or referral to support services.
15. Review guidelines for screening and case finding for ***anaemia*** in children. There is wide variation between health centres in the proportion of children with a record of anaemia, with records being lower in some health centres than would be expected from other evidence on the population incidence of anaemia. This indicates that in many areas anaemia may not be detected because lack of clarity and/or inappropriate guidelines, which will compromise systematic and appropriate approaches to screening and case finding.
16. Improve follow-up action for children identified with anaemia. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including deworming, prescription of iron supplements, nutritional advice, and follow-up monitoring of haemoglobin.
17. Improve recording of ***chronic ear infections***. Chronic ear infections are common in many Aboriginal and Torres Strait islander communities, and can have serious consequences for children's development. There is wide variation between health centres in the proportion of children with a record of chronic ear infection, with records being much less than would be expected from other evidence on the population incidence of such infections.
18. Improve follow-up action for children with chronic ear infections. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including follow-up examination, advice on ear care, development of an action plan, or referral to an ENT specialist.
19. Improve recording of ***evidence of developmental delay, and concerns over the domestic environment, financial situation, housing and food security***. There is wide variation between health centres in the proportion of children with a record of such evidence or concerns, with records being much less than would be expected from other evidence on the population prevalence of such conditions.
20. Review and improve systems and services for referral and follow-up support for children who are identified with developmental delay or who are living in poor social or environmental conditions. There is wide variation between health centres in the proportion of children with a record of referral or follow-up for such children.

Child health system assessments

21. Strengthening systems for more effective links between health centres and communities is a potential priority area for action, particularly in health centres with relatively lower scores in this area.
22. Improvement of systems to support regional health planning activities appears to be an area of particular need. Good regional planning systems, including community input, is important for coordinated delivery of community and health services that meet the needs of the population.
23. There appears to be a need to work with health centre teams to strengthen systems in general in those health centres with relatively low scores. As a starting point, it may be appropriate to focus on supporting health centres that have scores in the lowest 20%, with a particular focus on those items with the lowest scores.

Table of Contents

List of Tables and Figures

Tables:

Figures:

1. PROFILE OF HEALTH CENTRES THAT CONDUCTED CHILD HEALTH AUDITS AND/OR SATs IN 2012/2013

The child health audit tool was used in 94 different health centres in 2012 or 2013 (Table 1). These health centres had used the child health audit tools for varying numbers of cycles prior to 2012/2013, and the prior experience of use of the child health audit tool varied between jurisdictions (Table 2). The child health audit tool had been used by a relatively large number of health centres in Qld and the NT, and in relatively more audit cycles in FWNSW, NT and Qld. A total of 4,011 records were audited in the 94 health centres in 2012 or 2013. For 45 of these health centres the child health audit tool had been used most recently in 2012 (1,889 records audited), and for 49 health centres the audit tool was used in 2013 (2,122 records audited). A smaller number of health centres (62) recorded a completed systems assessment in the One21seventy database, with the majority of these being in Qld and the NT.

Table 1: Most recent child health audit and systems assessment completed in 2012 or 2013 (number of child health records audited, number of health centres and number of SATs)

		2012	2013	Total
FWNSW	#Audits		179	179
	#Centres		4	4
	#SATs		0	0
NT	#Audits	802	316	1,118
	#Centres	24	13	37
	#SATs	13	10	23
QLD	#Audits	798	1,500	2,298
	#Centres	16	30	46
	#SATs	11	26	37
SA	#Audits	229	67	296
	#Centres	4	1	5
	#SATs	0	0	0
WA	#Audits	60	60	120
	#Centres	1	1	2
	#SATs	1	1	2
Total	#Audits	1,889	2,122	4,011
	#Centres	45	49	94
	#SATs	25	37	62

Table 2: Most recent child health audit completed in 2012 and 2013 by audit cycle (number of child health records audited and number of health centres)

		Cycle							
		1	2	3	4	5	6	7	Total
FWNSW	#Audits							179	179
	#Centres							4	4
NT	#Audits	410	258	270	37	113	30		1,118
	#Centres	12	11	9	1	3	1		37
QLD	#Audits	281	100	787	771	359			2,298
	#Centres	6	3	15	15	7			46
SA	#Audits	202	94						296
	#Centres	4	1						5
WA	#Audits			60		60			120
	#Centres			1		1			2
Total	#Audits	893	452	1,117	808	532	30	179	4,011
	#Centres	22	15	25	16	11	1	4	94

Over 80% of the health centres are in remote communities and over 80% are government managed (Table 3). Overall 92% of audited records were for children who were identified as Aboriginal or Torres Strait Islander. Overall 95% of audited records showed a record of attendance at the child health centre within the previous 12 months. Over 50% of these attendances were for acute care, and about 20% were for a 'child health check'. National data shows that initial assessment at the health centre was most commonly by a nurse, with an Aboriginal or Torres Strait Islander Health Worker (AHW) being next most common professional to do the initial assessment.

Table 3: Characteristics of health centres and children whose records were audited during 2012/2013 (N & %)

		Total	
	Primary Health Care Centres	**94**	
Location	Urban	4	4%
	Regional	10	11%
	Remote	80	85%
Governance	Government	77	82%
	Community Controlled	17	18%
Size of population served	≤500	46	49%
	501-999	22	23%
	≥1000	26	28%
Completed child health audit cycles	Baseline	22	23%
	1-2 cycles	40	43%
	≥3 cycles	32	34%
	Number of audited records	**4011**	
Age Groups	<1 year	530	13%
	1-<3 years	969	24%
	3-<6 years	1045	26%
	≥6 years	1467	37%
Gender	Males	2046	51%
	Females	1965	49%
Indigenous status	Indigenous	3682	92%
	Non-indigenous	252	6%
	Not stated	77	2%
	Attended within past 12 months	3792	95%
Reason for last attendance	Acute care	2067	52%
	Child Health Check	879	22%
	Immunisation	540	13%
	Other	525	13%
Profession child first seen by	AHW	687	17%
	Nurse	2455	61%
	GP	582	15%
	Specialist	109	3%
	Allied Health	73	2%
	Other	31	1%
	Not stated	74	2%

2. RECORDED DELIVERY OF CHILD HEALTH SERVICES IN 2012/2013

The presentation of audit findings on the delivery of child health services follows the structure of the child health audit tool, with sections on immunisation; physical checks; discussion of key influences on health and brief interventions; enquiry about risk factors; and follow-up of abnormal findings.

A summary of the priorities for improvement is included for each of these sections.

For each service item within the tables, the following summary statistics are recorded:

Mean: For each health centre, every instance of an indicator (service item) being recorded on a child's clinic record as delivered is summed up and divided by all records to derive an average percent delivery for that audit cycle. An average percent across all health centres is then calculated by summing individual mean percents and dividing by the number of health centres. In the example below, the mean value of immunisation charts being recorded as present was 97% across all 37 health centres.

Range: Refers to the levels of delivery (%) for the health centre with the lowest level and the health centre with the highest level for each indicator. In the example below, the lowest health center had 82% of immunisation charts present for child health records audited and the highest health centre had 100% of charts present for all children records audited.

Standard Error: The standard error is a measure of how accurate the mean (%) estimate is to the true mean value. The lower the standard error, the better the estimate.

	Example	
Health Centres	**37**	
Audits	**1118**	
Immunisation	97	***Mean %***
Chart Present	±0.74	***Standard Error***
	(82-100)	***Range***

2.1 IMMUNISATIONS

Table 4 shows health centre level statistics (% mean, ±SE and range) of child clients within specific age groups that have completed immunisations as per the relevant jurisdictional schedule.

Table 4: Record of immunisation completeness according to recommended schedule for health centres during 2012/2013 (mean %, ±SE and range between health centres).

		Total	
	Health Centres	**94**	
	Records Audited	**4011**	**Immunisation schedule:**
	Immunisation Chart Present	91 ±1.78 (0-100)	
Age	Birth	67 ±2.74 (0-100)	Birth - Hep B (NSW,SA,WA); Hep B & BCG (NT,Qld)
	2 months	84 ±2.39 (0-100)	2 & 4 months - DTPa/Hib/ HepB/IPV; 7vPCV or 10vPCV; Rotavirus (all states)
	4 months	81 ±2.39 (0-100)	
	6 months	78 ±2.53 (0-100)	6 months - DTPa/Hib/HepB/ IPV; 7vPCV or 10vPCV (all states) + Rotavirus (Qld,SA)
	12 months	78 ±3.12 (0-100)	12 months - Hib; MMR; MenCCV (all states) + Hep B (Qld,SA) + Hep A (NT,WA)
	18 months	81 ±2.36 (0-100)	18 months - VZV (all states) + Hep A (NT,Qld,SA,WA) + 7vPCV (NT) + 23vPPV (WA)
	2 years	69 ±4.32 (0-100)	2 years - 23vPPV; Hep A (Qld,SA)
	4 years	81 ±2.73 (0-100)	4 years - DTPa/IPV; MMR (all states)
	>10 years	16 ±3.45 (0-100)	>10 years - VZV; HPV (females) (all states) + Hep B (NSW,Qld,SA,WA) + DTPa (NT,Qld,SA,WA)

Priorities for improvement on immunisations

- Improve systems for systematic recording of immunisations in child health records. A significant number of records do not include a chart for recording of immunisations, and there is wide variation between health centres in the proportion of children with an immunisation chart in their clinical record.
- Improve delivery and recording of immunisations scheduled for delivery at birth. There is wide variation in the recording of these immunisations between jurisdictions and between health centres.
- Improve delivery and recording of immunisations scheduled for delivery at 2 years and older. While there is room for improvement in coverage in all age groups and all jurisdictions, there appears to be a progressive fall off in coverage for children aged 2 years or more. This is particularly marked for immunisations scheduled for delivery to children over the age of 10 years.

2.2 PHYSICAL CHECKS

The tables in this section show health centre level statistics (% mean, ±SE and range) of child clients receiving scheduled physical checks according to jurisdictional guidelines including clinical measurements, examinations and developmental checks. A service is recorded as received if provided within the last 12 months of the audit date. Different checks apply to different age groups and jurisdictions as indicated in each table.

Table 5: Record of clinical measurements within the past 12 months for health centres during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Weight	89	
	±1.57	
	(35-100)	
Length/height	73	
	±2.28	
	(11-100)	
Head circumference	90	<12 months
	±2.41	
	(0-100)	
BMI	34	≥4 years NT; ≥2 years other states
	±2.96	
	(0-100)	
Haemoglobin	51	≥6 months, if indicated
	±3.78	
	(0-100)	
Urinalysis	12	≥10 years NT; QLD if indicated
	±2.33	
	(0-89)	

Table 6: Record of clinical examinations within the past 12 months for health centres during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Testes check	72	<12 months
	±4.03	
	(0-100)	
Hip examination	69	<12 months
	±3.67	
	(0-100)	
Gait	45	≥12 months QLD; ≥18 months NSW
	±3.59	
	(0-100)	
Skin check	80	
	±2.1	
	(14-100)	
Oral hygiene	61	≥6 months
	±2.37	
	(0-100)	
Cardiac auscultation	53	≥12 months NT; all ages other states
	±2.94	
	(0-100)	
Respiratory examination	69	
	±2.54	
	(0-100)	
Ear examination	78	
	±2.27	
	(0-100)	
Eye examination	54	≥4 years NT; all ages other states
	±2.82	
	(0-100)	
Trachoma	25	≥4 years NT; if indicated other states
	±3.65	
	(0-100)	

Table 7: Record of developmental checks within the past 12 months for health centres during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Developmental milestones	72	<4 years
	±2.5	
	(0-100)	
Vision	55	≥6 months NT & QLD; all ages NSW, WA
	±2.7	
	(0-100)	
Hearing	64	≥6 months NT; all ages other states
	±2.34	
	(7-100)	
Parent-Child Interaction	71	<4 years QLD & WA; <2 years NT; other states if indicated
	±2.8	
	(0-100)	

Priorities for improvement on clinical examinations

- Improve systems for systematic recording of essential measures such as weight in child health records. Weight is an important indicator of growth, development and general health in children. A significant number of records do not include a recent record of the child's weight, and there is wide variation between health centres in the proportion of children with a recent measure of weight. Low levels and wide variation of recording between health centres appears to be more marked among participating health centres outside of the NT.
- Improve monitoring and recording of haemoglobin according to regional best practice guidelines. Aboriginal and Torres Strait Islander children in many areas suffer from high rates of anaemia, which impacts on their general health and development. The causes of anaemia in many children should be remediable through following recognised clinical guidelines. A significant number of records do not include a recent record of haemoglobin monitoring, and there is wide variation between health centres in the proportion of children with a recent record.
- Improve monitoring and recording of developmental milestones – including for vision and hearing. Many children do not have a record of assessment of developmental milestones according to regional best practice guidelines, and there is wide variation between health centres in the proportion of children with a record.

2.3 BRIEF INTERVENTIONS

The following tables show health centre level statistics (% mean, ±SE and range) of child clients receiving brief interventions on a number of recommended issues. A record of a brief intervention indicates that there has been discussion and/or advice given on the issue within the last 12 months. Different brief interventions apply to different age groups and jurisdictions as indicated in each table.

Table 8: Record of discussion on nutrition and preventive factors within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/jurisdiction:**
Breastfeeding	72	<2years
	±2.77	
	(0-100)	
Nutrition	58	
	±2.62	
	(0-100)	
SIDS prevention	56	<12 months
	±4.45	
	(0-100)	
Passive smoking risk	40	<2years NT; all ages other states
	±3.09	
	(0-100)	
Infection prevention & hygiene	36	<3years NT; all ages QLD, SA & WA
	±2.64	
	(0-100)	
Oral health	51	≥6months NSW & QLD; ≥8months WA; ≥6months & <5years NT
	±2.79	
	(0-100)	
Injury prevention	37	≥18months NSW; ≤4years QLD; ≥6months in SA; <3years NT
	±2.9	
	(0-100)	

Table 9: Record of discussion on domestic, social, environmental factors within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Domestic/social environment	43	<5years WA; <6years NT; all ages NSW, QLD & SA
	±2.36	
	(0-92)	
Social or family support	54	<4years QLD; <5years WA; <6years NT; all ages NSW & SA
	±2.87	
	(0-100)	
Financial situation	18	<5years WA & NT
	±3.08	
	(0-80)	
Housing condition	28	<5years WA; all ages other states
	±2.44	
	(0-94)	
Food security	5	<5years WA; all ages QLD
	±1.31	
	(0-36)	

Table 10: Record of discussion/delivery of brief intervention for developmental factors within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Physical & mental stimulation	48	≥6months NSW; <5years QLD,WA & NT
	±3.16	
	(0-100)	
Physical activity	34	≥3years NSW; >5years QLD; >3years WA; >2years NT
	±3.2	
	(0-100)	
Education progress	18	≥5 years
	±2.45	
	(0-81)	
Social & emotional wellbeing	35	>5years NSW,SA & NT; all ages QLD & WA
	±3.32	
	(0-100)	
Sexual/reproductive health advice	4	>3years WA; ≥5years NT
	±1.44	
	(0-33)	

Priorities for improvement on advice and brief interventions on common risks to health

- Improve delivery and recording of advice on child nutrition – including on breastfeeding. Poor nutrition is an underlying factor for many aspects of poor child health. While social and environmental factors contribute to poor nutrition, it is important to provide appropriate advice to carers for providing the best possible diet for their children in any given situation. Many children do not have a record of relevant advice being provided, and there is wide variation between health centres in the proportion of children with a record of advice.
- Improve delivery and recording of advice on the risks of passive smoking, infection prevention and hygiene, and injury prevention. Children in many communities live in houses where a number of adults smoke, and where they have high exposure to infection and injury due to environmental conditions. Recording of advice on these issues is generally low.
- Improve attention of clinical staff to domestic/social and environmental conditions, including food security, financial resources, housing conditions, social and family support. These conditions have important implications for clinical care of individual patients, as well as for the health of communities and populations. Recording of discussion on these issues is generally low.
- Improve attention of clinical staff to factors relevant to child development, including physical and mental stimulation, physical activity, social and emotional wellbeing, education progress. These factors contribute to, or may be reflective of, mental and physical health. Recording of discussion on these issues is generally low.

2.4 RISK FACTORS

Table 11 shows health centre level statistics (% mean, ±SE and range) of child clients receiving a discussion on alcohol, tobacco or other harmful substances to identify at risk behaviours. Risk factor recording indicates that a discussion and/or education has been provided within the last 12 months. Different risk factor interventions apply to different age groups and jurisdictions as indicated in the table.

Table 11: Record of enquiry regarding use of cigarettes, alcohol and illicit drugs, and discussion and/or advice provided on their risks within the past 12 months: 2012/2013 (mean %, ±SE and range between health centres).

	Total	
Health Centres	**94**	
Records Audited	**4011**	**Applicable age/ jurisdiction:**
Smoking	16	≥5 years
	±2.74	
	(0-97)	
Alcohol use	17	>10years QLD; ≥5 years NT
	±3.37	
	(0-100)	
Drug or substance use	15	≥8 years QLD; ≥5 years others states
	±3	
	(0-100)	

Priorities for improvement in enquiry and advice on use of alcohol, tobacco, drugs:

- Improve enquiry - and recording of enquiry - regarding use of cigarettes, alcohol and illicit drugs, and discussion and/or advice provided on risks to children in the relevant age ranges. Many children do not have a record of relevant enquiry or advice being provided, and there is wide variation between health centres in the proportion of children with a record of advice.

2.5 FOLLOW-UP OF ABNORMAL CLINICAL FINDINGS

The following tables show health centre level statistics (% mean, ±SE and range) of child clients who receive follow-up action if a particular concern is noted within the last 12 months.

2.5.1 FAILURE TO THRIVE

Failure to thrive is defined as a 'child whose weight is less than normal for gestational corrected age/gender and past medical history' (Primary clinical care manual 6th ed 2009). Growth faltering is defined as 'a flattening or drop off of the growth curve following a period of steady growth' (CARPA, 5th ed 2009).

Table 12: Record of follow-up actions if evidence of failure to thrive within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with weight recorded	***3321***
	% Records with evidence of growth faltering/ failure to thrive	**13**
		±2.01
		(0-86)
% Growth faltering with record of:	Clinical assessment	77
		±3.42
		(0-100)
	Follow-up check	81
		±3.25
		(0-100)
	Nutrition advice	74
		±3.8
		(0-100)
	Family meeting	30
		±4.58
		(0-100)
	Action plan made	53
		±4.8
		(0-100)
	Referral to support services	39
		±4.76
		(0-100)
	Other action	40
		±5.31
		(0-100)

2.5.2 OVERWEIGHT/OBESITY

Overweight or obesity in childhood is defined as a BMI in the 85-95th percentile and >95th percentile respectively.

Table 13: Record of follow-up actions if overweight or obese within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with BMI recorded	***866***
	% Records with evidence of overweight/obesity	**7**
		±1.73
		(0-100)
% Overweight/obese with record of:	Referral to dietician/MO	70
		±7.69
		(0-100)
	BP assessment	68
		±7.94
		(0-100)
	Blood glucose assessment	18
		±6.34
		(0-100)
	Blood lipid assessment	10
		±4.88
		(0-100)

2.5.3 ANAEMIA

Anaemia is defined as <110g/L; or in Queensland:<105g/L for children aged 6-<12mths and <100g/L for children aged ≥12mths; or in the Northern Territory:<105g/L 6-<12mths, <110g/L 1-<5yrs,<115g/L 5-<8yrs, <119g/L 8-<12yrs, <118g/L 12-<15yrs female and <125g/L 12-<15yrs male.

Table 14: Record of follow-up actions if evidence of anaemia within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).
(NB: Haemoglobin tests only if indicated in each state/territory.)

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with haemoglobin assessment recorded	***1665***
	% Records with evidence of anaemia	**22**
		±2.19
		(0-100)
% Anaemia with record of:	Dietary/nutrition advice	71
		±4.15
		(0-100)
	Deworming	39
		±4.43
		(0-100)
	Iron supplement prescription	48
		±4.52
		(0-100)
	Follow-up Hb assessment	47
		±4.54
		(0-100)

2.5.4 RECURRENT OR CHRONIC EAR INFECTION

Recurrent ear infections refer to two or more ear infections in the past year and chronic ear infections refers to ear infections persisting for two weeks or more in the past year.

Table 15: Record of follow-up actions if evidence of recurrent or chronic ear infection within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with ear/hearing checks recorded	***2938***
	% Records with evidence of recurrent or chronic ear infection	**13**
		±1.4
		(0-58)
% Recurrent or chronic ear infection with record of:	Follow-up exam	92
		±2.1
		(0-100)
	Advice on ear care	77
		±3.67
		(0-100)
	Antibiotics prescription	92
		±2.32
		(0-100)
	Action plan made	57
		±4.76
		(0-100)
	Referral to audiology	53
		±4.55
		(0-100)
	Referral to ENT	50
		±4.69
		(0-100)
	Other action	46
		±4.62
		(0-100)

2.5.5 RECURRENT OR CHRONIC RESPIRATORY DISEASE

Recurrent or chronic respiratory disease is defined as more than three episodes of chest infection requiring antibiotics within the last 12 months. Respiratory disease can include asthma, frequent coughs, pneumonia and bronchitis.

Table 16: Record of follow-up actions if evidence of recurrent or chronic respiratory disease within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with respiratory exam recorded	***2610***
	% Records with chronic respiratory disease	2
		±0.43
		(0-25)
% Chronic respiratory disease with record of:	Referral to paediatrician	78
		±7.95
		(0-100)
	Paediatric respiratory assessment report	62
		±10.12
		(0-100)

2.5.6 PROTEINURIA

Evidence of proteinuria is defined as 1+ of protein or more in urinalysis check. Urinalysis check applies to children resident in Queensland (if indicated) or resident in the Northern Territory and ≥10 years.

Table 17: Record of follow-up actions if evidence of proteinuria within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
	Health Centres	**94**
	Records Audited	**4011**
	Total number of children with urinalysis test recorded	***176***
	% Records with evidence of proteinuria	**25**
		±5.13
		(0-100)
% Proteinuria with record of:	ACR	62
		±9.87
		(0-100)
	Follow-up by MO	84
		±7.17
		(0-100)

2.5.7 INFECTED SKIN SORES/SCABIES

Infected skin sores refers to yellow-brown crusted sores that are often surrounded by redness and swelling and may include evidence of pus, discharge or bleeding.

Table 18: Record of follow-up actions if infected skin sores or scabies within the past 12 months during 2012/2013 (mean %, ±SE and range between health centres).

		Total
Health Centres		**94**
Records Audited		**4011**
Total number of children with skin check recorded		***2976***
% Records with evidence of infected skin sores		**25**
		±1.65
		(0-67)
% Skin infections with record of:	Cleaning/antibiotic treatment	94
		±1.59
		(0-100)
	Swabs taken	29
		±3.13
		(0-100)
	Follow-up check	66
		±3.43
		(0-100)
% Records with evidence of scabies		**15**
		±1.24
		(0-67)
% Scabies with record of:	Treatment	93
		±2.24
		(0-100)
	Follow-up check	60
		±4.12
		(0-100)

2.5.8 DEVELOPMENTAL DELAY, SOCIAL AND ENVIRONMENTAL RISK FACTORS

Developmental delay may relate to biological, psychological and sociocultural factors affecting infant development. Developmental delay can occur when milestone-specific tasks are not met. Concerns regarding domestic environment include living conditions generally, exposure to physical and emotional violence, substance misuse and gambling. Concerns over housing and food security include overcrowding, access to clean water and access to nutritious food on a regular and reliable basis.

Table 19: Record of follow-up actions if concern regarding developmental, social or environmental factors within the past 12 months for 2012/2013 (mean %, ±SE and range between health centres).

		Total
Health Centres		**94**
Records Audited		**4011**
% Records with evidence of developmental delay		**4**
		±0.57
		(0-27)
% Evidence of developmental delay with record of:	Referral	79
		±4.54
		(0-100)
	Follow-up	79
		±4.5
		(0-100)
% Records with evidence of concern over domestic environment		**4**
		±0.74
		(0-41)
% Concern over domestic environment with record of:	Referral	71
		±5.25
		(0-100)
	Follow-up	63
		±5.86
		(0-100)
% Records with evidence of concern over financial situation		**2**
		±0.6
		(0-47)
% Concern over financial situation with record of:	Referral	81
		±6.01
		(0-100)
	Follow-up	70
		±6.86
		(0-100)
% Records with evidence of concern over housing/food security		**2**
		±0.44
		(0-27)
% Concern over housing/food security with record of:	Referral	50
		±8.75
		(0-100)
	Follow-up	46
		±8.5
		(0-100)

Priorities for improvement in follow-up of abnormal clinical findings and identified risks to health

- Improve recording of ***growth faltering/failure to thrive***. Growth faltering/failure to thrive is a key indicator of poor and deteriorating health in children, and should prompt investigation and action. There is wide variation between jurisdictions and between health centres in the proportion of children with a record of growth faltering or failure to thrive, with records being much less than would be expected from other evidence on the population incidence of these conditions.
- Improve follow-up action for children identified with growth faltering or failure to thrive. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including clinical assessment, development of an action plan, or referral to support services.
- Review guidelines for screening and case finding for ***anaemia*** in children. There is wide variation between health centres in the proportion of children with a record of anaemia, with records being lower in some health centres than would be expected from other evidence on the population incidence of anaemia. This indicates that in many areas anaemia may not be detected because lack of clarity and/or inappropriate guidelines, which will compromise systematic and appropriate approaches to screening and case finding.
- Improve follow-up action for children identified with anaemia. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including deworming, prescription of iron supplements, nutritional advice, and follow-up monitoring of haemoglobin.
- Improve recording of ***chronic ear infections***. Chronic ear infections are common in many Aboriginal and Torres Strait islander communities, and can have serious consequences for children's development. There is wide variation between health centres in the proportion of children with a record of chronic ear infection, with records being much less than would be expected from other evidence on the population incidence of such infections.
- Improve follow-up action for children with chronic ear infections. There is a wide variation between health centres in the recording of follow-up action, and generally low levels of recording of systematic actions being taken for these children – including follow-up examination, advice on ear care, development of an action plan, or referral to an ENT specialist.
- Improve recording of ***evidence of developmental delay, and concerns over the domestic environment, financial situation, housing and food security***. There is wide variation between health centres in the proportion of children with a record of such evidence or concerns, with records being much less than would be expected from other evidence on the population prevalence of such conditions.
- Review and improve systems and services for referral and follow-up support for children who are identified with developmental delay or who are living in poor social or environmental conditions. There is wide variation between health centres in the proportion of children with a record of referral or follow-up for such children.

3. SYSTEMS ASSESSMENT

The ABCD/One21seventy Systems Assessment Tool (SAT) has been developed to enable providers of Aboriginal and Torres Strait Islander primary health care services to undertake a structured assessment of the strengths and weaknesses of their systems to support best practice care. The SAT evolved from the Chronic Care Model and the associated Assessment of Chronic Illness Care (ACIC) tool and from the World Health Organization's (WHO) Innovative Care for Chronic Conditions (ICCC) Framework.

International experience has identified five key components of health systems to be effective across primary health care in improving the quality of care of clients with chronic illness:

- delivery system design
- information systems and decision support
- self-management support
- link with community, other health services and other resources
- organisational influence and integration

These five components are incorporated into the SAT and within each component are a number of items (Table 20) that the health team (managers and staff) discuss and come to a consensus about how well their systems are working.

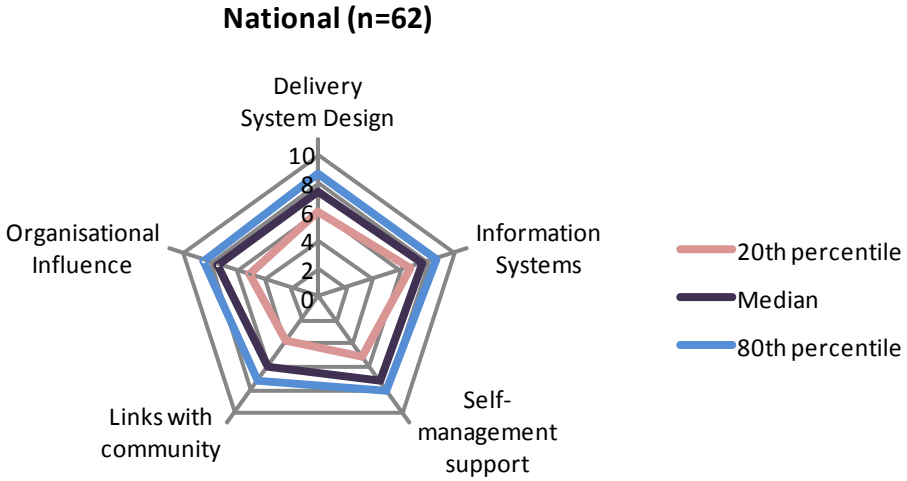
Table 20: ABCD/One21seventy systems assessment tool components and items

Components of systems	Items for each component
1. Delivery System Design This component refers to the extent to which the design of the health centre's infrastructure, staffing profile and allocation of roles and responsibilities, client flow and care processes maximise the potential effectiveness of the centre.	1. Team structure and function 2. Clinical leadership 3. Appointments and scheduling 4. Care planning 5. Systematic approach to follow-up 6. Continuity of care 7. Client access/cultural competence 8. Physical infrastructure, supplies and equipment
2. Information systems and decision support This component refers to clinical and other information structures (including structures to support clinical decision making) and processes to support the planning, delivery and coordination of care.	1. Maintenance and use of electronic client list 2. Evidence-based guidelines 3. Specialist–generalist collaborations
3. Self-management support This component refers to structures and processes that support clients and families to play a major role in maintaining their health, managing their health problems, and achieving safe and healthy environments.	1. Assessment and documentation 2. Self-management education and support, behavioural risk reduction and peer support.
4. Links with the community, other health services and other services and resources This component refers to the extent to which the health centre uses external linkages to inform service planning, links clients to outside resources, works out in the community, and contributes to regional planning and resource development.	1. Communication and cooperation on governance and operation of the health centre and other community-based organisations and programs 2. Linking health centre clients to outside resources 3. Working out in the community 4. Communication and cooperation on regional health planning and development of health resources.
5. Organisational influence and integration This component refers to the use of organisational influence to create a culture and support organisational structures and processes that promote safe, high quality care; and how well all the system components are integrated across the centre.	1. Organisational commitment 2. Quality improvement strategies 3. Integration of health system components.

Each item is scored separately on a scale of 0-11. System component scores are derived from the average of the scores for each item within the system component. Higher scores reflect better function.

Scores for each system component, aggregated for all health centres nationally, are shown in the radar plot below.

Figure 1: Radar plot showing median, 20th and 80th percentiles of aggregated system component scores as assessed by health centres (n=62) nationally in 2012/2013.



Nationally, the system components for which the median score was relatively high were: Organisational Influence; Delivery System Design; and Information Systems (Figure 1). The system component for which the median score was relatively low was Links with the Community. The 20th centile for Links to the Community was also relatively low, indicating that the health centre teams for 20% of services gave this system component a score of less than 4 out of 11.

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

Nationally, the median scores for individual items for all health centres nationally ranged between 4.5 and 9, with the lowest score being for Regional Health Planning, and the highest score being for Evidence-based Guidelines (Table 21). More importantly, there is a wide range between health centres on scores for all individual items. The range between the highest and lowest scores for each item extends from 0 or 1 up to the maximum of 11 for the majority of items. For many items, the range between the 20th centile and the 80th centile is 4 or 5 points.

Table 21: Aggregated individual item scores for each system component as assessed by health centres nationally (n=62) in 2012/2013.

Component	Item	Min	20th percentile	Median	80th percentile	Max
Delivery System Design (overall median 7.4)	Team structure and function	1	4	8	9	11
	Clinical Leadership	0	5	8	10	11
	Appointments and scheduling	2	6	8	9	11
	Care Planning	2	6	8	9	11
	Systematic approach to follow-up	1	7	8	9	11
	Continuity of care	2	5	7	9	11
	Client access/cultural competence	2	6	8.5	10	11
	Physical infrastructure	1	5	7	9	11
Information systems and decision support (overall median 7.7)	Maintenance and use of electronic client list	0	5	8	9	11
	Evidence based guidelines	3	7	9	10	11
	Specialist and generalist collaborations	1	5	8	9	11
Self-management support (overall median 7.3)	Assessment and documentation	1	5	7	9	11
	Self-management education and support	1	6	7	8	11
Links with community (overall median 6.0)	Communication and cooperation on governance and operation	1	4	5	7	11
	Linking clients to outside resources	1	4	7	9	11
	Working out in community	0	4	6	8	11
	Regional health planning	0	2	4.5	7	9
Organisational influence & integration (overall median 7.3)	Organisational commitment	0	4	6	8	11
	Quality improvement strategies	0	6	8	9	11
	Integration of health system components	0	4	7	9	11

Priorities for system improvements to enable health centres to provide high quality child health services

- Strengthening systems for more effective links between health centres and communities is a potential priority area for action, particularly in health centres with relatively lower scores in this area.
- Improvement of systems to support regional health planning activities appears to be an area of particular need. Good regional planning systems, including community input, is important for coordinated delivery of community and health services that meet the needs of the population.
- There appears to be a need to work with health centre teams to strengthen systems in general in those health centres with relatively low scores. As a starting point, it may be appropriate to focus on supporting health centres that have scores in the lowest 20%, with a particular focus on those items with the lowest scores.

References

The Child Health clinical audit protocol draws heavily on the following:

1. CARPA (Central Australian Rural Practitioners Association) (2009). ***Standard treatment manual: A clinical manual for primary health care practitioners in remote and rural communities in Central and Northern Australia*****,** 5th edition, CARPA, available at http://www.carpa.org.au/fmanual.htm (from here on referenced as 'CARPA, 5th edn, 2009').
2. MBS (Medical Benefits Scheme) ***Health assessment for Aboriginal and Torres Strait Islander people*** (MBS Item 715), available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/mha_resource_kit (from here on referenced as 'MBS 715').
3. Queensland Health, Royal Flying Doctor Service (Queensland Section) and Apunipima Cape York Health Council (2010), ***Chronic disease guidelines***, 3rd edition, Queensland Health, Royal Flying Doctor Service (Queensland Section) and Apunipima Cape York Health Council, Cairns (from here on referenced as 'CD Guidelines, 3rd edn, 2010').
4. Royal Flying Doctor Service (Queensland Section) (2009), ***Primary clinical care manual*** **(PCCM)** 6th edn, available at http://www.health.qld.gov.au/pccm/pccm_updates.asp (from here on referenced as 'PCCM, 6th edn, 2010').

Other references include:

5. AHMC (Australian Health Ministers' Advisory Council), 2011, ***National Framework for Universal Child and Family Health Services*** *[ONLINE]* Available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/119CD12CB66F8514CA257B660002C659/$File/NFUCFHS.PDF [Accessed 9 August 2013]
6. Australian Government, 2013, ***National Aboriginal and Torres Strait Islander Health Plan 2013-2023***, Commonwealth of Australia [ONLINE] Available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/2B39FA14C286E3EECA2579E800837B5F/$File/health-plan.pdf [Accessed 12 August, 2013]
7. Centre for Eye Research, 2013, ***Indigenous Eye Health,*** [ONLINE] Available at: http://www.cera.org.au/our-research/key-projects/indigenous-eye-health (Accessed 9 August 2013)
8. COAG, (Council of Australian Governments), 2009 ***National Strategy for food security in remote indigenous communities***, [ONLINE] available at: http://www.coag.gov.au/sites/default/files/nat_strat_food_security.pdf [accessed 16 August 2013]
9. CDNA (Communicable Disease Network Australia), 2006 ***Guidelines for the public health management of Trachoma in Australia,*** [ONLINE] available at [accessed 9 August 2013] http://www.health.gov.au/internet/main/publishing.nsf/Content/1EBA6A6D1AEB9569CA2571570008FB93/$File/Trachoma2.pdf
10. Department of Health and Families, Northern Territory, 2010, ***Healthy Skin Program, Guidelines for Scabies, Skin sores and Crusted Scabies in the Northern Territory*** [ONLINE] available at http://digitallibrary.health.nt.gov.au/dspace/bitstream/10137/436/1/Healthy_Skin_Program_2010.pdf [accessed 9 August 2013]
11. Healthy Under 5's kids Program (HU5Ks), Northern Territory Government Department of Health and Families, October 2010 http://remotehealthatlas.nt.gov.au/healthy_under_5_kids_program.pdf
12. NACCHO/RACGP, 2012 ***National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people***. 2nd edn. South Melbourne: The RACGP, [ONLINE] Available at: http://www.racgp.org.au/guidelines/nationalguide [accessed 23 April 2013]
13. National Immunisation Program schedule, Australian Government Department of Health and Ageing. Available at http://www.health.gov.au/internet/immunise/publishing.nsf/content/nips2.
14. RACGP (Royal Australian College of General Practice), 2012, ***Guidelines for preventive activities in general practice,*** *8th edition* [ONLINE] Available at: http://www.racgp.org.au/your-practice/guidelines/redbook/preventive-activities-in-children-and-young-people/ [accessed 12 August 2013]
15. Western Australian Aboriginal Child Health Survey (WAACHS), 2004 Telethon Institute for Child Health Research and Kulunga Research Network. Available at http://www.ichr.uwa.edu.au/waachs
16. Western Australian Aboriginal Child Health Survey (WAACHS), 2006 Telethon Institute for Child Health Research and Kulunga Research Network. Available at http://www.ichr.uwa.edu.au/waachs
17. WHO (World Health Organization) (2004). ***Family and community practices that promote child survival, growth and development. A review of the evidence*** (executive summary), WHO, Geneva.