Delivery of child health services in Indigenous communities: implications for the federal government's emergency intervention in the Northern Territory

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ABSTRACT

Objectives: To describe delivery of child health services in Australian Aboriginal communities, and to identify gaps in services required to improve the health of Aboriginal children.

Design: Cross-sectional baseline audit for a quality improvement intervention.

Setting and participants: 297 children aged at least 3 months and under 5 years in 11 Aboriginal communities in the Northern Territory, Far West New South Wales and Western Australia in 2006.

Main outcome measures: Adherence to guideline-scheduled services including clinical examinations, brief interventions or advice on health-related behaviour and risks, and enquiry regarding social conditions; and recorded follow-up of identified problems.

Results: Documentation of delivery of specific clinical examinations (26%–80%) was relatively good, but was poorer for brief interventions or advice on health-related behaviour and risks (5%–36%) and enquiry regarding social conditions (3%–11%). Compared with children in Far West NSW and WA, those attending NT centres were significantly more likely to have a record of growth faltering, underweight, chronic ear disease, anaemia, or chronic respiratory disease ($P < 0.005$). Only 11%–13% of children with identified social problems had an assessment report on file. An action plan was documented for 22% of children with growth faltering and 13% with chronic ear disease; 43% of children with chronic respiratory disease and 31% with developmental delay had an assessment report on file.

Conclusion: Existing systems are not providing for adequate follow-up of identified medical and social problems for children living in remote Aboriginal communities; development of systems for immediate and longer-term sustainable responses to these problems should be a priority. Without effective systems for follow-up, screening children for disease and adverse social circumstances will result in little or no benefit.

MJA 2008; 188: 615–618

The Australian Government-funded Indigenous child health checks were announced in June 2005 and implemented in mid 2006.[1] The health check scheme aimed to standardise screening and provided dedicated funding for primary care doctors to conduct health screening for Indigenous children from birth to 14 years of age. Although the concept predates the federal government's emergency intervention in the Northern Territory, the child health checks have become a key plank of the intervention.[2]

The health check includes:

> an assessment of the patient's health and their physical, psychological and social wellbeing. It also assesses what preventive health care, education and other assistance should be offered to the patient to improve their health and wellbeing.[1]

The broad scope of the child health check is consistent with recent international research that identifies the key risks for poor child development in developing country settings,[3] and for recurrent maltreatment.[4] Families' social conditions, the social and emotional wellbeing of parents, parenting skills, adequate nutrition, and prevention and early treatment of infection should be important aspects of any intervention. The investigation of these conditions within the scope of the child health check reflects a view that primary health care services have responsibilities in all of these areas.

The lack of good data on the quality of Indigenous primary health care and gaps in the services designed to alleviate risk and promote good child development means that funding may not be appropriately allocated across the scope of required services. Here, we draw on data from the baseline audit of a national Indigenous health services quality improvement project to describe patterns of delivery of child health services and gaps in these services.

METHODS

Study context

The clinical audits from which the data presented here arise are an integral component of a quality improvement intervention study in Indigenous primary care (the ABCD project).[5] Of more than 40 primary health care centres participating in the ABCD project as of December 2006, 11 had elected to audit their child health records. These centres were located in remote communities in the NT (four) and small regional towns in Far West New South Wales (FWNSW) (six) and Western Australia (one).

Assessment

Delivery of child health services, and detection and follow-up of specific health problems were assessed by auditing a sample of clinical records from each of the 11 health centres. Records of children who were at least 3 months and less than 5 years old and had been resident in the community for 6 or more of the previous 12 months were eligible for inclusion. From eligible records in each health centre, an age-stratified random sample of up to 30 records was drawn using computer-generated random numbers. In order to include children from across the spectrum of age and sex, a maximum of five girls and five boys from each of the following age groups were included: 3 months to <12 months; 12 months to <3 years; and 3 years to <5 years.

Our audit form was based on previous research work in this area,[6] the Medicare Benefits Schedule child health check item[1] (which is the basis of the NT emergency intervention child health check), and the Central Australian Rural Practitioners Association Standard Treatment Manual.[7] The audits were conducted by trained members of the project team who were familiar with the auditing process and with the child health audit tool, in collaboration with local health service staff. The audit form and protocol are available on the ABCD project website at <http://www.abcdproject.org.au>. A

1 Characteristics of participating health centres and children[*]

Characteristic	NT	FWNSW/ WA	Total
Community health centres	**4**	**7**	**11**
Health service governance			
Government-funded/operated	2	1	3
Managed by local or regional Indigenous committee/board	2	6	8
AGPAL accreditation status			
Currently accredited	2	0	2
Scheduled or in progress	1	1	2
No accreditation	1	6	7
Size of population served			
⩽ 500	1	2	3
501–999	1	2	3
⩾ 1000	2	3	5
Resident doctor (ie, not visiting)	2	1	3
Children	**110**	**187**	**297**
Median age (years)	1.8	2.2	2.0
Age distribution			
3 to < 12 months	35 (32%)	52 (28%)	87 (29%)
1 to < 3 years	39 (35%)	67 (36%)	106 (36%)
3 to < 5 years	36 (33%)	68 (36%)	104 (35%)
Boys	57 (52%)	91 (49%)	148 (50%)
Aboriginal status			
Aboriginal	108 (98%)	148 (79%)[†]	256 (86%)
Non-Aboriginal	2 (2%)	17 (9%)[†]	19 (6%)
Not stated	0	22 (12%)[†]	22 (8%)
Attended centre in previous year	109 (99%)	154 (82%)[†]	263 (89%)
Reason for most recent attendance during previous year			
Acute care	54 (50%)	46 (30%)	100 (38%)
Well baby check	18 (16%)	37 (24%)	55 (21%)
Immunisation	21 (19%)	41 (27%)	62 (24%)
Other	16 (15%)	29 (19%)	46 (17%)
Key responsible health care provider at most recent attendance			
Nurse	64 (59%)	115 (75%)	179 (68%)
Aboriginal health worker	35 (32%)	10 (6%)[†]	45 (17%)
Doctor	8 (7%)	23 (15%)	31 (12%)
Specialist	1 (1%)	3 (2%)	4 (2%)
Other	1 (1%)	3 (2%)	4 (2%)

AGPAL = Australian General Practice Accreditation Limited. FWNSW = Far West New South Wales. NT = Northern Territory. WA = Western Australia.

[*] Figures are number (%) unless otherwise indicated.

[†] $P<0.05$ for comparisons between NT and FWNSW/WA centres, based on logistic regression with adjustment for clustering by health centre.

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2 Proportion of regularly scheduled clinical services delivered within the previous 12 months, by age group[*]

	Age group			
Service item[†]	3 to < 12 months ($n = 87$)	1 to < 3 years ($n = 106$)	3 to < 5 years ($n = 104$)	Total ($n = 297$)
Clinical examinations				
Weight	97%	82%	58%	78%
Height/length	85%	58%	51%	64%
Head circumference	83%	na	na	na
Hearing test	48%	22%	17%	28%
Vision test	57%	11%	15%	26%
Ear examination	69%	58%	51%	59%
Hip examination	63%	na	na	na
Heart examination	52%	na	na	na
Development	60%	35%	19%	37%
Haemoglobin[‡] (NT only)	50%	85%	92%	80%
Testes check (boys only)	64%	na	na	na
Brief intervention or advice				
Breastfeeding	57%	na	na	na
Nutrition education	61%	36%	15%	36%
Passive smoking risk	9%	7%	1%	5%
Infection prevention/ hygiene	24%	21%	9%	18%
Oral health	15%	9%	8%	10%
Injury prevention	10%	7%	2%	6%
SIDS prevention	9%	na	na	na
Physical and mental stimulation	18%	17%	5%	13%
Enquiry regarding social conditions				
Domestic social environment	8%	1%	2%	3%
Social/family support and financial situation	18%	8%	7%	11%
Housing conditions and food security	10%	7%	1%	6%

na = not applicable. NT = Northern Territory. SIDS = sudden infant death syndrome.

[*] Figures represent proportion of children receiving the service.

[†] Services were defined as delivered if they were provided at least once for children < 1 year old, or at least once within the previous 12 months for children aged 1 year or older.

[‡] Haemoglobin tests are recommended in geographical areas of high prevalence of anaemia and/or parasitic infection and for children who are 6 months or older. Therefore, data given for haemoglobin tests are only for children aged ⩾ 6 months who lived in the NT. Eight children in the Far West New South Wales or Western Australian centres had haemoglobin tested.

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clinical service was assessed as "delivered" if there was a record of the service being delivered at least once within the 12 months preceding the audit date.

The study was approved by the human research ethics committees in the Top End of the NT, Central Australia, FWNSW and WA.

RESULTS

The records of 297 children (FWNSW, 157; NT, 110; WA, 30) from the 11 participating health centres were audited. Some health

3 Documented health-related concerns and follow-up actions in clinical records of 297 children

Health-related concern and follow-up	No. (%)*
Abnormal clinical findings	
Children with documented growth faltering or failure to thrive[†]	*50 (17%)*
Record of follow-up weight	32 (64%)
Record of nutritional advice given	26 (52%)
Record of family meeting	8 (16%)
Record of clinical assessment	25 (50%)
Record of action plan made	11 (22%)
Record of referral to support services	14 (28%)
Children with documented chronic ear disease[‡]	*55 (19%)*
Record of follow-up examinations	46 (84%)
Record of advice on ear care	39 (71%)
Record of prescription for antibiotics	53 (96%)
Record of action plan made	7 (13%)
Record of referral for audiology	7 (13%)
Record of referral to ear, nose and throat specialist	7 (13%)
Children with documented anaemia[§]	*31 (10%)*
Record of de-worming	27 (87%)
Record of prescription of an iron supplement	26 (84%)
Record of follow-up full blood count or haemoglobin level within 2 months	14 (45%)
Record of referral to nutrition program	9 (29%)
Children with documented recurrent or chronic respiratory disease[¶]	*23 (8%)*
Record of referral for paediatric assessment	13 (57%)
Record of paediatric assessment	10 (43%)
Children with developmental delay noted in record	*16 (5%)*
Record of referral	12 (75%)
Assessment report in file	5 (31%)
Concern regarding social or other circumstances	
Children with concerns regarding domestic environment noted in record	*16 (5%)*
Record of referral	8 (50%)
Assessment report in file	2 (13%)
Children with difficult social and financial situations noted in record	*19 (6%)*
Record of referral	8 (42%)
Assessment report in file	2 (11%)
Children with poor housing conditions/food security noted in record	*19 (6%)*
Record of referral	10 (53%)
Assessment report in file	2 (11%)

* Percentages shown for follow-up actions are proportions of the number of children with the relevant documented concern. † Based on examination of the growth chart. Growth faltering was defined as a flattening or drop-off of the growth curve following a period of steady growth, and failure to thrive as recurrent episodes of growth faltering or persistently poor growth, with the growth curve rising at a slower rate than the chart's standard centile lines. ‡ Defined as a record of recurrent ear infections (two or more in the previous year) or chronic ear infection (persisting for $\geqslant 2$ weeks). § Defined as a recorded haemoglobin level < 100 g/L. ¶ Defined as three or more episodes of chest infection requiring antibiotics in the previous year.

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centres had fewer than five boys or girls in an age group and so had a sample of less than 30 records. Data from the single centre in WA are presented collectively with those from FWNSW centres.

Most centres were managed by a health board, were not accredited and were serviced by a visiting doctor (Box 1). Compared with the health centres in FWNSW/WA, the NT centres had a lower proportion of non-Aboriginal children and of children with no ethnicity recorded, and higher rates of health centre attendance, predominantly for acute care (Box 1). Across all centres, nurses were most often the key health care provider. Aboriginal health workers were the key health care provider more often in the NT than in FWNSW/WA.

Scheduled clinical services tended to be delivered at higher rates for younger children (Box 2). Clinical examinations conducted at relatively low rates included hearing tests (28%), heart examinations (52% of children under 1 year old) and vision tests (26%). Brief interventions or advice regarding health-related behaviour and risks were infrequently recorded, with advice on passive smoking risk (5%), injury prevention (6%) and sudden infant death syndrome prevention (9% of children under 1 year old) the least frequently recorded (Box 2). Enquiries regarding social conditions were similarly infrequently recorded (range, 3%–11% for all children).

The proportion of children's records with documented growth faltering or failure to thrive, chronic ear disease, anaemia, recurrent or chronic respiratory disease, or developmental delay ranged from 5% to 19% (Box 3). With the exception of developmental delay, all of these conditions were significantly more frequently recorded for children attending NT centres than other centres (growth faltering or failure to thrive: 35% v 6%; chronic ear disease: 43% v 4%; anaemia: 25% v 2%; recurrent or chronic respiratory disease: 15% v 3%; $P < 0.005$ for all).

Documentation of follow-up of identified problems varied. Only 11%–13% of children with documented concern regarding their social circumstances had an assessment report on file, despite records of referral for about 40%–50% of these children. Less than two-thirds of children with identified growth faltering or failure to thrive had a recorded follow up of their weight, and only half had a record of clinical assessment. A relatively large proportion of children with documented chronic ear disease had a record of follow-up examinations (84%), advice on ear care (71%), or prescription of antibiotics (96%). However, only 13% had a record of a clear action plan or referral for audiology or ear, nose and throat assessment. Children with chronic respiratory disease or developmental delay were more likely to have records of referral (57% and 75%, respectively) and to have assessment reports on file (43% and 31%, respectively).

DISCUSSION

Moving through the range of child health services from delivery of clinical examinations to brief interventions and advice on health-related behaviour, and enquiry regarding social conditions, the recording of services delivered becomes increasingly poor in Australian Aboriginal communities in the NT, FWNSW and WA.

Problems such as poor growth, chronic ear and respiratory disease, and anaemia are more common in the NT than other regions. Social and living conditions are also known to be particularly poor in the NT,[8] but recording of concern for children regarding these conditions was low. Where problems were documented, whether medical or social, recording of referral or other follow-up actions was considerably lower than might be expected for well known significant threats to the health and development of children. When referrals were made for social reasons, only about one in 10 children had documented evidence that an assessment had been completed. This pattern indicates that provision of social support, allied health and specialist medical services, as well as systems for referral and follow-up of identified medical and social problems, are particularly poor in these communities.

The services participating in this project are among the leaders in implementing a systematic approach to quality improvement, so the generalisability of our findings on quality of services is limited. However, our audit data provide similar estimates to other sources for prevalence of anaemia, underweight[9] and chronic ear disease,[10] higher estimates for the proportion of records with data on child growth,[9] but lower estimates of delivery of hearing and vision tests compared with data reported for other centres in the NT using a similar method.[6] As participating centres in the NT were all based in remote communities and those in FWNSW and WA were mostly in small regional towns, the higher prevalence of key conditions in the NT may reflect different risks between these environments.

The clinical audit method relies on good recording of clinical information by practitioners — an essential feature of primary care practice, especially in areas of high workforce turnover. Our audit took a minimalist approach to documentation of services that guidelines generally recommend be delivered more frequently than once every 12 months in early life, in order to allow for differences in locally used best practice guidelines. This approach provides for standard indicators of delivery of services that can be used across a wide range of jurisdictions.

These findings highlight the inadequacy of existing systems to overcome identified medical and, most importantly, social problems for children living in remote Aboriginal communities — an argument made by many who are familiar with conditions in these communities.[11] New funding allocated by the Australian Government provides opportunities to expand remote primary health care teams,[12] with a specific view to overcoming identified service deficiencies. Development of systems for both immediate and longer-term sustainable responses to these problems should be a priority. Without effective systems for follow-up, simply screening children for disease and adverse social circumstances will result in little or no benefit.

ACKNOWLEDGEMENTS

This project would not be possible without the active support, enthusiasm and commitment of staff and management of the participating health services and the contribution made by the wider ABCD project team. The ABCD project is supported by funding from the Cooperative Research Centre for Aboriginal Health and the Australian Commission on Safety and Quality in Health Care. The work of a number of people with key roles in the project is supported by their employing organisations, including state and territory governments and community controlled health organisations. Ross Bailie's work is supported by NHMRC Fellowship #283303.

COMPETING INTERESTS

None identified.

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(Received 29 Oct 2007, accepted 5 Mar 2008) ❑