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ORIGINAL RESEARCH

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Early childhood development practices in a remote Aboriginal Community Controlled Health Services setting

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Abstract

Objective: Supporting Early Childhood Development (ECD) is an Australian national priority. Aboriginal children in Western Australia's Kimberley region have much higher rates of developmental concerns at school entry than non-Aboriginal children. We aimed to describe ECD practices in the participating service; document follow-up of identified developmental concerns; and identify barriers and enablers to incorporating ECD practices into clinic activity.

Design: Mixed-method design incorporating clinical audit and staff interviews.

Setting: An Aboriginal Community Controlled Health Service (ACCHS) in the Kimberley region.

Participants: A total of 176 children receiving primary health care through the participating ACCHS; interviews with five ACCHS staff members.

Main outcome measures: Frequency of developmental enquiry by age and domain; follow-up of identified developmental concerns; and barriers and enablers to ECD practices.

Results: Developmental enquiry was documented for 114 of 176 eligible children (65%), including in 80% of ACCHS child health assessments. Standardised ECD assessments were less common. Staff were aware of the importance of developmental enquiry, however, barriers to increasing ECD practices included a lack of resources and structured staff education, time pressures and a lack of role clarity between the ACCHS and government community health clinic.

Conclusions: This study provides insight into ECD practices in an ACCHS setting, highlighting the potential of primary health care to have an enhanced role in ECD if appropriate systems, training and tools are provided. A lack of role clarity across services, combined with poor communication between services, creates a potential risk for missed opportunities to support ECD.

KEYWORDS

Aboriginal health, early child development, primary care

1 | INTRODUCTION

Healthy early child development (ECD) lays the foundation for an individual to reach their full adult potential in terms of health, well-being and contribution to society.[1] Children who take significantly longer than age-matched peers to develop new skills are referred to as having 'developmental delay', which can arise due to a wide range of medical, environmental and social determinants, and occurs within a complex context of risk and protective factors. Implementing additional supports for children with and at risk of developmental delay (hereafter referred to as children with 'developmental concerns') in the first 5–8 years of life is imperative. During these critical early years when the brain undergoes rapid functional and structural changes,[1,2] there is an opportunity to alter developmental trajectories and subsequent adult health and well-being outcomes.[3] Supporting healthy ECD is an important strategy to address identified health inequity more broadly, as identified by the World Health Organization[4] and the Australian Government.[5]

Significant improvement in long-term health and developmental outcomes can be seen when carers of children with developmental concerns are supported to nurture their child's development through evidence-based practices.[1,4,6] Unfortunately, it is estimated that only 20% of Australian children with developmental concerns are identified prior to school entry.[7] Children from Aboriginal and Torres Strait Islander or rural–remote backgrounds are more likely to enter school with previously unidentified concerns,[8] having missed crucial opportunities to achieve their full potential. Delayed identification of developmental concerns may limit access to support within the education sector[7,9] and funding for crucial therapy services,[10] with potentially lifelong consequences for individuals, families and future generations, as well as increasing demands on health, education and other services.[1]

The Australian health care system aims to provide universal and affordable access to essential services for health and well-being, including in the area of ECD.[11] Preventive and developmental health services for children of pre-school age are provided across both primary care and government community health care sectors. Some child health checks are funded federally through the primary care Medicare Benefits Scheme (MBS), including the 'Health Assessment for Aboriginal and Torres Strait Islander People, MBS Item 715' (MBS 715 health check), which for children, according to the MBS item description, should include taking a history of development (including achievement of age-appropriate milestones). These checks require the involvement of a general practitioner and should be performed by the child's usual primary care provider.[12]

Additionally, in Western Australia free child health checks are performed by government-funded Community Child Health Nurses (CHNs) at specific ages through the

What is already known on this subject:

- Early identification of developmental concerns is essential to ensure additional supports are put in place to help children reach their full adult potential
- Rates of developmental concerns are higher in rural and remote populations and in the Kimberley region specifically, with a disproportionally high rate observed in the Kimberley Aboriginal community
- Previous government sector-based studies in remote areas have suggested an important role for primary health care providers in early childhood development, complementing those delivered through Universal Child and Family Health policies

What this paper adds:

- The Aboriginal Community Controlled Health Service (ACCHS) Sector provides an important contribution to early childhood development (ECD) monitoring in rural and remote areas, opportunistically and as part of routine ACCHS child health assessments
- ACCHS staff recognised the importance of early detection and management of developmental concerns but at times lacked the training and resources to provide this service effectively. Capacity building in anticipatory guidance and improving child health assessment templates could be efficient strategies to add benefit to existing clinical practices
- Suboptimal communication between service providers and a lack of organisational role clarity were raised as potentially modifiable challenges to service delivery

Universal Child Health Services Policy, at community health clinics, with additional checks provided if need is identified by the client or CHN. These routine well-child checks may be provided in conjunction with other scheduled well-child services such as immunisation. They provide an opportunity for early identification of developmental concerns, onwards referral and 'anticipatory guidance', a term describing education for parents about typical child development and how to provide developmentally nurturing experiences for their child.[13] In very remote Australia, primary care clinics may be the single care providers for their communities, operated by either the government or through the Aboriginal Community Controlled Health Service (ACCHS) sector. In larger towns, both primary health care clinics and government community health clinics frequently co-exist and provide services to the same families.

The remote Kimberley region of Western Australia has a large Aboriginal population.[14] The 2012 Australian Early Development Census found that 40.2% of children entering school in the Kimberley were vulnerable in one or more developmental domains.[15] This figure was disproportionately high in Kimberley Aboriginal children (55.7%) compared to their non-Aboriginal counterparts (15.6%) highlighting an important health disparity. In 2018, the overall rate of developmental vulnerability in the Kimberly region had not improved (41.8%) with ongoing higher rates among Aboriginal children (up to 62% in some regions), suggesting much more needs to be done.[16] Much of the primary health care in the Kimberley is delivered through the ACCHS sector. While the descriptor of MBS Item 715 suggests that some ECD activity would be expected in the Kimberley ACCHS sector, it is not known to what extent it is occurring, either formally or informally, or how ECD is being incorporated into the clinic and clinician workflow. This study aimed to describe: ECD practices carried out by the participating ACCHS; follow-up of identified developmental concerns; and barriers and enablers to incorporating ECD practices into clinic activity.

2 | METHODS

2.1 | Setting

The study took place at an ACCHS in a remote Kimberley town where approximately half the population is Aboriginal.[17] The ACCHS provides primary health care to Aboriginal people of all ages within the town and a visiting service to several remote communities under a comprehensive primary health care model.[18] Children could be seen by a generalist nurse, child health nurse (CHN) or Aboriginal health worker with or without subsequent review by a General Practitioner (GP). Staff working with child health programs had varying professional backgrounds and qualifications and provide a holistic service, including health promotion, and preventive and acute medical care. The scope of child health work at the ACCHS included care coordination for children with high-risk medical conditions and with complex child protection concerns. An electronic medical record system (MMEx, ISA technologies) was in use for the full audit period, which included an MBS 715 health check template and recall system for required follow-up. The ACCHS was visited by two different paediatric services, one for assessment and management of general medical issues and another for developmental issues. A small number of children included in this study were recruited for a different research project (Nini Helthiwan)[19] and had a formal developmental assessment performed as part of the study protocol. A separate government community health service provided community CHN, physiotherapy and occupational and speech therapy services.

2.2 | Design

This was a mixed-method study including an audit of ACCHS medical records and semi-structured interviews with ACCHS staff members. Medical records were manually reviewed for relevant consults during the audit period (between 1/1/2016 and 31/12/2016). Interview participants were approached directly by the interviewer (Author 1). The audit tool is included in Table 1. A 'visit' was defined as a clinic attendance on any single day, which could include interactions with multiple practitioners. Each such interaction was counted as a 'consult'. ECD practices included any activity to detect and/or address developmental concerns. They were more specifically defined as any of: formal developmental assessment (undertaken using a standardised assessment tool by a practitioner trained in its use), developmental monitoring (developmental enquiry with or without use of a screening tool, not meeting criteria for formal assessment), anticipatory guidance and referral of identified developmental concerns. For the purposes of audit, 'developmental enquiry' was defined as any documentation in the consult notes by a clinician regarding a child's development, further categorised by developmental domain (Box 1). All consult notes were reviewed to identify the reason for presentation; the type of clinician performing developmental enquiry (paediatrician, GP, CHN, generalist nurse, Aboriginal Health Worker, allied health and other specialists) and whether any anticipatory guidance was documented. Follow-up plans including any referrals to external and visiting services and any documented

TABLE 1 Audit tool and interview guide

Audit tool	
Patient inclusion criteria	Aboriginal and/or Torres Strait Islander Born between 1/1/2012 and 31/12/2015 inclusive Primary (regular) patient (at least 3 visits between 7/7/2015 and 7/7/2017) • At least one of these visits occurring during the audit period
Demographic information	Date of birth; age at end of the audit
	Gender
	Community
	Diagnosed developmental condition prior to, during or after audit period
	Recalls
	Communication with external organisations regarding ECD
Visits[a]	Date
Consults[b]	Date
	Age at consult
	Clinic location
	Primary reason for attendance
	Type of clinician seen
	Whether a child health assessment was performed
	Whether developmental enquiry was made and if any specific tool was used to do this
	Specific documentation of development within domains • Any comment regarding development generally (not domain specific) • Gross Motor • Fine Motor • Hearing and Speech • Personal Social • Problem Solving
	Follow-up of developmental concerns: • Type of follow-up organised • Evidence and timing of follow-up occurring
	Anticipatory guidance regarding child development
Interview guide	
Knowledge of local tools/resources/guidelines for child developmental assessment at the ACCHS	
Barriers and challenges to assessing development	
Actions taken and experiences arranging follow-up if developmental concerns were identified	
Experiences communicating with relevant organisations	
Perceived importance of assessing child development	

[a]A visit is one attendance to the ACCHS.

[b]A consult is one documented interaction with an individual clinician. Multiple consults could occur per visit.

formal diagnoses of developmental delay or other neurodevelopmental conditions made either prior to or during the audit period were recorded. Referral completion was reviewed 6 months post-census date: referrals not resulting in an attended appointment by this date were considered incomplete. If an MBS 715 health check had been performed, or a standardised assessment tool was used, this was also noted. Descriptive data analysis was completed in Excel 2010 (Microsoft) and analysed by clinic attendance, domain of developmental enquiry and follow-up of developmental concerns.

Interview participants were employees of the ACCHS during the interview period (November to December 2017). Purposeful sampling was used to recruit clinicians who provided care to children aged 0–5 years. Participants were approached directly by the interviewer (Author 1) and provided written informed consent prior to the interview. Semi-structured interviews of approximately 20 min duration were audio recorded, with content based on an interview guide outlined in Table 1. Interview content was transcribed verbatim into Word 2010 (Microsoft). Data were de-identified, tabulated and initial coding

performed by one author (Author 1) with further iterative thematic analysis conducted collaboratively (Authors 1, 2, 3 and 6).

Ethics approval was obtained from the Western Australian Aboriginal Health Ethics Committee (HREC reference number 723). This project was supported by the Kimberley Aboriginal Health Planning Forum.

3 | RESULTS

File review was undertaken for children who met the inclusion criteria (176), with a total of 1241 consults over 756 visits. Interviews were conducted with five ACCHS staff members (two GPs, two CHNs and one generalist nurse). The majority of children (84.1%) lived in or within 10 km of the town, and most recorded visits took place at the town clinic (87.2%). The main reason for presentation was 'being unwell' (75% of visits), with only 10 children presenting specifically for reasons related to ECD (1.3% of visits) (Table 2).

BOX 1 Early child development (ECD)

Child development refers to the process by which children grow and learn from conception through to adulthood. ECD refers to this process over the first 5–8 years of life.

ECD may be considered under five domains:

- *Gross motor*: using large muscle groups to move the whole body.
- *Fine motor*: using small muscle groups to perform tasks. Also referred to as '*hand-eye-coordination*'.
- *Communication*: communicating messages to others and understanding others' messages. Includes speech and hearing.
- *Personal–social:* sharing emotions, interacting with others and self-care (grooming).
- *Problem solving:* using knowledge and thinking processes to solve problems and learn. Also referred to as '*cognitive*'.

Children typically gain key skills within certain age ranges, known as 'milestones'. For example, most children will be able to walk by 12–18 months of age (gross motor milestone). Developmental enquiry was considered 'general' if it was not specific to any one domain, or summarised development across several domains.

3.1 | Developmental enquiry

Most children (64%) had developmental enquiry documented at least once over the audit period, most commonly in the 12–23 months age group (Table 1). Developmental enquiry was documented in 23% of all visits and 15% of all consults. Enquiries most commonly addressed the communication domain (49%), with problem solving addressed the least (8%) (Table 3). A formal MBS 715 health check was conducted for 56 children (32%) and was most commonly done for children aged 3–4 years at end of the audit period (Table 3). Forty-five (80%) of these checks included developmental enquiry. Developmental enquiry was more likely to occur in consultations with CHNs (22%) and GPs (20%) than with generalist nurses (5%) and Aboriginal Health Workers (3%). Staff at interview, which took place after the audit period, highlighted a desire for good outcomes and mentioned that supporting healthy ECD was a current topic of discussion within the ACCHS. Early intervention was flagged as a priority:

> [Developmental delay is] important to pick up early so kids can get the intervention and help they need.

TABLE 2 Proportion of consults with developmental enquiry, by reason for consults

	Total number of consults (*n*)	Developmental enquiry documented (*n* [% of total consults])
Child unwell	981	115 (12)
For medication/dressing/other treatment only	111	11 (10)
Routine child health check[a]	77	34 (44)
Other specialist/allied health review	35	4 (11)
Concerns about development	15	14 (93)
Research participant[b]	9	9 (100)
Opportunistic (accompanying family member to clinic)	8	1 (13)
Audiology	4	3 (75)
Follow-up of diagnosed developmental issue	1	1 (100)
Total	1241	192

[a]Where child health check was the reason for presentation, health check may not have been commenced on the day.

[b]Nini Helthiwan project.

TABLE 3 Attendance and ECD practices over 12-month audit period, by age at end of audit (31/12/2016)

	Age at end of audit period (months)				
	12 to <24	**24 to <36**	**36 to <48**	**48 to <60**	**Total**
Attendance (*n*)					
Total children (*n*)	54	36	43	43	176
Total consults (*n*)	505	238	276	222	1241
Median consults (IQR)	8 (5–11)	5 (3–8.5)	5 (3–9.5)	4 (2–6)	5.5 (3–10)
Total visits (*n*)	312	138	163	143	756
Median visits (IQR)	5 (3–7)	3 (2–6)	3 (2–6)	2 (1.5–3.5)	3 (2–6)
Practices (*n* [% of children])					
Child health check[a]	17 (31)	9 (25)	16 (37)	14 (33)	56 (32)
Developmental enquiry documented	43 (80)	20 (56)	27 (63)	24 (56)	114 (65)
Number of visits with developmental enquiry (*n* [% of children])					
0 visits	11 (20)	16 (44)	16 (37)	19 (44)	62 (35)
1 visit	24 (44)	14 (39)	17 (40)	16 (37)	71 (40)
2 visits	10 (19)	5 (14)	7 (16)	7 (17)	29 (17)
3 or more visits	9 (17)	1 (3)	3 (7)	1 (2)	14 (8)
Developmental enquiry documented at least once during audit period (*n* [% of children])					
General	20 (37)	9 (25)	16 (40)	15 (35)	60 (24)
Gross motor	36 (67)	13 (36)	9 (21)	9 (21)	67 (38)
Fine motor	22 (41)	6 (17)	7 (14)	8 (19)	43 (24)
Communication	31 (57)	17 (47)	19 (44)	20 (47)	87 (49)
Personal social	31 (57)	11 (31)	19 (40)	13 (30)	74 (42)
Problem solving	4 (7)	1 (3)	4 (9)	5 (9)	14 (8)
Anticipatory guidance[b]	7 (13)	2 (6)	1 (2)	1 (2)	11 (6)
Follow-up organised	4 (7)	4 (11)	7 (16)	13 (30)	28 (16)

[a]MBS item 715 health check: Counted if commenced, even if not completed/billed.

[b]Counted if provided at least once during audit period.

Seven children had a documented developmental issue that pre-dated the audit period, and eight were diagnosed during the audit period. Standardised developmental assessment tools were used only by the visiting developmental paediatricians and in infants recruited to participate in the Nini Helthiwan project. Staff at interview described a lack of easily accessible templates or triggers to monitor development in consults, and instead drew on personal and professional experience or had their '*own template which has developments and milestones*'. Knowledge of typical ECD often depended on personal experience of being a parent or experience working in ACCHS:

> [I don't] have that kind of one big resource or person that I can say "teach me", I'm kind of having to teach myself.

Interviewees reported both staff and patients were affected by a lack of clarity around the roles of the ACCHS and other local child health services. Some ACCHS staff thought responsibility for developmental monitoring lay with government community health services:

> We don't really have a system for checking development here, it is considered to be a community health thing.

However, only four children had the outcome of their CHN check with the government community health service documented in their medical records. To get copies of this documentation onto the primary care record, *'for the most part we'd have to ask'*. One interviewee felt the community health service expected the ACCHS to be doing more routine ECD checks, but that *'we don't get paid for it, whereas [they are] being paid for it'*. Another felt:

> That's the problem with two service providers in the town, people think 'oh well they're an [ACCHS] client so [the ACCHS] just fix everything'.

Time was a major limitation to developmental enquiries. Other situational factors, such as an acutely unwell child, a child presenting without their parents and having multiple children in the consult room, also created limitations.

> They come in and I'm like 'yes they're here, I haven't met them before, and I need to do needles, I need to do this, and they come in and they're sick and I'm like 'I can't do anything [except manage their acute illness].

3.2 | Follow-up of identified developmental problems

Forty-nine consults (28 children) with developmental enquiry resulted in a plan for further action or acknowledgement that this was already in progress. A total of 42 new referrals were made for 27 children during the audit period. The most common type of referral was an internal referral to the GP (either the GP adding a recall for review or referral from non-GP clinicians) ($n = 21$), followed by one or more external referrals to allied health ($n = 10$), general or developmental paediatrics ($n = 7$) or other paediatric subspecialties ($n = 4$). Of children with new referrals, 6 (22%) were seen by all agencies they had been referred to, 6 (22%) had been seen by some but not all the agencies referred to and 15 (56%) had not been seen by any.

Interviewees also described long waiting times for allied health and narrow referral criteria for developmental paediatric services.

> My experience has been long waits because it's probably under-resourced, and so there's a relatively long wait to get in to see the {occupational therapist} for example.

When asked at interview what they would do if atypical development was detected, staff mentioned onwards referral but not brief intervention, and did not indicate awareness of the role of anticipatory guidance. Only 11 (6%) consults involving developmental enquiry documented anticipatory guidance, which was given by CHNs ($n = 6$) or GPs ($n = 5$).

4 | DISCUSSION

Our study provides insight into ECD practices at an ACCHS located in a remote setting. Almost two-thirds of children had developmental enquiries documented by ACCHS staff in their medical file. These results are comparable to those from an audit in the Northern Territory[20] that also explored developmental practices for Aboriginal children in two very remote Aboriginal communities with a single health care provider. In our setting, despite the existence of a government-funded community health service in the same town and a perception among ACCHS staff that the government service was resourced to be the main provider of routine ECD checks, ECD practices were frequently provided through the ACCHS, including in conjunction with MBS-funded 715 health checks.

'Communication' was the developmental domain most enquired about. This may be because speech and hearing are comparatively easy to assess on incidental observation. It may also reflect clinician awareness of the importance of hearing issues in the local community. There is a large burden of ear disease in the Kimberley, with rates of chronic otitis media twice as high in Aboriginal than non-Aboriginal children and with comparatively high hospitalisation rates.[21] Conversely, the problem-solving domain was screened least often, perhaps due to a lack of equipment or lack of familiarity in assessing this domain, and anticipatory guidance was documented less frequently than in other studies.[20]

In our study, staff experience in ECD practices had been obtained in an 'ad hoc' manner or through personal experiences in raising their own children. Staff interviewed wanted more formal training and education in this area. Given staff interest, upskilling and improved resources and systems could substantially improve the quality and quantity of ECD monitoring. Strategies for upskilling remote health workers with evidence for success include face-to-face workshops with subsequent follow-up sessions[22] or e-learning modules.[23] Readily available information and tools for documentation, anticipatory guidance and referral are important and can lead to improved service delivery even in resource-poor environments. Since the interviews for this study were completed, the ASQ-TRAK tool has been validated as a culturally appropriate adaptation of the Ages and Stages Questionnaire (ASQ-3) for developmental screening for Australian Aboriginal Children.[24] Uptake of this tool, which requires purchase, is still far from universal across the ACCHS sector, with 8 of 20 ACCHS in WA having purchased the tool as of 2022.[25]

ECD practices were largely provided opportunistically but were also included in four-fifths of the federal-funded MBS 715 health checks. Given the importance of MBS 715 health checks, better integration of ECD tools with health assessment templates would likely increase developmental monitoring coverage. The existing assessment template on the electronic medical record used by ACCHS

in the Kimberley lacks structured prompts for assessment against developmental milestones and is currently being enhanced to better integrate ECD into core clinical activities. Resources to increase the quality of MBS 715 health checks have recently been developed by the Royal Australian College of General Practitioners in partnership with the National Aboriginal Community Controlled Health Organisation, are freely available and are also valuable for clinicians.[26]

The inclusion of assessment for 'age appropriate milestones' within the MBS item 715 descriptor highlights the intended role of primary care in monitoring developmental concerns. This role is consistent with the ACCHS model of care, namely a commitment to holistic, comprehensive health care, tailored to community needs.[27] The perception of staff that ECD monitoring fell outside of core business, however, highlights an important lack of role clarity in this area. Equally, government reports on developmental screening coverage report on health check coverage without any reference to a possible contribution of the ACCHS sector.[28]

In this environment of multiple health providers delivering care to the same patients, where universal access to developmental monitoring with opportunity to address concerns is the aim, communication between services is crucial. A 2017 report into the health of rural and remote Australian children reinforced a need for better coordination between service providers.[8] In our study, very few children had the outcome of a community health service check on file in the ACCHS medical record system. As in all sectors, communication across agencies and across medical record systems is an ongoing challenge and has been flagged as a priority area for improvement.[29] Analysis of an urban paediatric outreach service also noted that shared patient records, linked databases and a mix of informal collaboration and formal communication would assist in collaboration between different child health organisations.[30]

Timely follow-up of developmental concerns once identified is imperative, and this was an important area where service delivery could be improved. Follow-up of identified developmental concerns appears to be challenging in remote areas and particularly in Aboriginal communities, as previously described in the Northern Territory.[20,29] Limited referral options and long wait times were raised as possible contributing factors by staff interviewed. Other barriers identified by ACCHS staff to ECD monitoring included time pressures and competing clinical priorities when children present with acute medical concerns. Such barriers are not unique to this ACCHS or ECD monitoring and have been highlighted in other primary care and ACCHS-based studies on the completion of routine health checks.[31,32]

5 | STRENGTHS AND LIMITATIONS

The mixed-method approach used in this study provides a comprehensive picture of ECD practices in an ACCHS in a remote Australian town. The dataset allows comparison between age groups and enquiry about different developmental domains; information that could guide staff upskilling and resource provision. The use of a primary care electronic medical record system ensured comprehensive ascertainment of ECD practices, including those performed incidentally and opportunistically. As a retrospective audit, however, data are limited to the documentation that was entered as part of routine clinical data entry. Clinicians may be less likely to document observations they believe to be within the typical range, which could have underestimated ECD practices in children without developmental concerns. In some cases, observations were noted without an interpretation as to whether they were typical or atypical for age. Qualitative data collection was limited to clinicians directly involved in child health service delivery. As a result, data on recruitment practices, staff turnover and program management were not captured.

The extent of follow-up that occurred outside of the ACCHS was based on documentation, and undocumented follow-up could not be reported, hence actual rates of follow-up in this study may be under-reported. We also note that in the time since the audit was completed, developmental paediatric services in the region have increased. As a result, follow-up rates and referral completion may have improved. Evaluation of external service provision was outside the scope of this study. Finally, Aboriginal Health Workers were under-represented in qualitative data collection. This represents a missed opportunity to explore barriers to their increased involvement in ECD practices within the ACCHS setting. The input of Aboriginal staff and parents is essential to improving models of care going forward.

6 | CONCLUSION

This study provides a snapshot of ECD practices at a remote Western Australian ACCHS. Despite limited resources, staff recognise the importance of ECD and have opportunistically incorporated developmental monitoring into their core work. We also highlight the potential impacts of a lack of role clarity and suboptimal communication between services in achieving universal ECD monitoring for Aboriginal children and the subsequent management of developmental concerns. The ongoing higher rates of

developmental delay in Aboriginal children require action in this space. Empowering ACCHS staff to monitor child development and provide anticipatory guidance, including through education and the provision of clinical resources and assessment tools, has the potential to support sustained improvements in child health in a priority population.

AUTHOR CONTRIBUTIONS

JCB: data curation; formal analysis; investigation; methodology; writing – original draft. SAS: conceptualization; formal analysis; methodology; supervision; validation; writing – original draft; writing – review and editing. DA: conceptualization; supervision; writing – review and editing. JVM: conceptualization; writing – review and editing. LHY: writing – review and editing. EKG: conceptualization; formal analysis; methodology; supervision; writing – original draft; writing – review and editing.

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CONFLICT OF INTERESTS

Dr Lynette Henderson-Yates was the CEO of the participating health service from 2015 to 2021.

ETHICAL APPROVAL

Ethics approval was obtained from the Western Australian Aboriginal Health Ethics Committee (HREC reference number 723). This project was supported by the Kimberley Aboriginal Health Planning Forum Research Subcommittee.

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