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COMMENTARY

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Better understanding of discharge against medical advice for the improvement of health among Australian Aboriginal children

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This commentary pertains to the following manuscript:

Christensen D , Gibberd A , McNamara B , et al. Hospital and emergency department discharge against medical advice in Western Australian aboriginal children aged 0- 4 years from 2002- 2018: a cohort study. Paed Perinatal Epidemiol . 2023;37:691-703.

Aboriginal and Torres Strait Islander (hereafter, respectfully Aboriginal) people, the First Nations peoples of Australia, comprise 3.8% of the total Australian population.[1] Aboriginal Australians live in varying geographical contexts and are culturally, linguistically and socio-economically diverse, contributing richly to Australian life. The health of Aboriginal children is a priority for Aboriginal communities, families, peak bodies and governments,[2] with the early years being particularly important. However, aggregate national statistics consistently reflect an excess disease burden for Aboriginal children compared with other Australian children.[3] The focus in the literature has been primarily on describing deficits rather than on trying to understand them, such that the complex pathways of Aboriginal paediatric health disadvantage are often poorly understood.

For many Aboriginal parents and carers, hospitals are alienating environments, reminiscent of a traumatic history of colonisation in which children were forcibly removed and Aboriginal families treated as second-class citizens.[4,5] To maximise the health and well-being of Aboriginal children, it is important to recognise that the way they and their families interact with the health system today is often influenced by these past (and sometimes ongoing) experiences.

Discharge against medical advice (DAMA) occurs when patients (parent or carer when the patient is a child) leave an in-patient facility or emergency department before being formally discharged by the clinical team; this can put patients at an increased risk of re-admission or poor health outcome.[6] Complex person, hospital and contextual factors contribute to DAMA. In Australia, DAMA occurs more frequently among Aboriginal patients, with DAMA rates considered a measure of the responsiveness of hospitals to the needs of Aboriginal patients. This includes the level of cultural security felt by patients in the way they are treated, and how their needs are met or not met in the system.[6] Australian hospitals are regularly audited regarding DAMA rates. To date, most existing research focuses on adults.

In the current issue of *Paediatric and Perinatal Epidemiology*, Christensen and colleagues[7] leverage the linked Western Australian (WA) administrative data from their 'Defying the Odds' study. They investigated associations between DAMA in inpatient and emergency department (ED) settings and child, family, and episode-of-service characteristics in a population-based birth cohort of Aboriginal children <5 years. State-wide ED DAMA (predominantly 'did-not-waits') and hospital DAMA were analysed separately, a prudent decision given the mostly contrasting results.

Unsurprisingly, DAMA was more common in ED (4.7%) than in inpatient settings (1.6%). After adjustment for pertinent covariates, perinatal and maternal factors generally were not associated with DAMA during hospital episodes—although DAMA risk was borderline increased among those with birthweight <2500 g (adjusted odds ratio [aOR] 1.31, 95% confidence interval [CI] 1.00, 1.72). In contrast, ED DAMA was inversely associated with multiple births (aOR 0.80) and three or more previous births (aOR 0.92), while maternal age at birth <20 years was associated with increased DAMA risk (aOR 1.14). Thus, ED DAMA related more to mothers and their circumstances.

Children under 1 year at admission were more likely (aOR 1.24) than those 1–4 years to DAMA from the hospital but less likely to DAMA from ED (aOR 0.74). As expected, those with emergency admissions were 3.4 times more likely to hospital DAMA than elective admissions from waitlists, and a gradient was seen regarding the urgency of the ED triage category, with aORs of about 11 for semi- and non-urgent versus urgent presentations.

Geographical context was shown to be an important determinant of DAMA. This was no surprise: WA covers a vast and varying geographical area, with respect to accessibility to services, population density, climate, and socio-economic status. For hospitalisations, all levels of non-metropolitan areas of residence at birth had an increased risk of DAMA. There was evidence of a gradient effect with *increasing remoteness* such that children residing in very remote areas had 4.7 times the risk of DAMA compared with metropolitan Perth. This was also true of hospital location (rural hospitals aOR 6.99). However, for ED presentations, a very remote area of residence was associated with 40% *lower odds* of DAMA – with no associations with other levels of remoteness. Rural EDs had 12% lower odds (aOR 0.88), mainly reflecting limited primary healthcare options for very remote-residing children.

An important finding was the decrease in hospitalisation DAMA during the study period, but an increase in ED DAMA. This suggests that in-patient systems for Aboriginal children have substantially improved. This may be due to the introduction of mandatory online cultural security training for staff across the WA Health system[8] accompanied by focused strategies and monitoring to reduce DAMA rates. These same strategies do not seem to have been sufficient to impact ED rates. Indeed, the increase in ED DAMA over time suggests broader contextual factors outside of the hospital system, in particular, reduced access to primary health care with consequent increases in ED presentations by 3.2% per annum before the COVID-19 pandemic in 2019–2020.[9] Many changes over the study period, including reduced after-hour GP services, absence of after-hours services in Aboriginal Medical Services, increased service costs resulting in increased out-of-pocket expenses (due to reduced 'bulk-billing' by general practices where fees are completely government subsidised) and increased living costs.[10]

Does it matter if patients DAMA? With the focus on the adjusted results only, the paper does not adequately emphasise that the unadjusted odds of readmission among hospital DAMA is 40% higher than other patients—even the adjusted estimates suggest increased odds. This means that all things being equal, hospital DAMA is worthy of concern—even if a range of factors can explain the DAMA. The reduced unadjusted odds of readmission in ED DAMA supports the assertion that those who DAMA in ED could often be adequately treated in primary care.

This study was technically exemplary. A comprehensive and unbiased cohort was achieved using a population-based birth cohort covering an entire State, with multiple data sources to provide rich contextual information. Indigenous identification was rigorous using family relational data in addition to best-practice algorithms. Such methods of identification are rarely possible in most other countries with large minority Indigenous populations. The focus on explanatory models allowed within-Aboriginal comparisons to identify strengths and risks. The complex statistical analysis also considered the nested data structure—multiple levels of service episodes, children, and mothers. A Directed Acyclic Graph was explicitly used to assess potentially confounding relations. This allowed the generation of a minimal sufficient adjustment set to reduce confounding of each exposure, although the rationale for particular sets was not clearly provided and may have over- or under-adjusted in the analysis.

A few issues require consideration. First, the recording of DAMA involves a judgment based on clinical experience, the effort put into understanding the parents' context/needs, and the interpretation of coders. Second, local-level qualitative information about parents' experiences, reasons, attitudes, and suggestions for system improvement can add value to understanding the forces that influence the decision to DAMA. Practical, co-designed changes to systems, enhanced communication, and support can make a difference in reducing DAMA. Moreover, they also serve to improve the hospital experiences of Aboriginal children and their families, and the morale of staff working in the health system.

This policy-relevant study has been undertaken by a strong Aboriginal and non-Aboriginal epidemiological team committed to making a difference in Aboriginal child health. The findings from this study shed a positive light on DAMA among paediatric Aboriginal in-patients: the practice is relatively rare and has significantly and substantially improved since 2002–2005. Improvements coincide with emphasis on staff training and the introduction of the Closing the Gap policy, which aims to substantially increase the life expectancy of Australia's First Nations peoples.[2] While the lack of cultural security can exacerbate situations in which hospital and ED DAMA occur, society-level and broader system-level challenges are likely to be major contributors to ED DAMA rather than hospital systems and staff alone. Improved access to culturally secure primary care, better resourcing of rural hospitals and the recruitment and cultural safety training of suitable staff together have the potential to reduce DAMA—particularly in ED contexts where service demands and DAMA are increasing.

ABOUT THE AUTHORS

Judith M. Katzenellenbogen is an associate professor and a cardiovascular researcher at the University of Western Australia. Her expertise in epidemiology has underpinned a public health career in South Africa, New Zealand, and Australia. Her research program applies linked data and mixed methods to studying Aboriginal heart disease and stroke, building capacity, and using findings to advocate for changes to improve Aboriginal health. She has a strong focus on research translation, aiming to improve the use of data for national monitoring, policy, clinical practice, health service design, and community health literacy.

Melanie Robinson is a passionate researcher and a registered nurse with connections to Ngarinyin and Gidja Country in the Kimberley of Western Australia. She is the Director of Aboriginal Health for the Child and Adolescent Health Service of the Western

Australian Health Department and works closely with clinicians, managers, academics, and consumers to improve the health and well-being of Aboriginal and Torres Strait Islander children. She is a champion for change, a mentor, a mother, and a social justice advocate.

Ingrid Stacey is an early career researcher at the University of Western Australia with qualifications in biochemistry, epidemiology, and biostatistics. She uses linked administrative health data to investigate the health outcomes of acute rheumatic fever and rheumatic heart disease (RHD) among young Australians. As RHD predominantly affects First Nations Australians, Ingrid is committed to conducting collaborative, co-designed research that measures 'real-world' impacts of public health interventions.

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DATA AVAILABILITY STATEMENT

The data described are available in the article in the current edition of this journal.

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