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Language as a pillar of cultural safety: evaluating hospital-based healthcare workers' knowledge of First Nations languages and interpreter services in East Arnhem Land, Australia

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Abstract

Background

Communication is a key determinant of health, yet in Australia's Northern Territory (NT), First Nations language speakers usually receive medical care in English. The NT is a region of exceptional language diversity and vitality, with approximately 50 distinct First Nations languages spoken. At Gove District Hospital in East Arnhem Land, NT, 91% of First Nations peoples primarily speak an ancestral language, chiefly Yolngu Matha, with a smaller proportion speaking Anindilyakwa, Burarra and others. Many would benefit from access to an interpreter during healthcare encounters. This study aimed to assess healthcare provider knowledge of local languages, and their use of professional interpreters.

Methods

An exploratory, electronic, anonymous survey was distributed to clinical staff at Gove District Hospital, capturing demographics, knowledge of language names and dialects, confidence in pronunciation and spelling, and interpreter use. A purposeful sampling strategy targeted doctors, nurses, and allied health professionals. Exclusions comprised employment for <1 month, employment in an administrative role, as an Aboriginal Liaison Officer, or students. Responses were analysed using descriptive statistics and qualitative template analysis.

Results

Of an estimated 100 eligible staff, 56 participated (33 nurses, midwives, managers; 16 doctors; 7 allied health). Almost all (96%) identified at least one major local language, but only 18% felt confident pronouncing names and few could name dialects. The language identified correctly most often was Yolngu Matha. 50% identified Anindilyakwa and none named Burarra. Spellings varied widely. While staff acknowledged the benefit of using interpreters, <60% had used one, and just over half knew how to book one. Reported barriers included interpreter unavailability and time pressures. Reliance on Aboriginal Liaison Officers or family members raised concerns about confidentiality and accuracy. Staff expressed frustration at limited interpreter access, and a desire for training in local languages.

Conclusions

Findings reveal substantial gaps in linguistic knowledge and interpreter utilisation in a region of major language diversity. Addressing these issues requires systemic and individual change, including accurate language documentation in health records, employing interpreters, and intercultural communication training. Recognising and respecting patients' first languages is central to culturally safe care, and essential for improving health equity for First Nations peoples.

Study registration: 2008644

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Background

Language is a key determinant of health and wellbeing for indigenous language speakers globally (1-5). The Northern Territory (NT) in the tropical north of Australia has the greatest proportion of people who speak a First Nations language in Australia, alongside the Torres Strait islands (6). These proportions are estimated at 58.5% across the NT (7), and up to 97% in Nhulunbuy (8), the setting for this study. Approximately 100 First Nations languages still spoken today (9). Due to the ongoing impact of colonisation, First Nations peoples are over-represented in NT hospital where up to 70% of hospitalised people are First Nations. Research conducted at the main tertiary healthcare facility in the NT, Royal Darwin Hospital, found that in one ward, fifteen First Nations languages were spoken by patients in a four-week period however most hospital staff were unaware that Royal Darwin Hospital was a microcosm of diverse First Nations cultures (10). This rich linguistic and cultural diversity underscores the importance of recognising and upholding the rights of First Nations peoples to maintain and express their languages and cultural identities within healthcare settings. Article 13 of the United Nations Declaration on the Rights of Indigenous Peoples states that, "*Indigenous peoples have the right to revitalize, use, develop and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures*" (11). However, of the estimated 250 languages spoken in Australia before colonisation, only 123 languages remain in use today, of which 109 are endangered and all are under threat (12).

English is the operational language of hospitals in Australia which means many First Nations peoples do not receive healthcare in their preferred language (13) and report experiencing a lack of cultural safety (10, 14-16). Some First Nations language speakers who have been hospitalised for long periods have stated that the English-speaking hospital contributes to language loss (10). In the NT the dominance of English is a key example of systemic racism that reinforces the power imbalance between patients who identify as First Nations and most health care providers who do not (10, 13-16). One of the most common ways First Nations peoples experience racism is through poor communication (17-21). In Australia, culturally unsafe communication has resulted in inequitable health outcomes, including absence of informed consent, unnecessarily prolonged hospital stays, self-discharge and disengagement from the service, distrust of healthcare providers, and even death (10, 17, 22-25). Cultural safety is a proposed solution to counter racism in healthcare which highlights the critical importance of communicating in the patient's preferred language (10, 26-29). Cultural safety in healthcare requires a balanced power dynamic between healthcare providers and patients (30). However in the 'White', Western hospital environment, there frequently is a power differential that privileges biomedical knowledge, communicating in English and institutional authority over the lived experiences, cultural values, and voices of First Nations patients. In this context, the term 'White' refers not to individuals, but to the broader social construct that shapes institutional practices and values. Regardless of the ethnicity of individual hospital employees, the healthcare system itself operates within structures grounded in Western worldviews and White cultural norms.

Currently, hospitals in the NT have limited capacity to offer services in First Nations languages. This is because most healthcare workers do not speak these languages, there is a shortage of trained interpreters, and the fast-paced nature of hospitals is a barrier to identifying diverse language needs and booking an

interpreter (14, 30, 31). This is despite evidence that communicating with patients in their first language helps to build stronger relationships and trust, ensures informed consent and mitigates the risks of clinical errors and patient misidentification, contributing to better patient outcomes (15, 27, 32). However, language is not merely a tool for conveying information; it is an intrinsic aspect of an individual's identity and wellbeing (10, 33-36). A Yolŋu Matha speaking patient explained in a previous study: *"First language is important to us, it's like growing up as a child into that language. That Yolŋu Matha, it's very important, our language. We were born with it, we live with it, we prefer it"* (10).

We posit that non-First Nations peoples working with First Nations peoples should have foundational knowledge on which to build rapport and tailor their approach, including knowing the names of which language(s) are spoken. This paper is the first to document healthcare provider knowledge and understanding of First Nations languages spoken by people receiving healthcare at Gove District Hospital (GDH) in northern Australia on Yolŋu country. GDH services the East Arnhem region where 91% of First Nations peoples speak an ancestral language at home. This predominantly comprises Yolŋu Matha (an umbrella term for at least 20 languages and dialects, where Yolŋu means people, and Matha means tongue/language) and/or Anindilyakwa, the predominant language of Groote Eylandt, south of Nhulunbuy, whose residents are frequently transferred to.(37). GDH also provides care to some patients from Maningrida, where Burrara is the dominant language spoken (as well as Ndjébbana, Nakara, Gurrone, Kunbarlang, Kunwinjku, Kune (Mayali), Rembarrnga and Djinang). Yolŋu Matha languages, Anindilyakwa and Burrara are distinct and not mutually intelligible, highlighting that they define different countries albeit now grouped within Australia.

The aim of this study is twofold. Firstly, to assess GDH staff knowledge of language names spoken by their patients. Secondly, to evaluate healthcare provider use of interpreters (professional or other) and familiarity with professional interpreter services. The results will be used to inform the development of training programs and resources that enable the hospital system to prioritise effective intercultural communication in healthcare settings.

Methods

Study design

This study is embedded in a larger Participatory Action Research (PAR) project (38), the Communicate Study Partnership. The project aims to strengthen culturally safe communication at government-run hospitals (NT Health) in the region referred to as the Top End (Royal Darwin Hospital, Katherine Hospital and Gove District Hospital) to improve First Nations peoples' experience and outcomes of healthcare (39) (registered with ClinicalTrials.gov Protocol Record 2008644). Approval to conduct the research was granted by the Human Research Ethics Committee of the Northern Territory Department of Health and Menzies School of Health Research (HREC-224297) and the Research Governance Office, Northern Territory Department of Health (EFILE2022/13836).

Study setting

GDH is a 30-bed hospital managed by the NT government health department. The hospital is in the town of Nhulunbuy, serving the East Arnhem region, where 80% of patients identified as First Nations in 2024 (40). The NT Health patient

documentation system captures 35 languages, dialects and clan names under 'language' relevant to East Arnhem land. A single selection can be made from a drop-down list to specify 'Language spoken at home', and a second selection can be made for 'Preferred language'. Additional free text comments can be added to specify if there are more than two relevant languages. At the time of data collection, First Nations language interpreters were available to GDH through a contract with the NT Aboriginal Interpreter Service. This service provided one Yolŋu interpreter rostered full-time at GDH during week days; however, this role was frequently vacant meaning face-to-face interpreter services were only rarely available. Telephone interpreters were also available on demand. Low availability of trained and registered interpreters commonly leads to health staff asking Aboriginal Liaison Officers and family and friends to act as ad-hoc interpreters.

The Australian healthcare workforce is dominated by non-Indigenous peoples; only 7% of all NT health staff (including clinicians, administration, corporate services) identify as First Nations (41). Additionally, the Australian healthcare workforce relies on internationally trained professionals (42, 43); 30% of medical practitioners and 13% of nurses were internationally trained in 2023 (44, 45). At NT Health, 27% of staff identify as culturally and linguistically diverse (Northern Territory Government, 2024), hospital staff frequently come from interstate for short periods, and students from outside the NT undertake clinical placements. Staff often experience culture shock on arrival, lack understanding of the strength and diversity of First Nations cultures and are commonly characterised as a transient workforce (26, 41, 46, 47).

Data collection

Data were collected through a context-specific, exploratory survey which was designed for this study. The aim of the survey was to assess knowledge of language names and interpreter use practices among GDH clinical staff. The following information was provided at the start of the survey: "With this survey, we are interested in your knowledge of First Nations languages and experience of working with interpreters at GDH". The survey created in SurveyMonkey® collected staff demographics (profession, length of employment at the site, language(s) spoken at home), and posed questions about staff understanding of local language names, as well as confidence with pronunciation, and knowledge regarding working with First Nations language interpreters (Table 1). Spelling abilities were also assessed indirectly through analysis of free-text responses. Eight questions offered response options via multiple choice while four were text-based response boxes.

The electronic survey was distributed via email or accessed via a QR code on posters across hospital buildings. Alternatively, staff were invited by EJ to complete a paper-based survey at handover meetings, during breaks and as part of in-services. A purposeful sampling strategy was used aiming to engage 65% of the clinical workforce. Eligible employees comprised non-First Nations clinical staff (doctors, nurses, allied health professionals). First Nations staff were excluded since it was hypothesised that their knowledge of the content would differ and the aim was to understand knowledge and practices of non-First Nations employees. Other exclusions comprised: working at GDH for less than one month, administrative role, or students on short-term placement. We estimated there were 100 eligible employees who could complete the survey.

Data analysis

Electronic quantitative survey results were downloaded in a Microsoft Excel spreadsheet (48). Data from paper surveys were entered verbatim into the same spreadsheet. The data were cleaned and analysed using pivot table summaries. The relationship between duration of employment (not normally distributed) and interpreter use was explored using Wilcoxon's rank sum test.

Analysis of responses pertaining to local language names was guided by the NT Aboriginal Interpreter Service website and a language mapping resource (supplementary Material 1) developed by author LG in collaboration with local First Nations staff and leaders. Free-text comments were analysed using summary template analysis (49), an implementation research method used to rapidly analyse qualitative data. This approach was selected because it effectively summarises qualitative survey data, not to build a theory, but to produce implementable results (50). MS reviewed the free-text comments to identify initial *in vivo* domains - that is, domains named using respondents own words to preserve their authenticity. These responses were then organised by MS into a matrix and subsequently reviewed by VK. Through an iterative process, MS refined the results through collaborative discussions with all co-authors, revising the responses to ensure alignment with the domains.

Terminology

The term First Nations is used to cover all Aboriginal and Torres Strait Islander peoples in Australia. The non-Indigenous researchers in this study capitalize the term "White" to align themselves with the socially constructed racial category examined in Whiteness studies (51). Using "White" in this way serves as a prompt for non-Indigenous researchers to reflect critically on unearned privilege and power, with the goal of promoting decolonised thinking and practices (52). In this paper, the authors use the spelling *Yolŋu* with the letter ŋ (the velar nasal) to reflect the way Yolŋu write and pronounce their own name, rather than the anglicised spelling '*Yolngu*'. Responses from participants have been retained in their original form.

Positionality

MS is a White global health professional and researcher living and working on Larrakia land. EJ is a White Australian of Irish descent who has worked as a sonographer and nurse across Royal Darwin, Gove District and Tennant Creek hospitals. LG is a *Dhuwala/Dhangu* interpreter Aboriginal Liaison Officer raised in *Galiwink'u* who lives and works in East Arnhem Region at Gove District Hospital. SL is a White Australian healthcare professional with extensive experience in senior nursing leadership at Gove District Hospital currently working in healthcare safety and quality. CC is an Aboriginal man from Larrakia Country; his 20-year career spans frontline healthcare delivery to executive level positions developing policies. LC is an Australian-born White linguist and interpreter trainer with 15 years' experience working with First Nations language interpreters in the NT. APR is a White doctor and researcher and program lead of the Communicate Study Partnership. VK is an Australian born English speaking White researcher of Anglo-Celtic heritage, intercultural communication researcher and practitioner. Recognising these positions, the research team acknowledges the dominance of Whiteness, and that greater inclusivity of First Nations collaborators in the study design could have changed the overall approach.

Results

Survey response numbers and demographics

There were 65 surveys collected over 4 weeks from September to October 2023 of which 56 were from eligible participants and able to be included in the analyses. Most respondents were nurses or midwives (59%) followed by doctors (29%) (Table 1). Others included allied health professionals (dietitians, medical imaging staff, pharmacists, social workers) and nurse management staff. Where there were fewer than 5 respondents per employment category, responses were grouped with the largest group for anonymity. This resulted in a nurses/midwives category, abbreviated in places hereafter as 'nurse', and an allied health category. Respondents had worked at GDH for between 6 weeks and 17 years. Almost all (98%) reported speaking English at home. Among them, one also spoke Cantonese, another spoke only Bengali, and none reported speaking a First Nations language.

Respondents provided 23 free text comments (ranging from four-word answers to a 90-word paragraph). Emerging from review of the data, results were able to be grouped into the following categories: 1. knowledge of languages, 2. benefits and challenges of working with interpreters and 3. desire for professional development. Results below are presented according to these groups. For individual responses, duration of employment at GDH is shown in brackets alongside the comments.

Staff knowledge of language names

Nearly all staff (96%) could identify at least one major language for East Arnhem Land and some also named sub-languages, clans and dialects. There was significant variation in spelling across all responses. Only 18% of staff reported feeling comfortable pronouncing the names of languages.

Ninety-six percent of staff identified Yolŋu Matha as a major language local to the East Arnhem region, but only 51% of staff recognised Anindilyakwa as another major language spoken among people receiving healthcare at GDH, and no one identified Burarra (or other common languages spoken in Maningrida). 7% of respondents did not name Anindilyakwa but instead named Groote Eylandt/Alyangula as the place associated with the language, demonstrating an awareness of the region's linguistic identity but without naming the specific language. Before seeing the next question, 14% of respondents commented on the presence of dialects. For example, "*Lots of dialects which I am not good at articulating*" (doctor, 9 months) and "*Yolngu Matha - many different dialects*" (nurse, 17 years). A separate 7% of staff listed clan names and/or dialects amongst their responses. One allied health respondent who spoke English at home (21 months) listed English, Vietnamese and Tongan in addition to Yolŋu Matha as languages local to the region.

When asked about the language/dialect subgroups, 73% of staff (41/56) left the field blank or commented "unsure" or "don't know". Only 27% (15/56) of staff

responded with a mix of major languages, dialects, and clans, highlighting both the fluidity with which these categories are understood and named across communities, but also potential gaps in staff knowledge. One participant listed the Yolngu moieties, Dhuwa and Yirritja: however rather than being languages, these moieties comprise two complementary halves into which all things - people, animals, plants, places - are divided. Length of employment did not appear to correlate with more in-depth knowledge; one nurse employed for 17 years wrote "no idea" in response to the question on language/dialect subgroups. Also, employment duration was not significantly associated with using an interpreter. The median duration of employment among survey respondents who had used an interpreter was 18 months (range 2 months-17 years) versus 12 months (range 1.5 months to 20 years) in those who had not, $p=0.46$.

Only 18% of staff reported feeling confident pronouncing the names of local First Nations languages, with Yolngu Matha and Anindilyakwa among the few they felt comfortable saying. 50% of staff expressed discomfort with pronunciation and 32% felt comfortable pronouncing the names of "some languages". There was also significant variation in the spelling across Yolngu Matha, Anindilyakwa (Table 2) and other languages, dialects and clans.

Recognised benefits and challenges of working with interpreters

Staff widely acknowledged the benefits of having interpreters present during patient interactions. A manager (12 years) described it as "*absolute luxury*", and that it "*just feels safe and appropriate*." The presence of a regular interpreter was considered "*amazing*" by one doctor (12 months), who emphasised the need for more interpreters across all departments:

"We need to employ more interpreters so that they are readily available on ward 1, ward 2, and ED. (Theatre, OPD, everywhere!) and from different family groups and genders to avoid conflicts of interest. Too often we are seeing patients without an interpreter, resulting in miscommunication/inaccurate consent/non-informed"

Staff expressed a strong desire for increased access to interpreters, particularly in settings where complex procedures are performed. A doctor (2 months) wrote they "*would like to make more use of them especially in outpatient settings doing complex procedures such as exercise stress tests*". Another doctor (3 years) highlighted the need for female interpreters in the maternity ward, stating, "*We really need female interpreters present every day. Many women do not understand their medical conditions or problems in pregnancy and it's not adequate to use a phone interpreter*." Others echoed the call for more interpreters, with one nurse (1.5 years) noting that this could assist with challenges faced by the high turnover of staff, "*Be great to have more interpreters as a lot of the staff are agency or locums who don't regularly work with Aboriginal languages + have little understanding*". One doctor (6 weeks) reported that they only consistently use interpreters for consent, "*I probably don't use interpreters as often as I should, particularly in ED. I only always use interpreters in formal consent situations in other situations, it depends how busy ED is/if someone else suggests to use one.*"

Staff expressed ongoing frustration with the inconsistent availability of interpreters. A nurse noted that accessing interpreters was difficult, "*Throughout my 10 years working it has been hard to access an interpreter and is not consistent so often an assumption is made that an interpreter is not available. Also often an*

interpreter is required outside of regular business hours or at short notice. Almost near impossible to get". A nurse manager (4 years) echoed this concern sharing that "the [lack of] availability of face-to-face interpreters really does impact on the ability for us to provide patient centred care. Due to the poor service, staff do not think to ask about an interpreter and do not use them".

Time pressures in hospitals were a common constraint voiced by respondents. Staff highlighted that interpreters are rarely seen and often unavailable when needed most, particularly during emergencies or after hours. One doctor (3 years) said *"I should have called them but I'm too lazy. I am put off by the delays in getting hold of someone"*, and a nurse (12 months), noted the burden of extra paperwork, saying, *"The hassle of filling the post-interpreter form adds to the nursing workload."*

The benefits of working with Aboriginal Liaison Officers (ALOs) who are First Nations language speakers but not certified interpreters, were noted. One nurse (12 months) shared *"Having ALOs has been life changing with significantly better outcomes for health care"* and another doctor (12 months) suggested formal integration into medical teams: *"Would love to have a dedicated ALO to each ward round"*. A nurse (3.5 years) speculated on the benefits of integrating ALOs who speak a local language into the Emergency Department: *"I would love to have more ALO presence in ED... Not only to interpret but to be part of the team. We have regular huddles where we go through patients currently in the department and the plan for their care. I'm sure patients coming through the ED journey would feel more comfortable if there was an ALO in the team. Some ward admissions could be avoided if an ALO was present to assist discharge in some social issue situations."*

Documented challenges to working with trained and registered interpreters often led staff to rely on other language speakers instead. 77% of respondents indicated that they had used First Nations language speakers such as an Aboriginal Liaison Officer, and 79% of respondents indicated that they had used a family member to interpret (Table 1). One nurse respondent (12 years) wrote, *"My experience has been that family members or ALOs are better than the phone [interpreter] service"*. A doctor (18 months) reported an instance where the use of family members as an interpreter was directed by a patient, saying: *"On occasion AIS [Aboriginal Interpreter Service] interpreter has been deemed unsuitable for the family and so they requested to use one of their family members"*. This may reflect factors such as gender mismatch or an avoidance relationship between the available interpreter and client, though details were unavailable. Some staff recognised the ethical issues when untrained bilingual people are asked to interpret. A nurse (3.5 years) said they used family when waiting for an AIS interpreter despite knowing patient confidentiality may be breached by a family member who is not bound by the interpreters' code of ethics. A nurse (12 years) acknowledged the inappropriateness of relying on family members or ALOs for interpretation, noting, *"this is not their job and there is significant risk and conflict of interest in doing so"*. Some commentary appeared to suggest that responsibility for requesting an interpreter lay with the patient, with one doctor (3 years) noting: *"Maybe more signs can be put around or patients can be informed that interpreters are available"*. The same respondent observed: *"We are meant to have an interpreter in the hospital but I very rarely see them"*.

There were more occasions of telephone interpreting reported compared to face to face at (46% vs 27% respectively), but in comments provided, respondents overwhelmingly reported a preference for face-to-face interpreters. A nurse (3.5 years) shared that phone interpreters can be inaccessible, because: *"for some*

patients they find it difficult to hear on the phone. Each time I have used it it's been difficult and in the meantime care has been delayed or patient is left waiting until we can find another family member or someone else on ward that can speak in language".

Regarding knowledge of how to book an interpreter through the NT Aboriginal Interpreter Service, only 54% of staff surveyed knew how to book an interpreter, and 59% of respondents had used an NT Aboriginal Interpreter Service interpreter. Use was highest amongst nurses, followed by doctors then allied health (Table 1). When asked about the language of the interpreter sourced, 82% of respondents who had used an interpreter could recall the language. One nurse employed 6 months listed sign language (unspecified but likely referring to Australian Sign Language [Auslan], since this is the only sign language in Australia for which there are accredited interpreters). Another employed 12 months who spoke English at home listed Indonesian, indicating a misinterpretation of question 11 (Table 1).

Desire for professional development

Nurses expressed a desire for training and education about local languages to improve communication with patients. One nurse (14 months) wrote, "*I would love more education regarding languages,*" while another, unable to answer some survey questions regarding local languages, commented, "*very interested to understand more*". There was a suggestion that First Nations employees in the hospital could provide this training. For example, a nurse (3.5 years) who commented on wanting additional Aboriginal Liaison Officers in the ED, shared that their role could also be "*to teach staff language*".

Discussion

This paper is the first to document healthcare provider knowledge and understanding of local First Nations language names and interpreter services at Gove District Hospital (GDH) where the majority of First Nations peoples speak a First Nations language. The findings reveal significant gaps in staff awareness of the language names spoken by patients and the availability and role of interpreters. Almost all practitioners at GDH were able to name at least one major local First Nations language from East Arnhem Land. However, knowledge of, how to spell or pronounce the language name, and names of dialects or sublanguages was very low or non-existent. This pattern persisted regardless of length of employment; one staff member with 17 years of service was unable to name any Yolngu sub languages/dialects. Staff recognised this major limitation and expressed a desire to improve their linguistic knowledge and interest in being able to access and work more effectively with language interpreters. Our results highlight the importance of investing in both individual and systemic improvements, including enhancing hospital staff's linguistic capabilities and their capacity to work with, and recognise the benefits of, working with professional interpreters. These results will be examined further in relation to relevant literature below. Additionally, the paper offers recommendations to support continuous quality improvement strategies and details how the results have already contributed to systemic changes which support culturally safe communication at GDH.

At GDH we found that staff have a limited understanding of language names spoken in the region and often rely on ad hoc communication strategies which the staff themselves recognise as unsatisfactory. The loss of First Nations languages has well-documented negative effects on cultural identity and health outcomes in Australia and other colonised contexts (5, 53-58). The use of English in hospitals

presents significant barriers for First Nations language speakers to discuss care plans with their families in their own languages. For example, the use of medical terminology instead of describing symptoms, processes, or outcomes in more accessible terms can hinder communication (Aboriginal Interpreter Service, 2023). This not only affects understanding but may also contribute to language erosion. To support culturally safe communication in hospitals, including the use of first languages, non-Indigenous staff should be supported by the system to prioritise communication as part of a clinically safe practice. Critical requirements are interpreter availability and adequate staffing to permit time to use interpreters. Many First Nations peoples have said they do not expect staff to become fluent in all the languages local to the NT, however there is a minimum expectation that staff should know the names of local languages, be able to use some language when appropriate and pronounce words and names correctly (59). Doing so shows respect and helps to rebalance the power dynamic between healthcare provider and patient, by recognising the patient's unique knowledge and connection to their language (10, 13-15, 31). Larrakia Elder Auntie Bilawarra Lee and Yolngu nurse Stuart Yiwarr McGrath on the *Ask the Specialist* podcast (59) recommend that healthcare providers learn key words and phrases to show respect, build rapport and to facilitate basic communication, which may in turn support correct pronunciation of names and languages.

Our results revealed that most staff reported discomfort with pronouncing language names, and the majority also spelled them incorrectly. Pronouncing language names correctly is a powerfully simple act that conveys respect and acknowledges the deep significance of identity for the individuals whose healthcare journey we are supporting (36, 60). Accurate spelling of language names was analysed because it is equally important; it supports coordination and integration of care, and strengthens the visibility and recognition of First Nations languages within health systems (61). It is reasonable to infer that this limited proficiency likely extends to incorrect pronunciation and spelling of patients' names and communities/homelands as well. Correct pronunciation of names from different languages can be perceived as unimportant, or an inconvenience, or just 'too hard', but normalising this ambivalence amongst English speakers can constitute a microaggression that continues to shape healthcare (36, 62). This attitude perpetuates a longstanding colonial history of using English given names as tools to erase culture and identity (63, 64). Incorrect spelling or documentation of patient information at GDH has contributed to serious impacts on patient outcomes through cases of patient misidentification. For example, a patient being unnecessarily transferred to Darwin for surgeries intended for another person, or being given a different person's intended medication which resulted in deterioration and the need for a higher level of care (65).

Despite overwhelmingly positive comments about the benefits of working with interpreters, fewer than 60% of GDH staff reported ever having used one, and just over half indicated they knew how to book the service. This trend mirrors underutilisation at the regional tertiary hospital, Royal Darwin Hospital 1000km away (15, 47) and global findings (66-70), with commonly cited barriers including perceived interpreter unavailability and time pressures. While the use of professional interpreters significantly enhances patient outcomes (71-73) the tendency among GDH staff to prioritise interpreters for critical situations, such as emergency care or obtaining informed consent overlooks the importance of clear communication throughout the patient journey. For example, inadequate discharge communication at Royal Darwin Hospital has resulted in patients

missing transport back to their communities, leaving them homeless in Darwin and unable to return to their families and in financial distress (16). Additionally, despite the misconception among some staff that interpreters are solely a resource for patients, research in the NT shows that patients often do not feel empowered to advocate for themselves in a hospital setting (10, 26), and the NT Aboriginal Interpreter Service asserts that it is duty of the healthcare providers to proactively recognise need and arrange for interpreters. The time pressures cited by staff as a barrier to sourcing interpreters also contributes to a false economy, as investing time in securing an interpreter leads to significantly better outcomes for both patients and the healthcare system overall (26, 74). Previous research in the NT has recommended assigning delegation for booking interpreters to specific staff members within each interdisciplinary team such that this does not occur reactively, and employing interpreters directly through the hospital services instead of ad hoc bookings (15, 26). Based on our experiences at Royal Darwin Hospital, having interpreters on staff reduces potential time lags between making a booking and getting access to an interpreter, and allows the health service more say over how interpreters structure their time and organise their workload to improve visibility and accessibility. We argue that if local languages were more highly valued within the health system, and healthcare workers were more familiar with their names, there would likely be greater initiative taken to organise interpreter support.

However, expecting services to be able to provide appropriately trained and culturally suitable interpreters for all discussions where a language barrier exists is unrealistic for many reasons. There has historically been low appreciation of the value of bi- or multilingualism in Northern Australia that limits the available pool of people who can become interpreters. The resistance to bilingual education in the NT, marked by consecutive government policies that prioritise English over First Nations languages (75) has not only undermined the value of bilingualism but also contributed to a decline in the number of bilingual speakers. This issue was highlighted at the 2022 Top End Languages Forum in Darwin, held as part of the UNESCO International Decade of Indigenous Languages, where over 60 delegates from more than 10 First Nations communities in the Top End shared a collective vision for stronger support of bilingual education (76).

Another barrier to availability of interpreters in hospitals is that the hospital environment has been described as culturally unsafe by First Nations staff (26), potentially discouraging them from working there. Furthermore, many interpreters are employed on casual contracts which contributes to inconsistent staff availability. Finally, many interpreters who could work at GDH live in communities that are up to 20 kilometres away from the hospital and travelling to work can be challenging in the absence of a private vehicle as there is no available public transport. As found in our survey, the unmet need for trained interpreters in Nhulunbuy is consequently falling to Aboriginal Liaison Officers and family members. Asking Aboriginal Liaison Officers who speak a Yolngu language to interpret can place them in a complex position that blurs the lines between their social and cultural support role and the ethical responsibilities of an interpreter. Calling on family members can create risks which can be categorised into linguistic and ethical challenges including limited knowledge of medical terminology, confidentiality and privacy concerns, difficulties with sensitive topics, impact on family relationships and roles, and situations where family members could impose their own priorities or agendas (77).

To take advantage of language as a determinant of health, a strong institutional commitment to cultural safety that values and respects linguistic and cultural

diversity is required. Communication is frequently undervalued and regarded as a “soft” skill by hospital systems, considered secondary to and separate from medical care (78). Delivering culturally safe care in hospitals extends beyond purely including interpreters in clinical conversations. Research at Royal Darwin Hospital documents a strong desire among clinical staff for further education to support culturally safe communication, which includes addressing the importance of language for First Nations peoples (31, 43). To address the issues identified, GDH staff require additional training and support - a need they acknowledged while also revealing a tendency to wait for formal training rather than proactively seeking out resources themselves. Furthermore, a staff member’s suggestion that Aboriginal Liaison Officers could be responsible for educating clinicians on language and pronunciation highlights the pervasive cultural and colonial load that undermines cultural safety in the workplace (79). The expectation that a Yolŋu speaking staff member can teach non language speakers also risks reducing the linguistic diversity of the region by relying on individuals from a single community. As Yolŋu co-author LG explained during analysis, Yolŋu cultures value openness and generosity. Building relationships outside of workplace settings can support language learning and help bridge social divides in places like Nhulunbuy. Additionally, intercultural communication and anti-racism training, co-facilitated by non-indigenous and First Nations trainers, has been an effective model to promote cultural safety in hospitals (31). This approach centres First Nations stories and perspectives to prompt critical self-reflection, which enables healthcare workers to transform their behaviour and practices (31, 80).

Finally, it is worth noting that some survey participants recognised international cultural diversity among GDH patients. Developing culturally safe communication skills to better support First Nations patients will also benefit other individuals in the region who do not speak English as their first language, contributing to more inclusive and effective healthcare for all.

Systems changes resulting from the survey findings

The findings from this survey influenced the creation of low-cost, impactful changes at GDH. Authors LG and EJ consulted extensively with language speakers and community Elders to create a poster that aligns Yolŋu languages with clans and family names within the Dhuwa and Yirritja moieties (supplementary Material 1). The poster is displayed in hospital corridors and inserted into patient folders to support language documentation, but also to prompt conversations and foster stronger relationships between healthcare providers and patients. The poster highlights the complexity of Yolŋu Matha languages, underscoring that best-intentioned healthcare providers from other cultural backgrounds will inevitably face a steep learning curve. The poster footnote explains that the resource is not intended as a definitive guide; language names and classifications may vary across Yolŋu communities, reflecting diverse perspectives and conceptualisations of language.

A second poster emphasising that it is the healthcare provider, not patient, who needs an interpreter, was created by the research team and circulated at GDH. The poster included practical information for staff about how to contact the NT Aboriginal Interpreter Service in East Arnhem (supplementary Material 2).

To further support the clinical workforce, EJ conducted in-service training sessions and disseminated organisation-wide communications to promote culturally safe

practices and resources such as clinical language applications for smartphones and Plain English training. EJ also coordinated health education initiatives for interpreters and the ALOs which fostered two-way learning and collaboration between clinicians and First Nations staff.

Recommendations

These findings provide further evidence in support of previous recommendations from the NT (10) including the importance of embedding language requirements within administrative systems, registering patients in healthcare facilities using their correctly spelled First Nations names, and ensuring patients' languages are documented on patient lists alongside their key demographic information. Prior research also recommends direct employment of interpreters within the hospital service (26) which helps address ongoing interpreter availability issues. The study findings contribute to evidence recommending expanded access to locally designed and delivered intercultural communication training in response to staff's expressed desire for growth (31, 59). Intercultural communication training, cultural competency and cultural awareness training that educates staff about local cultures and also addresses the distinct roles of interpreters and Aboriginal Liaison Officers, and improves knowledge of First Nations languages, is required at GDH. This study is the first to document staff discomfort with pronunciation and spelling which are key aspects of recognising and respecting language and culture. As such we recommend incorporating dedicated practice of these skills into intercultural communication training, otherwise the entrenched dominance of White culture will persist even in settings with a strong Yolŋu cultural presence. Although previously acknowledged anecdotally, this is the first study to formally document the routine use of family members as interpreters at GDH, a practice that raises concerns about confidentiality, impartiality, accuracy and completeness of doctor-patient interactions. Involvement of family members in discussions about clinical care adds important value (81-84) but their use as interpreters, even though common practice internationally, (66, 85-90) is therefore strongly discouraged.

Strengths and limitations

We captured the majority of clinical staff employed at the hospital at the time of the survey, and applied robust methods to interpreting the data. A survey form of data collection allowed rapid deployment, ease of evaluation, and cost-effectiveness (91). We recognise however that a limitation of survey is their reliance on predetermined questions that may not capture the full complexity or nuance of respondents' experiences. For example, the framing of language through a fixed structure, categorising "major languages" and "sub languages/dialects", reflects a non-Indigenous, colonial lens that does not allow for the complexity of First Nations languages, nor the ways in which language is named, understood, or held by Yolŋu and other Nations. While the term "local" was intentionally left open to interpretation (e.g., local to the hospital, Nhulunbuy, or East Arnhem), clearer framing may have supported more consistent responses. Non-clinical administrative hospital staff were excluded but have a role in patient registration, language documentation and can play a pivotal role in arranging

interpreters. This limitation was identified following the deployment of the survey tool and the Communicate Study Partnership has since been exploring ways to engage administration staff in project activities.

Conclusion

While people employed in clinical roles in this First Nations health setting indicated a desire to be educated in cultural awareness and cultural safety practices, there remains among many a lack of basic knowledge of defining cultural characteristics, including language. This presents a clear risk to culturally and clinically safe care. Acknowledging, documenting, and actively supporting patients' language preferences and prioritising the use of interpreters are essential steps toward addressing the health inequities present in the NT. Individual practice change supported by systems improvements are required to ensure language is recognised as a pillar of culturally safe care. The remarkable linguistic strength in the East Arnhem Region is a major cultural asset, but without adequate supports the results indicate it is a source of confusion rather than celebration.

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Declarations

Ethics approval and consent to participate

Ethical approval to conduct the study was provided by the Northern Territory Department of Health and Menzies School of Health Research Ethics Committee (HREC 2022-4297). The need for participant consent was waived by the Ethics Committee in keeping with the 2023 Australian National Statement on Ethical Conduct in Human Research (survey forms were completed anonymously and deemed highly unlikely to cause distress to participants). The study was conducted in accordance with the Declaration of Helsinki guidelines.

Consent for publication

Not applicable.

Availability of data and materials

Data could be available on request with the approval of study investigators and the Communicate Study Partnership Indigenous Governance Council.

Competing interests

The authors declare no competing interests.

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Authors' contributions

MS, EJ, APR and VK devised the study. CC, APR and VK secured the funding. EJ and SL collected the data. SL and LG supported data collection and interpretation. MS analysed the data and developed the first draft of the manuscript. MS and VK undertook qualitative data analyses. LC participated in manuscript development, providing advice particularly relating to matters of First Nations language interpreters. All authors participated in data interpretation and manuscript development and revisions.

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Tables

Table 1: Survey findings

Item		Response	
Number		56	
Demographics			
1	Role (n, %)	Nurse/midwife or management Doctor Allied health	33 (59%) 16 (29%) 7 (13%)
2	Employment duration in years: median (range)	Overall Nurse/midwife or management Doctor Allied health	1.3 (0.13 to 20) 2.5 (0.13 to 17) 1 (0.13 to 2.75) 3.5 (0.17 to 20)
3	Language/s spoken at home (n, %)	English International language First Nations language	55 (98%) 2 (4%) 0 (0%)
Knowledge about languages*			
4	What major languages are local to this region? (%)	Yolŋu Matha (96%), Anindilyakwa (52%), concept of dialects (14%)**, Kriol (11%), “The Groote Eylandt language” (7%), Djambarrpuyngu (4%), Dhuwal (4%), Dhuwala (5%), Dhangu (4%), Nunggubuyu (2%), Gumatj (2%), Arpapunygnu (2%), Tongan (2%), and Vietnamese (2%).	
5	What are some of the language/dialect subgroups? (%)	Unable to answer (73%), Djambarrpuyngu (11%), Gupapunyngu (11%), Gumatj (7%), Yolŋu (7%), Dhuwala (7%), Dhuwa, Yirritja (2%), Munyuku (2%), Madarrpa (2%), Dhuwal (2%), Dhangu (2%), Djapu (2%), Anindilyakwa (2%), and Kriol (2%).	
6	Are you confident pronouncing the names of the languages in this region? (%)	Yes No Some languages	18% 50% 32%
6a	If you answered “yes” or “some languages” to question 3, please list below. (%)	Yolŋu Matha (25%), Anindilyakwa (14%), Djambarrpuyngu (5%), Can’t remember (5%), Kriol (2%), Indonesian (2%), Sign language (2%), Local languages (2%)	
Benefits and challenges of working with interpreters			

7	At Gove District Hospital, have you ever asked a family member to be an interpreter?	Yes No	80% 20%
7a	Did you document using a family member as an interpreter?	Yes No	51% 49%
8	At Gove District Hospital, have you ever asked an Aboriginal Liaison Officer to be an interpreter?	Yes No	77% 33%
8a	Did you document using an Aboriginal Liaison Officer as an interpreter?	Yes No N/A	48% 34% 18%
9	At Gove District Hospital, have you ever worked with an interpreter from the NT Aboriginal Interpreter Service (NT AIS)?	Yes No	59% (nurses 52%, doctor 33%, allied health 12%, medical science 3%) 41%
10	At Gove District Hospital, do you know how to book an NT Aboriginal Interpreter Service (AIS) interpreter?	Yes No	54% 46%
11	If you have worked with interpreters from the NT AIS, what language/s? (%)	Yolngu Matha (41%), Anindilyakwa (7%), Djambarrpuyngu (5%), "can't remember" (5%), Kriol (2%), Sign language (2%), Indonesian (2%)	
12	If you have worked with interpreters from the NT AIS, was it face to face or telephone? Select all that apply. (%)	Face to face Telephone NA	27% 46% 43%
13	Any other comments	Not presented.	

* Incorrect spelling has been corrected for presentation in this table.

**"concept of dialects" refers to a participant's recognition and acknowledgment of the existence of different dialects within languages.

Table 2: Examples of most commonly misspelt languages

Language	Incorrect spellings	Proportion misspelt
Anindilyakwa	<i>Andiliakwa, Anindilyakwan, Andilyawkwa, Andiliakwya, Anindiliwakwa, Anindiliyaka, Anaindilyakwa, Andindilyakwa, Anandilyiakwa, Anandiliaquan, anindilagia, Andilyakwa, Anandilliwaka, Anindilyaka, Andiliyakwa, Anandilakua</i>	57%
Yolngu (Yolngu) Matha	<i>Yolgnu, Yolnu Matha, Yolgnu Matha, Yolngu Mate, Yonglu, Yolongu Matha, Yongu Matha</i>	53%

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