



# BMJ Open INdigenous Systems and Policies Improved and Reimagined for Ear and hearing care (INSPIRE): a multi-method study protocol

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## ABSTRACT

**Introduction** Otitis media (middle ear disease) severity and chronicity among Aboriginal and Torres Strait Islander people, as well as gaps in socioeconomic outcomes related to hearing loss, indicates a breakdown in the current ear and hearing care system. The ear and hearing care system spans multiple sectors due to long-term impacts of otitis media and hearing loss in health, education and employment, necessitating a multi-disciplinary cross-sectorial approach to ear and hearing care. Public policies shape the current ear and hearing care system and here it is argued that a critical public policy analysis across different sectors is needed, with strong Aboriginal and Torres Strait Islander leadership and guidance. The current study aims to establish consensus-based ear and hearing care policy solutions for Aboriginal and Torres Strait Islander people in Australia.

**Methods and analysis** This multi-method study will be guided by a Brains Trust with strong Aboriginal and Torres Strait Islander leadership. Public policies in hearing health, social services, and education will be scoped to identify policy gaps, using the World Health Organization framework. Qualitative data will be collected through a culturally specific process of yarning circles to identify policy challenges and/or limitations in enabling accessible ear and hearing care programs/services for Aboriginal and Torres Strait Islander people, using dimensions of Mostert's public policy appraisal tool as an interview guide for stakeholders. Themes from the yarning circles will be used to inform an expert Delphi process to establish consensus-based policy solutions for optimising the ear and hearing care system for Aboriginal and Torres Strait Islander people.

**Ethics and dissemination** This study has approval from the Australian Institute of Aboriginal and Torres Strait Islander Studies Ethics Committee. Study findings will be disseminated to community through Brains Trust members and study participants, as well as through publications in peer-reviewed journals and research forum presentations.

## INTRODUCTION

Despite the healthcare system in Australia ranking among the top performers of high-income countries,<sup>1</sup> the World Health

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study will be the first to establish consensus-based policy solutions for improving ear and hearing care that spans multiple sectors for Aboriginal and Torres Strait Islander people in Australia.
- ⇒ A Brains Trust of leaders in ear and hearing care, health, social services, education, and public policy, including at least 50% Aboriginal and Torres Strait Islander members, will provide strong leadership, cultural expertise, and guidance.
- ⇒ This protocol provides a robust multi-step process involving a scoping review, yarning circles with key stakeholders, and an expert Delphi panel.
- ⇒ Policy solutions established in this study will have direct relevance to Australia but may be limited in global impact.

Organization (WHO) places prevalence rates of chronic suppurative otitis media among Aboriginal and Torres Strait Islander people as some of the highest in the world.<sup>2,3</sup> Otitis media, a viral or bacterial infection of the middle ear which can lead to hearing loss,<sup>4</sup> has impacts on communication and cognitive development,<sup>5</sup> social-emotional well-being,<sup>6</sup> school performance<sup>7</sup>, employment, and income status.<sup>8</sup> Between 2013 and 2019, the Australian Federal Government spent an estimated AUD 35.65 million on Aboriginal and Torres Strait Islander ear and hearing health initiatives.<sup>9</sup> To date, there has been limited change in outcomes or prevalence rates of otitis media and hearing loss.<sup>4,10</sup> The Australian Public Service Commission states that 'chronic policy failure' often surrounds complex issues of disadvantage experienced by Aboriginal and Torres Strait Islander people.<sup>11</sup>

Mitigating impacts of otitis media is complicated due to the condition being a 'wicked problem' among Aboriginal and Torres Strait



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Islander people who experience comparatively high severity and chronicity of otitis media.<sup>4,12</sup> Prevalence rates vary, however, recent literature indicates that up to 35% of Aboriginal and Torres Strait Islander children in urban areas present with otitis media at 2 months, increasing to 49% at 6 and 12 months.<sup>13</sup> Wicked problems are often multi-causal, socially complex issues, requiring coordinated efforts from multiple agencies across multiple sectors and levels of government.<sup>11</sup> Further, health determinants, the underlying cause of the disease, remain poorly addressed.<sup>4</sup> Otitis media is a poorly managed condition due to its fluctuating nature, multiple definitions, difficult access and other health priorities. Otitis media is almost exclusively managed in primary care as a brief episodic health condition, however, the broader long-term impacts<sup>5–8</sup> of chronic infection on health, education and disability (social services)<sup>14</sup> are not fully considered. Managing otitis media and its impacts takes a multi-disciplinary cross-sectorial approach and families must navigate between sectors, systems, and services in order to access timely care.<sup>14</sup>

The structure of systems and services is shaped by policy, the development of which is a complex process informed and influenced by actors, institutions and political and contextual factors relevant to the intervention.<sup>15,16</sup> The interpretations of the term ‘policy’ differ,<sup>17</sup> necessitating a clear differentiation between government-crafted policies (public policy) and those formulated by other entities such as private corporations or non-governmental organisations (NGOs). Policies assume an important role in service delivery, and as such, this complexity could lead to service discoordination, hindering the establishment of effective treatment approaches and care.

For the purposes of this study, public policy is defined as a frame for intended action or outcome, including strategies, frameworks, and guidelines,<sup>15,18</sup> directing investment and actions (i.e. programs, services, initiatives) with the aim to improve outcomes for individuals and society.<sup>18</sup> Public policy development is a shared responsibility of

the federal, state/territory, and local governments, which are tasked with the development of federal policy, state/territory policy and local policy, respectively.<sup>15,19</sup> Increasingly, governments are engaging relevant organisations and community groups in the conceptualisation, development, and review of public policy.<sup>20,21</sup> Governments and other organisations implement policies and deliver intended policy outcomes, supported by funding allocation and key performance metrics and reporting.<sup>21</sup>

The ear and hearing care (EHC) system itself encompasses multiple sectors and is shaped by multiple public policies, including sector-specific policies, and policy instruments which support implementation. The interrelated nature of these means that these may have influence beyond the intended scope. For example, post-surgical review outcomes (e.g. hearing loss magnitude) for patients are directed by health policies, the outcomes of which may impact patient interaction with social services (e.g. National Disability Insurance Scheme eligibility) and the education sector (e.g. classroom amplification needs).<sup>22</sup> Moreover, a large portion of the intervention demand is shouldered by the private healthcare system. While public policy can influence these behaviours, a disconnection may emerge, intensifying the intricacies of care.

The WHO’s six system building blocks provide a health systems framework (hereafter referred to as the framework) to understand the components which define a system, whereby leadership and governance include policies and policy makers.<sup>23</sup> The framework describes health system components, which, if performing, will achieve social and financial risk protection, responsiveness, and improved health and efficiency.<sup>23</sup> An extended scope of the framework has been presented here to describe multiple components of the system which influences outcomes for EHC (table 1).

Continued reporting of high severity and chronicity of otitis media<sup>4</sup> as well as poorer life outcomes<sup>24</sup> point to a breakdown along the current EHC system for Aboriginal

**Table 1** WHO Health Systems Framework

| Health  | Social services  | Education   |
|---|--|---|
| Service delivery  | Service delivery   | Educational delivery  |
| Health workforce (e.g. General Practitioners, Ear Nose Throat specialists, Indigenous Health Workers) | Allied health workforce (e.g. Audiologists, Speech Pathologists)                       | Education workforce (e.g. teachers and teacher aides, classroom support staff, Teachers of the Deaf)    |
| Health information systems (e.g. My Health Record)  | Information systems (e.g. National Disability Insurance Scheme portal)                 | Information systems (e.g. Nationally Consistent Collection of Data for School Students with Disability) |
| Access to essential medicines (e.g. antibiotics) and hearing devices and technologies                 | Access to (re)habilitative technologies  | Access to classroom amplification or hearing technologies (e.g. Frequency modulation system)            |
| Financing   | Financing  | Financing   |
| Leadership/governance (e.g. policies; federal, state/territory, and local governments)                | Leadership/governance (e.g. policies; federal, state/territory, and local governments) | Leadership/governance (e.g. policies; federal, state/territory, and local governments)                  |

and Torres Strait Islander people. Such breakdowns can take place at a micro (service delivery), meso (health professionals) and/or macro (policy) levels. Coordinated cross-sectorial policy actions are critical to whole-system performance, however, it is unclear to what extent policy gaps are responsible for this system breakdown. Effective public policy and robust implementation are crucial to the improvement of the EHC system performance, which, in turn, may contribute to closing the gap in education and life outcomes for Aboriginal and Torres Strait Islander people.

The key objective of Indigenous Systems and Policies Improved and Reimagined for Ear and hearing care (INSPIRE) is to improve the EHC system for Aboriginal and Torres Strait Islander people through establishing nationally applicable policy solutions with strong leadership and representation (at least 50%) of Aboriginal and Torres Strait Islander ear and hearing stakeholders. The study will use a Brains Trust which will inform a culturally appropriate methodology and maintain high-quality research to deliver consensus-based policy solutions for EHC.

The key objective of the study will be achieved through a scoping review, yarning circles, and an expert Delphi process with specific aims: (1) to scope public policies in hearing health, social services and education to identify policy gaps, using the WHO framework, (2) to identify challenges and/or limitations in the policies (identified in the scoping review) in enabling accessible EHC programs/services for Aboriginal and Torres Strait Islander people and (3) to establish consensus-based EHC policy solutions for Aboriginal and Torres Strait Islander people.

## METHODS AND ANALYSIS

This multi-method study is structured within four study phases. The study is anticipated to commence in the latter period of 2023 and will be completed by late 2025.

### Phase 1: Brains Trust establishment

#### Design

In November 2023, a Brains Trust will bring together key stakeholders in EHC to work collaboratively on the development of consensus-based EHC policy solutions. The Brains Trust will provide advice and guidance for the research project to approach solving complex system issues in EHC for Aboriginal and Torres Strait Islander people. This will be achieved in a manner that considers all stakeholders, namely Aboriginal and Torres Strait Islander individuals, families and communities, health providers, government organisations, and NGOs. The Brains Trust will be hosted on Microsoft Teams, meeting at agreed times three times per calendar year.

#### Recruitment and membership

Snowballing techniques will be used to recruit Brains Trust members. The membership of the Brains Trust ( $\geq 50\%$

Aboriginal and Torres Strait Islander representation) will consist of experts in public policy and researchers with expertise and/or experience in providing hearing health, social services, and educational support for Aboriginal and Torres Strait Islander people in Australia.

#### Function

The primary function of the Brains Trust is to provide high-level expertise and advice on matters relevant to research, which aims to solve complex systemic issues in EHC for Aboriginal and Torres Strait Islander people. The Brains Trust members will consider and provide advice on overall project objectives and aims, research methods, cultural safety and appropriateness of used research methods, project alignment with key Aboriginal and Torres Strait Islander hearing health, social services, and education sector initiatives (e.g. Close the Gap Priority Reforms), and feasibility and opportunities regarding implementing evidence-based findings.

### Phase 2: scoping review

#### Design

In December 2023, a scoping review of peer-reviewed and grey literature on publicly available policies relevant to EHC (i.e. policy documents within health, social services, and education) for Aboriginal and Torres Strait Islander people across the life course will be considered. This review will be guided by Joanna Briggs Institute's methodology for conducting scoping reviews.<sup>25</sup>

#### Procedure

The first step will involve searching seven formal databases and grey literature with search strings and limits. A Macquarie University librarian will be consulted to aid search strategy design and to compile keyword phrases, MeSH terms and Boolean and proximity operators. Citations from the searches will be exported into systematic review management software Covidence and all duplicates will be removed before screening processes.

Independent reviewers (KN, YD, and RM) will screen identified records (first by abstract and title and then by full text) using a predefined eligibility criteria. The reviewers will critically appraise eligible records, and one independent reviewer (KN) will extract data from included records of which 10% will be validated by an independent reviewer (RM). Disagreements will be settled through involvement of additional reviewers (CM, KG, and CP) and discussion until consensus is reached among all the reviewers. This review process will be recorded in Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR).<sup>26</sup>

The charting tool for grey literature will include the following details: (1) document title, (2) year of publication/last updated, (3) document type, (4) setting, (5) population, (6) intention, (7) sector, and (8) system building blocks. The data extraction tool will be updated

as necessary to enable the capture of all data relevant to the review question.

### Data synthesis

Data will be synthesised according to sector (health, social services, education) and the WHO system building blocks of service delivery, workforce, information systems, medical products and technologies, financing, and leadership and governance.

### Phase 3: yarning circles

#### Design

Between February 2024 and December 2024, yarning circles will be conducted to identify challenges and/or limitations in the policies (identified in the scoping review) in enabling accessible EHC programs/services for Aboriginal and Torres Strait Islander people. Yarning is a recognised and validated Aboriginal and Torres Strait Islander communication style routinely used for qualitative research to provide a culturally safe experience for participants through ensuring culturally specific processes are followed (e.g. acknowledging cultural protocols and practices).<sup>27</sup>

#### Recruitment and selection of sample

Yarning circles will be conducted with a total of 30 stakeholders comprising four main groups (described below). The researchers will work with National Aboriginal Community Controlled Health Organisation (NACCHO) and the Aboriginal and Torres Strait Islander Education Advisory Group (ATSIEAG) to recruit participants for Groups 1–3, inviting representatives from both organisations for participation in Group 4.

Participants in Groups 1–3 will primarily be recruited from urban/regional Aboriginal Community Controlled Health Organisations (ACCHOs) across New South Wales and Western Australia, while Group 4 will consist of national representatives. Remote locations will not be considered due to the unique challenges which affect these areas.

Group 1: Eight Aboriginal and Torres Strait Islander parents/guardians who have accessed EHC on behalf of their children (<18 years) for otitis media and/or hearing loss and related impacts. This includes participants who have accessed supports within school or social services for impacts on communication and education.

Group 2: Eight Aboriginal and Torres Strait Islander adults (≥18 years) who have accessed EHC for otitis media and/or hearing loss management and/or accessed supports within tertiary education or social services for impacts on communication, education, and employment.

Group 3: Eight Chief Executive Officers from ACCHOs and Aboriginal Education Officers (≥50% Aboriginal and Torres Strait Islander representation).

Group 4: Six (in total) national representatives from NACCHO and the ATSIEAG (≥50% Aboriginal and Torres Strait Islander representation).

### Procedure

Yarning circles will be led by Aboriginal and Torres Strait Islander researcher KN and Aboriginal researcher LH, supported by a non-Indigenous researcher YD with expertise in facilitating yarning circles with Aboriginal communities. Stakeholder groups will meet in their respective groups for yarning circles facilitated in online sessions hosted on Microsoft Teams. The researchers will follow an interview guide developed with reference to Morestin's public policy appraisal tool for analysing the effectiveness and implementation of public policies.<sup>28</sup> Morestin's public policy appraisal tool considers public policy dimensions of effectiveness, unintended effects, equity, cost, feasibility, and acceptability of public policies.<sup>28</sup> The interview guide will be modified for relevance to each of the four stakeholder groups. All yarning circles will be scribed and audiotaped with signed consent from participants. Follow-up yarning circles will be held on Microsoft Teams to present key findings for verification and validity purposes. Participants will be remunerated in gift vouchers for their time and knowledge. Participant data will be deidentified to protect participant identity and encourage freedom of expression.

### Data analysis

The researchers will use the Framework Model,<sup>29</sup> a methodological approach for management and analysis of qualitative data. This model is adaptable for both deductive and inductive data analysis. The researchers will employ a deductive approach, whereby codes and themes will be predefined by dimensions for analysing public policies identified by Morestin as effectiveness, unintended effects, equity, cost, feasibility, and acceptability of public policies,<sup>30</sup> while also considering the inclusion of any emergent themes which may be identified.

The researchers will be guided by the model through the following steps: (1) verbatim transcription of audio recordings, (2) familiarisation with the interview using the audio recordings and/or transcripts, (3) independent coding, (4) development of a working analytical framework through grouping codes into categories, (5) application of the analytical framework, (6) charting the data into the framework matrix, and (7) interpreting the data.

### Phase 4: expert Delphi process

#### Design

Between January 2025 and August 2025, a Delphi process involving three rounds of feedback to gain expert consensus on nationally applicable policy solutions for improving EHC for Aboriginal and Torres Strait Islander people will be conducted. The Conducting and REporting of DELphi Studies (CREDES) recommendations will guide the expert Delphi process. The CREDES recommendations guide consistent utilisation of this technique as well as ensure that studies report these processes in a transparent manner.<sup>30</sup>

## Recruitment and selection of sample

Snowballing techniques will be used to recruit participants ( $\geq 50\%$  Aboriginal and Torres Strait Islander representation) including public policy experts (e.g. public policy makers and/or analysts), representatives from government organisations, NGOs, and researchers with expertise in hearing health, education, and social services for Aboriginal and Torres Strait Islander people.

## Procedure

The Delphi process will be conducted using management software DelphiManager (<https://www.comet-initiative.org/delphimanager/>). The panel of experts will be invited via email or telephone to participate and those who accept and provide written consent will be granted access to the electronic survey platform. Round 1 will involve ascertaining answers to open-ended questions regarding what aspects of EHC may be leveraged to enable high-quality services and care pathways for Aboriginal and Torres Strait Islander people. The questionnaire in round 1 will be informed by the themes from the yarning circles. Responses to questions will be content analysed and used to generate statements for round 2. In round 2, these statements will be sent out for the panel of experts to rate on the 5-point Likert scale (1=strongly disagree, 2=disagree, 3=do not know, 4=agree, 5=strongly agree). The 5-point Likert scale allows the responder to select 'do not know' for items outside the scope of their knowledge. Each item will be paired with an optional textbox to encourage feedback or explanations for item ratings, especially for items rated 1=strongly disagree or 2=disagree. Updated and new statements will be generated to reflect ratings and content analysis of any rating explanations provided. In round 3, participants will be invited to rerate their agreement with updated statements. Eighty percent or higher on a 5-point Likert scale in the top two measures (4=agree, 5=strongly agree) will be used to indicate consensus<sup>31</sup>. All participant responses and ratings will be deidentified. Participants are expected to be employed and will not be remunerated due to ethics of workplace gift giving.

## Data analysis

Data analysis will be conducted using IBM SPSS software (Version 28) to identify consensus ( $\geq 80\%$  in top two measures 4=agree, 5=strongly agree) and measures of central tendency (median, mean) of item ratings.

## Ethics and dissemination

This study has ethical approval from the Australian Institute of Aboriginal and Torres Strait Islander Studies Ethics Committee (REC-0172). The scoping review, yarning circles, and expert Delphi process findings will be disseminated through publications in peer-reviewed journals, presentations at research forums, and to community through yarning circle participants, expert Delphi panelists, and Brains Trust members. A synopsis of INSPIRE

and the study findings will be regularly updated on the Macquarie University HEAR Centre website.

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**Contributors** KN, KG and CM formulated the conception and design of the work. KN, KG and CM drafted the manuscript and YD, MF, HG, LH, KK, NL, RM, CP and AW edited and critically revised the manuscript for intellectual content. All authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors approved the final version to be published.

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**Competing interests** None declared.

**Patient and public involvement** Our longstanding dialogue with Aboriginal and Torres Strait Islander communities has identified the need for this study. Aboriginal and Torres Strait Islander investigators (both senior and emerging) have been engaged with this project from the inception.

**Patient consent for publication** Not applicable.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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