Characteristics and value of Aboriginal Community Controlled Health Organizations’ primary health care and their financing needs: a protocol for systematic evidence reviews

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Review objective and questions

The objective of this comprehensive systematic review is to describe and assess the unique characteristics, impact (experiences of meaningfulness and measures of effects) and costs of primary health care (PHC) programs/services delivered by Aboriginal Community Controlled Health Organizations (ACCHOs) for Aboriginal and Torres Strait Islander people in Australia as well as the limitations of ACCHOs financing arrangements and options for enhancing them.

The review questions are:
1. How do Aboriginal and Torres Strait Islander patients, their family members and PHC providers experience or perceive:
a) the characteristics (positive and negative) and meaningfulness/value of PHC provided by ACCHOs; and
b) the differences between the characteristics and meaningfulness/value of PHC provided by ACCHOs and other Australian PHC providers?

2. What are effects of ACCHOs’ PHC programs/services on:
   a) Aboriginal and Torres Strait Islander peoples’ access to PHC;
   b) Social determinants of Aboriginal and Torres Strait Islander peoples’ health; and
   c) Aboriginal and Torres Strait Islander peoples’ health status?

And how do these effects compare with those of other Australian PHC providers?

3. How do costs of providing PHC programs/services in the ACCHO setting(s) differ from those of other Australian PHC provider settings?

4. What are the perceived limitations of financing arrangements for ACCHOs and the views about potential options for addressing them?

**Background**

In 2008 the Council for Australian Governments (COAG) committed to addressing health disparity between Aboriginal and Torres Strait Islander and non-Indigenous Australians by adopting the *Closing the Gap* policy initiative.¹ Targets for closing the gaps were set for a range of health and wellbeing indicators including for life expectancy and child mortality.² Whilst funding for specific government monitoring of *Closing the Gap* has been withdrawn (in June 2014), there has been some government investment in evaluating these indicators. The data show significant reduction in child mortality and early improvements in rates of immunization in the Aboriginal and Torres Strait Islander populations are evident.³ However, most indicators show little convergence to equity in outcomes. Wide disparity remains in the health status indicators of both children (0-17 years) and adults.² For example, the life expectancy gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians is estimated to be 10.6 years for males and 9.5 years for females.² The need to prioritize investment in identifying and implementing more effective measures in the health and other sectors to eradicate racially based health inequality remains urgent.³

Chronic diseases are responsible for approximately 70% of the life expectancy gap between Aboriginal and Torres Strait Islander and non-Indigenous Australians.⁴ These diseases share a number of common lifestyle risk factors, most notably, poor nutrition and lifestyle factors, such as physical inactivity, alcohol misuse and tobacco smoking.⁴,⁵ As in other countries, social determinants of health, including low income, lack of education, poor living conditions and social exclusion are key contributors to the high level of chronic disease and poorer health outcomes among Aboriginal and Torres Strait Islander people in Australia.⁶

Primary health care is recognized by the World Health Organization (WHO) as the best setting to manage chronic diseases.⁷ Aboriginal and Torres Strait Islander peoples’ conceptualization of PHC, like Aboriginal and Torres Strait Islander peoples’ definition of health,⁸ is different and broader than the WHO Alma Ata definition.⁷ The Aboriginal and Torres Strait Islander concept of PHC emphasizes that services/programs should be defined by and respond to the needs of the communities they serve, and be targeted not only at individuals but also their families and communities.⁹ The National Aboriginal Community
Controlled Health Organization (NACCHO), a leading peak body representing Aboriginal and Torres Strait Islander Australians, defines PHC as:

“...a holistic approach which incorporates body, mind, spirit, land, environment, custom and socio-economic status... an Aboriginal cultural construct that includes essential, integrated care based upon practical, scientifically sound and socially acceptable procedures and technology made accessible to Communities as close as possible to where they live through their full participation in the spirit of self-reliance and self-determination... it is a comprehensive approach to health in accordance with the Aboriginal holistic definition of health.”

In addition to medical care, which includes the management of chronic illnesses, Aboriginal and Torres Strait Islander peoples’ concept of PHC recognizes the provision of services relating to environmental health, pharmaceuticals, counseling, preventive medicine, health education and promotion, rehabilitative services, antenatal and postnatal care, maternal and child care, as well as programs and necessary supports for social and emotional wellbeing.

Data on utilization of PHC services in Australia shows that Aboriginal and Torres Strait Islander Australians are less inclined than non-Indigenous Australians to use PHC services. The lower than expected utilization of PHC is reflected in statistics on causes of hospitalization; Aboriginal and Torres Strait Islander people are hospitalized for potentially preventable conditions nearly four times more often than non-Indigenous Australians. They are also less likely to use preventative healthcare services. Studies exploring the reasons for this lower utilization of PHC have identified a range of supply factors (including distance, culturally inappropriate services and racism) and demand factors (including insufficient time, financial resources and knowledge, and other responsibilities) at play.

It is well documented that PHC is vital for improving and sustaining improvements in population health. There is strong evidence that a long-term relationship between patients and their primary care provider is protective of good health, facilitates improved outcomes from clinical problems and enhances health system efficiency. Increasing Aboriginal and Torres Strait Islander peoples’ access to appropriate effective PHC, and ensuring they can remain engaged with their PHC providers through their life-course, are therefore key to improving their health outcomes. This is well understood by policy makers and community leaders in Australia and acknowledged in the Aboriginal and Torres Strait Islander Health Plan 2013-2023.

In Australia, general practitioners (GP) are the primary providers of PHC. There are four avenues of access to PHC services available to Aboriginal and Torres Strait Islander people in Australia. They are: (i) GP clinics (private providers); (ii) government clinics delivering services to all Australians; (iii) government clinics funded by government specifically to provide services for Aboriginal and Torres Strait Islander people; and (iv) ACCHOs. The state funded PHC services designed specifically to provide services for Aboriginal and Torres Strait Islander people and ACCHOs PHC are sometimes referred to as Aboriginal Medical Services (AMS). However, it is important to distinguish state funded PHC services designed to cater for Aboriginal and Torres Strait Islander people from ACCHOs and the latter are the focus of this review. Aboriginal Community Controlled Health Originations (ACCHOs) are referred to by some authors in literature relating to PHC and AMS as Aboriginal Community Controlled Health Services (ACCHSs).
The National Aboriginal Community Controlled Health Organization, which uses the term Aboriginal inclusively to refer to Aboriginal and Torres Strait Islander Peoples, defines an ACCHO as:

“an incorporated Aboriginal organization, initiated by a local Aboriginal community, based in a local Aboriginal community, governed by an Aboriginal body which is elected by the local Aboriginal community, delivering a holistic, culturally appropriate health service to the Community, which controls it.”

The term Aboriginal Community Control has its genesis in Aboriginal and Torres Strait Islander Australians’ right to self-determination. Community activists established the first community controlled service at Redfern in 1971 with the aim of improving access to appropriate health services for local Aboriginal people. As Thompson et al. note, the rationale for the establishment of the first ACCHO was failure of the existing PHC system to provide Aboriginal and Torres Strait Islander Australians with appropriate affordable services. At that time, Medicare had not yet been created, and hence the only option for the majority of Aboriginal and Torres Strait Islander families, who had low or meager income levels, was to attend emergency department services, even for their most basic health needs, health prevention and promotion services. Within a year of beginning its service provision for Aboriginal and Torres Strait Islander people Redfern had become so popular that it was unable to meet the demand for its services. Federal government funding was allocated to the Redfern service in the following year and since then the number of ACCHOs has grown.

There are approximately 150 ACCHOs providing PHC services in communities across Australia. The ACCHOs range from large multi-functional services employing several medical practitioners and providing a wide range of services, to small services without locally based medical practitioners, which rely on Aboriginal health workers and/or nurses to provide the bulk of primary care services, often with a preventive, health education focus.

Aboriginal Community Controlled Health Organizations rely primarily on government (Commonwealth and State) funding and receive this through three main channels:

- Medicare, including fees claimed for services listed on the Medical Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS);
- Program funding to deliver specific services/activities that are defined by government and for which there is a high level of reporting obligation; and
- Core service funding (often called PHC funding).

Aboriginal Community Controlled Health Organizations have a leading role in achieving the policy vision of increasing Aboriginal and Torres Strait Islander peoples’ access to comprehensive appropriate PHC services. The Australian Government has committed to allocating resources to facilitate ACCHOs playing a lead role. For example, the Aboriginal and Torres Strait Islander Health Plan 2013-2023 states that, “ACCHSs will continue to be supported to fulfill their pivotal role in improving Aboriginal and Torres Strait Islander health.”

This review is part of the work of a Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange (CREATE). The CREATE program has been established to: (i) use existing evidence, and where possible develop new evidence to inform guidelines, policies and/or other tools focused on improving care and outcomes of Aboriginal
and Torres Strait Islander people with or at risk of developing a chronic disease; and (ii) strengthen the capacity of Aboriginal and Torres Strait Islander health service providers and researchers to conduct research and use evidence to improve health outcomes. The collaborating institutions of the CREATE program are the South Australian Health and Medical Research Institute (SAHMRI – Wardliparingga Aboriginal Research Unit), NACCHO and the University of Adelaide (School of Population Health and Joanna Briggs Institute).

In 2014, the lead author (JSG) was involved in a series of conversations with representatives from the Aboriginal health sector to understand the issues affecting community controlled primary health service delivery and sector research priorities. Representatives from NACCHO, its State and Territory affiliates, and their member organizations informed the discussions. This information exchange formed part of the Phase 1 activities of CREATE.

During the information exchange, sector representatives explained that whilst there is a policy commitment to building the ACCHO sector, in practice individuals working in ACCHOs find it difficult to access sufficient funding to cover the costs of the services that they provide and those not provided but that are still required to meet the holistic health needs of Aboriginal and Torres Strait Islander people. Furthermore, they explained that ACCHOs operate in a climate of uncertainty surrounding future funding, and this undermines efficient planning for the delivery of comprehensive PHC. The sector representatives also suggested that there remain inefficiencies in funding arrangements for ACCHOs, including the plethora of funding sources (multiple program funding sources referred to as "too many buckets") and very high levels of reporting obligations, which elevate administration costs. Additionally, the Aboriginal health sector representatives indicated that there seems to be a lack of understanding in government decision-making circles about:

i. The characteristics/features of PHC provided by ACCHOs for Aboriginal and Torres Strait Islander people;
ii. How Aboriginal and Torres Strait Islander people experience the meaningfulness/value of ACCHOs’ PHC;
iii. The effects of ACCHOs’ PHC on Aboriginal and Torres Strait Islander peoples’ access to PHC services, on the social determinants of Aboriginal Torres Strait Islander peoples’ health, and on Aboriginal and Torres Strait Islander peoples’ health status
iv. The ACCHOs funding needs, including their unique costs and the limitations of funding arrangements for ACCHOs.

The sector representatives suggested that this lack of understanding may be a factor behind the resource shortages experienced by many ACCHOs and that providing evidence on these questions may inform the creation of more appropriate funding mechanisms and adequate flows for the sector.

The three evidence reviews described in this protocol are designed to respond to the Aboriginal health sector identified knowledge gap described above. The results of the evidence reviews have the potential to inform more appropriate funding mechanisms for ACCHOs that can generate sufficient and sustainable funding for the delivery of appropriate comprehensive PHC. In addition they have the potential to contribute to building more appropriate and comprehensive PHC for Aboriginal and Torres Strait Islander people across the PHC health system. This will be achieved by using the findings of the reviews of the evidence on ACCHOs’ PHC to:
• Make recommendations to government decision makers working on policy and funding of ACCHOs and the Aboriginal primary health sector about options to enhance ACCHOs funding arrangements.
• Draw inferences for health care practitioners involved in PHC provision for Aboriginal and Torres Strait Islander people in Australia about lessons they should learn from ACCHOs about how to provide care for Aboriginal and Torres Strait Islander people.
• Identify gaps in the evidence base relating to ACCHOs characteristics, value, effects and financing needs that need to be addressed through primary research to build the evidence base required to optimize resource allocation and health outcomes in the Aboriginal primary health sector.

An initial cursory exploration of literature was conducted to establish whether there are studies with findings available to address the review questions and whether a systematic review addressing the knowledge gap to be addressed has been published or is underway. A minimum of two studies matching the inclusion criteria for the four review questions was found. Two reviews addressing similar questions to the ones to be addressed by the proposed reviews were identified. One is a recently published (2014 in the MJA) opinion piece21 informed by a literature review, which was designed to stimulate debate. The publication of this article further highlights the importance of gathering and interpreting evidence for decision makers at this juncture, about the value and nature of ACCHOs' PHC, ACCHOs funding needs and options for meeting them. The other review identified is a systematic review15 that had a similar but narrower objective to the proposed review. This review was commissioned by the Australian government and conducted by the Deebler Institute for Health Policy Research and Combined Universities Centre for Rural Health. The questions it set out to address were: Is there any peer-reviewed published evidence on the relative effectiveness of ACCHOs in Australia compared with mainstream services? What does it say? What is the quality of the evidence? The main findings of this review, which is not in the public domain, were: (i) there is some evidence that ACCHOs have made a substantial contribution to increasing access to appropriate PHC services in the Aboriginal and Torres Strait Islander populations; (ii) there is some evidence that ACCHOs and other AMSs may have unique cost drivers and higher costs than mainstream services; (iii) there is a dearth of evidence on the relative effectiveness and cost effectiveness of ACCHOs compared to mainstream services; and (iv) there is probably additional literature existing in grey sources not identified and included in the review.15 One limitation of this systematic review,15 from the perspective of addressing the knowledge gap identified by the Aboriginal health sector described above, is the use of the Aboriginal and Torres Strait Islander Health Performance Framework22 to define the outcomes for which measures of ACCHOs' PHC effects/relative effects were sought and analyzed. This means that it may have excluded potential additional measures of importance to Aboriginal people. A second limitation of this review is that it included only peer reviewed publications when, as the authors acknowledged,15 a substantial amount of the evidence relating to ACCHOs lies in grey literature sources.

Keywords
PHC; Aboriginal community controlled health service; ACCHO; ACCHS; Indigenous Health; Health services research; PHC policy
Inclusion criteria

Q1 - How do Aboriginal and Torres Strait Islander patients, their family members and PHC providers experience or perceive:

a) the characteristics (positive and negative) and meaningfulness/value of PHC provided by ACCHOs; and

b) the differences between the characteristics and meaningfulness/value of PHC provided by ACCHOs and other Australian PHC providers?

Types of participants/population

- Aboriginal and/or Torres Strait Islander Australian patients and/or their family members reporting experiences or perceptions of care provided by one or more ACCHO, AND/OR
- Australian health care providers and/or managers reporting experiences or perceptions of care provision in any one or more ACCHO, AND/OR
- Aboriginal and/or Torres Strait Islander Australian patients and/or their family members reporting experiences or perceptions of care provided by one or more ACCHO compared to care provided by another other PHC provider type, AND/OR
- Australian health care providers and/or managers reporting experiences or perceptions of care provided by one or more ACCHO compared to care provided by another PHC provider type.

Phenomenon of interest

The phenomenon of interest for the review of qualitative evidence are experiences or perceptions of:

(i) the characteristics/attributes (positive and negative) and meaningfulness of PHC provided for Aboriginal and Torres Strait Islander people by ACCHOs in Australia;

(ii) how the characteristics and meaningfulness of ACCHOs’ PHC differ from characteristics and meaningfulness of other PHC provider types in Australia.

To be included a study must report at least one finding for any one or more of the following phenomenon of interest:

- Nature/characteristics and/or meaningfulness of care provided by one or more ACCHO or one ACCHO compared to another
- How the nature/characteristics and/or meaningfulness of care provided by one or more ACCHO compares with the nature/characteristics and/or meaningfulness of care provided for Aboriginal or Torres Strait Islander people by another PHC provider type.

Context

- PHC delivery in one or more ACCHO setting, or ACCHO setting compared to another type of PHC setting anywhere in Australia.

Study design

- A qualitative research design OR
- A case study design that incorporated qualitative data gathering (e.g. data from focus groups or interviews) OR
- A mixed method study design that incorporated qualitative data gathering (for example holistic evaluations of primary healthcare programs).
Studies will be excluded if they include participants reporting experiences or perceptions of PHC provision for Aboriginal and Torres Strait Islander people in a range of PHC provider settings, and it is not possible to identify and extract the experiences/perceptions that relate to ACCHOs.

Q2. What are effects of ACCHOs’ PHC programs/services on:
   a) Aboriginal and Torres Strait Islander peoples’ access to PHC;
   b) social determinants of Aboriginal and Torres Strait Islander peoples’ health; and
   c) Aboriginal and Torres Strait Islander peoples’ health status?
And how do these effects compare with those of other Australian PHC providers?

**Types of participants/population**
- Aboriginal and Torres Strait Islander Australians.
- Studies that include diverse population groups if they report results separately for Aboriginal and Torres Strait Islander Australians.

**Intervention**
- Any ACCHO’s PHC program or service provided for Aboriginal and Torres Strait Islander Australians.

**Comparators**
- No comparator (i.e. studies measuring effects of one or more ACCHO PHC program[s]/service[s] before and after the program[s]/service[s] will be included)
- Any other PHC provider type
- A program/serviced provided in another ACCHO setting (i.e. comparison of effects of a program delivered in one ACCHO setting compared to another).

**Outcomes**
The details of the outcomes and outcome measures to be sought will be finalized once the review of qualitative evidence addressing question one has been completed. This is because we seek to include outcomes and measures that findings from the review of the qualitative evidence suggest are important to measure to establish the extent and nature of ACCHOs’ effects/impacts. The outcomes will cover:
- Indicators of PHC access including of the three dimensions of access identified by Thiede et al.23 namely availability (having services available at the right place and time); affordability (free or low cost services); and acceptability (including not limited to cultural acceptability);
- Process indicators of PHC quality;
- Indicators of the social determinants of Aboriginal and Torres Strait Islander peoples’ health including, but not limited to, employment status, educational attainment, qualifications and social inclusion;
- Indicators of Aboriginal and Torres Strait Islander people’s health status.

**Study design**
- All types of quantitative study designs (including audit based studies) and the quantitative component of mixed method studies.
Q3. How do costs of providing PHC programs/services in the ACCHO setting(s) differ from those of other Australian PHC provider settings?

**Types of participants/population**
- ACCHOs and other providers delivering PHC for Aboriginal and Torres Strait Islander people in Australia.

**Intervention**
- Any PHC program or service (or combination) provided in an ACCHO setting.

**Comparator**
- Any PHC program or service (or combination) provided in any other PHC provider setting.

**Outcomes**
- Differences in resource use.
- Differences in costs.

**Study design**
- Any type of costing or economic evaluation study measuring and comparing resource use and/or cost, including model based studies.

Q4. What are the perceived limitations of current financing arrangements for ACCHOs and the views about potential options for addressing them?

**Types of participants/population**
- PHC providers and managers.
- Individuals working in Aboriginal health sector policy and financing, for example, in government, NACCHO, its affiliates and community based organizations.

**Phenomenon of interest**
- Experiences and perspectives of the limitations and/or weaknesses in the funding arrangements for ACCHOs including, but not limited to: (i) inefficiencies in the processes for accessing and reporting on funding received from government; (ii) differences between the services within ACCHOs that are funded by the government and what ACCHOs deliver; (iii) gaps between the amount government pays ACCHOs to deliver services or programs and the cost of services or program provision; and (iv) restrictions imposed by the funding mechanisms on ACCHOs’ ability to respond to community needs, and/or recommendations for addressing the identified limitations.

**Context**
- Financing arrangements for ACCHOs in Australia.

**Study design**
- All qualitative study designs will be considered as well as qualitative components of mixed method studies.
- Text based opinion if insufficient primary research is identified.
Methods

The sequential process for the review is as follows (see also Figure 1):

- **Step 1** – Protocol development and submission for publication in the JBI Database of Systematic Reviews and Implementation Reports
- **Step 2** - Search for studies.
- **Step 3** – Study selection, critical appraisal, data extraction, data analysis/synthesis and write-up of findings for the review of qualitative evidence, addressing question one.
- **Step 4** - Study selection, critical appraisal, data extraction, data analysis/synthesis and write-up of findings for the review of quantitative evidence, addressing question two.
- **Step 5** – Study selection, critical appraisal, data extraction, data analysis/synthesis and write-up of findings for the review of quantitative evidence, addressing questions three and four using economic, quantitative, qualitative and if required textual opinion evidence.

Three distinct yet interrelated articles reporting the results of the review will be produced from the systematic evidence reviews. The first will present the findings from the review of qualitative evidence, addressing review question one. The second will present the findings from the review of quantitative evidence addressing review question two. The third will present the findings from the review of the economic evidence, addressing the review questions three and four.

Search strategy

One search for studies matching the inclusion criteria for the review questions will be conducted (see Figure 1 which shows the process for the proposed comprehensive review). Studies in English published from 15 April 1971- in commercial and grey literature will be sought. The start date aligns with the establishment of the first community controlled health service (1971).

A four-step search strategy will be used. First, an initial limited search of PubMed and CINAHL will be undertaken followed by an analysis of the text words contained in the title and abstract, and of the index terms used to describe articles. Second, a search will be undertaken using all identified keywords and index terms across all included databases, websites and search engines. Third, the reference lists of the articles selected for critical appraisal and of systematic and literature reviews addressing one or more of the review questions published from 2012 to 2014 will be searched for studies matching the inclusion criteria. Finally, Aboriginal health sector and research experts, including those from the CREATE leadership group, will be provided with the list of studies identified from the databases and hand search and asked to identify studies not identified by the search.

The databases to be searched for studies published in commercial and grey literature are: PubMed, Scopus, Healthbusinesselite, Econ Lit, Informit (Indigenous peoples’ database selection), Australian Indigenous Health Infonet Health Bibliography and Health Bulletin.

Trove (National Library of Australia) will be searched to identify relevant studies published as dissertations (PhD, Masters or Honours).
The websites to be searched are: Australian Policy Online’ Centre for Aboriginal Economic Policy and the Lowitja Institute.

The Google Scholar (advanced) search engine will also be used in the search.

A librarian from Adelaide University will assist the lead reviewer with the development of the search strategies for each of the databases. The lead reviewer will conduct the search, creating a database of studies potentially matching the inclusion criteria in endnote. Table 1 shows the initial keywords to be used in the database search. An Endnote database of the abstract records of studies identified by the search as potentially matching the inclusion criteria will be created and used for the study selection.

Table 1: Initial exploratory search terms

<table>
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<tr>
<th>Population of interest</th>
<th>Setting/intervention</th>
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With respect to study selection, for each question to be addressed in the evidence reviews, abstracts will be assessed against the inclusion criteria, and full text articles of studies that clearly match the inclusion criteria and for which there is uncertainty about whether they do will be retrieved. Articles that on full text examination do not match the inclusion criteria will be excluded, and the reasons for exclusion noted. The remaining articles (that do meet the inclusion criteria) will be set aside for critical appraisal and inclusion in the review.

Assessment of methodological quality

Studies matching the inclusion criteria for the reviews will be assessed using the most appropriate tool from the suite of critical appraisal tools in the Joanna Briggs Institute System for the Unified Management, Assessment and Review of Information (JBI-SUMARI). More specifically, studies contributing qualitative evidence will be appraised using the tool in the JBI Qualitative Assessment and Review Instrument (JBI-QARI) (Appendix I). Studies contributing quantitative evidence on ACCHO PHC effects, costs or/and expenditure will be appraised using the most appropriate instrument from the JBI Meta-Analysis of Statistics Assessment and Review Instrument (JBI-MASTARI) (Appendix II) or JBI Analysis of Cost, Technology and Utilization Assessment and Review Instrument (JBI-ACTUARI) (Appendix III). If model based quantitative studies with measures for economic outcomes are included, they will be assessed using the Philips tool, as recommended by the most recent JBI guidance for appraisal of economic evaluation evidence. If text based opinion addressing review question
four is included it will be appraised using the tool in the JBI Narrative, Opinion and Text Assessment and Review Instrument (JBI-NOTARI) (Appendix IV).

Two reviewers will critically appraise the included studies and work independently. Any disagreements will be resolved by discussion or by consulting a third party (another reviewer in the review team).

At the time of writing this protocol, a tool, based on culturally appropriate and respectful research from an Aboriginal perspective, designed for critically appraising studies with Aboriginal participants, was being developed within the CREATE project. Should the tool become available before the critical appraisal is conducted for any one of these reviews, it will be used in addition to the most appropriate JBI tool for the quality assessment.

Data extraction

Qualitative data will be extracted using the standardized data extraction form embedded in JBI-QARI (Appendix V). The data extracted will include details about the phenomenon of interest as well as study characteristics including population demographics, methods and context/setting.

Quantitative data on ACCHOs’ PHC effects will be extracted using the JBI-MASTARI data extraction tool (Appendix VI). The data extracted will include the measures of effects for the outcomes defined as relevant to include, as well as details about the study characteristics including population demographics, the nature of the PHC intervention, methods (including time period of analysis) and context/setting.

Quantitative economic data will be extracted using either the JBI-MASTARI data extraction tool (Appendix VI), or the JBI-ACTUARI data extraction tool (Appendix VII), depending on which study/tool is most appropriate.

If expert opinion is included it will be extracted using the data extraction tool in the JBI-NOTARI module of the JBI SUMARI software (Appendix VIII).

Two reviewers will perform the data extraction with cross checking of 20 percent of studies for comprehensiveness and accuracy.

Data synthesis

Q1. How do Aboriginal and Torres Strait Islander patients, their family members and PHC providers experience or perceive:

a) the characteristics (positive and negative) and meaningfulness/value of PHC provided by ACCHOs; and

b) the differences between the characteristics and meaningfulness/value of PHC provided by ACCHOs and other Australian PHC providers?

The JBI meta-aggregation approach will be used to synthesize the qualitative evidence addressing this question. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings rated according to their quality, and categorizing these findings on the basis of similarity of meaning. These categories will then be subjected to a meta-synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-
based practice. Where textual pooling is not possible the findings will be presented in narrative form. Four segregated synthesis/meta-aggregations will be performed. The first meta-aggregation will synthesize the findings extracted from the included studies on the characteristics of ACCHOs’ PHC. The second will synthesize the findings extracted from the included studies on the meaningfulness of ACCHOs’ PHC. The third will synthesize the extracted findings relating to characteristics of ACCHOs’ PHC compared to the characteristics of care provided by other PHC providers. The fourth will synthesize the findings extracted from included studies on the meaningfulness of ACCHOs’ PHC compared to the meaningfulness of care provided for Aboriginal and Torres Strait Islander people by other PHC providers.

Q2. What are effects of ACCHOs’ PHC programs/services on:
   a) Aboriginal and Torres Strait Islander peoples’ access to PHC;
   b) Social determinants of Aboriginal and Torres Strait Islander peoples’ health; and
   c) Aboriginal and Torres Strait Islander peoples’ health status?
And how do these effects compare with those of other Australian PHC providers?
Tables and narrative, and data permitting meta-analysis, will be used to synthesize quantitative evidence addressing this question. If meta-analysis is performed it will be conducted using the JBI MASTARI tool for pooling measures of effect. Effect sizes will be computed using the indicator relevant to the type of data being synthesized, and the effect sizes presented with their 95% confidence intervals.

Q3. How do costs of providing PHC programs/services in the ACCHO setting(s) differ from those in other Australian PHC provider settings?
Tables and narrative will be used to synthesize the identified and included evidence on differences in resource use and costs of ACCHOs compared to other PHC providers in Australia. Where appropriate the findings will be categorized using the JBI Dominance Ranking Matrix (DRM) tool for synthesizing findings from primary research on costs and cost effectiveness.

Q4. What are perceived limitations of the current financing arrangements for ACCHOs and the views about potential options for addressing them?
The JBI meta-aggregation approach will be used to synthesize the identified and included qualitative evidence for this question.
The review results for the four questions will be used to develop a summary of knowledge and knowledge gaps relating to ACCHOs’ PHC characteristics value and funding needs. This will be shared with Aboriginal health sector representatives in the CREATE leadership group to inform sector advocacy for health policy and practice reform, and future research.
Step 1:
- Engagement with Aboriginal health sector representatives and research experts to understand the knowledge gap to be addressed by the review
- Protocol development including definition of review questions inclusion criteria
- Presentation of draft protocol to Aboriginal Health Sector representatives in CREATE leadership group for input (13 March 2015)
- Finalisation of protocol for the review, submission to JBI library, for publication

Step 2:
- Search (four steps initial exploration to identify appropriate key words for database searchers, database search, hand search and consultation with experts to identify missed studies)
- Compilation of endnote database including records of studies potentially matching the inclusion criteria

Step 3 – Review of qualitative evidence addressing Q1 on ACCHS PHC characteristics and value
- Selection of studies matching inclusion criteria
- Critical appraisal
- Data extraction
- Synthesis of findings using JBI meta-aggregation approach
- Write up of review process and findings for Q 1 for publication
- Use findings from review one on inferences for what outcomes it is important and feasible to measure to understand scope and size of ACCHS PHC effects to define outcomes for review of evidence to address Q2

Step 4: Review of quantitative evidence addressing Q2 on ACCHS PHC effects
- Selection of studies matching inclusion criteria
- Critical appraisal of studies
- Data extraction
- Synthesis of findings using tables narrative and if data permits meta-analysis
- Write up of review process and findings for Q2

Step 5: Review of mixed economic evidence (quantitative and qualitative evidence) addressing respectively Q 3 on ACCHS unique costs and Q4 on ACCHS financing mechanism limitations
- Selection of studies matching inclusion criteria
- Critical appraisal
- Data extraction
- Synthesis of findings using JBI meta-aggregation approach for qualitative evidence and tables and narrative for resource use and cost evidence
- Write up of review process and findings for3 &4 for publication

Figure 1: Steps in the proposed systematic review of the evidence relating to ACCHO PHC

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Conflicts of interest

The authors declare that there are no conflicts of interest.

Acknowledgements

The authors would like to thank the Aboriginal health sector representatives in the CREATE leadership group for contributing their time and knowledge in this protocol's development. Input and guidance from Aboriginal community controlled sector representatives will be sought and integrated at each step in the review process. The CREATE leadership group is the oversight body for the review, and will provide input at critical stages of the systematic review process. The purpose of the leadership group’s involvement is to ensure that expert knowledge from individuals working within the Aboriginal health sector, particularly in community controlled services, informs the interpretation of the evidence and drawing of conclusions and recommendations. The authors would also like to thank Dr Brita Pekarsky, Dr David Scrimgeour and Ms Renee Williams for their expert knowledge relating to funding and service delivery in the Aboriginal primary health sector in Australia that helped shape this protocol.

This systematic review project is supported by the Australian National Health and Medical Research Council (NHMRC) (GNT1061242). The contents of the published material are solely the responsibility of the Administering Institution, a Participating Institution or individual authors and do not reflect the views of NHMRC.
References

commissioned by the Australian Government and prepared by the Combined Universities Centre for Rural Health and Deeble Institute for Health Policy Research. 2014.
Appendix I: JBI Qualitative Assessment and Review Instrument

(JBI-QARI) study appraisal tool

JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research

Reviewer __________________________ Date __________________________

Author __________________________ Year ______ Record Number ______

1. Is there congruity between the stated philosophical perspective and the research methodology? □ Yes □ No □ Unclear □ Not Applicable

2. Is there congruity between the research methodology and the research question or objectives? □ Yes □ No □ Unclear □ Not Applicable

3. Is there congruity between the research methodology and the methods used to collect data? □ Yes □ No □ Unclear □ Not Applicable

4. Is there congruity between the research methodology and the representation and analysis of data? □ Yes □ No □ Unclear □ Not Applicable

5. Is there congruity between the research methodology and the interpretation of results? □ Yes □ No □ Unclear □ Not Applicable

6. Is there a statement locating the researcher culturally or theoretically? □ Yes □ No □ Unclear □ Not Applicable

7. Is the influence of the researcher on the research, and vice- versa, addressed? □ Yes □ No □ Unclear □ Not Applicable

8. Are participants, and their voices, adequately represented? □ Yes □ No □ Unclear □ Not Applicable

9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? □ Yes □ No □ Unclear □ Not Applicable

10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? □ Yes □ No □ Unclear □ Not Applicable

Overall appraisal: □ Include □ Exclude □ Seek further info. □

Comments (Including reason for exclusion)

________________________________________________________________________

________________________________________________________________________
# Appendix II: JBI Meta-Analysis of Statistics Assessment and Review Instrument

(JBI-MAStARI) study appraisal tools

## JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was the assignment to treatment groups truly random?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Were participants blinded to treatment allocation?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Was allocation to treatment groups concealed from the allocator?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Were the outcomes of people who withdrew described and included in the analysis?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Were those assessing outcomes blind to the treatment allocation?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Were the control and treatment groups comparable at entry?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Were groups treated identically other than for the named interventions</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Were outcomes measured in the same way for all groups?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Were outcomes measured in a reliable way?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Was appropriate statistical analysis used?</td>
<td>☐</td>
<td>☑</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Overall appraisal:  Include ☐ Exclude ☑ Seek further info. ☐

Comments (Including reason for exclusion)

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

DOI: 10.11124/jbisrir-2015-2277
# JBI Critical Appraisal Checklist for Comparable Cohort/ Case Control

**Reviewer** ____________________________ **Date** ____________________________

**Author** ____________________________ **Year** ______ **Record Number** ______

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is sample representative of patients in the population as a whole?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Are the patients at a similar point in the course of their condition/illness?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Has bias been minimised in relation to selection of cases and of controls?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are confounding factors identified and strategies to deal with them stated?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Are outcomes assessed using objective criteria?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Was follow up carried out over a sufficient time period?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Were the outcomes of people who withdrew described and included in the analysis?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Were outcomes measured in a reliable way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Was appropriate statistical analysis used?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overall appraisal:** Include [ ] Exclude [ ] Seek further info. [ ]

**Comments (Including reason for exclusion)**

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
**JBI Critical Appraisal Checklist for Descriptive / Case Series**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was study based on a random or pseudo-random sample?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Were the criteria for inclusion in the sample clearly defined?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Were confounding factors identified and strategies to deal with them stated?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Were outcomes assessed using objective criteria?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. If comparisons are being made, was there sufficient descriptions of the groups?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Was follow up carried out over a sufficient time period?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Were the outcomes of people who withdrew described and included in the analysis?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Were outcomes measured in a reliable way?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Was appropriate statistical analysis used?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

---

**doi: 10.11124/jbisrir-2015-2277**
Appendix III: JBI Analysis of Cost, Technology and Utilization Assessment and Review Instrument (JBI-ACTUARI) study appraisal tool

### JBI Critical Appraisal Checklist for Economic Evaluations

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is there a well defined question?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Is there comprehensive description of alternatives?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Are all important and relevant costs and outcomes for each alternative identified?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Has clinical effectiveness been established?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Are costs and outcomes measured accurately?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Are costs and outcomes valued credibly?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Are costs and outcomes adjusted for differential timing?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. Is there an incremental analysis of costs and consequences?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or consequences?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Do study results include all issues of concern to users?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Are the results generalisable to the setting of interest in the review?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall appraisal: Include □ Exclude □ Seek further info. □

Comments (Including reasons for exclusion)

________________________________________________________________________

________________________________________________________________________

doi: 10.11124/jbisrir-2015-2277
### Appendix IV: JBI Narrative, Opinion and Text Assessment and Review Instrument

(JBI-NOTARI) study assessment tool

#### JBI Critical Appraisal Checklist for Narrative, Expert opinion & text

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the source of the opinion clearly identified?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Does the source of the opinion have standing in the field of expertise?</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>3. Are the interests of patients/clients the central focus of the opinion?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Is the opinion's basis in logic/experience clearly argued?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is the argument developed analytically?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Is there reference to the extant literature/evidence and any incongruency with it logically defended?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Is the opinion supported by peers?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall appraisal: [ ] Include [ ] Exclude [ ] Seek further info [ ]

Comments (Including reason for exclusion)

________________________________________________________________________

________________________________________________________________________
Appendix V: JBI-QARI data extraction tool

### JBI QARI Data Extraction Form for Interpretive & Critical Research

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
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<tbody>
<tr>
<td>Reviewer</td>
<td>Date</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
</tr>
<tr>
<td>Journal</td>
<td>Record Number</td>
</tr>
</tbody>
</table>

#### Study Description

**Methodology**

__________________________

**Method**

__________________________

**Phenomena of interest**

__________________________

**Setting**

__________________________

**Geographical**

__________________________

**Cultural**

__________________________

**Participants**

__________________________

**Data analysis**

__________________________

**Authors Conclusions**

__________________________

**Comments**

__________________________

Complete: Yes ☐ No ☐
Appendix VI: JBI-MAStARI data extraction tool

**JBI Data Extraction Form for Experimental / Observational Studies**

<table>
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<th>Reviewer</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Year</td>
</tr>
<tr>
<td>Journal</td>
<td>Record Number</td>
</tr>
</tbody>
</table>

**Study Method**

- [ ] RCT
- [ ] Quasi-RCT
- [ ] Longitudinal
- [ ] Retrospective
- [ ] Observational
- [ ] Other

**Participants**

Setting

Population

**Sample size**

Group A ____________________  Group B ____________________

**Interventions**

Intervention A

Intervention B

Authors Conclusions:

Reviewers Conclusions:
### Study results

#### Dichotomous data

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention ( ) number / total number</th>
<th>Intervention ( ) number / total number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

#### Continuous data

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Intervention ( ) number / total number</th>
<th>Intervention ( ) number / total number</th>
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<tbody>
<tr>
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</tbody>
</table>
Appendix VII: JBI-ACTUARI data extraction tool

JBI Data Extraction Form for Economic Evaluations

Reviewer ____________________________ Date ________________

Author ______________________________ Year ________________

Journal ______________________________ Record Number ______

Method of Evaluation

Cost Minimisation ☐ Cost Effectiveness ☐

Cost Utility ☐ Cost Benefit ☐

Interventions
____________________________________________________________________________________

Comparator
____________________________________________________________________________________

Setting
____________________________________________________________________________________

Geographical
____________________________________________________________________________________

Participants
____________________________________________________________________________________

Source of effectiveness data
____________________________________________________________________________________

Authors Conclusions
____________________________________________________________________________________

Reviewers Comments
____________________________________________________________________________________

Extraction Complete Yes ☐ No ☐
Clinical Effectiveness Results

Study design

Year range of primary studies

Analysis used

Clinical outcome results

Economic Effectiveness results

Date/s of economic data

Modeling used

Measure of benefits used in economic evaluation

Direct costs

Indirect costs

Currency

Statistical analysis

Estimated benefits used in EE

Cost results

Synthesis of costs and results

Outcome category

<table>
<thead>
<tr>
<th>Clinical effectiveness</th>
<th>Key</th>
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<tr>
<td>+</td>
<td>+</td>
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<tr>
<td>0</td>
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<td>-</td>
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<table>
<thead>
<tr>
<th>Cost</th>
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<tr>
<td>+</td>
</tr>
<tr>
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<tr>
<td>-</td>
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</table>
Appendix VIII: JBI-NOTARI data extraction tool

<table>
<thead>
<tr>
<th>JBI Data Extraction for Narrative, Expert opinion &amp; text</th>
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<tbody>
<tr>
<td>Reviewer ____________________ Date ____________________</td>
</tr>
<tr>
<td>Author ____________________ Year ______ Record Number _____</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Study Description</th>
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<tbody>
<tr>
<td>Type of Text: ________________________________</td>
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<table>
<thead>
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</table>

<table>
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<th>Stated Allegiance/ Position:</th>
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</thead>
</table>

<table>
<thead>
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</table>

<table>
<thead>
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<table>
<thead>
<tr>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Logic of Argument</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Data analysis</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Authors Conclusions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reviewers Comments</th>
</tr>
</thead>
</table>

| Data Extraction Complete | Yes ☐ | No ☐ |