

BMJ Open Bladder cancer in Aboriginal and Torres Strait Islander people living in Australia: a scoping review protocol

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ABSTRACT

Introduction Bladder cancer is the third most common urological malignancy affecting Australians, with key modifiable risk factors. Aboriginal and Torres Strait Islander people suffer from a higher prevalence of cancer-modifiable risk factors, are diagnosed with bladder cancer at a younger age, and have poorer survival rates compared with the general population. A comprehensive overview of the state of current knowledge on bladder cancer in this population is required.

Methods and analysis A search of MEDLINE, CINAHL, EMBASE and Web of Science databases, along with appropriate grey literature sources will be conducted between the 1 April 2022 and 30 April 2022. The reference lists of all included studies will be reviewed for additional appropriate sources. The national bladder cancer dataset compiled by the Australian Institute of Health and Welfare will also be included as a source. All relevant sources meeting inclusion criteria, published in English, from inception onwards will be included. Dual independent screening of titles and abstracts prior to full-text review will be undertaken for all identified results during the initial searches. Preliminary findings will be reviewed with stakeholders, to seek culturally appropriate feedback on the implications of the results. Results will be reported in tabular form, accompanied by a narrative synthesis with comparisons to the wider bladder cancer population.

Ethics and dissemination Ethics review will not be required, as only publicly available data will be analysed. Findings from the scoping review will be published in a peer-reviewed journal and presented at scientific meetings to stakeholders.

INTRODUCTION

Aboriginal and Torres Strait Islander people are two distinct cultural groups that are the indigenous peoples of Australia. They consist of hundreds of diverse regional groups with their own language, history and cultural traditions. Unfortunately Aboriginal and Torres Strait Islander people have worse cancer outcomes than the general population.¹ These outcomes are broadly attributed to a higher prevalence of modifiable risk factors, poor access to health services and lower uptake of diagnostic testing. Differences in

Strengths and limitations of this study

- To our knowledge, this will be the first review to synthesise available evidence on bladder cancer among Aboriginal and Torres Strait Islander people living in Australia.
- By using a rigorous scoping review methodology, this review will map available literature in a single resource and provide stimulus for further discussion and research, by identifying the state of current knowledge and gaps within it.
- Use of multiple health database searches along with an expansive grey literature search aims to include all relevant sources of information.
- As this is a scoping review with a goal to map available evidence, rather than assess the quality of evidence, no formal quality assessment of evidence will be conducted.

the social determinants of health (SDH) that are the ongoing consequences of colonisation and racial prejudice are recognised as causes for these differences.²

Bladder cancer is the second most common urological cancer worldwide, responsible for 3% of cancer cases, and 2% of cancer-related mortality in 2020.³ In Australia generally and within Aboriginal and Torres Strait Islander people, it is the third most common urological cancer.¹ The global incidence and mortality from bladder cancer is rising, with 1.5-fold increase incidence and 1.3-fold increase mortality between 1990 and 2013, due to an increase in, and ageing of, the population.⁴ The bladder cancer outcomes for First Nations people outside Australia have been mixed. One study found that Canadian First Nations men and women had significantly lower risk, compared with non-First Nations men and women.⁵ In contrast another study found American Indian and Alaskan Native people had lower 5-year survival compared with white and Asian or Pacific Islander Americans.⁶ Aggregated data from state cancer registries in Australia found that between



2009 and 2013, the incidence of bladder cancer was the same for Aboriginal and Torres Strait Islanders and the general Australian population, however, they were diagnosed at a younger age and had lower 5-year survival.¹

The prognosis of patients with bladder cancer depends on tumour characteristics including the histological aggressiveness and the depth of infiltration. Approximately 20% of bladder cancers infiltrate the muscularis propria, which has approximately a 50% survival at 5 years despite more aggressive treatment. Delays to treatment of muscle invasive bladder cancer, particularly greater than 3 months have been associated with more advanced disease, and significantly increase mortality.⁷ Without timely treatment, high-risk non-muscle invasive bladder cancer can progress to muscle invasive disease, particularly carcinoma in situ (54% risk if untreated) and high-risk disease.⁸

Surveillance after initial treatment of non-muscle invasive bladder cancer is time intensive. While substantial variation exists between international guidelines, at least annual surveillance for 5 years after diagnosis is a common feature, with increased frequency during the initial 2 years. The American Urological Association (AUA) recommend surveillance cystoscopy at 3 months, followed by 6–9 months, and then annually for at least 5 years.⁹ The European Urology Association recommends surveillance cystoscopy at 3 months, then 1-year postsurgery, followed by annually until 5 years.¹⁰ In high-risk disease, the AUA recommends surveillance every 3–4 months for 2 years, followed by every 6 months for 2 years and then annually, while the EAU recommends surveillance cystoscopy every 3 months for 2 years, followed by every 6 months until 5 years, followed by annually thereafter.⁹

Aboriginal and Torres Strait Islander people living in Australia are variably affected by risk factors for bladder cancer. Smoking is the most common modifiable cause of bladder cancer, and the prevalence among Aboriginal and Torres Strait Islander people is almost three times the general Australian population (43% vs 15%).^{11 12} Chronic diseases, such as diabetes, have also been associated with increased prevalence and poorer prognosis of bladder cancer.^{13 14} The prevalence of diabetes among Aboriginal and Torres Strait Islander people in Australia is almost three times the general population (12.6% vs 4.3%).¹⁵ In contrast, the life expectancy of Aboriginal and Torres Strait Islander people is shorter than the general population; 71.6 (vs 80.2) years for men, and 75.6 (vs 83.4) years for women.¹⁶

Aboriginal and Torres Strait Islander people face multiple barriers to accessing health services that could delay their diagnosis and treatment for bladder cancer. Australia has a large geographical landmass, and patients in regional and remote areas often travel long distances for diagnostic and treatment services, which are more likely to be in urban areas.¹⁷ Aboriginal and Torres Strait Islander people are more likely to live in remote areas compared with the general population (21% vs 2%).²

The disparity in health outcomes attributed to Aboriginal and Torres Strait Islander people, relative to the wider Australian population is due to the difference in socioeconomic status, and racism; all consequences of colonisation.² Targeted interventions to address gaps in the SDH have become part of health service wide attempts to improve all health outcomes of Aboriginal and Torres Strait Islander people.

The Commission on the Social Determinants of Health (CSDH) was developed by WHO and provides a conceptual framework on the SDH. It has developed a multidirectional model for conceptualising the SDH, with four elements: socioeconomic and political context SDH, structural SDH, intermediary SDH and cross-cutting SDH.¹⁸ The effects of structural, intermediary and cross-cutting SDH can be assessed on an individual level for their effects on health outcomes (see table 1). Considering SDH using a list-approach, where in-text discussion of a specific determinant is scored for its inclusion is an approach used in other SDH research, and allows for clear communication of addressed issues.¹⁹

No scoping or systematic review mapping the known literature on bladder cancer in Aboriginal or Torres Strait Islanders living in Australia exists. Scoping reviews are useful for mapping the available literature on a topic, and may provide a stimulus for further investigations of gaps in knowledge.²⁰ This scoping review will synthesise and characterise the available literature on bladder cancer in Aboriginal and Torres Strait Islanders living in Australia, with a focus to identify inequities related to diagnosis, treatment and surveillance. In presenting these results, comparisons will be made to literature on the general Australian population. This review will improve understanding of any inequities in healthcare for bladder cancer, for the benefit of Indigenous and Torres Strait Islander Australian's.

Review Question: (1) What are the clinical and biological features of bladder cancer in Aboriginal and Torres Strait Islander people living in Australia, and how do they

Table 1 Social determinants of health

Structural:	Cultural and societal values	Socioeconomic position	Ethnicity	
Intermediary:	Material circumstances/geographical location	Behavioural factors	Psychosocial factors	Health system
Cross-cutting:	Social cohesion			

typically present to medical attention? (2) How do Aboriginal and Torres Strait Islander people living in Australia use medical services for the diagnosis, treatment and surveillance of bladder cancer? (3) What are the bladder cancer outcomes for Aboriginal and Torres Strait Islander people living in Australia? (4) How are inequalities in the SDH addressed when reporting on bladder cancer in Aboriginal and Torres Strait Islander people living in Australia, and how do these inequalities affect research design or interpretation of results?

METHODS

This scoping review will follow the Joanna Briggs Institute Manual for Evidence Synthesis approach to scoping reviews along with the Preferred Reporting Items for Systematic Reviews and Meta-analyses Extension for Scoping Reviews (PRISMA-ScR) checklist.^{21 22} This protocol has been prospectively registered on the Open Sciences Framework.²³

Inclusion criteria

Participants

Sources that report on Aboriginal, or Torres Strait Islander people in Australia aged 18 years or older, who have undergone investigation or treatment for bladder cancer.

Concept

This review will consider sources that explore the clinical or biological features of bladder cancer; the utilisation of health services for diagnosis, treatment or surveillance; or bladder cancer-specific patient outcomes. Bladder cancer treatment services will include all local (surgical or radiotherapy) or systemic (chemotherapy, immunotherapy, or targeted therapy) treatments. Bladder cancer surveillance services will include local (endoscopic) and medical imaging services. For each concept, we will assess how the SDH as stated in the CSDH conceptual framework affects the research design and results.¹⁸

Context

This review will include sources specific to Aboriginal and Torres Strait Islander people living in Australia. Sources for people living outside Australia will be excluded.

Types of sources

This scoping review will consider systematic reviews and meta-analysis, randomised controlled trials, observational studies (eg, cohort, case-controlled, cross-sectional), case series, case reports and relevant grey literature. Abstracts, editorials, letters and commentaries will be excluded.

Search strategy

This scoping review will use a three-step search strategy. A limited preliminary search of MEDLINE (OVID) was conducted to identify studies of interest. These results were analysed to identify descriptive terms from the titles and abstracts along with Medical Subject Terms

(MeSH), which were used to develop a comprehensive search strategy. With the assistance of an experienced information specialist, this strategy was conducted in MEDLINE (OVID). This strategy has been adapted for CINAHL (EBSCO), EMBASE (Elsevier) and Web of Science (Clarivate) health databases (see online supplemental appendix 1 for all search strategies). Grey literature sources will be searched using resources listed in the Canadian Agency for Drugs and Technologies in Health Grey Matters Checklist, and the Australian Indigenous HealthInfoNet.^{24 25} Grey literature searches will use combinations of the following keywords: “bladder cancer” and “Australia” and “Indigenous” or “Aboriginal” or “Torres Strait Islander.” The final search strategies will be peer-reviewed using the Peer-Review of Electronic Search Strategies guidelines.²⁶ It is anticipated the search will be conducted between 1 April 2022 and 30 April 2022. Third, the reference list of all included studies after screening will be manually reviewed for additional sources meeting inclusion criteria. In addition, the national bladder cancer dataset compiled by the Australian Institute of Health and Welfare will be included as source.

Searches will not be restricted by language to identify potential additional literature. However, only articles published in English will be included in the final review. Articles published since the inception of each database will be included to maximise search results.

Study selection

Following completion of the search, all identified citations will be uploaded into the Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia) with duplicates removed. Screening for inclusion will be conducted in two phases. The first phase will involve screening titles and abstracts from initial search results. The second phase will involve reviewing full-text articles against the previously stated inclusion criteria. All initial search results will have their citations and abstracts imported into the Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia). Both phases of screening will be conducted by two independent reviewers. In cases of disagreements that are unable to be resolved via consensus, a third senior reviewer will adjudicate if required. The same approach will be used to screen all grey literature sources.

All sources that are excluded from the study during the full-text review for not meeting inclusion criteria will be recorded and reported in an appendix to the finalised scoping review. The PRISMA-ScR flow diagram will be presented to summarise the process for study selection.²²

Data extraction

Prior to commencing the review, the study team will meet to finalise the data extraction instrument. A preliminary data extraction instrument is included in online supplemental appendix 2. Data will be



extracted from included full-text sources by two independent reviewers. Extracted data will include specific information, organised to answer the previously stated aims of this scoping review.

Development of the data charting tool is an iterative process. The tool may undergo modifications during the review process as the content of included studies is extracted. Any modifications to the charting tool will be documented and reported in the final scoping review. To ensure completeness of information included for sources, the authors of papers will be contacted to request missing or additional data where required.

Data analysis

Collected data will be described in graphic and tabular form. Data pertaining to bladder cancer biology and clinical presentation will be summarised and presented alongside equivalent epidemiological data from the broader Australian, and indigenous populations living in Canada and the United States of America. This will aim to highlight any differences in clinical features (age, gender, stage at diagnosis, presence of risk factors) and these will be compared within the discussion. A similar approach will be used to discuss bladder cancer treatment and bladder cancer outcomes. Using the CSDH framework, the structural, intermediary and cross-cutting SDH within each source will be determined, as they relate to bladder cancer. These results will be displayed in tabular form and expanded within the narrative synthesis.

Patient and public involvement

Following collection and organisation of the data, the study team will consult with stakeholders from the Aboriginal and Torres Strait Islander community to aid in the interpretation and analysis of results.

Ethics and dissemination

As this review involves the synthesis of already available resources, it does not require ethics approval. The findings will be published in a peer-reviewed, open-access journal and be presented at appropriate national conferences.

CONCLUSION

It is hoped that these results will unveil gaps in current knowledge of bladder cancer within the Aboriginal and Torres Strait Islander community living in Australia, and facilitate the inclusion of this community in future, patient-centred research. This review may also identify areas in need of policy reform and inform health-care providers of the systemic challenges pertaining to accessing diagnostic, treatment and long-term follow-up of bladder cancer for these patients.

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to the protocol methodology, developing the search strategy and provided editorial revisions to the manuscript. AM contributed to the protocol methodology and provided editorial revisions to the manuscript. IT supervised the protocol development and provided editorial revisions to the manuscript.

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Appendix I: Search Strategies:

MEDLINE (Ovid)

Search conducted November 9, 2021

Search	Query	Records Retrieved
#1	exp urinary bladder neoplasm/	57,601
#2	((bladder or urothelial or transitional cell or urinary bladder or vesical) adj10 (cancer* or carcinoma* or neoplasm* or tumor* or tumour*)).af	91,090
#3	1 or 2	91,090
#4	(Indigenous or Aborigin* or "Torres Strait" or First Nation* or First people*).af	72,300
#5	exp oceanic ancestry group/	11,305
#6	4 or 5	76,219
#7	(Australia* or New South Wales or Victoria or South Australia or Western Australia or Queensland or Tasmania or Northern Territory or Australian Capital Territory).mp	223,956
#8	exp Australia/	157,789
#9	7 or 8	223,956
#10	3 and 9	213
#11	6 and 10	2
#12	3 and 6	227
#13	11 or 12	227

EMBASE (Elsevier)

Proposed Strategy.

Search	Query
#1	'bladder tumor'/exp OR 'bladder tumor'
#2	(bladder OR urothelial OR 'transitional cell' OR 'urinary bladder' OR vesical) NEAR/10 (cancer* OR carcinoma* OR neoplasm* OR tumor* OR tumour*)
#3	#1 OR #2
#4	'oceanic ancestry group'
#5	'australian aborigine'
#6	indigenous OR aborigin* OR 'torres strait' OR 'first nation*' OR 'first people*'
#7	#4 OR #5 OR #6
#8	#3 AND #7

Web of Science (Clarivate)

Proposed Strategy.

Search	Query
#1	ALL=(urinary bladder neoplasm)
#2	(((((ALL=(bladder)) OR ALL=(urothelial)) OR ALL=(transitional cell)) OR ALL=(urinary bladder)) OR ALL=(vesical))
#3	((((ALL=(cancer)) OR ALL=(carcinoma)) OR ALL=(neoplasm)) OR ALL=(tumo\$fr))

#4	#2 AND #3
#5	(((((ALL=(oceanic ancestry group))) OR ALL=(indigenous)) OR ALL=(aborigin*)) OR ALL=("Torres Strait")) OR ALL=("First Nation")) OR ALL=("first people")
#6	#4 AND #5

CINAHL (EBSCO)

Proposed Strategy.

#1	(MH "urinary bladder neoplasm"+)
#2	(MH "Bladder Neoplasms")
#3	bladder OR urothelial OR transitional cell OR urinary bladder OR vesical
#4	cancer OR carcinoma* OR neoplasm* OR tumour* OR tumor*
#5	(MH "Aboriginal Australians") OR (MH "First Nations of Australia")
#6	(MH "Torres Strait Islanders")
#7	indigenous OR aborigin* OR "Torres Strait" OR "First Nations" OR "First People"
#8	S1 OR S2
#9	S3 AND S4
#10	S8 OR S9
#11	S5 OR S6 OR S7
#12	(S5 OR S6 OR S7) AND (S10 AND S11)

Appendix II: Data Extraction Instrument

Literature Characteristics:

- Year of publication.
- Authors.
- Literature Title.
- First Author Institution.
- Target Audience of Literature.
 - o Academia, Public Health Workforce, Policy, General Interest
- Source of Literature:
 - o Database, Grey Literature Resource
- Literature Type:
 - o Study (Quantitative, qualitative), Information Resource (Patients/Support Persons, Health-Care Workers).
- Primary Outcome: If literature a form of study.
- Study Population: If literature a form of study.
 - o Total Participants.
 - o Size of Comparative Groups.
 - o Follow-up time.

Aboriginal and Torres Strait Islander People Within Literature (ATSIPWL):

- Proportion of population ATSI PWL.
- Age
- Gender
- Comorbidities
- Exposure Risk Factors:
 - o Smoking History
 - o Arsenic Exposure
 - o Carcinogen Exposure:
- Geographic Location: Remoteness.

Bladder Cancer Clinical Features:

- Histological Type.
- Histopathological Grade.
- Presence of Muscle Invasive Disease at Diagnosis.
- Clinical Stage at Diagnosis.

Timeliness of Investigation and Treatment:

- Wait-time to specialist review.
- Wait-time to endoscopic treatment.
- Distance to treatment centre (from residence).

Treatment and Surveillance:

- Proportion of patients referred for radiation that undergo treatment.
- Radiation Treatment Specifics:
 - o Indication: Palliative vs Curative Intent
 - o Dosage: Gy and number of fractions.
- Proportion of patients referred to medical oncologist who undergo treatment.
- Specifics of Medical Oncology Treatment:
 - o Indication:

- Treatment Details
- Proportion of patients undertaking routine endoscopic surveillance after treatment.

Bladder Cancer Outcomes:

- Overall Survival.
- Recurrence Free Survival.
- Progression Free Survival.
- Bladder Cancer Specific Survival.

Structural Determinants of Health:

- Cultural and societal values:
- Effect of socioeconomic position:
- Effect of ethnicity.

Intermediary Determinants of Health:

- Barriers due to material circumstances or geographic location:
- Behavioural Factors.
- Psychosocial Factors.
- Health System Factors.

Cross-Cutting Determinants of Health:

- Effects of Social Cohesion.