

2023

Summary of gynaecological cancer among Aboriginal and/or Torres Strait Islander people in Australia

Australian Indigenous HealthInfoNet

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Summary of gynaecological cancer among Aboriginal and/or Torres Strait Islander people in Australia



Australian Indigenous HealthInfoNet

The mandate of the Australian Indigenous HealthInfoNet (HealthInfoNet) is to contribute to improvements in Aboriginal and Torres Strait Islander health by making relevant, high quality knowledge and information easily accessible to policy makers, health service providers, program managers, clinicians and other health professionals (including Aboriginal and Torres Strait Islander Health Workers and Health Practitioners) and researchers. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community. The HealthInfoNet achieves its commitment by undertaking research into various aspects of Aboriginal and/or Torres Strait Islander health and disseminating the results (and other relevant knowledge and information) mainly via HealthInfoNet websites (<https://healthinfonet.ecu.edu.au>), the Alcohol and Other Drugs Knowledge Centre (<https://aodknowledgecentre.ecu.edu.au>), Tackling Indigenous Smoking (<https://tacklingsmoking.org.au>) and WellMob (<https://wellmob.org.au>). The research involves analysis and synthesis of data and other information obtained from academic, professional, government and other sources. The HealthInfoNet's work in knowledge exchange aims to facilitate the transfer of pure and applied research into policy and practice to address the needs of a wide range of users.

Recognition statement

The HealthInfoNet recognises and acknowledges the sovereignty of Aboriginal and Torres Strait Islander people as the original custodians of the country. Aboriginal and Torres Strait Islander cultures are persistent and enduring, continuing unbroken from the past to the present, characterised by resilience and a strong sense of purpose and identity despite the undeniably negative impacts of colonisation and dispossession. Aboriginal and/or Torres Strait Islander people throughout the country represent a diverse range of people, communities and groups, each with unique identities, cultural practices and spiritualities. We recognise that the current health status of Aboriginal and/or Torres Strait Islander people has been significantly impacted by past and present practices and policies.

We acknowledge and pay our deepest respects to Elders past, present and emerging throughout the country. In particular, we pay our respects to the Whadjuk Noongar peoples of Western Australia on whose Country our offices are located (<https://healthinfonet.ecu.edu.au/acknowledging-country>).

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Further information

This *Summary* is part of a resource package including the full review, a fact sheet and a short video. These resources and more information about gynaecological cancer among Aboriginal and Torres Strait Islander people can be viewed at: <https://healthinonet.ecu.edu.au/learn/health-topics/cancer/>

Acknowledgements

Special thanks are extended to staff at the Australian Indigenous HealthInfoNet for their assistance and support, and to the Australian Government Department of Health and Aged Care and other funding partners for their ongoing support of the work of the Australian Indigenous HealthInfoNet.

Tell us what you think

We value your feedback as part of our post-publication peer review process. Please let us know if you have any suggestions for improving this *Summary*: <https://healthinonet.ecu.edu.au/contact-us>



Cover artwork

Karnta

by Corinne Nampijinpa Ryan

Featured icon artwork

by Frances Belle Parker



The HealthInfoNet commissioned Frances Belle Parker, a proud Yaegl woman, mother and artist, to produce a suite of illustrated icons for use in our knowledge exchange products. Frances translates biomedical and statistically based information into culturally sensitive visual representations, to provide support to the Aboriginal and/or Torres Strait Islander workforce and those participating in research and working with Aboriginal and/or Torres Strait Islander people and their communities. Frances came to prominence winning the Blake Prize in 2000, making her the youngest winner and the first Indigenous recipient over the 65 year history of the prize.

“Birrinda is the Yagirr name for the mighty Clarence River (NSW). It is this river that is the life giving vein for the Yaegl people. And it is this river which inspires much of my artwork. I am deeply inspired by my Mother’s land (Yaegl land) and the Island in the Clarence River that my Mother grew up on, Ulgundahi Island. The stories which are contained within this landscape have shaped me as a person as an artist and most recently as a Mother. This is my history, my story and it will always... be my responsibility to share this knowledge with my family and my children.”

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Introduction

Gynaecological cancers are a group of cancers that start in the female reproductive system. Gynaecological cancer is a serious health issue for Aboriginal and/or Torres Strait Islander women, who have a higher risk of being diagnosed and dying from the disease than non-Indigenous women [1]. This summary will discuss cervical, uterine and ovarian cancers, which are the three most common types of gynaecological cancers that Aboriginal and/or Torres Strait Islander women are diagnosed with and die from in Australia [1].

In this summary, we have used the terms ‘woman’ and ‘women’. However, we understand that not all people with ovaries, a cervix, or a uterus identify as women or wish to be referred to by traditional medical terms. We encourage readers to consider transpeople and gender nonbinary people as part of this larger group, as they are also impacted by gynaecological cancers.

In 2021, it was estimated that 6,576 Australian women would be diagnosed with gynaecological cancer. Currently, Australian women have a 4.4% (1 in 23) risk of developing gynaecological cancer by the age of 85 [2].

Gynaecological cancer has the greatest burden on Aboriginal and/or Torres Strait Islander women, who in 2004-2008 were 1.7 times more likely to be diagnosed, and 2.0 times more likely to die from this disease than non-Indigenous women [3]. This is partly due to the ongoing oppression of Aboriginal and/or Torres Strait Islander people, which makes it hard to trust health services and institutions [4].

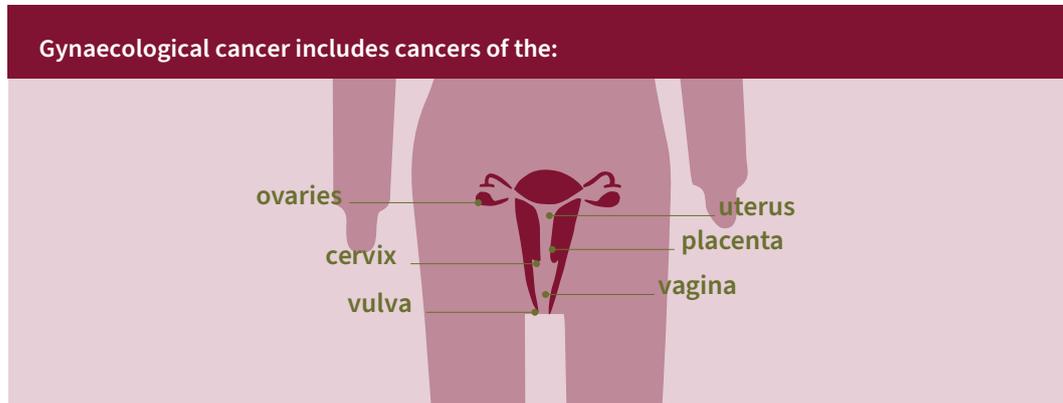
Aboriginal and/or Torres Strait Islander women:

- are diagnosed when cancer is more advanced [5,6]
- may experience a higher burden of comorbidities (having more than one illness at the same time)
- have less access to the best care
- receive less cancer treatment [7].

It is important for Aboriginal and/or Torres Strait Islander people to lead, develop and implement culturally safe gynaecological initiatives within their communities [8]. Preventative programs should focus on a holistic health approach and increase community-driven awareness of *when, how, and where* women can safely access an assessment for their gynaecological health concerns. Furthermore, to develop policies that are culturally safe, and give Aboriginal and/or Torres Strait Islander people control over their health, it is essential to understand the historical, contemporary and other contextual factors that influence health outcomes. Once this is achieved, the burden of gynaecological cancer among Aboriginal and/or Torres Strait Islander women can be reduced.

Gynaecological cancers defined

Cancer occurs when cells grow in an uncontrollable way and form a mass of tissue called a tumour. The location where the tumour first starts to grow is called the primary site or primary tumour. The abnormal cells can spread to surrounding tissue, and they can also spread to other parts of the body (this is called metastasis).



Source: Cancer Australia. (2018). Gynaecological cancers: a handbook for Aboriginal and Torres Strait Islander Health Workers and Health Practitioners. Sydney: Cancer Australia.

As a group, gynaecological cancers represent 9.3% of cancers diagnosed among women in Australia, and uterine cancer is the most diagnosed gynaecological cancer ^[2].

The context of Aboriginal and/or Torres Strait Islander women and gynaecological cancer

A person's risk of developing a gynaecological cancer is influenced not only by genes and behaviours, but also by social factors, including the continuing impact of colonialism on Aboriginal and/or Torres Strait Islander people, and its influence on health and access to health services. More recently, national frameworks and policies ^[9,10] have been developed that aim to improve awareness of gynaecological cancer prevention and early detection by providing culturally safe and high-quality care services.

Incidence

Key message

Aboriginal and/or Torres Strait Islander women are over one and a half times more likely than other Australian women to be diagnosed with gynaecological cancer, and this gap is not closing. There is a need to further investigate and identify strategies to reduce women's risk of developing a gynaecological cancer and to identify gynaecological cancers earlier to increase better prognosis and survival for Aboriginal and/or Torres Strait Islander women.



Cervical cancer

- In 2012-2016, 144 new cases of cervical cancer were diagnosed for Aboriginal and/or Torres Strait Islander women aged between 25 to 74 years ^[11].
- In 2012-2016, the age-standardised cervical cancer incidence rate for Aboriginal and/or Torres Strait Islander women was 20 per 100,000 and ranged from 5.8 per 100,000 to 11 per 100,000 across remoteness areas ^[11].



Uterine cancer

- In 2009-2013, Aboriginal and/or Torres Strait Islander women were 1.8 times more likely to be diagnosed with uterine cancer ^[12].



Ovarian cancer

- In 2009-2013, 103 cases of ovarian cancer were diagnosed among Aboriginal and/or Torres Strait Islander women ^[12]. It is important to note that ovarian cancer data could be underestimated due to the lack of reliable national historical data ^[13].

Mortality

Key message

Aboriginal and/or Torres Strait Islander women continue to experience poor gynaecological cancer outcomes and are two times more likely to die from this disease. If we are to close the gaps in gynaecological cancer care and outcomes for Aboriginal and/or Torres Strait Islander women, a coordinated focus across gynaecological cancers that is based on the lived experiences of Aboriginal and/or Torres Strait Islander women is urgently needed.



Cervical cancer

- Between 2015-2019, 61 Aboriginal and/or Torres Strait Islander women died from cervical cancer. This equated to 8.1 deaths per 100,000 women ^[11]. The mortality data were only analysed for five jurisdictions in Australia (New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory) ^[11].



Uterine cancer

- Uterine cancer was the 10th most common cause of cancer death among Australian women in 2018 ^[2].
- For the period 2011-2015, 36 Aboriginal and/or Torres Strait Islander women died from uterine cancer, around seven deaths per year ^[12].



Ovarian cancer

- For 2011-2015, 40 Aboriginal and/or Torres Strait Islander women died from ovarian cancer (around eight deaths per year) ^[12].
- The age-standardised mortality rate was 6.2 deaths per 100,000 Aboriginal and/or Torres Strait Islander women.

Relative survival

Survival after a gynaecological diagnosis is associated with a range of factors, including:

- characteristics of a woman when diagnosed with the cancer (i.e., age, existing additional illnesses and lifestyle)
- the tumour characteristics (i.e., stage and grade at time of diagnosis, and the type of tumour)
- access to a health-care system (i.e., diagnostic and treatment facilities, individualised follow-up services).

The relative survival estimates (the ratio of observed survival to expected survival) are reported for each of the gynaecological cancer types:



Cervical cancer

- Between 2007-2014, Aboriginal and/or Torres Strait Islander women's five-year relative survival rate for cervical cancer was 56%, significantly lower than non-Indigenous women ^[5, 8, 12].



Uterine cancer

- Between 2007-2014, the crude uterine cancer survival rate for Aboriginal and/or Torres Strait Islander women was 78% ^[12].



Ovarian cancer

- Between 2007-2014, Aboriginal and/or Torres Strait Islander women with ovarian cancer had a five-year relative survival rate of 45%.

Risk factors

A risk factor is anything that is known to increase the likelihood of a person developing a health condition, including a gynaecological cancer. Risk factors may be modifiable (e.g., smoking) while others are non-modifiable (cannot be changed) (e.g., a person's age or family history). The presence of one (or more) of these risk factors, does not mean a gynaecological cancer has developed, or will develop. The primary causes of all gynaecological cancers are still not fully understood. However, researchers have identified several factors that may increase the risk of developing one (or more) gynaecological cancers. These include ^[14-19]:



family
history



gene
mutations



reproductive
history



viral
infection



socio-
environmental
factors such as
smoking and/or
obesity

Colonisation as a major health risk for gynaecological cancer

The ongoing process of colonisation is a core social determinant of Indigenous health^[20]. Colonisation and racism have contributed to the following risk factors for gynaecological cancer:

Discriminatory policies and/or experiences

- Indigenous people have reported not feeling comfortable self-identifying as Indigenous in the health care system for fear of discrimination^[20]
- Aboriginal and/or Torres Strait Islander people are more likely to be exposed to risk factors related to cancer (such as smoking) as a direct result of colonialism^[21].

Food systems and ecological knowledge

- Colonisation intentionally prevented important knowledge sharing between generations, including knowledge on traditional food security and preparation. This, as well as the displacement of Aboriginal and/or Torres Strait Islander people, make it difficult to access healthy foods today^[22]. This is significant, as poor nutrition, high body mass, and obesity are significant risk factors for cancer^[6].

Colonial history and shared experiences in other countries

- The colonial history of Indigenous people in Canada reflects the experiences of Aboriginal and/or Torres Strait Islander people; therefore, we can learn from their shared experiences^[23]. For Indigenous people in Canada:
 - Colonialism has disrupted gender roles, reducing women's status in what was once a matrilineal society (a society based on the female line).
 - Because of past and present colonialism and racism, distrust of health authorities and institutions are barriers to Indigenous people accessing health care services, such as cervical cancer screening.
 - The experience of residential/boarding schools has impacted women's experience of their body and their sexuality, and interrupted intergenerational knowledge sharing about sexual health^[24].

The most common gynaecological cancer specific risk factors



Cervical cancer

- The main risk factor for cervical cancer is a chronic infection with the human papillomavirus (HPV), specifically high-risk HPV strains 16 and/or 18^[25, 26]. HPV is spread by skin-to-skin or body fluid-to-skin contact during sexual activity, including the vagina and cervix^[27]. Exposure to HPV is extremely common; up to 80% of sexually active people will be infected with HPV in their genital tract before the age of 50^[28, 29].
- Many women will not be aware they have HPV and the infection will clear before precancerous lesions (cell changes which could become cancerous over time) develop. While genital tract infection with HPV is very common, the development of pre-cancerous lesions is less common and the progression to cervical cancer only occurs in a small number of women over a long time frame (up to 10 years)^[27]. Although high-risk HPV types (16 and/or 18) are the main risk factors for cervical cancer, some (~5%) cervical cancers are not linked to HPV infection^[30-32].

Table 1. HPV-dependant and non-HPV dependent risk factors for cervical cancer.

| HPV-dependent cervical cancer risks | Non-HPV associated cervical cancer risks |
|--|---|
| <ul style="list-style-type: none"> • having sex from an earlier age ^[33] • having more sexual partners ^[33] • history of vulvar and/or vaginal squamous intraepithelial lesion (abnormal cell growth) ^[34] • weak immune system (e.g., HIV infection) ^[35] • history of sexually transmitted infections ^[35-38]. | <ul style="list-style-type: none"> • less access to resources ^[39,40] • taking oral contraceptives (the pill) for five or more years ^[41-43] • tobacco smoking ^[33,44]. |



Uterine cancer

Risk factors for endometrial cancer (a type of uterine cancer) among Aboriginal and/or Torres Strait Islander women include:

Table 2. Potentially modifiable and non-modifiable risk factors associated with uterine cancer.

| Non-modifiable risks factors | Modifiable risk factors |
|---|--|
| <ul style="list-style-type: none"> • being aged 60 or above • family history of endometrial (starting in the uterus), ovarian or bowel cancer • polycystic ovary syndrome (PCOS) • never having children or being infertile • genetic changes • polyps. | <ul style="list-style-type: none"> • being overweight or obese • having high blood pressure and/or diabetes • being inactive • taking tamoxifen (hormone therapy) to treat breast cancer • smoking and alcohol consumption • taking oestrogen hormone replacement therapy without progesterone (menopausal hormone therapy). |



Ovarian cancer

Little is known about the early aspects of ovarian cancer, however family history of breast or ovarian cancer - particularly in the mother or sister ^[45-47] is considered the most important risk factor ^[48]. Other risk factors for ovarian cancer include:

- age - higher in women over 50 ^[6]
- inherited gene changes - including inherited BReast CAncer 1 (BRCA1) and BReast CAncer 2 (BRCA2) genes ^[49]
- personal history of endometriosis (a disorder in which tissue grows outside, rather than inside, the uterus) ^[50, 51]
- personal history of breast, uterine or colon cancer ^[52-54]
- hormone replacement therapy for menopause ^[55, 56]
- obesity ^[57, 58].

Burden of disease

In 2018, for Aboriginal and/or Torres Strait Islander women, the number of healthy life years (known as disability-adjusted life years or 'DALYs') lost due to gynaecological cancers was estimated to be:

- Cervical cancer: 526 DALY, equivalent to 1.0 per 1,000 population (decreased by 14% since 2011).
- Endometrial cancer: 289 DALY, equivalent to 0.6 per 1,000 population (increased by 18% since 2011).
- Ovarian cancer: 332 DALY, equivalent to 0.6 per 1,000 population (decreased by 38% since 2011) ^[1, 59].

Prevention and early detection

Advancements in screening, modern testing, and genetic discovery have led to an increased opportunity for the earlier detection of many types of gynaecological cancer. Interventions that may assist in preventing or finding gynaecological cancer at an earlier stage are listed below:

Vaccination against HPV infection

- In Australia, the HPV vaccination is provided free by the National Immunisation Program (NIP) to school children aged 12 to 13 years, or for people aged over nine years who have a weakened immune system.
- For people who missed vaccinations in childhood, free catch-ups are available for people aged up to 26 years.
- The best time for HPV vaccination is before a person becomes sexually active.
- Anyone over nine years of age can talk to their doctor about getting immunised.
- One dose of HPV vaccination is now recommended (Australian Government Department of Health and Aged Care ^[60]).

Participation in cervical screening

- Routine screening can help detect a high-risk HPV infection and cervical changes, that if left untreated may become cervical cancer.
- Women should have a cervical screening test, even if they have had the HPV vaccine.
- The cervical screening test should be done every five years, from the age of 25 to 74 years.
- All women can now request to perform their own cervical screening test (self-collection) ^[61].

Genetic testing

- Genetic risk assessment testing can be done for women who:
 - are at risk of BRCA or Lynch Syndrome
 - have a personal (or family) history of ovarian, breast, endometrial cancer.
- Finding a gene mutation early can prevent cancer caused by BRCA1 and BRCA2 genes or Lynch Syndrome ^[62].

Clinical Investigations

If a woman has gynaecological symptoms, their doctor may arrange for further testing. This can include:

Physical examination

- feeling the stomach and checking for swelling
- internal vaginal examination, including a colposcopic assessment (looking at the cervix, vulva and/or vagina).

Blood tests

- can be performed to check a woman's overall health.

Internal scoping tests

- A doctor uses a device like a telescope to have a closer look at the affected area(s) and a biopsy may also be performed, which is when a small piece of tissue is taken for testing.
- examples can include:
 - colposcopic assessment – to view the cervix, vulva and/or vagina
 - hysteroscopic assessment – to look inside the uterus
 - laparoscopic assessment – to look inside the stomach.

Imaging tests

- Imaging tests take pictures of the area of the body that is affected by symptoms and/or check other areas for signs of cancer.
- examples can include:
 - X-rays
 - computerised tomography (CT) scans
 - magnetic resonance imaging (MRI) scans
 - positron emission tomography (PET) scans.

Treatment

The treatment for gynaecological cancer is dependent on:

- the type of gynaecological cancer
- the stage (including how far it has spread)
- the woman's general health
- the treatment the women prefers.

Women with gynaecologic cancer can often receive a combination of treatments, including:

- surgery – removal of the cancer tissue during an operation
- chemotherapy – using a special medicine to target and shrink/kill the cancer (can be taken with pills or through a drip into the veins)
- hormonal therapies may be used as primary treatment or alongside other treatments
- radiation – using high-energy rays to kill the cancer
- complementary and alternative therapies (medicines or health practices that are not standard treatment) should occur alongside standard treatment ^[63-65].

The experience of gynaecological cancer

Gynaecological cancer has a significant impact on Aboriginal and/or Torres Strait Islander women. The process of diagnosis and treatment is complex. It will usually involve multiple healthcare providers across a range of settings, both public and private. Although clinical aspects of cancer treatment are the same for all people, the health services still have a responsibility and need to provide care that is culturally safe and inclusive. Despite policy priorities^[9, 10], inequalities in gynaecological cancer outcomes continue for Aboriginal and/or Torres Strait Islander women^[1, 2, 59, 66]. The factors that influence these outcomes prevent Aboriginal and/or Torres Strait Islander people engaging with cancer care services^[67-70].

It is important to understand Aboriginal and/or Torres Strait Islander women's experiences of cancer care, and factors that may impact on accessibility^[67]. In 2019, a study carried out in Queensland identified that Aboriginal and/or Torres Strait Islander women with gynaecological cancer were left feeling at 'breaking point' and had very limited access to information and/or support^[67]. The challenges experienced included:

- delayed referrals
- lack of information
- difficulties accessing and complying with treatment recommendations
- cultural insensitivities within the healthcare system.

Australian Government programs and services

There are a range of mainstream Australian Government Department of Health and Aged Care programs and services that contribute to the prevention, diagnosis, and management of gynaecological cancers among Aboriginal and/or Torres Strait Islander women. They include:

- **The Medicare Benefits Schedule (MBS):**
 - A Medicare health assessment for Aboriginal and/or Torres Strait Islander adults checks a person's health and includes a cervical screening.
 - Medicare funds genetic testing for women with ovarian cancer who are likely to have a faulty gene.
- **The National Cervical Screening Program (NCSP)**
 - aims to prevent cervical cancer through regular testing and early detection of human papillomavirus (HPV)
 - Since 1 July 2022, the NCSP allows for eligible screeners to collect their own cervical screening test sample, an approach which is acceptable to Aboriginal and/or Torres Strait Islander women.
- **The National Cancer Screening Register**
 - supports the NCSP by providing a single electronic record for each person in Australia.
- **Practice Incentives Program (PIP)**
 - aims to encourage GPs to test under-screened women for cervical cancer and to increase overall screening rates.

- **The Pharmaceutical Benefits Scheme (PBS)**
 - provides subsidies for medicines used in the treatment of gynaecological cancers.
- **The National Immunisation Program (NIP)**
 - provides free HPV vaccination for school aged children 12 to 13 years
 - covers free catch-up vaccinations if they were missed during childhood for people aged up to 26 years.
- **The Indigenous Australians Health Programme (IAHP)**
 - provides funding for Primary Health Networks and Aboriginal Community Controlled Health Organisations (ACCHOs) for Indigenous led, culturally appropriate initiatives to increase access to health care for Aboriginal and/or Torres Strait Islander people
 - contributes to the funding and development of the *Australian cancer plan 2023-2033*.

Role of primary health care services

Primary health care services play a key role in the early diagnosis of gynaecological cancers, improving patient outcomes and survival. For primary healthcare services to be successful, it is essential that Aboriginal and/or Torres Strait Islander people are involved in the delivery of cancer care and there is culturally appropriate support for patients throughout their cancer journey. For example, ACCHOs play a vital role in the delivery of primary healthcare to Aboriginal and/or Torres Strait Islander people. There are ACCHOs located across all jurisdictions, funded by federal and state or territory governments. ACCHOs are primary healthcare services governed and operated by the local community, providing holistic, comprehensive and culturally appropriate healthcare to the communities in which they serve. A holistic approach to healthcare includes the physical, social, emotional and cultural wellbeing of Aboriginal and/or Torres Strait Islander people. ACCHOs provide a range of services, including but not limited to:

- ✓ cervical screening
- ✓ women's wellness checks
- ✓ dental care
- ✓ drug and alcohol support
- ✓ specialist care
- ✓ mental and public health initiatives.

Policies and strategies

There are few national policies and strategies that focus specifically on gynaecological cancer for Aboriginal and/or Torres Strait Islander people. This is a key barrier to reducing the cancer burden among Aboriginal and/or Torres Strait Islander people^[71]. Below is a summary of the most relevant national and international policies and strategies aimed at preventing, managing and reducing gynaecological cancers and cancer in general among Aboriginal and/or Torres Strait Islander women.

Policies and strategies developed for Aboriginal and/or Torres Strait Islander women with gynaecological cancer

- ***The National framework for gynaecological cancer control*** ^[10]
 - developed in 2012 to reduce the burden of gynaecological cancers among women in Australia
 - includes a priority area that focuses on improving gynaecological cancer outcomes for Aboriginal and/or Torres Strait Islander women.
 - strategies aim to:
 - improve participation of Aboriginal and/or Torres Strait Islander women in the NCSF
 - improve national data collection (including the inclusion of Indigenous status in pathology requests and reports)
 - make cancer related services more culturally appropriate
 - carry out more research to understand Aboriginal and/or Torres Strait Islander people's views and beliefs about gynaecological cancers.
- ***The National gynaecological cancers service delivery and resource framework***
 - developed in 2011 to help health professionals and service providers support women with gynaecological cancer
 - part of the framework focuses on developing a skilled and supported workforce, including for Aboriginal and Torres Strait Islander Health Workers.
- ***The Optimal care pathways (OCPs)***
 - developed in 2014-15 to provide frameworks for the delivery of consistent, safe, high-quality and evidence-based care for people with cancer
 - there are tumour specific OCPs for cervical cancer, endometrial cancer and ovarian cancer.
- ***The Optimal care pathway for Aboriginal and Torres Strait Islander people with cancer***
 - provides Aboriginal and/or Torres Strait Islander people with access to healthcare that is culturally safe
 - provides recommendations for being responsive to the needs of Aboriginal and/or Torres Strait Islander people.
- ***A handbook for Aboriginal and Torres Strait Islander health workers and health practitioners*** ^[72]
 - assists health professionals provide information and support to Aboriginal and/or Torres Strait Islander women with gynaecological cancer.
- ***The Ovarian cancer national action plan for 2015-2020 and 2020-2025*** ^[73]
 - aims to reduce rates, increase survival, and improve follow-up care and quality of life for women with ovarian cancer
 - notes the need for equity in access to health information, relevant research and culturally appropriate resources.

- **The Global Strategy to Accelerate the Elimination of Cervical Cancer as a Public Health Problem**
 - sets out three clear targets that each country should meet:
 1. 90% of girls should be fully vaccinated with the HPV vaccine by 15 years of age
 2. 70% of women should be screened for cervical cancer at 35 years of age and again by 45 years of age
 3. 90% of women with pre-cancer should be treated and 90% of women with invasive cancer managed.
- **National Cervical Cancer Elimination Strategy**
 - The project (in development) will support the work of the Australian Government Department of Health and Aged Care in eliminating cervical cancer as a public health issue in Australia by 2035.
 - It should be noted that while Australia as a national population will reach the elimination threshold, it will not be reached for Aboriginal and Torres Strait Islander people

No specific strategies could be located that address the increasing burden of uterine cancer for Aboriginal and/or Torres Strait Islander women.

Australian strategies/initiatives that are relevant to gynaecological cancer

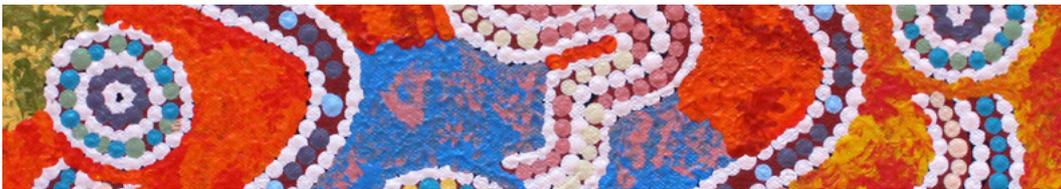
- **The National HPV Vaccine Program**
 - The HPV vaccine is free for those aged 12-13 under the National Immunisation Program, offered via school-based programs.
 - For people who missed vaccinations in childhood, free catch-ups are available for people aged up to 26 years.
 - It is recommended that people aged 9-25 years have the HPV vaccine administered.
- **The National Cervical Screening Program (NCSP)**
 - focuses on reducing morbidity (having a disease or symptom of disease) and mortality from cervical cancer ^[61].
 - Women aged 25-74 years are invited to have a cervical screening test every five years through their healthcare provider.
 - Women are now able to perform a self-collected cervical screening test (CST), which is particularly important for Aboriginal and/or Torres Strait Islander women ^[74].

Cancer Council Australia recommends five key cervical screening strategies to increase the rates of cervical screening among Aboriginal and/or Torres Strait Islander women ^[75]. They include:

1. Aboriginal and/or Torres Strait Islander women should be encouraged to participate in the NCSP and be invited to complete a five-yearly HPV test.
2. Invitations should be culturally appropriate and tailored to women's specific needs.
3. Cervical screening services should be accessible and culturally safe.
4. Self-collected vaginal samples or clinician-collected samples should be offered as a choice for all Aboriginal and/or Torres Strait Islander women.
5. Aboriginal and/or Torres Strait Islander status should be confirmed by healthcare professionals and recorded on clinical records to improve and maintain accurate data.

Key message

The development of a specific strategy to address the burden of gynaecological cancer for Aboriginal and/or Torres Strait Islander women that has a specific focus on implementation, monitoring and evaluation is critical to addressing poor health outcomes.



Future directions

To address the poor gynaecological cancer outcomes for Aboriginal and/or Torres Strait Islander women, focus should be placed on:

- Aboriginal and/or Torres Strait Islander-led research in cancer care
- strategies that hold the entire health system accountable to providing culturally safe, patient-centred care that is free of racism.

With the Australian cancer plan and National Aboriginal and Torres Strait Islander cancer plan and the National Strategy to Eliminate Cervical Cancer under development, it is critical that they are implemented, monitored and evaluated to ensure real outcomes in the prevention, diagnosis, treatment and care of Aboriginal and/or Torres Strait Islander women for gynaecological cancer.

Concluding comments

Aboriginal and/or Torres Strait Islander women are greatly impacted by gynaecological cancers. This is due to increased exposure to risk factors as a direct result of colonisation. Prevention and early diagnosis of gynaecological cancers are important to decrease its incidence and improve survival rates.

Effective cancer prevention by reducing risk factors and participation in cancer screening programs for Aboriginal and/or Torres Strait Islander people requires improved access to both high quality primary health care services and a higher level of specialised care within a hospital. This will also enable earlier diagnosis, management and care for Aboriginal and/or Torres Strait Islander women at all stages of cancer.

Culturally safe, accessible and patient centred care are key factors to reduce the burden of gynaecological cancers on Aboriginal and/or Torres Strait Islander women and their communities. This relies on fair resourcing to carry out effective prevention, management and care of gynaecological cancers, ensuring Aboriginal and/or Torres Strait Islander women are supported.

References

1. Australian Institute of Health and Welfare. (2022). *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2018* (Cat. no. BOD 32). Canberra: Australian Institute of Health and Welfare.
2. Cancer Australia. (2022). *Gynaecological cancer in Australia statistics*. Retrieved 10 August 2022 from <https://www.canceraustralia.gov.au/cancer-types/gynaecological-cancers/statistics>
3. Australian Institute of Health and Welfare. (2012). *Gynaecological cancers in Australia: an overview* (Cancer series no. 70. Cat. no. CAN 66). Canberra: Australian Institute of Health and Welfare.
4. Butler, T. L., Anderson, K., Condon, J. R., Garvey, G., Brotherton, J. M. L., Cunningham, J., . . . Whop, L. J. (2020). Indigenous Australian women's experiences of participation in cervical screening. *PLoS One*, *15*(6), e0234536. doi: 10.1371/journal.pone.0234536
5. Condon, J. R., Zhang, X., Baade, P., Griffiths, K., Cunningham, J., Roder, D. M., . . . Threlfall, T. (2014). Cancer survival for Aboriginal and Torres Strait Islander Australians: a national study of survival rates and excess mortality. *Population Health Metrics*, *12*(1). doi: 10.1186/1478-7954-12-1
6. Australian Institute of Health and Welfare. (2021). *Cancer in Australia 2021*. Canberra: Australian Institute of Health and Welfare.
7. Whop, L. J., Bernardes, C. M., Kondalsamy-Chennakesavan, S., Darshan, D., Chetty, N., Moore, S. P., . . . Valery, P. C. (2017). Indigenous Australians with non-small cell lung cancer or cervical cancer receive suboptimal treatment. *Asia-Pacific Journal of Clinical Oncology*, *13*(5), e224-e231. doi: 10.1111/ajco.12463
8. Diaz, A., Baade, P. D., Valery, P. C., Whop, L. J., Moore, S. P., Cunningham, J., . . . Condon, J. R. (2018). Comorbidity and cervical cancer survival of Indigenous and non-Indigenous Australian women: a semi-national registry-based cohort study (2003-2012). *PLoS One*, *13*(5), e0196764. doi: 10.1371/journal.pone.0196764
9. Cancer Australia. (2015). *National Aboriginal and Torres Strait Islander cancer framework*. Sydney: Cancer Australia.
10. Cancer Australia. (2016). *National framework for gynaecological cancer control*. Sydney: Cancer Australia.
11. Australian Institute of Health and Welfare. (2021). *National Cervical Screening Program monitoring report 2021* (Cancer series 134. Cat. no. CAN 141). Canberra: Australian Institute of Health and Welfare.
12. Australian Institute of Health and Welfare. (2018). *Cancer in Aboriginal and Torres Strait Islander people of Australia*. Retrieved 15 March 2018 from <https://www.aihw.gov.au/reports/cancer/cancer-in-indigenous-australians/contents/about>
13. McCluggage, W. G., Judge, M. J., Clarke, B. A., Davidson, B., Gilks, C. B., Hollema, H., . . . Hirschowitz, L. (2015). Data set for reporting of ovary, fallopian tube and primary peritoneal carcinoma: recommendations from the International Collaboration on Cancer Reporting (ICCR). *Modern Pathology*, *28*(8), 1101-1122. doi: 10.1038/modpathol.2015.77
14. Plummer, M., Herrero, R., Franceschi, S., Meijer, C. J., Snijders, P., Bosch, F. X., . . . Muñoz, N. (2003). Smoking and cervical cancer: pooled analysis of the IARC multi-centric case-control study. *Cancer Causes & Control*, *14*(9), 805-814. doi: 10.1023/b:caco.0000003811.98261.3e
15. Faber, M. T., Kjaer, S. K., Dehlendorf, C., Chang-Claude, J., Andersen, K. K., Hogdall, E., . . . Jensen, A. (2013). Cigarette smoking and risk of ovarian cancer: a pooled analysis of 21 case-control studies. *Cancer Causes & Control*, *24*(5), 989-1004. doi: 10.1007/s10552-013-0174-4
16. Raglan, O., Kalliala, I., Markozannes, G., Cividini, S., Gunter, M. J., Nautiyal, J., . . . Kyrgiou, M. (2019). Risk factors for endometrial cancer: an umbrella review of the literature. *International Journal of Cancer*, *145*(7), 1719-1730. doi: 10.1002/ijc.31961
17. Crosbie, E. J., Zwahlen, M., Kitchener, H. C., Egger, M., & Renehan, A. G. (2010). Body mass index, hormone replacement therapy, and endometrial cancer risk: a meta-analysis. *Cancer Epidemiology Biomarkers Prevention*, *19*(12), 3119-3230. doi: 10.1158/1055-9965.Epi-10-0832
18. Avgerinos, K. I., Spyrou, N., Mantzoros, C. S., & Dalamaga, M. (2019). Obesity and cancer risk: emerging biological mechanisms and perspectives. *Metabolism*, *92*, 121-135. doi: 10.1016/j.metabol.2018.11.001
19. Momenimovahed, Z., Tiznobaik, A., Taheri, S., & Salehiniya, H. (2019). Ovarian cancer in the world: epidemiology and risk factors. *International Journal of Womens Health*, *11*, 287-299. doi: 10.2147/ijwh.S197604
20. Allan, B., & Smylie, J. (2015). *First Peoples, second class treatment: the role of racism in the health and well-being of Indigenous peoples in Canada*. Toronto: Wellesley Institute.

21. Salmon, M., Skelton, F., Thurber, K. A., Bennetts Kneebone, L., Gosling, J., Lovett, R., & Walter, M. (2018). Intergenerational and early life influences on the well-being of Australian Aboriginal and Torres Strait Islander children: overview and selected findings from Footprints in Time, the Longitudinal Study of Indigenous Children. *Journal of Developmental Origins of Health and Disease*, 10(1), 17-23. doi: 10.1017/s204017441800017x
22. Markham, F., & Kerins, S. (2020). *Policy responses to food insecurity in remote Indigenous communities: social security, store pricing and Indigenous food sovereignty* (Topical issue paper no. 4/2020). Canberra: Centre for Aboriginal Economic Policy Research.
23. Lavalley, L. F., & Poole, J. M. (2009). Beyond recovery: colonization, health and healing for Indigenous people in Canada. *International Journal of Mental Health and Addiction*, 8, 271-281. doi: 10.1007/s11469-009-9239-8
24. Wakewich, P., Wood, B., Davey, C., Laframboise, A., & Zehbe, I. (2016). Colonial legacy and the experience of First Nations women in cervical cancer screening: a Canadian multi-community study. *Critical Public Health*, 26(4), 368-380. doi: 10.1080/09581596.2015.1067671
25. Walboomers, J., Jacobs, M., Manos, M., Bosch, F., Kummer, J., Shah, K., . . . Munoz, N. (1999). Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. *Journal of Pathology*, 189(1), 12-19.
26. Cohen, P. A., Jhingran, A., Oaknin, A., & Denny, L. (2019). Cervical cancer. *The Lancet*, 393(10167), 169-182. doi: 10.1016/s0140-6736(18)32470-x
27. Crosbie, E. J., Einstein, M. H., Franceschi, S., & Kitchener, H. C. (2013). Human papillomavirus and cervical cancer. *The Lancet*, 382(9895), 889-899. doi: 10.1016/s0140-6736(13)60022-7
28. Workowski, K. A., Bachmann, L. H., Chan, P. A., Johnston, C. M., Muzny, C. A., Park, I., . . . Bolan, G. A. (2021). Sexually transmitted infections treatment guidelines, 2021. *MMWR Recommendations and Reports*, 70(4), 1-187. doi: 10.15585/mmwr.rr7004a1
29. Manhart, L. E., Holmes, K. K., Koutsky, L. A., Wood, T. R., Kenney, D. L., Feng, Q., & Kiviat, N. B. (2006). Human papillomavirus infection among sexually active young women in the United States: Implications for developing a vaccination strategy. *Sexually Transmitted Diseases*, 33(8), 502-508. doi: 10.1097/01.olq.0000204545.89516.0a
30. Fernandes, A., Viveros-Carreño, D., Hoegl, J., Avila, M., & Pareja, R. (2022). Human papillomavirus-independent cervical cancer. *International Journal of Gynecological Cancer*, 32(1), 1-7. doi: 10.1136/ijgc-2021-003014
31. WHO Classification of Tumours Editorial Board. (2020). *Female genital tumours*. Lyon, France: International Agency for Research on Cancer.
32. McCluggage, W. G., Singh, N., & Gilks, C. B. (2022). Key changes to the World Health Organization (WHO) classification of female genital tumours introduced in the 5th edition (2020). *Histopathology*, 80(5), 762-778. doi: 10.1111/his.14609
33. International Collaboration of Epidemiological Studies of Cervical Cancer. (2007). Comparison of risk factors for invasive squamous cell carcinoma and adenocarcinoma of the cervix: collaborative reanalysis of individual data on 8,097 women with squamous cell carcinoma and 1,374 women with adenocarcinoma from 12 epidemiological studies. *International Journal of Cancer*, 120(4), 885-891. doi: 10.1002/ijc.22357
34. Buchanan, T. R., Zamorano, A. S., Massad, L. S., Liu, J., Thaker, P. H., Powell, M. A., . . . Kuroki, L. M. (2019). Risk of cervical and vaginal dysplasia after surgery for vulvar intraepithelial neoplasia or cancer: a 6-year follow-up study. *Gynecologic Oncology*, 155(1), 88-92. doi: 10.1016/j.ygyno.2019.07.017
35. Mapanga, W., Girdler-Brown, B., Feresu, S. A., Chipato, T., & Singh, E. (2018). Prevention of cervical cancer in HIV-seropositive women from developing countries through cervical cancer screening: a systematic review. *Systematic Reviews*, 7(1), 198. doi: 10.1186/s13643-018-0874-7
36. Smith, J. S., Herrero, R., Bosetti, C., Munoz, N., Bosch, F. X., Eluf-Neto, J., . . . Ashley, R. (2002). Herpes simplex virus-2 as a human papillomavirus cofactor in the etiology of invasive cervical cancer. *Journal of the National Cancer Institute*, 94(21), 1604-1613. doi: 10.1093/jnci/94.21.1604
37. King, C. C., Jamieson, D. J., Wiener, J., Cu-Uvin, S., Klein, R. S., Rompalo, A. M., . . . Sobel, J. D. (2011). Bacterial vaginosis and the natural history of human papillomavirus. *Infectious Diseases in Obstetrics and Gynecology*, 2011, 319460. doi: 10.1155/2011/319460
38. Abebe, M., Eshetie, S., & Tessema, B. (2021). Prevalence of sexually transmitted infections among cervical cancer suspected women at University of Gondar Comprehensive Specialized Hospital, North-west Ethiopia. *BMC Infectious Diseases*, 21, 378. doi: 10.1186/s12879-021-06074-y

39. Yoo, W., Kim, S., Huh, W. K., Dilley, S., Coughlin, S. S., Partridge, E. E., . . . Bae, S. (2017). Recent trends in racial and regional disparities in cervical cancer incidence and mortality in United States. *PLoS One*, *12*(2), e0172548. doi: 10.1371/journal.pone.0172548
40. Yu, L., Sabatino, S. A., & White, M. C. (2019). Rural-urban and racial/ethnic disparities in invasive cervical cancer incidence in the United States, 2010-2014. *Preventing Chronic Disease*, *16*, 180447. doi: 10.5888/pcd16.180447
41. Appleby, P., Beral, V., Berrington de Gonzalez, A., Colin, D., Franceschi, S., Goodhill, A., . . . Sweetland, S. (2007). Cervical cancer and hormonal contraceptives: collaborative reanalysis of individual data for 16,573 women with cervical cancer and 35,509 women without cervical cancer from 24 epidemiological studies. *The Lancet*, *370*(9599), 1609-1621. doi: 10.1016/s0140-6736(07)61684-5
42. Gierisch, J. M., Coeytaux, R. R., Urrutia, R. P., Havrilesky, L. J., Moorman, P. G., Lowery, W. J., . . . Myers, E. R. (2013). Oral contraceptive use and risk of breast, cervical, colorectal, and endometrial cancers: a systematic review. *Cancer Epidemiology, Biomarkers & Prevention*, *22*(11), 1931-1943. doi: 10.1158/1055-9965.Epi-13-0298
43. Green, J., Berrington de Gonzalez, A., Sweetland, S., Beral, V., Chilvers, C., Crossley, B., . . . Vessey, M. P. (2003). Risk factors for adenocarcinoma and squamous cell carcinoma of the cervix in women aged 20-44 years: the UK National Case-Control Study of Cervical Cancer. *British Journal of Cancer*, *89*(11), 2078-2086. doi: 10.1038/sj.bjc.6601296
44. Appleby, P., Beral, V., Berrington de Gonzalez, A., Colin, D., Franceschi, S., Goodhill, A., . . . Sweetland, S. (2006). Carcinoma of the cervix and tobacco smoking: collaborative reanalysis of individual data on 13,541 women with carcinoma of the cervix and 23,017 women without carcinoma of the cervix from 23 epidemiological studies. *International Journal of Cancer*, *118*(6), 1481-1495. doi: 10.1002/ijc.21493
45. Chiapparino, F., Parazzini, F., Bosetti, C., Franceschi, S., Talamini, R., Canzonieri, V., . . . La Vecchia, C. (2007). Risk factors for ovarian cancer histotypes. *European Journal of Cancer*, *43*(7), 1208-1213. doi: 10.1016/j.ejca.2007.01.035
46. Kurian, A. W., Balise, R. R., McGuire, V., & Whittemore, A. S. (2005). Histologic types of epithelial ovarian cancer: have they different risk factors? *Gynecologic Oncology*, *96*(2), 520-530. doi: 10.1016/j.ygyno.2004.10.037
47. Modugno, F., Ness, R. B., & Wheeler, J. E. (2001). Reproductive risk factors for epithelial ovarian cancer according to histologic type and invasiveness. *Annals of Epidemiology*, *11*(8), 568-574. doi: 10.1016/s1047-2797(01)00213-7
48. Mok, S. C., Kwong, J., Welch, W. R., Samimi, G., Ozbun, L., Bonome, T., . . . Wong, K. K. (2007). Etiology and pathogenesis of epithelial ovarian cancer. *Disease Markers*, *23*, 474320. doi: 10.1155/2007/474320
49. Rosenthal, A. N., Fraser, L., Manchanda, R., Badman, P., Philpott, S., Mozersky, J., . . . Jacobs, I. J. (2013). Results of annual screening in phase I of the United Kingdom familial ovarian cancer screening study highlight the need for strict adherence to screening schedule. *Journal of Clinical Oncology*, *31*(1), 49-57. doi: 10.1200/jco.2011.39.7638
50. Merritt, M. A., De Pari, M., Vitonis, A. F., Titus, L. J., Cramer, D. W., & Terry, K. L. (2013). Reproductive characteristics in relation to ovarian cancer risk by histologic pathways. *Human Reproduction*, *28*(5), 1406-1417. doi: 10.1093/humrep/des466
51. Merritt, M. A., Green, A. C., Nagle, C. M., & Webb, P. M. (2008). Talcum powder, chronic pelvic inflammation and NSAIDs in relation to risk of epithelial ovarian cancer. *International Journal of Cancer*, *122*(1), 170-176. doi: 10.1002/ijc.23017
52. Stewart, L. M., Spilsbury, K., Jordan, S., Stewart, C., Holman, C. D. J., Powell, A., . . . Cohen, P. (2018). Risk of high-grade serous ovarian cancer associated with pelvic inflammatory disease, parity and breast cancer. *Cancer Epidemiology*, *55*, 110-116. doi: 10.1016/j.canep.2018.05.011
53. Metcalfe, K. A., Lynch, H. T., Ghadirian, P., Tung, N., Olivetto, I. A., Foulkes, W. D., . . . Narod, S. A. (2005). The risk of ovarian cancer after breast cancer in BRCA1 and BRCA2 carriers. *Gynecologic Oncology*, *96*(1), 222-226. doi: 10.1016/j.ygyno.2004.09.039
54. Shin, D. W., Choi, Y. J., Kim, H. S., Han, K., Yoon, H., Park, Y. S., . . . Lee, D. H. (2018). Secondary breast, ovarian, and uterine cancers after colorectal cancer: a nationwide population-based cohort study in Korea. *Diseases of the Colon & Rectum*, *61*(11). doi: 10.1097/DCR.0000000000001203
55. Liu, Y., Ma, L., Yang, X., Bie, J., Li, D., Sun, C., . . . Lin, J. (2019). Menopausal hormone replacement therapy and the risk of ovarian cancer: a meta-analysis. *Frontiers in Endocrinology*, *10*, 801. doi: 10.3389/fendo.2019.00801
56. Urban, N., Hawley, S., Janes, H., Karlan, B. Y., Berg, C. D., Drescher, C. W., . . . Anderson, G. L. (2015). Identifying post-menopausal women at elevated risk for epithelial ovarian cancer. *Gynecologic Oncology*, *139*(2), 253-260. doi: 10.1016/j.ygyno.2015.08.024
57. Leitzmann, M. F., Koebnick, C., Danforth, K. N., Brinton, L. A., Moore, S. C., Hollenbeck, A. R., . . . Lacey, J. V. (2009). Body mass index and risk of ovarian cancer. *Cancer*, *115*(4), 812-822. doi: 10.1002/cncr.24086

58. Olsen, C. M., Nagle, C. M., Whiteman, D. C., Ness, R., Pearce, C. L., Pike, M. C., . . . Webb, P. M. (2013). Obesity and risk of ovarian cancer subtypes: evidence from the Ovarian Cancer Association Consortium. *Endocrine Related Cancer*, *20*(2), 251-262. doi: 10.1530/erc-12-0395
59. Australian Institute of Health and Welfare. (2022). *Australian Burden of Disease Study 2018: Interactive data on disease burden among Aboriginal and Torres Strait Islander people*. Canberra: Australian Institute of Health and Welfare.
60. Australian Government Department of Health and Aged Care. (2019). *Human papillomavirus (HPV) immunisation service*. Retrieved 21 July 2022 from <https://www.health.gov.au/health-topics/immunisation/immunisation-services/human-papillomavirus-hpv-immunisation-service#who-should-get-immunised-against-hpv>
61. Australian Government Department of Health and Aged Care. (2022). *About the National Cervical Screening Program*. Retrieved 21 July 2022 from <https://www.health.gov.au/initiatives-and-programs/national-cervical-screening-program/about-the-national-cervical-screening-program>
62. Ryan, N. A. J., McMahon, R. F. T., Ramchander, N. C., Seif, M. W., Evans, D. G., & Crosbie, E. J. (2021). Lynch syndrome for the gynaecologist. *The Obstetrician & Gynaecologist*, *23*(1), 9-20. doi: 10.1111/tog.12706
63. Cancer Australia. (2021). *Ovarian cancer: how is ovarian cancer diagnosed?* Retrieved 11 June 2021 from <https://www.canceraustralia.gov.au/affected-cancer/cancer-types/ovarian-cancer/how-ovarian-cancer-diagnosed>
64. Cancer Australia. (2022). *Cervical cancer: how is cervical cancer diagnosed?* Retrieved 14 September 2022 from <https://www.canceraustralia.gov.au/affected-cancer/cancer-types/cervical-cancer/how-cervical-cancer-diagnosed>
65. Cancer Australia. (2022). *Endometrial cancer: how is endometrial cancer diagnosed?* Retrieved 29 December 2022 from <https://www.canceraustralia.gov.au/affected-cancer/cancer-types/endometrial-cancer/how-endometrial-cancer-diagnosed>
66. Australian Institute of Health and Welfare. (2022). *Cancer Data in Australia* (Cat. no: CAN 122). Canberra: Australian Institute of Health and Welfare.
67. Marcusson-Rababi, B., Anderson, K., Whop, L. J., Butler, T., Whitson, N., & Garvey, G. (2019). Does gynaecological cancer care meet the needs of Indigenous Australian women? Qualitative interviews with patients and care providers. *BMC Health Services Research*, *19*, 606. doi: 10.1186/s12913-019-4455-9
68. Reath, J., & Carey, M. (2008). Breast and cervical cancer in Indigenous women: overcoming barriers to early detection. *Australian Family Physician*, *37*(3), 178-182.
69. Butler, T. L., Anderson, K., Garvey, G., Cunningham, J., Ratcliffe, J., Tong, A., . . . Howard, K. (2019). Aboriginal and Torres Strait Islander people's domains of wellbeing: a comprehensive literature review. *Social Science & Medicine*, *233*, 138-157. doi: 10.1016/j.socscimed.2019.06.004
70. Jaenke, R., Butler, T. L., Condon, J., Garvey, G., Brotherton, J. M. L., Cunningham, J., . . . Whop, L. J. (2021). Health care provider perspectives on cervical screening for Aboriginal and Torres Strait Islander women: a qualitative study. *Australian and New Zealand Journal of Public Health*, *45*(2), 150-157. doi: 10.1111/1753-6405.13084
71. Garvey, G., & Cunningham, J. (2018). National cancer control plans. *The Lancet Oncology*, *19*(12), e666. doi: 10.1016/S1470-2045(18)30834-9
72. Cancer Australia. (2018). *Gynaecological cancers: a handbook for Aboriginal and Torres Strait Islander Health Workers and Health Practitioners*. Sydney: Cancer Australia.
73. Ovarian Cancer Australia, Australia New Zealand Gynaecological Oncology Group, & Australian Society of Gynaecological Oncologists. (2020). *Ovarian cancer national action plan 2020-2025*. Melbourne: Ovarian Cancer Australia.
74. Whop, L. J., Smith, M. A., Butler, T. L., Adcock, A., Bartholomew, K., Goodman, M. T., . . . Lawton, B. (2021). Achieving cervical cancer elimination among Indigenous women. *Preventive Medicine*, *144*, 106314. doi: 10.1016/j.ypmed.2020.106314
75. Cancer Council Australia. (2018). *National Cervical Screening Program: guidelines for the management of screen-detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding*. Retrieved 15 August 2018 from <https://wiki.cancer.org.au/australiawiki/index.php?oldid=190197>

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