

PROSTATE CANCER QUALITY PERFORMANCE INDICATORS

Descriptions

2021

Acknowledgements

This is a supporting document for the Prostate Cancer Quality Improvement Monitoring Report (the monitoring report), which published quality performance indicator (QPI) data from the New Zealand Cancer Registry and the Ministry of Health's national data collections for patients diagnosed with prostate cancer in New Zealand Aotearoa between 1 January 2016 and 31 December 2018.

This document is being released by Te Aho o Te Kahu, the Cancer Control Agency (Te Aho o Te Kahu).

Te Aho o Te Kahu worked with the national Urological Cancer Working Group to identify and report on the prostate cancer quality performance indicators (QPIs). The partners have worked collaboratively to develop the indicators, the indicator descriptions contained within this report, identify and access national data required to calculate the prostate cancer QPIs, and finally analyse the data and report on findings.

The development group acknowledges that each data point contained within the monitoring report reflects an individual or cluster of patients and that each prostate cancer will have significantly affected the patient and their whānau. The group acknowledge all of those involved.

For simplicity of language the terms man and men are used throughout this document but should be taken to include all patients with prostate cancer.

Authors

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INTRODUCTION

Te Aho o Te Kahu, the Cancer Control Agency (Te Aho o Te Kahu) and the National Urological Cancer Working Group (the working group) have worked together to identify a set of 13 proposed quality performance indicators (QPIs) for prostate cancer.

The proposed indicators will allow us to measure performance and drive quality improvement in prostate cancer diagnosis and treatment services. The five QPIs that were able to be calculated using the Ministry of Health's national collections are presented in the associated Prostate Cancer Quality Improvement Monitoring Report (the monitoring report).

This document sets out descriptions of and the evidence and rationale for the full set of 13 QPIs.

In some instances, the original QPI required altering prior to calculation due to availability of data.

This document should be read in conjunction with the monitoring report.

Background

What is the prostate cancer quality performance indicator project about?

High-quality cancer care in New Zealand requires a nationally consistent, coordinated approach that advances equity and is structured to enable district health boards (DHBs) and hospitals to deliver quality improvement.

Addressing variation in the quality of cancer services is pivotal to delivering quality improvements. We can achieve this by establishing consensus, including through clear performance indicators, of what good cancer care looks like. Developing QPIs to quantitatively measure processes and outcomes is an internationally accepted approach to driving quality improvement in cancer care.

Te Aho o Te Kahu is developing national tumour-specific QPIs in partnership with sector-led working groups.

Key principles of the QPI development process are clinical engagement, consultation and consensus.



The QPIs Te Aho o Te Kahu calculates are:

- evidence-based (that is, supported by sound, current evidence that the indicator can drive quality improvement)
- important (that is, they address an area of clinical importance that could significantly affect the quality and outcome of care delivered)
- supportive of the goals of achieving Māori health gain, equity and national consistency
- measurable using complete, robust data from national collections.

How did we come up with these indicators?

The working group first identified a 'long list' of 221 potential prostate cancer QPIs from literature and evidence searches. The group reviewed these indicators at a meeting in August 2018 and considered which were potentially most valuable. It identified a 'short list' of 19 QPIs, which sub-work groups then further discussed and refined.

The group sent out a reduced list of 15 QPIs for sector feedback in May 2019.

After incorporating feedback from the sector, the working group further refined the list, resulting in the set of 13 QPIs described in this report. Of the 13, five can currently be calculated using Ministry of Health national collections. These five are presented in the associated monitoring report.

National data to calculate indicators

We have considered the data requirements for each indicator. If national data to measure the indicator is available from the Ministry of Health's national data collections, we can use it to calculate and report on the indicator.

We have designated QPIs and stratifying variables identified as important but for which data is not currently available in a national data collection as 'aspirational' – indicated by the terms 'yes', 'no' and 'partially'. Where a QPI cannot be calculated, Te Aho o Te Kahu will consider options to ensure that, if possible, it can be measured in future.

This document refers to the following national data sources:

- **Mortality Collection** – this classifies the underlying cause of death for all deaths registered in New Zealand
- **New Zealand Cancer Registry (NZCR)** – this is a population-based register of all primary malignant diseases diagnosed in New Zealand, excluding squamous and basal cell skin cancers



- **National Minimum Dataset (NMDS)** – this is a collection of public and private hospital discharge information, including coded clinical data for inpatients and day patients
- **National Non-Admitted Patients Collection (NNPAC)** – this includes event-based purchase units that relate to medical and surgical outpatient events and emergency department events
- **Pharmaceutical Collection (PHARMS)** – this is a data warehouse that supports the management of pharmaceutical subsidies and contains claim and payment information from pharmacists for subsidised dispensings.

Other data sources, such as the Radiation Oncology Collection (ROC), the Faster Cancer Treatment (FCT) dataset and the Prostate Cancer Outcomes Registry – Australia and New Zealand (PCOR – ANZ) are mentioned in this report. However, when it came to calculating the QPIs these sources were not used because, as explained for PCOR below, for the time period in question they did not meet the criteria of being a robust, complete national data collections.

More information on these data sources can be found on the Ministry of Health’s website: www.health.govt.nz.

Prostate Cancer Outcomes Registry – Australia and New Zealand

PCOR-ANZ holds clinical and patient-reported data on key measures of prostate cancer diagnosis, management and outcomes for men diagnosed with prostate cancer in Australia and Aotearoa New Zealand.

Since 2016, DHBs have progressively joined PCOR-ANZ and begun to contribute data to it. As at January 2021, 100 percent of DHBs are now actively participating, and an estimated 98 percent of all cases diagnosed in the public system are being notified to PCOR-ANZ.

DHB coverage was incomplete in the time period (2016–18) used for analysis in the Prostate Cancer Quality Monitoring Report, so the data has not been included. However, the PCOR-ANZ registry data set will contribute to the measurability of further QPIs in the future.



Glossary and abbreviations

The following terms are used in the body of this report.

Term	Description												
Androgen deprivation therapy (ADT)	An antihormone therapy whose main use is in treating prostate cancer. Prostate cancer cells usually require androgen hormones, such as testosterone, to grow. ADT reduces levels of androgen hormones, with drugs or surgery, to prevent the prostate cancer cells from growing.												
Computed tomography (CT)	A procedure that uses a computer linked to an X-ray machine to make a series of detailed pictures of areas inside the body. It may be used to diagnose cancer, plan treatment or find out how well treatment is working.												
Expanded Prostate Cancer Index Composite (EPIC)	A comprehensive instrument designed to evaluate patient function and bother after prostate cancer treatment.												
Faster Cancer Treatment (FCT)	Indicators that require district health boards to collect and report information on the times taken between referral with a high suspicion of cancer to diagnosis and treatment.												
First Specialist Appointment (FSA)	A person's first appointment with a hospital based medical specialist.												
Gleason grade	A grading system that helps evaluate the prognosis of men with prostate cancer using samples from a prostate biopsy. Pathologists assess the extent to which the cells in the cancerous tissue look like normal prostate tissue under the microscope. They will then assign one Gleason grade to the most predominant pattern in the biopsy and a second Gleason grade to the second most predominant pattern. The sum of the two grades determines the Gleason score.												
Gleason score	The sum of the two predominant Gleason grades (see above); this has been the main way of describing how aggressive prostate cancer looks under the microscope and how it is likely to behave. For example: Gleason grades 3 + 4 give a Gleason score of 7. A Gleason score of 6 is low grade, a score of 7 is intermediate grade and a score of 8 to 10 is high grade.												
International Society of Urological Pathology (ISUP) grade group	A revised prostate cancer grading system ISUP released in 2014. This system is also referred to as grade groups. It comprises five grades as follows. <table border="1" data-bbox="555 1637 1008 1928"> <thead> <tr> <th>Grade group</th> <th>Gleason score</th> </tr> </thead> <tbody> <tr> <td>Grade group 1</td> <td>≤ 6</td> </tr> <tr> <td>Grade group 2</td> <td>7 (3 + 4)</td> </tr> <tr> <td>Grade group 3</td> <td>7 (4 + 3)</td> </tr> <tr> <td>Grade group 4</td> <td>8</td> </tr> <tr> <td>Grade group 5</td> <td>9–10</td> </tr> </tbody> </table>	Grade group	Gleason score	Grade group 1	≤ 6	Grade group 2	7 (3 + 4)	Grade group 3	7 (4 + 3)	Grade group 4	8	Grade group 5	9–10
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Grade group 1	≤ 6												
Grade group 2	7 (3 + 4)												
Grade group 3	7 (4 + 3)												
Grade group 4	8												
Grade group 5	9–10												
	ISUP grade group is another measure of how aggressive prostate cancer looks and is likely to behave.												



Term	Description
Magnetic resonance imaging (MRI)	A procedure in which radio waves and a powerful magnet linked to a computer are used to create detailed pictures of areas inside the body. Sagittal MRI describes an anatomical plane which divides the body into right and left parts. Multiparametric MRI describes a method of obtaining a detailed three-dimensional image of the prostate by using several different MRI techniques.
Multidisciplinary meeting (MDM)	A treatment planning approach in which a multidisciplinary team reviews and discusses the medical condition and treatment options of a particular patient.
Multidisciplinary team (MDT)	A team that includes several doctors and other health care professionals who are experts in different specialties (disciplines). In cancer treatment, the primary disciplines in a multidisciplinary team are medical oncology (treatment with drugs), surgical oncology (treatment with surgery) and radiation oncology (treatment with radiation).
Pathological T2 (pT2) prostate cancer	There are several components of the TNM (Tumour – Node – Metastasis) staging system for prostate cancer. The pT component is determined by examining the prostate histologically after surgery is performed. pT2 tumours are those confined to the prostate.
Positron emission tomography (PET)	A procedure in which a small amount of radioactive glucose (sugar) is injected into a vein and a scanner is used to make detailed, computerised pictures of areas inside the body where the glucose is taken up. Because cancer cells often take up more glucose than normal cells, the pictures can be used to find cancer cells in the body.
Positron emission tomography-computed tomography (PET-CT)	A procedure that combines the pictures from a PET scan and a CT scan, performed at the same time with the same machine. The combined scans give more detailed pictures of areas inside the body than either scan gives by itself.
Prostatectomy	A surgical procedure for the partial or complete removal of the prostate.
Prostate-specific antigen (PSA)	A protein made by the prostate gland and found in the blood. PSA blood levels may be higher than normal in men who have prostate cancer, benign prostatic hyperplasia or infection or inflammation of the prostate gland.
Prostate-specific membrane antigen (PSMA)	A protein anchored in the cell membrane of prostate epithelial cells. PSMA is highly expressed on prostate epithelial cells and strongly up-regulated in prostate cancer. Therefore, it is an appropriate target for diagnosis and therapy of prostate cancer and its metastases.
Prostate-specific membrane antigen-positron emission tomography (PSMA-PET)	A type of PET scan used to image prostate cancer. The test is routinely performed with a contrast CT scan of the body to assist in localisation of lesions.
Radical treatment	A treatment given with the aim of destroying cancer cells to achieve cure.



Term	Description
Risk group	An initial risk stratification and staging system for clinically localised disease. It was developed by the National Comprehensive Cancer Network (NCCN) to provide the bases for initial management and treatment decisions of men with newly diagnosed prostate cancer. This evaluation should include clinical staging based on a digital rectal examination to assess the extent of disease, the serum PSA, the Gleason score/grade group in the initial biopsy and the number and extent of cancer involvement in the biopsy cores. This allows the stratification of men into risk categories (low, intermediate or high) according to the primary tumour.
TNM staging system	A term that refers to tumour, node and metastases (TNM) to describe the amount and spread of cancer in a patient's body. 'T' describes the size of the tumour and any spread of cancer into nearby tissue; 'N' describes spread of cancer to nearby lymph nodes; and 'M' describes metastasis (spread of cancer to other parts of the body). When available, TNM scores are used in conjunction with other information, such as blood test results, histologic (cell) test results and risk factors, to define the stage groups for most cancers. All people who meet the criteria of a stage group are expected to have similar prognosis and outcome.



PROSTATE CANCER QUALITY PERFORMANCE INDICATORS

The table below lists each QPI and contains hyperlinks to the detailed descriptions for each indicator on the following pages.

Indicator title	Indicator description	Calculated in monitoring report
PCQI 1. Route to diagnosis	Proportion of men with prostate cancer who are diagnosed following presentation to an emergency department	Yes
PCQI 2. Risk group assigned at diagnosis	A. Proportion of men with prostate cancer with risk group assigned at diagnosis B. Proportion of men with prostate cancer with TNM stage documented on the NZCR	No
PCQI 3. MRI prior to radical treatment	Proportion of men with prostate cancer undergoing an MRI prior to radical treatment	No
PCQI 4. PSMA scan	A. Proportion of men with high-risk prostate cancer having a PSMA PET/CT scan as part of staging before radical treatment B. Proportion of men who have a pre-salvage PSMA PET/CT scan before being treated with postoperative/salvage prostate bed radiation	No
PCQI 5. Discussion with radiation oncologist before radical prostatectomy	Proportion of men with prostate cancer being considered for radical prostatectomy who see a radiation oncologist before treatment, including remote consultations	Yes
PCQI 6. Medical oncology review of patients with advanced disease	Proportion of men with advanced prostate cancer who see a medical oncologist	Yes
PCQI 7. Surgical margin status of pT2 stage disease	Positive surgical margin rates for pT2 stage disease	No
PCQI 8. Length of stay after surgery	A. Proportion of men with prostate cancer discharged more than two days after radical prostatectomy B. Proportion of men with prostate cancer discharged five or more days after radical prostatectomy	Yes



Indicator title	Indicator description	Calculated in monitoring report
PCQI 9. Equitable access to treatment	Proportion of men treated with radical surgery, curative radiation treatment and either radical surgery or curative radiation treatment	Yes
PCQI 10. Timeliness of treatment pathway	A. Time from receipt of referral to first specialist appointment (FSA) B. Time from receipt of referral to diagnosis C. Time from decision to treat to first treatment	No
PCQI 11. Quality of life	Proportion of men whose mental and/or physical quality of life is significantly affected after (radical) treatment. Measure of men's functional outcome by assessing proportion of men in each EPIC category: urinary incontinence, urinary irritation, urinary obstruction, bowel habits, sexual function and hormonal function	No
PCQI 12. Progression-free survival	Proportion of men enrolled in active surveillance, or having undergone radiation treatment or radical prostatectomy, who show no objective evidence of biochemical disease progression at 2, 5 and 10 years after treatment	No
PCQI 13. Overall survival	Overall survival for men with prostate cancer at 1, 3, 5 and 10 years from diagnosis by stage	No



PCQI 1. Route to diagnosis

Indicator description	Proportion of men with prostate cancer who are diagnosed following presentation to an emergency department	
Rationale and evidence	Men usually experience a long period of symptoms before an acute presentation at an emergency department with advanced complications of prostate cancer. If these symptoms are recognised earlier, men are more likely to experience better outcomes, including better survival and lower risk of complications of advanced prostate cancer, such as severe pain, if the cancer spreads to the bones. One-year survival is lower for men whose pathway to cancer diagnosis started with an urgent referral or a presentation to the emergency department (Forbes et al 2014).	
Equity / Māori health gain	Māori men are more likely to be diagnosed following a presentation to an emergency department or urgent referral (13%) than non-Māori (9%) (Obertová et al 2015).	
Specifications	Numerator	Number of men who visited an emergency department up to two weeks prior to a prostate cancer diagnosis
	Denominator	Number of men diagnosed with prostate cancer
Data sources	NZCR, NMDS	
Notes	Data on prostate cancer diagnosis sourced only from death certificates is excluded.	



PCQI 2. Risk group assigned at diagnosis

Indicator description	<p>A. Proportion of men with prostate cancer with risk group assigned at diagnosis</p> <p>B. Proportion of men with prostate cancer with TNM stage documented on the NZCR</p>				
Rationale and evidence	<p>Prostate cancer is usually a slow-growing tumour, but in some instances it can spread rapidly throughout a man's body, and may result in their death. Therefore, risk assessment at diagnosis is an important process that provides the bases for initial management and treatment decisions. It can also help reducing disparities in survival outcomes (Obertová et al 2015).</p> <p>The initial evaluation (stage, biopsy Gleason score/ISUP grade group, serum PSA, imaging and genomic profile) provides information for clinical staging, as distinct from pathological staging, and allows men to be assigned to a risk group according to the primary tumour, as defined by the NCCN (NCCN 2020).</p>				
Equity / Māori health gain	<p>Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová et al 2015).</p> <p>Currently, there is an overall lack of national information on extent at diagnosis for prostate cancer patients, and a lack of national information on whether there are differences between Māori and non-Māori men in relation to their likelihood to have a risk group assigned at diagnosis. The assignment of risk group requires recorded data about clinical T stage, Gleason score and PSA levels at the time of diagnosis.</p>				
Specifications	<table border="0"> <tr> <td data-bbox="488 1285 667 1361">Numerator</td> <td data-bbox="667 1285 1311 1361"> <p>A. Number of men with NCCN risk group assigned</p> <p>B. Number of men in each overall TNM stage group</p> </td> </tr> <tr> <td data-bbox="488 1361 667 1420">Denominator</td> <td data-bbox="667 1361 1311 1420">Number of men diagnosed with prostate cancer</td> </tr> </table>	Numerator	<p>A. Number of men with NCCN risk group assigned</p> <p>B. Number of men in each overall TNM stage group</p>	Denominator	Number of men diagnosed with prostate cancer
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Denominator	Number of men diagnosed with prostate cancer				
Data sources	NZCR, pathology reports				



PCQI 3. MRI prior to radical treatment

Indicator description	Proportion of men with prostate cancer undergoing an MRI prior to radical treatment	
Rationale and evidence	<p>Knowledge of the T or N stage, determined by multi-parametric MRI, can affect treatment decisions and may significantly change radical treatment for men diagnosed with prostate cancer.</p> <p>Previous studies of men with prostate cancer have found a 4 percent risk of hospital admission with sepsis following a transrectal biopsy; one-third of these men will be admitted to an intensive care unit. Pre-biopsy MRI can reduce the need for a biopsy by up to 27 percent (Ahmed et al 2017; Kasivisvanathan et al 2018).</p> <p>Targeting of suspicious lesions found on MRI increases the rate of diagnosis of clinically significant lesions and decreases the rate of diagnosis of non-clinically significant lesions (Tempany et al 2018).</p>	
Equity / Māori health gain	Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová et al 2015).	
Specifications	Numerator	Number of men having an MRI in the six months prior to treatment <ul style="list-style-type: none"> A. prior to biopsy B. after biopsy
	Denominator	Number of men diagnosed with prostate cancer
Data sources	NNPAC, NMDS	



PCQI 4. PSMA scan

Indicator description	<p>A. Proportion of men with high-risk prostate cancer having a PSMA PET/CT scan as part of staging before radical treatment</p> <p>B. Proportion of men who have a pre-salvage PSMA PET/CT scan before being treated with postoperative/salvage prostate bed radiation</p>				
Rationale and evidence	<p>A large and increasing volume of literature shows that imaging with PSMA PET/CT scanning has the highest specificity and sensitivity for detecting prostate cancer, particularly in men with high-risk disease, and has a large impact on staging (Einspieler et al 2017; Hijazi et al 2015). This includes the settings of primary disease, local recurrence after surgery or radiation and nodal and bone metastases (Chaloupka et al 2017; Dewes et al 2016).</p> <p>PSMA PET/CT staging results in a change in management plan for 30 percent or more of the men scanned compared to conventional staging. This change of management plan occurs when PSMA PET/CT is used prior to definitive or salvage treatment (Roach et al 2018). A pilot study in New Zealand has shown PSMA PET/CT scanning is cost-effective because it can prevent men from undergoing futile radical treatment or result in alteration of treatment plans that are more appropriate to the stage of disease (Lim et al 2018).</p> <p>A negative PSMA PET/CT scan has been shown to predict for an improved relapse-free survival in men undergoing salvage radiation treatment (Emmett et al 2017).</p>				
Equity / Māori health gain	<p>Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová et al 2015).</p> <p>Access to PSMA scanning is currently inconsistent across New Zealand. It is frequently used in private insurance-funded care, and self-funded by some men. PSMA PET/CT is expected to become the standard of care in the near future; this indicator will assess the extent and equity of access to this imaging service.</p>				
Specifications	<table border="0"> <tr> <td data-bbox="480 1361 667 1547">Numerator</td> <td data-bbox="667 1361 1311 1547"> <p>A. Number of men having a PSMA PET/CT scan within six months of diagnosis</p> <p>B. Number of men having a PSMA PET/CT scan in the 90 days leading up to postoperative/salvage prostate bed radiation</p> </td> </tr> <tr> <td data-bbox="480 1547 667 1664">Denominator</td> <td data-bbox="667 1547 1311 1664"> <p>A. Number of men with high-risk prostate cancer</p> <p>B. Number of men treated with postoperative/salvage prostate bed radiation</p> </td> </tr> </table>	Numerator	<p>A. Number of men having a PSMA PET/CT scan within six months of diagnosis</p> <p>B. Number of men having a PSMA PET/CT scan in the 90 days leading up to postoperative/salvage prostate bed radiation</p>	Denominator	<p>A. Number of men with high-risk prostate cancer</p> <p>B. Number of men treated with postoperative/salvage prostate bed radiation</p>
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Denominator	<p>A. Number of men with high-risk prostate cancer</p> <p>B. Number of men treated with postoperative/salvage prostate bed radiation</p>				
Data sources	NNPAC, NMDS, ROC				



PCQI 5. Discussion with radiation oncologist before radical prostatectomy

Indicator description	Proportion of men with prostate cancer being considered for radical prostatectomy who see a radiation oncologist before treatment, including remote consultations	
Rationale and evidence	<p>Patient-centred care and informed decision making is recognised as an essential component of best-practice cancer care (Ministry of Health 2019).</p> <p>In men with localised prostate cancer, radical prostatectomy and radical radiation treatment have equivalent outcomes in terms of mortality, disease progression and long-term quality of life (Donovan et al 2016; Hamdy et al 2016; Kishan et al 2018).</p> <p>Therefore, for most men, modality of treatment (surgery or radiation treatment) is a patient decision rather than a decision made by an MDT. For this reason, it is important to ensure men receive evidence-based and personalised information about their treatment options from the relevant treatment specialist; for example, a radiation oncologist. Cancer nurse specialists also play an important role in helping communicate treatment options. Tailored information will support men in their choice of treatment and inform them of the intent and possible side effects of their preferred option.</p>	
Equity / Māori health gain	In Aotearoa New Zealand, the number of men being referred to and/or seeing a radiation oncologist before radical prostatectomy is not known. This indicator assumes that all men see a urologist as part of their prostate cancer diagnosis. This indicator will assess the equity of access to radiation oncology consultations.	
Specifications	Numerator	Number of men having an appointment with a radiation oncologist between diagnosis and radical treatment
	Denominator	Number of men with prostate cancer undergoing radical prostatectomy
Data sources	NZCR, NNPAC, NMDS	



PCQI 6. Medical oncology review of patients with advanced disease

Indicator description	Proportion of men with advanced prostate cancer who see a medical oncologist	
Rationale and evidence	Men with advanced prostate cancer should see a medical oncologist within two months of starting ADT (Morris et al 2018; National Institute for Health and Care Excellence 2019). Overseas studies have shown that men with advanced (metastatic) prostate cancer who receive chemotherapy when starting hormone therapy have increased survival (ECOG-ACRIN Cancer Research Group 2013). Because of the difficulty in recording the date of starting ADT, this indicator is used to indicate early versus late referral to medical oncology services.	
Equity / Māori health gain	Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová et al 2015).	
Specifications	Numerator	Number of men with prostate cancer who have had an FSA with a medical oncologist A. within two years of date of death, or B. two or more years before to date of death
	Denominator	Number of men who died with prostate cancer as a primary cause of death
Data sources	NZCR, NNPAC, NMDS, PHARMS, FCT, Mortality Collection	



PCQI 7. Surgical margin status of pT2 stage disease

Indicator description	Positive surgical margin rates for pT2 stage disease.	
Rationale and evidence	<p>The presence of a positive surgical margin increases the risk of recurrence and the need for further treatment and decreases the likelihood of survival for men with prostate cancer (Alkhateeb et al 2010; Ploussard et al 2011). Positive margins have been associated with a more than two-fold increase in the risk of a man dying from prostate cancer (Wright et al 2010).</p> <p>Unlike other tumour characteristics, surgical margins are the only survival factor surgeons can influence (Evans et al 2014).</p> <p>T2 positive margin rates are a marker of surgical quality; less than 20 percent of men should have T2 positive margins after surgery.</p>	
Equity / Māori health gain	Literature/ data not available	
Specifications	Numerator	Number of men with pT2 disease having radical prostatectomy with positive surgical margins
	Denominator	Number of men with pT2 disease having radical prostatectomy
Data sources	NZCR, NNPAC, NMDS, PCOR/pathology reports	
Notes	The Royal College of Pathologists of Australasia recommends that pathology reports record margin status (in the appropriate format).	



PCQI 8. Length of stay after surgery

Indicator description	<p>A. Proportion of men with prostate cancer discharged three or more days after radical prostatectomy</p> <p>B. Proportion of men with prostate cancer discharged five or more days after radical prostatectomy</p>				
Rationale and evidence	<p>Hospital length of stay following surgery is an indicator of health service efficiency and an important indicator for treatment quality.</p> <p>The enhanced recovery after surgery (ERAS) programme is an example of a recent, national initiative aimed at reducing the length of stay after surgery, including cancer surgery. Such initiatives may confer advantages for men with prostate cancer, including faster recovery and fewer complications. They may also lead to more cost-effective care (Lin et al 2019).</p>				
Equity / Māori health gain	<p>Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová 2015).</p>				
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Denominator	<p>Number of men with prostate cancer having a radical prostatectomy</p>				
Data sources	NZCR, NMDS				
Notes	The median length of stay for men with prostate cancer after radical prostatectomy will also be reported for international comparisons.				



PCQI 9. Equitable access to treatment

Indicator description	Proportion of men treated with: a) radical surgery b) curative radiation treatment c) radical surgery <u>and</u> curative radiation treatment.				
Rationale and evidence	<p>Many factors need to be considered before deciding the most appropriate intervention, including the extent and grade of the tumour, the age and the expected life span of the patient and any other serious health conditions he might have. It is also important to consider the likelihood that treatment will cure the cancer (or help in some other way), the patient's feelings about the possible side effects from each treatment and the opinion of the relevant treatment specialist.</p> <p>Men with prostate cancer should receive treatment that is appropriate to their risk group. For example, men with high-risk localised prostate cancer should be offered active treatment options (Bechis et al 2011; National Institute for Health and Care Excellence 2015) and referred to an MDM. However, not every man with prostate cancer needs to be treated right away. Men with low-risk prostate cancer are usually best managed with active surveillance.</p>				
Equity / Māori health gain	Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová et al 2015).				
Specifications	<table border="0"> <tr> <td>Numerator</td> <td>Number of men with prostate cancer treated with: A. radical surgery B. curative radiation treatment C. radical surgery or curative radiation treatment</td> </tr> <tr> <td>Denominator</td> <td>Number of men diagnosed with prostate cancer</td> </tr> </table>	Numerator	Number of men with prostate cancer treated with: A. radical surgery B. curative radiation treatment C. radical surgery or curative radiation treatment	Denominator	Number of men diagnosed with prostate cancer
Numerator	Number of men with prostate cancer treated with: A. radical surgery B. curative radiation treatment C. radical surgery or curative radiation treatment				
Denominator	Number of men diagnosed with prostate cancer				
Data sources	NZCR, NNPAC, NMDS, PHARMS, ROC				
Notes	The development of this indicator considered the inclusion of the proportion of men receiving systemic treatment, active surveillance or watchful wait; however, national data was not available.				



PCQI 10. Timeliness of treatment pathway

Indicator description	<p>A. Time from receipt of referral to FSA</p> <p>B. Time from receipt of referral to diagnosis</p> <p>C. Time from decision to treat to first treatment</p>
Rationale and evidence	<p>Timely and equitable access to quality cancer management is important to support good health outcomes and to reduce inequities for men with prostate cancer.</p> <p>Key components of successful cancer management include early recognition and reporting of symptoms, expertise in identifying men requiring prompt referral and rapid access to investigations and treatment.</p> <p>A suspicion of cancer or cancer diagnosis is very stressful for men and their family/whānau. It is important that men, family/whānau and general practitioners know as soon as possible when treatment will start. Long waiting times may affect local control and survival benefit for some men with high-risk prostate cancer and can result in delayed symptom management for men receiving palliative treatment (Berg et al 2015; Fossati et al 2017; Gupta et al 2018).</p> <p>Men referred to a specialist with a high suspicion of prostate cancer requiring immediate or urgent referral must be seen within 14 days of referral (Prostate Cancer Taskforce 2012).</p> <p>Many factors may delay first treatment for men with prostate cancer. Treatment should be delivered in a timely manner once a decision to treat has been made.</p>
Equity / Māori health gain	<p>Poorer prostate cancer survival for Māori men can be attributed to a series of differences along the prostate cancer care pathway, including less intensive diagnostic investigations, later stage at diagnosis, longer wait times and differences in treatment modalities for both localised and metastatic prostate cancer (Obertová 2015).</p>
Specifications	<p>There are three options:</p> <p>A. Median time from receipt of referral to FSA</p> <p>B. Median time from referral to diagnosis</p> <p>C. Median time from decision to treat to first treatment (radical prostatectomy or radical radiation treatment)</p>
Data sources	<p>NZCR, FCT</p>
Notes	<p>Proportion measures will be developed after reviewing the distribution of the time data and choosing appropriate timeframes (for example, more than two weeks from referral to diagnosis).</p> <p>Treatment modalities will include radical prostatectomy and radical radiation treatment.</p>



PCQI 11. Quality of life

Indicator description	<p>Proportion of men whose mental and/or physical quality of life is significantly affected after (radical) treatment.</p> <p>Measure of men's functional outcome by assessing proportion of men in each EPIC category: urinary incontinence, urinary irritation, urinary obstruction, bowel habits, sexual function and hormonal function.</p>	
Rationale and evidence	<p>Men's quality of life can be affected following all types of treatment for prostate cancer. Side effects may include urinary, sexual and bowel dysfunction and psychosocial effects. There is also a high prevalence of depression and anxiety in men with prostate cancer, across the treatment spectrum (Anderson et al 2014; Watts et al 2014).</p>	
Equity / Māori health gain	<p>Literature/ data not available</p>	
Specifications	Numerator	Number of men with prostate cancer within each of the six EPIC categories at 6 months and 1, 2 and 5 years after treatment
	Denominator	Number of men with prostate cancer alive at 6 months and 1, 2 and 5 years after treatment
Data sources	<p>NZCR, NNPAC, NMDS, PHARMS, PCOR</p>	
Notes	<p>At present, PCOR collects patient report outcome data from men at one year after treatment (Papa et al 2021).</p> <p>Indicator results will be reported by treatment modality.</p>	



PCQI 12. Progression-free survival

Indicator description	Proportion of men enrolled in active surveillance, or having undergone radiation treatment or radical prostatectomy, who show no objective evidence of biochemical disease progression at 2, 5 and 10 years after treatment	
Rationale and evidence	<p>In some men, prostate cancer is a slow-growing tumour and when this is the case there is debate as to the risks of treatment versus any survival advantage gained (United States Preventive Services Task Force et al 2018). Conversely, men with high-risk disease may progress soon after treatment and may be best managed with aggressive multimodality treatment.</p> <p>It is expected that men having undergone radiation treatment or radical prostatectomy or receiving treatment after being in an active surveillance programme will have high disease-free survival at 2, 5 and 10 years from diagnosis (Beaver 2018).</p> <p>Note that overdiagnosis of clinically unimportant disease will lead to higher reported survival. Therefore, results must be interpreted with some caution.</p> <p>Identifying services that are significant outliers may indicate inappropriate management for risk-stratification, inadequate staging or technical shortcomings.</p>	
Equity / Māori health gain	Literature/ data not available	
Specifications	Numerator	Number of men with prostate cancer that has not progressed 2, 5 and 10 years after the end of their primary treatment
	Denominator	Number of men with prostate cancer treated with radiation treatment, radical prostatectomy or enrolled in active surveillance
Data sources	NZCR, NNPA, NMDS, PHARMS	
Notes	This QPI is designed as a comparative analysis not between treatment modalities but rather between centres and/or regions.	



PCQI 13. Overall survival

Indicator description	Overall survival for men with prostate cancer at 1, 3, 5 and 10 years from diagnosis by stage	
Rationale and evidence	<p>An individual man's prognosis following diagnosis with prostate cancer depends on stage at diagnosis and quality of treatment, as well as the man's age and general health at the time of diagnosis.</p> <p>Prostate cancer is often a slow-growing tumour. In men with prostate cancer that is of low or intermediated risk, there is much debate as to the risks of treatment versus any survival advantage gained (Hamdy et al 2016). In addition, for elderly or men with comorbidities, prostate cancer may not be their primary cause of death.</p> <p>Benchmarking of prostate cancer survival rates between treatment providers allows identification of areas where survival rates fall below expectation; investigation is needed to understand the reasons for this.</p> <p>Note that overdiagnosis of clinically unimportant disease will lead to higher reported survival. Therefore, results must be interpreted with some caution.</p>	
Equity / Māori health gain	Māori men have significantly poorer survival than non-Māori, particularly when diagnosed with regional prostate cancer (Obertová et al 2015). Most of the disparity is due to the later stage at diagnosis for Māori men and ethnicity-based differences in treatment (Egan et al 2020).	
Specifications	Numerator	Number of men who survive 1, 3, 5 and 10 years from diagnosis, by stage
	Denominator	Number of men diagnosed with prostate cancer
Data sources	NZCR, Mortality Collection	



APPENDIX 1: WORKING GROUP MEMBERS

The National Urological Cancer Working Group comprised:

Chair

Mr Andrew Williams, Urologist, Auckland and Counties Manukau District Health Board

Deputy Chair

Dr Suzanne Beuker, Urologist, Nelson Marlborough District Health Board

Members

Emma Drake, Cancer Nurse Specialist, Southern District Health Board

Dr Peter Fong, Medical Oncologist, Auckland District Health Board

Dr Jason Gurney, Senior Research Fellow, Cancer Control and Screening Research Group, University of Otago

Tui Hancock, Whānau Ora Nurse Practitioner, Central Primary Health Organisation

Sharon Harber, Cancer Nurse Specialist, South Canterbury District Health Board

Mr Quinten King, Urologist, MidCentral District Health Board

Madhu Koya, Consultant Urologist, Waitemata District Health Board

Dr Remy Lim, Consultant Radiologist, Auckland District Health Board

Rob Macfarlane, Consumer

Mr Stephen Mark, Urologist, Canterbury District Health Board

Dr John Matthews, Consultant Radiation Oncologist, Auckland DHB

Sarah Mortimer, Operations Manager, Blood, Cancer, Renal & Palliative Care, Capital & Coast District Health Board

Tiffany Schwass, Cancer Nurse Specialist, Waikato District Health Board

Dr Alvin Tan, Medical Oncologist, Waikato District Health Board

Mr Simon van Rij, Urologist, Auckland District Health Board

Dr Jonathan Zwi, Pathologist, Auckland District Health Board



APPENDIX 2: STRATIFYING VARIABLES

In addition to DHB and regional cancer network, the indicators will be stratified by the following variables, where possible:

- age
- sex
- ethnicity
- New Zealand Index of Deprivation 2013 (NZDep2013) quintile
- Gleason score
- ISUP grade group.



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