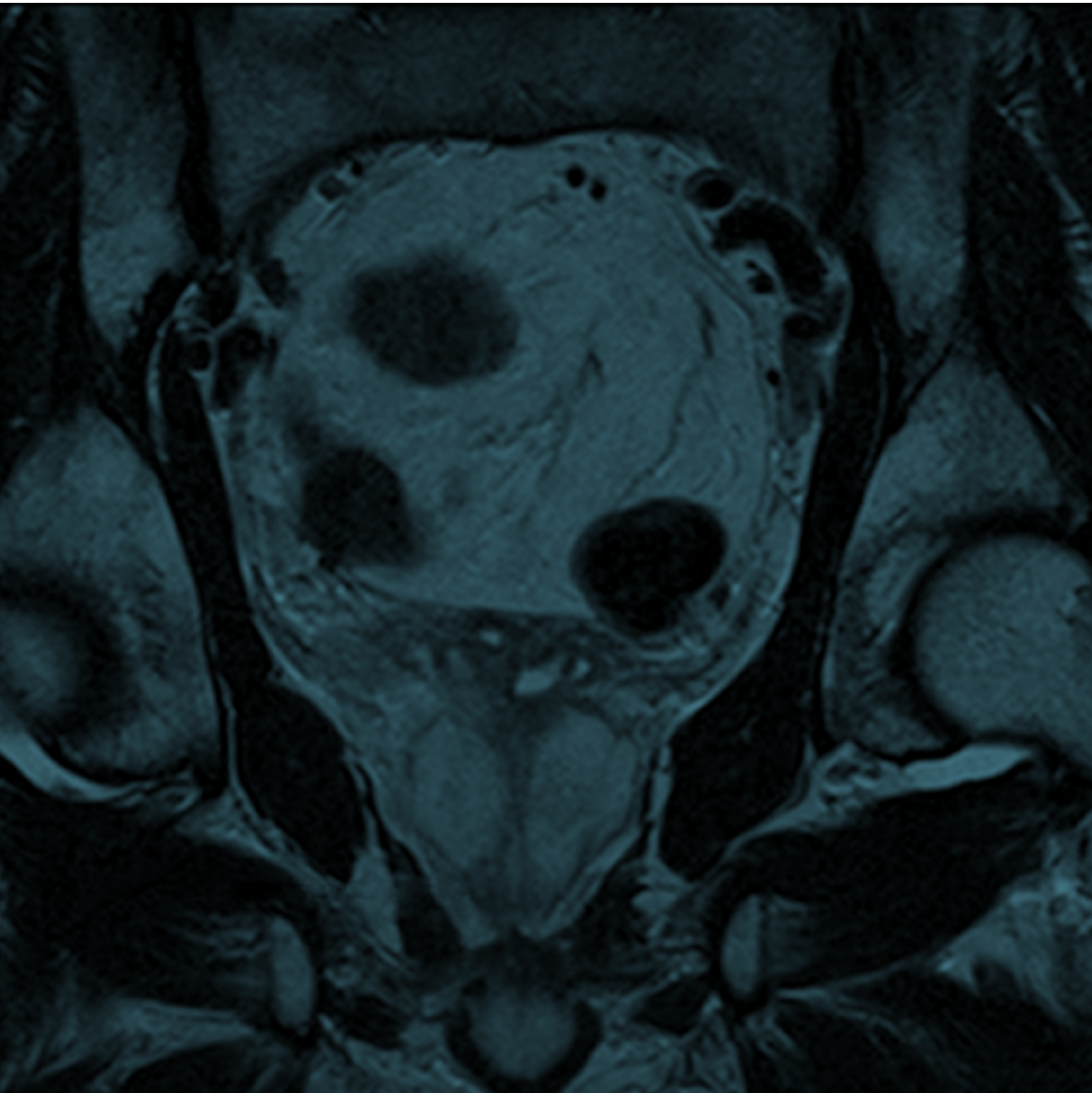
NPCA
National Prostate Cancer Audit

Annual Report 2021

Results of the NPCA Prospective Audit in England and Wales for men diagnosed from 1 April 2019 to 31 March 2020 and the Impact of COVID-19 in England during 2020 (published January 2022)



National Prostate Cancer Audit

Eighth Year Annual Report – Results of the NPCA Prospective Audit in England and Wales for men diagnosed from 1 April 2019 to 31 March 2020 and the Impact of COVID-19 in England during 2020 (published January 2022)

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The Royal College of Surgeons of England (RCS) is an independent professional body committed to enabling surgeons to achieve and maintain the highest standards of surgical practice and patient care. As part of this it supports Audit and the evaluation of clinical effectiveness for surgery.

The NPCA is based at the The Clinical Effectiveness Unit (CEU). The CEU is an academic collaboration between The Royal College of Surgeons of England and the London School of Hygiene and Tropical Medicine, and undertakes national clinical audits and research. Since its inception in 1998, the CEU has become a national centre of expertise in methods, organisation, and logistics of large-scale studies of the quality of surgical care. The CEU managed the publication of the NPCA Annual Report, 2021.

In partnership with:

The British Association of Urological Surgeons (BAUS) was founded in 1945 and exists to promote the highest standards of practice in urology, for the benefit of patients, by fostering education, research and clinical excellence. BAUS is a registered charity and qualified medical practitioners practising in the field of urological surgery are eligible to apply for membership. It is intended that this website will be a resource for urologists, their patients, other members of the healthcare team and the wider public.

The British Uro-oncology Group (BUG) was formed in 2004 to meet the needs of clinical and medical oncologists specialising in the field of urology. As the only dedicated professional association for uro-oncologists, its overriding aim is to provide a networking and support forum for discussion and exchange of research and policy ideas.

National Cancer Registration and Analysis Service (NCRAS), Public Health England collects patient-level data from all NHS acute providers and from a range of national data feeds. Data sources are collated using a single data processing system ('Encore') and the management structure is delivered through eight regional offices across England.

The NCRAS is the data collection partner for the NPCA.

Commissioned by:

The Healthcare Quality Improvement Partnership (HQIP) is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage, and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies www.hqip.org.uk/national-programmes

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The Royal College of Surgeons of England
35–43 Lincoln's Inn Fields
London
WC2A 3PE

T 020 7869 6601
E npca@rcseng.ac.uk
www.npca.org.uk

Designed @ www.superbirdcreative.co.uk

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Acknowledgements

The National Prostate Cancer Audit (NPCA) is commissioned by the Healthcare Quality Improvement Partnership (HQIP)[1] and funded by NHS England and the Welsh Government as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). The audit is a collaboration between the Clinical Effectiveness Unit (CEU) at the Royal College of Surgeons of England (RCS), the British Association of Urological Surgeons (BAUS) and the British Uro-oncology Group (BUG).

We would also like to thank all urologists, uro-oncologists and their clinical and non-clinical teams at NHS Trusts in England and Health Boards in Wales who collected and submitted data for the audit. Your support is key to enabling the NPCA to evaluate the care that men receive following a diagnosis of prostate cancer in England and Wales and whether this care reflects recommended guidelines and quality standards. The NPCA compares NHS Providers in England and Wales and provides these results to underpin quality improvement activities.

We are grateful to the NPCA data collection partners including the National Cancer Registration and Analysis Service (NCRAS), Public Health England (PHE)[2] and the Wales Cancer Network, Public Health Wales for supporting NPCA data submissions from Trusts and Health Boards and for supplying data for this report. We particularly appreciate the efforts of the cancer intelligence analysts and cancer information specialists at NCRAS and the Wales Cancer Network who supplied the data in the midst of the ongoing COVID-19 pandemic.

We would like to thank BAUS and BUG for their continued professional guidance and for raising awareness amongst urological and uro-oncological colleagues. We would also like to thank all members of the NPCA Patient and Public Involvement (PPI) Forum for providing advisory support and ensuring the voice of patients is central to the direction and delivery of the NPCA. A lay report summarising the key results will be developed in consultation with the NPCA PPI Forum and published in Spring 2022.

This report was prepared by members of the NPCA Project Team:

Clinical Effectiveness Unit, The Royal College of Surgeons of England and LSHTM

Julie Nossiter, NPCA Audit Lead
Melanie Morris, NPCA Lead Epidemiologist
Adrian Cook, NPCA Senior Statistician
Ajay Aggarwal, Clinical Audit Coordinator (Oncology)
Brendan Berry, Academic Clinical Fellow
Paul Cathcart, Clinical Audit Coordinator (Urology)
Joanna Dodkins, NPCA Clinical Research Fellow
Jan van der Meulen, NPCA Chair and Methodological Lead
Arjun Nathan, Academic Clinical Fellow
Matthew Parry, NPCA Clinical Research Fellow
Arun Sujenthiran, NPCA Clinical Research Fellow

The British Association of Urological Surgeons

Noel Clarke, NPCA Urological Clinical Lead

The British Uro-Oncology Group

Heather Payne, NPCA Oncological Clinical Lead

With support from:

The National Cancer Registration and Analysis Service (NCRAS), Public Health England (PHE)

Natasha Wood, NCRAS Audit Manager
Eleanor Fitzgerald, Cancer Intelligence Analyst
Wouter Verstraete, Cancer Intelligence Analyst
NCRAS Data Liaison and Registration teams

Wales Cancer Networks, Public Health Wales (PHW)

Gareth Popham, Network Assistant Manager
Julie Cowling, Wales information Specialist

1 The NPCA is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies https://www.hqip.org.uk/national-programmes/

2 This work uses data that has been provided by patients and collected by the NHS as part of their care and support. The data are collated, maintained and quality assured by the National Disease Registration Service, which is part of NHS Digital. http://www.ndrs.nhs.uk/

With review by:

The NPCA Clinical Reference Group:

Roger Kockelbergh (Chair), Consultant Urological Surgeon, Urology Expert Advisory Group, NCRAS, PHE

Stephen Allen, Patient representative, Tackle Prostate Cancer

Pauline Bagnall, Uro-oncology nurse specialist, British Association of Urological nurses (BAUN)

Chloe Bright, Principal Cancer Intelligence Analyst, NCRAS, PHE

Adam Glaser, Clinical Associate Professor, UK Cancer Survival Initiative

Michael Kirby, Visiting Professor, Royal College of General Practitioners (RGCP)

Gokul KandaSwamy, Consultant Urological and Robotic Surgeon, BAUS (Wales)

John McGrath, Consultant Urological Surgeon, NHS England's Specialised Cancer CRG

Krishna Narahari, Consultant Urological Surgeon, BAUS Oncology

Raj Persad, Consultant Urological Surgeon and Andrologist, BAUS

Janet Rimmer, Senior Implementation Lead, NHS Cancer Screening Programmes

Simon Russell, Consultant Oncologist, BUG

Vijay Sangar, MAHSC Professor of Urology, NHS England Specialised Commissioning Specialist Cancer Surgery CRG

Rebecca Leszczynski, Senior Knowledge Officer, Prostate Cancer UK

Members of the NPCA Project Team

NPCA Project Board:

Jonathan Glass (Chair), Consultant Urological Surgeon, Trustee of RCS Council

Chiara DeBiase, Director of Support and Influencing, Prostate Cancer UK

Roger Kockelbergh, Consultant Urological Surgeon, University Hospitals of Leicester NHS Trust

Gokul KandaSwamy, Consultant Urological and Robotic Surgeon, BAUS (Wales)

Krishna Narahari, Consultant Urological Surgeon, BAUS Oncology

Simon Russell, Consultant Clinical Oncologist, BUG

Caroline Rogers, Associate Director, HQIP

Sarah Walker, Project Manager, HQIP

Members of the NPCA Project Team

Foreword

This 2021 NPCA report has been produced in another challenging year. The COVID-19 pandemic, still ongoing at the time of writing, has continued to bring challenges during the data-gathering process which underpins the production of this report. This year we have used a new dataset for England – the Rapid Cancer Registration Dataset (RCRD) – collated successfully by NCRAS staff in difficult circumstances, giving us access to information we might otherwise have been unable to acquire. We have also received the standard (i.e. 'usual') dataset from the team at Public Health Wales despite considerable pressures and COVID-related demands. These teams' diligence and resourcefulness have ensured that this and future NPCA reports can be developed and distributed in a more timely and clinically useful manner. We would like to thank all teams for their outstanding contributions, meeting and overcoming the challenges resulting from the global events.

This 8th NPCA Annual Report covers the diagnostic period between April 1st 2019 and March 31st 2020 in order to bring clinicians and patients up to date with the prostate cancer landscape as it stood just before the pandemic in England and Wales. It also covers the period, for England, up to the end of December 2020, giving an insight into the effect of the pandemic on prostate cancer diagnosis and treatment.

The new data source for England provided quick access to information which would otherwise have been inaccessible, but because of its rapid acquisition, without having the comprehensive range of data available for previous reports, there was inevitably some missing detail that would usually be included in a 'normal' year. This has meant we were only able to report on four of our usual indicators for both England and Wales and a further two for Wales alone.

It is reassuring to see from these that the overall quality of the diagnostic and treatment services is good. That said, there are areas of practice highlighted in the report where there is significant variation between hospitals. Given the unusual public health circumstances, the NPCA have not carried out an outlier process for this annual report. However, individual provider results can still be accessed on our website, and we would urge health-care commissioners, hospital trusts, individual practitioners and patients to make use of these.

The NPCA Quality Improvement (QI) Programme will also continue to address issues of variation in provision, building on its successes in 2019 and 2020, which included the addition of new quality standards, the organisation of a highly effective QI workshop and a designated QI section on the NPCA website. This website has information about individual units. Please take a look and use it when you can!

Having data on services in England up to the end of 2020 from the RCRD, we were also able to report the national and regional picture relating to the impact of COVID-19 on diagnosis and treatment provided compared to the same time periods in 2019. The inevitable disruption caused by the pandemic is clear as diagnosis and treatment rates fell steeply, and some treatment modalities replaced others. The data also reveal the significant shortfall in the number of prostate cancer cases diagnosed during the period of study. This is a significant concern, whose effects will be studied and reported in the future.

An organisational audit, first carried out in 2013 and regularly updated, has been repeated during August/September 2021. We will publish on our website a 'state-of-the-nation' overview illustrating how prostate cancer diagnostic and treatment services are organised, in parallel with the launch of this report.

For 2022, the NPCA will continue to work with our data collection partners in England and Wales, the National Cancer Registration and Analysis Service and the Wales Cancer Network, to receive the most complete, accurate, timely data possible and to develop our activities aimed at maintaining and improving the quality of services for patients. We will also strengthen our collaborations with existing partners such as the British Association of Urological Surgeons, the British Uro-oncology Group, and NHS Improvement's Getting It Right First Time programme in England, whilst reaching out to other groups to use the power of the NPCA prostate cancer data resource to monitor and improve the quality of care. A programme to establish formal collaborations will also be developed and instituted in the next two years.

/continued over

Foreword

As a result of the efforts of the UK prostate cancer community the NPCA has now created a prostate cancer data resource of national and international importance. This is available for interrogation and study by clinicians, patients and health-care commissioners across the spectrum of prostate cancer care. "UK prostate cancer" can be justifiably proud of this achievement. The NPCA team would like to encourage research-interested groups to put this information to work to continue to improve the delivery of prostate cancer care.

Finally, we would like to express our great thanks to the members of the NPCA PPI Forum and patient organisations, including Tackle Prostate Cancer and Prostate Cancer UK, for their support. A very special thanks goes to the hard-working local, regional and national teams for their endeavours in making the NPCA such a success. Their work has been a substantial and sustained effort over years which has put prostate cancer and prostate cancer patients' welfare at the forefront of the national cancer agenda. Given the incidence and importance of this disease, this is exactly where it should be.

Noel Clarke
Urological Clinical Lead representing the British Association of Urological Surgeons

Heather Payne
Oncological Clinical Lead representing the British Uro-oncology Group

Executive Summary

Background

The aim of the NPCA is to assess the process of care and its outcomes in men diagnosed with prostate cancer in England and Wales.[3] The NPCA determines whether their prostate cancer care is consistent with current recommended practice and it provides information to support healthcare providers, commissioners, regulators, patient groups and patients in helping to improve prostate cancer diagnosis and treatment. In this report we make use of a new rapid dataset for England as well as the standard or 'usual' dataset from Wales (i.e. data from the same source as in previous reports) to describe process and outcome measures from selected aspects of the care pathway for men with prostate cancer.

Data collection and analysis

This report presents results from the prospective audit for men diagnosed with, or treated for, prostate cancer between 1st April 2019 and 31st March 2020 in England and Wales. The basis of the audit is usually routine data sources. However, in this unprecedented year, data flows have been disrupted. Notwithstanding this we have still been able to receive Cancer Network Information System Cymru (CaNISC), Patient Episode Database for Wales (PEDW) and Office for National Statistics (ONS) data in Wales. We have also been given access to a Rapid Cancer Registration Dataset (RCRD) in England which has been linked to Hospital Episode Statistics (HES), ONS, the Radiotherapy Data Set (RTDS) and the Systemic Anti-Cancer Therapy (SACT) database. In future, this could potentially lead to the regular rapid reporting of information, once data quality going forward has been further evaluated. A comparison of data from the standard NPCA dataset with the RCRD can be found here.

Using the RCRD and the data from Wales we report specific information for six performance indicators relating to diagnosis, staging and treatment during the period immediately before the COVID pandemic started. These include one disease presentation indicator and three treatment-outcome performance indicators for both England and Wales, and two related to treatment allocation for Wales. For England, thanks to the RCRD, we report on the impact that COVID-19 had at a regional level on diagnosis and treatment rates in 2020.

How to use this report and the NPCA website

The information presented here reports prostate cancer services in England and Wales, showing variation across providers. Due to the unusual circumstances underpinning data collection and collation, resulting in the unavailability of standard cancer registration data[4], the NPCA has not carried out a formal outlier process in this report. Rather, a breakdown of results at the level of each Trust/Health Board and specialist MDT is provided in the appendices and is available on our website to facilitate local quality improvement activities. We recommend that these data provide a starting point for reflection on the reasons behind variation in practice and outcome, and that this report be used to identify such areas.

The NPCA team are aware of COVID-related changes in the process and breadth of data collection and collation and, as a consequence, its potential shortfalls. For this reason, we would encourage circumspection in making comparisons with every aspect of the findings in our previous reports. However, where we have reported indicators we are confident that the data are robust and it is therefore reasonable in relation to these to take action appropriately.

As always, the audit provides an impetus to maintain and improve data collection for the most accurate reflection of prostate cancer care in England and Wales, as the findings are only as good as the data collected. Users of this report should take time to identify areas for improvement in data completeness, service availability and patient outcomes, especially as we come out of the current pandemic. An important aspect of this is the engagement of clinicians to ensure that the data reported on their behalf is both complete and accurate. We also encourage clinical leads and other MDT members to attend our next Quality Improvement workshop (the last was in December 2021), where audit results provide a foundation for discussion and improvement in care. The next will be advertised on our QI webpage in due course. We also welcome feedback on how the NPCA audit outputs can be improved.

These results can be used by patient charities and support groups to inform their patient and carer networks and by patients to start conversations with their care providers. A lay summary of the report will be published alongside this report in early 2022. Previous lay summaries of our Annual Reports and patient-focussed slide sets for use by support groups can be found on our website at www.npca.org.uk

3 Medium-term indicators require longer follow-up (up to two years' post-treatment) so the reporting time period for GU or GI complications is 1st January to 31st December 2018.

4 Standard cancer registration data for diagnoses in England from 1st January 2019 were unavailable during the preparation of this report. For updates regarding future availability please refer to the monthly National Disease Registration Service newsletters

Key Findings

Data quality

- Data completeness of key variables necessary to assign a risk group remains high for Wales (PSA, Gleason score and TNM variables; 86%, 86% and 79%, respectively). Information on PSA and Gleason score were unavailable for England this year so it was not possible to place men in a risk group.

- Data completeness of performance status reached 100% in Wales and increased in England compared with the previous report (61% versus 52%).

Prospective audit in England and Wales

- The number of men diagnosed with prostate cancer, in the pre-pandemic period covered by this audit (1st April 2019 to 31st March 2020), is 45,885. This is an increase on the number reported for 2017-2018 (42,668) but down from the unusually high number for 2018-2019 (52,850). It is thought that the surge in numbers in that year (diagnosed 1st April 2018 to 31st March 2019) may have been explained by increased public awareness following diagnosis of two high profile celebrities with prostate cancer (https://www.npca.org.uk/reports/npca-annual-report-2020/).

- The proportion of men presenting with metastatic disease at diagnosis in England and Wales is stable at 13%.

- The proportion of men recorded as having an emergency readmission within 90 days of radical prostate cancer surgery is 13%, similar to the 14% reported in 2020.

- Medium-term outcomes are similar or better than previous years:

  a. Genitourinary complications following radical prostatectomy have reduced slightly since last year's report. 7% of men experienced at least one genitourinary complication within two years of their prostatectomy compared to 9% the previous year.

  b. Gastrointestinal complications following radical radiotherapy remain stable: 11% of men experiencing a gastrointestinal complication within two years of their radiotherapy as was the case in the previous year.

Prospective audit in Wales

(Figures from last year's report included English data, so comparative figures are given only for Wales)

- 10% of men with low-risk disease had radical treatments and were potentially "over-treated" in Wales.[5] This represents a decrease from 2018-2019 when 16% of men were potentially "over-treated" in Wales.

- 40% of men with high risk disease did not have radical treatments and were potentially "under-treated" in Wales.[5] This has increased from 2018-2019 when 34% of men were potentially "under-treated" in Wales.

Impact of the COVID-19 pandemic in England

- The COVID-19 pandemic has had a profound impact on the care provided to patients with cancer, with delays in diagnosis and treatment. While the audit did not measure the reasons behind each case, other evidence shows us that this situation was likely to be due to the steps taken to mitigate transmission of the virus, changes to the provision of services due to capacity pressures and patients being reluctant to seek care.[6,7,8,9,10]

- There was a 54% reduction in the number of patients newly diagnosed with prostate cancer during April – June 2020 compared with the same period in 2019. From July 2020 onwards there was an increase in diagnostic activity across all regions but this had not returned to 2019 levels by the end of 2020.

- Of the men diagnosed with prostate cancer since April 2020, a higher proportion were diagnosed at stage IV compared with 2019 (21% vs 17%).

- There was a 48% reduction in the number of men undergoing radical prostatectomy from April – June 2020 compared with 2019. Surgical activity increased July – September 2020, but there was an overall 5% reduction compared with 2019. From October to December, there was a 25% overall reduction, compared with the same period in 2019. This effect did vary by region.

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5 Prostate Cancer. NICE Quality Standard [QS91], 2015 (Updated May 2019) QS2: 'men with low-risk localised prostate cancer for whom radical treatment is suitable are offered a choice between active surveillance, radical prostatectomy or radical radiotherapy'; QS3: 'men with intermediate- or high-risk localised/locally advanced localised prostate cancer who are offered non-surgical radical treatment are offered radical radiotherapy and ADT in combination'

6 Gathani T, Clayton G, E M, Horgan K. The COVID-19 pandemic and impact on breast cancer diagnoses: what happened in England in the first half of 2020. *British Journal of Cancer* 2020.

7 Greenwood E, Swanton C. Consequences of COVID-19 for cancer care — a CRUK perspective. *Nature Reviews Clinical Oncology* 2021; **18**: 3-4.

8 Kuryba A, Boyle JM, Blake HA, Aggarwal A, Van Der Meulen J, Braun M, Walker K, Fearnhead NS. Surgical Treatment and Outcomes of Colorectal Cancer Patients During the COVID-19 Pandemic: A National Population-based Study in England. Annals of Surgery Open. 2021 Jun 1;2(2):e071.

9 McCormack V, Aggarwal A. Early cancer diagnosis: reaching targets across whole populations amidst setbacks. *British journal of cancer* 2021.

10 Rutter M, Brookes M, Lee T, Rogers P, Sharp L. Impact of the COVID-19 pandemic on UK endoscopic activity and cancer detection: a National Endoscopy Database Analysis. *Gut* 2020.

- There was a 45% reduction in the number of men initiating radical radiotherapy from April – June 2020 compared with 2019. During July – September 2020, radical radiotherapy activity increased above the levels observed in 2019 in every region and by 23% overall.

- Increasing use of a hypofractionated regimen was evident across each region reflecting guidance for the safe maintenance of radiotherapy services without reducing treatment effectiveness.[11,12]

There was a rapid and marked fall in the use of docetaxel use from April 2020 in each region for men with metastatic hormone-sensitive prostate cancer and a concomitant increase in the use of enzalutamide. This reflects updated guidance published in April 2020.[13] However, there was significant inter-regional variation.

11 Zaorsky NG, James BY, McBride SM, Dess RT, Jackson WC, Mahal BA, Chen R, Choudhury A, Henry A, Syndikus I, Mitin T. Prostate cancer radiation therapy recommendations in response to COVID-19. Advances in radiation oncology. 2020 Nov 1;5:26-32.

12 NICE, 2020. COVID-19 rapid guideline: delivery of radiotherapy. NICE guideline [NG162], 2020 https://www.nice.org.uk/guidance/NG162

13 NICE Guideline [NG161], 2020. NHS England interim treatment changes during the COVID-19 pandemic

Table 1. Recommendations, key findings and related national guidance

These recommendations are based on results from data collected in the audit period of 1st April 2019 to 31st March 2020 just before the COVID-19 pandemic. This should be borne in mind if implementing a recommendation below in a time when services are impacted by the pandemic situation.

No.	Recommendation	Audience	Annual Report 2021 findings underlying recommendation	Previous results (Annual Report 2020)	National guidance
Data quality					
R1	Aim to achieve high completeness of key data items captured by NHS organisations in England, including TNM staging variables and performance status. - A clinician responsible for reviewing and checking their team's data returns should be identified, mirroring the approach in Wales where data completeness remains high.	Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	Performance status: England, from COSD (61%) Wales (100%) (Results 3.1, Table 3). Stage variable assigned: England, from RCRD (74%) Risk group assigned: Wales (94%) (Results 3.2, Table 3)	Performance status Increase: England, from COSD (52%) No change: Wales (100%) Risk group assigned: England (91%) Wales (95%)	*The Cancer Outcome and Services Data set (COSD) has been the national standard for reporting cancer in the NHS in England since January 2013. Feedback reports for the data submitted are available through the CancerStats website.* *The Welsh Cancer Intelligence and Surveillance Unit collects, analyses and releases information about cancer in Wales.*
R2	Review recording of radical treatments, in particular radical prostatectomy, working with data specialists in the Wales Cancer Network.	NHS Organisations in Wales. Prostate cancer teams (local and specialist MDTs) within NHS/Health Boards	Recommendation in light of **R10 – R13**.	N/A	*The Welsh Cancer Intelligence and Surveillance Unit collects, analyses and releases information about cancer in Wales.*
Diagnosis					
R3	Increase the use of trans-perineal biopsy methods, which is advised wherever clinically appropriate, when targeting lesions in the anterior region of the prostate, whilst balancing against resource constraints and the risk of side effects.	Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	40% of men in England and 24% of men in Wales had a trans-perineal prostate biopsy. (Results 3.2, Table 4).	The availability of different data sources* in England for this report precludes a valid comparison to previous results in the Annual Report 2020	*https://www.england.nhs.uk/wp-content/uploads/2018/04/implementing-timed-prostate-cancer-diagnostic-pathway.pdf* *This recommendation is based on the views of the NPCA Clinical Reference Group (CRG).*

/Table 1 continued

No.	Recommendation	Audience	Annual Report 2021 findings underlying recommendation	Previous results (Annual Report 2020)	National guidance
Disease status					
R4	Seek advice from a doctor if any of the following new symptoms are experienced: urinary symptoms, erectile problems, blood in their urine or unexplained back pain, as early diagnosis improves outcomes.	Patients	Overall 13% of men in England and Wales were diagnosed with metastatic disease at diagnosis. (ranging from 4% to 23% by specialist MDT; unadjusted results). (Results 3.3.1, Performance indicator 1, Figure 1).	No change: 13% of men in England and Wales	NHS Long Term Plan for Cancer 2019 *'...build on work to raise greater awareness of symptoms of cancer, lower the threshold for referral by GPs, accelerate diagnosis and treatment...'* Cancer delivery plan for Wales 2016 - 2020 *'… develop a programme of awareness campaigns for cancer'*
R5	Ensure that a family history of prostate, breast or ovarian cancer is reported to a healthcare provider with a view to a possible genetic counselling referral.	Patients / patient groups	Overall 13% of men in England and Wales were diagnosed with metastatic disease at diagnosis. (ranging from 4% to 23% by specialist MDT; unadjusted results). (Results 3.3.1, Performance indicator 1, Figure 1).	No change: 13% of men in England and Wales	NHS Long Term Plan for Cancer 2019 *'...build on work to raise greater awareness of symptoms of cancer, lower the threshold for referral by GPs, accelerate diagnosis and treatment...'* Cancer delivery plan for Wales 2016 - 2020 *'… develop a programme of awareness campaigns for cancer'*
Outcomes of treatment					
R6	Consider establishing radiotherapy centre specialist gastrointestinal services to offer advice to people with bowel-related side effects of radiotherapy. - Identification of these side-effects could be improved with the initiation of hospital-level PROMs programmes.	Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	11% of men experienced at least one bowel complication (defined as receiving a procedure of the large bowel and confirmed diagnosis of radiation toxicity) within two years after radical radiotherapy. (Results 3.3.1, Performance indicator 4, Figure 4).	No change: 11% of men in England and Wales	NICE Guideline [NG131], 2019 *1.3.39 Offer people with signs or symptoms of radiation-induced enteropathy care from a team of professionals with expertise in radiation-induced enteropathy (who may include oncologists, gastroenterologists, bowel surgeons, dietitians and specialist nurses).*

/Table 1 continued

No.	Recommendation	Audience	Annual Report 2021 findings underlying recommendation	Previous results (Annual Report 2020)	National guidance
Outcomes of treatment					
R7	Ensure that men who are offered prostate cancer treatment are made aware of the side effects including: loss of libido, problems getting or keeping erections, loss of ejaculatory function, a worsening of sexual experience, urinary incontinence and/or bowel side effects.	Patients and Prostate cancer teams (local and specialist MDTs) within NHS Trusts/ Health Boards	*Radical prostatectomy – urinary complications* 7% of men experienced at least one genitourinary complication requiring a procedural/surgical intervention within two years after radical prostatectomy. (Results 3.3.1, Performance indicator 3, Figure 3). *Radical radiotherapy – bowel complications* 11% of men experienced at least one bowel complication within two years after radical radiotherapy. (Results 3.3.1, Performance indicator 4, Figure 4).	Reduction: 9% of men in England and Wales Bowel complications are consistent with previous report – 10% of men in England and Wales	NICE Guideline [NG131], 2019 *1.1.12 Tell people with prostate cancer and their partners or carers about the effects of prostate cancer and the treatment options on their:* *sexual function* *physical appearance continence other aspects of masculinity.* *Support people and their partners or carers in making treatment decisions, taking into account the effects on quality of life as well as survival.* NICE Quality Standard [QS91], 2015 *QS4: men with adverse effects of prostate cancer treatment are referred to specialist services.*
R8	Empower patients to ask to be referred to specialist support services if they are experiencing physical or psychological side effects during, or following, prostate cancer treatment. - These should be offered early and on an ongoing basis, in keeping with national recommendations.	Patients and Prostate cancer teams (local and specialist MDTs) within NHS Trusts/ Health Boards	Recommendation in light of **R13**.	N/A	NICE Guideline [NG131], 2019 *1.1.11 Ensure that mechanisms are in place so people with prostate cancer and their primary care providers have access to specialist services throughout the course of their disease.*
R9	Make available sources of further information and support for men with prostate cancer and carers. These are accessible via GP services and from prostate cancer charities including Prostate Cancer UK (www.prostatecanceruk.org) and Tackle Prostate Cancer (www.tackleprostate.org). Both of these charities operate nationwide support networks.	Patients and Prostate cancer teams (local and specialist MDTs) within NHS Trusts/ Health Boards	Recommendation in light of **R6** and **R13**.	N/A	NICE Guideline [NG131], 2019 *1.1.3 Offer people with prostate cancer advice on how to get information and support from websites, local and national cancer information services, and from cancer support groups.* *1.1.4 Choose or recommend information resources for people with prostate cancer that are clear, reliable and up to date. Ask for feedback from people with prostate cancer and their carers to identify the highest quality information resources.*

/Table 1 continued

No.	Recommendation	Audience	Annual Report 2021 findings underlying recommendation	Previous results (Annual Report 2020)	National guidance
Treatment allocation: recommendations on the basis of Welsh data*					
R10	Continue to advocate active surveillance in the first instance for men with low-risk prostate cancer.	Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	10% of men diagnosed with low-risk localised cancer in Wales underwent radical prostate cancer therapy within 12 months of diagnosis. (Results 3.3.2, Performance indicator 5, Table 5).	*Decrease: 16% of men were 'potentially over-treated' in Wales*	*NICE Quality Standard [QS91], 2015* *QS2: men with low-risk prostate cancer for whom radical treatment is suitable are also offered the option of active surveillance.* *NICE Guideline [NG131], 2019* *1.3.7 Offer a choice between active surveillance, radical prostatectomy or radical radiotherapy to people with low-risk localised prostate cancer for whom radical treatment is suitable.*
R11	Investigate why men with high-risk/locally advanced disease are not considered for radical treatment.	Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	60% of men diagnosed with locally-advanced prostate cancer underwent radical treatment within 12 months of diagnosis in Wales equating to 40% of men being 'potentially under-treated'. (Results 3.3.2, Performance indicator 6, Table 5).	*Increase: 34% of men were 'potentially under-treated' in Wales*	*NICE Guideline [NG131], 2019* *1.3.13 Do not offer active surveillance to people with high-risk localised prostate cancer.* *NICE Guideline [NG131], 2019* *1.3.14 Offer radical prostatectomy or radical radiotherapy to people with high-risk localised prostate cancer when it is likely the person's cancer can be controlled in the long term.*
R12	Discuss with your clinical specialist the option of disease monitoring with active surveillance in the first instance.	Patients with low-risk prostate cancer and clinical specialists	10% of men diagnosed with low-risk localised cancer in Wales underwent radical prostate cancer therapy within 12 months of diagnosis. (Results 3.3.2, Performance indicator 5, Table 5).	*Decrease: 16% of men were 'potentially over-treated' in Wales*	*NICE Quality Standard [QS91], 2015* *QS2: men with low-risk prostate cancer for whom radical treatment is suitable are also offered the option of active surveillance.* *NICE Guideline [NG131], 2019* *1.3.7 Offer a choice between active surveillance, radical prostatectomy or radical radiotherapy to people with low-risk localised prostate cancer for whom radical treatment is suitable.*

/Table 1 continued

No.	Recommendation	Audience	Annual Report 2021 findings underlying recommendation	Previous results (Annual Report 2020)	National guidance
Treatment allocation: recommendations on the basis of Welsh data*					
R13	Discuss with your clinical specialist the radical treatment options available to men with high-risk/locally advanced disease.	Patients and clinical specialists	60% of men diagnosed with locally-advanced prostate cancer underwent radical treatment within 12 months of diagnosis in Wales equating to 40% of men being 'potentially under-treated'. (Results 3.3.2, Performance indicator 6, Table 5).	*Increase: 34% of men were 'potentially under-treated' in Wales*	NICE Guideline [NG131], 2019 *1.3.13 Do not offer active surveillance to people with high-risk localised prostate cancer.* NICE Guideline [NG131], 2019 *1.3.14 Offer radical prostatectomy or radical radiotherapy to people with high-risk localised prostate cancer when it is likely the person's cancer can be controlled in the long term.*
Overall recommendations					
R14	Review of the NPCA indicators for providers should be undertaken within the region and nationally, and fed through to providers - Pay particular attention to variations in service provision (diagnostics, treatment and support services) and treatment outcomes. - Where variation is apparent, agree quality improvement action plans and present these to the Trusts and Health Boards which should follow-up implementation progress.	Commissioners and health care regulators	Recommendation in light of **R1 – R12**.	N/A	*This recommendation is based on the views of the NPCA CRG.*
R15	Ensure that radiotherapy and surgical treatment centres are able to deliver a full range of treatments and support services for patients.	Commissioners and health care regulators	Recommendation in light of **R6–R8** and **R13**.	N/A	*This recommendation is based on the views of the NPCA CRG.*

* In this report we make use of a new rapid dataset for England (the RCRD) as well as the 'usual' dataset from Wales to describe process and outcome measures from selected aspects of the care pathway for men with prostate cancer. The RCRD does not contain information on metastases, Gleason grade or PSA which precluded using our risk-stratification algorithm to assign a risk group. As a result, it was not possible to produce indicators based on a risk group for England in this report.

Standard cancer registration data for diagnoses in England from 1st January 2019 were unavailable during the preparation of this report. For updates regarding future availability please refer to the monthly National Disease Registration Service newsletters

Table 2. Impact of COVID-19: recommendations, key findings and related national guidance

These recommendations are based on results from data collected in England during 2019 and 2020.

No.	Recommendation	Audience	Annual Report 2021 results findings underlying recommendation: comparison of 2019 vs 2020	National guidance
Diagnosis and radical treatment				
CR1	Review the diagnostic and treatment activity for your region during 2020 illustrating how your service responded during this time and to support decision making in response to current changes in demand.	Cancer alliances. Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	From April – December: There was a 33% reduction in the number of men newly diagnosed with prostate cancer (31,541 vs 21,260; 2019 vs 2020, respectively). (Results 4.2, Figure 6) There was a 26% reduction in the number of men undergoing radical prostatectomy (5,141 vs 3,798; 2019 vs 2020, respectively). (Results 4.2, Figure 9) There was a 13% reduction in the number of men initiating radical radiotherapy (9,144 vs 7,930; 2019 vs 2020, respectively). (Results 4.2, Figure 11)	NHS England Cancer Recovery Taskforce: Cancer Services Recovery Plan, 2020 *'Phase 1: ensure continuation of essential cancer treatment and screening for high risk individuals during the initial peak of the pandemic.* *Phase 2: restore disrupted services as far as possible to at least pre-pandemic levels.* *Phase 3 (to run until March 2021): full recovery of NHS cancer services in England, including ensuring that care for all patient groups continues to be safe, effective and holistic.'* NHS England 2021/22 priorities and operational planning guidance, 2021 *' To restore full operation of all cancer services…local systems, drawing on advice and analysis from their Cancer Alliance, will ensure that there is sufficient diagnostic and treatment capacity in place'*
CR2	Monitor adherence to the recommended diagnostic pathway for suspected prostate cancer.	Cancer alliances. Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	From April – December: There was a 33% reduction in the number of men newly diagnosed with prostate cancer (31,541 vs 21,260; 2019 vs 2020, respectively). (Results 4.2, Figure 6)	NHS England Implementing a timed prostate cancer diagnostic pathway, 2018 *'Improve performance against national standards (particularly 62 day performance and the 28 day faster diagnosis standard)'* NHS England Cancer Recovery Taskforce: Cancer Services Recovery Plan, 2020 *'Phase 1: ensure continuation of essential cancer treatment and screening for high risk individuals during the initial peak of the pandemic.* *Phase 2: restore disrupted services as far as possible to at least pre-pandemic levels.* *Phase 3 (to run until March 2021): full recovery of NHS cancer services in England, including ensuring that care for all patient groups continues to be safe, effective and holistic.'* NHS England 2021/22 priorities and operational planning guidance, 2021 *'All systems are expected to work with regions to deliver increased capacity to meet the diagnostic needs for their population, in line with the recommendations of the Richards review.'*

/Table 2 continued

No.	Recommendation	Audience	Annual Report 2021 results findings underlying recommendation: comparison of 2019 vs 2020	National guidance
Hypofractionation				
CR3	Continue to increase the use of hypofractionated radiotherapy.	Radiotherapy centres. Cancer alliances. Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	Of the men undergoing radical radiotherapy during April-December there was an increase in the use of a hypofractionated regimen, 78% (7148/9109) in 2019 vs 85% (6595/7772) in 2020. (Results 4.2, Figure 12)	*Guidance pre-dating the COVID-19 pandemic:* *NICE Guideline [NG131], 2019* *'1.3.17 For people having radical external beam radiotherapy for localised prostate cancer: offer hypofractionated radiotherapy (60 Gy in 20 fractions) using IMRT, unless contraindicated'* *Guidance published during the COVID-19 pandemic recommended 'the wider use of short, high daily dose (hypofractionated) radiotherapy' including:* *NICE Guideline [NG162], 2020* *RCR Coronavirus Guidance*
Systemic anti-cancer treatment				
CR4	Offer enzalutamide (or apalutamide) with androgen deprivation therapy (or abiraterone for patients intolerant of enzalutamide) to people with newly diagnosed metastatic disease instead of docetaxel, where appropriate.	Cancer alliances. Prostate cancer teams (local and specialist MDTs) within NHS Trusts/Health Boards	From April –December, there was a 74% reduction in the number of men with hormone-sensitive metastatic disease receiving docetaxel (1458 vs 377; 2019 vs 2020, respectively) During the same time period, there was a marked increase in the number of men receiving enzalutamide (3 vs 1011; 2019 vs 2020, respectively) (Results 4.2, Figure 14)	*Guidance pre-dating the COVID-19 pandemic:* *NICE Guideline [NG131], 2019* *'1.5.6 Offer docetaxel chemotherapy to people with newly diagnosed metastatic prostate cancer who do not have significant comorbidities'* *Updated guidance 2020:* *NICE Guideline [NG161], 2020. NHS England interim treatment changes during the COVID-19 pandemic* *'Option to give enzalutamide with androgen deprivation therapy for patients with newly diagnosed metastatic disease instead of docetaxel to reduce toxicity and potential for admission. For patients who are intolerant of enzalutamide, give the option of switching treatment to abiraterone'* *Updated guidance 28.10.21:* *Project information | Apalutamide for treating prostate cancer [ID1534] | Guidance | NICE* *[NICE updated guidance to add when published]*

NPCA
National Prostate Cancer Audit

Annual Report 2021

Diagnosis & staging

For men diagnosed in England and Wales April 2019 - March 2020:

45,885 men were **diagnosed** with prostate cancer in England and Wales between **1st April 2019 and 31st March 2020**

13% **decrease** compared with 52,580 men in 2018-2019*

*this may be explained by the diagnosis of two high-profile celebrities during this previous reporting period, which was publicised by the media

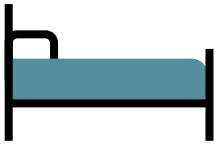
55% of men were **70 years or older**

13% of men presented with **metastatic** disease

Treatment outcomes

For men undergoing surgery in England and Wales between April 2019 - March 2020:

13% of men were **readmitted** within 3 months **following surgery**



This is stable compared with 2018-2019

For men undergoing radical treatment in 2018:

7% experienced at least one **genitourinary** complication requiring a procedural/surgical intervention within two years after **radical prostatectomy**

11% experienced at least one **gastrointestinal** complication requiring a procedural/surgical intervention within two years after **radical radiotherapy**

Decrease compared to 9% in 2017

Stable compared to 11% in 2017

Treatment allocation

For men diagnosed in Wales April 2019 - March 2020:

Low-risk, localised disease

10% of men had radical treatments and were **potentially 'over-treated'**
16% in 2018-2019

High-risk/locally advanced disease

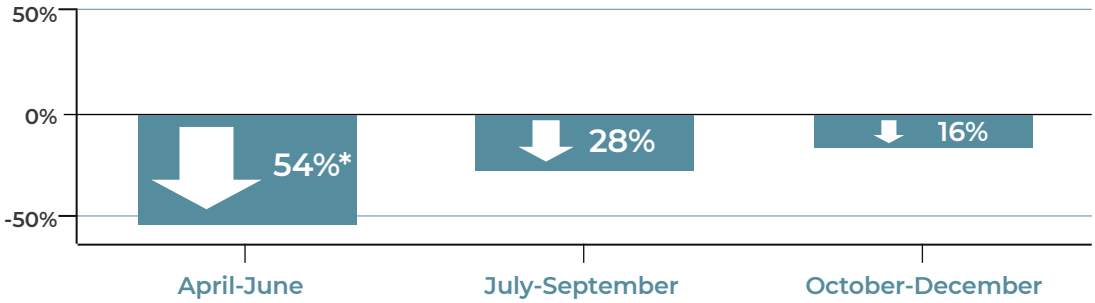
40% of men did not have radical treatments and were **potentially 'under-treated'** - 34% in 2018-2019

NPCA
National Prostate Cancer Audit

Annual Report 2021
Impact of COVID19 in England in 2020

Impact on **Diagnosis**

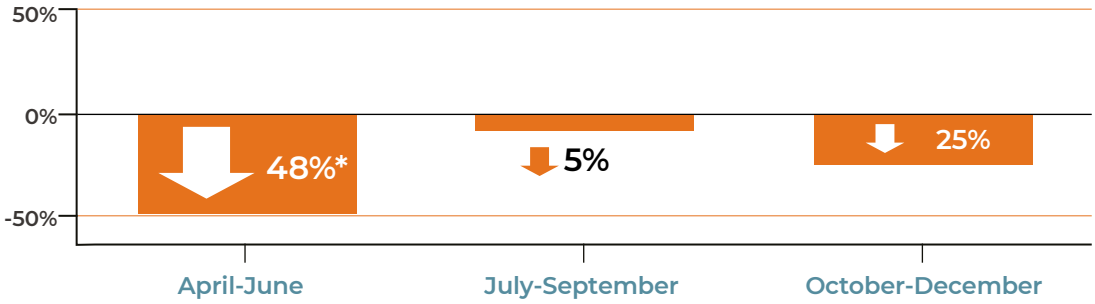
Number of patients newly diagnosed with prostate cancer in 2020 (compared to same period in 2019)



* There was a 54% reduction in the number of men diagnosed between April - June 2020 compared with same period in 2019

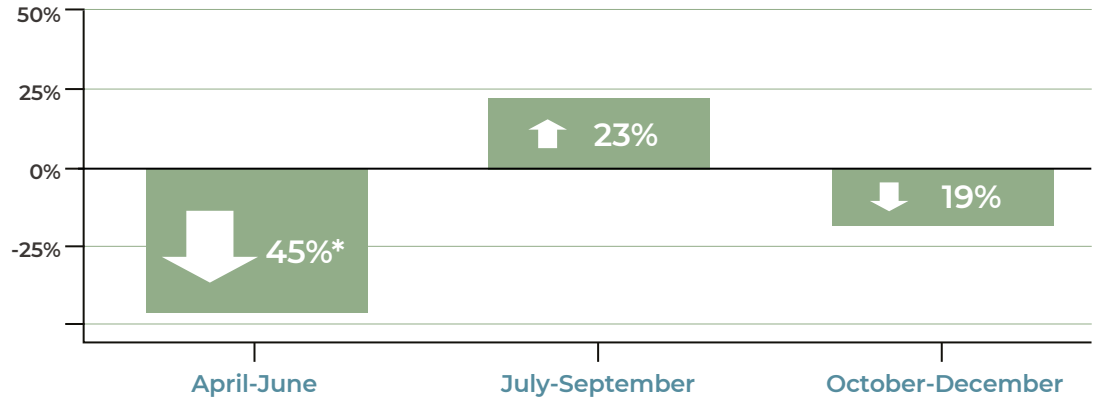
Impact on **Radical treatment** received

Number of patients undergoing radical prostatectomy in 2020 (compared to same period in 2019)



* There was a 48% reduction in the number of men undergoing prostatectomy between April - June 2020 compared with same period in 2019

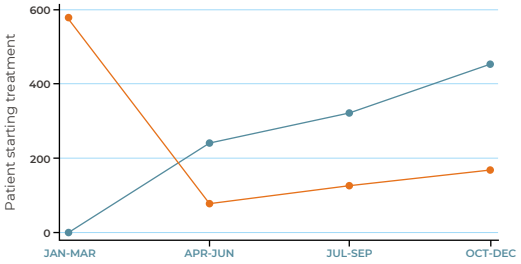
Number of patients undergoing radical radiotheraphy in 2020 (compared to same period in 2019)



* There was a 45% reduction in the number of men undergoing radiotherapy between April - June 2020 compared with same period in 2019

Impact on **systemic therapy**

Rapid and marked **fall of Docetaxel use** from April 2020 in metastatic hormone-sensitive prostate cancer. Conversely, rapid and marked **increased use of Enzalutamide**



1. The National Prostate Cancer Audit (NPCA): Introduction

The National Prostate Cancer Audit has been reporting annually for seven years, developing and adding indicators year-on-year but for the first time, we report fewer indicators in this audit cycle than previously. Although the NPCA still covers the whole patient care pathway from diagnosis through to treatment and treatment-related outcomes, the unprecedented circumstances of the pandemic mean that data capture, collection and collation has been severely affected. We are fortunate to be able to report as usual for Wales and in addition, we have been able to access a Rapid Cancer Registration Dataset (RCRD) for England, provided by NCRAS.

Limiting the impact of the adverse events of radical treatments remains a priority area. We use our previously developed and validated performance indicators to identify men experiencing moderate genitourinary (GU) complications following surgery (radical prostatectomy) and moderate GI toxicity following radiotherapy (external beam radiation [EBRT]).[14,15] We have been able to do this for this report using the RCRD for England and the audit dataset for Wales.

The key indicators regarding potential "over-treatment" of low-risk disease and potential "under-treatment" of high-risk localised/locally advanced disease, which have shown improving trends over the first years of the Audit, could only be reported for Wales this year as risk stratification was not possible using the English RCRD dataset. When full data availability returns, the NPCA audit will use an updated, widely-accepted risk stratification score (the Cambridge Prognostic Grouping[16]) which will give more detail about treatment allocation for different risk groups, in particular whether men with low risk disease are potentially receiving treatment unnecessarily.

Despite the unusual circumstances that have led to an updated structure for this report, we have been able to report on several key indicators and describe the impact of COVID-19 on diagnosis and treatment services during the first phase of the pandemic. We hope that the findings included, reporting where we have robust data available, will continue to drive quality improvement in centres across the country.

1.1. Aim and objectives

The aim of the NPCA is to assess the process of care and its outcomes in men diagnosed with prostate cancer in England and Wales.

The key objectives of the Audit are to investigate:

- service delivery and organisation of prostate cancer care in England and Wales.
- the characteristics of men newly diagnosed with prostate cancer.

  the diagnostic and staging process and planning of initial treatment.
- the initial treatments that men received and the determinants of variation.[17]
- overall and disease-free survival with further follow-up.[18]

The NPCA determines whether the care received by men diagnosed with prostate cancer in England and Wales is consistent with current recommended practice and provides information to support healthcare providers, commissioners and regulators in helping to improve care for patients. The NPCA is the first national audit which is able to report on process and outcome measures from all aspects of the care pathway for men with prostate cancer. This year we focus on particular indicators for selected parts of the pathway for which we have robust, complete data.

14 Sujenthiran A, Charman S et al. Quantifying severe urinary complications after radical prostatectomy: the development and validation of a surgical performance indicator using hospital administrative data. *BJU int* (2017); 120:219-225

15 Sujenthiran A, Nossiter J et al. National population-based study comparing treatment-related toxicity in men who received Intensity-modulated versus 3D-Conformal Radical Radiotherapy for prostate cancer. *Int J Radiat Oncol Biol Phys.*(2017); 99: 1253 -1260

16 Parry MG, Cowling TE, Sujenthiran A, et al. Risk stratification for prostate cancer management: value of the Cambridge Prognostic Group classification for assessing treatment allocation. *BMC Med*. 2020;18(1):114.

17 For example, a short report published in October 2020 explored geographical variation in the management of high-risk/locally advanced prostate cancer in England and investigated potential determinants for receipt of treatment including age, comorbidities, socioeconomic status and ethnicity, which was explored further in a corresponding peer-reviewed publication.

18 Outcome measures of survival are not used in this year's Annual Report but will be used in future reports when the NPCA data has sufficient follow-up.

2. Methods

For full details of our methodology including the data used, definition of variables and details of statistical analysis, please see the most recent version of the NPCA Annual Report Methodology Supplement (www.npca.org.uk).

NPCA dataset and Rapid Cancer Registration Dataset

The NPCA uses patient data collected routinely by the national Cancer Registration and Analysis Service (NCRAS) in England and the Wales Cancer network (WCN) including data on the diagnosis, management and treatment of every patient newly diagnosed with prostate cancer in England and Wales.

For England, the NCRAS provide data from its cancer analysis system, which collates patient data from a range of national data feeds across all NHS providers. For this annual report, the NCRAS provided data from the Rapid Cancer Registration Dataset (RCRD), which is sourced mainly from the Cancer Services and Outcomes Dataset (COSD), containing proxy tumour registrations, as the standard Cancer Registration data were unavailable. This dataset has been provided more quickly than has been possible in the past and includes men diagnosed up to December 2020. However, the speed of production and the pandemic has meant that several of the standard data items are unavailable or too incomplete for use (section 2.3) and others should be interpreted with caution (section 3.3.1).

The RCRD is linked to Hospital Episode Statistics (HES) data, the Office for National Statistics (ONS) dataset, the National Radiotherapy Dataset (RTDS) and the Systemic Anti-Cancer Dataset (SACT).

In Wales, the standard NPCA data items (which can be found on our website[19]) were available for men diagnosed up to 31st March 2020. These data are captured through CaNISC and linked to additional data items from the Patient Episode Database for Wales (PEDW), ONS and CaNISC. RTDS data are currently unavailable. The radiotherapy centres are currently implementing the collection of the RTDS, which will be available to the NPCA in the near future.

We urge centres to work with their data collection leads to ensure prostate cancer data is collected as completely as possible as the audit is only as accurate as the data we receive.

2.1. Patient cohort

Patients are eligible for inclusion in the prospective audit if they have newly diagnosed prostate cancer using the ICD-10 diagnostic code of "C61" (malignant neoplasm of the prostate). The data collection period reported here includes men diagnosed between 1st April 2019 and 31st March 2020 in England and Wales for an assessment of short-term indicators. Medium-term indicators require longer follow-up (up to two years' post-treatment) so the diagnostic period is earlier. The reporting time period for these is therefore over a whole calendar year (1st January 2018 to 31st December 2018).

For England only, we report on the impact of the COVID-19 pandemic on the diagnosis and treatment of men with prostate cancer during 2020 and compare this to the 'usual' patterns of care in 2019.

Level of reporting

It is recommended that the care of patients eligible for radical prostate cancer treatments should be coordinated by specialist MDTs (SDMT).[20] These hubs are made up of one or more specialist cancer centres coordinating services for referring local Trusts or Health Boards.[21]

This year, findings are presented locally and nationally with results at the level of the specialist MDT or the surgery or radiotherapy centre found in the appendices and on our website.

2.2. Definitions

Disease status and risk stratification

Using the Welsh data, men were assigned to a prostate cancer 'risk group' according to a modified D'Amico classification, which is a three-tiered disease status category, assigned according to their TNM stage, Gleason score and PSA level, using an algorithm previously developed by the NPCA.[22]

In England, the RCRD did not contain information on Gleason grade or PSA which precluded using our risk-stratification algorithm to assign a risk group. Disease staging (stage I-IV) derived by NCRAS from TNM status was available but did not map well to the previous risk groups. For example, the group of men with primary metastatic disease did not map to stage IV, which also included N1 patients. The locally advanced risk group comprised men with T3/4, N1, Gleason≥8 or PSA>20mg/dl, while stage III included only men with T3/4. The low-risk group included only T1 patients, while stage I included T2a.

The RCRD disease staging was used to adjust for extent of disease for the treatment-outcome performance indicators (section 2.4). However, because of the mapping problems described above it was not possible to produce indicators based on a risk group for England.

19 https://www.npca.org.uk/resources/npca-minimum-dataset/

20 NICE 2002. Improving outcomes in urological cancer.

21 Aggarwal A, Nossiter et al. Organisation of Prostate Cancer Services in the English National Health Service. *Clin Oncol (R Coll Radiol)* 2016; 28:482-9.

22 NPCA Annual Report 2016. Download from: https://www.npca.org.uk/reports/npca-annual-report-2016/

Treatment allocation

A patient was considered to have undergone radical prostate cancer therapy if he was identified as having received a radical prostatectomy, radical external beam radiotherapy or brachytherapy within 12 months of his diagnosis date.

HES and PEDW records, for England and Wales respectively, were used to identify patients who had undergone a radical prostatectomy using the OPCS-4 procedure code "M61". Where information on radical prostatectomy was missing in the PEDW data for Wales, this information was added from the NPCA dataset.

2.3. Performance indicators included in this report

In this Annual Report, the NPCA report on six performance indicators which are summarised here. For further detail, please see the most recent version of the NPCA Annual Report Methodology Supplement (www.npca.org.uk).

For England and Wales:

Disease presentation

- ***Performance indicator 1: Proportion of men diagnosed with metastatic disease (presented at the level of the SMDT).***

  This *process* indicator provides information on the variation of the proportion of men diagnosed with metastatic prostate cancer, at a point at which they are normally beyond curative treatment. This could potentially indicate a late diagnosis.

Outcomes of treatment: short-term

- ***Performance indicator 2: Proportion of patients who had an emergency readmission within 90 days of radical prostate cancer surgery (presented at the level of the surgery centre).***

  This *outcome* indicator was derived from linkage with HES/PEDW admissions. An overnight stay is not required for a patient to fall into this category. An emergency readmission code indicates that "admission was unpredictable and at short notice because of clinical need" (from the HES data dictionary[23]). It may reflect that a patient experienced a complication related to radical prostate cancer surgery after discharge from hospital.

Outcomes of treatment: medium-term

- ***Performance indicator 3: Proportion of patients experiencing at least one genitourinary (GU) complication requiring a procedural/surgical intervention within 2 years of radical prostatectomy (presented at the level of the surgical centre).***

  We used a coding-framework based on OPCS-4 procedure codes to capture genitourinary complications that required an intervention.[24] These included complications of the urinary tract as opposed to those related to sexual dysfunction. Men with an associated diagnosis of bladder cancer (ICD-10 "C67" code) or who received post-operative radiotherapy were excluded. Men who are both diagnosed and treated in 2018 are included in this indicator for England, and all those treated in 2018 are included for Wales.

- ***Performance indicator 4: Proportion of patients receiving a procedure of the large bowel and a diagnosis indicating radiation toxicity (gastrointestinal (GI) complication) up to 2 years following radical prostate radiotherapy (presented at the level of the radiotherapy centre).***

  We used a coding-framework based on OPCS-4 procedure codes to capture interventions required to treat gastrointestinal (GI) toxicity. This indicator also required the presence of specific ICD-10 diagnosis codes relating to GI toxicity.[25] This combination approach allowed us to exclude the men who had GI interventions for reasons unrelated to radiotherapy, such as part of a screening programme. Men with an associated diagnosis of bladder cancer, those who received additional brachytherapy and those who had received a radical prostatectomy prior to radiotherapy were excluded. Men who are both diagnosed and treated in 2018 are included in this indicator for England, and all those treated in 2018 are included for Wales.

23 http://content.digital.nhs.uk/media/23711/Admitted-Patient-Care/pdf/Admitted_Patient_Care_.pdf

24 More detail of the genitourinary procedure codes can be found here: Sujenthiran A, Charman S, Parry M et al. Quantifying severe urinary complications after radical prostatectomy: the development and validation of a surgical performance indicator using hospital administrative data. *BJU int* (2017); 120:219-225

25 More detail of the gastrointestinal procedure codes and diagnostic codes indicating radiation toxicity can be found here: Sujenthiran A, Nossiter J, Charman S et al. National population-based study comparing treatment-related toxicity in men who received Intensity-modulated versus 3D-Conformal Radical Radiotherapy for prostate cancer. *Int J Radiat Oncol Biol Phys.*(2017); 99: 1253 -1260

For Wales only:

Treatment allocation

- ***Performance indicator 5: Proportion of men with low-risk localised prostate cancer undergoing radical prostate cancer therapy (presented at the level of the SMDT).***

  This *process* indicator provides information about the potential "over-treatment" of men with low-risk prostate cancer.

- ***Performance indicator 6: Proportion of men with high-risk/locally advanced disease receiving radical prostate cancer therapy (presented at the level of the SMDT).***

  This *process* indicator provides information about potential "under-treatment" of men with high-risk/locally advanced disease.

2.4. Statistical Analysis

Centres that perform less than 10 procedures per year are excluded; however, there were none of these this year.

Indicators 1, 2 and 3 were adjusted for patient age, comorbidity, socio-economic status and disease stage (for English patients). Multivariate logistic regression was used to estimate the probability of a patient having an event, at trust level the individual probabilities were summed to give the expected number of events, and the number of events was then divided by the expected.

Comorbidity was captured using the Royal College of Surgeons (RCS) Charlson comorbidity score[26] based on ICD-10 diagnosis codes in HES/PEDW. The Index of Multiple Deprivation (IMD) was used to categorise patients into five socioeconomic groups (1=least deprived; 5=most deprived) based on the areas in which they lived. The five categories were fifths of the national IMD ranking of these areas.

Funnel plots were generated for treatment-outcome performance indicators 1-3 using control limits defining differences corresponding to two standard deviations (inner limits) and three standard deviations (outer limits) from the national average population. Funnel plots are able to graphically display variation across treatment centres for our performance indicators according to patient volume.

26 Armitage JN and van der Meulen J. Identifying co-morbidity in surgical patients using administrative data with the Royal College of Surgeons Charlson Score. *Br J Surg* 2010; 97:772-81.

3. Results

3.1. Audit participation and data completeness

43,330 men were identified with prostate cancer in England from 1st April 2019 to 31st March 2020, of whom 43,324 could be assigned a valid NHS provider (Table 3). Prostate cancer diagnostic services are provided at 126 NHS Trusts across 45 specialist MDTs in England and 6 Health Boards across 4 specialist MDTs in Wales.[27] Surgical services were provided by 52 centres and radiotherapy services by 53 centres during this time period.

In Wales we received a total of 2,561 NPCA records of newly diagnosed men and all could be assigned to a valid NHS provider.

Completeness of pre-treatment data items

Data completeness is high for Wales, and remains consistent with previous year's results, with performance status reaching 100% completeness (Table 3). 94% of Welsh men could be assigned to a risk group due to the high completeness of PSA, Gleason score and TNM variables (86%, 86% and 79%, respectively).

On the basis of RCRD, completeness of performance status in England (61%) increased compared with the previous year's result (52%), but is lower than in Wales. Information on PSA and Gleason score were unavailable in the RCRD so it was not possible to place men in a risk group. RCRD staging information was missing for approximately one quarter of men in the cohort.

Table 3. Data completeness for selected data items for men newly diagnosed with prostate cancer in England and Wales over the period of 1 April 2019 and 31 March 2020.

Data variable	England		Wales	
	N	%	N	%
Diagnostic and staging variables				
No. of men with new diagnosis of prostate cancer	43,330[a] [RCRD]	100%	2,561 [NPCA]	100%
Performance status completed	26,301 [RCRD]	61%	2,561 [NPCA]	100%
Biopsy performed	34,379 [HES]	79%	1,269 [NPCA]	50%
PSA completed[b]			2,208 [NPCA]	86%
Gleason score completed[b]			2,208 [NPCA]	86%
TNM completed	24,641 (RCRD)	57%	2,026 [NPCA]	79%
Stage variable assigned[c]	31,934 [RCRD]	74%	N/A	
Risk group assigned[c]	N/A		2405 [NPCA]	94%

Acronyms: RCRD = Rapid Cancer Registration dataset; NPCA = National Prostate Cancer Audit dataset; PSA = Prostate Specific Antigen; TNM = Tumour, Nodes, Metastases Classification of Malignant Tumours.

a including 6 men who could not be assigned a provider

b unavailable in the RCRD for England.

c Stage variable only available for England from RCRD; PSA and Gleason score unavailable in RCRD therefore unable to assign a risk group for English men

Data quality: recommendations

R1. Aim to achieve high completeness of key data items captured by NHS organisations in England, including TNM staging variables and performance status.

- *A clinician responsible for reviewing and checking their team's data returns should be identified, mirroring the approach in Wales where data completeness remains high.*

R2. Review recording of radical treatments, in particular radical prostatectomy, working with data specialists in the Wales Cancer Network.

27 https://www.npca.org.uk/reports/npca-organisational-audit-2019/

3.2. Audit findings

Patient and diagnostic characteristics are summarised in Table 4.).

Patient characteristics

Over a third of men are aged between 70 and 80 (40% for England and 38% for Wales) and another third are aged between 60 and 70. Prostate cancer is a disease of the older man as is shown by the significant proportion being diagnosed above 80 years old (16% and 14% in England and Wales, respectively). This is consistent with last year's report. In England and Wales, most men had no comorbidities recorded (81% and 79%). Of the men who had performance status recorded in England, 73% had a performance status of zero (fully active) versus 66% of men in Wales, similar to last year's report.

Table 4. Patient and diagnostic characteristics for men newly diagnosed with prostate cancer in England and Wales over the period of 1 April 2019 and 31 March 2020.

Data variable	England		Wales	
	N	%	N	%
No. of men with new diagnosis of prostate cancer	43,330[a]		2,561	
Age				
<60	5,585	13%	294	11%
60-69	13,695	32%	924	36%
70-79	17,302	40%	984	38%
≥80	6,748	16%	359	14%
Total	43,330	100%	2,561	100%
Missing	0		0	
Performance status				
0	19,256	73%	1,686	66%
1-2	6,593	25%	839	33%
≥3	452	2%	36	1%
Total	26,301	100%	2,561	100%
Missing	17,029		0	
Charlson score				
0	34,916	81%	2,035	79%
1	3,985	9%	368	14%
≥2	4,429	10%	158	6%
Total	43,330	100%	2,561	100%
Missing	0		0	
Biopsy performed				
Trans-rectal	20,623	60%	969	76%
Trans-perineal	13,756	40%	300	24%
Total	34,379	100%	1,269	100%
Missing	8,951		1,292	
Prostate Specific Antigen (PSA) [b]				
<10			1,283	58%
10-20			464	21%
>20			461	21%
Total			2,208	100%
Missing			353	

/Table 4 continued

Data variable	England		Wales	
	N	%	N	%
Gleason score [b]				
≤6			783	35%
7			1,017	46%
≥8			408	18%
Total			2,208	100%
Missing			353	
T stage				
T1	2,753	6%	385	16%
T2	13,813	32%	1,204	50%
T3	10,231	24%	640	27%
T4	1,685	4%	174	7%
Total	28,482	100%	2,403	100%
Missing	14,848		158	
N stage				
N0	24,892	90%	2,129	91%
N1	2,851	10%	212	9%
Total	27,743	100%	2,341	100%
Missing	15,587		220	
M stage				
M0	23,137	87%	1,855	85%
M1	3,518	13%	328	15%
Total	26,655	100%	2,183	100%
Missing	16,675		378	
Risk group c [e]				
Low risk			218	9%
Intermediate			1,091	45%
High-risk/locally advanced			768	32%
Metastatic			328	14%
Total			2,405	100%
Insufficient [d]			156	
Stage e [f]				
I	11,774	37%		
II	5,064	16%		
III	9,666	30%		
IV	5,430	17%		
Total	31,934	100%		
Missing	11,396			

Acronyms: PSA = Prostate Specific Antigen; TNM = Tumour, Nodes, Metastases Classification of Malignant Tumours; RCRD = Rapid Cancer Registration Dataset

Some columns do not add to 100% due to rounding

a including 6 men who could not be assigned a provider

b unavailable in the RCRD for England.

c unadjusted values

d Insufficient data indicates that one of the criteria needed for the risk group algorithm is missing so it could not be assigned.

e Stage variable only available for England from RCRD; PSA and Gleason score unavailable in RCRD therefore unable to assign a risk group for English men

f Please see Glossary in annual report for staging notation

Diagnostic investigations

The trans-rectal ultrasound guided method remains the most common biopsy technique at 60% in England and 76% in Wales, with 40% and 24% of men undergoing a trans-perineal biopsy (in England and Wales respectively). There is a significant amount of missing data in each of the countries, however, making these figures difficult to compare across the years.

Diagnosis: recommendations

R3. Increase the use of trans-perineal biopsy methods, which is advised wherever clinically appropriate, when targeting lesions in the anterior region of the prostate, whilst balancing against resource constraints and the risk of side effects.

Treatment information

Treatment characteristics are summarised in Table 5.

6,988 men were identified as undergoing a radical prostatectomy in England; most were robotically assisted (93%), with the remainder being performed laparoscopically (3%) or through open surgery (4%). There has been a continued adoption of the robotic-assisted approach with last year's proportion being 89% (2018/2019) up from 74% in 2015/2016. Robotic prostatectomies were performed less frequently in Wales (82%) but this is steadily increasing from 74% last year and 68% and 63% in the two previous years. Just over one fifth of the prostatectomies were performed with a lymphadenectomy in England (21%) but more so in Wales (59%).

4,831 men underwent radical radiotherapy in England; the vast majority were performed with Intensity-modulated Radiotherapy (IMRT) (Table 5) for first line therapy, which is consistent with the figure reported last year, but 7% still had 3D conformal radiotherapy. Of all men receiving radiotherapy, 17% received radiotherapy to the pelvic lymph nodes as well as the prostate, with the remainder of men receiving radiotherapy to the prostate +/- seminal vesicles only. Wales used IMRT routinely and 15% of Welsh men appear to be having "regional" vs "prostate only" radiotherapy, although these figures for both countries rely on data on "planned region of treatment".

Table 5. Treatment characteristics for men receiving radical radiotherapy or prostatectomy in England and Wales over the period of 1 April 2019 and 31 March 2020.

Data variable	England		Wales	
	N	%	N	%
Radical prostatectomy information				
No. of men undergoing radical prostatectomy	6,988		306	
Prostatectomy type				
Robotic	6,494	93%	244	82%
Laparoscopic	211	3%	30	10%
Open	283	4%	25	8%
Total	6,988	100%	299	100%
Missing	0		7	
Lymphadenectomy performed				
No	5,502	79%	115	41%
Yes	1,486	21%	164	59%
Total	6,988	100%	279	100%
Missing	0		27	
Radical radiotherapy information				
No. of men undergoing radical radiotherapy	14,831		821	
Radiotherapy modality				
Intensity Modulated Radiation Therapy	13,759	93%	795	100%
3D conformal	1,072	7%	2	<1%
Total	14,831	100%	797	100%
Missing	0		24	
Planned radiotherapy region				
Prostate and/or seminal vesicles	12,015	83%	671	85%
Whole pelvis incl. lymph nodes	2,461	17%	120	15%
Total	14,476	100%	791	100%
Missing	355		30	

3.3. NPCA performance indicators

3.3.1. For England and Wales

Disease status at presentation

Performance indicator 1: Proportion of men diagnosed with metastatic disease (presented at the level of the SMDT).

The average proportion of men diagnosed with metastatic disease in England and Wales is 13%, across 49 specialist MDTs (ranging from 4% - 23%) (Figure 1). Variation in the proportion of men diagnosed at a point at which they are normally beyond curative treatment could potentially indicate late diagnosis for some men. Although these results are similar to last year's, two data quality issues in the RCRD mean that this indicator should be interpreted cautiously: a high proportion of men have missing data on their metastatic status; and some men referred to a tertiary centre had their diagnosis allocated to the SMDT associated with that centre, rather than their diagnosing centre.

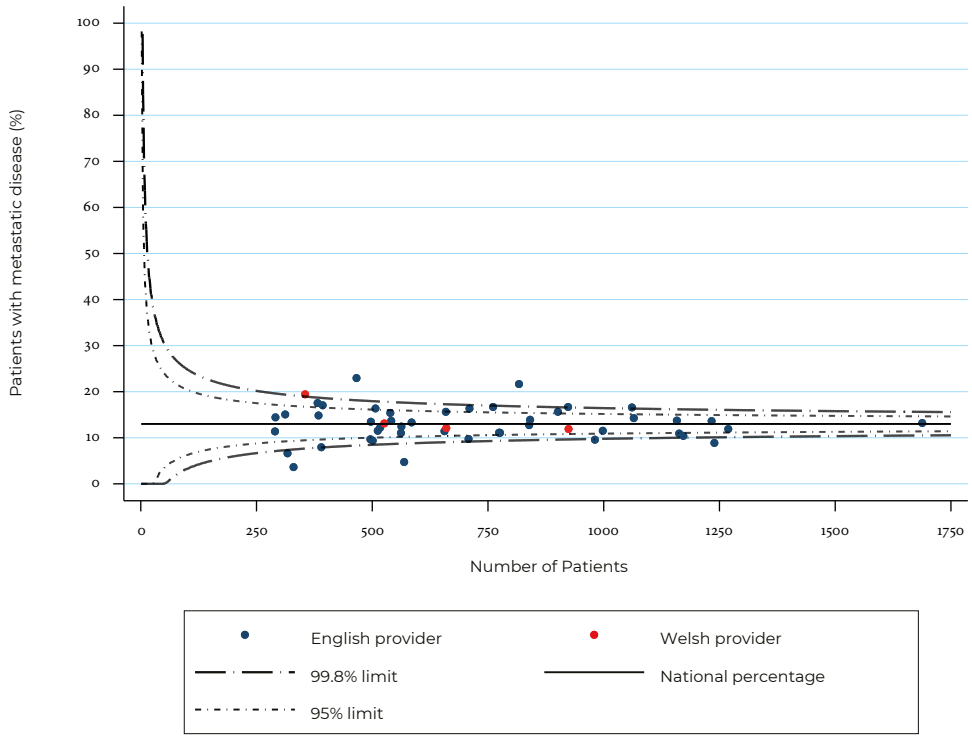
Disease status: recommendations

R4. *Seek advice from a doctor if any of the following new symptoms are experienced: urinary symptoms, erectile problems, blood in their urine or unexplained back pain, as early diagnosis improves outcomes.*

R5. *Ensure that a family history of prostate, breast or ovarian cancer is reported to a healthcare provider with a view to a possible genetic counselling referral.*

Figure 1. Unadjusted funnel plot for the proportion of patients with metastatic disease at diagnosis across the specialist MDTs in England and Wales.

Diagnosis between 1st April 2019 and 31st March 2020
National percentage = 13.0%



Footnote: This indicator should be interpreted with caution due to the amount of missing data on metastases in the RCRD, and as some men referred to a tertiary centre had their diagnosis allocated to the SMDT associated with that centre, rather than their diagnosing centre

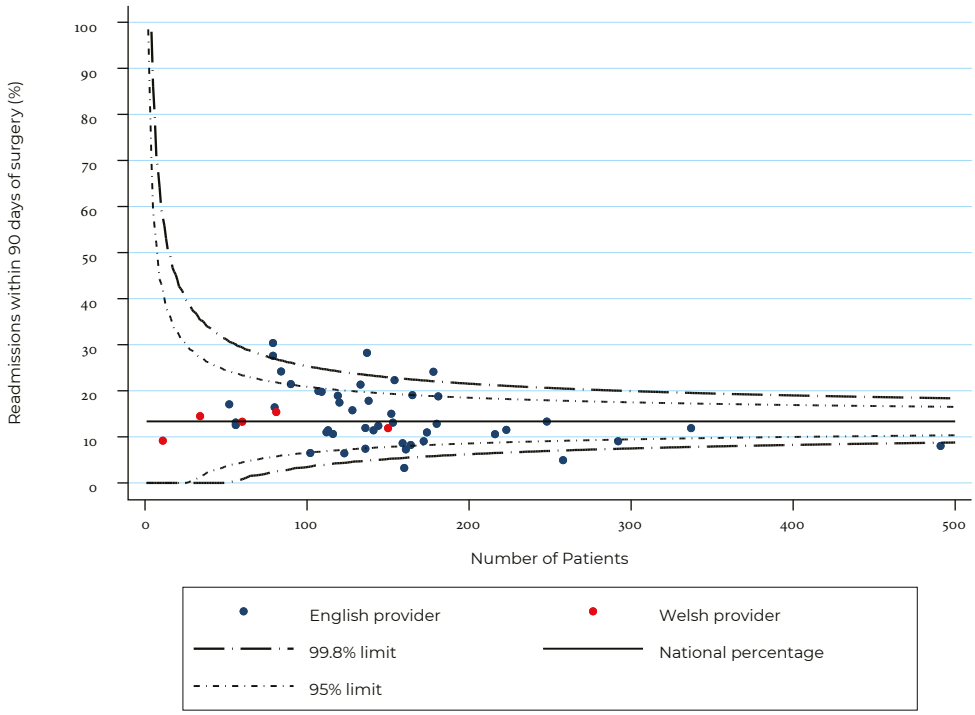
Outcomes of treatment: short-term

Performance indicator 2: Proportion of patients who had an emergency readmission within 90 days of radical prostate cancer surgery (presented at the level of the surgery centre).

7,244 men underwent a radical prostatectomy at 50 surgical centres between 1st April 2019 and 31st March 2020. The 90-day emergency readmission rate following radical prostatectomy was 13% (range 3 – 30%) (Figure 2).

Figure 2. Adjusted funnel plot for the proportion of patients readmitted as an emergency within 90 days of radical prostatectomy by surgical centres in England and Wales.

Surgery between 1st April 2019 and 31st March 2020
National percentage = 13.4%



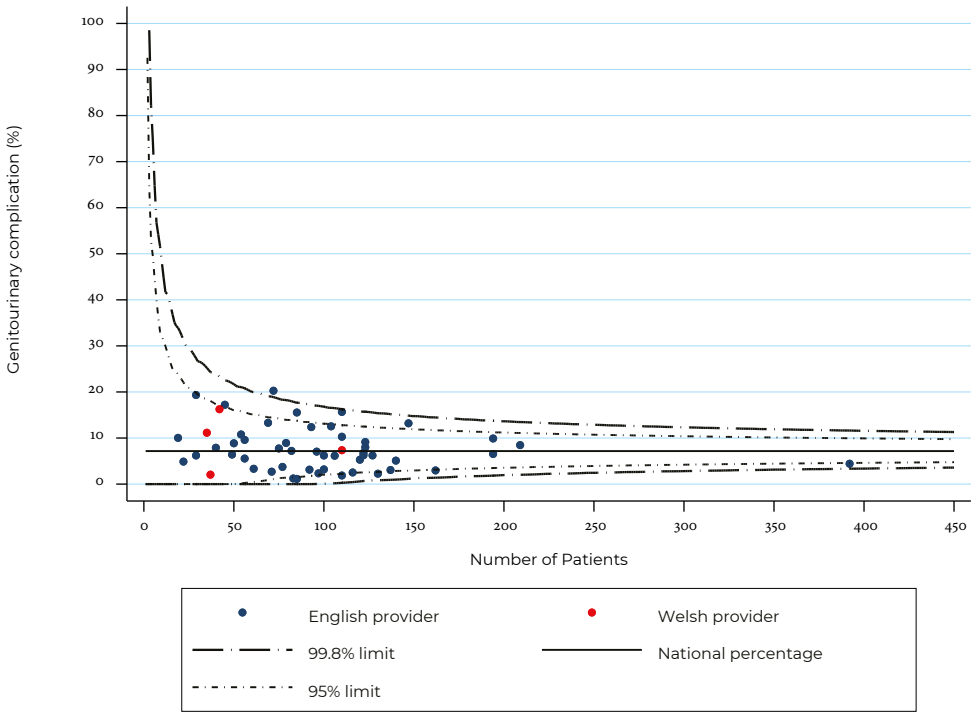
Outcomes of treatment: medium-term

Performance indicator 3: Proportion of patients experiencing at least one genitourinary (GU) complication requiring a procedural/surgical intervention within 2 years of radical prostatectomy (presented at the level of the surgical centre).

5,188 men underwent a radical prostatectomy at 52 surgical centres during 2018. Overall 7% of men experienced at least one treatment-related GU complication within two years following surgery, with a range of 1 – 20% (Figure 3).

Figure 3. Adjusted funnel plot for the proportion of patients experiencing at least one genitourinary complication requiring a procedural/surgical intervention within 2 years of radical prostatectomy by surgical centres in England and Wales.

Surgery between 1st January 2018 and 31st December 2018
National percentage = 7.2%

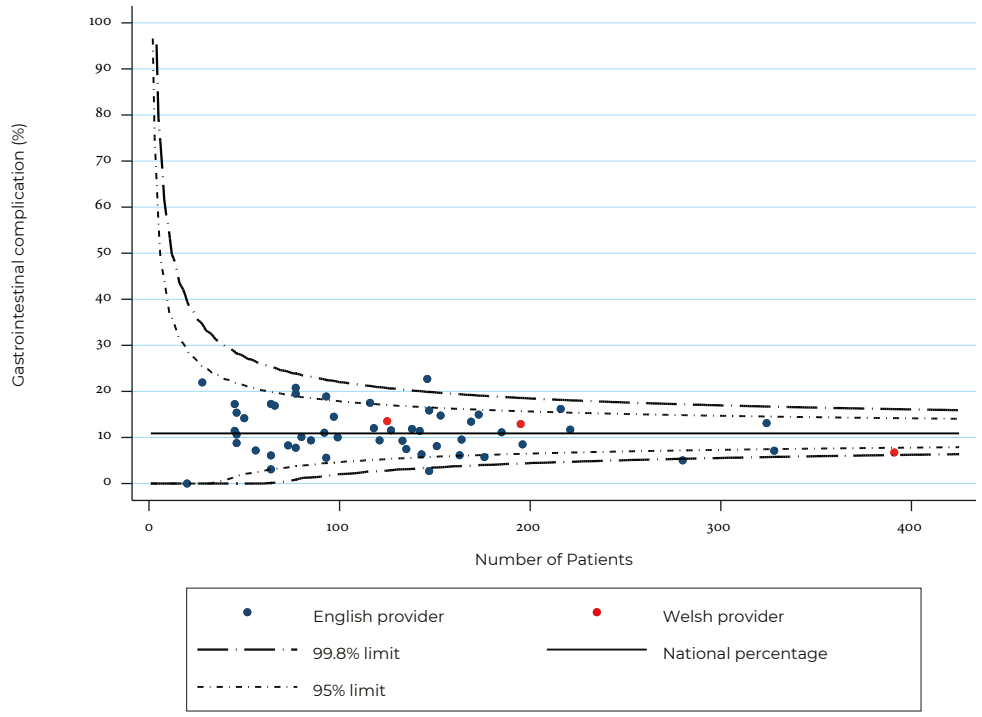


Performance indicator 4: Proportion of patients receiving a procedure of the large bowel and a diagnosis indicating radiation toxicity (gastrointestinal (GI) complication) up to 2 years following radical prostate radiotherapy (presented at the level of the radiotherapy centre).

6,806 men received EBRT at 53 radiotherapy centres during 2018. Overall 11% (range 0 – 23%) experienced at least one bowel complication within two years of radiotherapy (Figure 4).

Figure 4. Adjusted funnel plot for the proportion of patients receiving a procedure of the large bowel and a diagnosis indicating radiation toxicity up to 2 years following radical prostate radiotherapy.

Surgery between 1st January 2018 and 31st December 2018
National percentage =10.9%



These performance indicators show that the picture of readmissions and complications is unchanged or improving since last year's report. The national average for 90-day readmissions after radical prostatectomy (RP) is stable at 13% (compared to 14% last year). The proportion of men experiencing a treatment-related GU complication within two years of surgery has improved somewhat from 9% in last year's report to 7% this year.

The proportion of men experiencing a treatment-related GI complication within two years of radiotherapy remained consistent with last year at 11%. The number of men found to have undergone radiotherapy is far fewer than reported last year (6,806 compared to 11,683 for 2017). This was due to the use of the RCRD which identified men diagnosed since 1st January 2018 and then found their matching records in the HES database, so men included were both diagnosed and treated in 2018. Few men diagnosed in the first six months of 2018 would also have begun radiotherapy in the first half of that year, as men often go through other treatments first. Despite this, the indicator for GI complications robustly reports the complication rate, following up those for whom we have a confirmed record of radiotherapy.

Although a formal outlier process has not been undertaken this year, Centres with performance that is worse than the national average for any of the indicators should review their treatment pathway and engage with other providers to understand any differences in care. The most recent NPCA Quality Improvement workshop took place in December 2021 and we encourage all Clinical Leads and MDT members to attend the next event.

Outcomes of treatment: recommendations

R6. *Consider establishing radiotherapy centre specialist gastrointestinal services to offer advice to people with bowel-related side effects of radiotherapy.*

- Identification of these side effects could be improved with the initiation of hospital level PROMS programmes.

R7. *Ensure that men who are offered prostate cancer treatment are made aware of the side effects including: loss of libido, problems getting or keeping erections, loss of ejaculatory function, a worsening of sexual experience, urinary incontinence and/or bowel side effects.*

R8. *Empower patients to ask to be referred to specialist support services if they are experiencing physical or psychological side effects during, or following, prostate cancer treatment.*

- These should be offered early and on an ongoing basis, in keeping with national recommendations.

R9. *Make available sources of further information and support for men with prostate cancer and carers. These are accessible via GP services and from prostate cancer charities including Prostate Cancer UK (www.prostatecanceruk.org) and Tackle Prostate Cancer (www.tackleprostate.org). Both of these charities operate nationwide support networks*

3.3.2. For Wales only

Treatment allocation

Performance indicator 5: Proportion of men with low-risk localised prostate cancer undergoing radical prostate cancer therapy (presented at the level of the SMDT).

10% of men diagnosed with low-risk localised cancer underwent radical prostate cancer therapy within 12 months of diagnosis in Wales (range: 0% - 13%). In last year's report 16% of Welsh men were found to be potentially "over-treated", which shows improvement. The average appears substantially higher, however, than last year's national average (for England and Wales) of 5% but is only based on the 4 specialist MDTs in Wales, and small numbers of potential "over-treatment" events in each (Table 6).

Performance indicator 6: Proportion of men with high-risk/locally advanced disease receiving radical prostate cancer therapy (presented at the level of the SMDT).

60% of men diagnosed with high-risk/locally advanced prostate cancer were found to have undergone some form of radical therapy in Wales within 12 months of diagnosis (range: 40% - 74%). This appears very different from last year's national average figure (for England and Wales) of 71%, but again is based on only the 4 specialist MDTs in Wales. However, the figure for potential "under-treatment" in high-risk/locally advanced men (at an average of 40% in Wales by these results) is high and has increased since the 34% found in Wales last year. This should give a focus to this issue for Welsh providers, but may be relevant to many English providers too. These men receive ADT only or a watch and wait policy as opposed to ADT and radiotherapy to the prostate. Three out of the four Health Boards reported here have, both historically and this year, performed better than the national average but the proportions have dropped and could potentially improve for all (Table 6).

Table 6. Provider level (specialist MDT) data for the performance indicators 5 and 6 in Wales only.			
Provider name	**No of patients**	**No of events**	**%**
Performance Indicator 5: % low risk given radical treatment – average = 10.1%			
Abertawe Bro Morgannwg University Health Board	50	5	10.9
Aneurin Bevan University Health Board	42	6	13.3
Betsi Cadwaladr University Health Board	18	0	0
Cardiff and Vale University Health Board	108	11	9.8
Performance Indicator 6: % high risk given radical treatment – average = 59.5%			
Abertawe Bro Morgannwg University Health Board	305	117	39.9
Aneurin Bevan University Health Board	81	57	66.3
Betsi Cadwaladr University Health Board	217	159	71.8
Cardiff and Vale University Health Board	165	124	74.1
Performance indicator 5: Proportion of men with low-risk localised prostate cancer undergoing radical prostate cancer therapy. Performance indicator 6: Proportion of men with locally advanced disease receiving radical prostate cancer therapy.			

Treatment allocation: recommendations based on Welsh data

R10. *Continue to advocate active surveillance in the first instance for men with low-risk prostate cancer.*

R11. *Investigate why men with high-risk/locally advanced disease are not considered for radical treatment.*

R12. *Discuss with your clinical specialist the option of disease monitoring with active surveillance in the first instance.*

R13. *Discuss with your clinical specialist the radical treatment options available for men with high-risk/locally advanced disease*

Overall recommendations for England and Wales

R14. *Review of the NPCA indicators for providers should be undertaken within the region and nationally, and fed through to providers*

- *Pay particular attention to variations in service provision (diagnostics, treatment and support services) and treatment outcomes.*
- *Where variation is apparent, agree quality improvement action plans and present these to the Trusts and Health Boards which should follow-up implementation progress.*

R15. *Ensure that radiotherapy and surgical treatment centres are able to deliver a full range of treatments and support services for patients.*

4. Impact of COVID-19

The COVID-19 pandemic has had a profound impact on the care provided to patients with cancer, with delays in diagnosis and treatment due to the steps taken to mitigate transmission of the virus, changes to the provision of services due to capacity pressures and patients being reluctant to seek care.[28,29,30,31,32]

In this section we focus on the patterns of prostate cancer-related activities and events during 2020 underpinned by the analysis of RCRD linked to HES/RTDS/SACT/ONS data for England only. We describe the activity of prostate cancer services over time (from 1st January 2020 – 31st December 2020) including diagnosis and treatment, and compare this with the 'usual' activity during 2019. Comparable data from the same diagnostic and/or treatment periods were unavailable for Wales.

Our paper reporting on the impact of the COVID-19 pandemic on the diagnosis and treatment of men with prostate cancer during 2020 at a national level in England will be published shortly. This section reports regional variation in the patterns of diagnostic and treatment activity (radical treatment and systemic anti-cancer treatments in keeping with updated NICE guidance in 2020[33,34]) over each quarter of 2020 (Q1: January – March, Q2: April – June, Q3: July – September and Q4: October – December) compared with the same periods in 2019. Results at the regional and cancer alliance level are provided in the COVID Impact appendices on our website.

4.1. Data sources and completeness

For England, data from the RCRD was used to identify prostate cancer diagnoses between 1st Jan 2019 and 31st Dec 2020. These were linked to data from Hospital Episode Statistics (HES), the Radiotherapy Dataset (RTDS) and the Systemic Anti-Cancer Therapy dataset (SACT). As noted in section 2, the RCRD captures approximately 90% of cancer diagnoses that are seen in the full NCRAS dataset, with relatively consistent completeness across trusts.

28 Gathani T, Clayton G, E M, Horgan K. The COVID-19 pandemic and impact on breast cancer diagnoses: what happened in England in the first half of 2020. *British Journal of Cancer* 2020.

29 Greenwood E, Swanton C. Consequences of COVID-19 for cancer care — a CRUK perspective. *Nature Reviews Clinical Oncology* 2021; **18**: 3-4.

30 Kuryba A, Boyle JM, Blake HA, Aggarwal A, Van Der Meulen J, Braun M, Walker K, Fearnhead NS. Surgical Treatment and Outcomes of Colorectal Cancer Patients During the COVID-19 Pandemic: A National Population-based Study in England. Annals of Surgery Open. 2021 Jun 1;2(2):e071.

31 McCormack V, Aggarwal A. Early cancer diagnosis: reaching targets across whole populations amidst setbacks. *British journal of cancer* 2021.

32 Rutter M, Brookes M, Lee T, Rogers P, Sharp L. Impact of the COVID-19 pandemic on UK endoscopic activity and cancer detection: a National Endoscopy Database Analysis. *Gut* 2020.

33 NICE, 2020. NHS England interim treatment changes during the Covid-19 pandemic. NICE guideline [NG161], 2020 NICE Guideline [NG161], 2020. NHS England interim treatment changes during the COVID-19 pandemic

34 NICE, 2020. COVID-19 rapid guideline: delivery of radiotherapy. NICE guideline [NG162], 2020 https://www.nice.org.uk/guidance/NG162

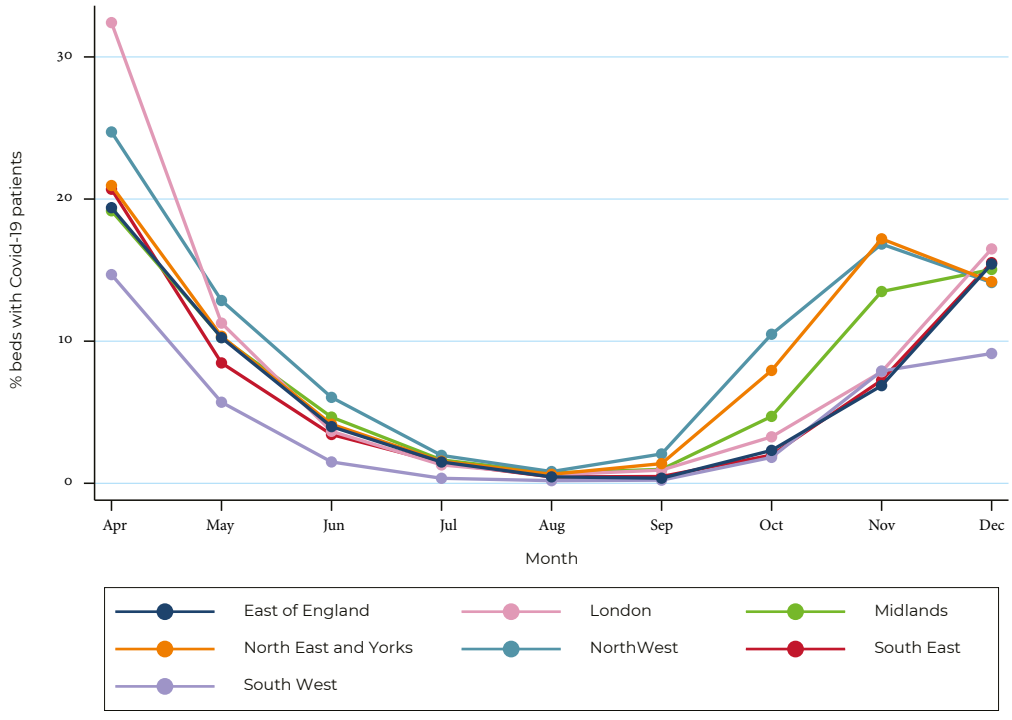
4.2. Methods

Data are presented at NHS region level for the seven English regions and for the 21 cancer alliances. Each quarter of the 2020 calendar year is compared to the same quarter of 2019, with 2020 data presented as a percentage of 2019 for the seven English regions. Diagnoses are broken down by stage, using RCRD disease stage. The number of radical prostatectomy procedures undertaken is analysed, to assess the extent and duration of disruption to surgery. Use of radiotherapy is broken down into conventional/hypo-fractionated, to assess whether any change in practice was observed. Use of docetaxel and enzalutamide during 2020 is analysed, to assess the effect of guidance to substitute docetaxel with enzalutamide.[35]

The proportion of all hospital beds occupied by COVID patients by region is shown in Figure 5.

Figure 5. The proportion of hospital beds (all) occupied by Covid-19 patients by region.

Information from the NHS England Covid-19 daily situation report published 13.05.21.



35 NICE, 2020. NHS England interim treatment changes during the Covid-19 pandemic. NICE guideline [NG161], 2020 *NICE Guideline [NG161], 2020. NHS England interim treatment changes during the COVID-19 pandemic*

4.3. Findings

Patient and diagnostic characteristics in 2019 vs 2020 are summarised in Table 7.

Patient characteristics

The distribution of patient characteristics, including age, Charlson score, deprivation and stage were all similar in 2020 compared to 2019. There was slightly more missing data for stage in 2020 (Table 7).

Table 7. Patient and diagnostic characteristics for men newly diagnosed with prostate cancer in England over the period of 1 January - 31 December in 2019 and 2020.

Data variable	2019		2020	
	N	%	N	%
No. of men with new diagnosis of prostate cancer	42,591		33,045	
Age				
<60	5,486	13%	3,945	12%
60-69	13,480	32%	10,332	31%
70-79	16,924	40%	13,454	41%
≥80	6,701	16%	5,314	16%
Total	42,591	100%	33,045	100%
Missing	0		0	
Charlson score				
0	34,206	80%	26,846	81%
1	3,926	9%	3,002	9%
≥2	4,459	11%	3,197	10%
Total	42,591	100%	33,045	100%
Missing	0		0	
Biopsy performed				
Trans-rectal biopsy	21,757	63%	10,779	43%
Trans-perineal biopsy	12,634	37%	14,496	57%
Total	34,391	100%	25,275	100%
Missing	8,200		7,770	
Stage				
I	11,358	36%	8,599	37%
II	5,078	16%	3,500	15%
III	9,545	30%	6,739	29%
IV	5,408	17%	4,518	19%
Total	31,389	100%	23,356	100%
Missing	11,202		9,689	

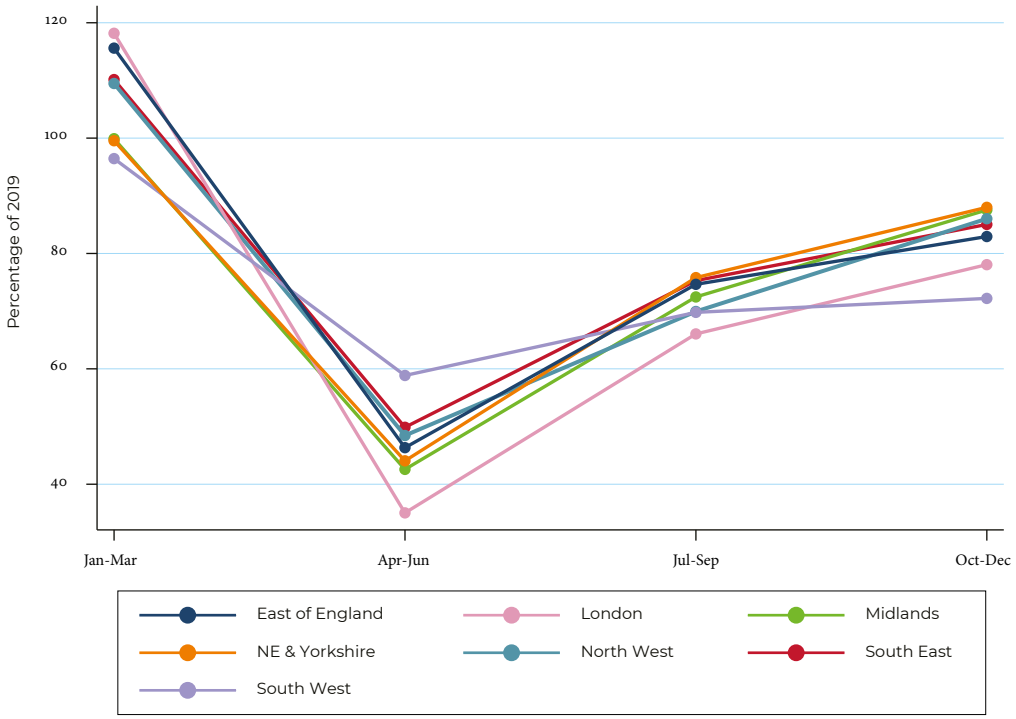
Diagnoses

Most biopsies performed in 2019 used the trans-rectal ultrasound guided method (63%) but this changed in 2020 to the majority being trans-perineal biopsies (57%). There was a fifth of the data on biopsy method used missing in 2019 (19%) and almost a quarter (24%) in 2020.

During the first 'lockdown period' in the UK (counted here as covering Q2, April – June 2020), there was a 54% reduction in the number of patients newly diagnosed with prostate cancer compared with the same period in 2019 (Figure 6). This varied by region from a 65% reduction in the number of expected diagnoses in London, the region with the highest proportion of hospital beds (both ICU and beds in general wards) occupied by COVID patients during Q2 (Figure 5), to a 41% reduction in the South West, the region with the lowest hospital bed occupancy. Lockdown restrictions were lifted in July 2020 and the number of men newly diagnosed with prostate cancer increased over time during July – September (Q3) and October – December 2020 (Q4) (Figure 6). Overall, there was a 28% reduction (7,375 in 2020 vs 10,177 in 2019) in the number of men diagnosed in Q3 (range across regions: 24% - 34%) and a 16% reduction (9,041 vs 10,805) in Q4 2020 (range: 12% - 28%) compared with the same time periods in 2019 (Figure 6).

Figure 6. The number of men newly diagnosed with prostate cancer in 2020 presented as a proportion of the diagnoses per quarter in 2019 for each region in England.

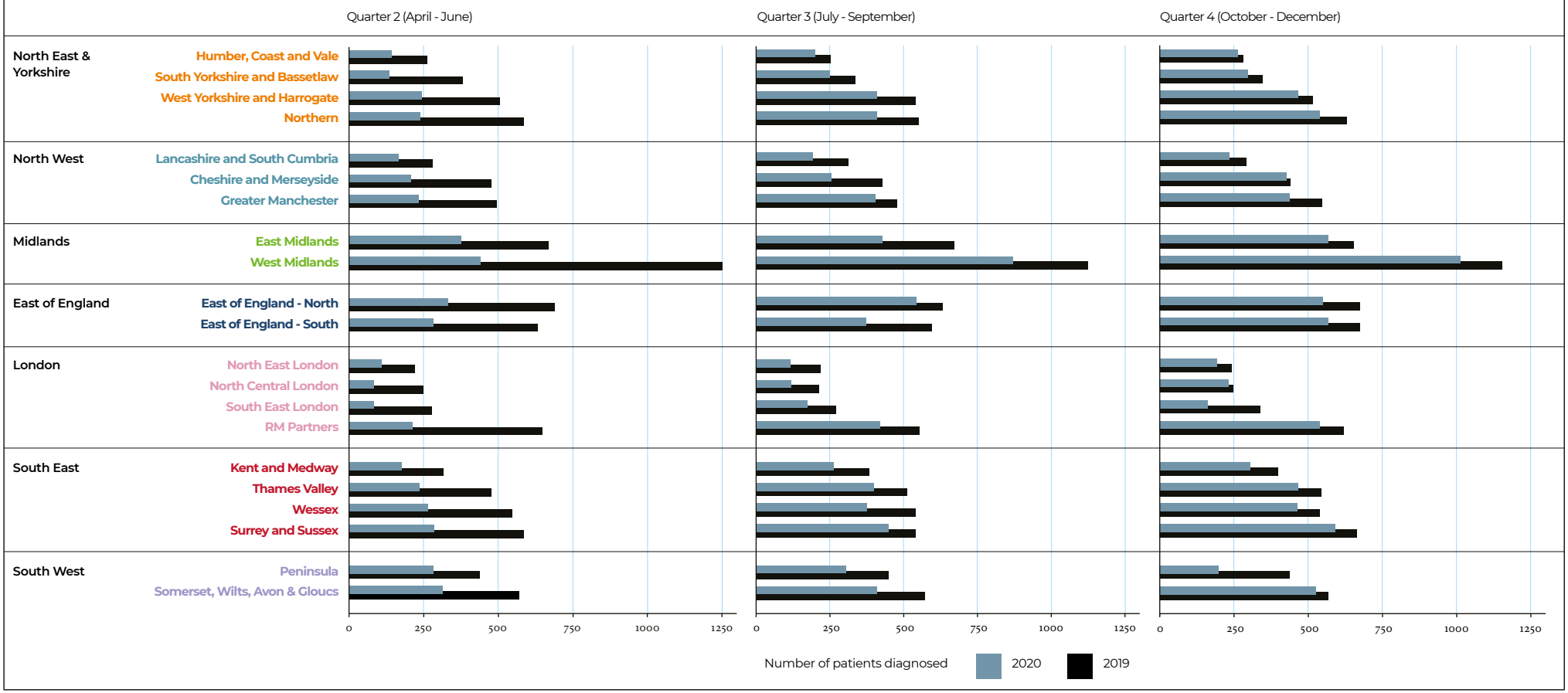
From April – December there was a 33% reduction in the number of men newly diagnosed with prostate cancer (31,541 vs 21,260; 2019 vs 2020, respectively).



A comparison of the number of men newly diagnosed in 2020 and 2019 by cancer alliance is shown in Figure 7, grouped by region and then ordered by 2019 numbers. There was a substantial decline in the number of men diagnosed with prostate cancer April – June 2020 (Q2) in each cancer alliance. Diagnostic activity increased across all cancer alliances during Q3 and Q4 2020 but did not reach 2019 levels in any alliance.

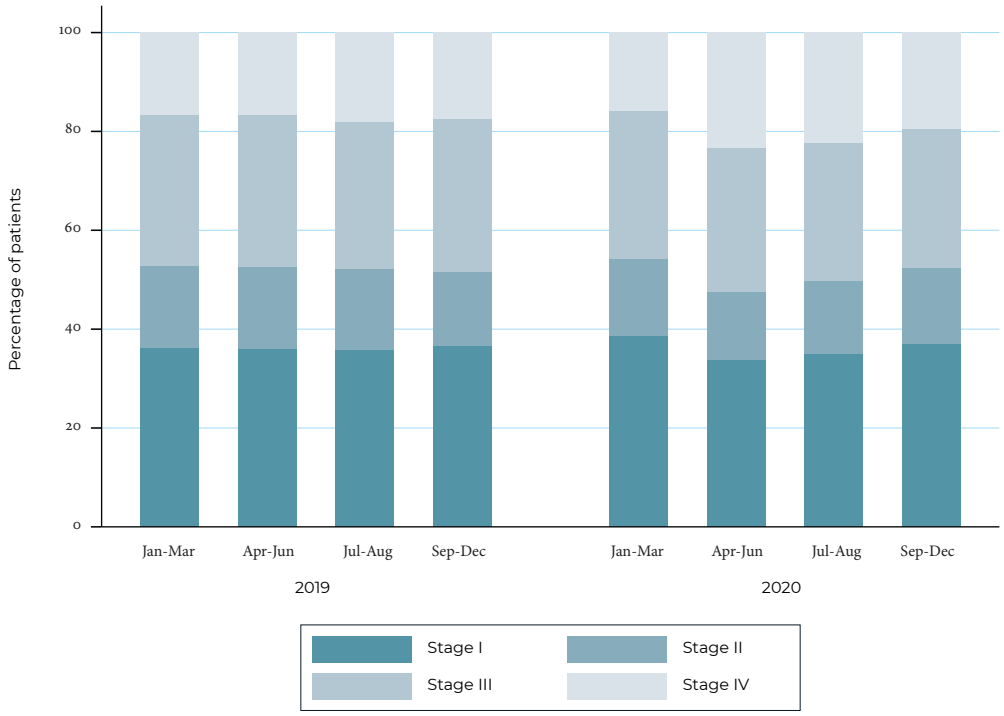
Figure 7. The number of men newly diagnosed with prostate cancer by Cancer Alliance in England.

2019 and 2020, quarters 2, 3 and 4



Since April 2020 (Q2), a higher proportion of men were diagnosed with a more advanced stage of disease compared with the same period in 2019 (Figure 8).

Figure 8. The distribution of prostate cancer diagnoses by cancer stage in England.

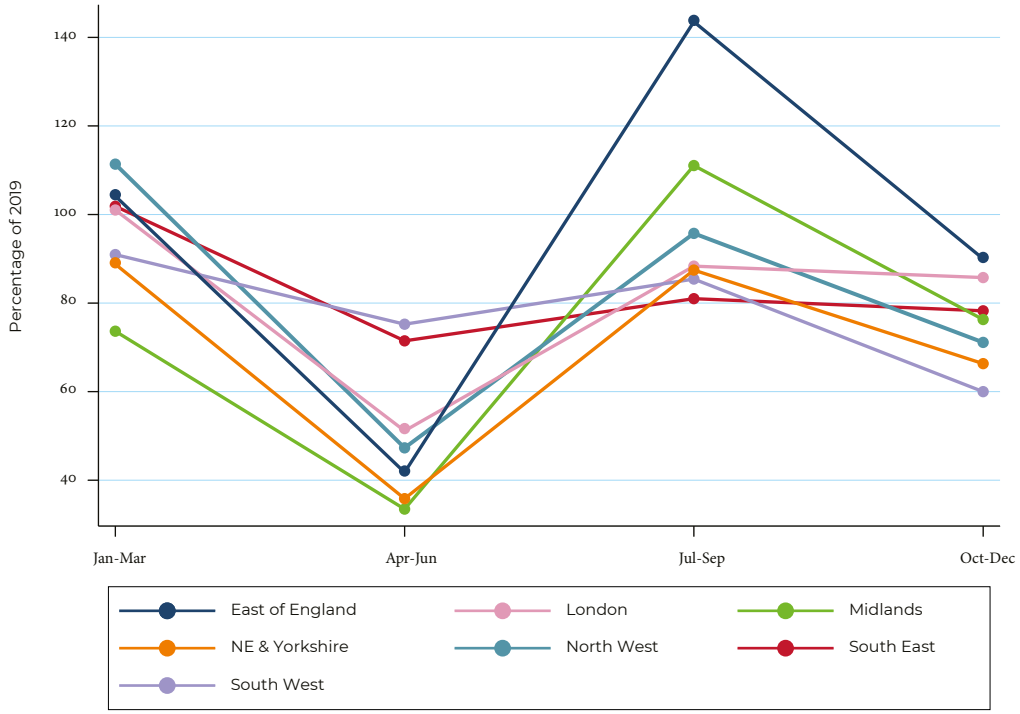


Surgery

There was a 48% reduction (898 in 2020 vs 1,734 in 2019) in the number of men undergoing radical prostatectomy from April – June 2020 (Q2) compared with 2019 which varied by region (range: 25% – 67%; Figure 9). Surgical activity increased during July – September 2020 (Q3) with only an overall 5% reduction (1,603 vs 1,682) compared with 2019. However, in two regions, there was an increase in the number of radical prostatectomies performed in Q3 compared with the same period in 2019 (Midlands, 271 vs 244; East of England, 211 vs 147). During October – December 2020 (Q4), there was a 25% reduction (1,297 vs 1,725) in surgical activity compared with 2019 (range: 10% - 40%).

Figure 9. The number of men undergoing radical prostatectomy in 2020 presented as a proportion of surgical activity per quarter in 2019 for each region in England

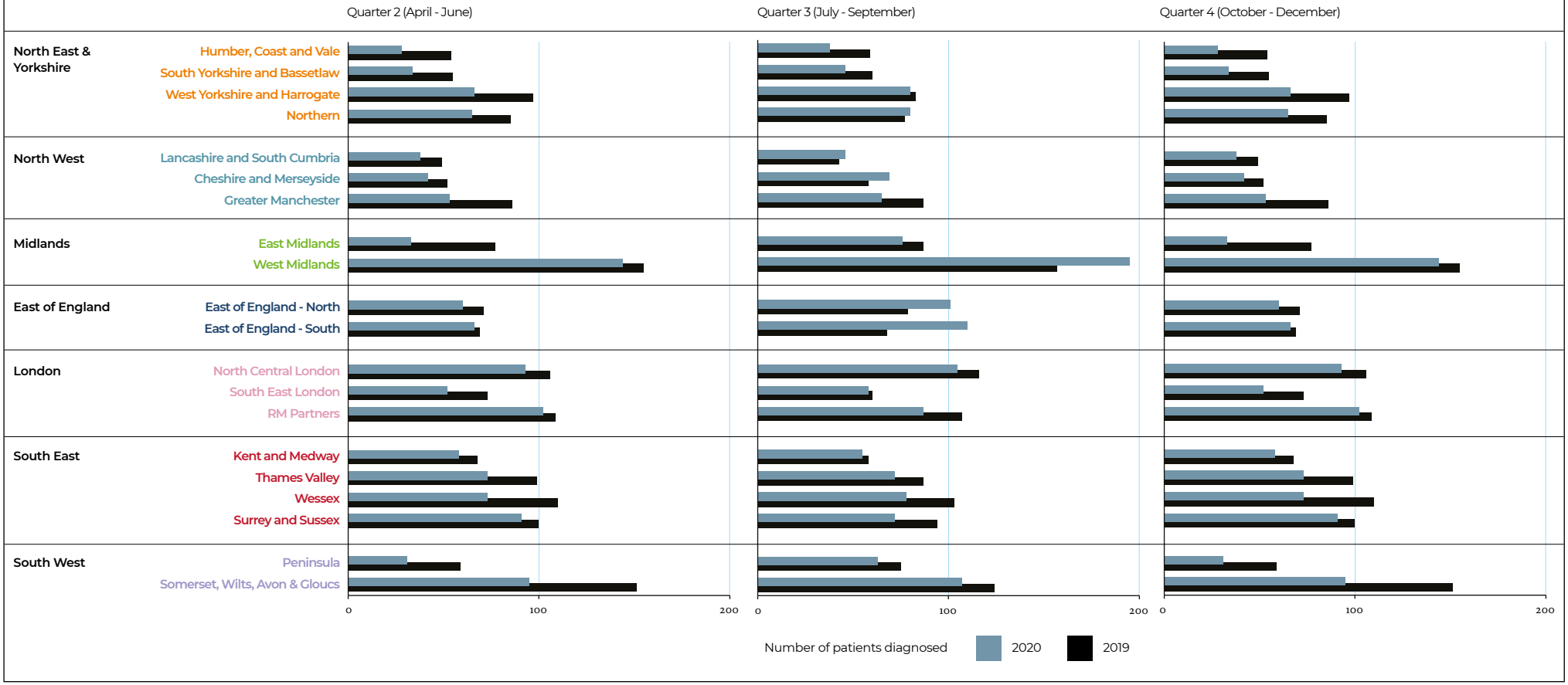
From April – December, there was a 26% reduction in the number of men undergoing radical prostatectomy (5,141 vs 3,798; 2019 vs 2020, respectively).



A comparison of the number of men undergoing radical prostatectomy in 2020 and 2019 by cancer alliance is shown in Figure 10. The number of surgical procedures performed fell sharply in each cancer alliance during April – June 2020 (Q2), followed by increasing surgical activity across all cancer alliances during Q3 and Q4 2020.

Figure 10. The number of men undergoing radical prostatectomy by cancer alliance in England.

2019 and 2020, quarters 2, 3 and 4

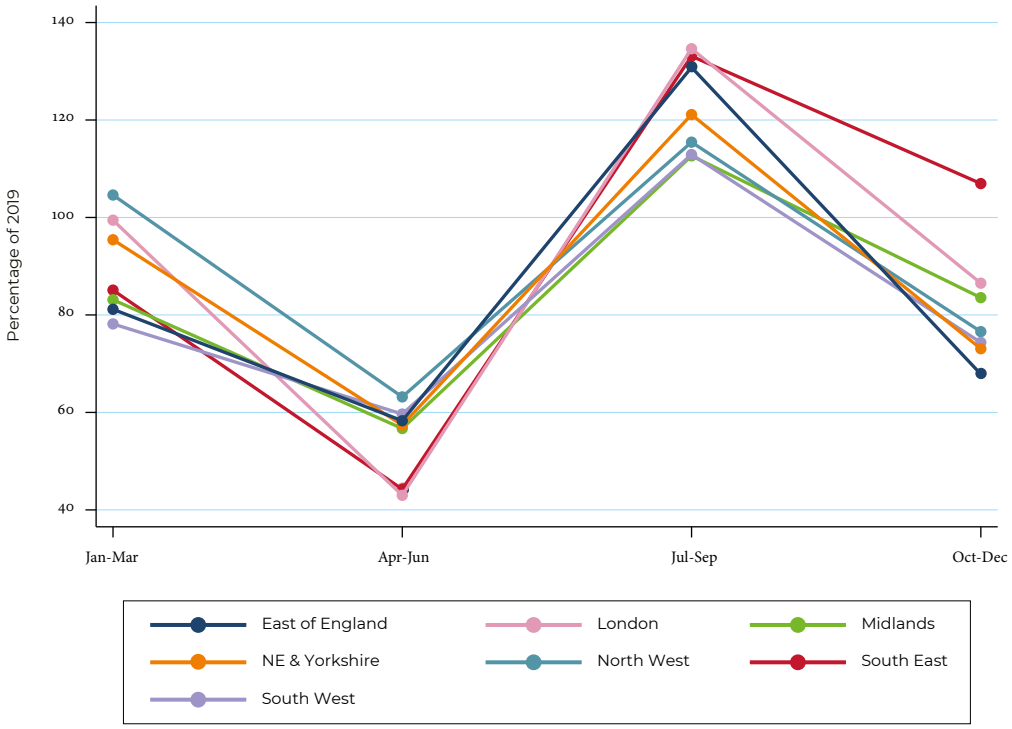


Radiotherapy

During April – June 2020 (Q2), 1,390 fewer men initiated radical radiotherapy, a 45% reduction compared with 2019 (range: 37% - 57%; Figure 11) in keeping with guidance published at the outset of the COVID-19 pandemic advocating avoidance or deferral of EBRT.[36] Overall, there was a 23% increase in radiotherapy activity during July – September 2020 (Q3) above 2019 levels (3,879 vs 3,162), which ranged from 13% to 35% by region (Figure 11). Increasing use of a hypofractionated regimen was evident across each region compared with the same periods in 2020 reflecting guidance for the safe maintenance of radiotherapy services without reducing treatment effectiveness (Figure 12).[27,37]
In the final quarter of 2020 (October – December), there was an overall 19% reduction in the number of men starting radical radiotherapy (2,393 vs 2,934) compared with Q4 in 2019. A reduction in activity was observed in 6 out of 7 regions (range: 14% - 32%) with the exception of the South East where activity increased 7% above Q4 levels in 2019 (Figure 11).

Figure 11. The number of men undergoing radical radiotherapy (EBRT) in 2020 presented as a proportion of EBRT activity per quarter in 2019 for each region in England. From April – December,

From April – December, there was a 13% reduction in the number of men initiating radical radiotherapy (9,144 vs 7,930; 2019 vs 2020, respectively).

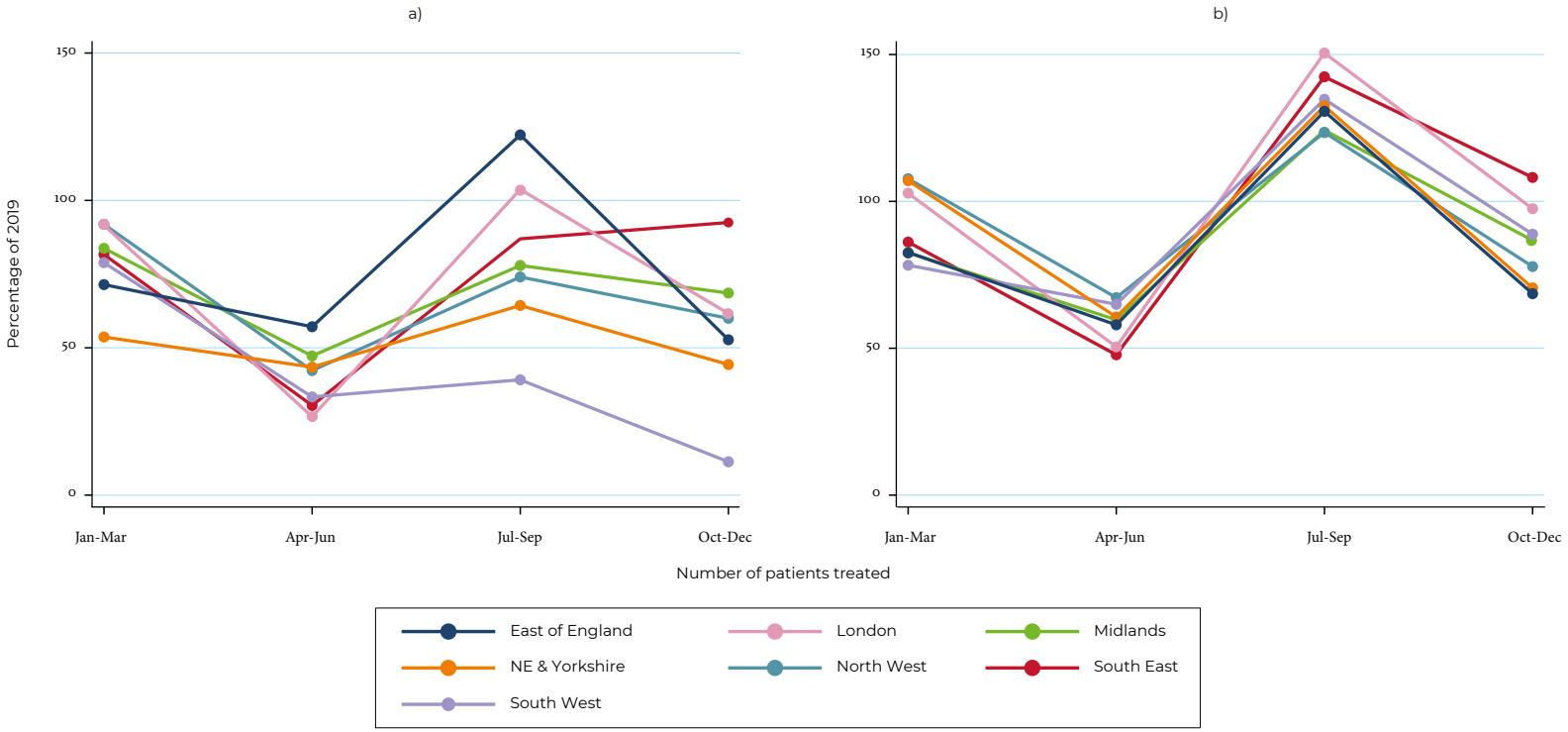


36 Zaorsky NG, James BY, McBride SM, Dess RT, Jackson WC, Mahal BA, Chen R, Choudhury A, Henry A, Syndikus I, Mitin T.) Prostate cancer radiation therapy recommendations in response to COVID-19. Advances in radiation oncology. 2020 Nov 1;5:26-32.

37 NICE, 2020. COVID-19 rapid guideline: delivery of radiotherapy. NICE guideline [NG162], 2020 https://www.nice.org.uk/guidance/NG162

Figure 12. The number of men undergoing a) conventional or b) hypofractionated radiotherapy (EBRT) regimen in 2020 presented as a proportion of activity per quarter in 2019 for each region in England.

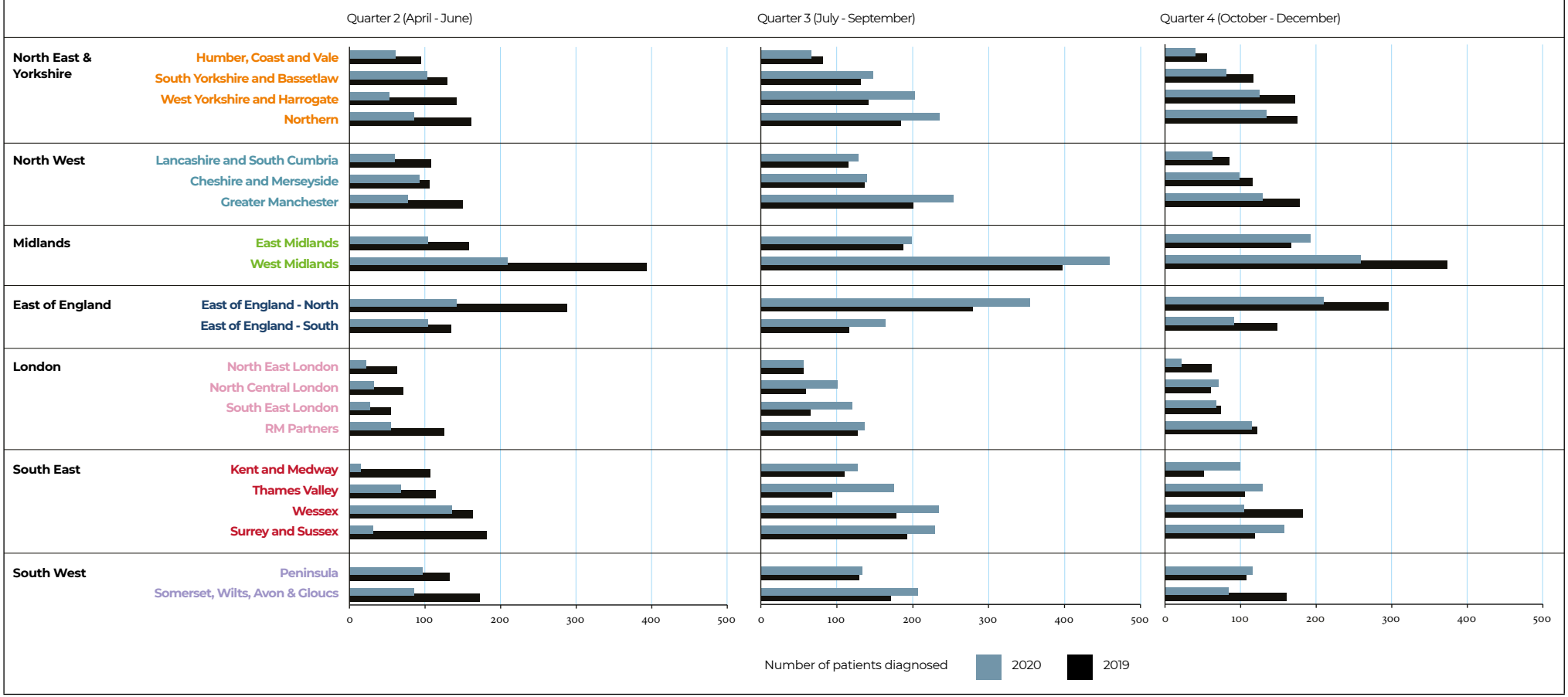
Of the men undergoing radical radiotherapy during April-December there was an increase in the use of a hypofractionated regimen, 78% (7148/9109) in 2019 vs 85% (6595/7772) in 2020.



A comparison of the number of men undergoing radical radiotherapy in 2020 and 2019 by cancer alliance is shown in Figure 13. There was a substantial decline in the number of men initiating radical April – June 2020 (Q2) across each cancer alliance. However, activity increased above the levels in 2019 during Q3 for 19 out of the 21 cancer alliances. By Q4, 6 out of the 21 cancer alliances maintained an increase in activity.

Figure 13. The number of men undergoing radical radiotherapy by cancer alliance in England.

2019 and 2020, quarters 2, 3 and 4

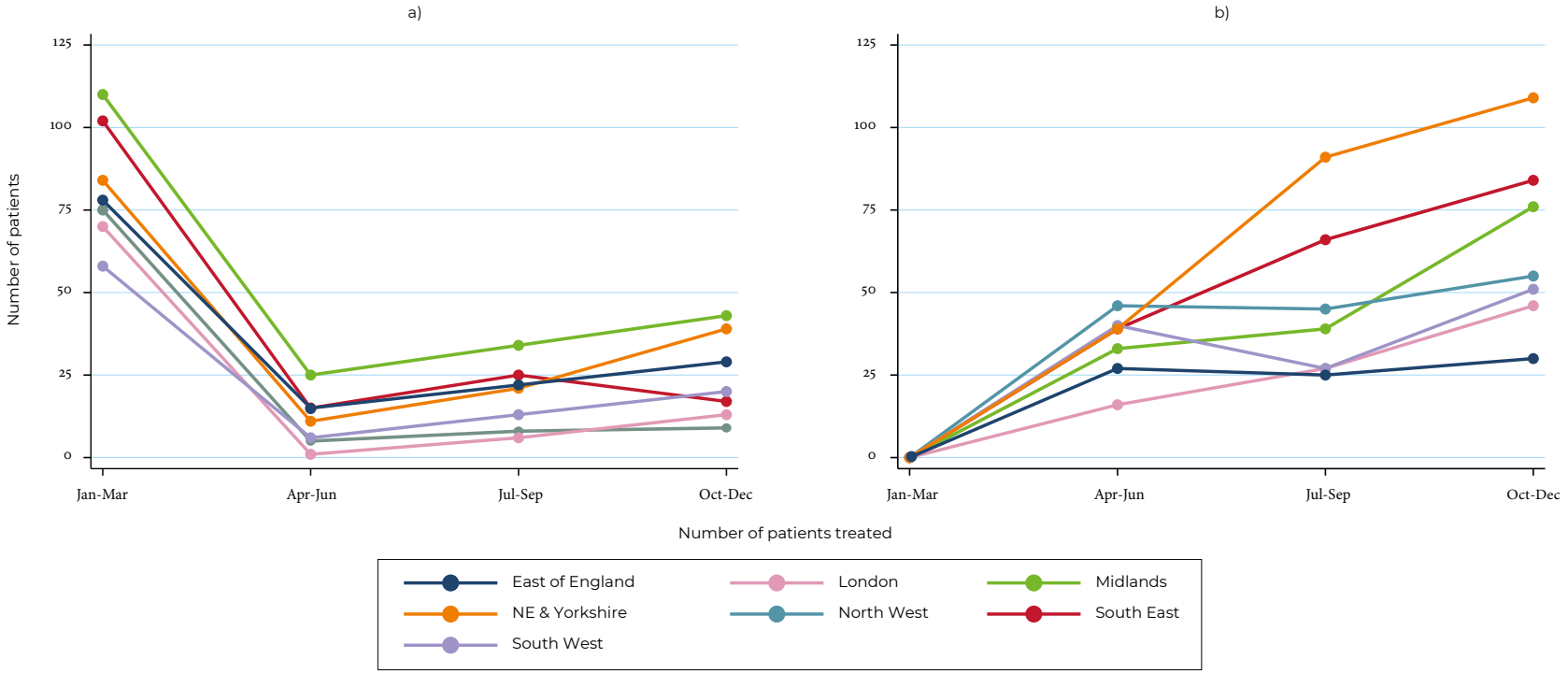


Systemic treatments

There was a rapid and marked fall in docetaxel use from April 2020 (Q2) across all regions and a concomitant increase in the use of enzalutamide, which varied by region (Figure 14). Overall, from April – December, there was a 74% reduction in the number of men with hormone-sensitive metastatic disease receiving docetaxel (377 in 2020 vs 1458 in 2019). During the same time period, there was a marked increase in the number of men receiving enzalutamide (1011 in 2020 vs 3 in 2019). These results reflect the rapid NICE guidance published in April 2020 on systemic anti-cancer therapy recommending using enzalutamide (or abiraterone) as an alternative to docetaxel in men with newly-presenting hormone-sensitive prostate cancer, given that these treatments are less immunosuppressive and can be administered at home.[38]

Figure 14. The number of men with hormone-sensitive metastatic prostate cancer receiving a) docetaxel or b) enzalutamide in 2020 per quarter in 2019 for each region in England.

From April – December, there was a 74% reduction in the number of men with hormone-sensitive metastatic disease receiving docetaxel (1458 vs 377; 2019 vs 2020, respectively). During the same time period, there was a marked increase in the number of men receiving enzalutamide (3 vs 1011; 2019 vs 2020, respectively)



38 NICE, 2020. NHS England interim treatment changes during the Covid-19 pandemic. NICE guideline [NG161], 2020 NICE Guideline [NG161], 2020. NHS England interim treatment changes during the COVID-19 pandemic

Overall recommendations on the basis of English data

CR1. *Review the diagnostic and treatment activity for your region during 2020 illustrating how your service responded during this time and to support decision making in response to current changes in demand.*

CR2. *Monitor adherence to the recommended diagnostic pathway for suspected prostate cancer.*

CR3. *Continue to increase the use of hypofractionated radiotherapy.*

CR4. *Offer enzalutamide (or apalutamide) with androgen deprivation therapy (or abiraterone for patients intolerant of enzalutamide) to people with newly diagnosed metastatic disease instead of docetaxel, where appropriate.*

5. Discussion

For the performance indicators in this NPCA annual report, the data cover a period before the start of the COVID-19 pandemic, but they were collected and collated during that very challenging time. Despite this, the information specialists at NCRAS in England were able to provide the NPCA with a rapidly produced, proxy cancer registration dataset (RCRD) and those at the Wales Cancer Network were able to pull together the same dataset as in previous years. Thanks to the RCRD, the NPCA is also able to provide a picture of how services were impacted during 2020 as the first and second phases of the pandemic continued.

An awareness of the potential limitations of the RCRD led us to carry out investigations into how this method of data gathering compared to the standard NPCA data (for a time period where both were available). We were reassured to find that around 90% of diagnoses were captured, a figure which was roughly consistent across Trusts (ranging from 80-100% complete). There were more missing data in the individual M stage variable used for measuring the proportion of men diagnosed with metastatic disease and it emerged that some men referred to a tertiary centre had their diagnosis allocated to the SMDT associated with that centre, rather than their diagnosing centre; thus this indicator should be interpreted with caution. Unfortunately, the usual cancer characteristics and variables collected by the NPCA for annual reporting (Gleason and PSA scores) were not available in the English data, meaning that we were unable to carry out the usual risk stratification. Instead, we have used the disease stage variable provided in the RCRD which is based on TNM status alone. This is not ideal as it is not a measure used clinically and the completeness of it does vary between providers, with an average of 25% of these data missing. In previous years, the NCRAS team has been able to supplement the data captured at Trusts through time-consuming liaison with hospital teams, and examination of imaging data and other datasets not routinely shared with the NPCA, in order to provide the audit with a highly complete set of T, N and M values. Given data were collected pre-pandemic, improvements need to be made at Trust level to increase the completeness of routine data. This would benefit clinical practice and reduce the data validation required.

The lack of certain key items has also meant that several of our usual indicators could not be robustly estimated and so are missing from this report. However, this means that the indicators reported were chosen because we are confident that they are underpinned by robust data and could be adjusted for case mix where appropriate. The similarity of many of the indicators' results to previous years provides further reassurance and, although we did not carry out a formal outlier process (as the data were not fully validated), many of the same providers fell outside the funnel limits as had previously.

The data collected by clinical teams are obviously a vital part of clinical practice, but it also continues to be extremely valuable, both for examination of practice and for this opportunity for national benchmarking and comparison. We encourage all providers to examine their own results, with the caveats noted above in mind, and to look for ways to improve their performance – even in those centres who already do well.

The next annual report will face further challenges as data were collected during the COVID-19 pandemic. The agility of teams in responding to the changing circumstances is laudable but we acknowledge that data collection may have been reduced. Preliminary examination of the data covering 2020 shows that services were impacted, including reduced diagnoses and treatments. Providers may have to prepare, in future practice, to see men diagnosed at later stages and potentially with higher disease-risk profiles which may impact the outcomes of patients in the future.

The COVID recovery period has been outlined in the NHS England Cancer Recovery Taskforce: Cancer Services Recovery Plan, 2020 and identifies three stages to cancer services recovery[39]. Phase 1 is to ensure continuation of essential cancer treatment and screening for high risk individuals during the initial peak of the pandemic. Phase 2 is to restore disrupted services as far as possible to at least pre-pandemic levels and Phase 3 is full recovery of NHS cancer services in England, including ensuring that care for all patient groups continues to be safe, effective and holistic.

We will continue to provide robust reporting to help inform the prostate cancer care community. Wales has been leading the way in continuing to provide clinician-approved data and England is pushing forward with rapid registration data, and thus we aim to report more rapidly as these new datasets become the norm. We also continue to encourage each provider to engage firstly with their own data, and then with other providers, for instance at our Quality Improvement events, where we can share best practice and meet challenges together.

39 https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/12/C0821-COVID-19-Cancer-services-recovery-plan-14-December-2020.pdf

6. Future Plans for the NPCA

The NPCA in England no longer collects bespoke data items within the NPCA minimum dataset. For men diagnosed from the 1st April 2019 COSD data items have only been collected in keeping with the monthly routine submission of data to the NCRAS, PHE. Circumstances have meant, however, that we have shifted to a new data source, the Rapid Cancer Registration Dataset. This opens new possibilities for more timely reporting, although it has the disadvantage that some data items are currently not available.

Working with our data collection partners we were able to access the RCRD more rapidly, enabling the NPCA to determine the impact of COVID-19 in a more timely manner. We were able to examine the influence on the diagnosis and treatment of men with prostate cancer, including treatment delay, the potential receipt of sub-optimal treatment and how diagnosis and treatment varies by region. With further follow-up, the NPCA will determine the impact of changes in diagnostic and treatment pathways during the COVID-19 pandemic on the outcomes of men with prostate cancer.

Our regular organisational survey, although it was delayed until this year, went out to providers in order to provide up to date information about service availability across the country. Data were gathered in 2021 and will be published early in 2022.

We were unable to publish data in England as part of the Clinical Outcomes Programme (COP) and the National Clinical Audit Benchmarking (NCAB) this year, but plan to do so again in future years. This enables wider dissemination of our findings to clinicians, stakeholders, patients and the public.

We encourage Trusts to review their data quality and to ensure the following COSD data items are uploaded to the cancer registry for every newly diagnosed patient with prostate cancer: performance status, CNS availability, PSA, Gleason score, TNM and the two new COSD data items regarding use of pre biopsy multiparametric MRI and prostate biopsy type. In this way, the audit will be able to report using the most accurate data.

The success of the NPCA relies heavily on the quality of the data received from Trusts and Health Boards across England and Wales. Our data collection partners (NCRAS and WCN) will continue to work directly with individual care providers to help improve data quality. This will ensure the reliability of all the results we present and the reporting of outliers. In future, the NPCA will recommence using our outlier policy to notify outlying providers for which we publish the Trust responses in each Annual Report. This will enable the data to be checked and changes implemented to improve patient outcomes.

Acronym list

ADT	Androgen Deprivation Therapy
BAUS	British Association of Urological Surgeons
BUG	British Uro-Oncology Group
CaNISC	Cancer Network Information System Cymru
COSD	Cancer Outcomes and Services Dataset
CEU	Clinical Effectiveness Unit
CNS	Clinical Nurse Specialist
COP	Clinical Outcomes Programme
CRG	Clinical Reference Group
EBRT	External Beam Radiation Therapy
GI	Gastrointestinal
GP	General Practitioner
GU	Genitourinary
HQIP	Healthcare Quality Improvement Partnership
HES	Hospital Episode Statistics
IMRT	Intensity Modulated Radiation Therapy
ICD	International Classification of Disease
MRI	Magnetic Resonance Imaging
MDT	Multi-Disciplinary Team
NCRAS	National Cancer Registration and Analysis Service
NCAPOP	National Clinical Audit and Patient Outcomes Programme
NCAB	National Clinical Audit Benchmarking
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NPCA	National Prostate Cancer Audit
RTDS	National Radiotherapy Data Set
ONS	Office for National Statistics
OPCS	Office of Population Censuses and Surveys
PEDW	Patient Episode Database for Wales
PPI	Patient and Public Involvement
PSA	Prostate Specific Antigen
PHE	Public Health England
RP	Radical Prostatectomy
RCS	Royal College of Surgeons
SMDT	Specialist Multidisciplinary Team
IMD	The Index of Multiple Deprivation
TNM	Tumour, Nodes, Metastases
WCN	Wales Cancer Network
WCISU	Welsh Cancer Intelligence and Surveillance Unit

Glossary

Active Surveillance
The initial monitoring of prostate cancer with low risk clinical characteristics.

Androgen Deprivation Therapy (ADT)
Androgen deprivation therapy is a hormone therapy used to control prostate cancer and delay or manage any symptoms arising from it. Testosterone makes prostate cancer cells grow faster and this therapy works by either stopping the body from making the hormone testosterone, or by stopping testosterone reaching the prostate cancer cells. By doing this the cancer will usually shrink, wherever it is in the body. Androgen deprivation therapy can be used when prostate cancer cells have already spread to distant sites but it can also be used with other treatments, such as radiotherapy, to make them more effective.

ASA score
The American Society of Anaesthesiologists (ASA) classification is a scoring system based on the perioperative health and co-morbidities of a surgical patient. A high ASA score denotes a higher risk of perioperative complications in the short and long term. For the NPCA, an ASA score is assigned to all patients regardless of treatment.

Brachytherapy
A treatment for prostate cancer using either the implantation of permanent radioactive seeds into the prostate (termed low dose rate brachytherapy) or the temporary insertion of a source of radiation into the prostate (termed high dose rate brachytherapy). Brachytherapy can deliver a high radiation dose to the prostate gland whilst reducing radiation to the surrounding healthy tissue. This treatment can be used in isolation or in combination with external beam radiotherapy in higher risk disease.

British Association of Urological Nurses (BAUN)
The British Association of Urological Nurses is a registered charity which aims to promote and maintain the highest standards in the practice and development of urological nursing and urological patient care. Registered charity no: 1140616.

British Association of Urological Surgeons (BAUS)
Professional association for urological surgeons. Registered charity no: 1127044.

British Uro-oncology Group (BUG)
Professional association for clinical and medical oncologists specialising in the field of urology. Registered charity no: 1116828.

Cancer Network Information System Cymru (CaNISC)
An online computer system that provides information for health professionals on cancer patients across Wales.

Cancer Outcomes and Services Dataset (COSD)
The national standard for reporting on cancer in the NHS in England. Trusts submit a data file to the National Cancer Registration and Analysis Service (NCRAS) every month.

Care Quality Commission (CQC)
Independent regulator of health and adult social care in England. The CQC makes sure that health and social care services provide people with safe, effective, compassionate and high-quality care.

Case-mix
Refers to different characteristics of patients seen in different hospitals (for example age, sex, disease stage, social deprivation and general health). Knowledge of differing case-mix enables a more accurate method of comparing quality of care (case-mix adjustment).

Case-mix adjustment
A statistical method of comparing quality of care between organisations that takes into account other important and measurable characteristics which might affect outcome (also see risk-adjustment).

Castrate Resistant Prostate Cancer
Prostate cancer that keeps growing even when the amount of circulating testosterone in the body is reduced to levels commensurate with castration.

Charlson Co-morbidity Score
A scoring system used commonly to quantify the co-existence of other medical conditions (medical co-morbidities: see below). Many patients may other medical conditions in addition to their prostate cancer. The score is calculated based on the absence and presence of specific medical problems in the Hospital Episode Statistics (HES) database.

Clinical Effectiveness Unit (CEU)
An academic collaboration between the RCS and the London School of Hygiene and Tropical Medicine (LSHTM). The CEU carries out national surgical audits, develops audit methodologies and produces evidence on clinical and cost effectiveness.

Clinical Nurse Specialist (CNS)
An experienced senior nurse who has undergone specialist training and plays an essential role in improving communication and coordinating treatment in cancer patients. Specialist nurses act as the first point of contact for the patient, coordinating and facilitating the patient's treatment.

Clinical Outcomes Publication (COP)
An NHS initiative to promote data transparency and support wider engagement with national clinical audit data via publication of a directory of audits on myNHS.

Co-morbidity
Medical condition(s) or disease process(es) that are additional to the disease under investigation (in this case, prostate cancer).

External Beam Radiotherapy (EBRT)
The use of high energy X-ray beams directed at the prostate to kill cancer cells. It is used as a standard method to treat localised or locally advanced prostate cancer.

Gleason Score
The Gleason score is a measure assigned by a pathologist to determine how aggressive an individual's prostate cancer is when the prostate cancer tissue is examined using a microscope. It is made up of two separate scores between 3 and 5 which are then added together to make a final score graded between 6 and ten. Along with PSA and TNM, the Gleason score can be used to predict how a prostate cancer might behave in the future. This process is used for risk stratification, i.e. to help to predict how a specific cancer might progress and/or respond to treatment.

Health Board
A local health organisation that is responsible for delivering all healthcare services within a regional area in Wales. Currently, there are seven Health Boards in Wales and six of these provide prostate cancer services.

Healthcare Quality Improvement Partnership (HQIP)
The Healthcare Quality Improvement Partnership (HQIP) aims to promote quality improvement in patient outcomes and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices.

Hospital Episode Statistics (HES)
A database that contains data on all patients treated within NHS trusts in England. This includes details of admissions, diagnoses and treatments.

Hypofractionated radiotherapy
Patients undergoing radiotherapy receive one treatment (known as a fraction) with each hospital visit. Hypofractionated radiotherapy is where the total dose of radiation is divided into larger doses (per treatment session) over a shorter period of time. In prostate cancer treatment, conventional radiotherapy involves 37 treatment sessions over seven or eight weeks compared with hypofractionated radiotherapy which involves 20 treatment sessions over four weeks. Having fewer treatment sessions over four weeks has been found to work just as well for men with localised prostate cancer as having more sessions over a longer time. The risk of side effects is also similar and as it involves fewer hospital visits, men may find a shorter course of radiotherapy more convenient.

Intensity-modulated Radiotherapy (IMRT)
Conformal radiotherapy shapes the radiation beam to closely fit the area of the cancer in order to avoid healthy tissue. A type of conformal radiotherapy with highly shaped and focussed beams of X Rays enabling higher doses of radiotherapy to be given to the prostate gland with reduced dose to the surrounding normal structures (bladder and bowel).

International Classification of Diseases, Tenth Revision (ICD-10)
The World Health Organisation international standard diagnostic classification. It is used to code diagnoses and complications within the Hospital Episode Statistics database of the English NHS.

Localised Disease
When cancer is confined within the anatomical boundaries of the prostate.

Locally Advanced Disease
When cancer has spread outside the anatomical boundaries of the prostate (T3 or T4) but is still contained within the prostate gland's pelvic location. This may be associated with spread to lymph nodes within the pelvis (N+).

Lymphadenectomy
The surgical removal of one or more groups of lymph nodes (usually in the pelvis) in prostate cancer.

Magnetic Resonance Imaging (MRI)
A type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body. The term "multi-parametric" (mpMRI) refers to variation in the types of MR image obtained during a scan. This adds to the ability of the clinical team to determine the presence of a cancer and its chance of being a more aggressive type of cancer growth.

Margin Status
Once the prostate has been removed during surgery, the margin status indicates whether the edge of the specimen contains cancer cells or not. A positive margin status does not always indicate that residual prostate cancer cells may have been left behind.

Metastatic Disease
When cancer has spread from its initial site of development in the prostate (the primary site) to distant sites of the body (the metastatic site(s)). These sites are mainly in the bones and lymph nodes in the first instance.

Multidisciplinary Team (MDT)
A team of specialist health care professionals from various backgrounds (e.g. doctors, nurses, administrative staff) who collaborate to assess diagnosis and treatment and organise and deliver care for patients with conditions such as prostate cancer. The specialist MDT enables local cancer units to access specialist prostate cancer services which may not be locally available (see Specialist Multidisciplinary Team).

Multimodal Therapies
The use of multiple treatments used in combination against prostate cancer. These combinations may include radiotherapy, hormone therapy, surgery and/or systemic chemotherapy.

National Cancer Data Repository (NCDR)
The NCDR comprises a merged dataset of English cancer registration data, linked to further national datasets including Hospital Episode Statistics (HES), the radiotherapy dataset (RTDS) and Office of National Statistics data (ONS).

National Cancer Registration and Analytical Service (NCRAS)
A national body which collects, analyses and reports on cancer data for the NHS population in England.

NHS Digital
The provider of professional IT services to the NHS. Their goal is to improve health and social care in England by making better use of technology, data and information.

NHS Hospital Trust
An NHS organisation that provides acute care services in England. A trust can include one or more hospitals.

National Institute for Health and Care Excellence (NICE)
An organisation responsible for providing national guidance on the promotion of good health, and the prevention and treatment of ill health.

Office for National Statistics (ONS)
Government department responsible for collecting and publishing official statistics about the UK's society and economy. This includes cancer registration data.

Patient Episode Database for Wales (PEDW)
A database that contains all inpatient and day case activity undertaken in NHS hospitals in Wales. This includes details of admissions, diagnoses and the treatments.

Performance Status (WHO/ECOG)
The World Health Organisation (WHO)/Eastern Cooperative Oncology Group (ECOG) performance status indicator is a measure of how disease(s) impacts a patient's ability to manage on a daily basis. It was initially developed in the research setting to standardise the reporting of chemotherapy toxicity and the response of cancer patients in clinical trials. However, it is now in the public domain and is routinely used in other research and clinical settings.

Prostate Specific Antigen (PSA)
A protein produced by the cells of the prostate gland. A high PSA may indicate prostate cancer or prostate cancer recurrence but it also may indicate benign conditions such as an enlarged prostate or infection.

Radical Prostatectomy
The surgical removal of all the prostate gland and the associated seminal vesicles. The latter are structures integrally associated with the prostate. Their function is to produce and store fluid which sustains the viability of sperm when it leaves the prostate.

Radical treatment
Potentially curative treatment aimed at curing prostate cancer (removing cancer tissue or filling all cancer cells in their primary location). These treatments include radical prostatectomy and radiotherapy.

Radiotherapy
The use of radiation to destroy cancer cells. There are different types of radiotherapy, including external beam radiotherapy (radiotherapy delivered from a radiation source outside the body) and brachytherapy (radiotherapy delivered directly by implanting a radiation source within the tumour itself).

Radiotherapy Data Set (RTDS)
A database that contains standardised data from all NHS Trust providers of radiotherapy services in England.

Risk Stratification
Classification of prostate cancer according to individual risk profile. This is done by taking into account how aggressive the cancer is and how far it has spread (see Gleason score).

Risk-adjustment
A statistical method that takes into account important and measurable characteristics (also see case-mix adjustment).

Roach Score
A formula which uses PSA and Gleason score to predict the risk of pelvic node involvement in prostate cancer patients.

Robotic-assisted Prostatectomy
A "key-hole" operation is one which uses laparoscopy (the insertion of a telescope and small instruments into the abdomen) as opposed to a conventional "open" operation involving a larger incision. A laparoscopic operation is commonly associated with the use of a robotic device which is controlled from a separate console by a surgeon, who carries out removal of the prostate. The robotic device allows for more controlled and precise movements during the operation. Advantages over traditional open surgery include less blood loss, less post-operative pain, a shorter hospital stay, smaller scars.

Royal College of Surgeons of England (RCS)
An independent professional body committed to enabling surgeons to achieve and maintain the highest standards of surgical practice and patient care. As part of this it supports audit and the evaluation of clinical effectiveness of surgery.

Specialist Multidisciplinary Team (SMDT)
A team of specialists who coordinates the specialist treatment of men with prostate cancer. The SMDT enables local cancer units to access specialist prostate cancer services which may not be locally available. Specialist services include prostatectomy and radiotherapy (see Multidisciplinary Team).

Staging/stage
The anatomical extent of a cancer. This determines whether a cancer is confined within its primary site (localised disease) or whether it has spread to other areas of the body (metastatic spread). It is usually denoted by the TNM staging process where "T" represents the local stage, "N" the presence of lymph node involvement and "M" represents the presence of metastatic disease.

T1 means the cancer is too small to be seen on a scan[40], T2 means the cancer is completely inside the prostate gland, T3 means the cancer has broken through the capsule (covering) of the prostate gland and T4 means the cancer has spread into other body organs nearby, such as the back passage, bladder, or the pelvic wall. No means that the nearby lymph nodes do not contain cancer cells and N1 means there are cancer cells in lymph nodes near the prostate. Mo means the cancer has not spread to other parts of the body and M1 means the cancer has spread to other parts of the body outside the pelvis.

Systemic Anti-Cancer Therapy (SACT)
The SACT database collects data on the use of systemic anti-cancer therapy from all NHS England providers. This database has been used to identify the men receiving docetaxel chemotherapy for their prostate cancer.

Trans-perineal biopsy
Biopsy of the prostate using a fine needle through the perineum (the area of skin between the back of the scrotum and the front of the anus) guided using an ultrasound probe placed in the rectum (back passage). This is performed under general or local anaesthetic. The needle placement can access some areas of the prostate more easily than trans-rectal ultrasound biopsies, particularly those in the forward portion of the prostate gland.

Trans-rectal Ultrasound (TRUS) Biopsy
The use of thin needles to takes tissue samples from the prostate after numbing the area with local anaesthetic. The biopsy is done through the rectum (back passage). The placement of these needles is enabled by use of an ultrasound scanner in the rectum to guide the biopsy.

Treatment-related Toxicity
Complications following radical treatment. Genitourinary and gastrointestinal complications can be expected following radiotherapy or prostatectomy.

'Usual' / standard dataset
This is the dataset that has been historically provided by our data partners and reported in previous Annual Reports (e.g. in the 2020 annual report, which can be found at https://www.npca.org.uk).

Wales Cancer Network (WCN)
A new organisation that has evolved from the merger of the two Cancer Networks in Wales and the Cancer National Specialist Advisory Group (NSAG) and is designed to collect cancer-specific information in Wales.

Welsh Cancer Intelligence and Surveillance Unit (WCISU)
WCISU is the National Cancer Registry for Wales. Its primary role is to record, store and report on all incidences of cancer for the resident population of Wales.

40 https://www.cancerresearchuk.org/about-cancer/prostate-cancer/stages/tnm-staging

