NKCA
National Kidney Cancer Audit

NATCAN
National Cancer Audit Collaborating Centre

National Kidney Cancer Audit
State of the Nation Report 2024

An audit of care received by people diagnosed with kidney cancer in England (January 2017-December 2021) and Wales (January-December 2022).

National time trends in kidney cancer diagnoses and treatments in England (January 2019-September 2023)

Published September 2024

NKCA
National Kidney Cancer Audit

Citation for this document:

National Kidney Cancer Audit (NKCA) State of the Nation Report 2024 London:

National Cancer Audit Collaborating Centre, Royal College of Surgeons of England, 2024.

This document was prepared by members of the NKCA project team:

Amit Bahl (BUG) – Clinical Lead Oncology

Grant Stewart (BAUS) – Clinical Lead Surgery

Jan van der Meulen – Senior Methodologist

Thomas Cowling – Senior Methodologist

Emily Mayne – Data Scientist

Cressida Miller – Senior Project Manager

Marina Parry – Senior Project Manager

Raghav Varma – Clinical Fellow

With review and input from:

NKCA Clinical Reference Group

NATCAN Executive Team

Royal College of Surgeons of England
ADVANCING SURGICAL CARE

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. Registered Charity no: 212808.

HQIP
Healthcare Quality Improvement Partnership

The National Cancer Audit Collaborating Centre (NATCAN) is commissioned by the **Healthcare Quality Improvement Partnership (HQIP)** as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). NATCAN delivers national cancer audits in non-Hodgkin lymphoma, bowel, breast (primary and metastatic), oesophago-gastric, ovarian, kidney, lung, pancreatic and prostate cancers. HQIP is led by a consortium of the Academy of Medical Royal Colleges and the Royal College of Nursing. 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

The British Association of Urological Surgeons

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. Registered Charity no: 1127044

BUG

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. Registered Charity no: 1116828

NDRS
NATIONAL DISEASE REGISTRATION SERVICE

This work uses data that has been provided by patients and collected by the NHS as part of their care and support. For patients diagnosed in England, the data is collated, maintained and quality assured by the National Disease Registration Service (NDRS), which is part of NHS England. Access to the data was facilitated by the NHS England Data Access Request Service.

GIG CYMRU NHS WALES
Rhwydwaith Canser Cymru
Wales Cancer Network

NHS Wales is implementing a new cancer informatics system. As a result, the quality and completeness of data from Wales is likely to have been impacted due to implementation of this new system across multiple NHS organisations (Health Boards), which has resulted in data being supplied by both old and new systems. Additionally, and reflecting the uncertainty of data quality, the data submitted to the audit may not have undergone routine clinical validation prior to submission to the Wales Cancer Network (WCN), Public Health Wales.

Contents

1. Introduction

The National Kidney Cancer Audit (NKCA) aims to evaluate the patterns of care and outcomes for people with kidney cancer in England and Wales, using routinely collected data and to support services to improve their care quality.

This State of the Nation report aims to help NHS organisations to benchmark their kidney cancer care against measurable standards, to identify unwarranted variation in measures of processes and outcomes, and to describe national levels and patterns of these measures in England and Wales.

Along with this document and lay summary, further resources are available at: https://www.natcan.org.uk/audits/kidney/. These include individual NHS provider results, the appendix, action plan template to support local quality improvement projects, a detailed description of the audit methodology and the NKCA Quality Improvement Plan 2024 which sets out the scope, care pathway, and quality improvement goals. This report focuses on eight indicators of performance of NHS providers to drive improvements in kidney cancer care (Table 1).

This State of the Nation report provides a national perspective on the patterns of kidney cancer care and outcomes across England and Wales. This year it includes people diagnosed with kidney cancer between January 2017 to December 2021 in England, and January 2022 to December 2022 in Wales. It reports on 8 out of the 10 performance indicators for England, and 4 out of the 10 performance indicators for Wales outlined in the NKCA Quality Improvement Plan 2024. The report describes the national picture and variation between NHS trusts in England/ Health Boards in Wales. Findings in the report lead to five recommendations to drive improvements in the quality of kidney cancer care. The State of the Nation report will be published annually. In future years the NKCA will work to align the reporting periods in England and Wales, and to provide more timely reporting. In England this will require the use of Rapid Cancer Registration Data (RCRD) as well as 'gold standard' National Cancer Registration Data (NCRD)[1], and development work is needed to ensure the RCRD is of sufficient data quality. Future reports will evaluate change in care and outcomes over time, as well as variation between organisations.

The NKCA also provides timely quarterly reports of data quality to NHS trusts in England. Data quality reports provide a local perspective on the completeness of data available on people with kidney cancer at individual NHS organisations and shine a spotlight on areas where improvements to data collection are needed. Good quality data is essential for the audit to produce reliable and robust information. The most recent data quality report was on data spanning January 2021 to December 2023, and reports are updated every three months.

The NKCA will shortly begin quarterly reporting of performance indicators for NHS trusts in England (expected October 2024). These will be updated every three months and will provide timely reporting on the performance indicators outlined in the NKCA Quality Improvement Plan 2024. The intended audience is NHS trusts; supporting them to track progress alongside local quality improvement activities.

A summary of this report for people diagnosed with kidney cancer and the public will be made available on the NKCA's webpages. Details of the methods are available in the NKCA Methodology Supplement and a glossary is provided of terminology in this report.

Further information about the outlier process can be found in the FAQs for NATCAN (point 17).

1 The audits in NATCAN do not 'collect' clinical data. The cancer audits utilise the nationally mandated flows of data from hospitals to the National Disease Registration Service (NDRS) in NHSE and the Wales Cancer Network in Public Health Wales, thereby minimising the burden of data collection on provider teams. Further information about the timeliness of National Cancer Registration Dataset (NCRD) can be found on the NATCAN website https://www.natcan.org.uk/resources/timeliness-of-the-national-cancer-registration-dataset-ncrd/

Table 1. Cancer registration dataset and time period that define the population for each performance indicator

Performance indicators	England	Wales
PI1: Percentage of people with kidney cancer with the data completeness measure recorded for MDT meeting	National Cancer Registration Dataset (NCRD) People with kidney cancer diagnosed between 01/2019 – 12/2021	Cancer Network Information System Cymru (CaNISC) People with kidney cancer diagnosed between 01/2022 – 12/2022
PI2: Percentage of people with kidney cancer who are consented for a clinical trial (England only)*		
PI3: Percentage of people with a small renal mass (≤4cm) who have a biopsy (England only)*		
PI4: Percentage of people with a T3+ and/or 10cm+ and/or N1 and M0 renal cell carcinoma (RCC)** who have a radical nephrectomy within 31 days of diagnosis (England only)*		
PI5: Percentage of people with T1b-3NxM0 RCC (T2-3NxM0 RCC for Wales)** who have surgery		
PI6: Percentage of people with T1aN0M0 RCC** who undergo nephron sparing treatment		
PI7: Percentage of people presenting with M1 RCC who have initial SACT within 12 months of diagnosis	NCRD People with kidney cancer diagnosed between 01/2017 – 12/2021	
PI8: Percentage of people with kidney cancer who die within 30 days of starting SACT treatment		

*Measured in England only due to the availability of relevant data for Wales. MDT: Multi-disciplinary team; SACT: systemic anti-cancer therapy.
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

T3+ and/or 10cm+ and/or N1 and M0 RCC	Tumour extends into major veins or perinephric tissues or invades beyond Gerota fascia and/or tumour more than 10cm in size and/or metastasis in regional lymph node(s) with no distant metastasis
T2-3NxM0 RCC	Tumour is more than 7cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1b-3NxM0 RCC	Tumour is more than 4cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1aN0M0 RCC	Tumour is less than or equal to 4cm in size with no regional lymph node metastasis and no distant metastasis

** UICC TNM8 Kidney Cancer

We report a three-year period for England to ensure sufficient patient numbers to be able to reliably estimate each provider's performance. Similarly, indicators on SACT are reported for a five-year period (2017-2021) for England due to the relatively small number of people diagnosed with metastatic disease in each provider (see Table 1). For Wales, data for only one year were available[2]. Due to the different periods covered, and differences in the construction of some indicators, results for England and Wales are presented separately. We aim to align the data from Wales and England in future reports and present the combined results. NKCA analyses gold standard data for performance indicators but also utilises Rapid Cancer Registration Dataset (RCRD) to illustrate the change in diagnosis and treatment over time.

2 NHS Wales is part way through a cancer informatics implementation programme which is designed to improve the data capture and reporting capabilities of NHS Wales. This ongoing implementation is impacting the data quality within NHS Wales in the short term with multiple systems being used and different implementation dates across cancer sites and organisations resulting in a complex data landscape. NHS Wales has committed to continue to submit audit data annually until data submissions are sourced exclusively from the new cancer informatics solution. This will be from 2026 onwards that NHS Wales will be able to supply quarterly data using this new integrated, and more accessible digital platform.

Infographic for English results

NKCA
National Kidney Cancer Audit

Diagnosis & staging

28,229
people were diagnosed with kidney cancer in 2019 - 2021

58% of people with kidney cancer **were diagnosed at stage T1 and any N/M category**

21% of people **had metastases**

69 years age at diagnosis (median) Interquartile range **59 - 77 years**

64% of people **were male**

82% of people with kidney cancer had a **multi-disciplinary team meeting recorded***

2% of people with kidney cancer had **consented for a clinical trial**

*Data completeness measure

Treatment Allocation

20% of people **with a small renal mass had a biopsy**

69% of people with a T3+ or 10cm+ or N1 and M0 Renal Cell Carcinoma (RCC) **had radical nephrectomy within 31 days of decision to treat.**

Surgery

76% of people with T1b-3NxM0 RCC **underwent surgery**

67% of people with T1aN0M0 **underwent nephron sparing treatment**

Systemic Anti-Cancer Therapy (SACT)

48% of people with metastatic RCC **received initial SACT within 12 months of diagnosis**

3% of people with kidney cancer **died within 30 days of SACT treatment**

T3+ and/or 10cm+ and/or N1 and M0 RCC - Tumour extends into major veins or perinephric tissues or invades beyond Gerota fascia and/or tumour more than 10cm in size and/or metastasis in regional lymph node(s)
T1b-3NxM0 RCC - Tumour is more than 4cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1aN0M0 RCC - Tumour is less than or equal to 4cm in size with no regional lymph node metastasis and no distant metastasis

Infographic for Welsh results

NKCA
National Kidney Cancer Audit

Diagnosis & staging

490
people were diagnosed with kidney cancer in 2022

46% of people with kidney cancer **were diagnosed at stage T1 and any N/M category**

21% of people **had metastases**

70 years age at diagnosis (median) Interquartile range **60 - 78 years**

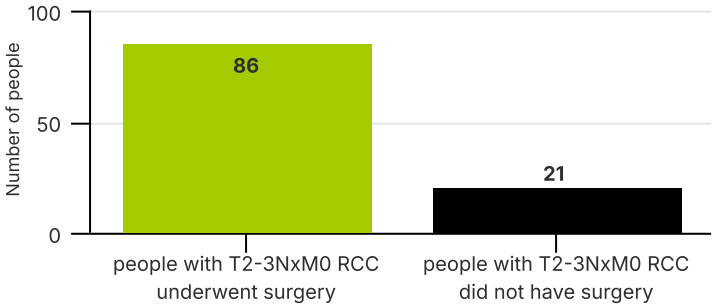
65% of people **were male**

99% of people with kidney cancer had a **multi-disciplinary team meeting recorded***

*Data completeness measure

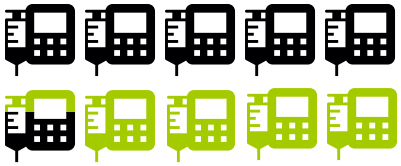
Treatment Allocation

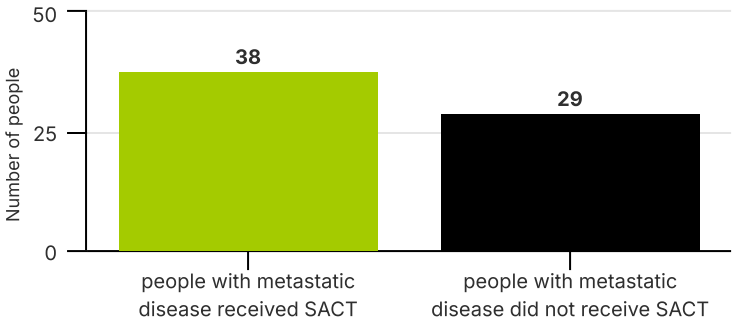
80% of people with T2-3NxM0 Renal Cell Carcinoma (RCC) **underwent surgery**



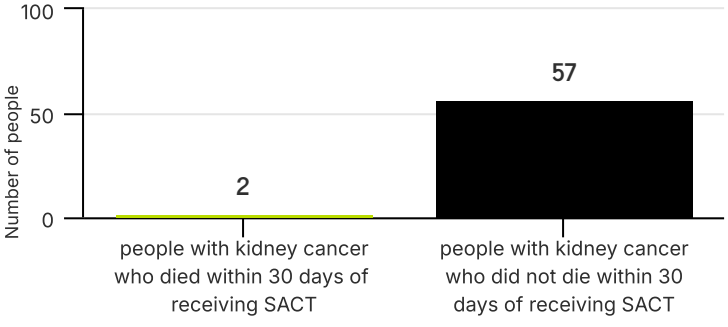
Systemic Anti-Cancer Therapy (SACT)

57% of people with metastatic RCC **received initial SACT within 12 months of diagnosis**





3% of people with kidney cancer **died within 30 days of SACT treatment**



T3+ and/or 10cm+ and/or N1 and M0 RCC - Tumour extends into major veins or perinephric tissues or invades beyond Gerota fascia and/or tumour more than 10cm in size and/or metastasis in regional lymph node(s)
T2-3NxM0 RCC - Tumour is more than 7cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1aN0M0 RCC - Tumour is less than or equal to 4cm in size with no regional lymph node metastasis and no distant metastasis

2. Recommendations

Recommendation	Audience	Audit findings	Quality Improvement Goal	National guidance/standards/resources
1. Increase the number of people with a small renal mass who receive a renal mass biopsy to confirm the histological diagnosis, by improving availability of timely diagnostics.**	England ICBs working with trusts Wales Health boards	**England:** The percentage of people with a small renal mass who have a renal mass biopsy was 20%, with an NHS Trust-level interquartile range of 8-28%.	To increase the use of renal tumour biopsy	The Getting It Right First Time (GIRFT) Academy developed a guide on the management of kidney cancer. They recommend offering renal mass biopsy, where technically feasible, if it will impact patient's choice or clinician's recommendation on treatment for patients with solid small renal masses. **NKCA standard that 25% of providers perform better than* 28% (England)**.
2. Review pathways for higher risk renal cell carcinoma (RCC) to understand system-level delays and ensure providers treat these people within 31 days from decision to treat in England and 21 days in Wales.**	England Cancer Alliances working with trusts Wales Health boards	**England:** The percentage of people with a T3+ and/or 10cm+ and/or N1 and M0 RCC tumour who have a radical nephrectomy within 31 days of decision to treat was 69% with an NHS Trust-level interquartile range of 61-77%.	To expedite treatment of people with potentially high risk for recurrence localised and locally advanced RCCs (i.e. cT3+, 10cm+, cN1 tumours)	GIRFT recommends fast-tracking the assessment of people with higher risk disease (>10cm, cT3+, cN1 tumours) and expediting their treatment. The benchmark defined for cancer waiting times from decision to treat to treatment is 31 days in England and 21 days in Wales. **NHS England's standard set at 96%.** **NKCA standard that 25% of providers perform better than* 77% (England).**
3. Identify and address reasons why people with kidney cancer, stage T1b-3Nx RCC are not considered for surgical treatment and increase the number of eligible people.	England Cancer Alliances working with trusts Wales Health boards	**England:** The percentage of people with T1b-3NxM0 RCC who have surgery was 76%. This is with an NHS Trust-level interquartile range of 69-83%. **Wales:** The percentage of people with T2-3NxM0 RCC who have surgery was 80% with a health board interquartile range of 69-85%.	To increase use of surgery, if medically appropriate, for initially localised RCC at risk of progression	Kidney Cancer UK (KCUK) Accord Report 2022 measured the quality of kidney cancer services in England between 2017 to 2018 and emphasised the importance of prioritising curative surgery for T1b-3NxM0 RCC if medically appropriate (QPI2). NKCA standard that 25% of providers perform better than* 83% (England). NKCA standard that 25% of providers perform better than* 85% (Wales).

*Upper quartile of performance indicator values at the NHS trust or Health Board (in Wales) level. These figures were calculated without risk-adjustment and may be revised in future iterations of this report once risk-adjustment has been applied to understand appropriate target levels.

**Measured in England only due to the availability of relevant data for Wales.

Recommendation	Audience	Audit findings	Quality Improvement Goal	National guidance/standards/resources
4. Ensure that people with kidney cancer, stage T1aN0M0 RCC are discussed in specialist multidisciplinary team meetings and offered nephron sparing treatment.**	England Cancer Alliances working with trusts Wales Health boards	**England:** The percentage of people with T1aN0M0 RCC who undergo nephron sparing treatment was 67% with an NHS Trust-level interquartile range of 52-78%.	To reduce the use of unnecessary extensive surgery for low-risk RCC	Better Cancer Ambition and Action (2016) recognised the need for national cancer QPIs to support a culture of continuous quality improvement. Scottish QPI7 aims to improve the percentage of people with T1a renal cancer receiving nephron sparing treatment to preserve renal function and reduce frequency of cardiovascular events. **NKCA standard that 25% of providers perform better than* 78% (England).**
5. Ensure people diagnosed with metastatic RCC are evaluated by a medical/clinical oncologist with expertise in renal cancer management and receive systemic anti-cancer therapy (SACT).	England Cancer Alliances working with trusts Wales Health boards	**England:** The percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis was 48%. This is with an NHS Trust-level interquartile range of 40-57%. **Wales:** The percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis was 57%. This is with a health board interquartile range of 50-78%.	To increase use of evidence based SACT treatment in eligible people with kidney cancer without severe toxicity	KCUK Accord QPI4 and Scottish QPI9 aim to increase the number of people with metastatic RCC receiving SACT as clinical trials show it can improve quality of life and extend survival. **NKCA standard that 25% of providers perform better than* 57% (England).** **NKCA standard that 25% of providers perform better than* 78% (Wales).**

*Upper quartile of performance indicator values at the NHS trust or Health Board (in Wales) level. These figures were calculated without risk-adjustment and may be revised in future iterations of this report once risk-adjustment has been applied to understand appropriate target levels.

**Measured in England only due to the availability of relevant data for Wales.

3. Results for England

3.1 Data completeness and patient characteristics

We analysed the National Cancer Registration Dataset (NCRD) for 28,229 people diagnosed with kidney cancer in England from 1st January 2019 to 31st December 2021 (Table A1) with 24,589 (92%) people being from the white ethnic group, of those known.

Data were complete for: 79% of T, 72% of N, and 77% of M category of stage values (Table A1); 76% of stage grouping (1-4) data were complete. Completeness of ethnicity (94%), performance status (40%), and tumour size (65%) data items could also be improved and have been included in our quarterly report of data quality (uses RCRD for a more recent cohort of people with kidney cancer).

The median age at diagnosis was 69 years overall (IQR 59-77). There were more male (64%) people than female (36%) in keeping with kidney cancer statistics presented by Cancer Research UK. In people with a T, N, or M stage recorded respectively, the percentage of people with a T1-2 stage was 68%; 10% of people had nodal disease (N1), and 21% had metastatic disease (M1).

3.2 Performance indicators

Table 2. Performance indicators for people with kidney cancer diagnosed and treated in England

	National percentage %	Median % (IQR %) [range %; Trust n]	No. of people with kidney cancer (total)	No. of events	Time period
PI1: Percentage of people with kidney cancer with the data completeness measure recorded for MDT meeting	**82%**	**84%** (74-92%) [20-98%; n=123]	28,229	23,210	2019-21
PI2: Percentage of people with kidney cancer consented for a clinical trial*	**2%**	**1%** (0-3%) [0-15%; n=122]	21,908	352	2019-21
PI3: Percentage of people with a small renal mass who have a biopsy*	**20%**	**17%** (8-28%) [0-75%; n=108]	6,614	1,330	2019-21
PI4: Percentage of people with a T3+ and/or 10cm+ and/or N1 RCC** who had a radical nephrectomy within 31 days of diagnosis*	**69%**	**70%** (61-77%) [39-94%; n=100]	4,539	3,124	2019-21
PI5: Percentage of people with T1b-3NxM0 RCC** who have surgery 1 month prior and 12 months following diagnosis	**76%**	**75%** (69-83%) [19-98%; n=115]	9,093	6,873	2019-21
PI6: Percentage of people with T1aN0M0 RCC** who undergo nephron sparing treatment 1 month prior and 12 months following diagnosis	**67%**	**66%** (52-78%) [7-100%; n=91]	3,804	2,558	2019-21
PI7: Percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis	**48%**	**46%** (40-57%) [15-81%; n=120]	7,949	3,812	2017-21
PI8: Percentage of people with kidney cancer who die within 30 days of SACT treatment	**3%**	**3%** (0-6%) (0-20%; n=77)	5,228	173	2017-21

IQR: Interquartile range; MDT: multi-disciplinary team; RCC: renal cell carcinoma; SACT: systemic anti-cancer therapy. All numbers in this table are unadjusted. We have included median and IQR as these offer a better representation of skewed, non-normal distributions than mean (standard deviation). Trusts with less than 10 patients in their denominator were excluded from medians, IQRs, ranges and Trusts in above.

*12 months following diagnosis was measured to capture all people with kidney cancer who underwent treatment. Timeframe to treatment was not assessed in these performance indicators.

Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

T3+ and/or 10cm+ and/or N1 and M0 RCC	Tumour extends into major veins or perinephric tissues or invades beyond Gerota fascia and/or tumour more than 10cm in size and/or metastasis in regional lymph node(s) with no distant metastasis
T2-3NxM0 RCC	Tumour is more than 7cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1b-3NxM0 RCC	Tumour is more than 4cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis
T1aN0M0 RCC	Tumour is less than or equal to 4cm in size with no regional lymph node metastasis and no distant metastasis

** UICC TNM8 Kidney Cancer

Treatment planning

Key messages: 82% of people diagnosed with kidney cancer (23,210 patients) between 1st January 2019 and 31st December 2021 in England were recorded to have been discussed at an MDT meeting, with an NHS trust-level interquartile (IQR) of 74-92%. During this period, only 2% (352 patients) were recorded to have consented to a clinical trial with an NHS trust-level IQR of 0 - 3% (Table 2). NHS trusts should improve data completeness for whether people diagnosed with kidney cancer were discussed at MDT meetings and increase the number of people consenting to participate in clinical trials. This aligns with NHS England initiatives on promoting research to improve patient care - 'Embedding Research in the NHS'.

Kidney cancer MDT guidance, published in 2012 by the British Association of Urological Surgeons (BAUS) and the British Uro-oncology Group (BUG), aims to avoid fragmentation and improve collaboration in patient care. The Scottish QPI4 MDT target is 95%, and it was surpassed in 2020, reaching 95.9%. However, poor data completeness for this metric at 82% makes it difficult to determine performance levels. The reasons for poor data completeness are likely to vary across organisations and data items – recording of information at MDT, data entry/audit resource etc. The Audit will further explore data completeness and try to build a clearer picture of the issues in submission of data for people with kidney cancer, to build on this in future publications.

KCUK Accord QPI5 found 500 people with RCCs (2.7% of the cohort) between 1st January 2017 and 31st December 2018 had evidence of clinical trial participation. At the Trust level the proportion of people with RCC with evidence of clinical trial participation ranged from 0.3% to 16.3% which aligns with the current range of clinical trial participation at NHS trusts, spanning from 0 – 15%, as shown above. Viewed at national level, there is a very low overall level of access to clinical trials. This is of concern as people with kidney cancer are not getting access to the newest kidney cancer treatments via clinical trials.

Use of renal biopsy

Key messages: In England between 1st January 2019 and 31st December 2021, 20% of people with kidney cancer (1,330 patients) presenting with a less than or equal to 4cm renal mass had a biopsy to confirm the histological diagnosis, with an NHS trust-level IQR of 8 – 28% (Table 2). NHS trusts should ensure they have adequate capacity and increase the use of timely renal biopsy for small renal masses to confirm the histological diagnosis, in keeping with the recommendation from GIRFT.

GIRFT made this recommendation to assist in pre-operative counselling for people with kidney cancer, offering clarity for those choosing active treatments like surgery or ablation, and reassurance for people with non-cancerous masses who may prefer to avoid invasive therapies. During this timeframe, 80% (6,614 patients) of people with a small renal mass did not have a biopsy to help guide pre-operative counselling.

Curative treatment for renal cell carcinoma

Key messages: Between 1st January 2019 and 31st December 2021, 69% of people with kidney cancer in England, (3,124 patients) with a T3+ and/or 10cm+ and/or N1 and M0 RCC had a radical nephrectomy within 31 days of decision to treat among those who had surgery, with an NHS trust-level IQR of 61 – 77%. The benchmark defined for cancer waiting times from decision to treat to treatment is 31 days, with NHS England's standard set at 96%. For those with T1b-3NxM0 RCC, 76% (6,873 patients) had surgery within 1 month prior and 12 months following diagnosis, with an NHS trust-level IQR of 69 - 83% (Table 2). These two indicators provide information on ensuring timely management for people with RCC amenable to surgical treatment. NHS trusts should ensure timely curative treatment for people with RCC.

This relates to the GIRFT recommendation of prevention of metastatic disease by earlier management of high-risk, localised disease. It was found that 31% of people with high-risk, localised and locally advanced RCC did not have timely access to surgical treatment.

24% is a high percentage of all T1b-3NxM0 cases not to receive curative surgery within 12 months of diagnosis. Between 1st January 2017 and 31st December 2018, KCUK Accord QPI2 found 72.9% T1b-T3 RCC received radial nephrectomy surgery up to 1 month prior to 6 months following diagnosis.

Nephron sparing treatment for T1a renal cell carcinoma

Key messages: In people with T1aN0M0 RCC who underwent treatment within 1 month prior and 12 months following diagnosis between 1st January 2019 and 31st December 2021 in England, 67% (2,558 patients) had nephron sparing treatment (partial nephrectomy and thermal ablation). This performance indicator had an NHS trust-level IQR of 52-78% (Table 2). Therefore, 33% of people with T1aN0M0 underwent radical nephrectomy. NHS trusts should increase the percentage of people with T1a tumours who undergo nephron sparing treatment.

The Scottish QPI7 highlights the importance of nephron sparing treatment for T1aN0M0 RCC to help preserve renal function, reduce frequency of cardiovascular events and increase quality of life for people. The percentage of nephron-sparing treatment in Scotland reached 83.5% in 2020. Our results suggest nephron sparing treatment may be underutilised in England.

Systemic anticancer therapy for metastatic renal cell carcinoma

Key messages: Between 1st January 2017 and 31st December 2021, 48% of people with metastatic RCC (3,812 patients) in England received initial SACT within 12 months of diagnosis. The IQR across NHS trusts was 40 – 57%. In addition, 3% of people died within 30 days of SACT treatment, with an NHS trust IQR of 0 – 6% (Table 2). NHS trusts should increase timely access to SACT, while reducing severe associated toxicity.

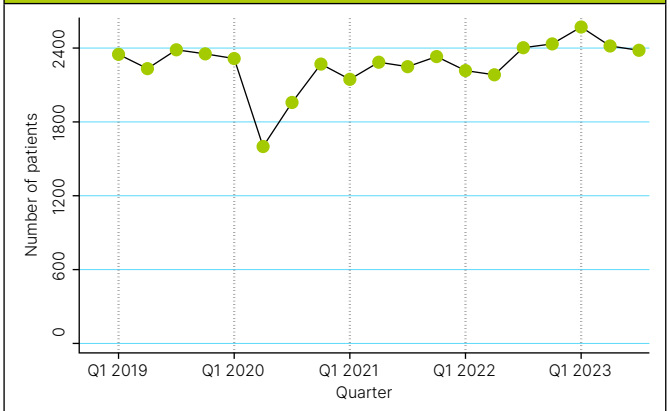
The Scottish QPI9 emphasised the use of SACT as clinical trials have demonstrated it can improve quality of life, extend survival, and improve cancer related symptoms for people with metastatic RCC. Scotland QPI9 in 2020 found 62.2% of people with advanced (T4N0M0) and/or metastatic RCC receiving initial SACT in the first year after diagnosis. Between 1st January 2017 and 31st December 2018, KCUK Accord QPI4 found just under half of M1 RCC (47.4%) received SACT up to one month prior and one year following diagnosis. 48% may suggest that SACT is being underutilised nationally.

In addition, the Scottish QPI15 monitors the 30-day mortality after SACT to ensure care is safe, effective and person-centred. They found a 4.5% (25 out of 558) 30-day mortality for kidney cancer across Scotland in 2022. In England 3% of people died within 30 days of SACT treatment, when measured from the first cycle.

3.3 National time trends in kidney cancer diagnoses and treatments

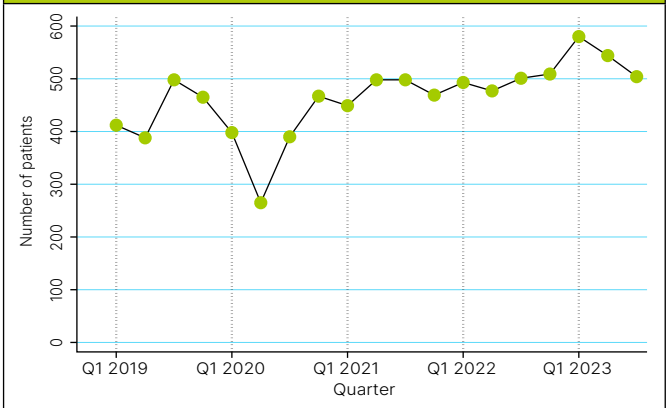
Using the Rapid Cancer Registration Dataset (RCRD), we demonstrate the national trends in the diagnosis and treatment of kidney cancer from 1st January 2019 to 30th September 2023. After 2020, we observe increased numbers of diagnoses (Figure 1), radical nephrectomies (Figure 3), partial nephrectomies (Figure 4) and thermal ablations (Figure 5), along with a significant increase in SACT utilisation in the first quarter of 2023 following its approval by NICE for adjuvant therapy (Figure 6). For all of the graphs throughout this report Q1 is Jan-Mar, Q2 is Apr-Jun, Q3 is Jul-Sept and Q4 is Oct-Dec. Please note, the y-axes in the below graphs have different scales.

Figure 1. Diagnosis per quarter year in England



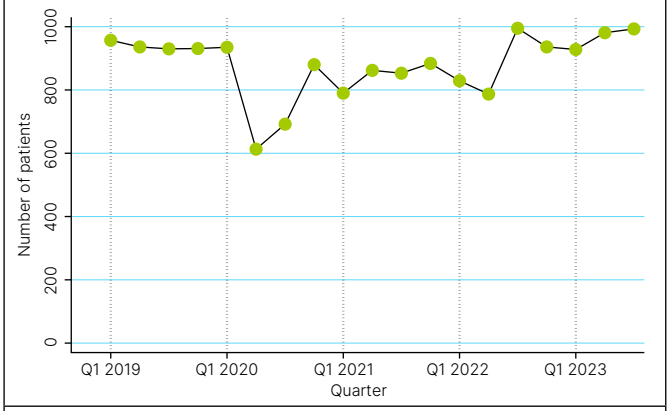
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 2. Renal biopsies per quarter year in England



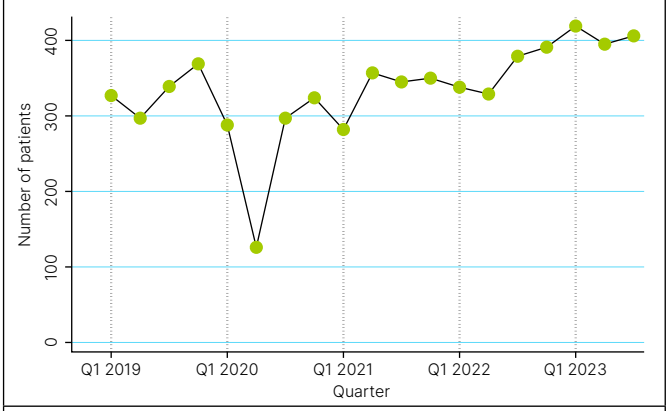
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 3. Radical nephrectomies per quarter year in England



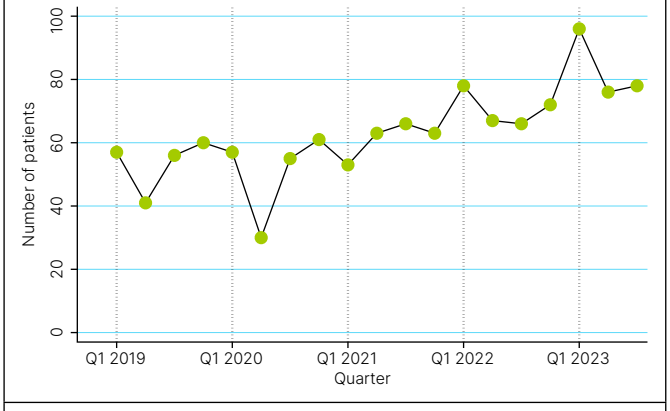
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 4. Partial nephrectomies per quarter year in England



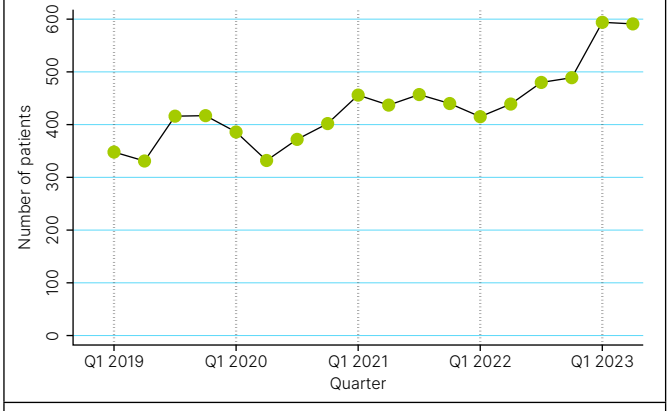
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 5. Thermal ablations per quarter year in England



Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 6. SACT started per quarter year in England

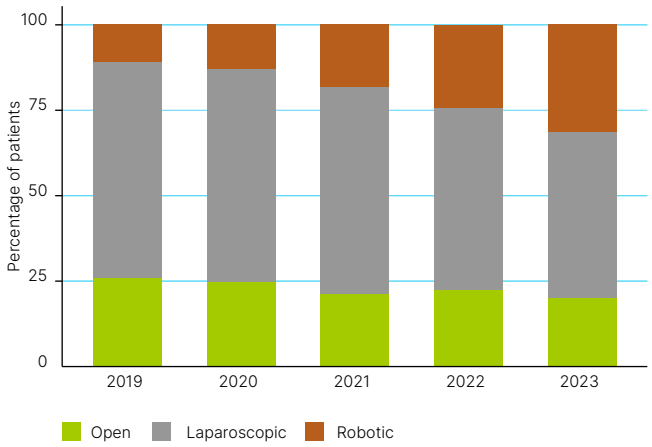


Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

From 1st January 2019 to 30th September 2023, there has been an ongoing transition to robot-assisted radical nephrectomy, with more than a quarter of procedures taking place robotically in 2023 (Figure 7).

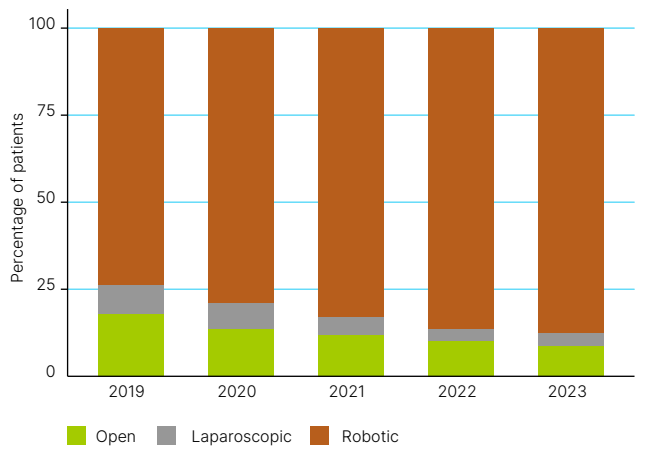
This is mainly associated with a decline in the number of laparoscopic radical nephrectomies (Figure 7). In addition, most partial nephrectomies are now being performed as robot-assisted procedures (Figure 8).

Figure 7. Surgical approach for radical nephrectomies in England 2019-2023



Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 8. Surgical approach for partial nephrectomies in England 2019-2023



Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

4. Results for Wales (2022)

4.1 Data completeness and patient characteristics

Results for Wales were derived using Cancer Network Information System Cymru (CaNISC) datasets. The analysis included 490 people diagnosed with kidney cancer in 2022 (Table 3). NHS Wales is undergoing implementation of a new cancer informatics system. This implementation has affected the data quality and completeness for Wales in this audit. Data has not been clinically validated before submission to the audit.

The levels of completeness for the 490 people (Table 3) analysed were: 74% for T, 67% for N and 64% for M category of stage. 76% of stage grouping (1-4) data was complete. Particular attention should be given to data reflecting T1a and T1b staging, as we were unable to include 'percentage of people with a small renal mass (≤4cm) who have a biopsy' and 'percentage of people with T1aN0M0 RCC who undergo nephron sparing treatment' due to poor T1a and T1b differentiation. In addition, completeness of performance status (70% complete), sex (98% complete) and ethnicity (58% complete) data items could also be improved.

The median age at diagnosis was 70 years overall (IQR 60-78). There were more male people with kidney cancer than female, with 65% being male and 35% female. The percentage of people with a T1-2 stage was 61%. 16% of people had nodal disease (N1) and 21% had metastatic disease (M1). 277 (97%) people being from the white ethnic group, of those known.

4.2 Performance indicators

Table 3. Performance indicators for people with kidney cancer diagnosed and treated in Wales in 2022

	National percentage %	Median % (IQR %) [range %; Health Board n]	No. of people with kidney cancer (total)	No. of events
PI1: Percentage of people with kidney cancer with the data completeness measure recorded for MDT meeting	**99%**	**100%** (98-100%) [97-100%; n=6]	490	486
PI5: Percentage of people with T2-3NxM0 RCC** who have surgery 1 month prior and 12 months following diagnosis	**80%**	**79%** (69-85%) [67-100%; n=5]	107	86
PI7: Percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis	**57%**	**66%** (50-78%) [43-100%; n=6]	67	38
PI8: Percentage of people with kidney cancer who die within 30 days of SACT treatment	**3%**	**0%** (0-7%) [0-8%; n=6]	59	2

IQR: Interquartile range; MDT: multi-disciplinary team; RCC: renal cell carcinoma; SACT: systemic anti-cancer therapy. All numbers in this table are unadjusted. We have included median and IQR as these offer a better representation of skewed, non-normal distributions than mean (standard deviation).

*Due to poor T1a and T1b differentiation, we could not include T1b patients in this performance indicator for Wales.

T2-3NxM0 RCC	Tumour is more than 7cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis

** UICC TNM8 Kidney Cancer

Treatment planning

Key message: 99% of people diagnosed with kidney cancer in Wales In 2022 were recorded to have been discussed at an MDT meeting, with a health board IQR of 98% - 100% (Table 3). The Welsh health boards should maintain their current high standards of data completeness for whether people diagnosed with kidney cancer were discussed at MDT meetings.

82% of people diagnosed with kidney cancer (23,210 patients) between 1st January 2019 and 31st December 2021 in England were recorded to have been discussed at an MDT meeting, with an NHS trust-level interquartile (IQR) of 74-92%. During this period, only 2% (352 patients) were recorded to have consented to a clinical trial with an NHS trust-level IQR of 0 - 3%.

There were only 4 cases where an MDT meeting was not recorded. This is currently surpassing the Scottish QPI4 MDT target of 95%. This is in line with the guidelines of the Welsh government for managing people on the suspected cancer pathway, where clinicians should collaborate as a multi-disciplinary team in patient management.

Curative treatment for renal cell carcinoma

Key message: In Wales, 79% of people with T2-3NxM0 RCC (86 patients) had surgery within 1 month prior and 12 months following diagnosis in 2022. The median was 79% and the IQR was 69 - 85% (Table 3). The Welsh health boards should increase the percentage of curative treatment for people with T2-3NxM0 RCC.

This aligns with the NHS Wales Cancer Improvement Plan for 2023-2026 to treat cancer effectively.

Systemic anticancer therapy for metastatic renal cell carcinoma

Key messages: In Wales, 57% of people with metastatic RCC (38 patients) received initial SACT, with a median of 66% and an IQR of 50 – 78% in 2022. 3% of people with kidney cancer died within 30 days of SACT treatment. The median being 0% with an IQR of 0 – 7% (Table 3). The Welsh health boards should increase timely access to SACT, while reducing severe associated toxicity.

NHS Wales Cancer Improvement Plan for 2023-2026 emphasises the significance of Systemic Anti-Cancer Therapy (SACT) in improving cancer survival and quality of life.

4.3 National picture of kidney cancer treatment in 2022

Using CaNISC datasets, Figures 9 and 10 describe national patterns of treatment for kidney cancer from 1st January 2022 to 31st December 2022. We observe that 205 of 490 (42%) people with kidney cancer had renal biopsies (Figure 9), with 51% of partial nephrectomies performed as open procedures (Figure 10).

Figure 9. Number of people with kidney cancer who received renal biopsies and different treatment options

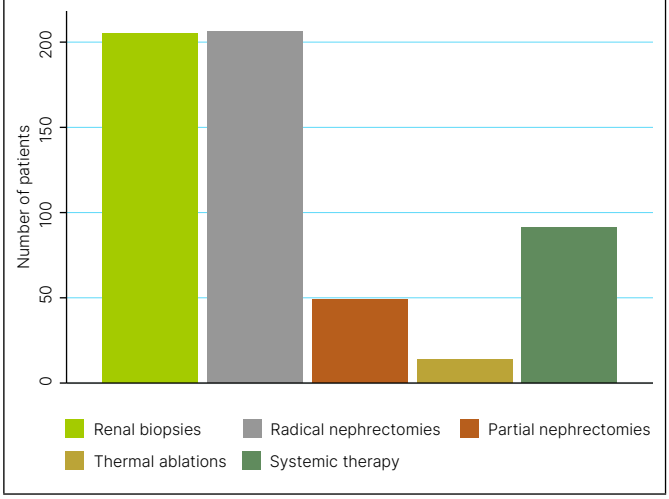
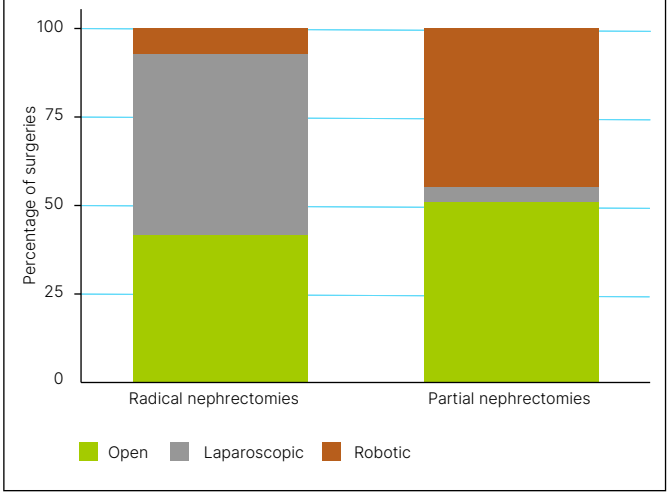


Figure 10. Surgical approach for radical and partial nephrectomies



5. Commentary

This first NKCA State of the Nation report provides a baseline description of the care delivered in NHS hospitals across England and Wales to people diagnosed with kidney cancer between 2017 and 2021.

We report on indicators that were defined to monitor progress against the five NKCA healthcare QI goals:

1. To increase the use of renal tumour biopsy

2. To expedite treatment of people with potentially high risk for recurrence localised and locally advanced RCCs (i.e. cT3+, 10cm+, cN1 tumours)

3. To increase use of surgery, if medically appropriate, for initially localised RCC at risk of progression

4. To reduce the use of unnecessary extensive surgery for low-risk RCC

5. To increase use of evidence based SACT treatment in eligible people with kidney cancer without severe toxicity

The performance indicators uphold principles of clinical relevance, methodological robustness, and technical rigor, fostering collaboration with data partners in England and Wales for continuous improvement and assessment. The audit is building on previous assessments of kidney cancer care in the UK and has drawn on these to develop the current eight performance indicators.

Clinical practice and its context can change over time, leading to changes in performance indicators. The NKCA's goals and indicators are likely to evolve over time, and recommendations will become more focused as the NKCA learns through the audit and feedback cycle.

We have included the upper quartile of performance indicator values at the NHS trust (in England) or Health Board (in Wales) level. This is to help guide target thresholds; however, these figures were calculated without risk-adjustment and may be revised in future iterations of this report once risk-adjustment has been applied to understand appropriate target levels.

Further indicators that we intend to introduce include the percentage of all people with kidney cancer who are treated within 31 days of a decision to treat (21 days of a decision to treat for Wales), the percentage of people with kidney cancer who are treated within 62 days of an urgent referral for suspected cancer, and the percentage of people with kidney cancer who have a biopsy to confirm histological diagnosis before non-surgical treatment. Treatment can include thermal ablation, surgery and SACT. These indicators have not been reported in this State of the Nation report due to the methodological development work required and time required to understand the nuances of the Cancer Waiting Times (CWT) dataset. The NKCA will also further develop its Quality Improvement Plan in collaboration with its stakeholders.