NKCA
National Kidney Cancer Audit

NATCAN
National Cancer Audit Collaborating Centre

National Kidney Cancer Audit
State of the Nation Report 2025

An audit of care received by people diagnosed with kidney cancer between 1 January 2018 to 31 December 2022 in England and 1 January 2022 to 31 December 2023 in Wales. National time trends in kidney cancer diagnoses and treatments between 1 January 2019 to 30 September 2024 in England and 1 January 2022 to 31 December 2023 in Wales.

Published September 2025

NKCA

National Kidney Cancer Audit

Citation for this document:

National Kidney Cancer Audit (NKCA) State of the Nation Report 2025 London:

National Cancer Audit Collaborating Centre, Royal College of Surgeons of England, 2025.

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

Amit Bahl (BUG), Clinical Lead Oncology

Grant Stewart (BAUS), Clinical Lead Surgery

Raghav Varma, Clinical Fellow

Thomas Cowling, Senior Methodologist

Emily Mayne, Data Scientist

Marina Parry, Senior Project Manager

Aurelia Chen, Project Coordinator

Adrian Cook, Senior Statistician

Jan van der Meulen, Senior Methodologist

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) and funded by NHS England and Welsh Government as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). NATCAN delivers national audits in bowel, breast (primary and metastatic), kidney, lung, non-Hodgkin lymphoma, oesophago-gastric, ovarian, pancreatic and prostate cancers.

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.

© 2025 Healthcare Quality Improvement Partnership (HQIP)

Copyright All rights reserved. No part of this publication may be reproduced in any form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright owner. Applications for the copyright owner's written permission to reproduce any part of this publication should be addressed to the publisher.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

Contents

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

1. Introduction

The National Kidney Cancer Audit (NKCA) evaluates patterns of care and outcomes for people diagnosed with kidney cancer in England and Wales. It aims to help NHS organisations 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.

This is the second State of the Nation report from the National Kidney Cancer Audit. The NKCA derives its indicators using information that is routinely collected by the NHS as part of the care and support given to people diagnosed with kidney cancer, rather than data collected specifically for the Audit[1]. For people diagnosed or treated in England, the data are collated, maintained and quality assured by NHS England's National Disease Registration Service (NDRS). For people diagnosed or treated in Wales, data are provided by Wales Cancer Network (WCN)[2], using the Cancer Network Information System Cymru (CaNISC) or Cancer Dataset Form (CDF). For full details of the data and methods used within this report, please see the NKCA Methodology Supplement.

This report includes performance indicator results for people diagnosed with kidney cancer between January 2018 and December 2022 in England, and January 2022 to December 2023 in Wales. The report describes the national picture and variation between NHS trusts in England from January 2019 to September 2024 and health boards in Wales in 2022-2023. We are currently using the National Cancer Registration Dataset (NCRD), only available to December 2022, in England to report our performance indicators as the staging information required (tumour, node, metastasis [TNM]) is 80% complete. We are working towards providing more timely reporting in the future, requiring use of the Rapid Cancer Registration Dataset (RCRD), where diagnoses are available to September 2024 (at time of report drafting). This relies on further development work to ensure reliable findings can be derived from it. Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-21. NKCA Quality Improvement Plan 2024 sets out the scope, care pathway, and quality improvement goals. Similar to our previous report, we focus on eight performance indicators to drive improvements in kidney cancer care (Table 1). The NKCA has developed these performance indicators using national guidelines and addressing quality improvement goals after consultation with its Clinical Reference Group and Patient and Public Involvement (PPI) forum. Findings in this report lead to five recommendations to support improvements in the quality of kidney cancer care.

This year, the results for individual NHS organisations will be available on our data dashboards. We encourage NHS kidney cancer service providers to review the findings of this report and their results on the dashboard to explore reasons for unwarranted differences in practice.

The NKCA data dashboards also feature data quality measures and cancer waiting time performance indicators for NHS trusts in England and are updated quarterly (January, April, July and October) using the RCRD. 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, such as TNM. Good quality data is essential for the audit to produce reliable and robust results. Cancer waiting time performance indicators assess whether cancer services are delivered to patients in a timely manner. These indicators include the percentage of all people with kidney cancer who are treated within 31 days of a decision to treat and the percentage of people with kidney cancer who are treated within 62 days of an urgent referral for suspected cancer.

The NKCA plans to launch a quality improvement initiative later this year, aiming to improve quality of care for people with kidney cancer. Alongside this, the NKCA will work with NDRS to help trusts improve data accuracy and completeness which will impact audit findings and ultimately quality of care.

Additional materials that accompany this report include:

- A methodology supplement with details about the NKCA's data sources and methods
- An online glossary that explains technical terms used in this report
- Action plan template to support local quality improvement projects
- Information about the outlier process

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 team.

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 2027 onwards that NHS Wales will be able to supply quarterly data using this new integrated, and more accessible digital platform.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

- Resources to support local monitoring of practice and quality improvement, such as provider-level results on the Data Dashboard and downloadable reports and a local action plan template
- A summary of this report for people living with kidney cancer and for the public is available on the NKCA's website
- An appendix containing supporting documents

Table 1. Performance Indicators Included*

	England^	Wales#
PI1: Percentage of people who had a record of being discussed at a multidisciplinary team (MDT) meeting	Yes (01/20 – 12/22)	Yes (01/22 – 12/23)
PI2: Percentage of people with kidney cancer who are consented for a clinical trial	Yes (01/20 – 12/22)	No (data unavailable)
PI3: Percentage of people with a small kidney cancer (≤4cm) who have a biopsy**	Yes (01/20 – 12/22)	No (data unavailable)
PI4: Percentage of people with a T3+ and/or 10cm+ and/or N1 and M0 renal cell carcinoma (RCC)*** whose radical nephrectomy is within 31 days of decision to treat	Yes (01/20 – 12/22)	No (data unavailable)
PI5: Percentage of people with T1b-3NXM0 RCC (T2-3NXM0 RCC for Wales)*** who have surgery	Yes (01/20 – 12/22)	Yes (01/22 – 12/23)
PI6: Percentage of people with T1aN0M0 RCC*** who undergo nephron sparing treatment	Yes (01/20 – 12/22)	No (data unavailable)
PI7: Percentage of people presenting with M1 RCC who have initial SACT within 12 months of diagnosis	Yes (01/18 – 12/22)	Yes (01/22 – 12/23)
PI8: Percentage of people with kidney cancer who die within 30 days of starting SACT treatment	Yes (01/18 – 12/22)	Yes (01/22 – 12/23)
PI9: Percentage of people who are treated within 31 days of a decision-to-treat	No (on data dashboard)	No (data unavailable)
PI10: Percentage of people who are treated within 62 days of an urgent referral	No (on data dashboard)	No (data unavailable)
PI11: Percentage of people who have a biopsy to confirm histological diagnosis before non-surgical treatment	No (undergoing methodological development)	No (undergoing methodological development)

MDT: Multi-disciplinary team; SACT: systemic anti-cancer therapy

*See methodology supplement/data dashboard for the exact definitions of each performance indicator, ^England data: National Cancer Registration Dataset (NCRD), #Welsh data: Cancer Network Information System Cymru (CaNISC), ** The audit does not include individuals with benign pathology. Therefore, it only encompasses people for whom the biopsy detects kidney cancer, *** UICC TNM8 Kidney Cancer

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 metastases 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 metastases
T1b-3NxM0 RCC	Tumour is more than 4cm in size or tumour extends into major veins or perinephric tissues with no distant metastases
T1aN0M0 RCC	Tumour is less than or equal to 4cm in size with no regional lymph node metastases and no distant metastases

For six performance indicators, we report results of patients diagnosed in a three-year period (2020-2022) for England to ensure sufficient patient numbers to be able to reliably estimate each provider's performance. The two indicators including SACT are reported for a five-year period (2018-2022) for England due to the relatively small number of people diagnosed with metastatic disease by each provider. For Wales, data for two years were available (2022-2023). Due to the different periods covered, and differences in the construction of some indicators, results for England and Wales are presented separately but combined in the infographic.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

2. Infographic

Summary of results for people diagnosed with kidney cancer in England (2018-2022) and Wales (2022-2023)

NKCA
National Kidney Cancer Audit

%E
%W
The number within the circle represents the national percentage (England top: Wales bottom) for the time period indicated

Diagnosis & staging (England 2020-2022 and Wales 2022-2023)

England in 2020-2022 **Wales in 2022-2023**

28,485 **986**

people were diagnosed with **kidney cancer**

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

64% — of people **were male**

59% E **47%** W — of people with kidney cancer **were diagnosed at stage T1 and any N/M category**

21% E **23%** W — of people **had metastatic disease (M1)**

82% E **99%** W — of people with kidney cancer who had a **record of being discussed at a multi-disciplinary team (MDT) meeting**

1% — of people with kidney cancer had **consented for a clinical trial**

Data unavailable for Wales

Treatment Allocation (England 2020-2022)

20% — of people **with a small kidney cancer (≤4cm) had a biopsy**

21% in 2022
21% in 2021
19% in 2020

Data unavailable for Wales

68% — of people with a T3+ and/or 10cm+ and/or N1 and M0 renal cell carcinoma (RCC) **had radical nephrectomy within 31 days of decision to treat**

63% in 2022
69% in 2021
73% in 2020

Data unavailable for Wales

Surgery (England 2020-2022 and Wales 2022-2023)

78% of people with T1b-3NXM0 RCC **underwent surgery** 1 month prior and 12 months following diagnosis in England

78% in 2022
78% in 2021
76% in 2020

82% of people with T23NXM0 RCC **underwent surgery** 1 month prior and 12 months following diagnosis in Wales

84% in 2023
80% in 2022

69% of people with T1aN0M0 **underwent nephron sparing treatment** 1 month prior and 12 months following diagnosis in England

70% in 2022
72% in 2021
66% in 2020

Data unavailable for Wales

Systemic Anti-Cancer Therapy (SACT, England 2018-2022 and Wales 2022-2023)

49% E **54%** W — of people with metastatic RCC **received initial SACT within 12 months of diagnosis**

England: **50%** in 2022, **52%** in 2021, **48%** in 2020

Wales: **53%** in 2023, **56%** in 2022

3% E **2%** W — of people with kidney cancer **died within 30 days of SACT treatment**

England: **4%** in 2022, **3%** in 2021, **2%** in 2020

Wales: **0%** in 2023, **3%** in 2022

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

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

3. Recommendations

Recommendations developed in collaboration with NKCA Clinical Reference Group and based on key findings in this report.

Recommendation	Audience	Audit Findings	Quality Improvement Goal	National Guidance/Standards/Resources
Clinical Recommendations				
1. Increase the number of people with a small kidney cancer who receive a renal biopsy to confirm the histological diagnosis, by improving availability of timely diagnostics and supporting shared decision making.*	England: Cancer Alliances working with trusts Wales: health boards	**England:** The percentage of people with a small kidney cancer who have a renal biopsy was 20%, with an NHS trust-level interquartile range of 7-31%**, Performance Indicator PI3. **Wales:** Unable to report this performance indicator due to poor differentiation between T1a and T1b stage categories. **Trend: 19% in 2020 to 21% in 2022, pre-pandemic level of 22% in 2019.**	Goal #2: 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.
2. Review pathways for higher risk renal cell carcinoma (RCC) to understand system-level delays and ensure providers prioritise these people over lower-risk cases, treating them within 31 days from decision to treat in England and 21 days in Wales.*	England: Cancer Alliances working with trusts Wales: health boards	**England:** Percentage of people with a T3+ and/or 10cm+ and/or N1 and M0 renal cell carcinoma (RCC) whose radical nephrectomy is within 31 days of decision to treat (England only) was 68% with an NHS trust-level interquartile range of 57-79%**, PI4. **Wales:** Unable to report this performance indicator due to incomplete recording of the decision-to-treat date. **Trend: 73% in 2020 to 63% in 2022, pre-pandemic level of 76% in 2019.**	Goal #3: 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. The above cancer waiting times aligns with the NHS Wales Cancer Improvement Plan for 2023-2026, to treat cancer effectively. NHS England's standard set at 96%.
3. Identify and address reasons why people with kidney cancer, stage T1b-3NX RCC are not considered for surgical treatment and increase the proportion of eligible people assessed and treated.	England: Cancer Alliances working with trusts Wales: health boards	**England:** The percentage of people with T1b-3NXM0 RCC who have surgery was 78%. This is with an NHS trust-level interquartile range of 70-83%**, PI5. **Wales:** The percentage of people with T2-3NXM0 RCC who have surgery was 82% with a health board interquartile range of 70 – 90%**, PI5. T1b is missing due to poor differentiation between T1a and T1b stage categories. **Trend in England: 76% in 2020 to 78% in 2022, pre-pandemic level of 81% in 2019.**	Goal #4: 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).

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

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 to support consistent and appropriate consideration for 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 69% with an NHS trust-level interquartile range of 58-77%**, PI6. **Wales:** Unable to report this performance indicator due to poor differentiation between T1a and T1b stage categories. **Trend: 66% in 2020 to 70% in 2022, pre-pandemic level of 68% in 2019.**	Goal #4: 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.
5. Ensure people diagnosed with metastatic RCC are evaluated by a medical/clinical oncologist with expertise in renal cancer management to increase the proportion of people considered for receipt of systemic anti-cancer therapy (SACT) if appropriate.	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 49%. This is with an NHS trust-level interquartile range of 40-56%**, PI7. **Wales:** The percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis was 54%. This is with a health board interquartile range of 58 – 68%**, PI7. **Trend in England: 48% in 2020 to 50% in 2022, pre-pandemic level of 48% in 2019.**	Goal #5: 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 SACT can improve quality of life and extend survival.

*Measured in England only due to the availability of relevant data for Wales.
**Interquartile Range, representing the range between the 25th and 75th percentiles.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

4. Results for England

4.1 Data completeness and patient characteristics

We analysed the National Cancer Registration Dataset (NCRD) for 28,485 people diagnosed with kidney cancer in England from 1st January 2020 to 31st December 2022 (Table A1) with 24,352 (92%) people being from the white ethnic group, where known (93% complete).

Data completeness has improved, with 80% of T, 74% of N, and 79% of M category of stage values now recorded (Table A1). Performance status (44%) and tumour size (65%) data items could also be improved and are included in our data dashboard, updated quarterly (uses RCRD for a more recent cohort of people with kidney cancer).

The median age at diagnosis was 69 years (IQR 59-77). There were more men (64%) than women (36%) diagnosed with kidney cancer. In people with a T, N, or M category of stage recorded, the percentage of people with a T1 stage category was 59%, T2 stage category was 10%, T3 stage category was 28% and T4 stage category was 3%. 10% of people had nodal disease (N1), and 21% had metastatic disease (M1).

4.2 Performance indicators

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

	National average %	Trust-level median % (IQR %) [range %; Trust n]	No. of people with kidney cancer included in analysis (total)	No. of events	Time period
PI1: Percentage of people who had a record of being discussed at a multidisciplinary team (MDT) meeting (unadjusted)	**82%**	**84%** (73-91%) [22-99%; n=123]	28,485	23,443	2020-22
PI2: Percentage of people with kidney cancer consented for a clinical trial (unadjusted)	**1%**	**1%** (0-2%) [0-13%; n=122]	22,426	317	
PI3: Percentage of people with a small kidney cancer (≤4cm) who have a biopsy*	**20%**	**17%** (7-31%) [0-78%; n=107]	6,704	1,358	
PI4: Percentage of people with a T3+ and/or 10cm+ and/or N1 and M0 renal cell carcinoma (RCC)** whose radical nephrectomy is within 31 days of decision to treat	**68%**	**68%** (57-79%) [29-100%; n=102]	4,093	2,779	
PI5: Percentage of people with T1b-3NXM0 RCC** who have surgery 1 month prior and 12 months following diagnosis***	**78%**	**77%** (70-83%) [34-94%; n=116]	8,963	6,948	
PI6: Percentage of people with T1aN0M0 RCC** who undergo nephron sparing treatment 1 month prior and 12 months following diagnosis***	**69%**	**71%** (58-77%) [15-95%; n=91]	3,873	2,688	
PI7: Percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis***	**49%**	**48%** (40-56%) [22-76%; n=117]	7,738	3,793	2018-22
PI8: Percentage of people with kidney cancer who die within 30 days of SACT treatment	**3%**	**3%** (1-5%) [0-17%; n=77]	5,695	172	

IQR: Interquartile range; MDT: multi-disciplinary team; RCC: renal cell carcinoma; SACT: systemic anti-cancer therapy. All performance indicators in this table are adjusted for age, sex, ethnicity, co-morbidity and deprivation (except where specified). We have included median and IQR as these offer a better representation of skewed, non-normal distributions than mean (standard deviation). Trusts with fewer than 10 patients in their denominator were excluded from medians, IQRs, ranges and trusts above.

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

* The audit does not include individuals with benign pathology. Therefore, it only encompasses people where the biopsy detects kidney cancer.

** UICC TNM8 Kidney Cancer

*** 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.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

Treatment planning

Key messages:

- 82% (23,443) of people diagnosed with kidney cancer in 2020-2022 in England were recorded to have an MDT meeting date, with an NHS trust interquartile rate (IQR) of 73-91% (Table 2). During this period, only 1% (317) were recorded to have consented to a clinical trial with an NHS trust IQR of 0-2% (Table 2).
- NHS trusts should improve the recording for whether people diagnosed with kidney cancer were discussed at MDT meetings and ensure staging information is fully recorded. They should increase recruitment in relevant clinical trials.

82% of people diagnosed with kidney cancer in England during 2020-2022 had a record of being discussed at an MDT meeting as recommended in kidney cancer MDT guidance. This was published in 2012, by the British Association of Urological Surgeons (BAUS) and the British Uro-oncology Group (BUG) to avoid fragmentation and improve collaboration in patient care.

Viewed at national level, there is a very low overall level of people with kidney cancer consented to clinical trials over the years measured of those that were recorded. Out of 317 people with kidney cancer who consented for clinical trial, 48 (15%) were known to have metastatic disease, 217 (68%) had non-metastatic disease, and 52 (16%) had missing staging information. This is of concern as a considerable number of people with kidney cancer are not getting access to the newest kidney cancer treatments via clinical trials.

Use of renal biopsy

Key messages:

- 20% (1,358) of people with kidney cancer in 2020-2022 in England presenting with a less than or equal to 4cm kidney cancer had a biopsy to confirm histological diagnosis to guide management decisions, with an NHS trust IQR of 7–31% (Table 2).

Further analysis has revealed a discrepancy between the expected and observed rates of biopsy prior to the initiation of ablation, active surveillance, or systemic anti-cancer therapy. While this may suggest incomplete data capture, further investigation is needed to understand underlying patterns and validate this indicator.

Curative treatment for renal cell carcinoma

Key messages:

- 68% (2,779) of people with kidney cancer, in 2020-2022 in England 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 IQR of 57–79%. 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, 78% (6,948) had surgery within 1 month prior and 12 months following diagnosis, with an NHS trust IQR of 70-83% (Table 2). These two indicators provide information on ensuring timely management for people with RCC amenable to surgical treatment.

The percentage of people diagnosed with kidney cancer with high-risk, localised and locally advanced RCC treated within 31 days has sharply declined from 76% in 2019 to 63% in 2022 (Table A2). This sustained reduction is a significant concern, particularly in light of the GIRFT recommendation to prevent progression to metastatic disease through timely management of high-risk, localised disease. While this reduction may in part reflect the impact of the COVID-19 pandemic, it highlights the urgent need for system-level improvements to ensure earlier access to surgery. Furthermore, 22% is a high percentage of all T1b-3NXM0 cases who did not receive curative surgery within 12 months of diagnosis.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

Nephron sparing treatment for T1a renal cell carcinoma

Key messages:

- 69% (2,688) of people with T1aN0M0 RCC who underwent active treatment within 1 month prior and 12 months following in 2020-2022 in England had nephron sparing treatment (partial nephrectomy and thermal ablation). The IQR across NHS trusts was 58-77% (Table 2).
- 31% of people with T1aN0M0 underwent radical nephrectomy. Both the numerator and denominator exclude people with kidney cancer who are managed with active surveillance.

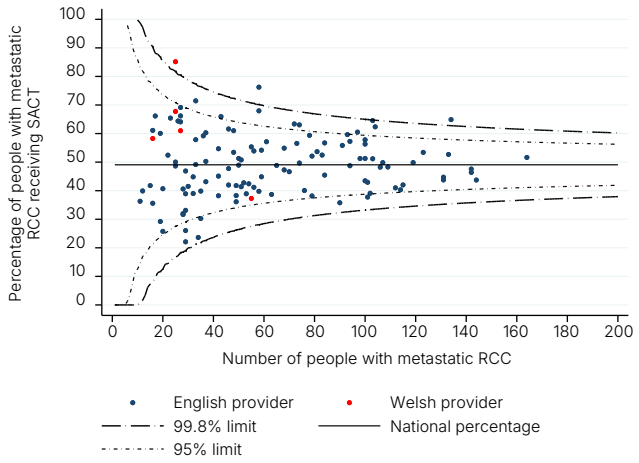
Nephron-sparing treatment is recommended for T1aN0M0 RCC due to its benefits in preserving kidney function, reducing cardiovascular risk, and improving quality of life. However, our findings suggest it remains underutilised in England, with only 69% of patients receiving partial nephrectomy or thermal ablation between 2020 and 2022. This means nearly one in three patients underwent radical nephrectomy, potentially exposing them to avoidable long-term complications.

Systemic anticancer therapy for metastatic renal cell carcinoma

Key messages:

- 49% (3,793) of people with metastatic RCC in 2018-2022 in England received initial SACT within 12 months of diagnosis. The IQR across NHS trusts was 40–56%.
- 3% (172) of people died within 30 days of SACT treatment, with an NHS trust IQR of 1–5% (Table 2).

Figure 1. Adjusted funnel plot for the percentage of patients with metastatic RCC receiving initial SACT within 12 months of diagnosis (between 1st January 2018 and 31st December 2022) at NHS trust-level in England and Wales.



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

There has been a small improvement in the percentage of people with metastatic RCC in England receiving initial SACT within 12 months of diagnosis, rising from 48% in 2019 to 50% in 2022. While this upward trend is encouraging, half of the people with metastatic RCC did not receive SACT within a year of diagnosis. In the Canadian Health Care System[3], between 1 January 2011 and 31 December 2021, 4,107 patients were diagnosed with metastatic RCC, of which 2,752 (67%) received systemic therapy. This suggests SACT is underutilised in England. For three trusts, the proportion of people with metastatic RCC receiving initial SACT within 12 months of diagnosis was below the 99.8% limit (three standard deviations from the national average, Figure 1). A review identified inaccuracies in the data held by the NKCA, and as per the NKCA outlier policy, results from these trusts were removed from the report. Outlier communications can be found here.

In addition, in England, 3% of people died within 30 days of SACT treatment, ranging from 0-17%, when measured from the start date of the first cycle. No trusts were found to be above the 99.8% limit (three standard deviations from the national average) for this indicator.

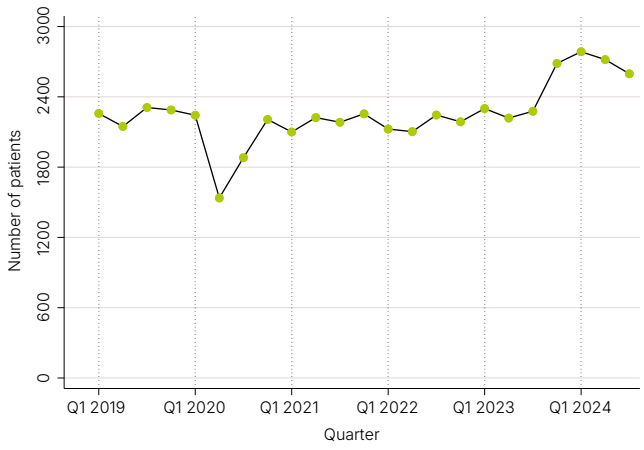
1 Cardenas Luisa M., Ghosh Sunita, Finelli Antonio, et al. Trends of Utilization of Systemic Therapies for Metastatic Renal Cell Carcinoma in the Canadian Health Care System. JCO Global Oncology. 2023(9):e2300271.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

4.3 National picture of treatment in 2019-2024

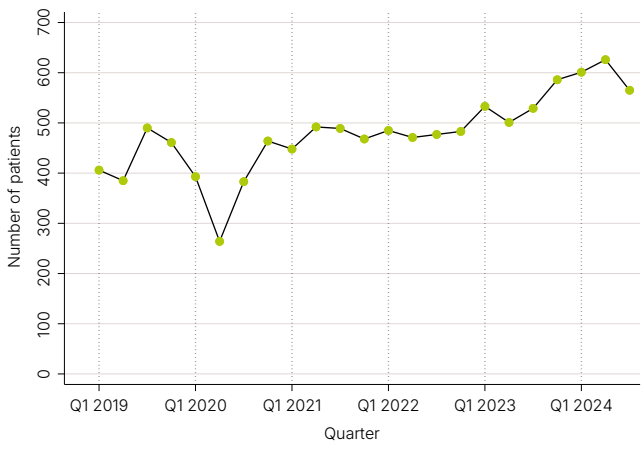
Using the RCRD, we present the national trends in the diagnosis and treatment of kidney cancer from 1st January 2019 to 30th September 2024. After Q4 2023, we observe increased numbers of diagnoses (Figure 2), renal biopsies (Figure 3), radical nephrectomies (Figure 4), partial nephrectomies (Figure 5) and thermal ablations (Figure 6), along with a significant increase in SACT utilisation in the first quarter of 2023 following the approval by NICE of adjuvant pembrolizumab therapy (Figure 7). Kidney cancer diagnosis and treatment were affected by the COVID-19 pandemic, with a noticeable decline in the number of diagnoses and treatments, with recovery to pre-pandemic levels being achieved in 2021. For all 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 2. Diagnoses per quarter year in England



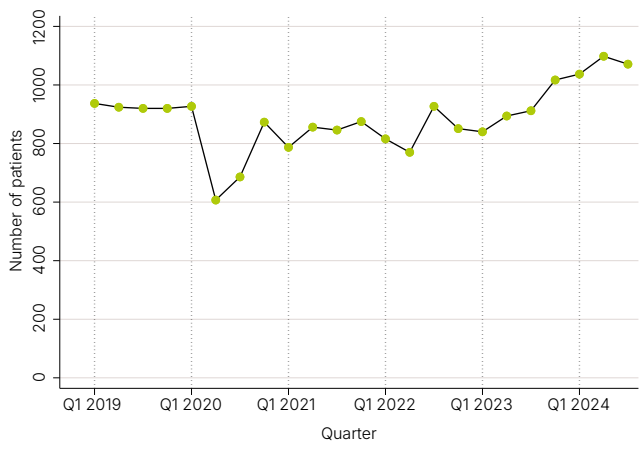
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 3. Renal biopsies per quarter year in England



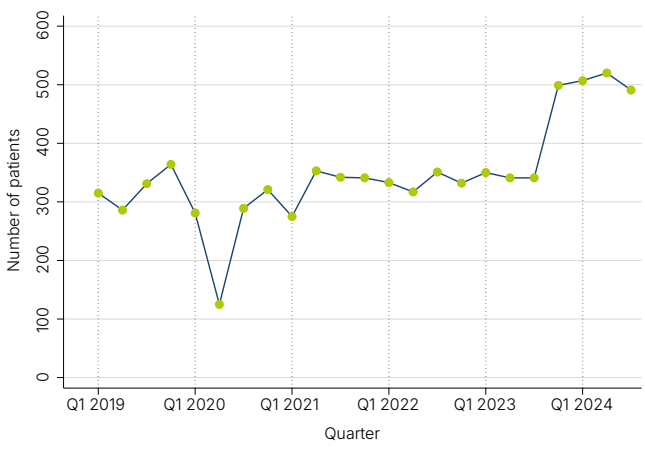
Data were impacted by the COVID-19 pandemic and so will be atypical to some degree during 2020-2021

Figure 4. 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

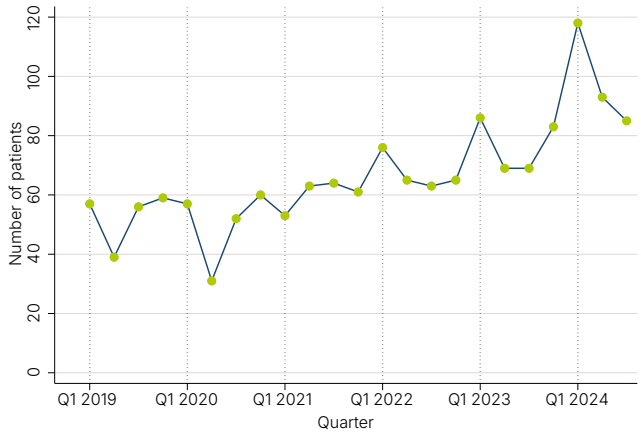
Figure 5. Partial nephrectomies per quarter year in England



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

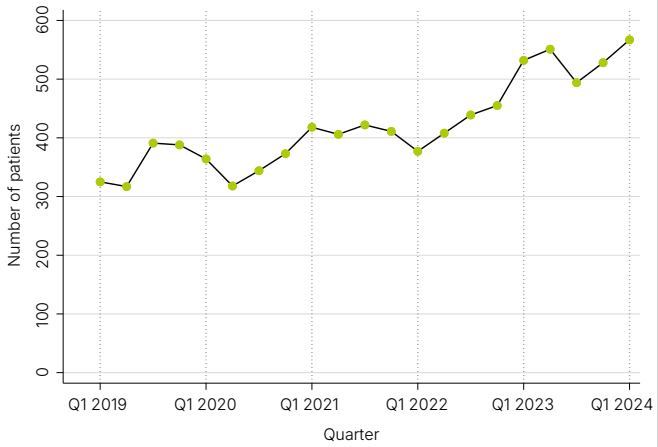
Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

Figure 6. 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

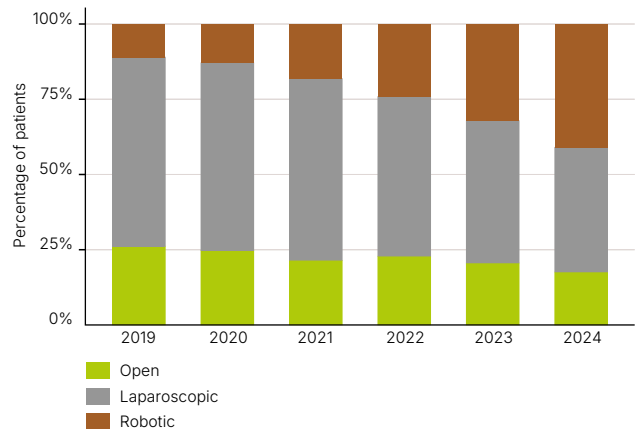
Figure 7. SACT started per quarter year in England



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

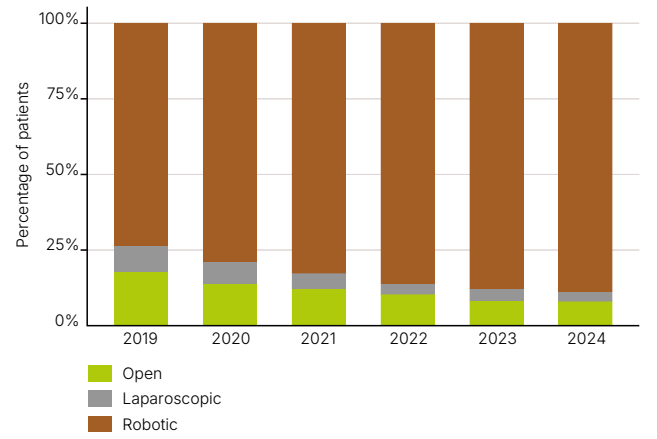
From 1st January 2019 to 30th September 2024, there has been an ongoing transition to robot-assisted radical nephrectomy, with 41% (1,434/3,502) taking place robotically in 2024 from 11% (406/3,701) in 2019 (Figure 8). In addition, 89% (1,473/1,661) partial nephrectomies are being performed as robot assisted procedures in 2024 from 74% (953/1,296) in 2019 (Figure 9).

Figure 8. Surgical approach for radical nephrectomies in England between 1st January 2019 to 30th September 2024



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

Figure 9. Surgical approach for partial nephrectomies in England between 1st January 2019 to 30th September



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

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

5. Results for Wales

5.1 Data completeness and patient characteristics

Results for Wales were derived using Cancer Network Information System Cymru (CaNISC) and Cancer Dataset Form (CDF) datasets. The analysis included 986 people diagnosed with kidney cancer in 2022 and 2023 (Table A3). 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 986 people analysed were: 83% for T, 76% for N and 73% for M category of stage (Table A3). Particular attention should be given to data reflecting T1a and T1b staging, as we were unable to include 'percentage of people with a small kidney cancer (≤4cm) who have a biopsy' and 'percentage of people with T1aN0M0 RCC who undergo nephron sparing treatment' due to poor differentiation between T1a and T1b stage categories. In addition, completeness of performance status (81% complete) and ethnicity (54% complete) data items could also be improved.

The median age at diagnosis was 69 years (IQR 59-77). There were more men than women diagnosed with kidney cancer, with 64% being male and 36% female. In people with a T, N, or M category of stage recorded respectively, the percentage of people with a T1 stage category was 47%, T2 stage category was 15%, T3 stage category was 30% and T4 stage category was 7%. 17% of people had nodal disease (N1), and 23% had metastatic disease (M1). 521 (98%) people being from the white ethnic group, of those known.

5.2 Performance indicators

Table 3. Performance indicators for people with kidney cancer diagnosed and treated in Wales in 01/2022-12/2023

	National average%	Trust-level median % (IQR %) [range %; health board n]	No. of people with kidney cancer included in analysis (total)	No. of events
PI1: Percentage of people who had a record of being discussed at a multidisciplinary team (MDT) meeting *(unadjusted)*	**99%**	**100%** (99-100%) [99-100%; n=6]	984	979
PI5: Percentage of people with T2-3NXM0* RCC** who have surgery 1 month prior and 12 months following diagnosis	**82%**	**89%** (70-90%) [68-95%; n=5]	229	188
PI7: Percentage of people with metastatic RCC receiving initial SACT within 12 months of diagnosis	**54%**	**61%** (58-68%) [37-85%; n=5]	156	85
PI8: Percentage of people with kidney cancer who die within 30 days of SACT treatment	**2%**	**0%** (0-4%) [0-6%; n=5]	125	2

IQR: Interquartile range; MDT: multi-disciplinary team; RCC: renal cell carcinoma; SACT: systemic anti-cancer therapy. All performance indicators in this table are adjusted for age, sex, ethnicity, co-morbidity and deprivation (except for PI1 which is 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.

**UICC TNM8 Kidney Cancer

T2-3NXM0 RCC	Tumour is more than 7cm in size or tumour extends into major veins or perinephric tissues with no distant metastasis

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

Treatment planning

Key message:

- 99% of people diagnosed with kidney cancer in 2022-2023 in Wales were recorded to have been discussed at an MDT meeting, with a health board IQR of 99%-100% (Table 3).

Curative treatment for renal cell carcinoma

Key message:

- 82% (188) of people with T2-3NXM0 RCC in 2022-2023 in Wales had surgery within 1 month prior and 12 months following diagnosis. The median was 89% and the IQR was 70-90% (Table 3).

Systemic anticancer therapy for metastatic renal cell carcinoma

Key messages:

- 54% (85) of people with metastatic RCC in 2022-2023 in Wales received initial SACT, with a median of 61% and an IQR of 58–68% (Table 3).
- 2% of people with kidney cancer died within 30 days of SACT treatment. The median being 0% with an IQR of 0–4% (Table 3).

5.3 National picture of treatment in 2022-2023

Using CaNISC and CDF datasets, Figures 10 and 11 describe national patterns of treatment for people diagnosed with kidney cancer from 1st January 2022 to 31st December 2023. We observe that 383 of 986 (39%) people with kidney cancer had renal biopsies (Figure 10), with 58% of partial nephrectomies performed as open procedures (Figure 11).

Figure 11. Number of people with kidney cancer who received renal biopsies and different treatment options

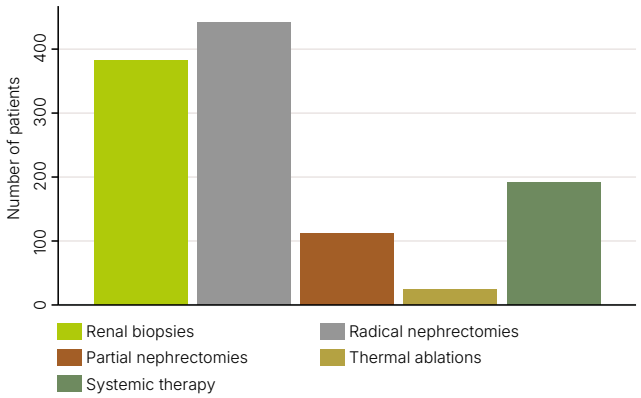
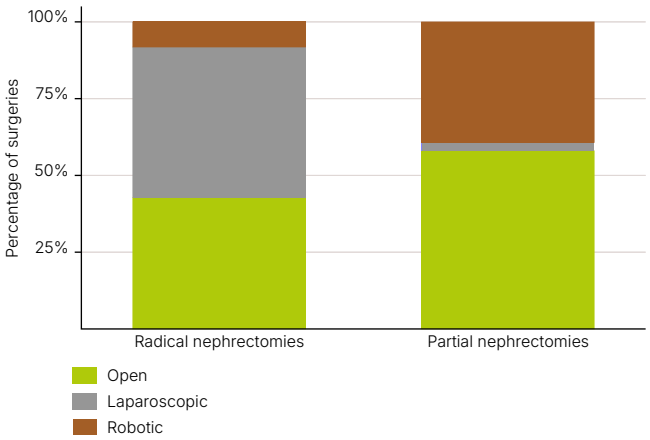


Figure 11. Surgical approach for radical and partial nephrectomies



Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)

6. Commentary

This State of the Nation report provides a concise overview of the care delivered in NHS hospitals across England and Wales to people diagnosed with kidney cancer between 2018 and 2024. However, incomplete data collection limits our ability to use more recent data from the RCRD, and we encourage clinicians to engage with improving the accuracy and completeness of data collected. To support this, the NKCA will work with NDRS to help trusts improve data accuracy and completeness and ultimately improve quality of care in future years.

The report has focused on the overall national figures. The indicator values for the NHS organisations, both quarterly and State of the Nation results, can be found on the data dashboard. To help guide target thresholds, we have included the upper quartile of performance indicator values at the NHS trust (in England) or health board (in Wales) level. It is essential that clinicians, NHS trusts and Cancer Alliances in England and NHS hospitals and health boards in Wales use the dashboard and additional online materials to review their performance and, where necessary, initiate local quality improvement activities.

Overall, there has been minimal change in the current State of the Nation results, which reflects the nature of the findings, which includes data for two, three or five years, with only one year of new data being added on an annual basis. To enhance clarity and context, we have included year-on-year results to illustrate trends and provide a deeper understanding of performance.

The percentage of people with high-risk RCC receiving treatment within 31 days of a decision to treat has declined from 76% in 2019 to 63% in 2022, showing a concerning downward trend. In England, NHS trust-level interquartile range was 57-79%, and notably, no Cancer Alliance achieved the NHS England standard of 96% compliance. This shortfall represents a systemic failure to deliver timely care to a group of patients for whom delays can result in disease progression, poorer outcomes, and increased anxiety. Additional resources are urgently required for trusts to identify people with high-risk RCC and ensure they receive treatment without delay.

There is also scope to improve access to systemic anti-cancer therapy for patients with advanced disease, as it can improve quality of life, extend survival, and alleviate cancer-related symptoms. Audit data revealed wide variation in the percentage of patients with metastatic RCC receiving initial SACT within 12 months of diagnosis, ranging from 22% to 76% across 117 NHS trusts in England and from 37% to 85% across the five health boards in Wales. To address this, an oncologist with a specialist interest in renal cancer should oversee management of metastatic RCC pathways, working with the clinical teams to identify barriers to SACT. Where low rates were identified in this report, this was fed back to individual trusts for further investigation as part of our outlier process.

Looking ahead, the NKCA aims to continue enhancing kidney cancer care in England and Wales, with a focus on more frequent reporting through our data dashboard, updated quarterly, and by working closely with professional bodies to drive the quality improvement plan. Ongoing investigations include understanding regional variations in receipt of timely treatment, exploring under-treatment in metastatic kidney cancer and further work to validate the renal biopsy performance indicator.

Copyright © 2025 Healthcare Quality Improvement Partnership (HQIP)