

## Renal cancer overview

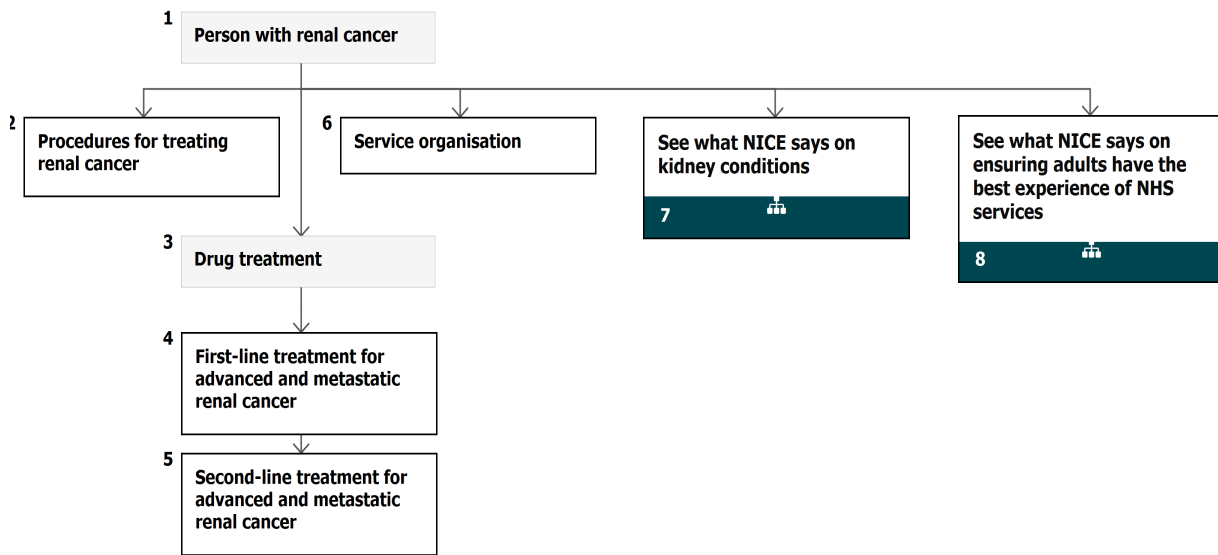
NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/renal-cancer>

NICE Pathway last updated: 18 January 2019

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



## 1 Person with renal cancer

No additional information

## 2 Procedures for treating renal cancer

### Interventional procedures

NICE has published guidance on the following procedures with **normal arrangements** for clinical governance, consent and audit:

- [laparoscopic cryotherapy for renal cancer](#)
- [percutaneous cryotherapy for renal cancer](#)
- [percutaneous radiofrequency ablation for renal cancer](#)
- [laparoscopic partial nephrectomy](#)
- [laparoscopic nephrectomy \(including nephroureterectomy\)](#).

NICE has published guidance on [single-port laparoscopic nephrectomy](#) with **special arrangements** for clinical governance, consent and audit or research.

NICE has published guidance that [irreversible electroporation for treating renal cancer](#) should be used **only in the context of research**.

## 3 Drug treatment

No additional information

## 4 First-line treatment for advanced and metastatic renal cancer

### Cabozantinib

The following recommendations are from NICE technology appraisal guidance on [cabozantinib for untreated advanced renal cell carcinoma](#).

Cabozantinib is recommended, within its marketing authorisation, for adults with untreated advanced renal cell carcinoma that is intermediate- or poor-risk as defined in the International Metastatic Renal Cell Carcinoma Database Consortium criteria. It is recommended only if the

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company provides cabozantinib according to the [commercial arrangement](#).

See [why we made the recommendations on cabozantinib](#) [See page 10].

NICE has written information for the public on [cabozantinib](#).

### **Tivozanib**

The following recommendations are from NICE technology appraisal guidance on [tivozanib for treating advanced renal cell carcinoma](#).

Tivozanib is recommended as an option for treating advanced renal cell carcinoma in adults, only if:

- they have had no previous treatment and
- the company provides tivozanib with the discount agreed in the patient access scheme.

This recommendation is not intended to affect treatment with tivozanib that was started in the NHS before this guidance was published. People having treatment outside this recommendation may continue without change to the funding arrangements in place for them before this guidance was published, until they and their NHS clinician consider it appropriate to stop.

See [why we made the recommendations on tivozanib](#) [See page 9].

NICE has written information for the public on [tivozanib](#).

### **Pazopanib**

The following recommendations are from NICE technology appraisal guidance on [pazopanib for the first-line treatment of advanced renal cell carcinoma](#).

Pazopanib is recommended as a first-line treatment option for people with advanced renal cell carcinoma who have not received prior cytokine therapy and have an ECOG performance status of 0 or 1 and if the manufacturer provides pazopanib with a 12.5% discount on the list price as agreed in the patient access scheme.

When using ECOG performance status, healthcare professionals should take into account any physical, sensory or learning disabilities, or communication difficulties that could affect ECOG performance status and make any adjustments they consider appropriate.

People who are currently being treated with pazopanib for advanced metastatic renal cell

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carcinoma but who do not meet the criteria above should have the option to continue their therapy until they and their clinicians consider it appropriate to stop.

NICE has written information for the public on [pazopanib](#).

### **Sunitinib**

The following recommendations are from NICE technology appraisal guidance on [sunitinib for the first-line treatment of advanced and/or metastatic renal cell carcinoma](#).

Sunitinib is recommended as a first-line treatment option for people with advanced and/or metastatic renal cell carcinoma who are suitable for immunotherapy and have an ECOG performance status of 0 or 1.

When using ECOG performance status score, clinicians should be mindful of the need to secure equality of access to treatments for people with disabilities. Clinicians should bear in mind that people with disabilities may have difficulties with activities of daily living that are unrelated to the prognosis of renal cell carcinoma. In such cases clinicians should make appropriate judgements of performance status taking these considerations into account.

People who are currently being treated with sunitinib for advanced and/or metastatic renal cell carcinoma but who do not meet the criteria above should have the option to continue their therapy until they and their clinicians consider it appropriate to stop.

NICE has written information for the public on [sunitinib](#).

### **Bevacizumab, sorafenib and temsirolimus**

The following recommendations are from NICE technology appraisal guidance on [bevacizumab \(first-line\), sorafenib \(first- and second-line\), sunitinib \(second-line\) and temsirolimus \(first-line\) for the treatment of advanced and/or metastatic renal cell carcinoma](#).

Bevacizumab, sorafenib and temsirolimus are **not recommended** as first-line treatment options for people with advanced and/or metastatic renal cell carcinoma.

People who are currently being treated with bevacizumab (first-line), sorafenib (first- and second-line), sunitinib (second-line) and temsirolimus (first-line) for advanced and/or metastatic renal cell carcinoma should have the option to continue their therapy until they and their clinicians consider it appropriate to stop.

NICE has written information for the public on [bevacizumab, sorafenib and temsirolimus](#).

## 5 Second-line treatment for advanced and metastatic renal cancer

### Lenvatinib with everolimus

The following recommendations are from NICE technology appraisal guidance on [lenvatinib with everolimus for previously treated advanced renal cell carcinoma](#).

Lenvatinib plus everolimus is recommended as an option for treating advanced renal cell carcinoma in adults who have had 1 previous VEGF-targeted therapy, only if:

- their ECOG performance status score is 0 or 1 and
- the company provides lenvatinib with the discount agreed in the patient access scheme.

This recommendation is not intended to affect treatment with lenvatinib plus everolimus that was started in the NHS before this guidance was published. People having treatment outside this recommendation may continue without change to the funding arrangements in place for them before this guidance was published, until they and their NHS clinician consider it appropriate to stop.

See [why we made the recommendations on lenvatinib with everolimus \[See page 9\]](#).

NICE has written information for the public on [lenvatinib with everolimus](#).

### Cabozantinib

The following recommendations are from NICE technology appraisal guidance on [cabozantinib for previously treated advanced renal cell carcinoma](#).

Cabozantinib is recommended, within its marketing authorisation, as an option for treating advanced renal cell carcinoma in adults after VEGF-targeted therapy, only if the company provides cabozantinib with the discount agreed in the patient access scheme.

NICE has written information for the public on [cabozantinib](#).

### Everolimus

The following recommendations are from NICE technology appraisal guidance on [everolimus for advanced renal cell carcinoma after previous treatment](#).

Everolimus is recommended within its marketing authorisation as an option for treating advanced renal cell carcinoma that has progressed during or after treatment with vascular endothelial growth factor targeted therapy, only if the company provides it with the discount agreed in the patient access scheme.

NICE has written information for the public on [everolimus](#).

### **Nivolumab**

The following recommendation is from NICE technology appraisal guidance on [nivolumab for previously treated advanced renal cell carcinoma](#).

Nivolumab is recommended, within its marketing authorisation, as an option for previously treated advanced renal cell carcinoma in adults, when the company provides nivolumab according to the [commercial arrangement](#).

NICE has written information for the public on [nivolumab](#).

### **Axitinib**

The following recommendations are from NICE technology appraisal guidance on [axitinib for treating advanced renal cell carcinoma after failure of prior systemic treatment](#).

Axitinib is recommended as an option for treating adults with advanced renal cell carcinoma after failure of treatment with a first-line tyrosine kinase inhibitor or a cytokine, only if the company provides axitinib with the discount agreed in the patient access scheme.

At the time of publication (February 2015), axitinib has a UK marketing authorisation only for use after failure with first-line sunitinib or a cytokine. If it is considered for use after any other first-line treatments, the prescriber should obtain and document informed consent and follow the relevant guidance published by the General Medical Council.<sup>1</sup>

Because the remit referred to NICE by the Department of Health for this technology appraisal only includes adults who have been previously treated with sunitinib, the use of axitinib after treatment with other tyrosine kinase inhibitors is not subject to statutory funding.

NICE has written information for the public on [axitinib](#).

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<sup>1</sup> For further information see the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#).

## Sorafenib and sunitinib

The following recommendations are from NICE technology appraisal guidance on [bevacizumab \(first-line\)](#), [sorafenib \(first- and second-line\)](#), [sunitinib \(second-line\)](#) and [temsirrolimus \(first-line\)](#) for the treatment of advanced and/or metastatic renal cell carcinoma.

Sorafenib and sunitinib are **not recommended** as second-line treatment options for people with advanced and/or metastatic renal cell carcinoma.

People who are currently being treated with bevacizumab (first-line), sorafenib (first- and second-line), sunitinib (second-line) and temsirolimus (first-line) for advanced and/or metastatic renal cell carcinoma should have the option to continue their therapy until they and their clinicians consider it appropriate to stop.

NICE has written information for the public on [sorafenib and sunitinib](#).

## 6 Service organisation

NICE has published cancer service guidelines on:

- [improving outcomes in urological cancers](#)
- [improving supportive and palliative care for adults with cancer](#).

## 7 See what NICE says on kidney conditions

[See Kidney conditions](#)

## 8 See what NICE says on ensuring adults have the best experience of NHS services

[See Patient experience in adult NHS services](#)



## Lenvatinib with everolimus

In the NHS, advanced renal cell carcinoma that has progressed after 1 tyrosine kinase inhibitor is treated with axitinib, nivolumab or cabozantinib. The evidence from a single clinical trial suggests that, on average, people live around 10.1 months longer if they have lenvatinib plus everolimus rather than everolimus alone. In the trial, lenvatinib plus everolimus caused side effects, leading many patients to interrupt or even stop treatment. This is despite the patients enrolled in the trial being relatively fit (that is, they had an ECOG performance status score of 0 or 1).

The cost-effectiveness analyses for lenvatinib plus everolimus show it's more effective and less costly than cabozantinib and nivolumab. Compared with axitinib, the cost-effectiveness estimates are within what NICE normally considers acceptable. So, NICE is recommending lenvatinib plus everolimus as an option for use in the NHS in people with an ECOG performance status score of 0 or 1.

For more information see the committee discussion in the NICE technology appraisal guidance on [lenvatinib with everolimus for previously treated advanced renal cell carcinoma](#).

## Tivozanib

Current treatment in the NHS for untreated advanced renal cell carcinoma is usually sunitinib or pazopanib. There is no evidence to suggest that tivozanib is more effective than pazopanib and sunitinib in extending overall and progression-free survival. At best, tivozanib may have a similar effect to sunitinib or pazopanib. Also, the evidence does not clearly show that people tolerate the adverse effects of tivozanib better than those of sunitinib or pazopanib.

The cost of treating renal cell carcinoma with tivozanib is likely to be lower than the cost of treating it with sunitinib or pazopanib, but tivozanib is also likely to be less effective. The estimated cost savings are high enough to compensate for the estimated lower effectiveness. Also, there is a need to be able to offer tivozanib to people who do not tolerate existing treatments. Therefore, tivozanib is recommended as an option for treating advanced renal cell carcinoma in adults who have had no previous treatment.

For more information see the committee discussion in the NICE technology appraisal guidance on [tivozanib for treating advanced renal cell carcinoma](#).

## Rationale: cabozantinib

Current treatment for untreated advanced renal cell carcinoma is usually pazopanib or sunitinib.

Clinical trial evidence shows that cabozantinib extends the time until cancer progresses compared with current treatment. But the evidence on whether cabozantinib increases how long people live is less certain. It appears to be at least as effective as current treatment, but it's not clear how much extra benefit it offers.

Cost-effectiveness estimates for cabozantinib compared with current treatment are uncertain. This is because there is not much evidence available to estimate how long people live, and the costs and benefits of treatments after cabozantinib do not fully reflect those in the NHS. The cost effectiveness estimates are within the range that NICE usually considers a cost effective use of NHS resources, taking into account the uncertain estimates. Therefore, cabozantinib is recommended as an option for treating advanced renal cell carcinoma in the NHS.

For more information see the committee discussion in the NICE technology appraisal guidance on [cabozantinib for untreated advanced renal cell carcinoma](#).

## Glossary

### ECOG

Eastern Cooperative Oncology Group

### VEGF

vascular endothelial growth factor

## Sources

[Cabozantinib for untreated advanced renal cell carcinoma](#) (2018) NICE technology appraisal guidance 542

[Tivozanib for treating advanced renal cell carcinoma](#) (2018) NICE technology appraisal guidance 512

[Lenvatinib with everolimus for previously treated advanced renal cell carcinoma](#) (2018) NICE technology appraisal guidance 498

[Cabozantinib for previously treated advanced renal cell carcinoma \(2017\) NICE technology appraisal guidance 463](#)

[Everolimus for advanced renal cell carcinoma after previous treatment \(2017\) NICE technology appraisal guidance 432](#)

[Nivolumab for previously treated advanced renal cell carcinoma \(2016\) NICE technology appraisal guidance 417](#)

[Axitinib for treating advanced renal cell carcinoma after failure of prior systemic treatment \(2015\) NICE technology appraisal guidance 333](#)

[Pazopanib for the first-line treatment of advanced renal cell carcinoma \(2011 updated 2013\) NICE technology appraisal guidance 215](#)

[Bevacizumab \(first-line\), sorafenib \(first- and second-line\), sunitinib \(second-line\) and temsirolimus \(first-line\) for the treatment of advanced and/or metastatic renal cell carcinoma \(2009\) NICE technology appraisal guidance 178](#)

[Sunitinib for the first-line treatment of advanced and/or metastatic renal cell carcinoma \(2009\) NICE technology appraisal guidance 169](#)

## Your responsibility

### Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They

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should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### **Technology appraisals**

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

### **Medical technologies guidance, diagnostics guidance and interventional procedures guidance**

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the

interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.