NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Thyroid cancer: assessment and management

The Department of Health in England has asked NICE to develop a clinical guideline on thyroid cancer: assessment and management.

The guideline will be developed using the methods and processes outlined in developing NICE guidelines: the manual.

1 Why the guideline is needed

Cancer of the thyroid, a small gland at the base of the neck, is uncommon and occurs in people from their 20s through to their 60s. Almost all thyroid cancers (about 97%) are differentiated and have a good prognosis. When deaths do occur, they tend to arise from the spread of the cancer to the bones or lungs. There has been an increase of over 150% in the incidence of thyroid cancer in the UK over the past 30 years. It is unclear if this is because of more effective diagnosis or more people developing thyroid cancer. The rise in incidence has not been matched by a rise in mortality, but raises questions about assessment for people with suspected thyroid cancer and about appropriate treatment.

Thyroid cancer is treated by partial (hemi-) or total thyroidectomy often followed by radioactive iodine. Since thyroid cancer can occur in young adults and has a good prognosis, many who have this surgery will spend most of their lives without a thyroid gland. The long-term implications of this include lifelong treatment with replacement thyroid hormone.

There is particular uncertainty about appropriate diagnosis and treatment for nodules of intermediate size, and classification and practice vary internationally.

Once thyroid cancer has been treated there is still a chance it might recur. Recurrence is uncommon in well-differentiated cancers, but it can be more serious than the original occurrence. There are questions about the risk of recurrence and how this risk should be translated into a long-term follow-up strategy.

Current practice

Thyroid cancer is usually diagnosed following ultrasound of a thyroid swelling, with examination of cells or tissue extracted by fine needle aspiration or biopsy. Usual treatment is removal of the lobe of the thyroid which includes the cancer (hemi-thyroidectomy), or a total thyroidectomy. The choice of surgery depends on the type and size of cancer and other factors such as multifocal disease, involvement of nodes or metastatic disease. Surgery may be followed by a number of adjuvant treatments, according to the size and type of cancer and factors such as evidence of local or distant disease. Primarily this is using radioactive iodine but also includes targeted therapy (tyrosine kinase inhibitors) and external beam radiotherapy.

2 Who the guideline is for

This guideline is for:

- healthcare professionals in primary, secondary and tertiary care
- commissioners and providers of services for people with thyroid cancer
- people with suspected and confirmed thyroid cancer, their families and carers, and the public.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the Welsh Government, Scottish Government, and Northern Ireland Executive.

Equality considerations

NICE has carried out an equality impact assessment during scoping. The assessment:

- lists equality issues identified, and how they have been addressed

- explains why any groups are excluded from the scope.

3 What the guideline will cover

3.1 Who is the focus?

Groups that will be covered

- People aged 16 years and over with suspected and confirmed thyroid cancer.

Groups that will not be covered

- Children and young people under 16 years.

3.2 Settings

Settings that will be covered

- Primary, secondary and tertiary healthcare (including inpatient care and transitions between departments and services).

3.3 Activities, services or aspects of care

Key areas that will be covered

We will look at evidence in the areas below when developing the guideline, but it may not be possible to make recommendations in all the areas.

1 Assessment, diagnosis and staging.

   Assessment, diagnosis and initial staging using:

   - ultrasound imaging
   - radioisotope scans such as technetium and thallium scans
   - blood tests, including thyroid-stimulating hormone (TSH) and calcitonin
   - fine-needle aspiration cytology (FNAC) and core biopsy for formal diagnosis
   - molecular testing when diagnosis is uncertain.

   Further staging through imaging using:

   - CT, MRI or PET.

2 Initial treatment of thyroid cancer
- hemi- or total thyroidectomy
- lymph node dissection for disease-positive nodes (therapeutic dissection)
- prophylactic lymph node dissection.

3 Further treatment of primary thyroid cancer, including metastasis at presentation, and treatment of residual, late metastatic or recurrent thyroid cancer:
- radioactive iodine
- external beam radiotherapy.

4 Follow-up and monitoring
- predicting residual disease and recurrence
- using stimulated thyroglobulin in disease monitoring
- need for TSH suppression
- frequency and duration of review.

5 Information and support for people with suspected and confirmed thyroid cancer and their families and carers.

Areas that will not be covered

Treatment for people with medullary thyroid cancer, anaplastic thyroid carcinoma, multiple endocrine neoplasia type 2, or thyroid lymphoma.

Related NICE guidance

NICE guidance that will be referenced in this guideline

- Lenvatinib and sorafenib for treating differentiated thyroid cancer after radioactive iodine (2018) NICE technology appraisal guidance 535

The guideline will not cover tyrosine kinase inhibitors for treating differentiated thyroid cancer because this is already covered by this NICE technology appraisal guidance. The guideline will cross-refer to the recommendations in the technology appraisal guidance.

Other related published NICE guidance

- Thyroid disease: assessment and management. (2019) NICE guideline NG145
- Suspected cancer: recognition and referral (2017) NICE guideline NG12
- Minimally invasive video-assisted thyroidectomy (2014) NICE interventional procedures guidance 499
- Denosumab for the prevention of skeletal-related events in adults with bone metastases from solid tumours (2014) NICE technology appraisal guidance 265

Related NICE guidance in development

- Selumetinib for treating differentiated thyroid cancer. NICE technology appraisal guidance. Publication date to be confirmed.

NICE guidance about the experience of people using NHS services

- Medicines optimisation (2015) NICE guideline NG5
- Patient experience in adult NHS services (2012) NICE guideline CG138
- Medicines adherence (2009) NICE guideline CG76

3.4 Economic aspects

We will take economic aspects into account when making recommendations. We will develop an economic plan that states for each review question (or key area in the scope) whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an NHS and personal social services (PSS) perspective, as appropriate.

3.5 Key issues and draft questions

While writing this scope, we have identified the following key issues and draft questions related to them. The key issues and draft questions will be used to develop more detailed review questions, which guide the systematic review of the literature.

The populations included in the questions will be stratified, where appropriate, according to the type of thyroid cancer and the size of the thyroid nodules.

1 Assessment, diagnosis and staging

1.1 What is the diagnostic accuracy of ultrasound for identifying thyroid nodule malignancies or nodules with malignant potential?

1.2 What is clinical and cost effectiveness of radioisotope scans for people with suspected thyroid cancer?

1.3 In people with potentially malignant nodules on ultrasound at initial presentation, for what size and classification of thyroid nodule is it clinically and cost effective to use active surveillance or discharge rather than biopsy?

1.4 For people with potentially malignant nodules on ultrasound, what is the diagnostic accuracy of fine-needle aspiration cytology (FNAC) with rapid on-site assessment, FNAC without rapid on-site assessment or core biopsy for diagnosing thyroid cancer?

1.5 For people with fine-needle aspiration samples showing benign cytology or non-diagnostic atypical features, is it clinically and cost effective to repeat FNAC, use active surveillance or discharge?

1.6. For people with fine-needle aspiration samples suggesting follicular cancer, what is the clinical and cost effectiveness of molecular testing to diagnose or rule out thyroid cancer?

1.7. What are the indications for imaging using CT scans (with or without contrast), MRI or PET for further staging?

2 Initial treatment of thyroid cancer

2.1 For people with differentiated thyroid cancer, what is the clinical and cost effectiveness of hemi-thyroidectomy or total thyroidectomy with or without prophylactic and/or therapeutic node dissection?

3 Further treatment of primary thyroid cancer, including metastasis at presentation, and treatment of residual, late metastatic or recurrent thyroid cancer

3.1 For people who have had thyroidectomy for differentiated thyroid cancer, is radioactive iodine with or without preparation with thyrotropin alfa a clinically and cost-effective treatment?

3.2 What is the most clinically and cost-effective dose for people receiving radioactive iodine after thyroidectomy for differentiated thyroid cancer?

3.3 For people with residual, metastatic or recurrent thyroid cancer, what is the clinical and cost effectiveness of external beam radiotherapy?

4 Follow-up and monitoring

4.1 For people who have had thyroidectomy and radioactive iodine treatment for differentiated thyroid cancer, what is the most clinically and cost-effective length of treatment with levothyroxine to supress TSH?

4.2. For people who have had thyroidectomy and radioactive iodine treatment for differentiated thyroid cancer, what is the clinical and cost effectiveness of measuring thyroglobulin, with or without radioisotope scans to assess residual or recurrent disease?

4.3 For people who have had treatment for differentiated thyroid cancer, what is the clinical and cost effectiveness of using stimulated thyroglobulin, imaging and radioisotope scans to re-assess risk of recurrence 1 to 2 years after initial treatment and to tailor their follow-up regimen?

4.4 For people who have had treatment for differentiated thyroid cancer, what is the optimum frequency and length of follow-up given the severity and spread of the disease?

5 Patient information and support

5.1 What information, education and support do people with suspected and confirmed thyroid cancer and their families and carers need?

3.6 Main outcomes

The main outcomes that may be considered when searching for and assessing the evidence are:

1 mortality
2 quality of life
3 cost effectiveness
4 local cancer progression
5 incidence of distant metastases

6 cancer recurrence
7 postoperative dysphagia
8 osteoporosis

4 NICE quality standards and NICE Pathways

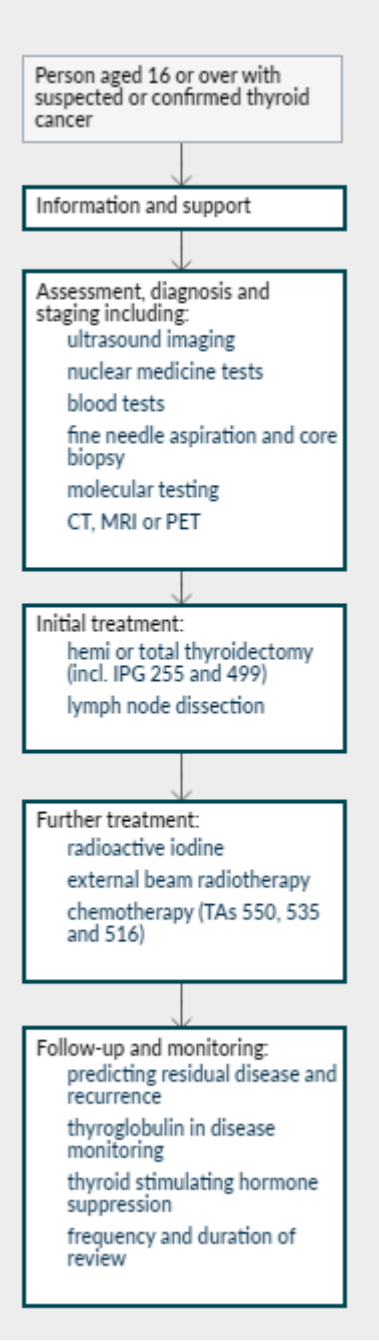
4.1 NICE Pathways

NICE Pathways bring together everything we have said on a topic in an interactive flowchart. When this guideline is published, the recommendations will be included in the NICE Pathway on thyroid cancer (in development).

Other relevant NICE guidance will also be added, including:

- Lenvatinib and sorafenib for treating differentiated thyroid cancer after radioactive iodine (2018) NICE technology appraisal guidance 535
- Vandetanib for medullary thyroid cancer (2018) NICE technology appraisal guidance 550
- Cabozantinib for medullary cancer (2018) NICE technology appraisal guidance 516
- Minimally invasive video-assisted thyroidectomy (2014) NICE interventional procedure guidance 499.

An outline based on this scope is included below. It will be adapted, and more detail added as the recommendations are written during guideline development.



5 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 13 December 2019 to 17 January 2020.

The guideline is expected to be published in April 2022.

You can follow progress of the guideline

Our website has information about how NICE guidelines are developed.