1 Background Information

Quick info:
The purpose of this care map is to define the appropriate diagnosis and management of hyperthyroidism. The objective is to reduce inappropriate prescribing and referral of patients presenting to any provider organisation in Qatar. It is intended that the care map will be used primarily by physicians in primary care and outpatient settings.

Scope of the care map
This guideline covers the following aspects of care:
- Causes and clinical features of hyperthyroidism, including:
  - Graves' disease.
  - Toxic multinodular goitre.
  - Toxic adenoma.
  - Thyroiditis.
  - Medication induced thyrotoxicosis.
- Clinical assessment of hyperthyroidism.
- Consideration of thyroid storm.
- Use of TFTs for diagnosis.
- Management of hyperthyroidism.
- Covers adults age 18 years and older in primary and secondary care settings.

Aspects of care not covered in this guideline are:
- Assessment and management of thyroid disorders in children and pregnant women.
- Management of secondary hyperthyroidism.
- Management of thyroid cancer.

Definition
Thyrotoxicosis refers to a clinical state that results from inappropriately high thyroid hormone action in tissues, regardless of the source of the excess thyroid hormone [1].

Hyperthyroidism occurs when an excess of thyroid hormones is produced by an overactive thyroid gland [1]:
- Primary hyperthyroidism occurs when thyrotoxicosis is caused by an abnormality of the thyroid gland, e.g. Graves' disease, and maybe classified as either [1]:
  - Clinical (overt) hyperthyroidism is defined as a low or undetectable serum TSH with elevated levels of FT4 and/or FT3.
  - Subclinical hyperthyroidism is defined as a low or undetectable serum TSH with values within the normal reference range for both FT3 and FT4.
- Secondary hyperthyroidism occurs when thyrotoxicosis is caused by abnormal stimulation of a normal thyroid gland, e.g. by a TSH-secreting pituitary tumour.

Aetiology
Primary hyperthyroidism may be caused by [2,3]:
- Graves' disease.
- Toxic multinodular goitre.
- Toxic adenoma.
- Thyroiditis.

Secondary hyperthyroidism may be caused by [2,3]:
- TSH-secreting pituitary tumour.
- Chorionic gonadotrophin-secreting tumours.
- Thyroid hormone resistance.

Other causes of thyrotoxicosis may include [2,3]:
- Ingestion of excess thyroid hormone (factitious thyrotoxicosis).
- Gestational thyrotoxicosis.
- Medication e.g. amiodarone, iodine.
- Other causes of thyroid destruction, e.g.:
• External irradiation.
• Infarction of an adenoma.

Prevalence
Data on the incidence and prevalence of hyperthyroidism in Qatar is presently lacking. In the USA, the prevalence of clinical (overt) hyperthyroidism is 0.5% and the prevalence of subclinical hyperthyroidism is 0.7% [4].

Complications
Possible complications of hyperthyroidism include [4,6,7]:
• Atrial fibrillation – risk increases with decreasing levels of TSH.
• Graves’ orbitopathy (ophthalmopathy) in patients with Graves’ disease.
• Congestive cardiac failure.
• Osteoporosis and fractures.
• Pretibial myxoedema.
• Thyroid storm.

Higher risk groups
Groups at higher risk of developing hyperthyroidism include [3,8,9]:
Graves’ disease:
• Women.
• Family history of thyroid disease.
• Family or personal history of autoimmune disease.
Toxic multinodular goitre or toxic thyroid nodule:
• Age over 50 years.
• Patients living in areas of low iodine intake.

References:
Please see the care map’s Provenance.

2 Updates to this care map

Quick info:
Date of publication: 08-Dec-2016
Please see the care map’s Provenance for additional information on references, contributors, and the editorial approach.

3 Key recommendations of this care map

Quick info:
The key recommendations of this guideline are:

Investigations:
• Symptomatic patients should have TSH and FT4 checked. If FT4 is normal, then check FT3 [2].
• Targeted testing for hyperthyroidism, with TSH, is recommended in specific patient groups [2,4][L2, RGA1].
• Measurement of thyroid autoantibodies is not routinely required if the cause is indicated by clinical features, however, they may be helpful in certain cases, especially if knowledge of the cause will influence treatment [2][L2, RGA2].

Referral to secondary care:
• Refer all patients with confirmed clinical (overt) hyperthyroidism to an endocrine specialist [R-GDG].
• Persistent subclinical hyperthyroidism should prompt referral to an endocrine specialist [4][L2, RGA2].

Anti-thyroid drugs:
• When using anti-thyroid drugs as the primary treatment for Graves’ disease, continue carbimazole for 12-18 months then taper or discontinue if TSH is normal [4][L1, RGA2].
• Long-term carbimazole treatment of toxic multinodular goitre or toxic adenoma, should be avoided in the majority of cases [4][L2, RGB].
• Long-term therapy may however be appropriate in some elderly or otherwise ill patients with limited longevity, where regular monitoring is possible, and in those who prefer this option [4].

Radioactive iodine therapy:
• Is an acceptable treatment option in Graves’ disease and toxic multinodular goitre or toxic adenoma [4][L2].

Thyroidecomy:
• See the ‘Consider thyroidecomy’ care point on the Secondary care page for specific indications and contraindications for thyroidecomy.
• The surgeon performing the procedure should be thoroughly trained and have an active practice in thyroid surgery [R-GDG].
• Following inadequate surgery for toxic multinodular goitre or toxic adenoma with persistent or recurrent hyperthyroidism, radioactive iodine therapy should be used for retreatment [4][L2, RGA1].

Subclinical hyperthyroidism:
• Treatment of subclinical hyperthyroidism should be considered in elderly patients and those at risk of complications of hyperthyroidism [4][L2].
• Treatment of subclinical hyperthyroidism is not generally recommended for young, asymptomatic patients with low but detectable TSH, although these patients should be monitored [7][L2, RGB].

Graves’ eye disease:
• For patients whose dominant clinical features are due to Graves’ eye disease, refer directly to a specialised ophthalmology unit or joint thyroid eye clinic [6].

References:
Please see the care map's Provenance.

4 Abbreviations used in this care map

Quick info:
The abbreviations used in this care map are as follows:

Anti-TPO-Ab
Anti-thyroid peroxidase antibodies

Anti-TRAb
Anti-TSH-receptor antibodies

CBC
Complete blood count

DEXA
Dual-energy x-ray absorptiometry scan

ECG
Electrocardiogram

FT3
Free tri-iodothyronine

FT4
Free thyroxine

NSAIDs
Non-steroidal anti-inflammatory drugs

T3
Tri-iodothyronine

T4
Thyroxine (tetra-iodothyronine)

TFTs
Thyroid function tests

TSH
Thyroid-stimulating hormone

5 Hyperthyroidism - clinical presentation
Quick info:

**Suspected thyrotoxicosis**

Thyrotoxicosis can present with the following symptoms [3,9]:

- Palpitations.
- Hyperactivity, irritability, altered mood.
- Fatigue, weakness.
- Diarrhoea, steatorrhoea.
- Heat intolerance, increased sweating.
- Weight loss with increased appetite.
- Infertility, oligomenorrhoea, amenorrhoea.
- Polyuria.
- Reduced libido.
- In people with diabetes: deterioration in diabetic control and hyperglycaemia.

Signs of thyrotoxicosis can include [3,4,9]:

- Warm, moist skin; palmar erythema.
- Tremor.
- Eye manifestations e.g. exophthalmos, ophthalmoplegia, eyelid retraction or lid lag.
- Thyroid enlargement (although the thyroid may be normal in size).
- A bruit over the thyroid gland in Graves' disease.
- Sinus tachycardia, atrial fibrillation.
- Diffuse alopecia.
- Muscle wasting and weakness, proximal myopathy, hyperreflexia.
- Rarely:
  - Onycholysis, pruritus, urticaria, diffuse pigmentation.
  - Gynaecomastia in men.
  - Pretibial myxoedema.
  - Chorea.
  - Periodic paralysis.
  - Psychosis.
  - Impaired consciousness.

NB: Elderly patients may present with few classic signs. Therefore, the absence of such signs, does not exclude hyperthyroidism [7].

**Suspected thyroid storm**

Thyroid storm (thyrotoxic crisis) [4,10,11]:

- Is a medical emergency, that should be managed in an intensive care unit setting [4][L2, RGA1](see the 'RED FLAG!' care point).
- Is characterised by an extreme hypermetabolic state.
- Typical features include:
  - Tachycardia, arrhythmias, and congestive heart failure.
  - Fever.
  - Diarrhoea, nausea, and vomiting.
  - Hepatic failure, jaundice.
  - Agitation, delirium, psychosis and coma.
- May occur in patients with untreated or poorly treated hyperthyroidism after:
  - Surgery.
  - Trauma.
  - Childbirth.
  - Infection.
  - Myocardial infarction.
6 History and examination

Quick info:

**History**
A comprehensive history should be taken, asking specifically about the following [2,4,12]:
- Compressive symptoms such as swelling, dysphagia, hoarseness.
- Rate of growth of any neck masses.
- Previous head or neck irradiation.
- Emigration from an iodine-deficient area.
- Family history of:
  - Thyroid disease.
  - Autoimmune disease.
- Medication that can cause thyrotoxicosis, e.g.:
  - Amiodarone.
  - Lithium.
  - Interferon alpha.
  - Interleukin-2.
  - Iodine.

**Examination**
A thorough examination should be performed, including [4]:
- Vital signs, including:
  - Pulse rate.
  - Blood pressure.
  - Respiratory rate.
- Body weight.
- Eye examination.
- Thyroid examination, including:
  - Size.
  - Tenderness.
  - Symmetry.
  - Nodularity.
- General physical examination, particularly including:
  - Skin and hand signs.
  - Signs of heart failure.
  - Neuromuscular examination.
  - Pretibial myxoedema.

References:
Please see the care map's Provenance.

7 RED FLAG! -thyroid storm -other alarm features

Quick info:
Urgent referral to a specialist is indicated for the following [6,15,16]:

- Diabetic ketoacidosis.
- Occurs rarely following radioactive iodine therapy.

References:
Please see the care map's Provenance.
• Emergency evaluation and management of suspected thyroid storm.
• Symptoms or signs of new-onset atrial fibrillation or acute heart failure - refer to the emergency department.
• Emergency sight-threatening situations – if this occurs out of hours, refer to an emergency eye care service.

References:
Please see the care map's Provenance.

9 Investigations

Quick info:
Investigations in symptomatic patients
If the patient is symptomatic [2]:
• Check TSH and FT4.
• If TSH is low (i.e. below the reference range) and FT4 is normal, then check FT3.
• Consider performing an ECG if clinically indicated.
• Consider thyroid ultrasound scanning if clinically indicated and available.

Targeted testing for hyperthyroidism
TSH should be checked at presentation in patients with the following [2,4][L2, RGA1]:
• Goitre.
• Atrial fibrillation.
• Osteoporosis.
• Subfertility.
• Untreated subclinical hyperthyroidism:
  • Check TSH every 6-12 months and then follow up FT4 and FT3 if TSH is low.
• Taking amiodarone:
  • Check TSH before starting treatment, at 1 and 3 months after starting, then every 3-6 months whilst on treatment.
  • Continue to monitor TSH up to 12 months after treatment has stopped.
• Taking lithium:
  • Check TSH before starting treatment, then every 6-12 months whilst on treatment.
• Turner's Syndrome or Down's Syndrome:
  • Check TSH annually.

References:
Please see the care map's Provenance.

10 Interpretation of TFTs

Quick info:
Interpretation of TFTs
Hyperthyroidism is diagnosed on the basis of thyroid function tests and symptoms as follows [2,4]:
• Clinical (overt) hyperthyroidism is diagnosed by:
  • Symptoms of hyperthyroidism.
  • Low TSH levels (i.e. below the reference range).
  • Elevated FT4 and/or FT3 levels.
• Subclinical hyperthyroidism [2][L2, RGA2]:
  • Clinical symptoms and signs are typically absent, mild, or non-specific.
  • Low TSH levels (i.e. below the reference range).
  • Normal FT4 and FT3 levels.

Pitfalls in the interpretation of thyroid function tests
If TSH is not low and FT4 is raised consider the possibility of [2,4]:

References:
Please see the care map's Provenance.
• Assay interference (discuss with biochemistry personnel).
• TSH-secreting pituitary adenoma.
• Familial dysalbuminaemic hyperthyroxinaemia.
• Syndrome of thyroid hormone resistance.
Other possible results [2]:
• Low TSH levels and low FT3 levels may be caused by the presence of non-thyroidal illness:
  • The diagnosis may be evident on re-testing, once other morbidity is eliminated.
• Low TSH levels associated with thyroid pain may be caused by thyroiditis.
References:
Please see the care map's Provenance.

12 Subclinical hyperthyroidism

Quick info:
Differentiate from other causes of a low TSH, e.g. [7][L2, RGA1]:
• Drugs that suppress serum TSH, e.g. dopamine, glucocorticoids.
• Psychiatric illness.
• Non-thyroidal illness, e.g. euthyroid sick syndrome.
• Hypothalamic-pituitary disorders.
References:
Please see the care map's Provenance.

13 Consider cause of hyperthyroidism

Quick info:
Causes include:
• Graves disease.
• Toxic multinodule goitre.
• Toxic adenoma.
• Drug-induced thyrotoxicosis.
• Thyroiditis.
• Factitious thyrotoxicosis.

14 Repeat TFTs

Quick info:
If other causes have been excluded [4,7][L2, RGA2]:
• Determine if subclinical hyperthyroidism is persistent, by repeating the thyroid tests in 2-3 months.
References:
Please see the care map's Provenance.

15 Refer to endocrinology if persistent

Quick info:
Persistent subclinical hyperthyroidism should prompt referral to a specialist [4,7][L2, RGA2].
References:
Please see the care map's Provenance.
16 Suspected Graves' disease

Quick info:
Features of Graves' disease include:
- Low TSH levels and either raised FT4 and/or raised FT3 levels [2-4,6].
- The presence of Anti-TPO-Ab is suggestive of autoimmune disorders, but is not specific to Graves' disease.
- Anti-TRAb is highly sensitive and specific for Graves' disease.
- A diffuse enlarged thyroid gland is commonly palpable; and it may be possible to auscultate a bruit over the gland.
- Eye manifestations
  - Pretibial myxoedema.
  - Thyroid acropachy.
  - Splenomegaly – rare.

Graves' eye disease
Graves’ orbitopathy (ophthalmopathy) [6]:
- Less common but responsible for considerable morbidity.
- More than 90% of cases occur in patients presenting with hyperthyroidism due to Graves' disease.
Features of Graves’ eye disease include [4,6]:
- Pain in primary gaze.
- Pain with eye movement.
- Chemosis.
- Eyelid swelling.
- Eyelid erythema.
- Conjunctival redness.
- Caruncula swelling.
- Decreased visual acuity.
- Diplopia.
- Proptosis.

References:
Please see the care map's Provenance.

17 Other cause suspected

Quick info:
**Toxic multinodular goitre**
Features include [2,8]:
- Low TSH levels and either raised FT4 or raised FT3 levels.
- Patients are usually aged over 50 years although more prevalent in iodine-deficient areas.
- At least two nodules must be present for the diagnosis to be made on radio-isotope scanning.
- Possible features include:
  - Dyspnoea.
  - Dysphagia.
  - Sensation of neck pressure.

**Toxic adenoma**
Features include [2,3,7,8]:
- Low TSH levels and either raised FT4 or raised FT3 levels.
- Non-tender thyroid mass which is generally palpable – usually reaches at least 3 cm in size before hyperthyroidism occurs.
- More prevalent in iodine-deficient areas.

**Drug induced thyrotoxicosis**
The medications that can cause thyrotoxicosis include [4]:

• Amiodarone.
• Lithium.
• Interferon alpha.
• Interleukin-2.
• Iodine.
• Tyrosine kinase.
• Iodine-rich herbal remedies and over-the-counter supplements.
• Some antiretroviral agents.

NB: For patients taking drugs known to modify thyroid function tests, consider seeking advice regarding test interpretation from an endocrine specialist [2].

**Thyroiditis**

Thyroiditis usually presents with a thyrotoxic phase followed by variable periods of hypothyroidism and eventual resolution in the majority [8].

Features of thyroiditis include [4,8]:

• **Subacute thyroiditis:**
  - Malaise, fever, and thyroidal pain as well as tremor and heat intolerance.
  - Tender, enlarged, firm, and irregular thyroid gland.
• **Painless thyroiditis:**
  - May occur in autoimmune thyroiditis, postpartum, during lithium or cytokine treatment, or occasionally with amiodarone.

**Factitious hyperthyroidism**

Factitious hyperthyroidism occurs due to excessive intake of thyroid hormones. Features may include [13]:

• Low TSH levels and raised FT4 levels.
• Absent goitre.
• Reduced uptake on radio-isotope scanning.
• Low thyroglobulin level.
• Negative autoantibodies.

References:

Please see the care map's Provenance.

18 Refer to specialist

Quick info:

**Referral:**

• Outpatient referral to endocrinology is indicated for the evaluation or management of suspected Graves' disease [2,15-24].
• Routine dual endocrinology and ophthalmology referral is indicated for evaluation or management of significant Graves' orbitopathy (ophthalmopathy) [15,17].

References:

Please see the care map's Provenance.

19 Primary care management whilst awaiting specialist input

Quick info:

Due to the risk of cardiac complications, consider prescribing beta-blockers [2,4][L2, RGA2]:

• In all patients with symptomatic thyrotoxicosis.
• Especially patients who:
  - Are aged over 65 years.
  - Have a resting heart rate greater than 90 bpm; or
  - Have coexistent cardiovascular disease.
Choice of beta-blocker [2,14]:
- Propranolol is often used.
- Other beta-blockers licensed for use in thyrotoxicosis are metoprolol and atenolol.

References:
Please see the care map's Provenance.

20 Primary care management whilst awaiting specialist input

Quick info:
Due to the risk of cardiac complications, consider prescribing beta-blockers [2,4][L2, RGA2]:
- In all patients with symptomatic thyrotoxicosis.
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  - Have coexistent cardiovascular disease.

Choice of beta-blocker [2,14]:
- Propranolol is often used.
- Other beta-blockers licensed for use in thyrotoxicosis are metoprolol and atenolol.

For patients with suspected Graves’ disease and/or orbitopathy (ophthalmopathy) [4,6][L2, RGA2]:
- Offer smoking cessation advice to all patients known or suspected of having Graves’ disease who are current smokers, due to the higher rate of eye disease in smokers with Graves’ disease:
  - Refer to smoking cessation services, where appropriate.
  - Advise on the risks of second-hand tobacco smoke.
- Written information should be given to all patients diagnosed with Graves’ disease on the early symptoms of Graves’ orbitopathy.

For patients with suspected Graves’ orbitopathy [6]:
- Consider prescribing lubricant eye drops.

References:
Please see the care map's Provenance.

21 Refer to endocrinology

Quick info:
Outpatient referral to endocrinology is indicated for the evaluation or management of any of the following [2,15-24]:
- All cases of confirmed clinical (overt) hyperthyroidism [R-GDG].
- Suspected drug-induced hyperthyroidism.
  - Referral is particularly recommended in patients taking amiodarone as management may be complex.
  - Inconsistency between clinical findings and laboratory test results.
- Non-thyroidal illness with TSH suppression, i.e. euthyroid sick syndrome.
- Apathetic thyrotoxicosis in elderly patients.
- TSH-secreting pituitary adenoma (high TSH and high FT4).

References:
Please see the care map's Provenance.
Diagnosis and management of hyperthyroidism in adults

Provenance Certificate

Overview

This guideline document has been developed and issued by the Ministry of Public Health of Qatar (MOPH), through a process which aligns with international best practice in guideline development and localisation. The guideline will be reviewed on a regular basis and updated to incorporate comments and feedback from stakeholders across Qatar.

Whilst the MOPH has sponsored the development of the care map, the MOPH has not influenced the specific recommendations made within it.

This care map was approved on 08 Dec 2016.

For information on changes in the last update, see the information point entitled 'Updates to this care map' on each page of the care map.

Editorial approach

This care map has been developed and issued by the Ministry of Public Health of Qatar (MOPH), through a process which aligns with international best practice in guideline development and localisation. The care map will be reviewed on a regular basis and updated to incorporate comments and feedback from stakeholders across Qatar.

The editorial methodology, used to develop this care map, has involved the following critical steps:

- Extensive literature search for well reputed published evidence relating to the topic.
- Critical appraisal of the literature.
- Development of a draft summary guideline.
- Review of the summary guideline with a Guideline Development Group, comprised of practising physicians and subject matter experts from across provider organisations in Qatar.
- Independent review of the guideline by the Clinical Governance body appointed by the MOPH, from amongst stakeholder organisations across Qatar.

Explicit review of the care map by patient groups was not undertaken.

Whilst the MOPH has sponsored the development of the care map, the MOPH has not influenced the specific recommendations made within it.

Sources of evidence

The professional literature published in the English language has been systematically queried using specially developed, customised, and tested search strings. Search strategies are developed to allow efficient yet comprehensive analysis of relevant publications for a given topic and to maximise retrieval of articles with certain desired characteristics pertinent to a guideline.

For each guideline, all retrieved publications have been individually reviewed by a clinical editor and assessed in terms of quality, utility, and relevance. Preference is given to publications that:

1. Are designed with rigorous scientific methodology.
2. Are published in higher-quality journals (i.e. journals that are read and cited most often within their field).
3. Address an aspect of specific importance to the guideline in question.
Diagnosis and management of hyperthyroidism in adults

Where included, the ‘goal length of stay’ stated within this guideline is supported by and validated through utilisation analysis of various international health insurance databases. The purpose of database analysis is to confirm the reasonability and clinical appropriateness of the goal, as an achievable benchmark for optimal duration of inpatient admission.

Evidence grading and recommendations

Recommendations made within this guideline are supported by evidence from the medical literature and where possible the most authoritative sources have been used in the development of this guideline. In order to provide insight into the evidence basis for each recommendation, the following evidence hierarchy has been used to grade the level of authoritativeness of the evidence used, where recommendations have been made within this guideline.

Where the recommendations of international guidelines have been adopted, the evidence grading is assigned to the underlying evidence used by the international guideline. Where more than one source has been cited, the evidence grading relates to the highest level of evidence cited:

- **Level 1 (L1):**
  - Meta-analyses.
  - Randomised controlled trials with meta-analysis.
  - Randomised controlled trials.
  - Systematic reviews.

- **Level 2 (L2):**
  - Observational studies, examples include:
    - Cohort studies with statistical adjustment for potential confounders.
    - Cohort studies without adjustment.
    - Case series with historical or literature controls.
    - Uncontrolled case series.
  - Statements in published articles or textbooks.

- **Level 3 (L3):**
  - Expert opinion.
  - Unpublished data, examples include:
    - Large database analyses.
    - Written protocols or outcomes reports from large practices.

In order to give additional insight into the reasoning underlying certain recommendations and the strength of recommendation, the following recommendation grading has been used, where recommendations are made:

- **Recommendation Grade A1 (RGA1):** Evidence demonstrates at least moderate certainty of at least moderate net benefit.
- **Recommendation Grade A2 (RGA2):** Evidence demonstrates a net benefit, but of less than moderate certainty, and may consist of a consensus opinion of experts, case studies, and common standard care.
- **Recommendation Grade B (RGB):** Evidence is insufficient, conflicting, or poor and demonstrates an incomplete assessment of net benefit vs harm; additional research is recommended.
- **Recommendation Grade C1 (RGC1):** Evidence demonstrates a lack of net benefit; additional research is recommended.
- **Recommendation Grade C2 (RGC2):** Evidence demonstrates potential harm that outweighs benefit; additional research is recommended.
- **Recommendation of the GDG (R-GDG):** Recommended best practice on the basis of the clinical experience of the Guideline Development Group members.
Diagnosis and management of hyperthyroidism in adults

References


5. Surks Mi, Ortiz E, Daniels GH et al. Subclinical thyroid disease: scientific review and guidelines for diagnosis and management. J Am Med Assoc 2004; 291:228-238.


23. Mai VQ, Burch HB. A stepwise approach to the evaluation and treatment of subclinical hyperthyroidism. Endocrine Practice 2012 18:772-80.
Diagnosis and management of hyperthyroidism in adults


Guideline Development Group members

The following table lists members of the Guideline Development Group (GDG) nominated by their respective organisations and the Clinical Governance Group. The GDG members have reviewed and provided feedback on the draft guideline relating to the topic. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

<table>
<thead>
<tr>
<th>Guideline Development Group members</th>
<th>Name</th>
<th>Title</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Ahmad Mostafah Abdel Wahhab</td>
<td>Senior Specialist Family Medicine &amp; Trainer</td>
<td>Primary Health Care Corp</td>
<td></td>
</tr>
<tr>
<td>Dr Haidar Albustanji</td>
<td>Consultant Endocrinology</td>
<td>Ministry of Interior Clinics</td>
<td></td>
</tr>
<tr>
<td>Dr Alshaymaa Al Motawa</td>
<td>Consultant Family Medicine &amp; Clinical Lead</td>
<td>Qatar Petroleum</td>
<td></td>
</tr>
<tr>
<td>Dr Mohammed Bashir</td>
<td>Consultant Adult Endocrinology</td>
<td>Hamad Medical Corp</td>
<td></td>
</tr>
<tr>
<td>Dr Tarik Elhadd</td>
<td>Senior Consultant Endocrinology</td>
<td>Hamad Medical Corp</td>
<td></td>
</tr>
<tr>
<td>Dr Ghassan Youseph Hommos</td>
<td>Senior Consultant Endocrinology</td>
<td>Al Emadi Hospital</td>
<td></td>
</tr>
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Diagnosis and management of hyperthyroidism in adults

Guideline Development Group members

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Arif Mahmood</td>
<td>Consultant Family Medicine</td>
<td>Qatar Petroleum</td>
</tr>
<tr>
<td>Dr Mohamed Salem Nasralla Saleh</td>
<td>Specialist Family Medicine</td>
<td>Primary Health Care Corp</td>
</tr>
<tr>
<td>Dr Mahmoud Zirie</td>
<td>Senior Consultant Endocrinology</td>
<td>Hamad Medical Corp</td>
</tr>
</tbody>
</table>

Responsibilities of healthcare professionals

This care map has been issued by the MOPH to define how care should be provided in Qatar. It is based upon a comprehensive assessment of the evidence as well as its applicability to the national context of Qatar. Healthcare professionals are expected to take this guidance into account when exercising their clinical judgement in the care of patients presenting to them.

The guidance does not override individual professional responsibility to take decisions which are appropriate to the circumstances of the patient concerned. Such decisions should be made in consultation with the patient, their guardians, or carers and should consider the individual risks and benefits of any intervention that is contemplated in the patient’s care.

Acknowledgements

The following individuals are recognised for their contribution to the successful implementation of the National Guidelines project.

Healthcare Quality Management and Patient Safety Department of the MOPH:

- Ms Huda Amer Al-Katheeri, Acting Director & Project Executive.
- Dr Alanoud Saleh Alfehaidi, Guideline & Standardisation Specialist.
- Dr Ilham Omer Siddig, Guideline & Standardisation Specialist.
- Ms Maricel Balagtas Garcia, Guideline Standardisation Coordinator.
- Dr Rasmeh Ali Salameh Al Huneiti, Research Training & Education Specialist.
- Mr Mohammad Jaran, Risk Management Coordinator.

Hearst Health International:

- Dr Mehmood Syed, Middle East Clinical Director & Project Clinical Lead.
- Mr Michael Redmond, Clinical Programmes Manager.
- Ms Deepti Mehta, Editorial and Research Manager.
- Ms Rebecca Cox, Editorial and Research Team Leader.
- Ms Shuchita Deo, Lead Editorial Assistant.
- Ms Siobhan Miller, Editorial Assistant.
- Ms Fatima Rahman, Editorial Assistant.
- Ms Tahmida Zaman, Editorial Assistant.
- Ms Emma Ramstead, Information Specialist.
- Dr Amy Glossop, Clinical Editor.
- Dr Zara Quail, Clinical Editor.
- Dr Sabine Fonderson, Clinical Editor.