Research & Thyroid Disease?

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What is research?
Audit
Measures current practice against a defined (desired) standard; part of clinical governance; aims to safeguard high quality clinical care
Asks: Does this service reach a predetermined standard?

Service evaluation
Assesses/defines current practice without reference to a standard
Asks: What standard does this service achieve?

Research
Process of systematic inquiry that entails collection of data; documentation of critical information; and analysis and interpretation of that data/information, in accordance with suitable methodologies set by specific professional fields and academic disciplines
How do we go about research?
The research journey...

1. Identify key question(s)
   - Hypothesis
   - Aims

2. Secure funding

3. Secure regulatory approvals

4. Conduct, Analyse, Report, research

The research journey...
Examples of UK funders

Medical Research Council

NIHR | National Institute for Health Research

Biotechnology and Biological Sciences Research Council

British Thyroid Foundation

Engineering and Physical Sciences Research Council

wellcome trust

Economic and Social Research Council

Innovate UK
Areas for research in thyroid disease

- Hypothyroidism
- Hyperthyroidism
- Thyroid nodules / goitre
- Other (e.g. how we measure thyroid hormones)
1 Levothyroxine–liothyronine combination therapy for hypothyroidism

What is the clinical and cost effectiveness of levothyroxine (T4) and liothyronine (T3) combination therapy compared with T4 alone for people with hypothyroidism whose symptoms have not responded sufficiently to T4 alone? Does DiO2 polymorphism affect the response to combination therapy with T4 and T3?
7 Levothyroxine for subclinical hypothyroidism in people under 65

What is the clinical and cost effectiveness of levothyroxine for people under 65 with symptomatic subclinical hypothyroidism?
NICE recommendations for research in thyroid disease

Hypothyroidism

10 Iodine for subclinical hypothyroidism
What is the clinical and cost effectiveness of iodine for people with subclinical hypothyroidism?
NICE recommendations for research in thyroid disease

Hypothyroidism

11 Selenium for subclinical hypothyroidism
What is the clinical and cost effectiveness of selenium for people with subclinical hypothyroidism?
2 Long-term health outcomes for people with subclinical hyperthyroidism

What is the clinical and cost effectiveness of treatment (antithyroid drugs or radioactive iodine) for improving long-term health outcomes for people with subclinical hyperthyroidism?
Hyperthyroidism

3 Antithyroid drugs in subgroups with Graves' disease

Are there subgroups of people with Graves' disease who have a particularly good response to antithyroid drugs?
4 Long-term effectiveness and safety of radioactive iodine therapy for hyperthyroidism

What is the long-term clinical and cost effectiveness, including safety, of radioactive iodine for hyperthyroidism?
5 Dosimetry-guided radioactive iodine therapy for hyperthyroidism

What is the clinical and cost effectiveness of dosimetry-guided radioactive iodine strategies for hyperthyroidism?
6 Antithyroid drug regimens for T3 thyrotoxicosis due to Graves' disease

What is the clinical and cost effectiveness of different durations of antithyroid drug regimens for people with T3 thyrotoxicosis due to Graves' disease?
NICE recommendations for research in thyroid disease

Hyperthyroidism

8 Antithyroid drug regimens for Graves' disease

What is the clinical and cost effectiveness of a block and replace regimen compared with a titration regimen of antithyroid drugs for Graves' disease?
9 Percutaneous ablation for benign thyroid nodules

What is the clinical and cost effectiveness of percutaneous thermal ablation for benign thyroid nodules?
Underpinning science - research
Questions?