

The British Association of Endocrine and Thyroid Surgeons National Audit

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Topics

- Summary of our audit; history, methodology and data fields
- Thoughts on thyroid-cancer specific audit items/end-points and extent to which they are addressed in existing audit

The BAETS

- ‘The BAETS is the representative body of British Surgeons who have a specialist interest in surgery of the endocrine glands (thyroid, parathyroid and adrenal)’ .
- Current membership = 239
- Various specialty backgrounds (General surgery, ENT, Transplant...)
- Strong International links

The BAETS Audit: History and Rationale

- Majority of endocrine surgery is on thyroid and parathyroid glands: common operations (approx 10,000 thyroidectomies 2009-10)
- Mortality of surgery virtually nil
- Short-term complications of thyroid (and parathyroid) surgery well defined and directly linked to surgeon's performance:
 - Bleeding: re-exploration of the neck to arrest haemorrhage
 - Voice changes: injury to recurrent laryngeal or superior laryngeal (EBSL) nerves
 - Parathyroid injury: hypocalcaemia

Initial Audit

- August 2000-
- Paper-based
- Proforma completed by members and submitted by post/fax
- Voluntary and Anonymous: members identified via unique code
- Emphasis on short-term morbidity

BRITISH ASSOCIATION OF ENDOCRINE SURGEONS
Thyroid

Participation in the BAES Audit is a requirement for recognition as an endocrine unit and for training

Patient id	Date of GP referral	/ /	BAES member no: 002623	
	Hospital no:			
	Date of operation	/ /		
	Date of discharge	/ /		
	Previous cancellations?	Y/N		
Sex : male / female	Number:			
Date of birth:	Preop laryngoscopy	Y N	FNAC	Y N

Thyroid		Reoperation:	Y	N
		Toxic:	Y	N
Pathology	Tick one or more:			
Colloid goitre		lobectomy		
Colloid adenoma		lobectomy + subtotal/near total lobectomy		
Cyst		bilateral subtotal lobectomy		
Follicular adenoma		total thyroidectomy		
Follicular cancer		Isthmusectomy		
Papillary cancer		biopsy / excision nodule		
Medullary cancer		other		
Anaplastic cancer		Lymph node surgery	None	
Lymphoma			Biopsy / sample only	
C cell hyperplasia			Minor	
Graves' disease			Major	
Chronic lymphocytic thyroiditis			Number of nodes	
Other (state)				

Surgeons	Operator	cons	HST	BST	other
	Assistant	cons	HST	BST	other

Outcome at discharge	Died:	Y	N	Reoperation	Y	N
				Hypocalcaemia	N	N
				Calcium supplement	Y	N
				Vit D supplement	Y	N
				On T3 / T4	Y	N
				RLN palsy	Y	N

Fax to the Audit Office after operation / discharge then completed form after review at 3 months

Outcome at 3 months	3 months postoperatively or earlier if stable	Wound infection	Y	N
		Related readmission	Y	N
		Hypocalcaemia	Y	N
		Calcium supplement	Y	N
		Vit D supplement	Y	N
		On T3 / T4	Y	N
		Voice change	Y	N
		Laryngoscopy requested	Y	N
		RLN palsy	Y	N

BAES Office, c/o Association of Surgeons, Royal College of Surgeons, Lincoln's Inn Fields, London
Fax: 0207 430 9235

2003 First National Report

- 76 members submitting data
- 3,622 thyroid procedures
- Majority for benign disease (88%)
- Findings:
 - High Consultant involvement in surgery
 - 90% neoplastic lesions had undergone pre-op FNAC
 - Concerns:
 - 17% no pathological diagnosis submitted
 - Lower than expected use of pre-op laryngoscopy in re-do surgery
 - Complication rates higher than hitherto expected

Current Methodology

- Web-based system from 2004-
- In partnership with Dendrite Clinical Systems Ltd
 - Limited patient identifiers

Additional Data Fields:

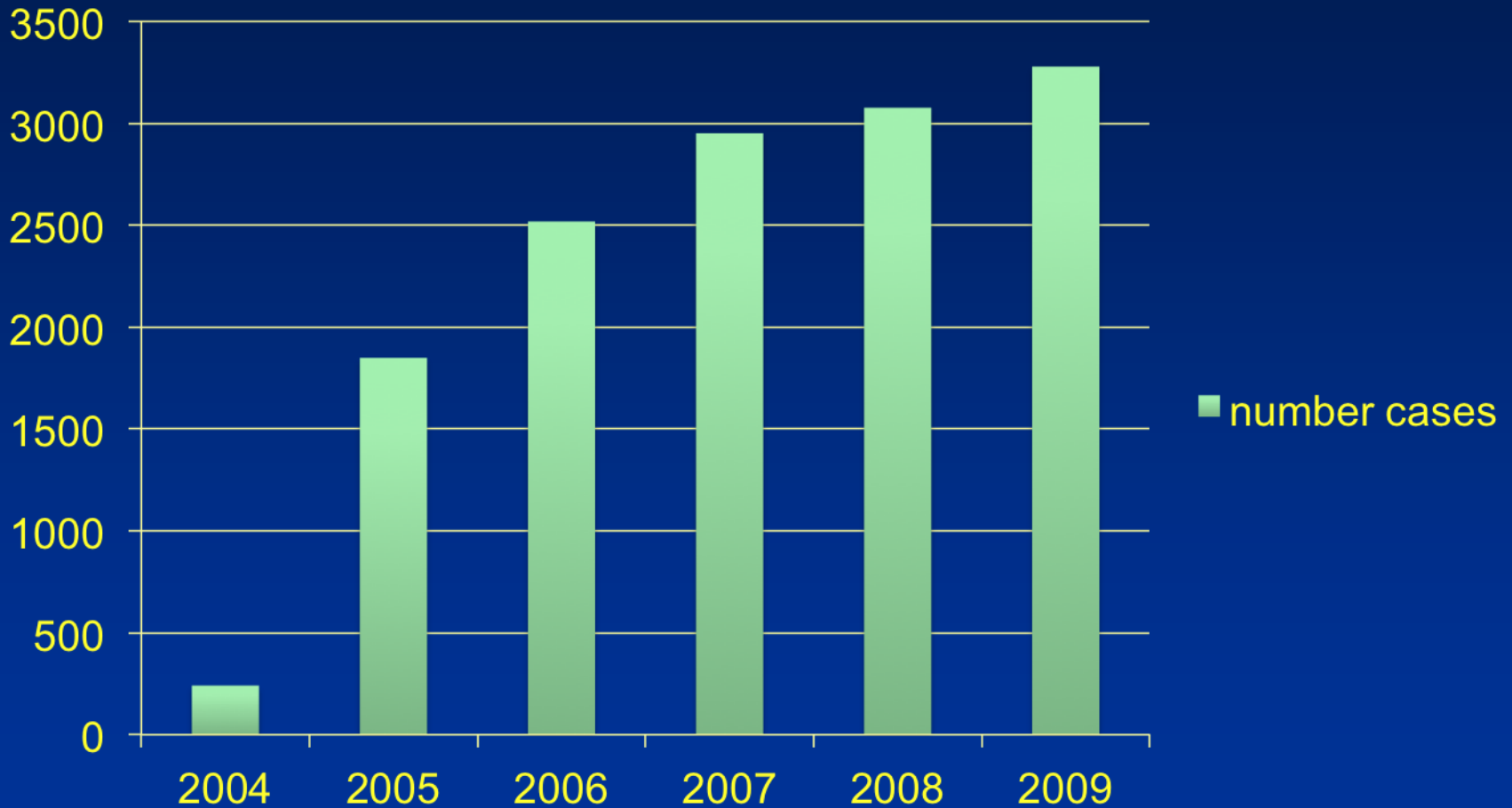
- Details of extent of thyroid surgery
- Nodal surgery for thyroid cancer
- MDT discussion for thyroid cancer
- Pathology fields, tumour staging
- Tightening of some definitions for post-op complications

Demonstration

Further Progress

- National Reports 2007 and 2009
- Currently database has 28,634 endocrine cases registered; 18,495 thyroid procedures

Thyroidectomy: Cases submitted over time



The British Association
of Endocrine and Thyroid Surgeons



Third
National Audit Report

2009

Prepared by

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Dendrite Clinical Systems



Surgery for thyroid disease

General information from the database

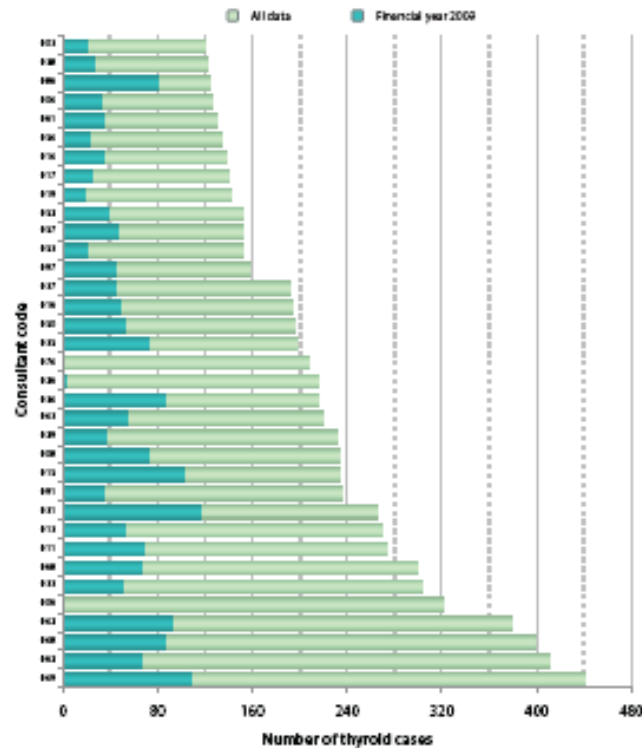
Number of members

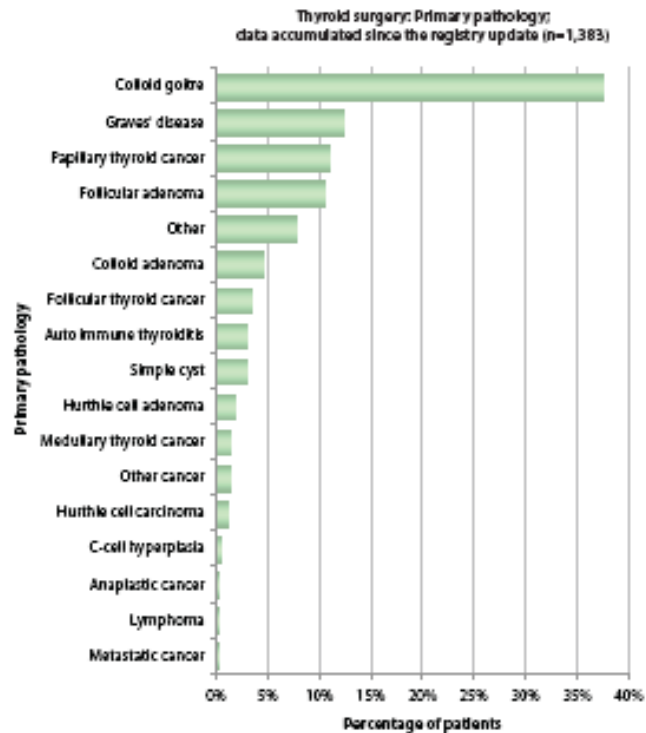
Over the lifetime of the audit, 99 members have entered data on thyroid surgery. The 70 members who have contributed the most data are shown in the following two charts.

There are an additional 29 members who account for a total of 527 procedures with a median of 15 cases over a 4-year period (range 1 – 42 per member, average 17).

Thyroid disease

Thyroid surgery: Number of operations reported by each member;
high-volume contributors





Thyroid disease

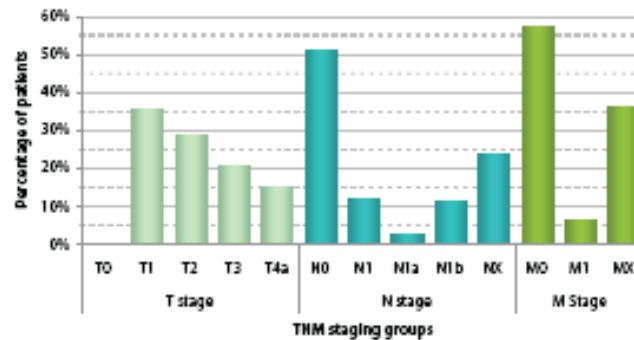


Cancer staging

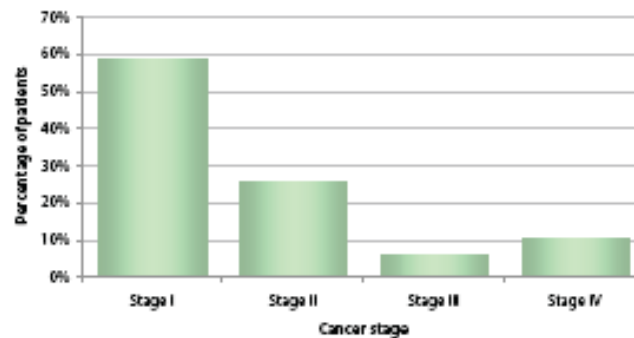
There has been an improvement in the completion of data entry since the last report. Where the data are available, it is evident that 58% of patients have stage I disease. This will be influenced by age (since the changes made to the database structure, 40.4% of the patients with a recorded overall stage undergoing first-time surgery are less than 45 years old; n=87), the size of the primary tumour and whether nodal surgery was undertaken. For the patients with a known overall stage, the data show that in 7.9% of cases (5 of 63) the malignancy was not completely resected (4 patients had a primary pathology of papillary thyroid cancer and one a squamous carcinoma in a papillary thyroid cancer).

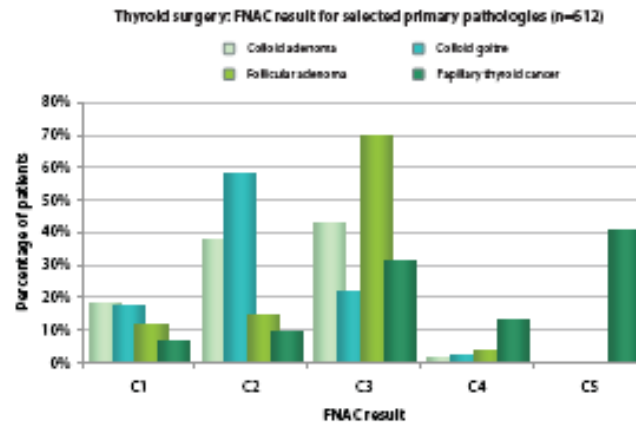
Thyroid disease

First-time thyroid surgery: Cancer TNM staging



First-time thyroid surgery: Overall cancer staging (n=87)





Thyroid disease

Multi-disciplinary team (MDT) meeting

There is evidence of high levels of involvement of MDTs for those patients with a malignant diagnosis, half of whom are discussed following surgery.

For the operations recorded in the updated version of the database with an indication for surgery as biopsy result and a primary diagnosis of cancer (including C-cell hyperplasia) 47.3% (n=131) were discussed at an MDT meeting; the MDT data were missing for 28 such patients.

For these same patients with a primary diagnosis of cancer (including C-cell hyperplasia) 99.2% (n=126) were discussed at an MDT meeting post-operatively; the post-operative MDT data were missing for 33 patients.



The British Association of Endocrine and Thyroid Surgeons Third National Audit Report 2009

Operation type and staging papillary thyroid cancer

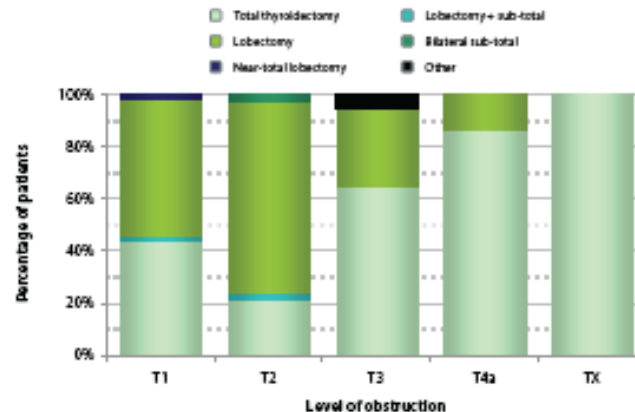
44.0% of patients with micropapillary PTC (T1) underwent a total thyroidectomy. The choice of surgery will be influenced by nodal status, the accuracy of pre-operative tumour measurement and the influence of the MDT.

The incidence of lobectomy is high in T2 and T3 disease. This may in part be explained by:

- under-staging by fine needle aspiration biopsy (C1-C4).
- failure to perform a pre-operative biopsy.

Thyroid disease

Thyroid surgery for papillary thyroid cancer: Operation performed (n=123)



Completion thyroidectomy for cancer

There are 37 entries where the indication for surgery is completion thyroidectomy for cancer and the primary pathology is either FTC (10) or PTC (27). Of these, 11 tumours were T1 (<10 mm) and the nodal statuses reported were 7 x N0; 1 x N1; 3 x NX. This could be considered over-treatment of some patients according to current guidelines (British Thyroid Association 2007). This practice should continue to be audited and the results should be debated amongst members of the MDT.

Lymphoma and surgery

There are 4 entries with a primary pathology of lymphoma; 1 lobectomy and 2 biopsies were reported; 1 operation was unspecified.

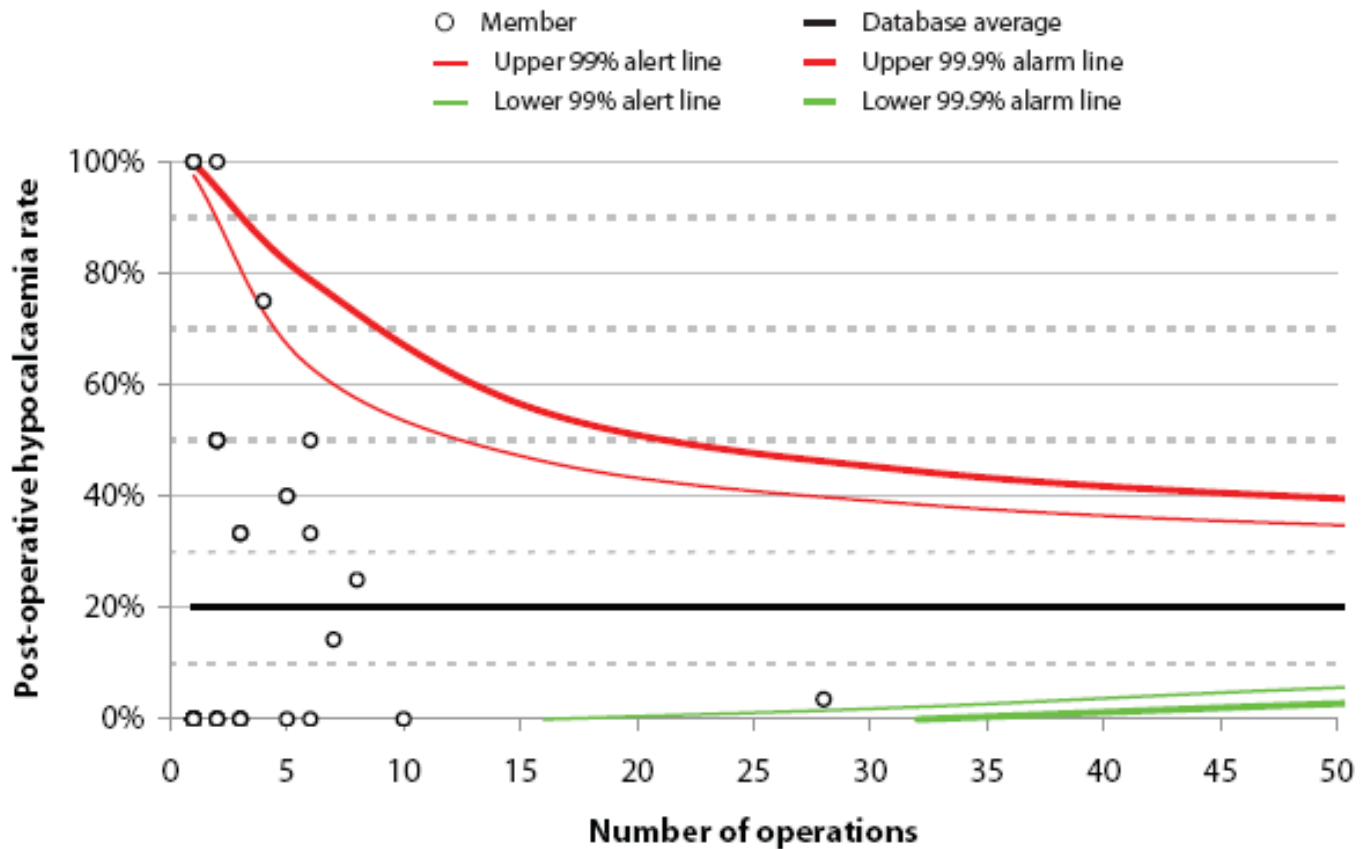
Lymph node surgery

The National guidelines regarding lymph node surgery for papillary thyroid cancer are vague. For patients with a FNAC result of CS (malignant) undergoing first-time surgery for papillary thyroid cancer, 7/37 (18.9%) had no lymph node surgery; in 2 cases the patient data are incomplete.

Current guidelines (British Thyroid Association 2007) recommend central node dissection as a minimum for patients with an established diagnosis of medullary thyroid carcinoma. This happened for only 20.5% patients recorded in the database (15 of 73).

It is therefore concerning that for patients undergoing first-time surgery for medullary thyroid cancer (taken over the life of the database) 21 of 73 (28.8%) did not undergo any lymph node surgery. This might partly explain the high number of re-operations reported for patients with this pathology (43.0%; 61 of 139 with another 2 cases where the presence/absence of a previous operation is not recorded). This again raises the topic about concentrating the management of this rare disease in a few specialist centres in the United Kingdom.

Thyroid surgery: Funnel plot on post-operative hypocalcaemia rates following total thyroidectomy for multi-nodular goitre; financial years 2008 & 2009 (n=152)



Recent/Future Developments

- ‘Live’ Funnel plot facility
- Annual Personal reports for individual members: potential use in appraisal and revalidation
- ‘De-anonymisation’
- Open reporting of outcomes?
 - Analysis of data quality
 - Risk stratification

Thyroid cancer audit within the existing BAETS Audit

- Very large existing database, established methodology
- Data entered by individual members
- Comprehensive details of surgical treatment and short-term morbidity
- Data only collected on operated cases (and only by BAETS members)
- Limited information on pre-operative investigation
- Difficulty of longitudinal follow-up of cases/multiple operations etc
- No data on adjuvant treatments, long-term outcome, recurrence etc

Thoughts on thyroid cancer audit

- Should have ability to:
 - Follow cases longitudinally
 - Register new investigations; *phase of treatment*
 - Register recurrence/follow-up w/o recurrence

Data collected/to be collected?

- *Demographics*
 - Socioeconomic status
 - Thyroid Ca specific risk factors (RAI, DXT, FHx)

- Diagnostic phase:

Mode of presentation (thyroid mass, other neck mass, mets, co-incidental)

FNA/core and repeats

Imaging

Diagnostic surgery

Basis of diagnosis

- First therapeutic phase

- Surgery and details, short-term outcomes/morbidity*

- Other; RAI, DXT, systemic; morbidity

- Outcome: Curative intent

- Pathology data (subtype, exact T,N,M, R)*

- Tumour markers

- Subsequent Interventions

Further diagnostics: date of recurrence
and basis of this diagnosis?

Further surgery

Further oncological

Updated staging

Thyroid cancer specific end-points?

- *Non-operative diagnosis rate for DTC, by presentation mode*
- *Number of operations in initial therapeutic phase (thyroid, LN's)*
- **Surgical morbidity**
- Oncological morbidity
- Surrogates for adequacy of initial treatment
 - Nodal yield per defined compartment
 - R0/1
 - Tumour marker levels (assay uniformity?)
 - RAI uptake?
- Trial accrual
- Local/regional recurrence rates (?interval; 5yr?)
- Survival/mortality
- PROM's?

Summary

- BAETS audit represents very large registry of thyroid (cancer) operations and short-term surgical complications
- But:
 - Limited info on non-surgical management, recurrence, late follow-up