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Evaluation of the use of appropriate thyroid function tests

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CHAPTER 2

2.1 AIM

The study is a record review comparing pre and post clinical guidelines prescribing patterns. Data from a private medical aid scheme (Discovery Health) was used in order to evaluate the use of appropriate thyroid function tests by the clinician. All data was generated from Discovery Health. The author was not responsible for the diagnosis and evaluation of patients as these criteria fall beyond the scope of this study. This study will focus on comparing the ordering of specific thyroid function tests within the described time frames in order to evaluate the change in the ordering pattern of thyroid function tests once the evidence based guidelines had been published.

2.2 METHODOLOGY

Following ethical approval (Appendix 10) two data sets were generated. Data set (I) was based on records compiled from October 2002 to March 2003 whereas Data set (II) was based on six months of records compiled from April 2003 to September 2003 (inclusive). A total sample size of 100 000 cases were reviewed. Data from Discovery Health was extracted and transferred onto a reporting form (Appendix B). Inclusion and exclusion criteria provided specific parameters applicable to the diagnosis of thyroid disease. The inclusion and exclusion parameters were applied to Data Set I and II. They were as follows:

2.2.1 INCLUSION CRITERIA

- Male and female members of the scheme
- Patients submitting a single claim under the Medical Savings Account (MSA) within the prescribed time periods
- Patients of all ages

2.2.2 EXCLUSION CRITERIA

- Patients submitting multiple claims within the prescribed time periods
- Patients claiming from “In Hospital Benefits”

- Patients with uncontrolled thyroid disease, surgery for thyroid disease and thyroid carcinoma (situations where prescribing of thyroid function tests falls outside of the guidelines)

Following the application of the exclusion and inclusion criteria the sample size totaled 73 850 cases. Patients claiming from "In Hospital Benefits" as opposed to the Medical Savings Account (MSA) were deliberately excluded due to that particular type of claim requiring a first line Free T4 measurement in addition to TSH when assessing their thyroid function in order to exclude Euthyroid Sick Syndrome. Euthyroid Sick Syndrome can be described as abnormal findings on thyroid function tests that occur in the setting of a nonthyroidal illness (NTI) without pre-existing hypothalamic-pituitary and thyroid gland dysfunction. After recovery from an NTI, these thyroid function test abnormalities should be completely reversible. This is a common feature in hospital patients and would therefore validate their exclusion from this study. Since this data represents out of hospital claimants, only the results may not reflect patients presenting with complicated disease.

An analysis was made with regard to three criteria:

1. The number of requests for TSH; Free T4 and Free T3.
2. The number of requests for specific combinations of tests (TSH + Free T4, Free T4 + Free T3).
3. The economic impact of the guidelines on ordering patterns.