

Decreasing Utilization of Screening Thyroid Function Testing in a Primary Care Practice: A Quality Improvement Project

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BACKGROUND

Although thyroid disorders are commonly encountered in the primary care setting, screening thyroid function testing (TFT) may result in detecting clinically insignificant abnormalities, leading to possible unnecessary treatment, increased medical costs, patient anxiety, and unnecessary sub-specialty referrals.

The role of screening for thyroid dysfunction is controversial; the United States Preventive Service Task Force (USPSTF) does not recommend routine screening for thyroid disease among non-pregnant adults.

Currently, our primary care practice at Brookhaven Family Medicine does not have a standardized process regarding thyroid dysfunction screening.

OBJECTIVE

To develop and implement a standardized process, utilizing the USPSTF screening guideline, to decrease thyroid function screening in nonpregnant asymptomatic adults.

METHODS

The records of BFM patients 18 years of age and older who had a resident visit for a complete physical exam (CPE) or an annual wellness visit (AWV) during a six-month period of 2019 were reviewed to assess: 1) If TFTs were ordered under those encounters and 2) if TFTs were ordered under CPE/AWV diagnosis codes.

Residents, medical assistants, and attending physicians were educated on the thyroid screening guideline. Residents created a data collection form (Figure 1) to track TFT orders for every qualifying encounter and, when applicable, indications for ordering the TFT. Additionally, residents created a visual reminder, in the form of a laminated card (Figure 2), which was placed on every physician and medical assistant computer in the office.

The study period took place from February 14, 2022, through March 25, 2022. The primary outcome was to decrease the number of unnecessary screening TFT (defined as TFT ordered under CPE/AWV diagnostic codes) ordered during resident CPE or AWV encounters.

Figure 1: Data Collection Form

QI Project: Decreasing utilization of screening TSH

****Only complete this form for annual physical and annual wellness visits****

Date: _____

Patient: _____

Resident: _____

Visit: CPE AWV

TSH ordered during this CPE/AWV: YES NO

If YES, please select reason: _____

Symptom of hypothyroidism or hyperthyroidism (please describe; ex: weight changes, palpitations, fatigue, etc) _____

Abnormal thyroid exam

History of hypothyroidism or hyperthyroidism

Other (describe) _____

Screening (**Reminder that TSH SHOULD NOT be ordered for routine screening**)

Figure 2: Laminated card reminder

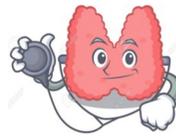


Figure 3: Post-Intervention Percentage of Patients with Ordered Screening TFT

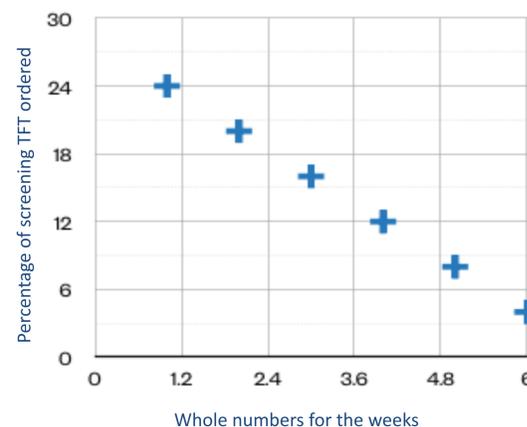


Table 1: Pre-and-Post Intervention Results

	Pre Intervention	Post Intervention	Decrease in utilization of screening TFT
Screening TFT during CPE/AWV	22%	3.9%	18.1%

RESULTS

A retrospective review from July 1, 2019, through December 31, 2019, revealed 337 eligible resident encounters of patients without any history of thyroid disease.

Among those, TFTs were ordered in 150 encounters (44.5%) and, in 74 of those encounters, TFT were ordered under the CPE or AWV diagnosis codes (22.0% of all encounters).

During the study period, there were 102 qualifying encounters. TFT were ordered in 42 cases (41.2%), and, of those, there were 4 patients (3.9% of all encounters) who had TFT ordered under CPE or AWV.

Post-intervention, there was an 18.1% decrease in the utilization of screening TFTs (Table 1).

CONCLUSION

Implementing a standardized process led to a significant decrease in utilization of screening thyroid function testing (22.0% to 3.9%) during CPE/AWV encounters.

CLINICAL IMPLICATION

While the overall rate of TFT ordering did not change significantly (44.5% to 41.2%), our project showed significant decrease in documentation of TFT ordering under CPE/AWV encounters.

This can be a result of two possible causes: 1) indicated TFT orders were incorrectly documented under CPE/AWV encounters; 2) unnecessary TFT were documented under other diagnoses for justification. Further investigation can shed additional light on the process.

REFERENCES

- Wootton T, Bates R. Things We Do for No Reason™: Routine Thyroid-Stimulating Hormone Testing in the Hospital. *J Hosp Med.* 2020;15(9):560-562. doi:10.12788/jhm.3347
- Tilahun K, Demissie M, Bekele T, Nigusie M, H/Mariam D. Thyroid Hormone Tests Ordering Practice and Cost-Effectiveness in Samples Referred to International Clinical Laboratories from Addis Ababa Health Facilities. *Ethiop J Health Sci.* 2020;30(3):347-354. doi:10.4314/ejhs.v30i3.5
- Bateman EA, Gob A, Chin-Yee I, MacKenzie HM. Reducing waste: a guidelines-based approach to reducing inappropriate vitamin D and TSH testing in the inpatient rehabilitation setting. *BMJ Open Qual.* 2019;8(4):e000674. Published 2019 Oct 25. doi:10.1136/bmjopen-2019-000674
- Volpé R. Rational use of thyroid function tests. *Crit Rev Clin Lab Sci.* 1997;34(5):405-438. doi:10.3109/10408369709006421
- Gupta S, Verma M, Gupta AK, Kaur A, Kaur V, Singh K. Are we using Thyroid Function Tests Appropriately?. *Indian J Clin Biochem.* 2011;26(2):178-181. doi:10.1007/s12291-011-0128-0
- Sheehan MT. Biochemical Testing of the Thyroid: TSH is the Best and, Oftentimes, Only Test Needed - A Review for Primary Care. *Clin Med Res.* 2016;14(2):83-92. doi:10.3121/cmr.2016.1309