

Use of Thyroid Tests by Family Physicians in NL

Choosing Wisely Canada Recommendation

Don't use Free T4 or T3 to screen for hypothyroidism or to monitor and adjust levothyroxine (T4) dose in patients with known primary hypothyroidism, unless the patient has suspected or known pituitary or hypothalamic disease.

Don't do thyroid function tests in asymptomatic people.

Practice Points

1. In most people a normal Thyroid Stimulating Hormone (TSH) indicates either a normal endogenous thyroid function or an adequate T4 replacement dose.
2. TSH only becomes unreliable in patients with known or suspected pituitary or hypothalamic disease when TSH cannot respond physiologically to altered T4 or T3.
3. In stable patients, TSH needs to be monitored no more often than every six months.
4. Costs per test are: TSH \$10, T4 \$12, and T3 \$9.
5. 84% of TSH tests are ordered by Family Physicians (FPs), as well as 79% of T4 tests, and 57% of T3 tests.
6. The practice of endocrinologists is substantially different from that of FPs which accounts for the higher rate of T4 and T3 testing undertaken by endocrinologists.

Methods

1. All TSH, T4, and T3 tests ordered by FPs in NL from 1 Apr 2018 - 31 Mar 2019 were analysed by year, age, sex, and clinician who ordered the test. The rate of TSH tests per 1,000 billings was calculated for 2017.

Results

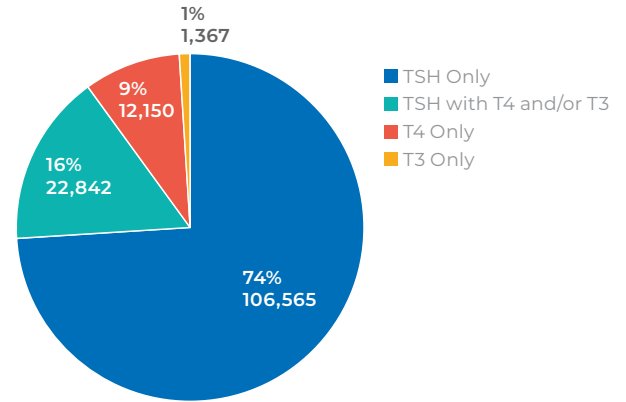


Fig. 1. Number of TSH, T4 and T3 Tests by FPs in 2018/19

- In 12 months there were 129,407 TSH tests ordered by FPs, 18% of which were accompanied by a T4 and/or T3 test order.
- Thyroid Tests amounts to one test per four people in the population.

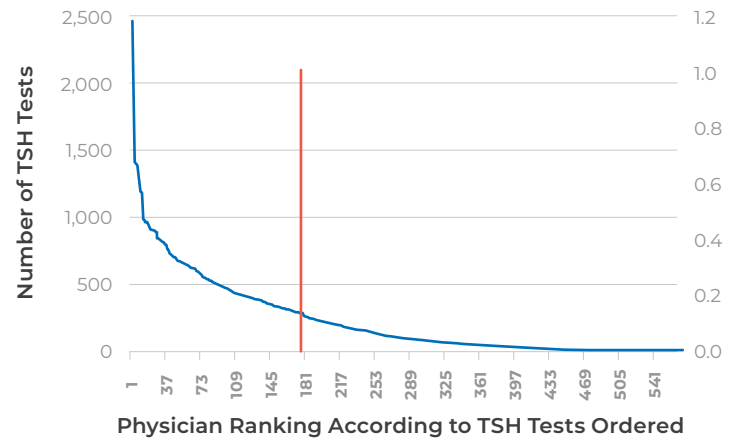


Fig. 2. Total TSH Tests Requested Ranked by FP in 2018/19

- 80% of total TSH tests were ordered by 31% of FPs (red line), 88 FPs ordered 500 or more TSH tests in 12 months.

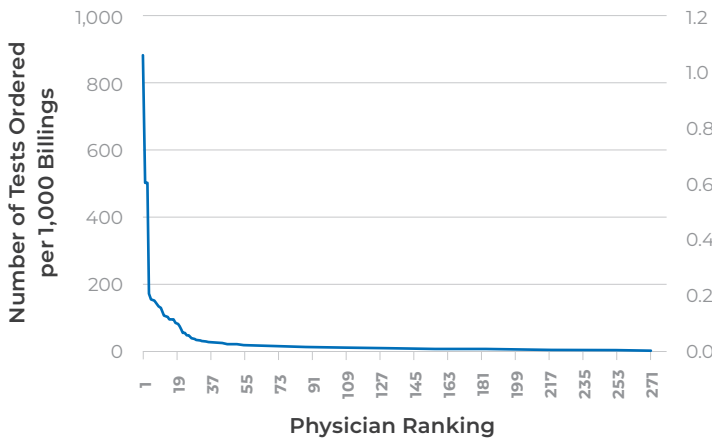


Fig. 3. Rate of TSH Tests Ordered per 1,000 Billings Ranked by FP in 2017

- 23 FPs ordered more than 50 TSH tests per 1,000 billings.

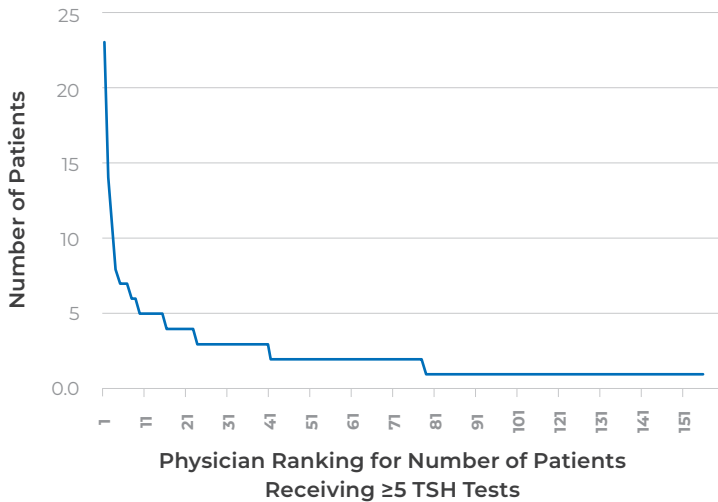


Fig. 4. Number of Patients Receiving Five or More TSH Tests Ranked by FP

- 156 FPs ordered five or more TSH tests for one patient over 12 months, 17 of which ordered five or more tests for five or more patients.

Conclusions

1. T4 and T3 ordering is frequently coupled with TSH testing. Reflex testing for T4 occurs within laboratories in patients with an abnormal TSH, making T4 and T3 ordering unnecessary.
2. In patients with known or suspected pituitary or hypothalamic disease the order for T4 or T3 should contain this information.
3. The number of patients receiving five or more TSH tests per year is high (N=511).
4. Some FPs ordered a large number of TSH tests per year, whether analyzed by number or by rate/1,000 billings.