

# Increasing Testing for Thyroid Dysfunction in Neonates Post Iodine Exposure

W chang, MD, ECU neonatologist; S Devagiri, MD, ECU neonatology fellow; E Atwood, MD, ECU pediatric endocrinologist; S Moore, NNP, ECU health neonatology; J Nupur, ECU medical student; M Chanas, Pharm D, ECU health pharmacy



## BACKGROUND

- Excessive exposure to iodine can cause thyroid dysfunction through Wolff-Chaikoff effect. Thyroid hormone is critical for normal neurocognitive development in neonates. Transient hypothyroidism can cause adverse neurodevelopmental outcomes.
- There are case reports of neonates developing hypothyroidism post-surgery and/or contrast exposure with previous normal thyroid function tests. There are no current guidelines regarding testing of these neonates except there is FDA guideline for IV contrast exposure only.

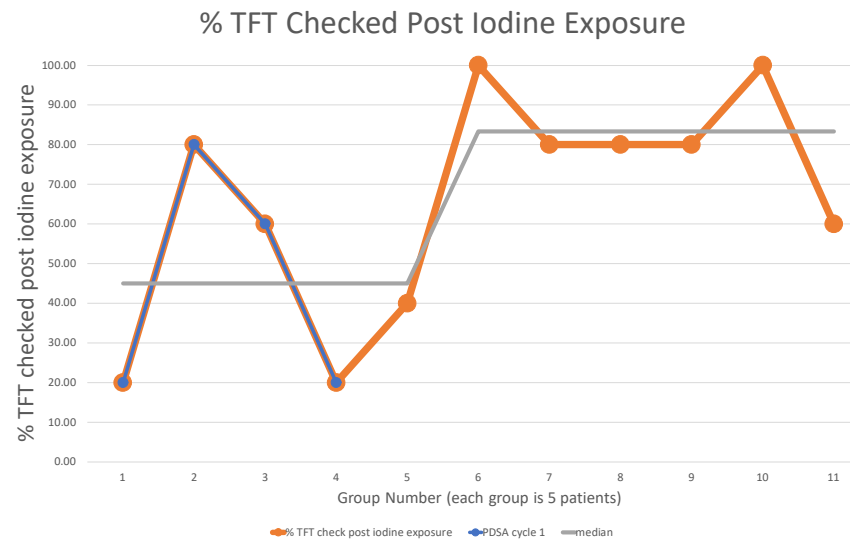
## PROJECT AIM

- Global Aim: To achieve uniform screening of thyroid dysfunction after iodine exposure.
- Specific Aim: Achieve 80% thyroid function screening 7-10 days post iodine exposure in neonates at ECU Health Neonatal Intensive Care Unit and Special Care Nursery, over 12 months beginning from 08/01/2022.

## CHANGES MADE (PDSA CYCLES)

- In the first PDSA cycle screening algorithm was disseminated to providers and staff via email and reminders posted in provider's workrooms.
- In the second PDSA cycle providers were asked to create iodine exposure as problem list that will serve as a reminder to order thyroid labs. For patients who are discharged home before 7 days problem list was created in discharge summary.

## RESULTS/OUTCOMES



- Due to wide range of potential exposure per month, data are reported per groups of 5 patients.
- We found one patient who was euthyroid initially and became hypothyroid after exposure to iodine and was started on Synthroid.

## PROJECT DESIGN/STRATEGY

- Surgical exposure patients are identified from pediatric surgery epic list. Contrast exposure patients are identified by NICU pharmacist. All patients are then pulled to an EPIC list and followed for labs and results.
- Data collected include TFT screening and development of hypothyroidism.
- Outcome measure includes the percentage of patients screened for thyroid dysfunction post iodine exposure. Other measures includes the number of patients that test positive for hypothyroidism post iodine exposure.

## NEXT STEPS

- Updating guideline with consult pediatric endocrinology after 2 abnormal thyroid screens after iodine exposure
- Implementing universal order sets to link common iodine contrast procedures with thyroid function tests via EPIC function of using another provider's order set
- Future plans of building a neonatal panel of iodine procedures and thyroid function tests.