

Type and Screens

Who Needs One? Who is Responsible?

Wenting Ma, MD, Bracha Abraham MD , Alessandra Riccio, MD,, Grace Lassiter MD MPH,, Monica Liu, MD MBA

Michelle Tiangco, MS, Christine Lennon, MD

Department of Anesthesiology, Weill Cornell Medicine, New York-Presbyterian Hospital, New York, NY

Purpose

The necessity of an active type and screen for a scheduled surgical procedure may not always be agreed upon by all members of the peri-operative staff. Current institution guidelines can be subject to interpretation based on the perceived relative risk of the procedure. The lack of an immediately available type and screen in the perioperative period where blood product transfusion is indicated can result in an increase in the utilization of emergency uncrossmatched products, posing certain risks to the patients and resource burdens to the blood bank that could be avoided in scheduled surgical procedures.

Study Aims:

- Investigate the **incidence** of emergency blood transfusions
- **Evaluate** the result time of Type and Screens and barriers to meeting the institutional standard of result time within 90 minutes
- **Increase** the % of T&S resulted prior to case start in OR

Investigation Methods

- **Emergency Blood Orders Chart Review** Jan 2021- Aug 2023
 - Classified by service
 - Filtered as ED admit vs outpatient admit
- **Type and Screen Orders** Oct 2023- Dec 2023
 - Classified by service
 - T&S result times of 45 min, 90 min, 100 min, 120 min
- Chart review of NSGY cases where emergency blood was transfused; when T&S resulted after case end

Blood Order Results

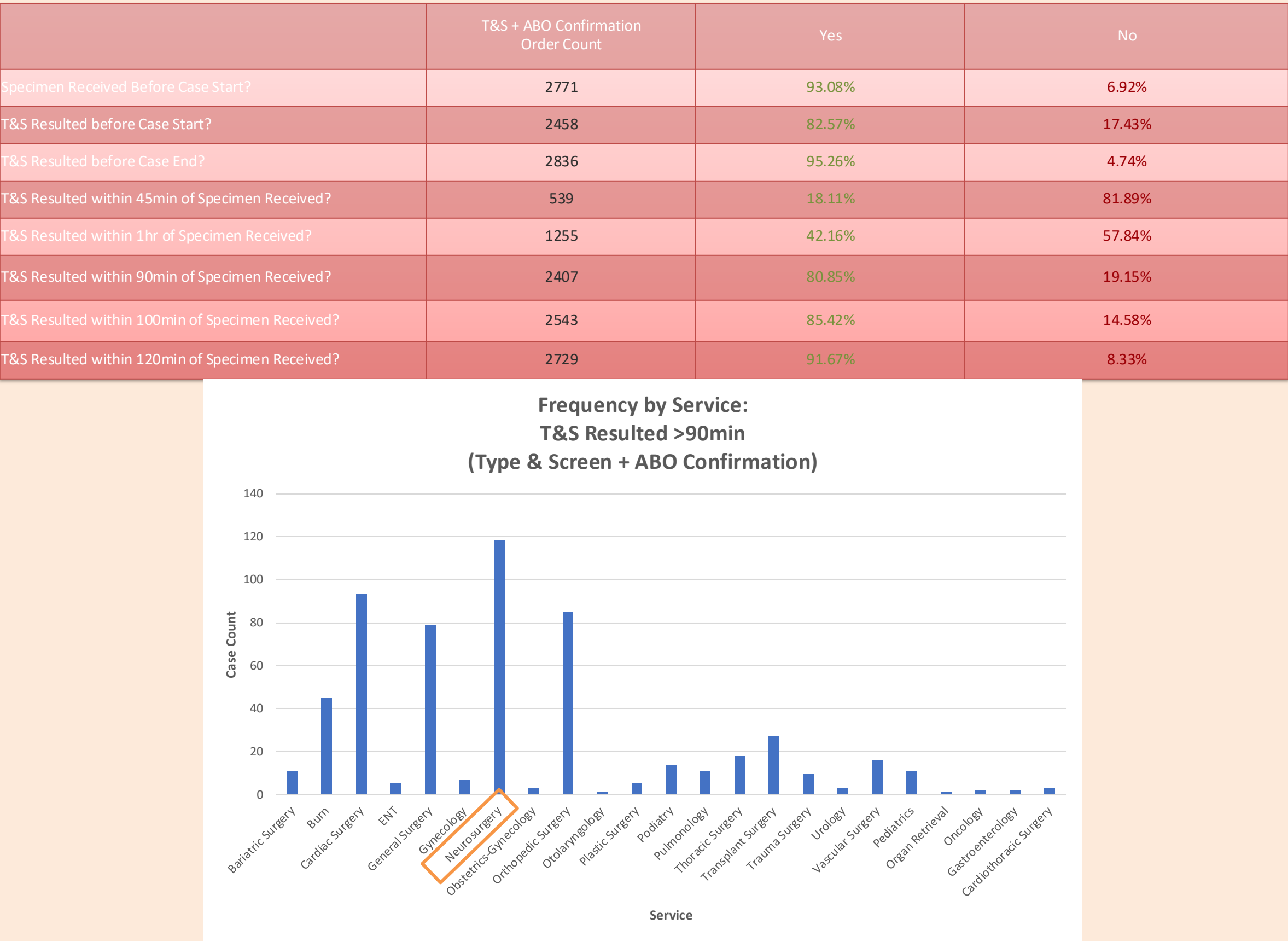


Figure 1: Current T&S Perioperative Guidelines

LOW RISK SURGERY (e.g. Breast biopsy, similar minor and superficial procedures, cataracts, screening endoscopy, diagnostic angiogram, vein stripping) --> Regardless of patient co-morbidities: Routine screening labs are **NOT** recommended or required

INTERMEDIATE RISK SURGERY (e.g. Intraabdominal, intrathoracic, intracranial non-vascular, carotid, vascular infra- inguinal, head and neck, orthopedic, or prostate surgery)
T&S recommended if significant blood loss possible, if patient has a bleeding history

HIGH-RISK SURGERY (e.g. Open Aortic, Major vascular, Major thoracic, Intracranial vascular, Intracranial Re-do Procedure)
T&S always recommended

Figure 2: Infographic on Proper Type and Screen Collection

We have found that truncated labels and inadequately filled tubes account for the majority of delays that result in use of emergency uncrossmatched blood, increasing the rate of complications. We are hoping to decrease these delays with all of your help utilizing the following few steps:

1. Sufficient Quantity
 - Adults: Draw 2-6mL of blood in the collection tubes (always prefer a larger volume)
 - Peds: Draw 1 mL per tube
2. ENSURE the label has the **full name** and **MRN** of the patient.
3. ENSURE label has Collection Date and Time .
3. IF the machine doesn't print the full MRN and name of the patient, use the patient sticker and label it with the collection time/date AND your initials.

Proposed Solutions

- **Safety Events Dashboard for Blood Bank**
 - Keep records of any safety incidents reported regarding type and screen
 - Categorize common reasons for T&S results delays
 - Examples) Identify percentage of specimen tubes truncated, percentage of tubes not adequately filled, length of time taken for specimen to be delivered to the blood bank since being drawn from the patient
- **Clarify Department Specific Guidelines on T&S Ordering**
 - Educate specific surgical departments regarding bleeding risks associated with their procedure and need for pre-op T&S to be ordered
 - Examples) Craniotomies in NSGY, Uterine myomectomies in GYN Surgery
- **Perioperative Staff Education (Figure 2)**
 - In-service education and infographics for perioperative nursing and patient assistant staff regarding proper labeling of T&S tubes

Future Directions

- Evaluate the percentage of perioperative type and screens that took longer than 90 minutes to result after 3 months of intervention, categorized into delay reason
- Develop institutional perioperative guideline handbook to delineate the need for type and screen for each surgical department and surgical procedure based on historic needs for transfusion

Abbreviations: T&S: type and screen, NSGY: neurosurgery, GYN: gynecology