Transfusion practice in surgery: toward a meaningful specialty-specific quality indicator

Sara Bakhtary, Frederick Jamison, Alexandra Tabacu, Ian Hennessy, Elena Nedelcu
Department of Laboratory Medicine, University of California, San Francisco (UCSF)

University of California San Francisco

BACKGROUND

Transfusion is common procedure in surgical patients. Prior studies have identified the crossmatch/transfused (C/T) ratio as a quality indicator of red blood cell (RBC) transfusion practice, and a C/T ratio of <2 is considered acceptable. However, this indicator has limited significance if not provided in a specialty-specific setting. This study was conducted to assess this quality indicator at surgical specialties from our academic medical center and assess opportunities to reduce waste associated with overordering.

OBJECTIVE

To report specialty-specific C/T ratio scorecards and associated healthcare cost of crossmatched but not transfused red blood cell (RBC) units at our institution

STUDY DESIGN

This is a retrospective study of crossmatch and transfused units from January 1, 2019 to December 30, 2019 at three hospitals belonging to our academic medical center. Surgical department requesting the blood, the type of provider (medical doctor versus nurse practitioner), the number of units ordered and transfused were collected.
The C/T ratio was calculated per specialty and individual (deidentified) provider, and the associated cost was estimated.

RESULTS

A total of 22 surgical specialties were identified with 22,487 units crossmatched (1-5678 units per department) and 8970 transfused (1-2252 units per department) and a **C/T ratio of 2.5**. General surgery, neurological surgery, cardiothoracic surgery, orthopedic and vascular surgery have the largest transfusion volumes (571 to 2252 units) and a specialty specific C/T ratio ranging from 2.3 to 2.6. Obstetrics and gynecology, oral and maxillary surgery, urologic surgery, thoracic surgery and surgical oncology have the highest C/T ratio (3.1-4.1) although these departments transfuse 8% of the total volume.
Department specific C/T scorecards for surgical specialties with ≤ 10 and > 10 providers are illustrated in Fig. 1 and Fig. 2., respectively.

RESULTS (cont)

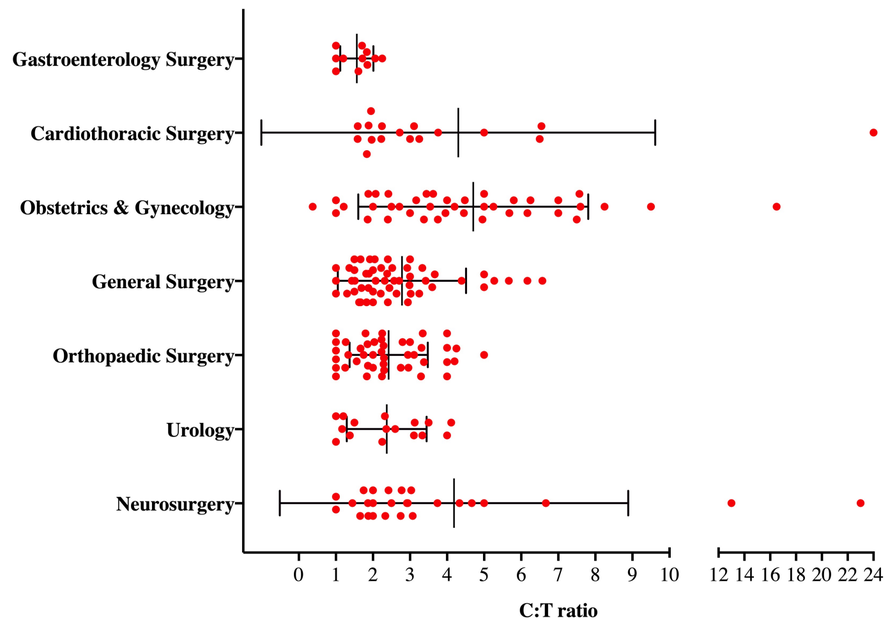

Fig. 1. Department specific C/T scorecards for surgical specialties with > 10 providers.

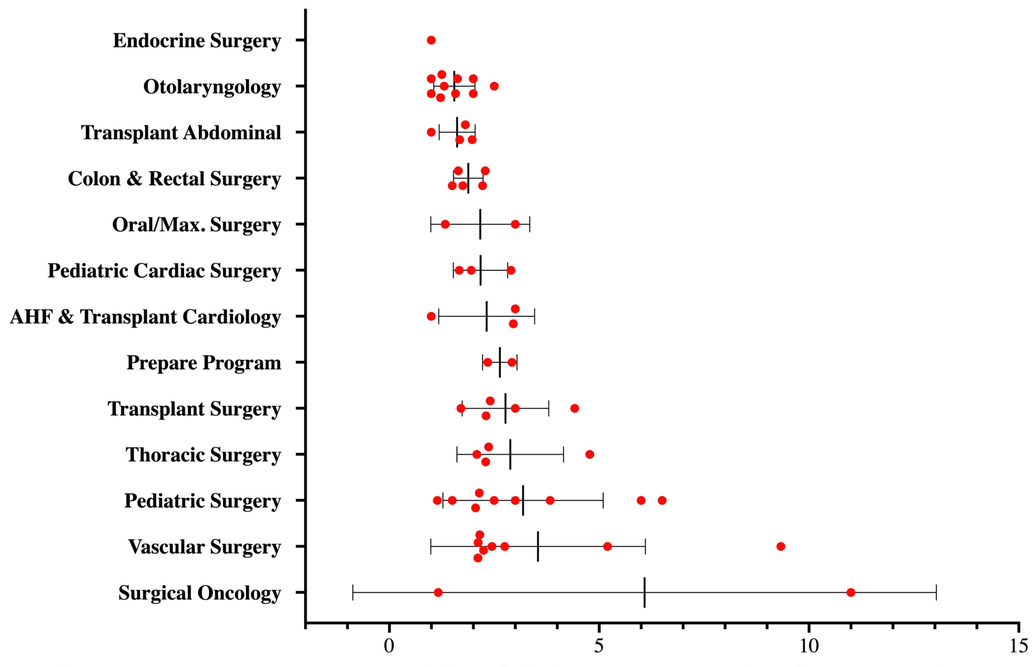

Fig. 2. Department specific C/T scorecards for surgical specialties with ≤ 10 providers.

Associated health care cost due to crossmatch but not transfused RBCs:
A total of 13,517 RBC units were crossmatched and not transfused in all surgical specialties representing $10,137,750 associated cost.

CONCLUSION

Despite an overall acceptable transfusion practice with C/T ratio of 2.5, further analysis including specialty-specific and cost assessment reveals significant opportunities for improvement.