MPOG Pediatric Subcommittee Meeting

May 19, 2021

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

Agenda

5 minutes	**Announcements**
10 minutes	**PONV/Antiemetic Data Review**
20 minutes	**Transfusion Vigilance (TRAN-01)** *Measure Review and Discussion*
20 minutes	**Overtransfusion (TRAN-02)** *Measure Review and Discussion*

2021 MPOG Meetings

- **Pediatric Subcommittee Meetings**
  - August 18
  - October 9 (TBD: Virtual vs. In person)
  - December 15
- **MPOG Annual Retreat 2021**
  - October 8 (San Diego, CA)

Measure Discussion

PONV Prophylaxis in Pediatrics

PONV-02 Inclusion/Exclusion Criteria

OLD (2018)

Inclusion

- *Patients ages 3-17 years old*
- *Received an inhalational general anesthetic*
- *Has ≥ 2 risk factors for POV*

Exclusion

- *Patients < 3 or > 17 years old.*
- *Patients transferred directly ⟶ ICU*
- *Liver or Lung Transplants*
- *Procedures on the Neck*
- *Intrathoracic Procedures*
- *Procedures on the Lower Abdomen*
- *Obstetric Procedures & Labor Epidurals*
- *Endoscopy*
- *Obturator neurectomy*
- *Shoulder cast application*

UPDATE (2021)

Inclusion

- Patients ages 3-17 years old

Exclusion

- Patients < 3 or > 17 years old.
- Patients transferred directly ⟶ ICU
- ASA 5 or 6
- Labor Epidural cases
- Diagnostic Imaging Procedures

Gan et al, 2020

PONV-02 Risk Factors

OLD (2018)

- *Hx of PONV*
  - *personal or first-degree relative*
- *At Risk Surgery*
  - *Strabismus*
- *Procedure ≥ 30 minutes*

UPDATE (2021)

- Post-pubertal females (≥ 12y)
- Inhaled anesthetic duration ≥ 30 minutes
  - halogenated and/or nitrous oxide
- Hx of PONV
  - personal or first-degree relative
- At Risk Surgery
  - Strabismus
  - Adenotonsillectomy
  - Tympanoplasty/Otoplasty
- Postoperative long-acting opioids
  - Administered after Induction

Gan et al, 2020

PONV-02 Success Criteria

OLD (2018)

Patient receives at least two prophylactic pharmacologic antiemetic agents of different classes preoperatively or intraoperatively

Gan et al, 2020

UPDATE (2021)

Low (0 risk factors)

- Patient receives at least **one** prophylactic pharmacologic antiemetic.

Medium (1-2 risk factors)

- Patient receive combination therapy consisting of at least **two** prophylactic pharmacologic antiemetics from different classes.

High (>2 risk factors)

- Patient receives **three** prophylactic pharmacologic antiemetics.

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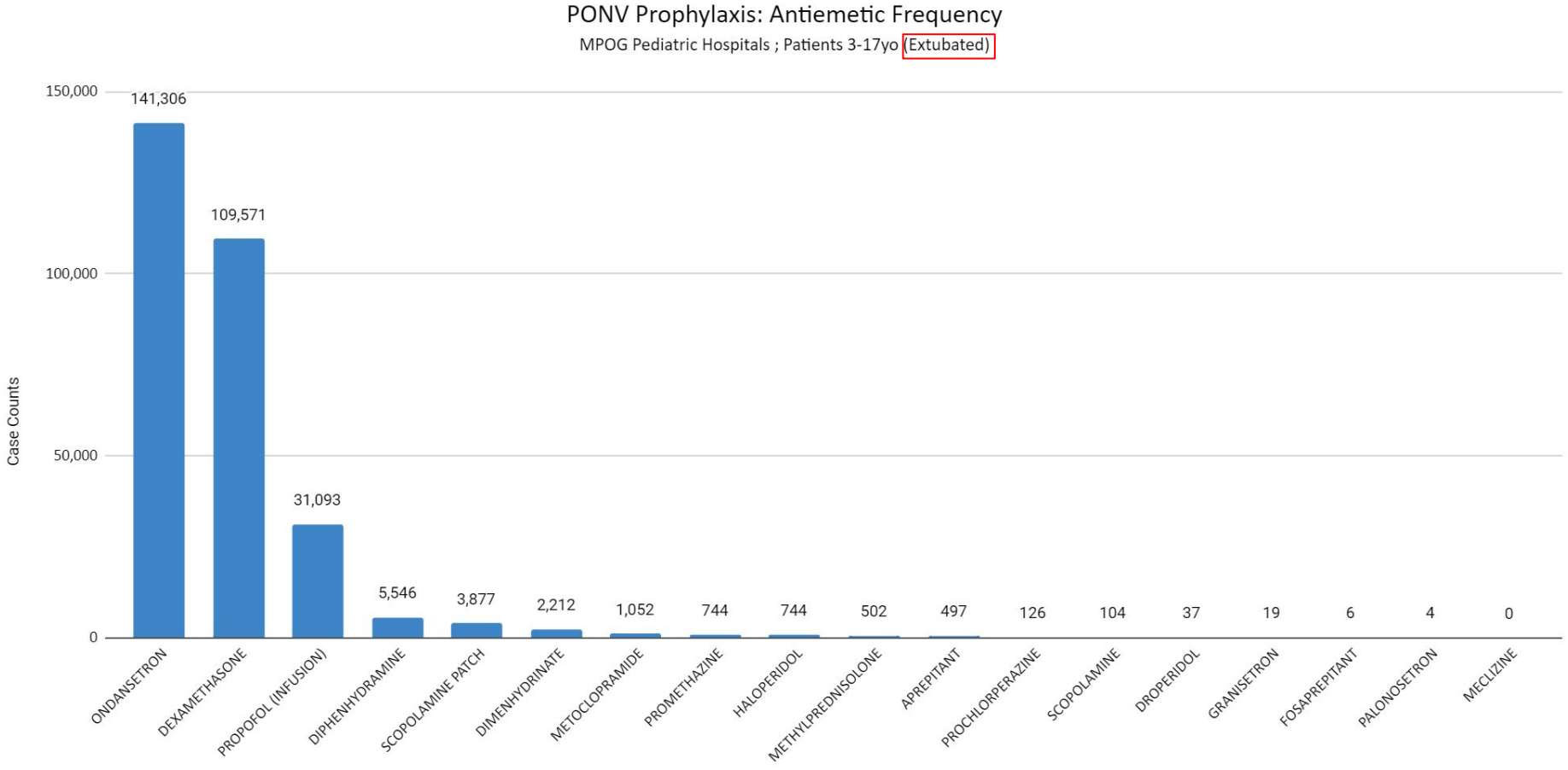
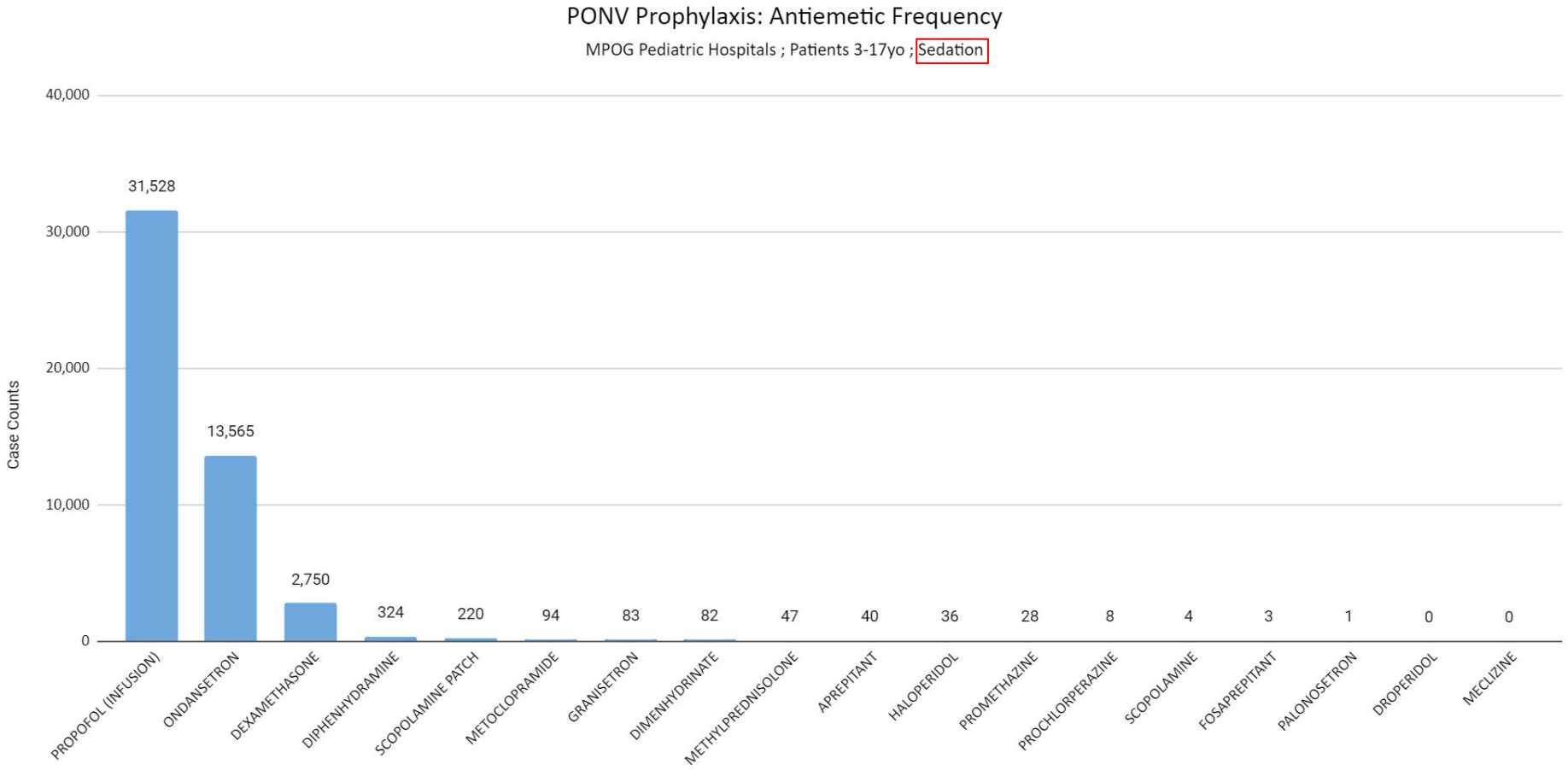
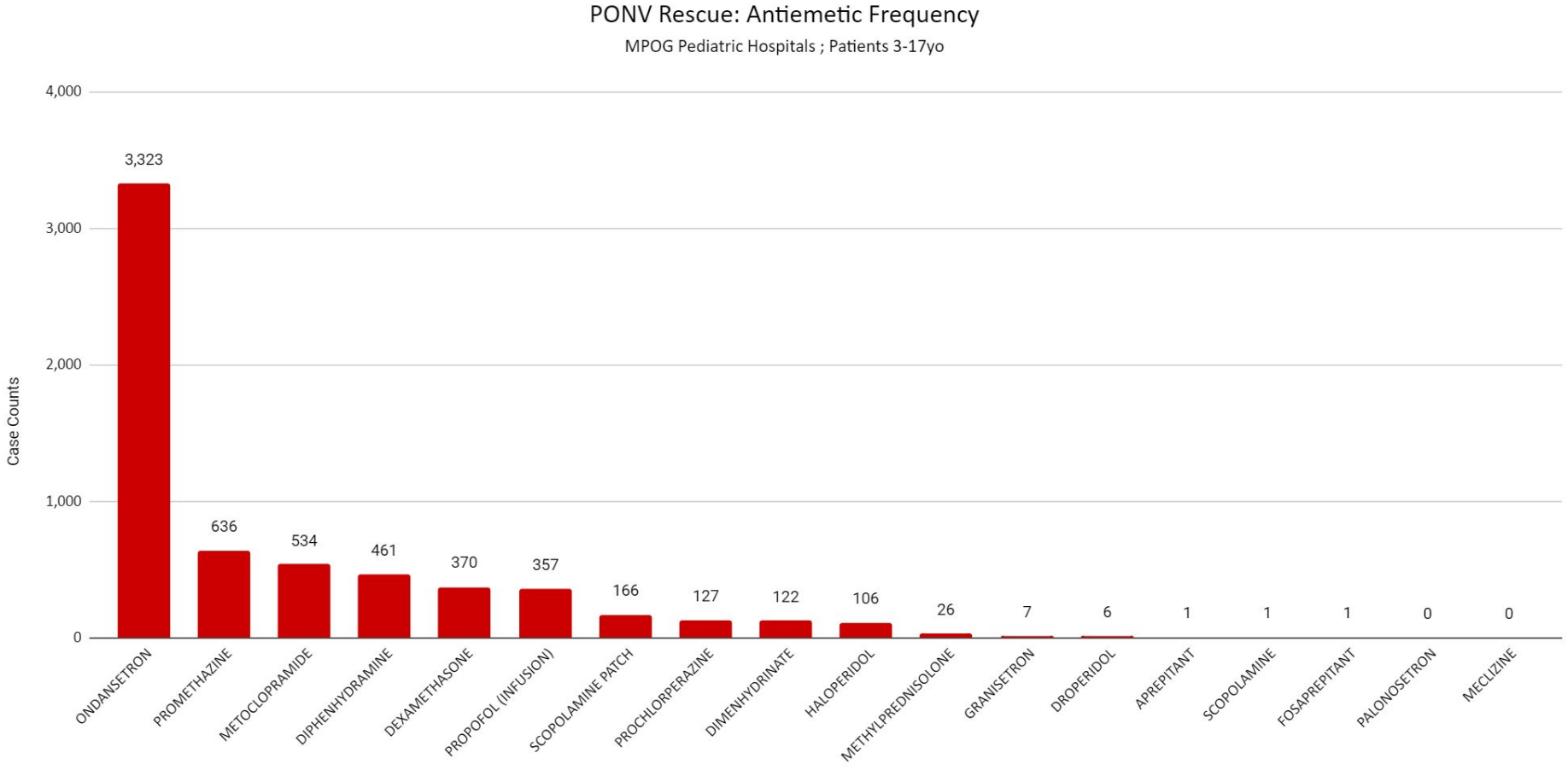
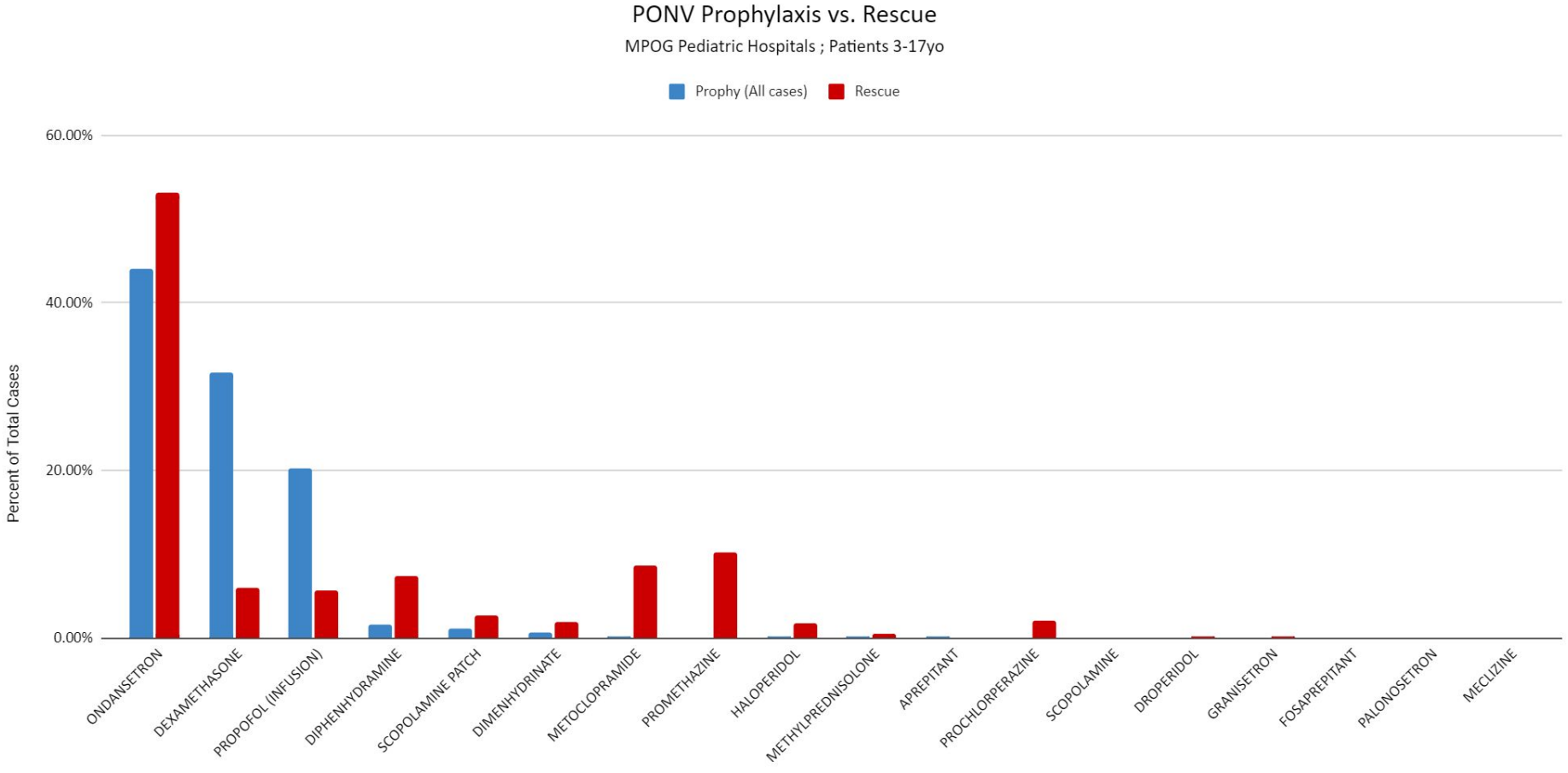
Choice of Antiemetics and Frequency


PONV Prophylaxis: Antiemetic Frequency
MPOG Pediatric Hospitals ; Patients 3-17yo (Extubated)
Case Counts
150,000
100,000
50,000
0
141,306
109,571
31,093
5,546
3,877
2,212
1,052
744
744
502
497
126
104
37
19
6
4
0
ONDANSETRON
DEXAMETHASONE
PROPOFOL (INFUSION)
DIPHENHYDRAMINE
SCOPOLAMINE PATCH
DIMENHYDRINATE
METOCLOPRAMIDE
PROMETHAZINE
HALOPERIDOL
METHYLPREDNISOLONE
APREPITANT
PROCHLORPERAZINE
SCOPOLAMINE
DROPERIDOL
GRANISETRON
FOSAPREPITANT
PALONOSETRON
MECLIZINE


PONV Prophylaxis: Antiemetic Frequency
MPOG Pediatric Hospitals ; Patients 3-17yo ; Sedation
Case Counts
40,000
30,000
20,000
10,000
0
31,528
13,565
2,750
324
220
94
83
82
47
40
36
28
8
4
3
1
0
0
PROPOFOL (INFUSION)
ONDANSETRON
DEXAMETHASONE
DIPHENHYDRAMINE
SCOPOLAMINE PATCH
METOCLOPRAMIDE
GRANISETRON
DIMENHYDRINATE
METHYLPREDNISOLONE
APREPITANT
HALOPERIDOL
PROMETHAZINE
PROCHLORPERAZINE
SCOPOLAMINE
FOSAPREPITANT
PALONOSETRON
DROPERIDOL
MECLIZINE


PONV Rescue: Antiemetic Frequency
MPOG Pediatric Hospitals ; Patients 3-17yo
Case Counts
4,000
3,000
2,000
1,000
0
3,323
636
534
461
370
357
166
127
122
106
26
7
6
1
1
1
0
0
ONDANSETRON
PROMETHAZINE
METOCLOPRAMIDE
DIPHENHYDRAMINE
DEXAMETHASONE
PROPOFOL (INFUSION)
SCOPOLAMINE PATCH
PROCHLORPERAZINE
DIMENHYDRINATE
HALOPERIDOL
METHYLPREDNISOLONE
GRANISETRON
DROPERIDOL
APREPITANT
SCOPOLAMINE
FOSAPREPITANT
PALONOSETRON
MECLIZINE

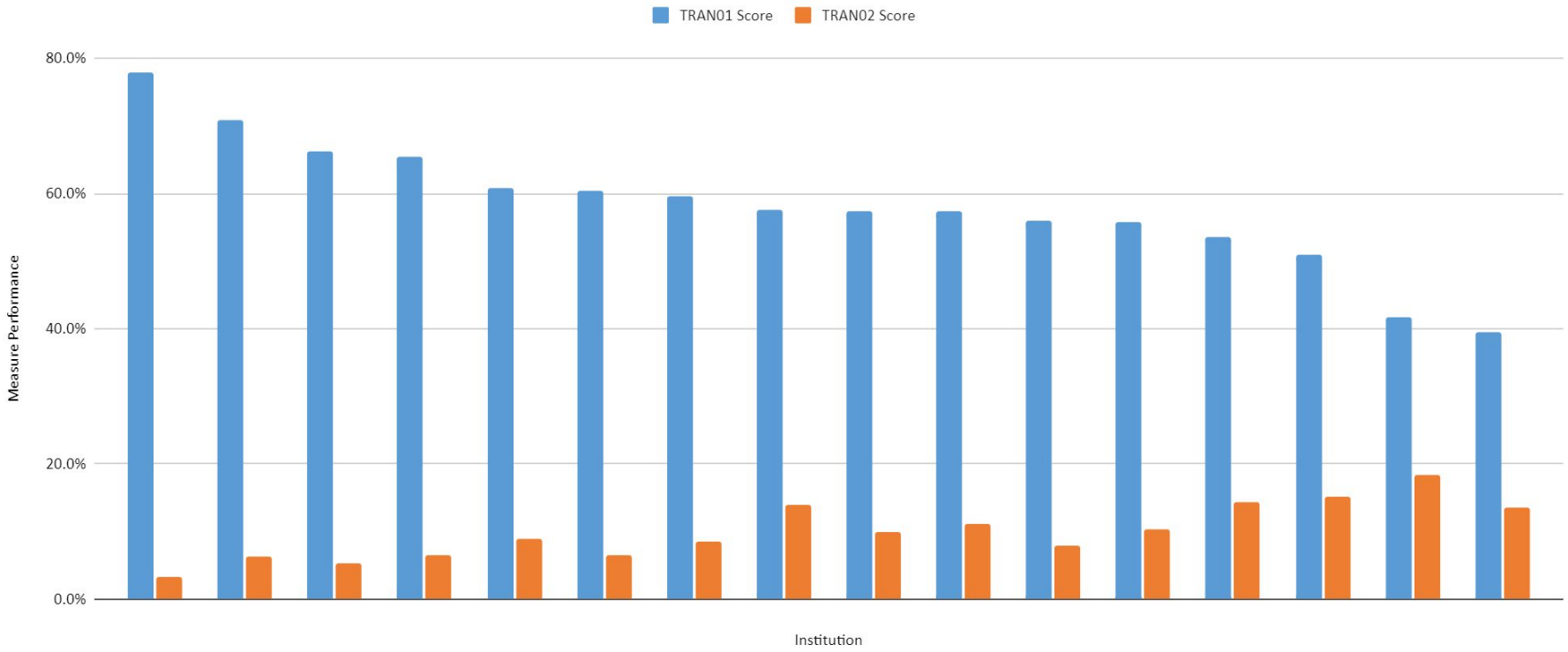

PONV Prophylaxis vs. Rescue
MPOG Pediatric Hospitals ; Patients 3-17yo
Prophy (All cases)
Rescue
60.00%
40.00%
20.00%
0.00%
Percent of Total Cases
ONDANSETRON
DEXAMETHASONE
PROPOFOL (INFUSION)
DIPHENHYDRAMINE
SCOPOLAMINE PATCH
DIMENHYDRINATE
METOCLOPRAMIDE
PROMETHAZINE
HALOPERIDOL
METHYLPREDNISOLONE
APREPITANT
PROCHLORPERAZINE
SCOPOLAMINE
DROPERIDOL
GRANISETRON
FOSAPREPITANT
PALONOSETRON
MECLIZINE

Measure Review

Measure	Description	Peds Meeting Review
PONV 02 (PEDS)	*PONV prophylaxis, Pediatrics*	2/17/2021
TRAN 01	*Transfusion Management Vigilance*	5/19/2021
TRAN 02	*Overtransfusion*	5/19/2021
NMB 01	*Train of Four Taken*	8/18/2021
NMB 02	*Reversal Administered*	8/18/2021
PUL 03	*Administration of PEEP*	10/9/2021
TOC 01	*Intraoperative Transfer of Care*	10/9/2021
PUL 01	*Protective Tidal Volume, 10 mL/kg PBW*	12/15/2021
TEMP 03	*Perioperative Hypothermia*	12/15/2021

Blood Management Performance (April 2020-2021)

MPOG Peds Institutions Contributing Preop/Postop Data



Transfusion Vigilance
TRAN-01

TRAN 01 - Transfusion Vigilance

Description

Percentage of cases with a blood transfusion that have a hemoglobin or hematocrit value documented prior to transfusion.

- Transfusion is defined as packed red blood cells or whole blood.
- Prior to the first transfusion, a Hgb/Hct of any value should be checked in a time period of 0 to **90 minutes before the transfusion**, or the most recent documented Hgb/Hct was **< 8/24** within 36 hours before the transfusion.

Responsible Provider

Provider(s) who administered the transfusion

Inclusion/Exclusion Criteria

Current (2018)

Inclusions

- *All patients who receive a transfusion between Anesthesia Start and Anesthesia End.*

Exclusions

- *Patients < 2 years of age*
- *ASA 5 & 6*
- *Patients < 12 years old undergoing a cardiac procedure*
- *Massive Transfusion and/or EBL ≥ 2000 ml*
- *Patients < 12 years old where either transfused PRBC or EBL was greater than 30cc/kg.*
- *Burn Debridement cases*
- *Obstetric Non-Operative Procedures*
- *C-section cases with an EBL > 1500cc or with a HR>110, SBP<85, DBP<45, or O2Sat <95%.*
- *Postpartum hemorrhage cases*

Proposed Pediatric Criteria

Inclusions

- All patients who receive a transfusion between Anesthesia Start and Anesthesia End.

Exclusions

- Patients ≤ 6 months or ≥ 18 years of age
- ASA 5 & 6
- Patients with cyanosis preoperatively AND congenital heart disease
- Patients with transfused volume or EBL > 40cc/kg.
- Patients on ECMO
- Burn Debridement Cases?
- All Obstetric procedures

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Definitions/Considerations

Current (2018)

Massive Transfusion/EBL

- *Patients < 12 years old: transfused volume or EBL was ≥ 30cc/kg.*

1 Unit of Blood

- *350 cc/unit.*

Cardiac Procedure

- *CPT: 00560, 00561, 00562, 00563, 00567, 00580).*

Obstetric Procedures *As determined by the MPOG Obstetric Anesthesia Type*

- *Labor Epidurals*
- *Cesarean Delivery w/ massive blood loss*
- *Postpartum hemorrhage cases (ICD-10 code: O72.0, O72.1, O72.2, O72.3)*

Proposed Pediatric Criteria

Massive Transfusion

- *Transfused volume of ≥ 40 cc/kg*

1 'Unit' of Blood

- *Patients < 12y: transfused volume 15 cc/kg?*

Cyanosis and CHD

- *Cyanosis: At least two SpO2 readings < 90% (between Preop start and Patient in Room)*
- *CHD defined by ICD-9/10 codes*

Success Criteria

Current (2018)

Documentation of hgb and/or hct prior to transfusion

- *If the most recent Hgb/Hct drawn before the first transfusion is ≤ 5/16, a second unit could be administered without rechecking Hgb/Hct between units.*
- *For patients < 12 years old: Pre-transfusion Hgb/Hct required before the first unit and an additional recheck after 15cc/kg has been transfused.*
- *If multiple units are administered, documentation of a Hgb/Hct value must be present within 90 minutes before each administration.*
- *All transfusions administered between cardiopulmonary bypass start → end will not be included for determining measure results for the case.*

Proposed Update (2021)

Documentation of hgb/hct prior to transfusion

- If the most recent Hgb/Hct drawn before the first transfusion is ≤ 5/16, an additional 15cc/kg could be administered without rechecking Hgb/Hct between units.
  - For patients < 12y?
- If multiple units are administered, documentation of a Hgb/Hct value must be present within 60 minutes before each transfusion.
- All transfusions administered between cardiopulmonary bypass start → end will not be included for determining measure results for the case.

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Overtransfusion
TRAN-02

TRAN 02 - Overtransfusion

Description

Percentage of cases with a post transfusion hemoglobin or hematocrit value greater than or equal to 10 g/dL or 30%.

- All Hgb/Hct labs resulted between the time of last transfusion and **18 hours after Anesthesia End** are evaluated.

Responsible Provider

Provider(s) who administered the last transfusion

Success Criteria

- Hgb/Hct value documented as ≤ 10/30 within 18 hours after A.End

OR

- If No Hgb/Hct checked within 18 hours of Anesthesia End, the case will pass…
  - Should this be exclusion or flagged criteria instead?

Summary of Recommendations

- 1 ‘unit’ transfused definition = 15cc/kg
- Massive Transfusion/blood loss: Total transfused volume (or EBL) of 40cc/kg
- Include patients ≥ 6mo.
- Exclusions
  - Cardiac bypass cases (and ECMO)
  - All obstetric procedures
  - Revisit Burn case exclusion
- TRAN 01 Success
  - If multiple units are administered, documentation of a Hgb/Hct value must be present within 90 minutes before each administration.
- TRAN 02 Success
  - If No Hb/Ht checked within 18 hours of Anesthesia End, the case should be flagged for systematic review

Next Steps…

- We will incorporate your feedback and update the transfusion metrics as needed
- Next Subcommittee meeting: **August 18th @ 1p EST**
  - NMB-01: Train of Four Monitoring
  - NMB-02: Reversal administered


Thank you