INTUBATION NATION

ANESTHESIA RESIDENCY PROGRAM NEWSLETTER

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Editor in Chief Jessica Reyes, MD
Editor Nicholas Nedeff, MD

Mission Trip Kibera

By James Morrow MD, CA-1

In the Summer of 2015 I traveled to Nairobi, Kenya to serve with Dr. Stanley Simiyu in the Kibera Slum. Dr. Stanley is a native of Kenya who attended Medical School in Nairobi then did his residency with the Kenyan Army. What stood out to me about Dr. Simiyu is that he is a Christian man in the truest sense of the word, his deed follows his word. I learned while serving with him, a typical day starts with a bus ride into the city where his clinic lies on the edge of the Kibera Slum. The Kibera slum is around a million people strong living in a puzzle of connected sheet metal huts containing no running water, toilets, or even basic living arrangements outside of a dirt floor, four walls and a roof. There he serves the people of Kibera for 8+ hrs/day for absolutely nothing, he asks his patients only to pay what they can which for most is nothing. From there he travels into a wealthier part of town where he works in another clinic doing C-sections and delivering babies in order to pay his bills before returning home only to do it again the next day. While working with him one day I asked what his long term plan was for the clinic. He said he wished to start a Women and children's center there and then someday maybe even provide Labor and Delivery services to the women of Kibera.
I have continued to keep in contact with Dr. Simiyu through prayer and financial support and Im proud to say that the Women and Children's Center is complete and we have plans for the completion of the Labor and Delivery Center within the next year. There are many hurdles including funding and Anesthesia services training but we have a plan for sustainability after the investment and are dedicated to caring for the women and children of Kibera. Traveling to Kenya was a life changing experience, I came to medicine for the sole reason to serve my fellow man and found a man early on who is living that on a daily basis. The blessings continue at Kendall Regional Medical Center on a daily basis for me and I hope that in the near future we can join Dr. Simiyu for Anesthesia education and in financial support of his mission.

ANNOUNCEMENTS: UPCOMING EVENTS

November 10 – Decemeber
Holiday Toy drive collection

December 11-13
Resident Wellness Retreat

December 1
Applications for Pain Management/Pediatric Fellowship (NMRP and ERAS)

Feburary 7, 2021
In Training Exam (ITE)

FEATURED ARTICLES

PACU GUIDE

A review of PONV and Discharge Criteria

By Matthew Maggio MD CA-1

PONV

The postoperative period following general anesthesia may come with many challenges, but the most common complication is postoperative nausea and vomiting. Even after discharge to home, patients may experience postdischarge nausea and vomiting which can occur at home within 24 hours of an uneventful discharge.

The pathway to nausea and vomiting involves the emetic reflex. This is the activation of the chemoreceptor trigger zone (CTZ) in the area postrema. Dopamine and serotonin are only few of the many substances that can cross the blood-brain barrier and stimulate the CTZ. There are a plethora of risk factors for PONV, thus it is vital to take a thorough history in the preoperative period.

The risk factors include: female gender, particularly if menstruating on day of surgery or in first trimester of pregnancy, large body habitus, non-smoking status, history of PONV or motion sickness, age less than 50 years, use of volatile anesthetics or nitrous oxide, administration of large doses of neostigmine and perioperative opioids, duration of surgery, and type of surgery (eye muscle surgery (oculocardiac vagal reflex), middle ear surgery, cholecystectomy, gynecologic surgery - laparoscopic approach).

The Apfel scoring system is a simplified risk score which will help you determine which patients are at high-risk for developing PONV. Of the many risk factors, the Apfel score includes female gender, non-smoking status, history of PONV/motion sickness, and use of post-operative opioids.

PONV Prophylaxis Based on Apfel Score

Risk Score	Prevalence PONV	Prophylaxis: No of Anti-emetics	Examples*
0	9%	0-1	± Ondansetron 4 mg
1	20%	1	Ondansetron 4 mg ± Dexamethasone 4mg
2	39%	2	Ondansetron 4 mg +Dexamethasone 4mg ± Propofol infusion
3	60%	3	Ondansetron 4 mg + Dexamethasone 4 mg + Propofol infusion ± Scopolamine patch
4	78%	4	Ondansetron 4 mg + Dexamethasone 4 mg + Propofol infusion + Scopolamine patch

Combinations should be with drugs that have a different mechanism of action
Try not to order agents for treatment in PACU that have already been used for ppx

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Discharge Criteria

Knowing when a patient is ready for discharge from the PACU is an important part in postoperative care. The Aldrete score is a scoring system to determine the release of patients from the PACU to the ward or ICU. A minimum score of 9 is required for discharge.
The postanesthetic discharge scoring system (PADS) is similar to the Aldrete scoring system but determines when the patient is ready to be discharged home. A minimum score of 9 is also required for discharge.

TABLE 56–3 Postanesthesia discharge scoring system (PADS).[1,2]

Criteria	Points
Vital signs	
Within 20% of preoperative baseline	2
Within 20% to 40% of preoperative baseline	1
>40% of preoperative baseline	0
Activity level	
Steady gait, no dizziness, at preoperative level	2
Requires assistance	1
Unable to ambulate	0
Nausea and vomiting	
Minimal, treated with oral medication	2
Moderate, treated with parenteral medication	1
Continues after repeated medication	0
Pain: minimal or none, acceptable to patient, controlled with oral medication	
Yes	2
No	1
Surgical bleeding	
Minimal: no dressing change required	2
Moderate: up to two dressing changes	1
Severe: three or more dressing changes	0

[1]Modified from Marshall SI, Chung F: Discharge criteria and complications after ambulatory surgery. Anesth Analg 1999;88:508.
[2]Score ≥ 9 is required for discharge.

TABLE 44–5 The modified Aldrete scoring system for determining when patients are ready for discharge from the postanesthesia care unit.

Activity: able to move voluntarily or on command	
4 extremities	2
2 extremities	1
0 extremities	0
Respiration	
Able to deep breathe and cough freely	2
Dyspnea, shallow or limited breathing	1
Apneic	0
Circulation	
BP ± 20 mm of preanesthetic level	2
BP ± 20–50 mm of preanesthesia level	1
BP ± 50 mm of preanesthesia level	0
Consciousness	
Fully awake	2
Arousable on calling	1
Not responding	0
O_2 saturation	
Able to maintain O_2 saturation >92% on room air	2
Needs O_2 inhalation to maintain O_2 saturation >90%	1
O_2 saturation <90% even with O_2 supplementation	0

A score ≥9 was required for discharge.
BP, blood pressure.
Reproduced, with permission, from Aldrete JA: The post anesthesia recovery score revisited (letter). Clin Anesth 1995;7:89.

Sources:

- Basics of Anesthesia
- Morgan and Mikhail's Clinical Anesthesiology
- Faust's Anesthesiology Review

MALIGNANT HYPERTHERMIA
At a Glance
By Joohi Kahn DO CA-3

Malignant hyperthermia (MH) is an autosomal dominant hypermetabolic crisis and is considered an emergency.
As soon as someone suspects a patient has MH, call for assistance and bring the MH treatment cart in the room. The supplies necessary to treat MH must be readily and immediately available wherever general anesthetic triggering agents are being used.
Common triggers: Succinylcholine and volatile gases.

Clinical signs:
- Unexplained increase in end tidal CO2 in mechanically ventilated patients, tachypnea in spontaneously breathing patients
- Sinus tachycardia, frequent PVCs, signs of hyperkalemia on ekg
- Masseter or generalized muscle rigidity
- Contrary to the name, hyperthermia is usually a late finding, and is often absent when suspecting the diagnosis

What should I do?
- Call for help, bring in the MH cart, call the hotline! MH-HYPER, 1-800-644-9737
- Intubate if patient not already intubated, 100% FiO2
- Place a foley, obtain large bore IV access
- Start to mix dantrolene, older formations come in a 20mg formation per vial that must be reconstituted in 60ml of sterile water. Given that the initial dose is 2.5mg/kg, a 100 kg patient will require 250mg, help will be necessary with the reconstitution process.
- Send labs and urine for analysis, treat hyperkalemia
- ACLS protocol if needed
- Surgery will need to be halted, and the patient will be treated until symptoms resolve. ICU bed will be needed for further observation

In the 1960-1970s, the fatality rate of MH was close to 80%. Nowadays the mortality rate is approximately 5% given the advance of medicine, the use of capnography, early detection, and prompt administration of dantrolene.

NEW CHIEF OF PEDIATRIC ANESTHESIA
Dr. Caleb Stalls

Dr. Caleb Stalls was named Chief of Pediatric Anesthesia. It is our honor congratulate him on his new position. We are incredibly fortunate to have Dr. Stalls as part of our Department and Faculty. He completed undergrad at Furman University where he double majored in English and Biology. Received his medical doctorate from UNC Chapel Hill, and went to the University of New Mexico for residency. He came to KRMC directly from Yale University where he completed his Pediatric Anesthesia Fellowship.

2020 HOLIDAY TOY DRIVE
Donations Welcomed

It's that time of the year again! As we approach this Holiday Season we are continuing our tradition of collecting toys for our Holiday Toy Drive now through December. In efforts to spread some holiday cheer, residents will accompany our hospital's Child Life Specialist, Ariana Lorenzo, in distributing the toys collected to each child spending their Holidays at our hospital. Open your hearts, donate and join us in lifting spirits this Holiday Season.

WELCOME TO THE WORLD
Penelope June MacDougall

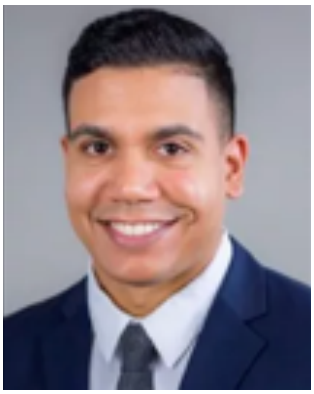
Our residency family is overjoyed to welcome Penelope June MacDougall to the world. She was born on October 1st 2020, weighing just 6 lbs. We would like to congratulate Drs. Scott and Rochelle MacDougall on their first bundle of joy.

FACULTY/RESIDENT OF THE QUARTER

Quarter 1 of 2020-2021

We would like to reconize and congratulate our first Faculty/Resident of the Quarter. They were voted for by Residents and Faculty for their exceptional work ethic, professionalism, and contribution to our program.

Juan Ampuero MD, MBA
Kendall Regional Medical Center



Victor Iturbides, MD
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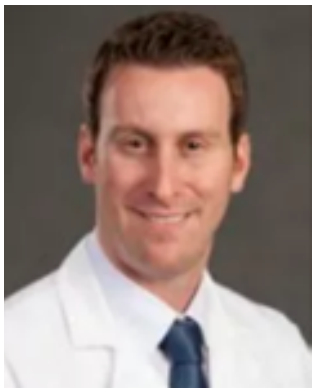

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