



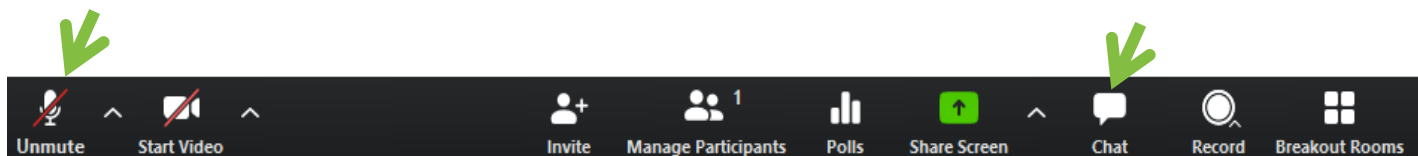
Neonatal Initiatives

Action Period Call
February 26th, 2025
12:00 – 1:00 PM CT

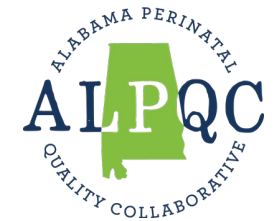


Welcome

- Please type your **name** and the **organization** you represent in the chat box and send to "Everyone."
- Please click on the three dots in the upper right corner of your Zoom image, click "Rename" and put your name and organization.
- Please also do for all those in the room with you viewing the webinar.
- Attendees are automatically muted to reduce background noise.
- You may enter questions/comments in the "chat" box during the presentation. We will have a Q&A session at the end.
- Slides will be available via email and at <http://www.alpqc.org/initiatives/nhp>
- We will be recording this call to share, along with any slides.



Agenda

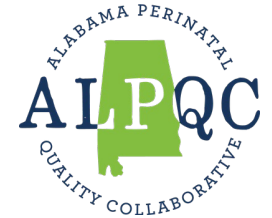


Activity:	Time:
Welcome, Updates & Reminders	12:00-12:05
NHP December and Quarterly Data Review	12:05-12:20
External Speaker: Dr. Kalsang Dolma “Preventing Intraventricular Hemorrhage Through a Clinical Care Bundle”	12:20-12:45
Q&A	12:45-12:55
Reminders & Next Steps	12:55-1:00



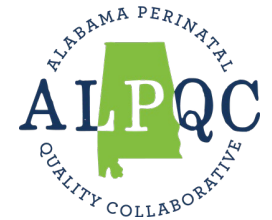
Updates

Updates & Reminders



- Monthly (January) NHP data will be due February 28th
 - Links to surveys sent on February 17th
 - Please let us know if you did not receive links and we will send them out ASAP

Upcoming Events



Registration opens in March

Please mark your calendars for the
2025 ALPQC Summit

July 10th-11th

Location: Mobile, AL

Cost: Registration is FREE!

Hotel: Renaissance Mobile Riverview Plaza Hotel

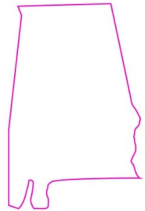


*Save
the
Date*



Poll Question

- How interested is your team in participating in an initiative around Safe Sleep?
 - A. Interested, but need more information
 - B. Interested in a QI project
 - C. Interested in receiving resources, but not in a QI project
 - D. Interested in something else for a QI project



INFANT MORTALITY RATE

6.7



Healthy People 2030 Target



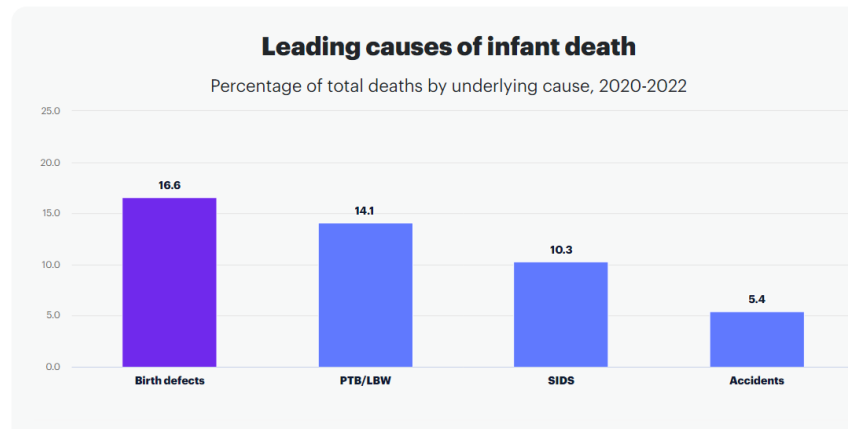
5.0 deaths per 1k births

In 2023, **449** babies tragically died before their first birthday

29 were officially ruled sleep-related

An additional **15** deaths were listed as “undetermined,” although many of those deaths occurred while the baby was sleeping

Sudden Infant Death Syndrome (SIDS) was the **3rd** leading cause of infant death in Alabama from 2020-2022



Other state PQCs that have done or are doing QI projects around Safe Sleep:

- Illinois
- Colorado
- Indiana
- Pennsylvania
- Vermont



December Data Review Levels 1 and 2

ALPQC NHP

(From December, 2023 to January, 2025)

Hide Filters

Measure Names

- All_Hospitals
- Your_Hospital

Your Hospital No Hospital

Race All

Birth Wt All

Date December 2024

GA Multiple values

Levels All

Zeros Hosps All Values

Navigation Tabs

Raw Temp

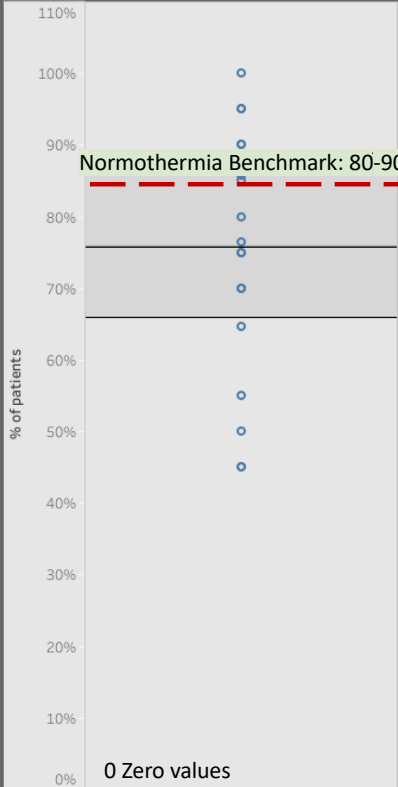
Control Charts

Race/Ethnicity Data

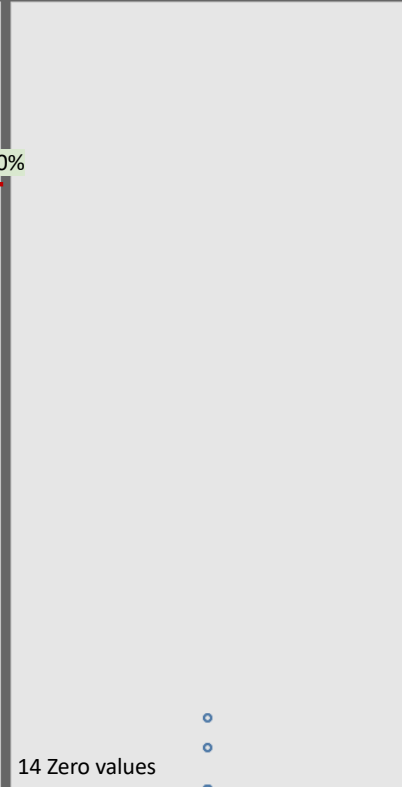
Structural

Main Page

Normothermic (≥ 36.5 & < 37.5 C)



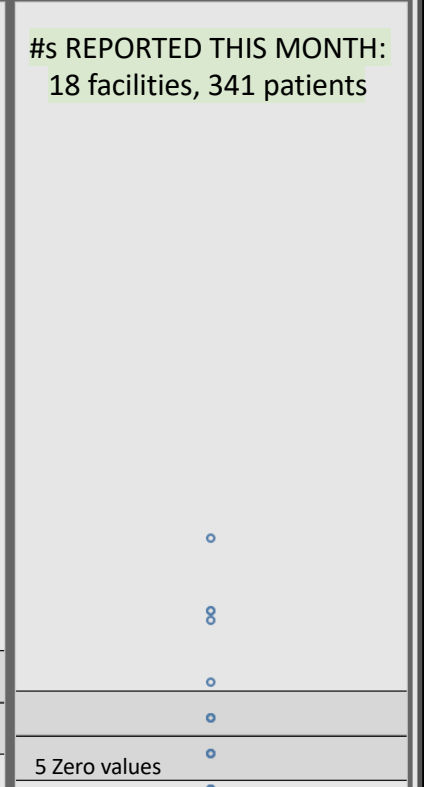
Moderate to Severe Hypothermia (< 35.9 C)



Mild Hypothermia (≥ 35.9 & < 36.5 C)



Hyperthermia (≥ 37.5 C)



ALPQC NHP

(From December, 2023 to January, 2025)

Hide Filters

Legends

- Lower Control Limit
- Upper Control Limit
- Your Hospital
- All Hospitals

Your Hospital No Hospital

Outcomes Any Hypothermia

Thermias Multiple values

Race All

Birth Wt All

GA Multiple values

DeliveryMode All

Date Multiple values

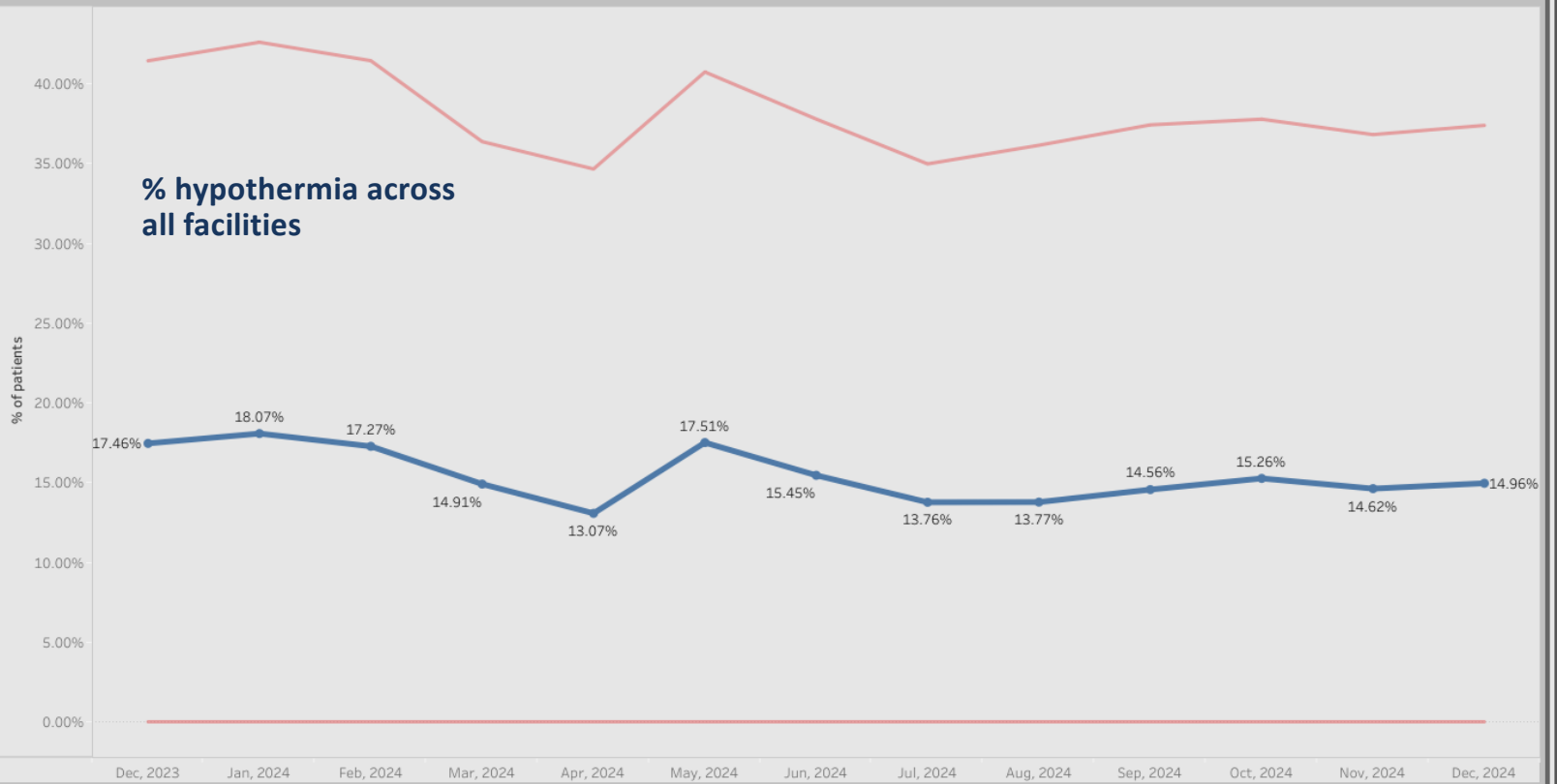
Only Your H.. All

Race/Ethnicity Data

Structural

Main Page

Control Charts: All Hospitals Vs. Your Hospital



ALPQC NHP

(From December, 2023 to January, 2025)

Hide Filters

Legends

- Lower Control Limit
- Upper Control Limit
- Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes Mod-Sev Hypother..

Thermias Moderate to Sever..

Race All

Birth Wt All

GA Multiple values

DeliveryMode All

Date Multiple values

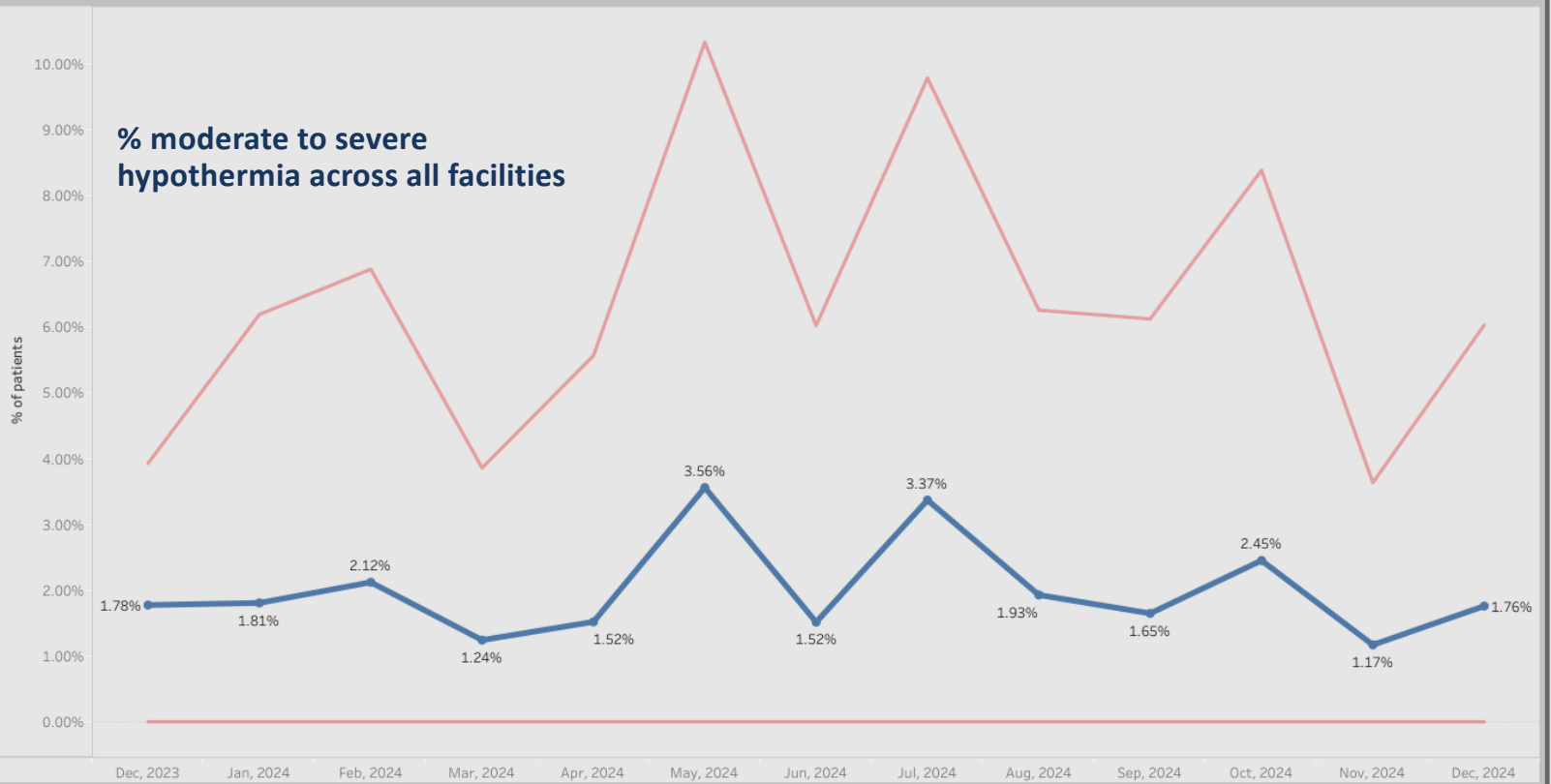
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Race/Ethnicity Data

Structural

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ALPQC NHP

(From December, 2023 to January, 2025)

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Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes Hyperthermia

Thermias Hyperthermia (>= ..

Race All

Birth Wt All

GA Multiple values

DeliveryMode All

Date Multiple values

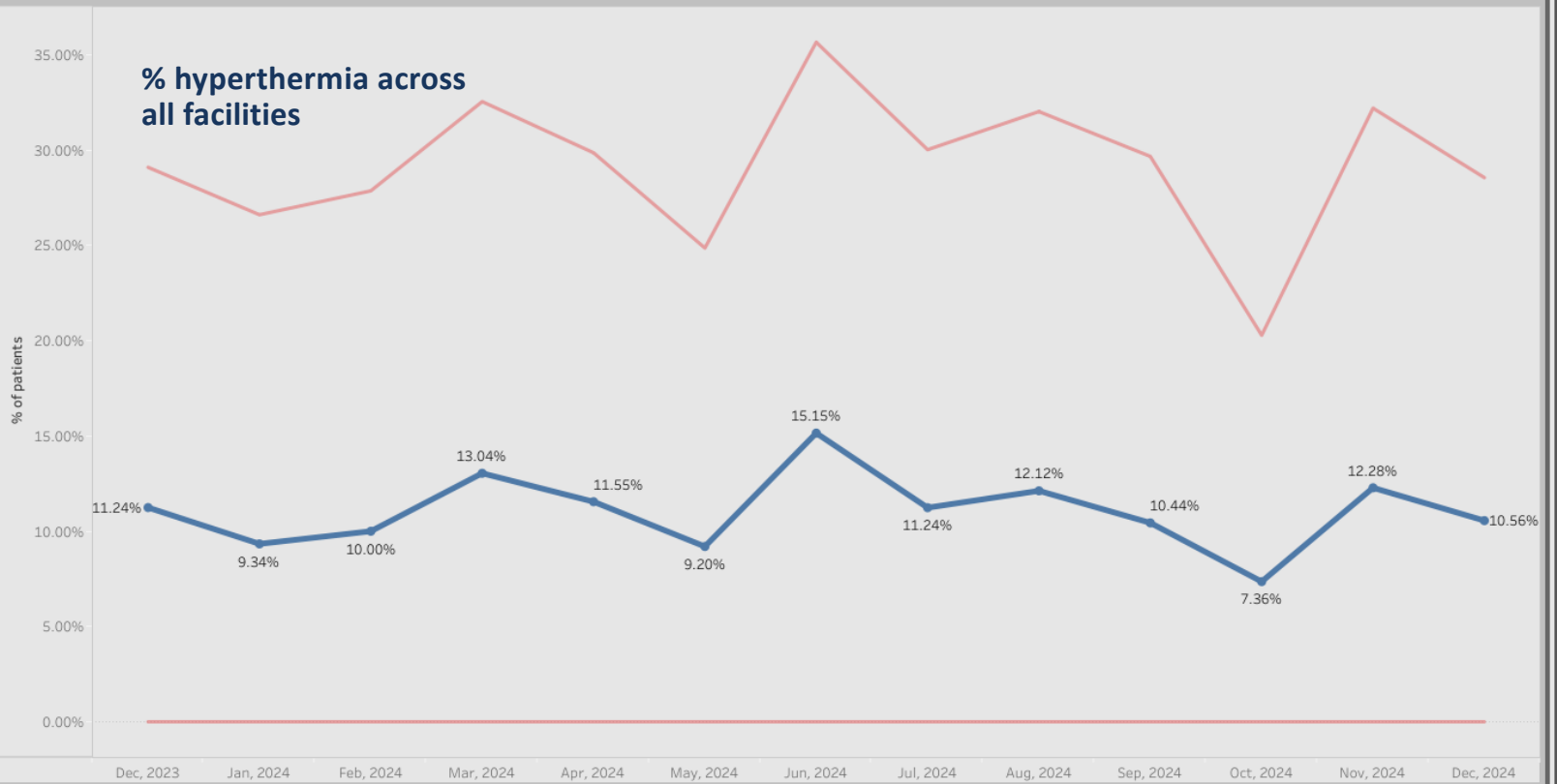
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Race/Ethnicity Data

Structural

Main Page

Control Charts: All Hospitals Vs. Your Hospital





December Data Review Levels 3 and 4

ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

Hide Filters

Measure Names

- All Hospitals.
- Your Hospital.

Your Hospital
No Hospital

Date: December 2024

Race: All

Birth Wt: All

GA: Multiple values

Zeros Hosps: All Values

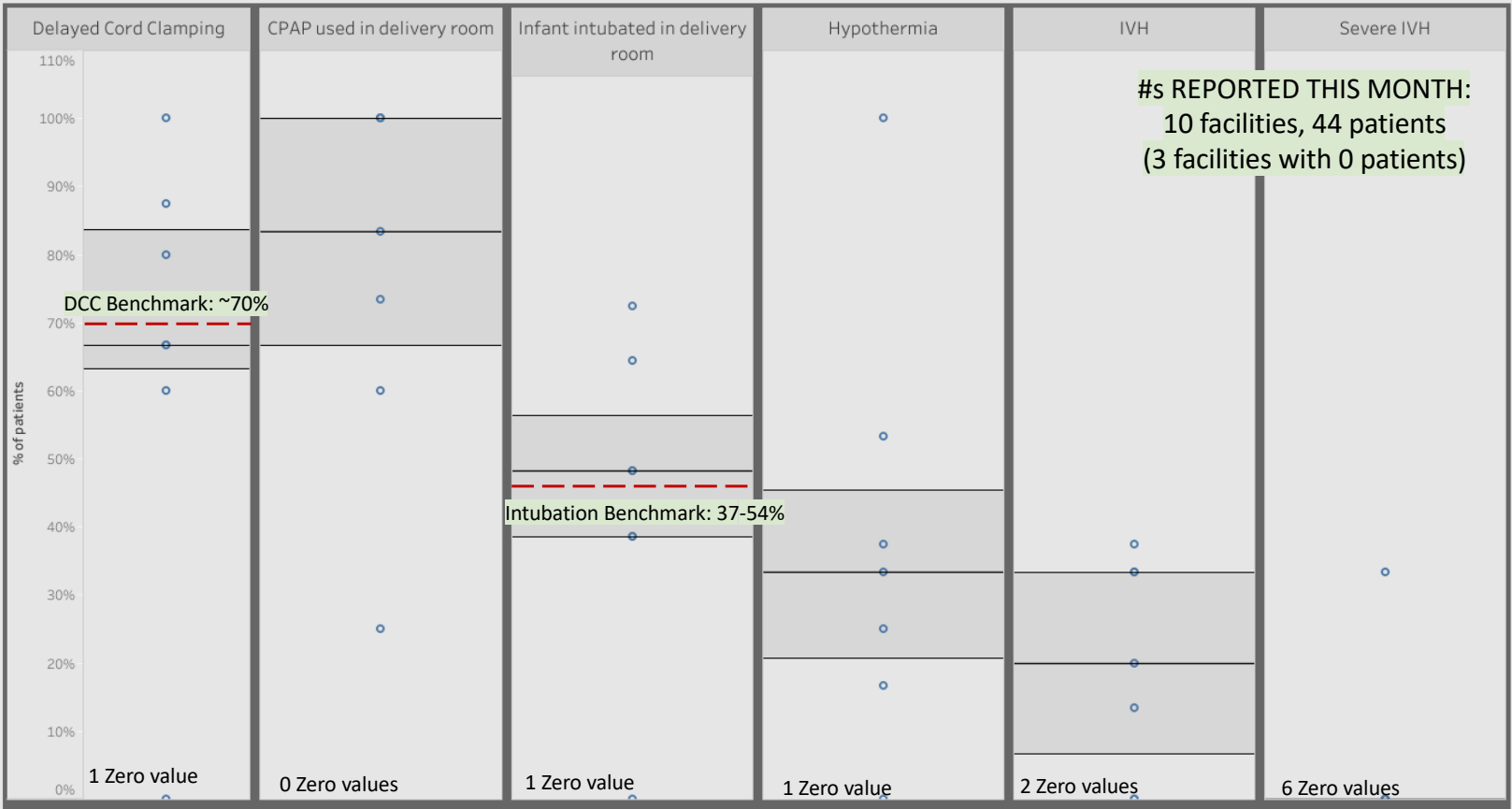
Temp page

Control Charts

Race/Ethnicity Data

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Main Page



ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

Hide Filters

Legends

- Lower Control Limit
- Upper Control Limit
- Your Hospital
- All Hospitals

Your Hospital No Hospital

Outcomes OS, DCC

Thermias All

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

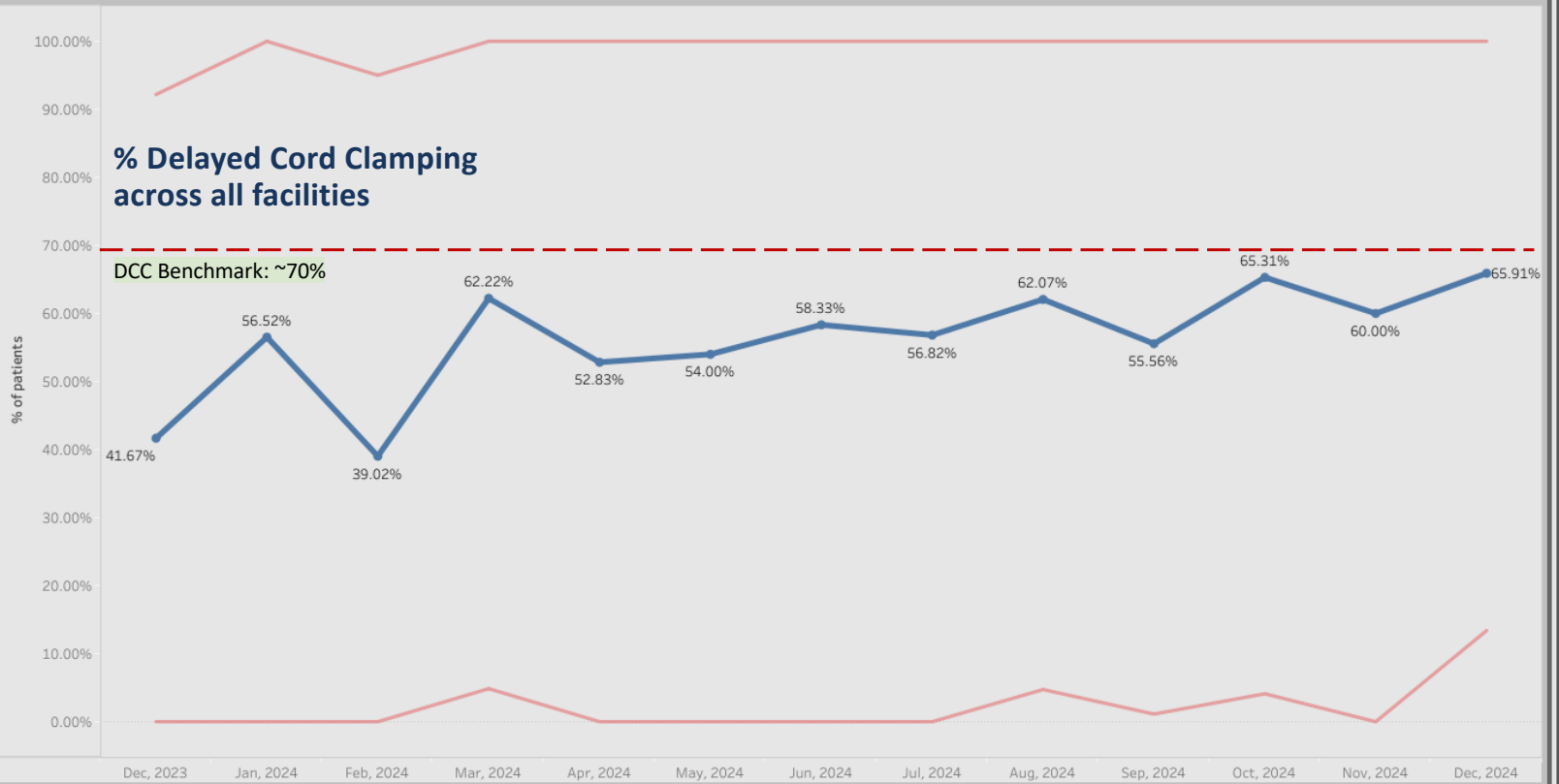
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Race/Ethnicity Data

Structural

Main Page

Control Charts: All Hospitals Vs. Your Hospital



ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

Hide Filters

Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes O4, CPAP

Thermias All

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

Only Your H.. All

Race/Ethnicity Data

Structural

Main Page

Control Charts: All Hospitals Vs. Your Hospital



ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

Hide Filters

Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes OS, Intubation

Thermsias All

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

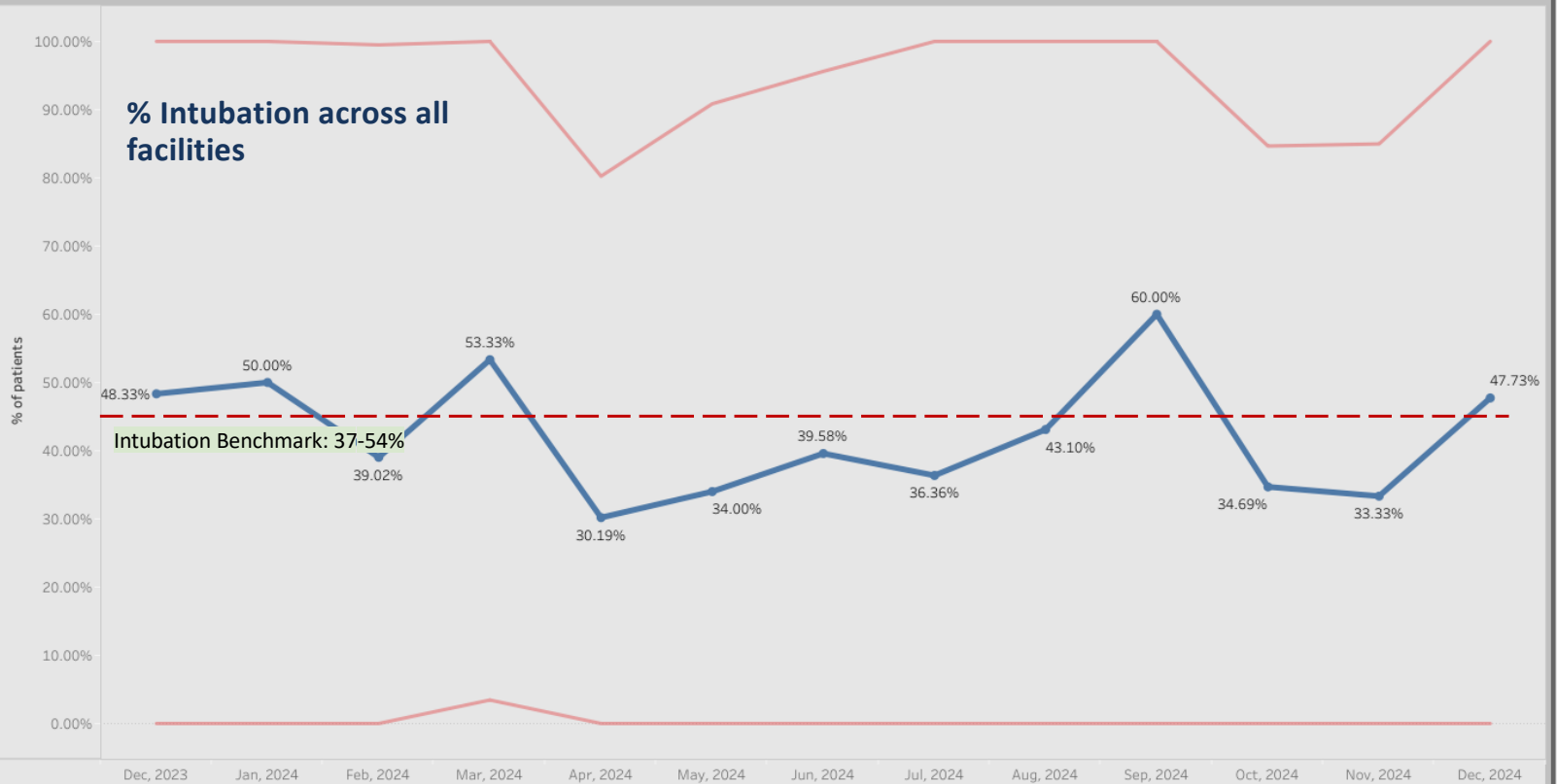
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ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

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Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes 06. IVH

Thermas All

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

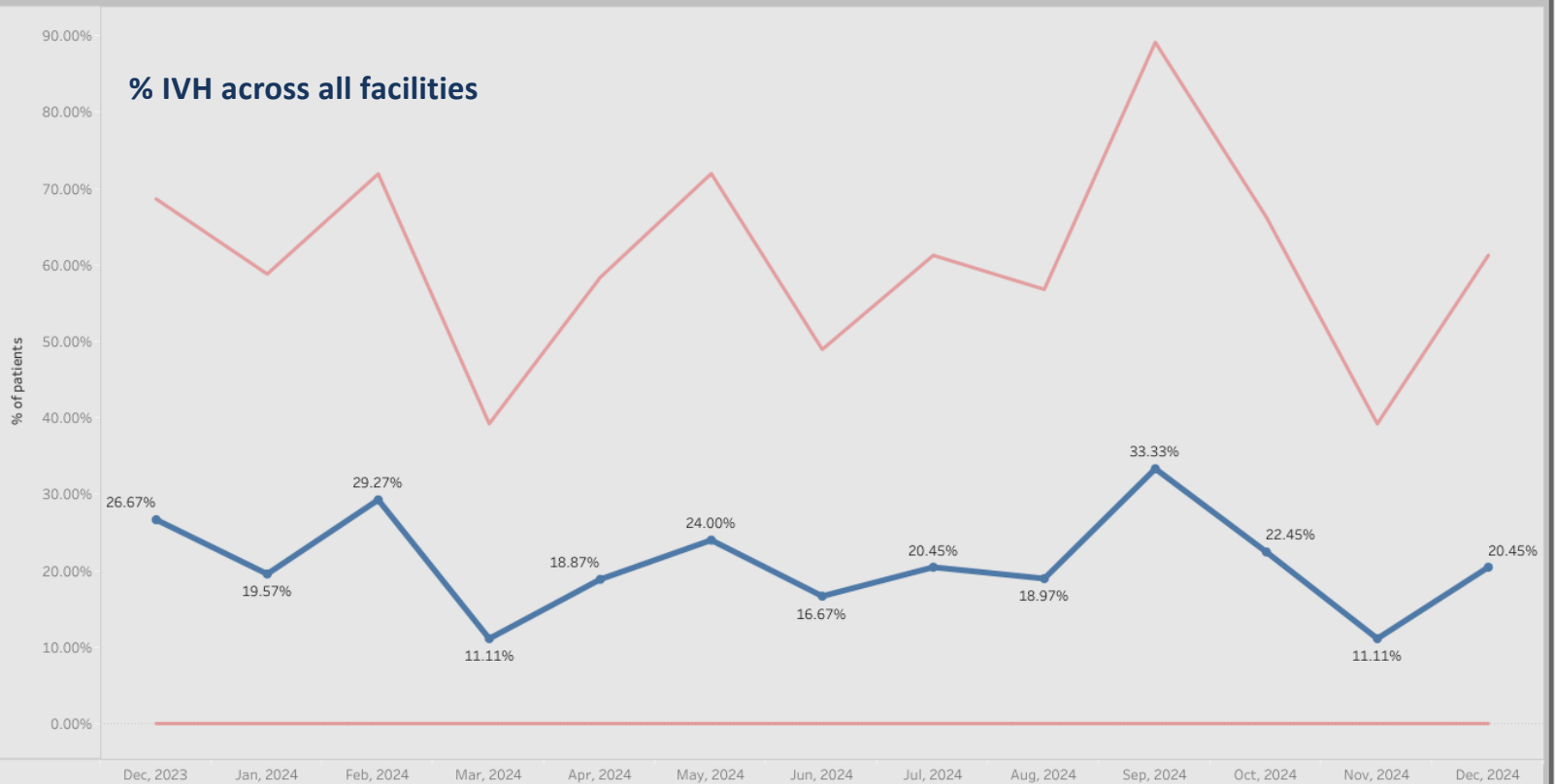
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Race/Ethnicity Data

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Hide Filters

Legends

- Lower Control Limit
- Upper Control Limit
- Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes O6a. IVH Severe

Therms All

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

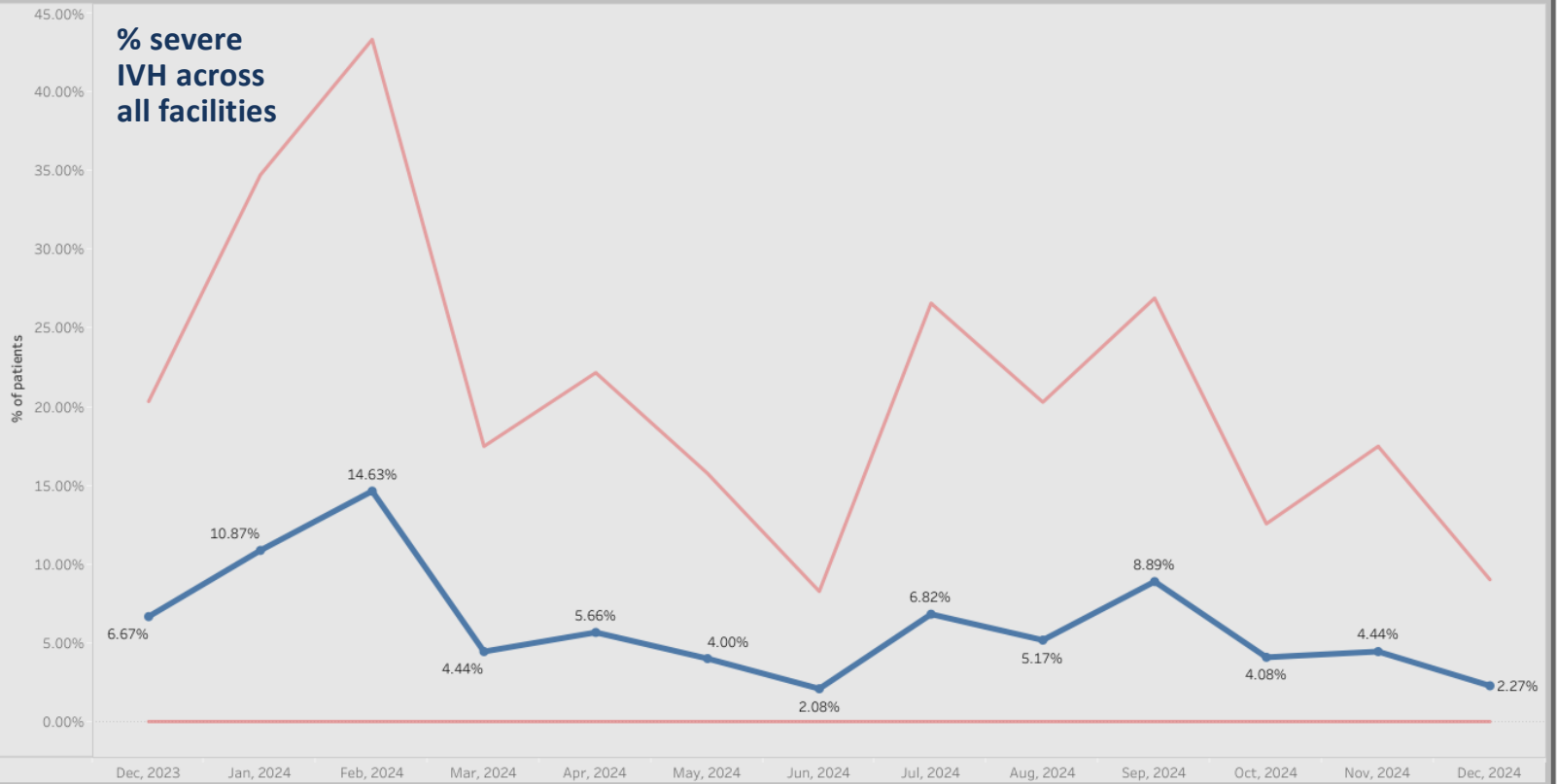
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Race/Ethnicity Data

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No Hospital

Birth Wt All

GA Multiple values

Date December 2024

Race All

Zeros Hosps All Values

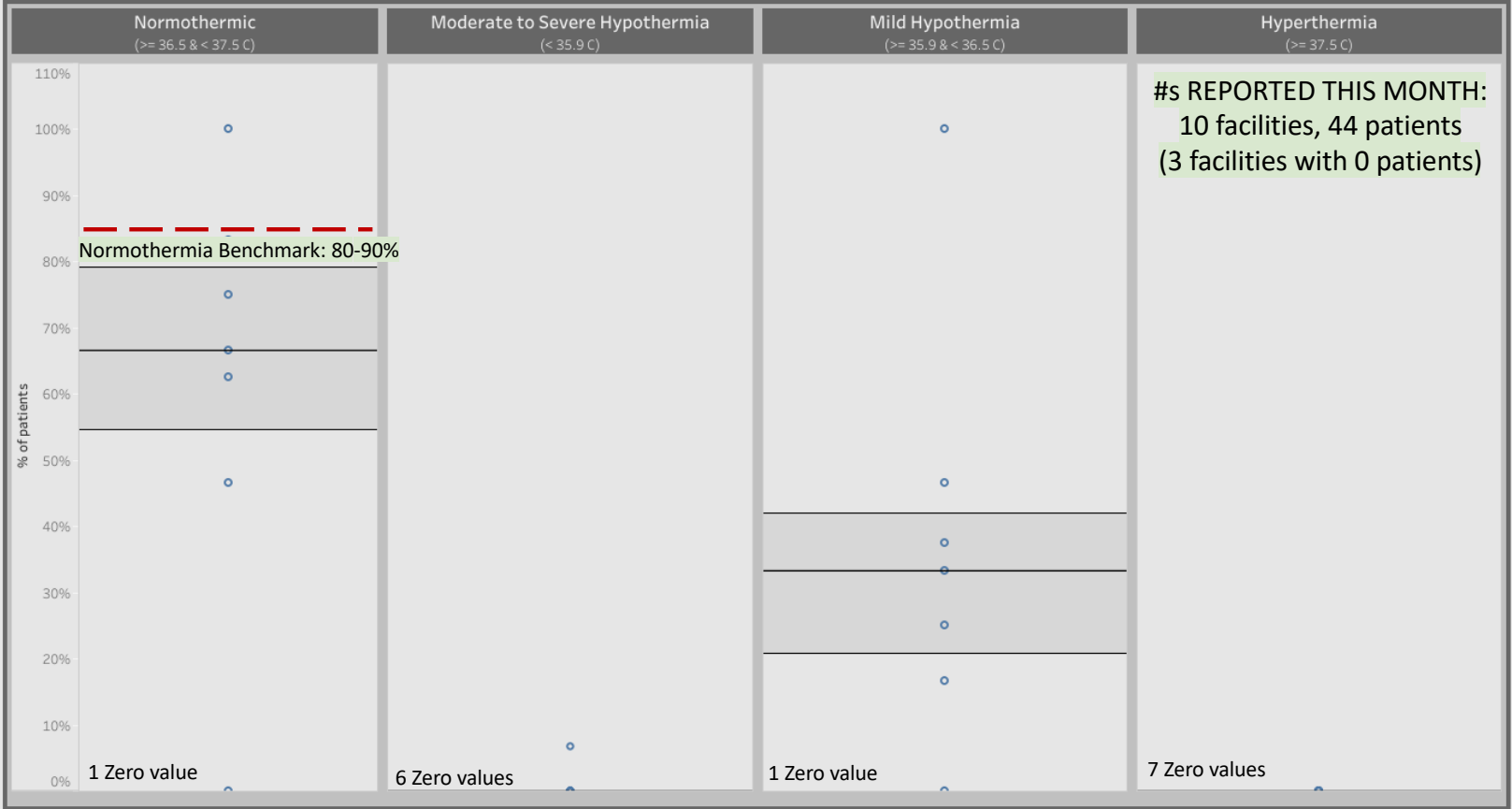
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ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

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Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes Any Hypothermia

Thermias Multiple values

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

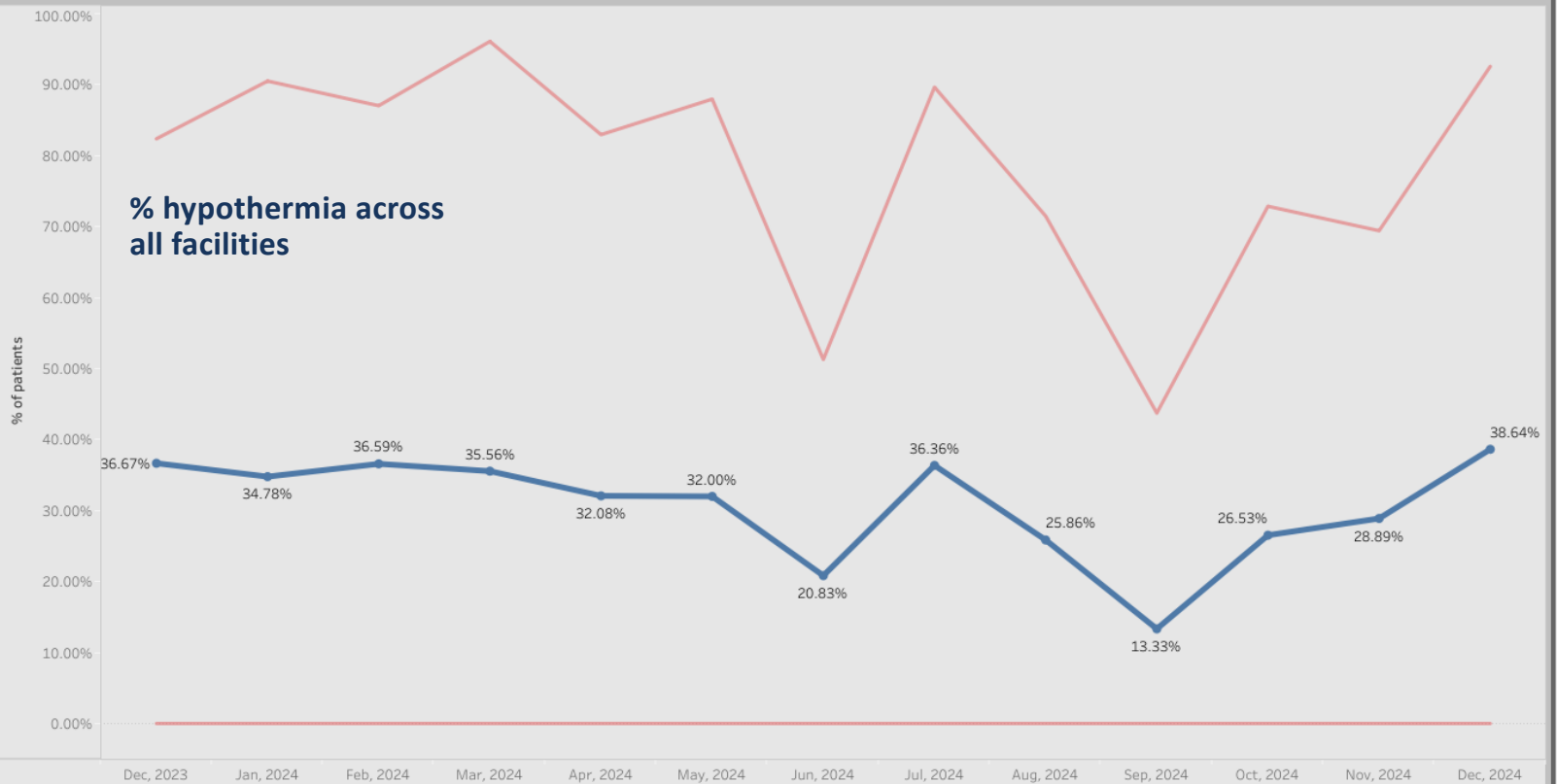
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Race/Ethnicity Data

Structural

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Control Charts: All Hospitals Vs. Your Hospital



ALPQC NHP (Golden Hours)

(From December, 2023 to December, 2024)

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Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes Mod-Sev Hypother..

Thermias Moderate to Sever..

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

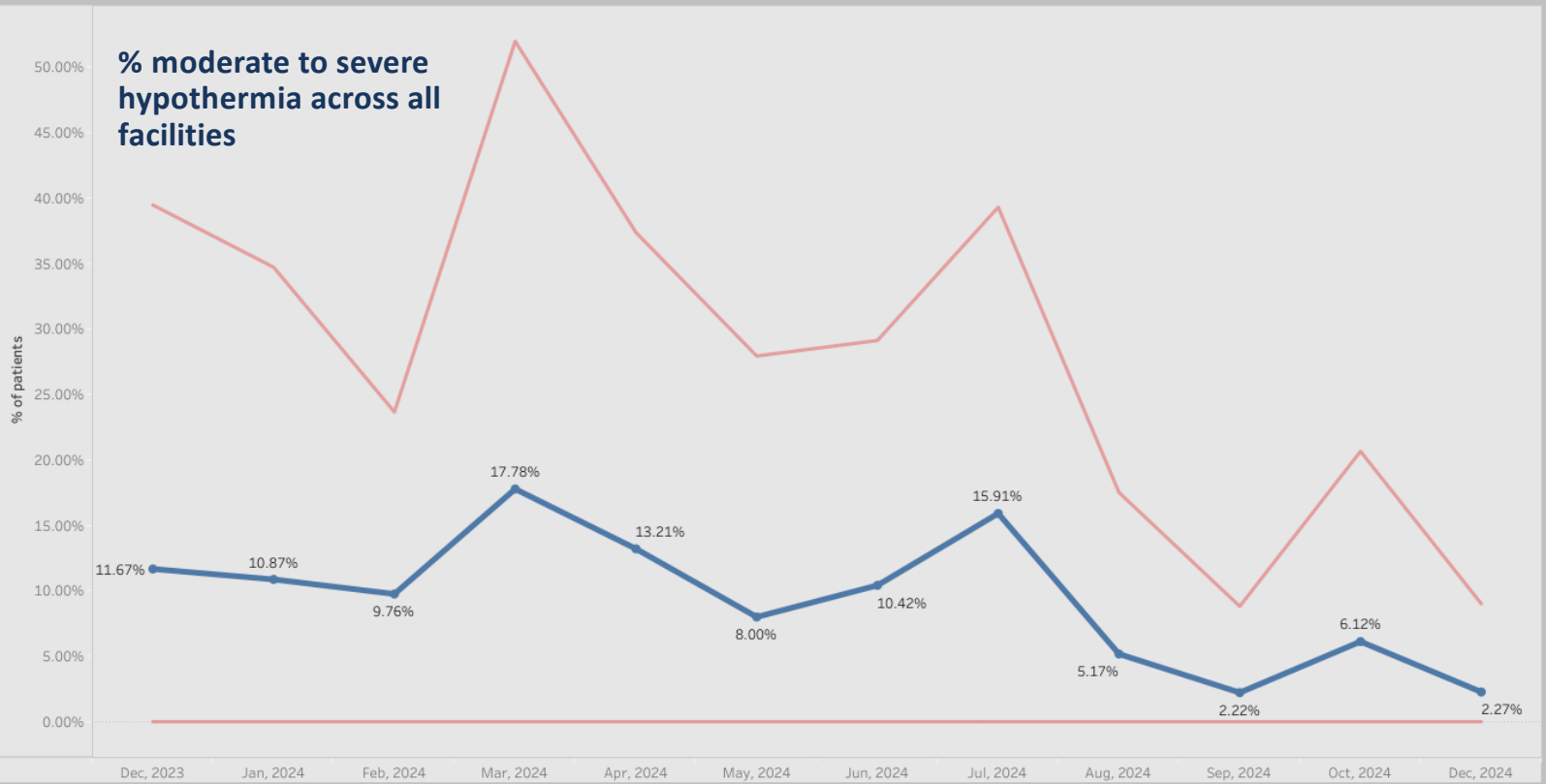
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Legends

Lower Control Limit

Upper Control Limit

Your Hospital

All Hospitals

Your Hospital No Hospital

Outcomes Hyperthermia

Thermias Hyperthermia (>= ..

Race All

Birth Wt All

DeliveryMode All

GA Multiple values

Date All

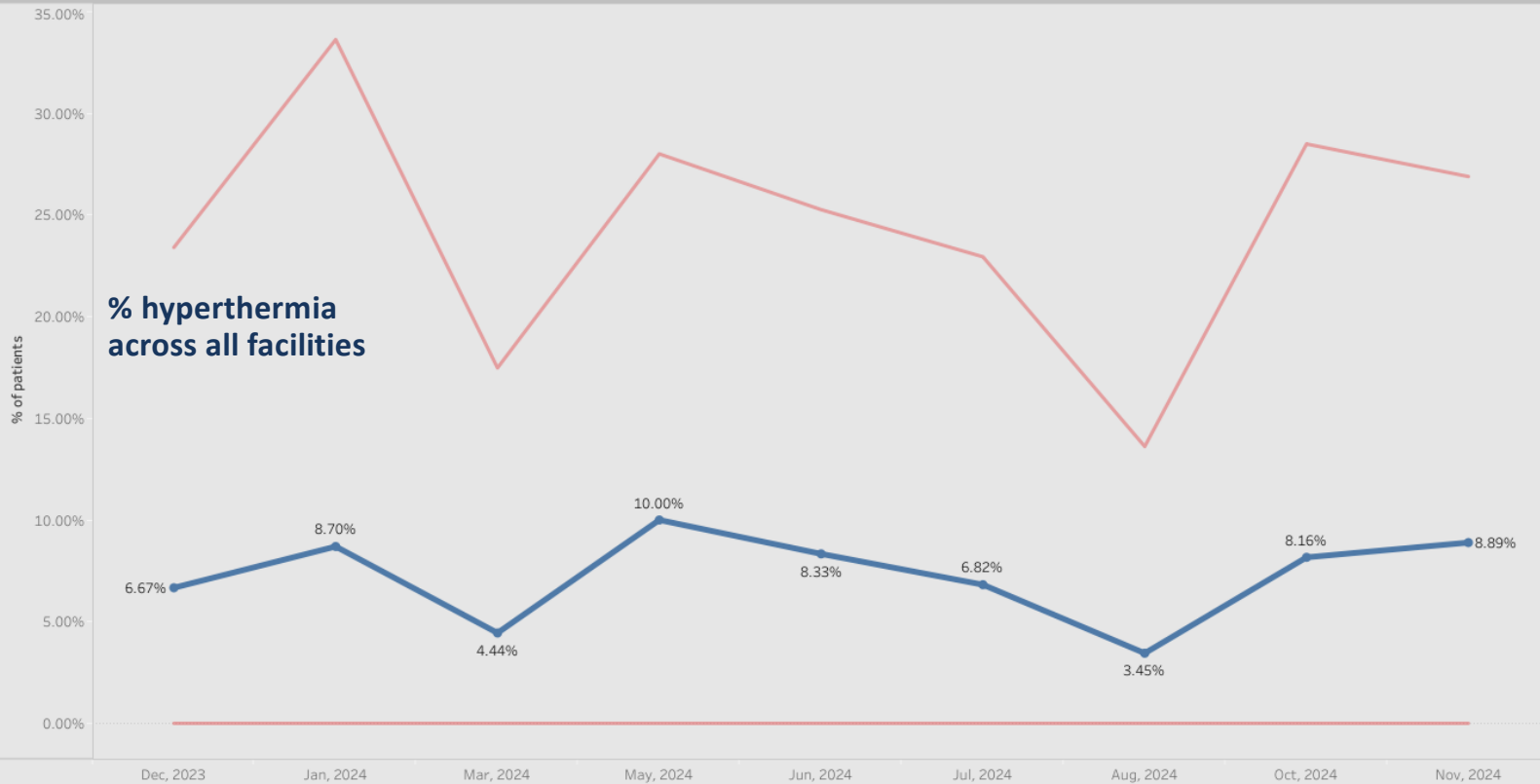
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Race/Ethnicity Data

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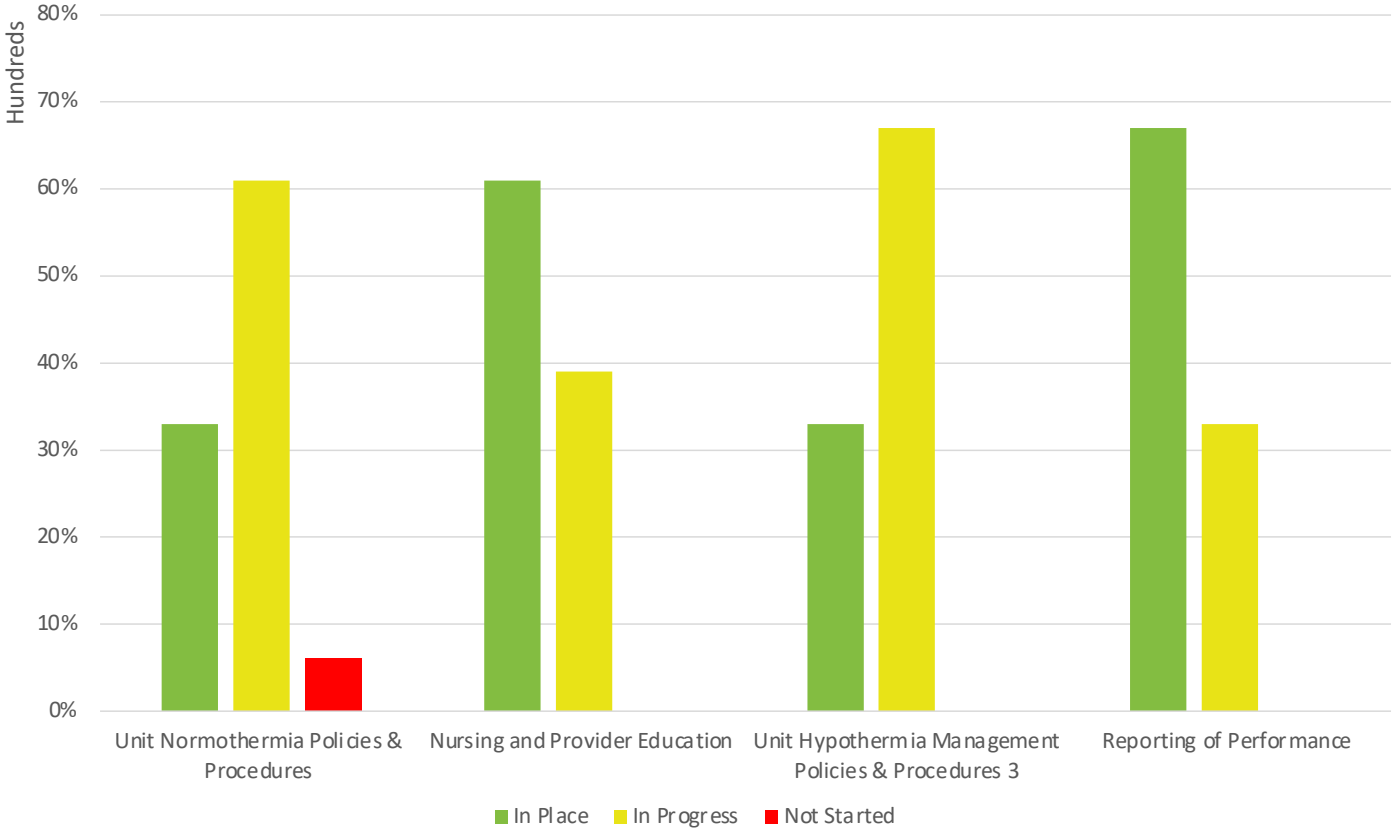




Quarterly Measures Levels 1 and 2



Quarter 4, 2024 Structural Measures (Level 1 and 2)

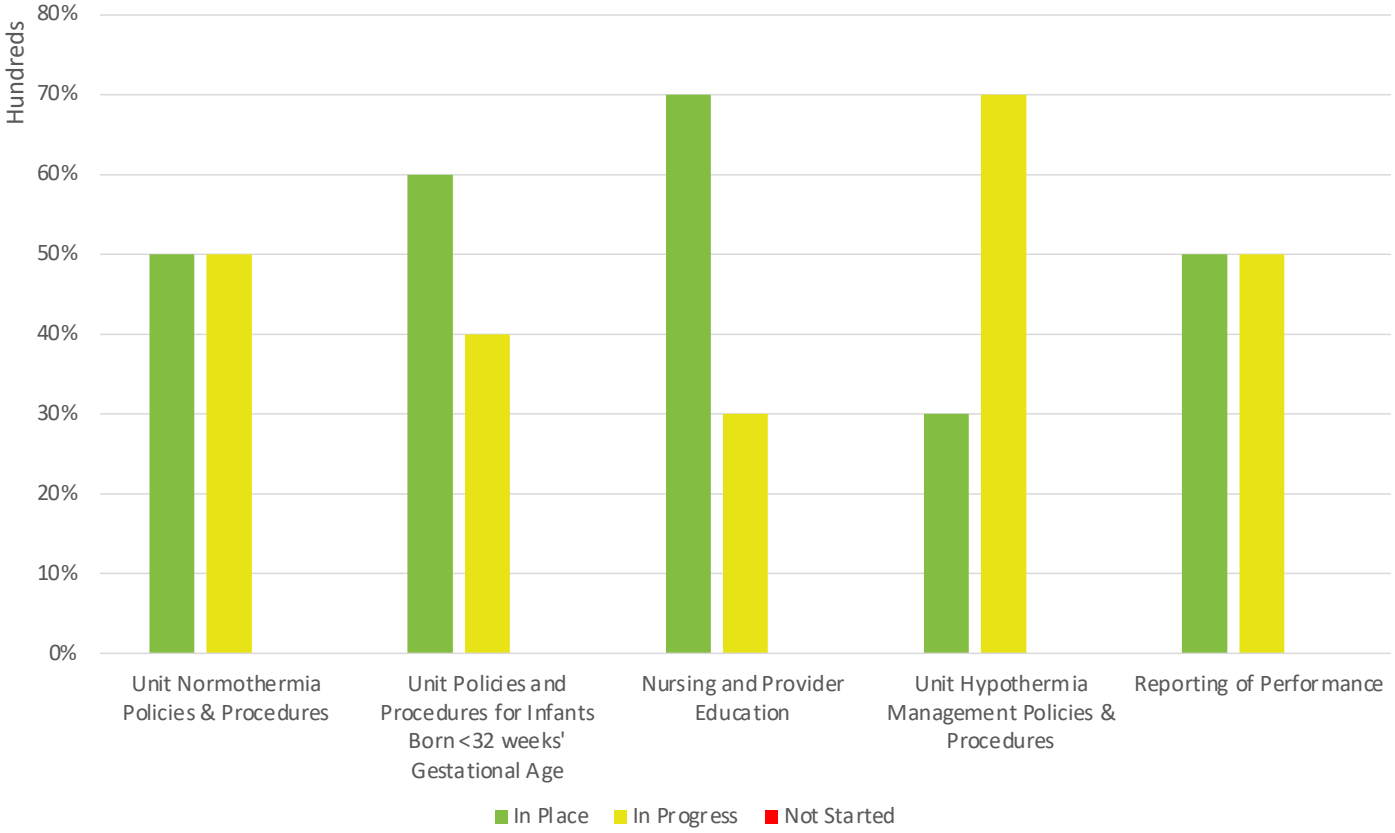




Quarterly Measures Levels 3 and 4



Quarter 4, 2024 Structural Measures (Level 3 and 4)





External Speaker: Dr. Kalsang Dolma

USA Children's & Women's Hospital
"Preventing Intraventricular Hemorrhage
Through a Clinical Care Bundle"



Preventing Intraventricular Hemorrhage Through a Clinical Care Bundle

Kalsang Dolma, MD
Lisa Gore, NNP



UNIVERSITY OF
SOUTH ALABAMA

Disclosure

- We have no disclosures

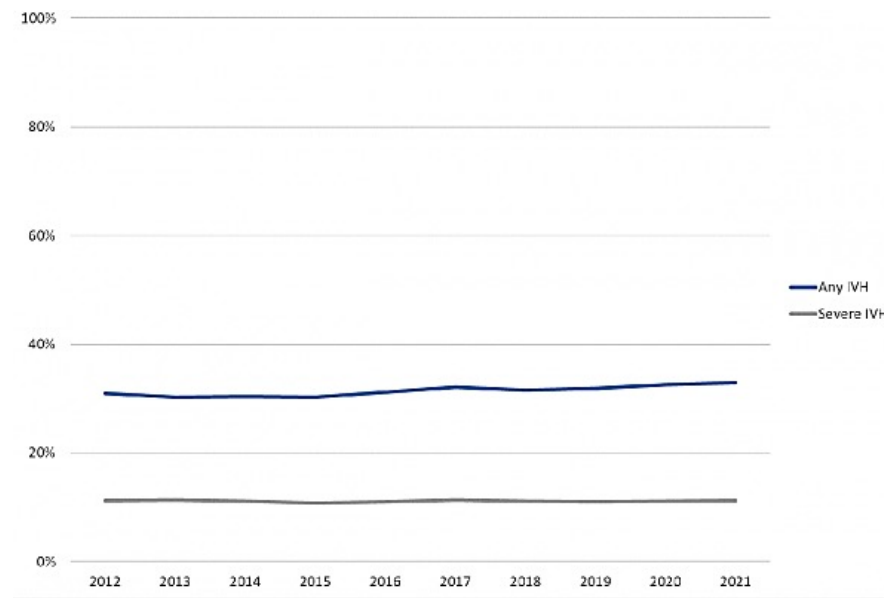
Overview

- Background
- IVH bundle care

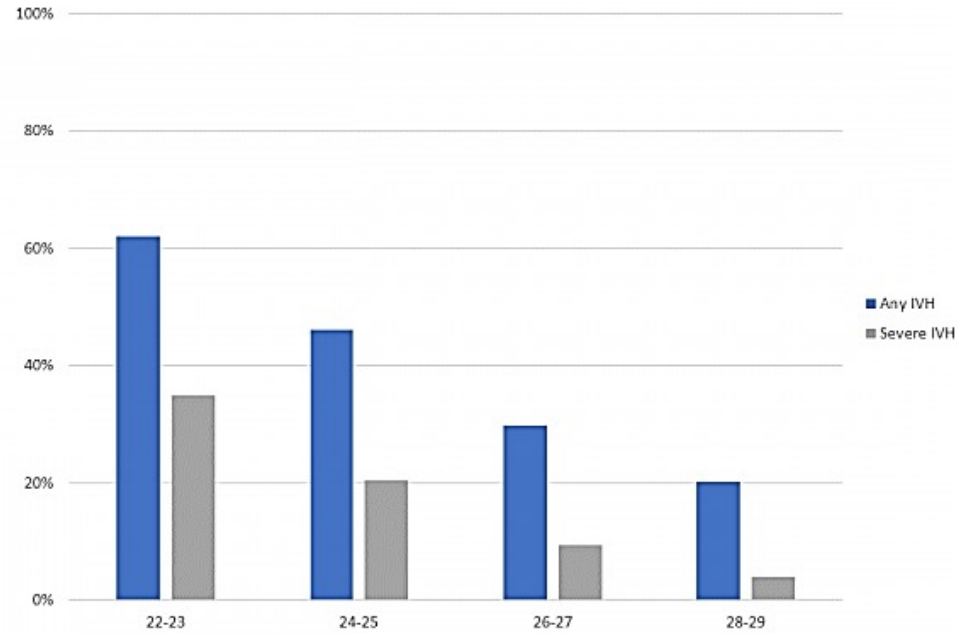
Background

- IVH:
 - Significant complication of preterm birth
 - Strongly associated with adverse neurodevelopmental and survival outcomes
 - Pathogenesis of GMH-IVH linked to fragility of cerebral vasculature and fluctuations in cerebral blood flow
 - Improvement in overall survival rates of preterm infants over the last few decades (Stoll 2015), incidence of IVH in premature infants has not declined (Nagi 2025)

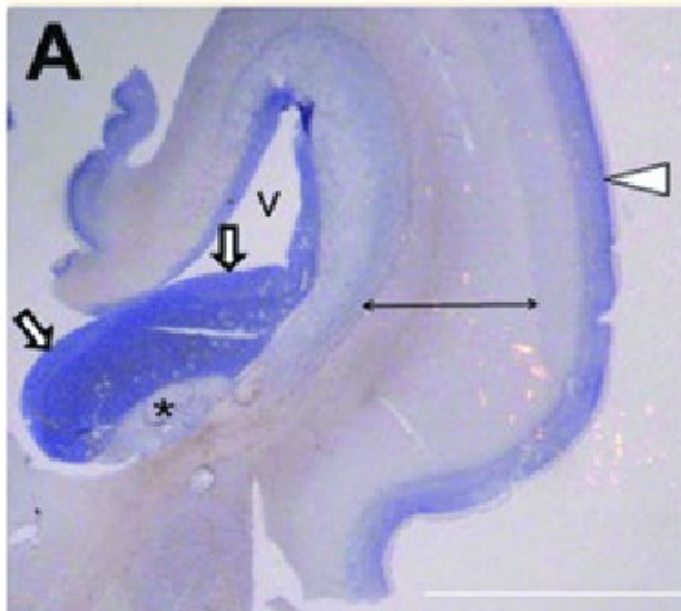
Rate of IVH and Severe IVH since 2012 (VON 2023)



IVH and Severe IVH by Gestational age (VON 2023)

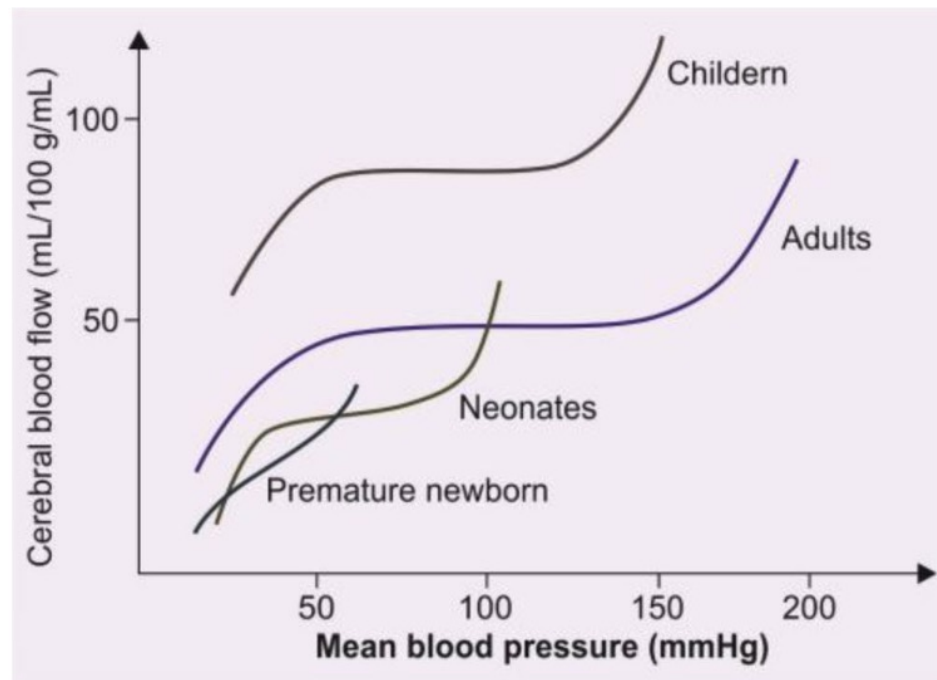


Germinal Matrix



- Highly vascular structure
- Neuronal progenitor cells
- Thin-walled blood vessels
- Matures by DOL4

Cerebral Autoregulation



Neonatal Risk Factors in the Pathogenesis of IVH

Neonatal risk factors in the pathogenesis of IVH.

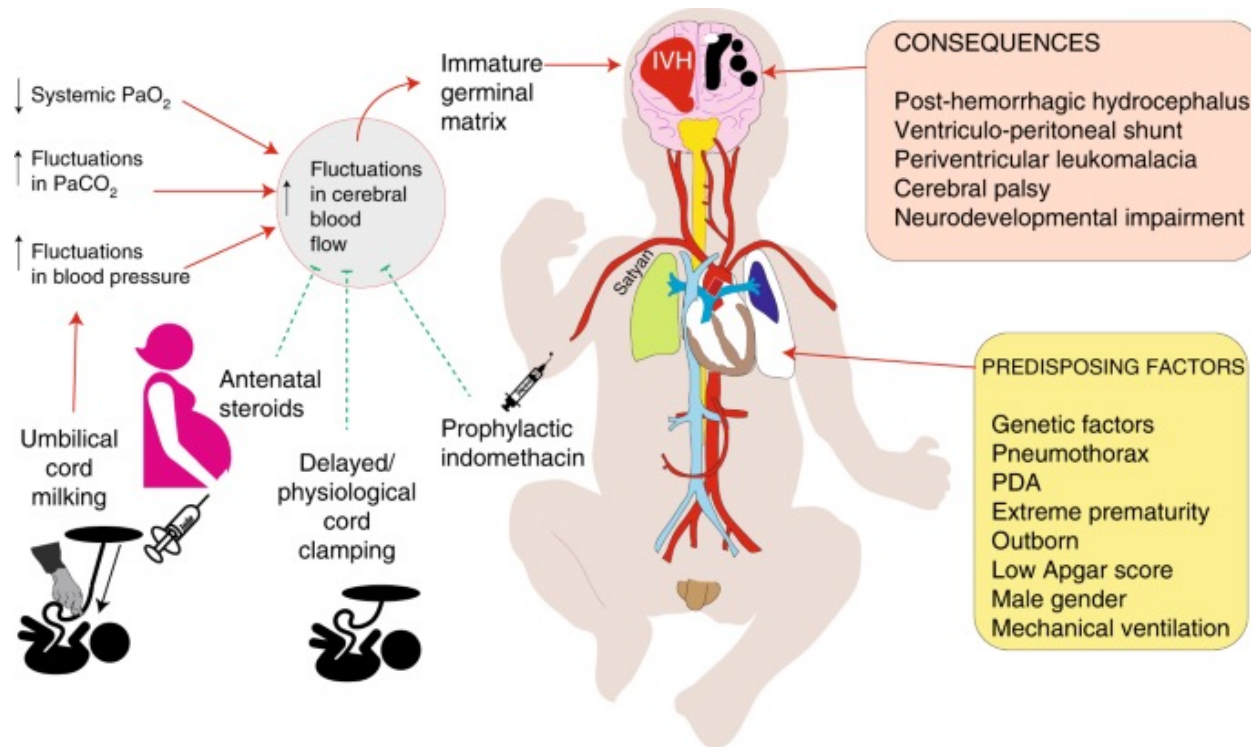
	Major Pathogenic mechanism	Putative mechanisms*	Risk factors
1	Disturbance in CBF	1. Fluctuation in CBF 2. High cerebral venous pressure 3. Abnormal blood pressure 4. Pressure passive circulation	Hypoxia Hypercarbia Severe acidosis Asynchrony between infants and ventilator breathe Severe RDS Patent ductus arteriosus Frequent suctioning of airway Rapid infusion of NaHCO ₃ Pneumothorax High ventilator pressure Prolonged labor and vaginal delivery Hypotension Hypertension Sepsis Dehydration Extreme prematurity and low birth weight (<1000g) Clinically unstable resulting from respiratory compromise, sepsis or other reasons
2	inherent fragility of germinal matrix vasculature	Might be worsened by an inflammatory injury to the blood brain barrier	Hypoxic ischemic insult Sepsis
3.	Platelet and coagulation disturbances	Hemostatic failure	Thrombocytopenia Disseminated intravascular coagulopathy

- Disturbances in the CBF and impaired cerebral autoregulation
 - Fluid boluses or transfusion
 - Hypertonic fluids and Na fluctuations
 - Fluctuations in CO₂ and PH
 - Changes in head position
 - Temperature fluctuation
 - Glucose and electrolyte
 - Intubation attempts and ventilation strategies
- Fragility of the Germinal matrix
 - Acidosis
 - Hypoxia
 - Sepsis
- Astrocyte maturity
 - Antenatal corticosteroid



Ballabh et. Al *Pediatr Res* 2010

Predisposing factors, pathogenesis, and consequences of IVH



Reducing Severe Intraventricular Hemorrhage in Preterm Infants With Improved Care Bundle Adherence

Sarah E. Kolnik, MD, MBA,^a Kirtikumar Upadhyay, MD,^a Thomas R. Wood, BM, BCh, PhD,^{a,b} Sandra E. Juul, MD, PhD,^{a,b} Gregory C. Valentine, MD, MED^{a,c}

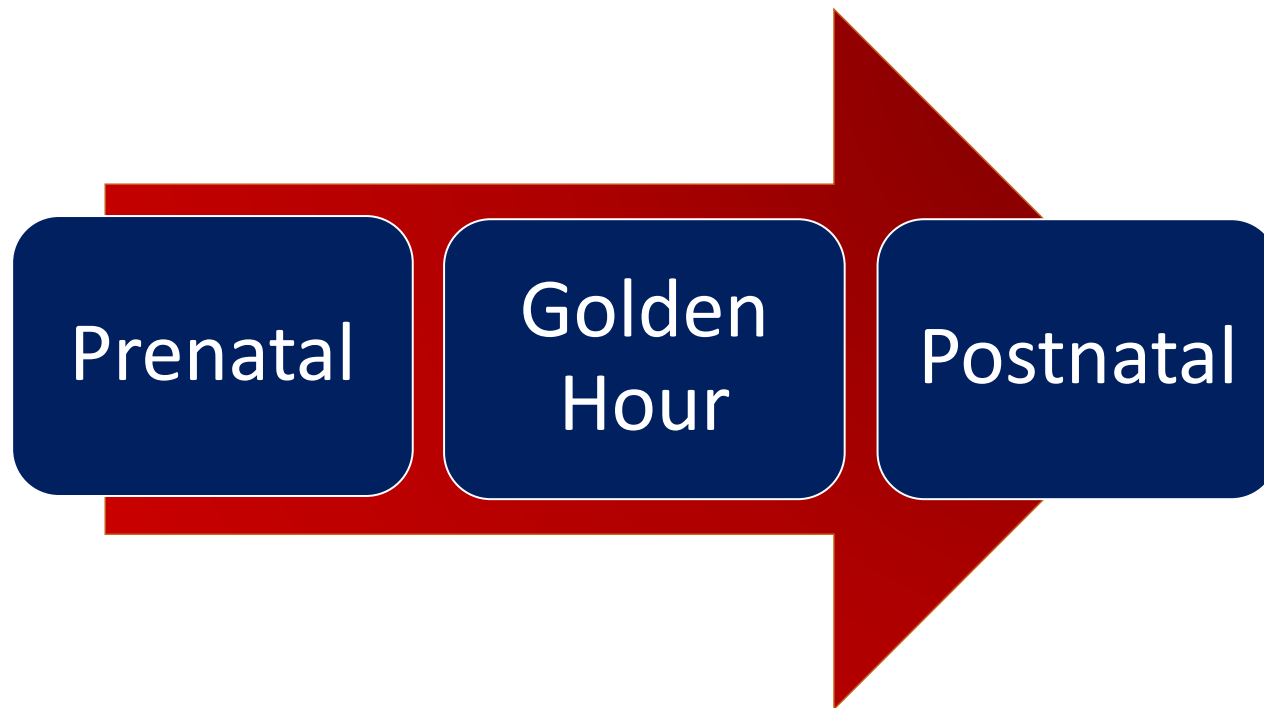
Severe IVH rate in ≤ 30 weeks decreased from 9.8 % to 2.4 %

A Quality Improvement Bundle to Improve Outcomes in Extremely Preterm Infants in the First Week

Colm P. Travers, MD,^a Samuel Gentle, MD,^a Amelia E. Freeman, MD,^a Kim Nichols, RN,^b Vivek V. Shukla, MD,^a Donna Purvis, RN,^b Kalsang Dolma, MD,^{a,c} Lindy Winter, MD,^a Namasivayam Ambalavanan, MD,^a Waldemar A. Carlo, MD,^a Charitharth V. Lal, MD^a

Severe IVH rate in ≤ 28 weeks decreased from 16.4 % to 10.0%

IVH Bundle care



Prenatal

- Antenatal corticosteroid (ideally 24 hours to 7 days prior to delivery)
 - Higher survival to discharge in 22-25 weeks (72.3% vs. 51.9%)
 - Higher survival without severe IVH (86.3% vs. 74.3 %)

Ehret et. Al, JAMA 2018

	20 0/7 weeks to 21 6/7 weeks	22 0/7 weeks to 22 6/7 weeks	23 0/7 weeks to 23 6/7 weeks	24 0/7 weeks to 24 6/7 weeks	25 0/7 weeks to 25 6/7 weeks
Antenatal corticosteroids	Not recommended 1A	Consider 2C	Consider 2B	Recommended 1B	Recommended 1B

Prenatal

- Antenatal magnesium sulfate for neuroprotection
 - Role in preventing IVH is controversial
 - Role in decreasing risk of cerebral palsy

Rouse DJ et. Al, NEJM 2008

Neonatal Transport

- Interhospital transport of VLBW infants are associated with increase incidence of IVH and severe IVH (OR 1.75 (95% CI 1.64 to 1.86)).

Mohamed MA, et. Al, Arch Dis Child Fetal Neonatal Ed. 2010

Golden Hour



Delayed Cord Clamping

- Recommended 30-60 secs
- Decrease mortality in <29 weeks infants
- Improved blood pressures at 4 hours, decreased rates of transfusions, total IVH, and sepsis

Mordi et al NEJM 2018

Cochrane sys Rev 2014

Prevention of Hypothermia

- Hypothermia after birth linked with severe IVH?
- Maintain normal temperature
 - Polyethylene plastic wrap
 - Warmed blankets
 - Hat
 - Warming mattress at delivery
 - Delivery room temperature 76° F

Respiratory Support in Delivery Room

- CPAP trials if possible
- T-piece resuscitation
- Avoid multiple intubation attempts. Intubation by trained personal only
- Early rescue surfactant
- Gentle ventilation strategy

Prevention of Hypoglycemia

- Insert umbilical lines asap
- Consider PIV if no umbilical lines by 60 mins, max 2 attempts
- Early TPN initiation

Prevention of Infection

- Use strict asepsis methods
- Use bundle approach for insertion of central lines, surfactant instillation and TPN preparations
- Antibiotics first dose if indicated

Indomethacin Prophylaxis

ORIGINAL ARTICLE

f X in ✉

Long-Term Effects of Indomethacin Prophylaxis in Extremely-Low-Birth-Weight Infants

Authors: Barbara Schmidt, M.D., Peter Davis, M.D., Diane Moddermann, M.D., Arne Ohlsson, M.D., Robin S. Roberts, M.Sc., Saroj Saigal, M.D., Alfonso Solimano, M.D., Michael Vincer, M.D., and Linda L. Wright, M.D., for the Trial of Indomethacin Prophylaxis in Preterms Investigators* [Author Info & Affiliations](#)

Published June 28, 2001 | N Engl J Med 2001;344:1966-1972 | DOI: 10.1056/NEJM200106283442602

[VOL. 344 NO. 26](#) | [Copyright © 2001](#)

- Reduction in severe IVH
OR: 0.6 (0.6-0.9)
- No improvement in survival without neurosensory impairment at 18 months
- Concern for SIP and AKI

Postnatal: Clinical care in First 7 days

Respiratory stress reduction measures

Hemodynamic Management

Medication/Treatment and Labs

Ultrasound and imaging

Infant Positioning

Minimal Stimulation

Noise Reduction

Parent Education

Respiratory Stress Reduction Measures

- Avoid hyper/hypocapnia and rapid fluctuations of pCO₂
 - Extreme levels of PCO₂ (whether high or low) or fluctuation can increase the risk of brain injury.
 - Transcutaneous CO₂ monitor
 - Goals: CO₂ limits 40 to 60; pH ≥ 7.25
 - Coordinate respiratory equipment changes and lab draws with care times if possible
- Avoid manipulation of ETT unless necessary
- Suction only if concern about possible ETT obstruction during the first 72 hours

Hemodynamic Management

- Goal: $MAP \geq$ Gestational age
- Avoid any large fluctuation in BP
- Intervene only if clinical evidence of poor perfusion or lower oxygen saturations
- Use fluid bolus carefully
- Avoid using dopamine in the first 7 days of life
- Recommended first line treatment: Dobutamine









HIP trial

Original research



OPEN ACCESS

Hypotension in Preterm Infants (HIP) randomised trial

Eugene M Dempsey ¹, Keith J Barrington,² Neil Marlow ³,
Colm Patrick Finbarr O'Donnell ⁴, Jan Miletin ⁵, Gunnar Nauelaers,⁶
Po-Yin Cheung ⁷, John David Corcoran ⁸, Afif Faisal EL-Khuffash ⁸,
Geraldine B Boylan,¹ Vicki Livingstone,¹ Gerard Pons,⁹ Jozef Macko,¹⁰
David Van Laere,¹¹ Hana Wiedermannova,¹² Zbyněk Straňák ¹³, On behalf of the
HIP consortium








No difference in survival at 36 weeks free of severe brain injury

Original research



OPEN ACCESS

Outcomes of extremely preterm infants who participated in a randomised trial of dopamine for treatment of hypotension (the HIP trial) at 2 years corrected age

Neil Marlow ¹, Keith J Barrington ², Colm Patrick Finbarr O'Donnell ^{3,4},
Jan Miletin,⁵ Gunnar Nauelaers,^{6,7} Po-Yin Cheung ⁸, John David Corcoran ^{9,10},
El Khuffash,¹¹ Geraldine B Boylan,¹² Vicki Livingstone,¹² Gerard Pons,¹³
Zbyněk Straňák ^{14,15}, David Van Laere,¹⁶ Jozef Macko,¹⁷ Hana Wiedermannova,¹⁸
Eugene M Dempsey ¹², on behalf of the HIP consortium

No improvement in survival without impairment at 2 years of age



Dopamine in Extremely Preterm Infants

Clinical Research Article | Published: 31 January 2020

Association between dopamine and cerebral autoregulation in preterm neonates

[Nina S. Solanki](#) & [Suma B. Hoffman](#) 

Pediatric Research **88**, 618–622 (2020) | [Cite this article](#)

2247 Accesses | **6** Altmetric | [Metrics](#)

Dopamine exposure in first 96 hours associated with impaired cerebral autoregulation

Medications/Treatments and Labs

- Avoidance of sodium bicarbonate
 - Sodium bicarbonate infusion can result in sudden increased cerebral blood flow
- Avoidance of fluid pushes (unless severe hypotension or acute blood loss)
- Provide PRBC transfusions at a volume of 10-15 ml/kg over 3 hours for 1st seven days
- Consistent adherence to slow blood draws from central lines via Hummi device

Ultrasound and Imaging

- Ultrasounds and cardiac echos limited in the first 72 hours
- X-rays if needed to be done utilizing Leobed tray

Infant Positioning

- Rotation of the head to one side obliterates the internal jugular vein on the same side
- Intracranial pressure can be lowered when the head is elevated by 20-30 degrees

Infant Positioning

Two staff members to change a baby's position

- Turn baby slowly and steadily
- Avoid turning 180 degrees in one movement

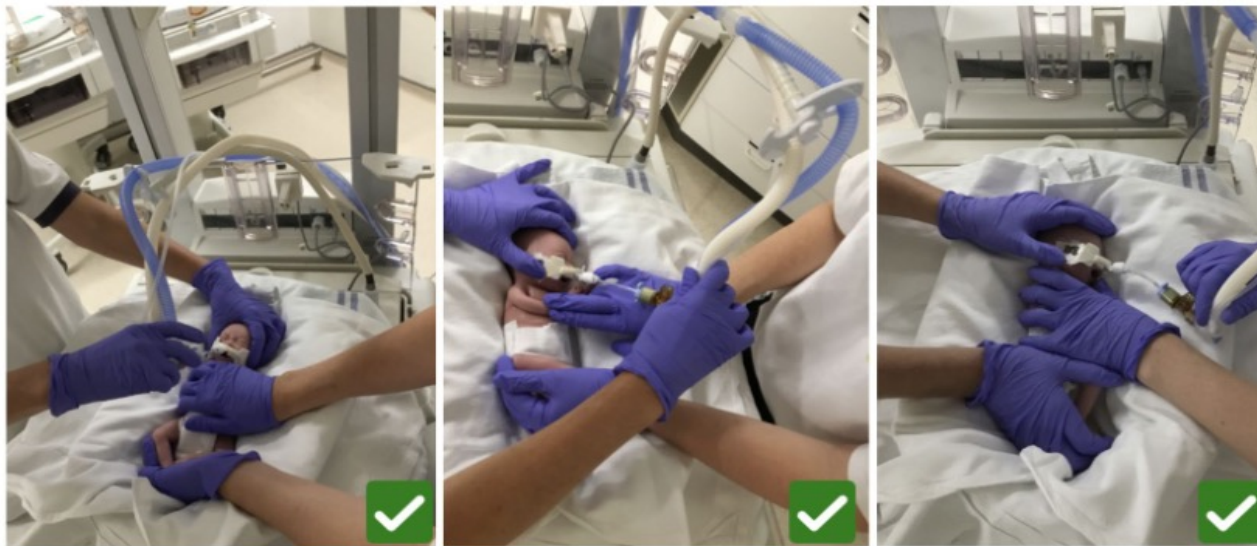
Maintain neutral position

- Nose and umbilicus in line with each other
- Head of the bed elevated 20-30 degrees
- Avoid prone positioning

Legs should not be lifted above head

- To carry out diaper changes, flex leg to the chest and slide the diaper underneath
- Consider side lying diaper changes

Two Staff Members to Change a Baby's Position

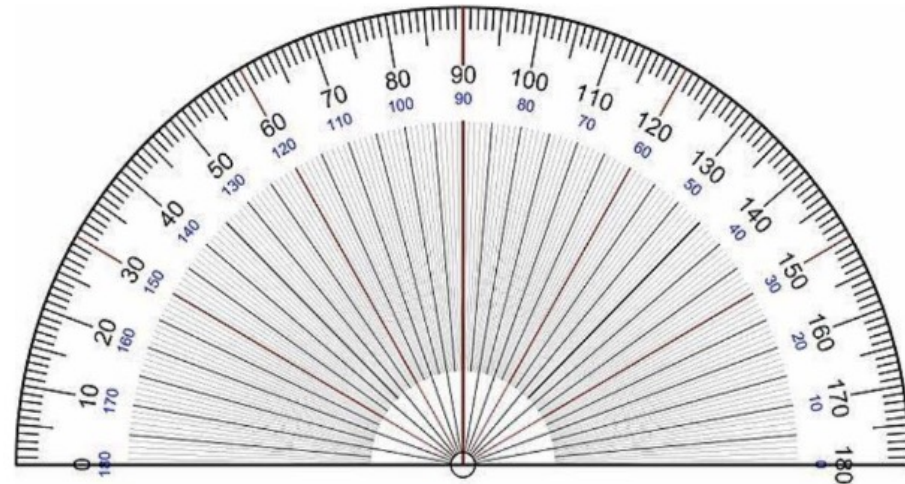


Nose and Umbilicus in Alignment



Head rotation to either side may lead to complete occlusion or obstruction of the jugular venous-drainage system of the same side⁶ and this should be avoided

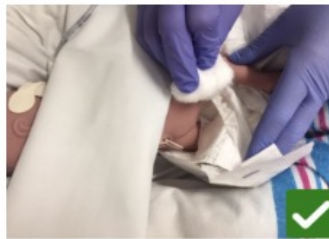
Head End Elevation



Legs should not be Lifted Above the Head



Tuck clean nappy outside dirty nappy



Undo dirty nappy and clean baby



Remove dirty nappy.
Legs not elevated during whole process.



Legs should not be lifted
above their heads

Minimal Stimulation

- Keep procedures and interventions by staff to a minimum
 - Do only those interventions required to maintain stability and safety
 - Cluster care to minimize the number of times an incubator is entered
 - No cosmetic cares
 - No handprints or footprints
- Wake infant with 10 seconds of a gentle hand-hug before any care
- No bath until after 72 hours of age
- Coordination of care including assessments, lab draws, suctioning etc. with all team members
- All care and procedures must be coordinated with the bedside nurse

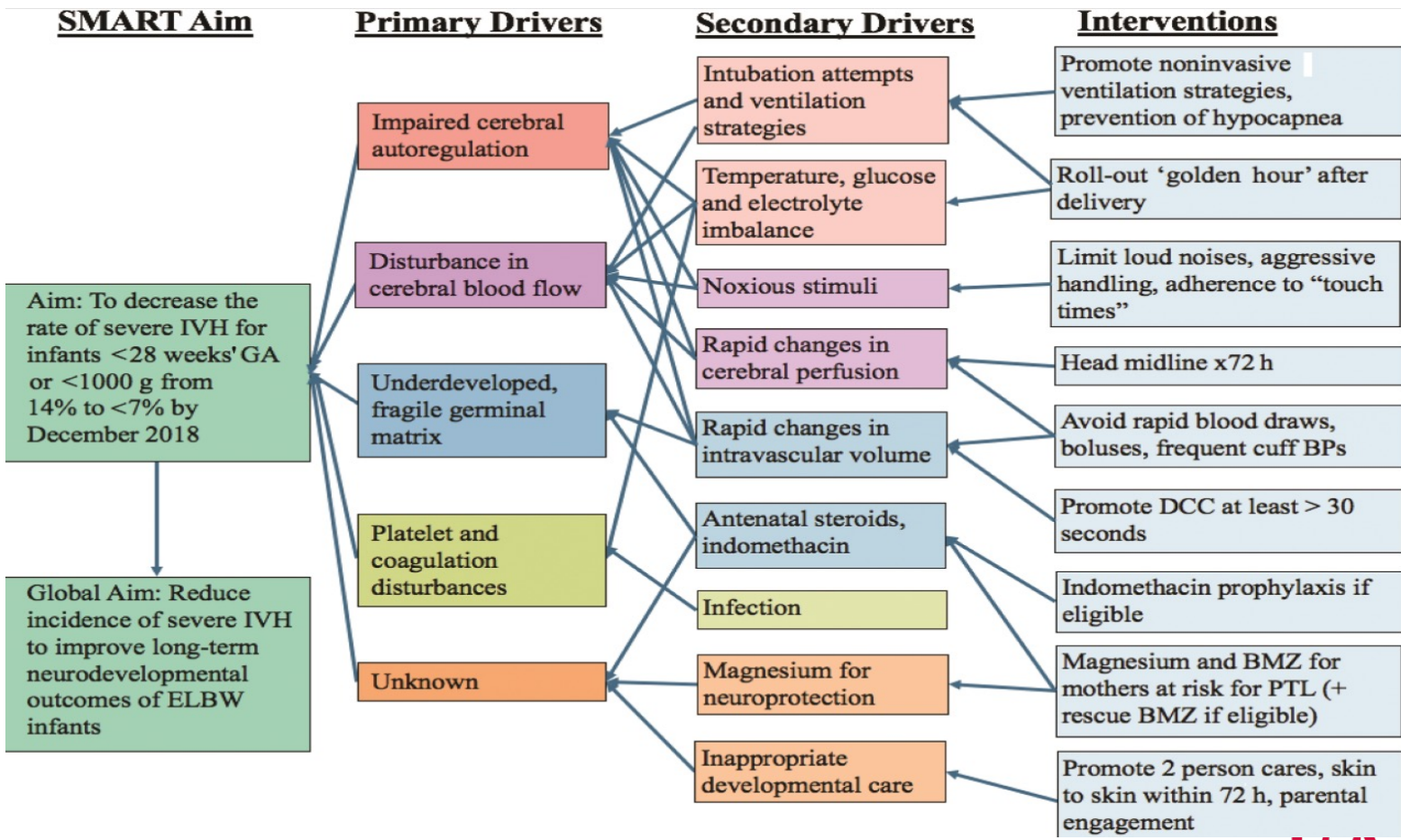
Noise Reduction

- Sound levels in the NICU should not exceed 45 to 50 dB, with transient sound not to exceed 65 to 70 dB.
- To promote an optimal environment for rest and growth of the neonate
 - Goal is to keep the noise level less than 45 dB
 - Carefully close incubator doors
 - Close incubator top as soon as possible
 - Handle equipment gently
 - Address alarms promptly
 - Keep all necessary conversations low and limit conversations at bedside



Parent Teaching

- Encourage touch hold instead of stroking
- Enforce quite voices
- Cell phones on silent
- No flash photography
- Excellent hand washing techniques; no jewelry
- Review Kangaroo Care policy
- Refer to parent brochure



THANK YOU



Question?

Q&A



Please feel free to **unmute** and ask questions

You may also enter comments or questions in the “chat” box

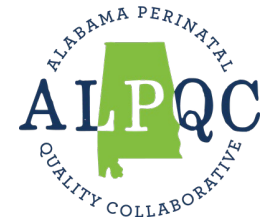


Poll Question (Results)

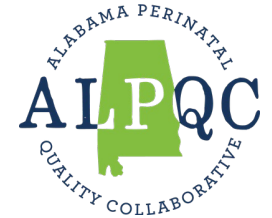
- How interested is your team in participating in an initiative around Safe Sleep?
 - A. Interested, but need more information
 - B. Interested in a QI project
 - C. Interested in receiving resources, but not in a QI project
 - D. Interested in something else for a QI project

Reminders

- Hospital Shares are encouraged!
 - Please sign up to share on the sign-up sheet or by emailing info@alpqc.org. We look forward to hearing from everyone!



Stay Connected!



Website:

<http://www.alpqc.org>

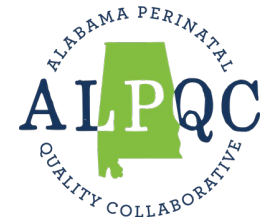
Email:

info@alpqc.org

X (Twitter): @alpqc

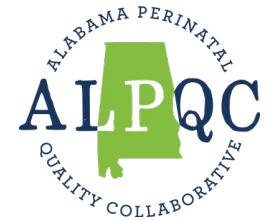
<https://twitter.com/alpqc>

Next Meeting



Wednesday, March 26th at 12pm

Thank you!



**Thank you for all your hard work!!
We will see you next month!**