

CARDIOLOGY  
2025 ❤️

## Trends in Cardiac ICU Readmissions

A Quality Improvement Approach

Tasha D. Bryant, APRN

February 20, 2025



# HOPE. HEAL. LEARN.





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**Disclosures: None**



CARDIOLOGY  
2025 

# CASE STUDY



- Full term, now 8 weeks old
- HLHS s/p Norwood- BT shunt
- 8-week ICU stay
- Genetic disorder
- Bloody stool 1 day ago
- G- tube 2 days ago
- Fortified feeds

# WHY



- Readmission rates
- Mitigate readmissions
- Modifiable factors
- Compare to other institutions

## Risk factors associated with readmission after pediatric cardiothoracic surgery

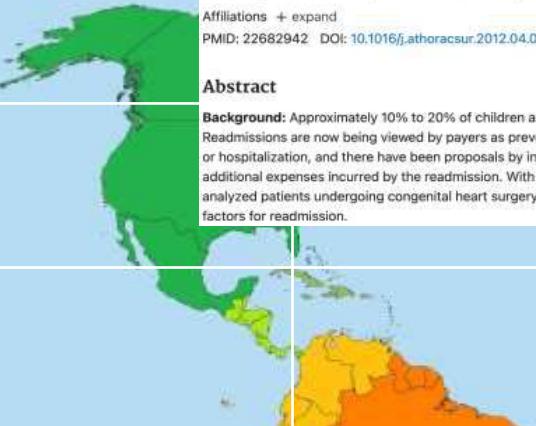
Brian Kogon <sup>1</sup>, Ashish Jain, Matthew Oster, Kimberly Woodall, Kirk Kanter, Paul Kirshbom

Affiliations + expand

PMID: 22682942 DOI: 10.1016/j.jthoracsur.2012.04.025

### Abstract

**Background:** Approximately 10% to 20% of children are readmitted congenital heart surgery. Readmissions are now being viewed by payers as preventable complications of the original surgery or hospitalization, and there have been proposals by insurance agencies to deny coverage of the additional expenses incurred by the readmission. With hopes to reduce the potential impact, we analyzed patients undergoing congenital heart surgery at our institution in order to identify risk factors for readmission.



## Unplanned Readmission to the Pediatric Cardiac Intensive Care Unit: Prevalence, Outcomes, and Risk Factors

Marissa A Brunetti <sup>1</sup>, Andrew C Glatz <sup>2</sup>, Ken McCardle <sup>3</sup>, Antonio R Mott <sup>4</sup>, Chitra Ravishankar <sup>2</sup>, J William Gaynor <sup>5</sup>

Affiliations + expand

PMID: 26467874 DOI: 10.1177/2150135115594854

### Abstract

**Background:** Factors leading to cardiac intensive care unit (CICU) readmission and the impact on mortality have yet to be well delineated. We sought to define the prevalence and outcome for unscheduled CICU readmission. Secondary objectives were to identify indications and risk factors for unscheduled CICU readmission.



## Direct Discharge to Home From the Pediatric Cardiovascular ICU

**OBJECTIVES:** To describe direct discharge to home from the cardiovascular ICU.

**DESIGN:** Mixed-methods including retrospective Pediatric Cardiac Critical Care Consortium and Pediatric Acute Care Cardiology Collaborative data and survey.

**SETTING:** Tertiary pediatric heart center.

**PATIENTS:** Patients less than 25 years old, with a cardiovascular ICU stay of greater than 24 hours and direct discharge to home from January 1, 2016, to December 8, 2020, were included. Select data describing patients discharged from acute care internally and nationally from Pediatric Acute Care Cardiology Collaborative sites were compared with the direct discharge to home cohort.

Dana B. Gal, MD<sup>1,2</sup>

David M. Kwiatkowski, MD, MS<sup>3,4</sup>

Camila Crib Fabersonne, MD, MPH<sup>2</sup>

Alaina K. Kipps, MD, MS<sup>1,2</sup>

## This Presentation:

California  
Georgia  
Philadelphia  
Japan

CARDIOLOGY  
2025 

## Incidence and risk factors for readmission to a paediatric intensive care unit

Umi Konishi <sup>1</sup>, Takeshi Hatchi <sup>2</sup>, Ryo Ikebe <sup>1</sup>, Yu Inata <sup>2</sup>, Kazumi Takemori <sup>1</sup>, Muneyuki Takeuchi <sup>2</sup>

Affiliations + expand

PMID: 31576633 DOI: 10.1111/nicc.12471

### Abstract

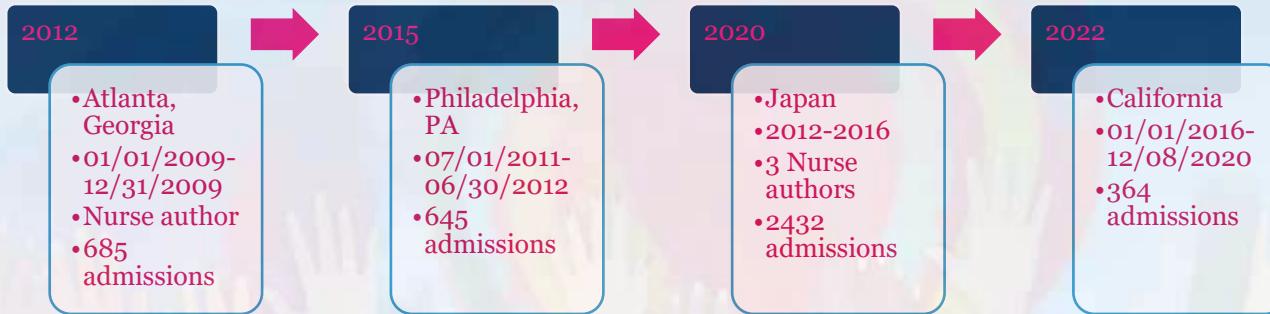
**Background:** Unscheduled readmission to a paediatric intensive care unit can lead to unfavourable patient outcomes. Therefore, determining the incidence and risk factors is important. Previous studies on such readmissions have only focused on the first 48 hours after discharge and described the relative risk factors as unmodifiable.

**Aim:** To identify the incidence and risk factors of unscheduled readmission to a paediatric intensive care unit within 7 days of discharge.



# A Decade of Discovery

## International Inquiry



**Total: 4126 admissions**



# 2012: ATLANTA, GEORGIA



## Risk factors associated with readmission after pediatric cardiothoracic surgery

Brian Kogon <sup>1</sup>, Ashish Jain, Matthew Oster, Kimberly Woodall, Kirk Kanter, Paul Kirshbom

Affiliations + expand

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**Background:** Approximately 10% to 20% of children are readmitted congenital heart surgery. Readmissions are now being viewed by payers as preventable complications of the original surgery or hospitalization, and there have been proposals by insurance agencies to deny coverage of the additional expenses incurred by the readmission. With hopes to reduce the potential impact, we analyzed patients undergoing congenital heart surgery at our institution in order to identify risk factors for readmission.

**Aim:** Readmission within 30 days of hospital discharge

**Findings:** Hispanic ethnicity, LOS>10 days, FTT

**Outcomes:** Discharge process changes



## 2015: PHILADELPHIA, PENNSYLVANIA

### Unplanned Readmission to the Pediatric Cardiac Intensive Care Unit: Prevalence, Outcomes, and Risk Factors

Marissa A Brunetti <sup>1</sup>, Andrew C Glatz <sup>2</sup>, Ken McCordle <sup>3</sup>, Antonio R Mott <sup>4</sup>, Chitra Ravishankar <sup>2</sup>, J William Gaynor <sup>5</sup>

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#### Abstract

**Background:** Factors leading to cardiac intensive care unit (CICU) readmission and the impact on mortality have yet to be well delineated. We sought to define the prevalence and outcome for unscheduled CICU readmission. Secondary objectives were to identify indications and risk factors for unscheduled CICU readmission.

**Aim:** Prevalence, outcome, indications, risk factors

**Findings:** Uncommon but higher mortality rates

**Other:** Genetic anomaly and LOS important factors



# 2020: OSAKA, JAPAN



## Incidence and risk factors for readmission to a paediatric intensive care unit

Umi Konishi <sup>1</sup>, Takeshi Hatachi <sup>2</sup>, Ryo Ikebe <sup>1</sup>, Yu Inata <sup>2</sup>, Kazumi Takemori <sup>1</sup>,  
Muneyuki Takeuchi <sup>2</sup>

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**Aim:** To identify the incidence and risk factors of unscheduled readmission to a paediatric intensive care unit within 7 days of discharge.

**Aim:** Incidence and risk factors within 7 days of discharge from ICU

**Risk factors:** Unscheduled initial admission, admit from general ward, withdrawal syndrome during index stay

**Other:** Withdrawal potentially modifiable



# 2022: CALIFORNIA



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- Not associated with increased unplanned readmissions
- Mixed levels of confidence technical aspects and low levels of confidence in logistics of DDH
- May be safe in select patients



# CONCLUSION

Decade of Discovery

Unplanned readmissions uncommon

Post-discharge monitoring may increase readmissions  
and decrease mortality

Each study had own limitations



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**THANK YOU** 