

## INTRODUCTION

### Adult Congenital Heart Disease (ACHD)

- CHD encompasses various cardiac abnormalities present since birth.
- Advancements in diagnosis and surgical treatment over the past two decades significantly improved survival rates.<sup>1,2,3</sup>
- ACHD patients undergo multiple surgical re-interventions, leading to higher risk of complications.

### Postoperative Pulmonary Complications (PPCs)

Common issue in cardiac surgery patients, occurring in 10-25% of cases.<sup>3,4</sup>

Significant impact on morbidity, mortality, and healthcare costs.<sup>5</sup>

Limited data on PPCs occurrence in ACHD patients and associated risk factors.<sup>6</sup>

## OBJECTIVES

➔ Lack of specific data on PPCs in ACHD patients necessitate further investigation.

- To determine the incidence and nature of PPCs following cardiac surgery in ACHD patients.
- Provide informative data for future trials to explore interventions for improving patient outcomes.

## METHOD

### Study Design

- Retrospective, single-center cohort study (Adult Congenital Heart Disease Program, Toronto General Hospital)
- Review of electronic patient records from 2004 to 2019
- Trained medical investigators extracted anonymous data

### Inclusion and Exclusion Criteria

- Included: patients aged above 16 years who underwent surgical treatment for congenital heart diseases
- Excluded: patients underwent heart transplant surgery, thoracotomy for pacemaker implantation, and septal myectomy for hypertrophic obstructive cardiomyopathy treatment

### Definition of Postoperative Pulmonary Complications (PPCs)

- Defined as per the European Perioperative Clinical Outcome (EPCO) definitions by ESA-ESICM joint taskforce on perioperative outcome measures (2015)

## RESULTS

	N=220
Age	36(27,48)
Male (%)	123 (57%)
MELD	7(6, 9)
BMI	25.1 (21.9, 28.9)
Creatinine	78(69,90)
ICU LOS	1.87 (0.95, 3.26)
Discharge from Hospital alive(%)	205 (94%)

Table 1. Baseline Characteristics. Median (IQR)

Overall PPCs	200 (91%)
Pleural Effusion	171 (78%)
Atelectasis	172 (78%)
Respiratory failure	93 (42%)
Pneumothorax	88 (20%)
Respiratory Infection	36 (16%)
Bronchospasm	2 (0.9%)
Aspiration Pneumonia	0

Table 2. Postoperative pulmonary complications (N, %)

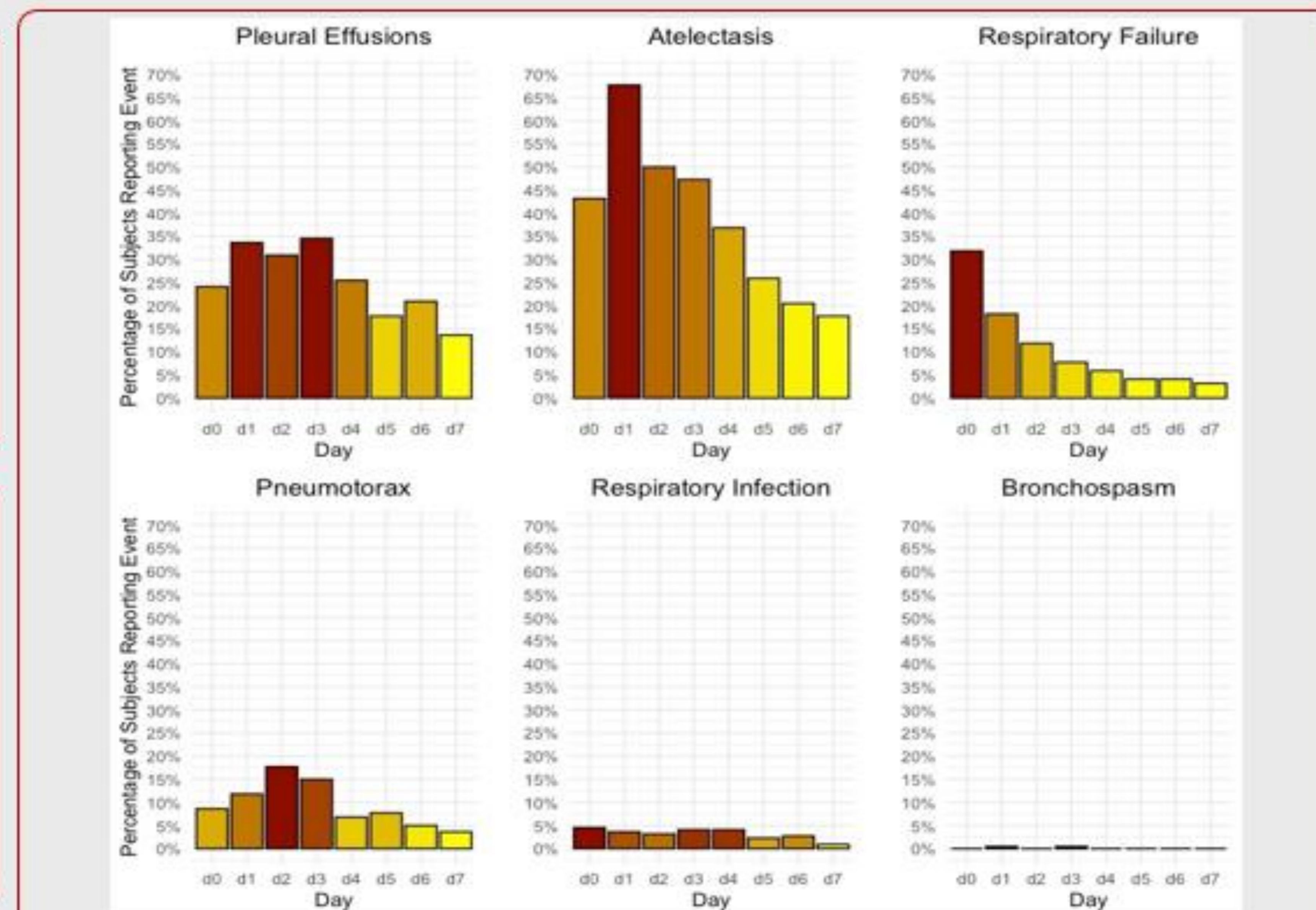


Figure 1. Frequency distribution of PPCs in the first 7 days after surgery

## CONCLUSION

- These are preliminary data of show that the incidence of PPCs in a population of ACHD undergoing cardiac surgery in adult age is high. However the impact on the patients outcome need to be assessed.
- Further data collection and analysis are ongoing (total sample ~ 800 patients), and will help better characterize incidence, most relevant risk factors and clinical characteristics associated with the development of PPCs.

## ACKNOWLEDGEMENTS

We appreciate the collective efforts of the entire team and extend our gratitude to the Department of Anesthesia, Toronto General Hospital for their generous support.

## REFERENCES

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## AUTHORS

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## CONTACT INFORMATION

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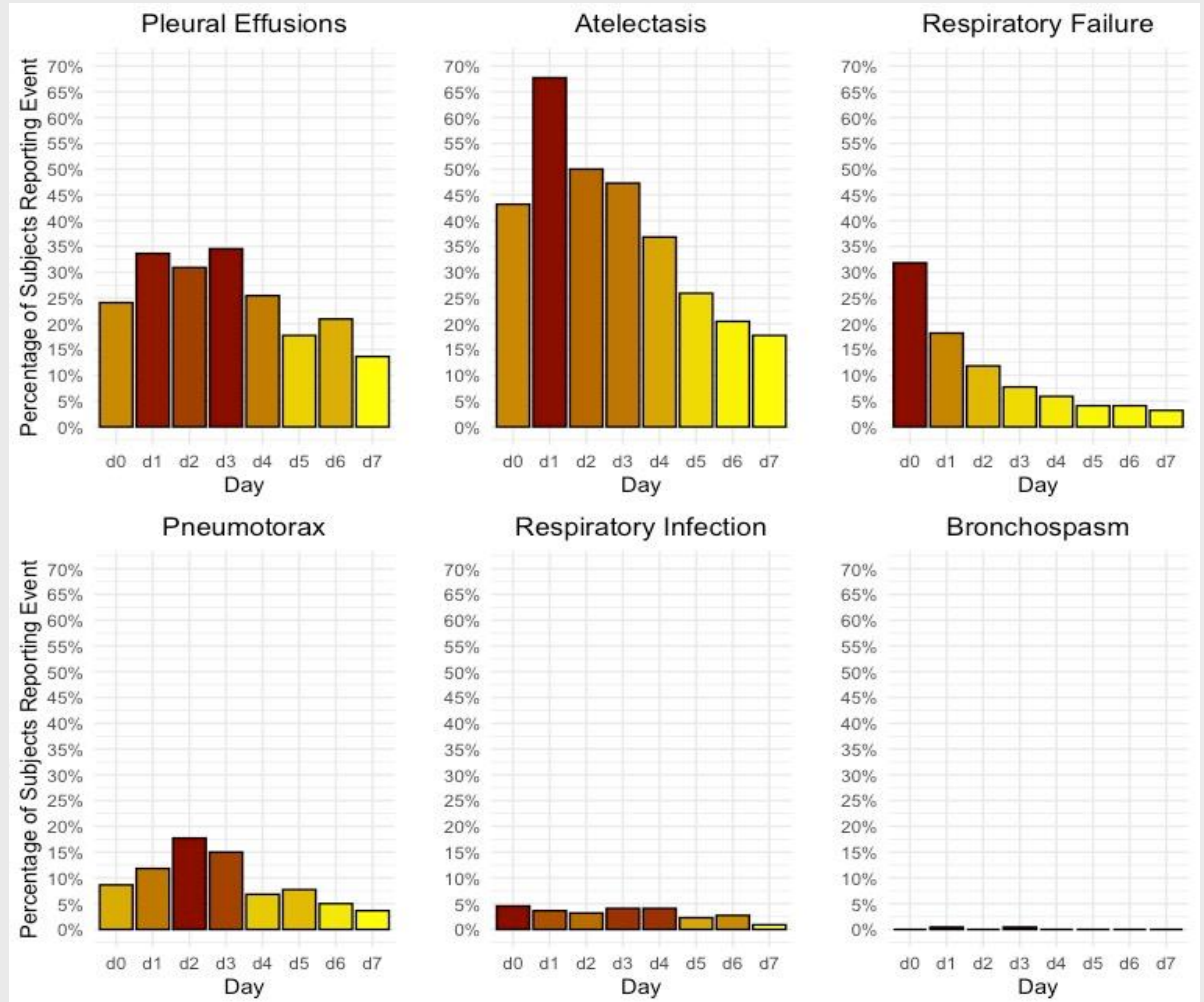
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# REFERENCES

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1. Marelli AJ, Ionescu-Ittu R, Mackie AS, Guo L, Dendukuri N, Kaouache M. Lifetime prevalence of congenital heart disease in the general population from 2000 to 2010. *Circulation* 2014; 130: 749–56.
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