

AUTHORS

T Johnson¹, S. Gray¹, K. Dryden-Palmer¹, M. Alfred², S. Anthony³, M. Fan⁴, J. Johnstone⁵, D. Piquette⁶, M. Science⁷, M. Tadros^{7,8}, G. Tomlinson⁹, P. Trbovich⁴, S. Verderber¹¹, C. Parshuram^{1,3}

1. Department of Critical Care Medicine, The Hospital for Sick Children, Toronto
2. Department of Mechanical and Industrial Engineering, University of Toronto, Toronto
3. Child Health Evaluative Sciences, The Hospital for Sick Children Research Institute, Toronto
4. Research and Innovation, North York General Hospital, Toronto
5. Department of Medicine, University of Toronto, Toronto
6. Sunnybrook Research Institute, Toronto
7. Department of Infectious Diseases, The Hospital for Sick Children, Toronto
8. Department of Pediatric Laboratory Medicine, The Hospital for Sick Children, Toronto
9. Division of Biostatistics, Dalla Lana School of Public Health, University of Toronto
10. John H. Daniels Faculty of Architecture, Landscape and Design

CONTACT INFORMATION

Tanelle Johnson
Pediatric Critical Care Fellow
The Hospital for Sick Children
tanelle.johnson@sickkids.ca

INTRODUCTION

- ICU design has the potential to influence important outcomes for patients, families, and staff
- Little is known about Canadian PICU age, design, and renovation history
 - Renovations to meet best-practice standards
 - Renovations during COVID-19 pandemic
- Improved knowledge about PICU lifespan can better inform planning timelines and help improve future PICU design

OBJECTIVES

- To estimate Canadian PICU life span, design, and renovation trajectory
- To understand current capacity, technologies offered, and staff and family resources available

METHODS

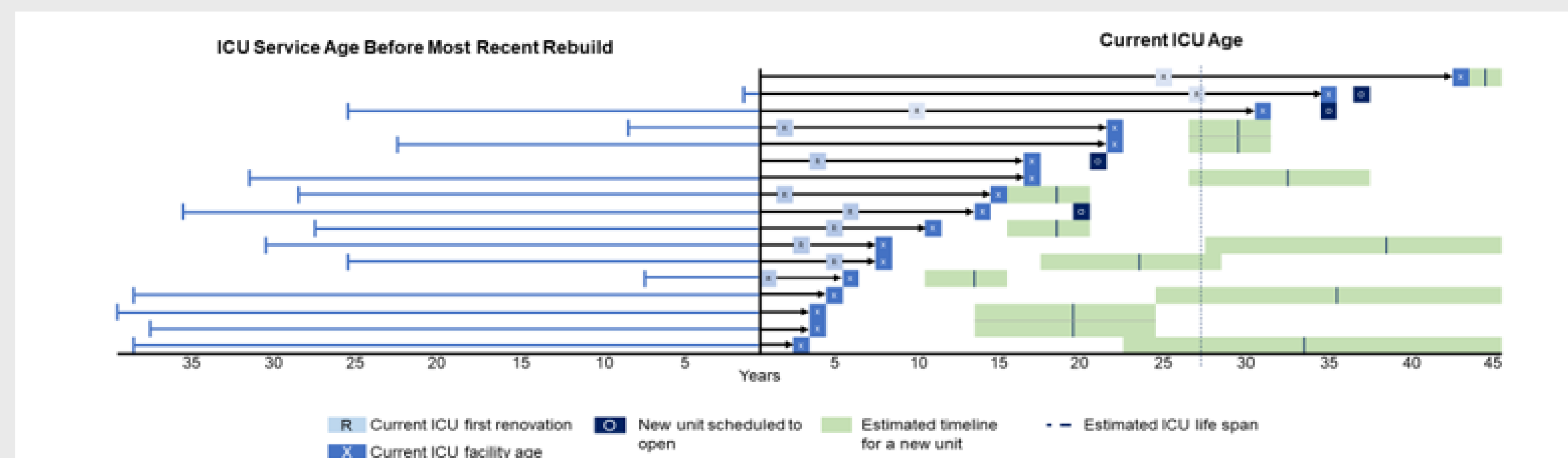
National cross-sectional survey of PICU Medical Directors or delegates

- Facilitated interview with structured and open-ended questions
 - The Past: historical renovations
 - The Present: current design, how staff interact with the built environment
 - The Future: planned renovations, new unit timeline
- Survey piloted with PICU MDs
- 18 eligible PICUs
- Descriptive statistics in R version 4.2.2 (R Foundation).

RESULTS

17 units (94%) enrolled across Canada (May-Oct 2023)

- Units have a median of 18 beds (range 6-32), 11 (69%) have single patient rooms only
- Common unit geometries: U, L, racetrack, pods
- Pre-pandemic renovations added baseline functionality: changes to unit ventilation, addition of family resources
- Pandemic renovations increased capacity: modification of head units, expansion into adjacent space



CONCLUSIONS

Currently, Canadian PICUs are a median of 14 yrs old

- Units with only single patient rooms are newer compared to those with single + multi-patient rooms (median age 8 yrs vs 28 yrs)
- Considering Medical Director projections and new unit opening dates, estimated life span of a PICU is 27 yrs
- 4 new units are scheduled to open between 2025-2029
- Pandemic renovations (2020-2022) focussed on increasing unit surge capacity

ACKNOWLEDGEMENTS

Thank you to SickKids PICU MDs for survey piloting and feedback for revisions. Thank you to ICU ROOM collaborators for ongoing feedback.

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1. Verderber S, Gray S, Suresh-Kumar S, Kerez D, Parshuram C. Intensive Care Unit Built Environments: A Comprehensive Literature Review (2005-2020). *Health Environments Research and Design Journal*. 2021 Oct 1;14(4):388-415.
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4. Davidson JE, Aslakson RA, Long AC, Puntillo KA, Kross EK, Hart J, et al. Guidelines for Family-Centered Care in the Neonatal, Pediatric, and Adult ICU. *Crit Care Med*. 2017 Jan 1;45(1):103-28.

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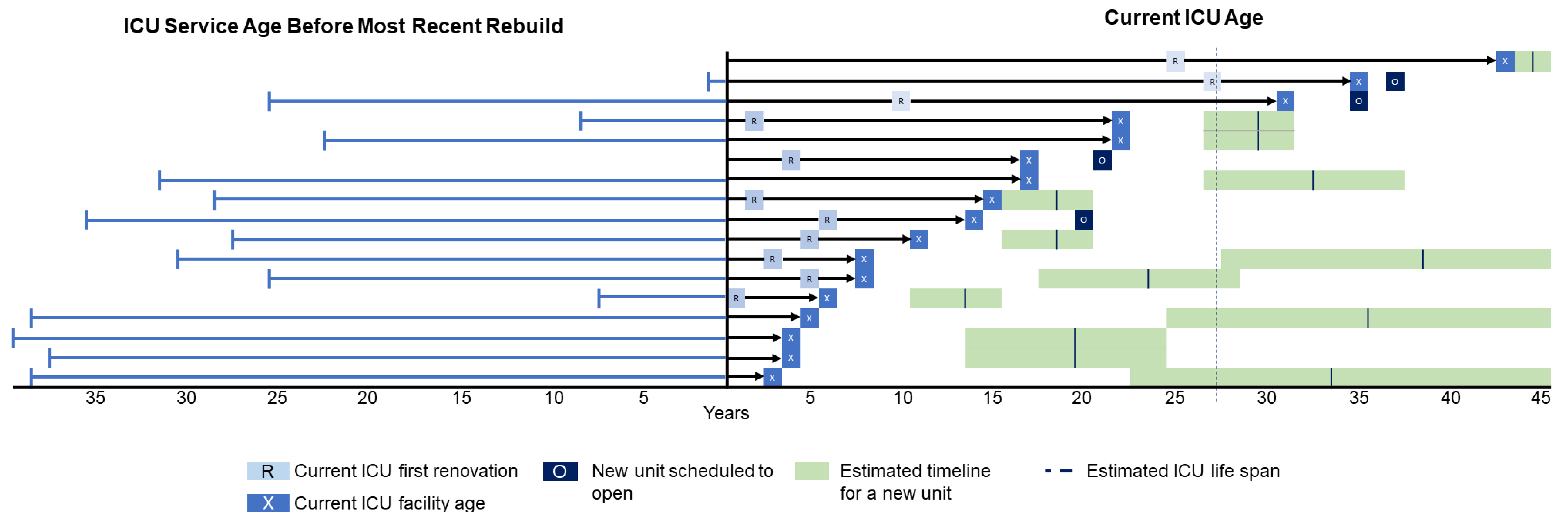
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