

Automated and interoperable methods for generalizable development of clinical machine-learning models for predicting neuromorbidity in critically ill children

Ruoting Li, Christopher M Horvat, Mehdi Nourelahi, Eddie Pérez Claudio, Jason Hammett, Mark S Wainwright, Robert SB Clark, Alicia K Au, Harry Hochheiser medRxiv 2025 August 5 <https://doi.org/10.1101/2025.08.01.25332805>

Declining mortality in the field of pediatric critical care medicine has shifted practicing clinicians' attention to preserving patients' neurodevelopmental potential as a main objective. Earlier identification of critically ill children at risk for incurring neurological morbidity would facilitate heightened surveillance that could lead to timelier clinical detection earlier interventions, and preserved neurodevelopmental trajectory.

- Challenge: building reproducible, generalizable models
- AutoML + FHIR
- AWS infrastructure (later used with open-source AutoML)
- Performance improves, even with smaller feature set.

Funding: R01NS118716 Bio-Digital Rapid Alert to Identify Neuromorbidity (MPIs- Clark, Au, Horvat, Hochheiser)

