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12:00-1:00 pm

Biotech Center Auditorium *or* via Zoom Link

<https://uwmadison.zoom.us/j/97289902125>

Using Electronic Health Record Data to Predict Deterioration in Hospitalized Children

Abstract: Children who are admitted to the hospital and subsequently deteriorate have a high risk of mortality. They are also more likely to experience complications in their long-term health. Because timely intervention increases survival, it is critically important to detect deterioration in hospitalized children as early as possible. Current early warning scores that predict deterioration are subjectively derived, utilize limited data elements, and have been shown in randomized control trials to not reduce in-hospital mortality.

This talk will focus on our recent efforts to utilize machine learning and electronic health record (EHR) data to revolutionize pediatric early warning scores. Using a cohort of approximately 56,000 patients over a 12-year period, we developed a gradient boosted machine learning model that detects deterioration earlier and more accurately than current standards in both internal and external settings. I will also highlight recent efforts within the lab to extend risk prediction to other hospital settings and the use of notes for explaining prediction model outputs. Our research facilitates early detection of pediatric patients at risk for deterioration, thereby creating opportunities for timely intervention that could decrease preventable death and improve long-term outcomes in children.



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