

# Evaluating the ability of machine learning to predict hospital admissions from emergency department triage at St John of God Midland Hospital using data from 2016 to 2023.

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Status	RECRUITING
Sponsor	Dr Ethan Williams
Enrollment	550,000 participants

## Plain Language Summary

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When someone arrives at an emergency department, a triage nurse quickly assesses their urgency level based on vital signs and a brief description of their symptoms. This study is using that same triage information — already collected as part of routine care — to build artificial intelligence models that can predict whether a patient will need to be admitted to hospital.

By analysing over seven years of emergency department data from St John of God Midland Hospital (2016–2023), the researchers are training machine learning models to find patterns in triage data. They are also addressing a challenge called 'concept drift' — where patient patterns shift over time (as happened dramatically during COVID-19) — to make these models more reliable in real-world settings.

This is a data-only study — no participants are recruited directly. The 'participants' are all patients who presented to the Midland ED during the study period, whose de-identified records are used for model training. Only patients who left before being seen or died in the ED are excluded from the dataset.

## Key Eligibility Criteria

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### Inclusion (1)

- All presentations to the SJOG Midland Emergency Department between January 1st 2016 and 31st December 2023. SJOG Midland ED is a mixed adult and paediatric department so patients of all ages will be participants.

### Exclusion (1)

- The only patients excluded from the dataset are patients who did not wait or passed away in the emergency department.

## Locations (1 total)

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St John of God Midland Public Hospital - Midland, WA, Australia