Can machine learning augment clinician adjudication of events in cardiovascular trials? 
A case study of major adverse cardiovascular events (MACE) across CVRM trials

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Purpose
Evaluate the automation of clinical event adjudication against human expert ground-truth adjudication.
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Hypothesis
Machine learning (ML) algorithms can classify ischemic stroke (IS) and transient ischemic attack (TIA) from the same data used by human expert adjudicators.

Methods
• Train, test and validate ML algorithms against ground-truth from human expert adjudicators using 5-fold cross validation.
• Algorithms: Random Forest (RF), Support Vector Machine (SVM), XGBoost
• Performance Evaluation: AUC-ROC, Precision, Recall

Results
With high consistency (>95% AUC-ROC) between automated and expert adjudication, these results demonstrate that ML-based adjudication of IS and TIA has potential for clinical event classification in CV outcome trials.

Conclusions
Subsequent research will focus on enhancing the stroke-related ML models and pursuing ML approaches to adjudicate other outcome and safety events.