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remEDy

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Reducing Mis-triage in Emergency Departments: Improving Triage Accuracy through Real-time Evaluation and Artificial Intelligence

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on behalf of the rem**ED**y research group members

Background

- Triage is a critical step in the emergency department to ensure timely care, safety and efficient resource use
- Mis-triage affects 15% up to 33% of ED patients
- Causes of mis-triage remain unclear
- Current evaluation studies:
  - Often use retrospective data or scenarios
  - Lack standard definition of patient acuity
  - Rely on surrogate outcomes (e.g. admission and mortality)

Aims

1. Develop evidence- & consensus-based triage evaluation instrument for real-time use
2. Identify clinician/patient/emergency department factors contributing to mis-triage and its consequences
3. Develop & validate AI algorithm to support triage decisions
4. Create & test training program to improve triage accuracy

Methods

Work Package 1
- Scoping Review
- Workshop
- RAND/UCLA Delphi
- Pilot

Work Package 2
- Multicentric prospective observational study
- Focus Group

Work Package 3
- Acquire Dataset
- Model Development
- Evaluation

Work Package 4
- Behavioral Change Wheel
- Training Development
- Pragmatical Trial

Triage Evaluation Instrument | **Real-Time Evaluation** | **AI - Decision Support Algorithm** | **Training Triage Clinicians Program**

Expected clinical relevance

- **New benchmark for triage evaluation:** real-time, evidence-based instrument for triage evaluation
- **Deeper insights into mis-triage**: identification of causes and consequences to guide improvements
- **Enhanced triage equity**: reducing biases and ensuring fair care for all patient groups
- **Targeted training programs**: tailored education to strengthen triage performance and minimize mis-triage

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2. Sax DR, Warton EM, Mark DG, Vinson DR, Kene MV, Ballard DW, Vitale TJ, McGaughey KR, Beardsley A, Pines JM, Reed ME, Kaiser Permanente CREST (Clinical Research on Emergency Services & Treatments) Network. Evaluation of Version 4 of the Emergency Severity Index in US Emergency Departments for the Rate of Mistriage. JAMA Network Open. 2023 Mar 17;6(3):e233404.

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