CONCLUSION AND RELEVANCE
Prediction model → more efficient than selection at random
→ guide rational use of limited resources
Depending on available resources
→ customization of probability threshold and alert rate to ↑ specificity or sensitivity

BACKGROUND AND IMPORTANCE
Medication discrepancies → avoidable harm
Accurate medication history = essential
Medication reconciliation (MED-REC) → labor-intensive
→ prone to many errors
many patients do not receive a complete MED-REC due to limited resources
➔ Need for approach to identify patients at risk

AIM
Develop and validate a prediction model to identify patients at risk for at least one clinically relevant medication discrepancy at the time of emergency department presentation
“The MED-REC predictor”

METHODS
Prospective multicenter study
• MED-REC at emergency department
• Identifying clinically relevant discrepancies

Three datasets
A. 824 patients → development of model
B. 350 patients → temporal validation
C. 119 patients → geographic validation

Development and validation
• Multivariable logistic regression
  outcome = at least one clinically relevant discrepancy
• Discrimination and calibration

RESULTS

DEVELOPMENT (Figure 1)
At least one clinically relevant discrepancy observed in 35% (A), 37% (B) and 49% (C)
Final model → 8 predictors

VALIDATION

DISCRIMINATION (Figure 2)
Moderate: AUC 0.66
Retained in all datasets
Better than at random selection

CALIBRATION (Figure 3)
Excellent calibration (A and B)
Slight underestimation (C)

IN PRACTICE
• Model incorporated in electronic health record
• Runs in real-time
• Alerts on structured worklist
• MED-REC of high risk patients by pharmacist or pharmacy technicians