



Internal Validation of a
Medication Therapy
Management Scoring Index
(MTMSI) in a Community Hospital
Intensive Care Unit

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Disclosure

- The speaker has no actual or potential conflict of interest in relation to this presentation

Learning Objective

- Recognize the challenges of validating a scoring tool to be used in pharmacy practice

Cox Medical Center South

- Community hospital located in Springfield, Missouri
 - 650 licensed beds
- Level I trauma
- Level I stroke center
- 4 intensive care units (ICUs)
 - 76 ICU beds



Background

- Medication therapy management (MTM) services in the ICU has allowed pharmacists to optimize medication use, reduced adverse effects, and focus on patient outcomes
- Augusta University Medical Center developed and validated the Medication Regimen Complexity (MRC- ICU) scoring tool in medical intensive care unit (MICU) patients

Background

- MRC-ICU was unable to correlate scores with pharmacist interventions in MTM patients
- MTMSI was developed from MTM patient characteristics where pharmacists made the most interventions

MTMSI Characteristics

Age	BUN > 18
# of Home Medications	SOFA score
Diabetes*	Glucose > 180 mg/dL*
VTE prophylaxis	Neuromuscular blocker
Acid Suppression	# of Antibiotics*
Therapeutic Anticoagulation*	

* Characteristics having a higher weight.

VTE= Venous thromboembolism
 SOFA= Sequential Organ Failure Assessment
 BUN= Blood Urea Nitrogen

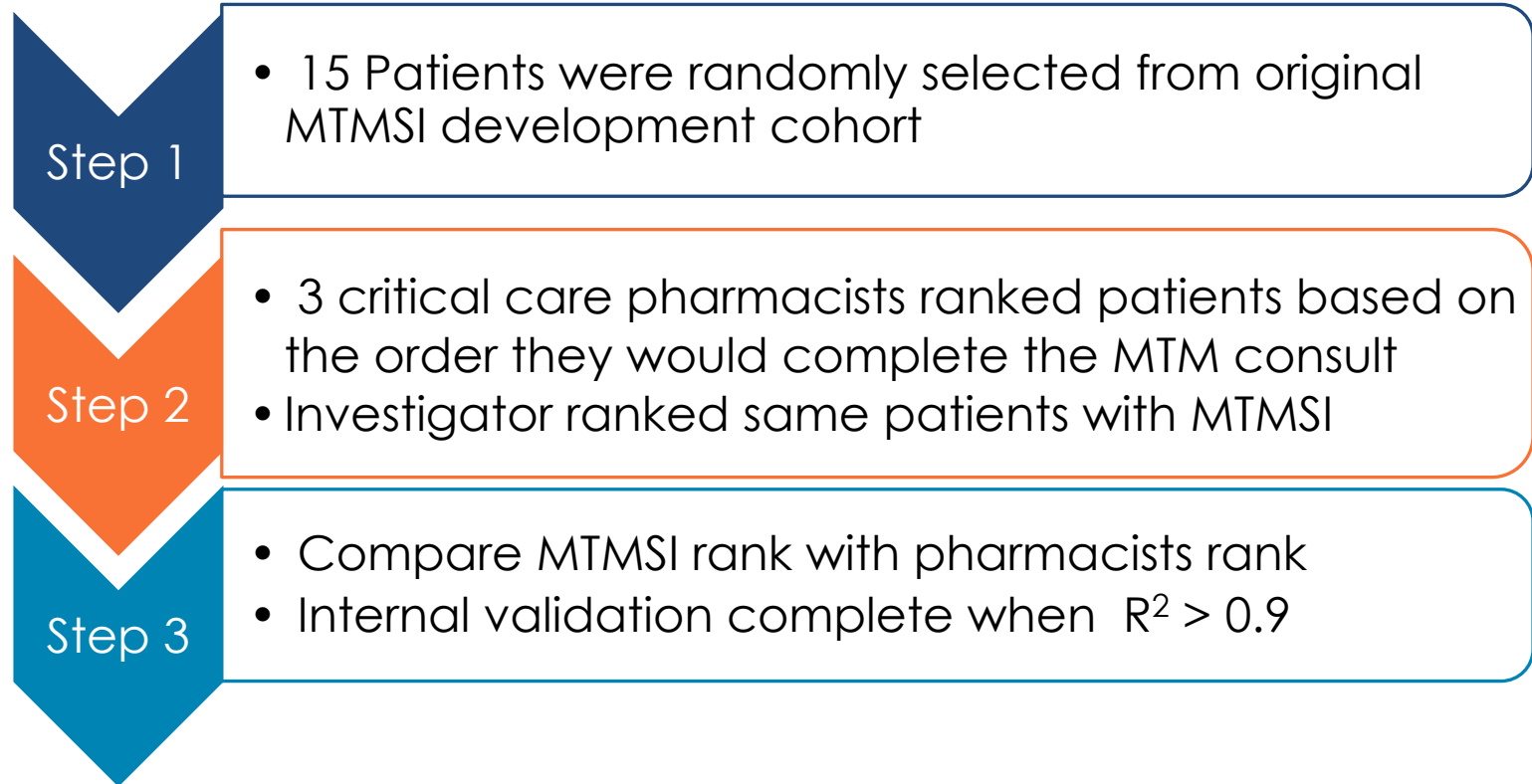
Study Objective

- To internally validate the MTMSI for our institution to assess if it can function as an appropriate MTM service triage measure

Methods

- Retrospective, single center study
- Patient information collected using data from MTM service interventions recorded in electronic medical record
- Patients who had an MTM completed from June 1, 2017 to May 31, 2018 were included

Internal Validation Process



Validation Attempts

Round 1

- Pharmacist reviewed whole patient chart
- Group facilitation and consensus ranking

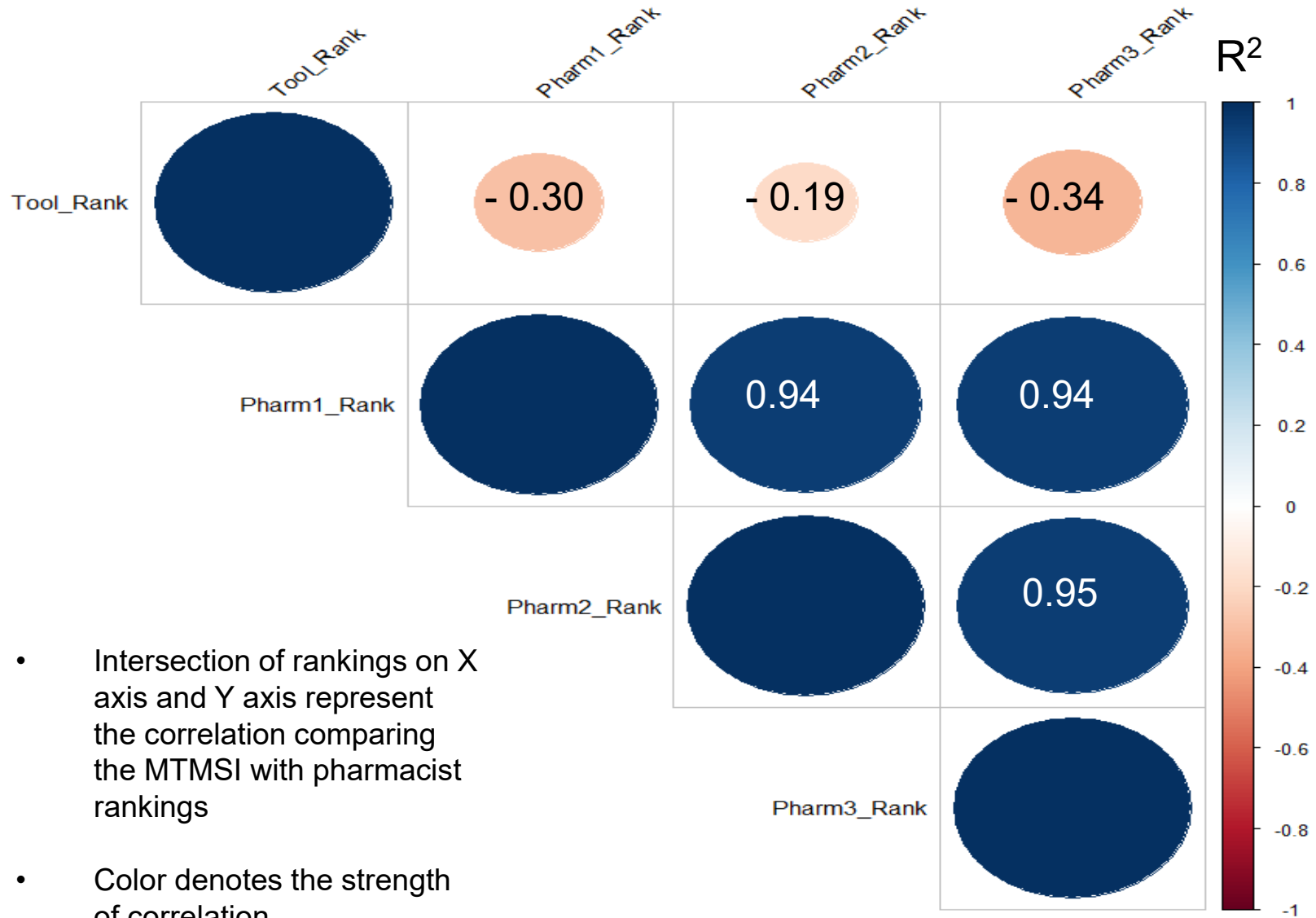
Round 2

- Pharmacists reviewed whole chart only ranking based on MTMSI characteristics
- Group facilitation and consensus ranking

Round 3

- Pharmacists only provided tool characteristics to rank
- Separate rankings submitted

Round 3 Results



- Intersection of rankings on X axis and Y axis represent the correlation comparing the MTMSI with pharmacist rankings
- Color denotes the strength of correlation

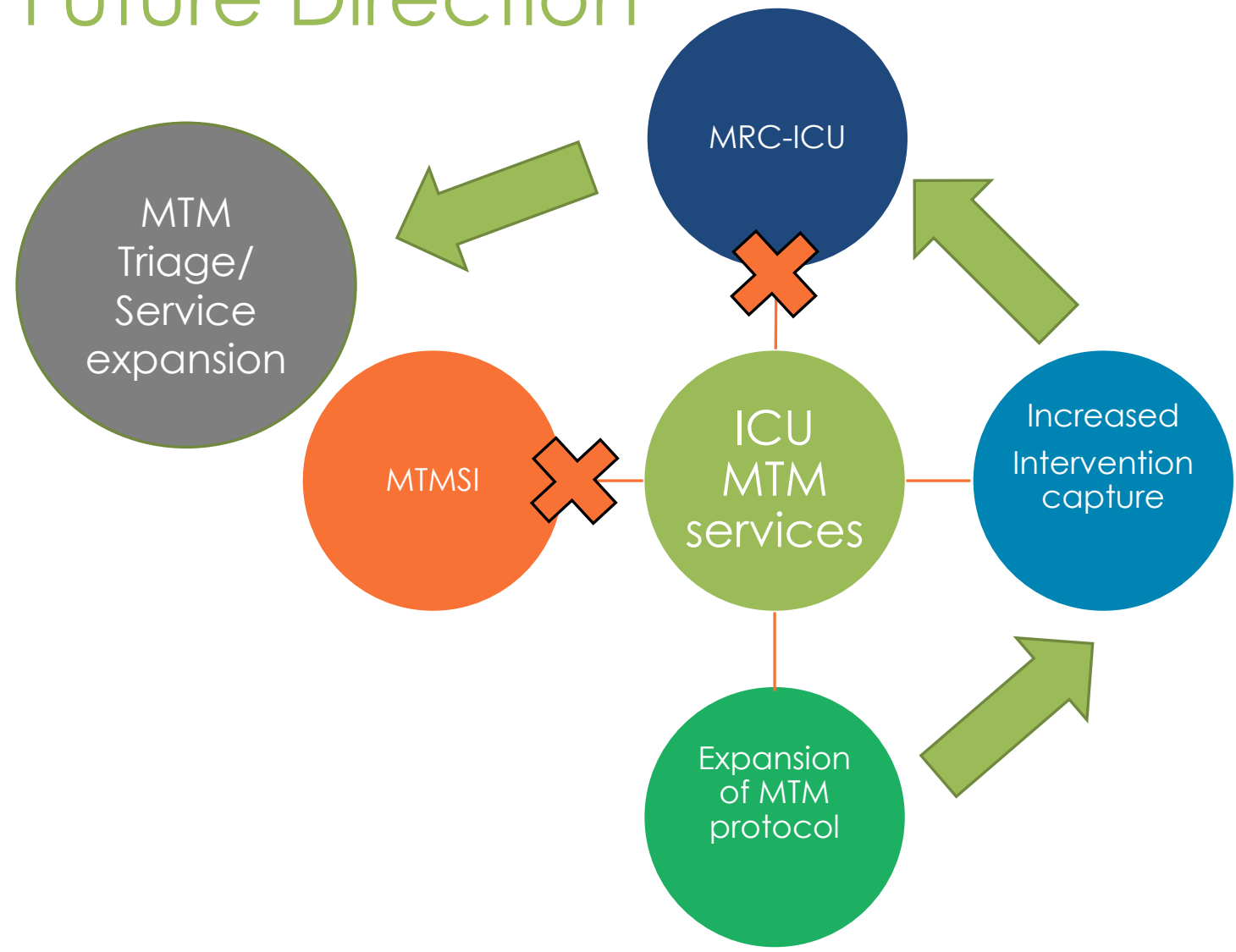
Discussion

- Pharmacist rankings are in disagreement with the MTMSI rankings
- Pharmacists are ranking MTM patients based on severity vs. the intervention potential
- Should pharmacists redefine what's important in evaluating ICU patients ?

Lessons Learned

- No set standard has been defined regarding patient acuity and pharmacist intervention
- Validation of known medical scoring tools based off of standard of care
 - CAM- ICU

Future Direction



Summary

- Internal validation could not be completed due to pharmacist and MTMSI discrepancies
- No set standard for defining pharmacist interventions
- Expand the MTM protocol for higher rate of intervention capture

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