

# HOMOGENEITY OF OPINION EXPERT ON CLEO SCALE

## WHEN APPLIED TO 50 MODELED PHARMACEUTICAL INTERVENTIONS

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### BACKGROUND

The CLEO Scale is a 3-dimensional tool to assess the Clinical, Economic and Organizational impact of Pharmacists' interventions (PI) which would resolve drug related problems in prescriptions.

AVICENNE is an advanced real time pharmaceutical decision support system based on the patient's data, Pharmaceutical Algorithms and PharmaClass® (Keenturtle) which enhances the PI relevance.

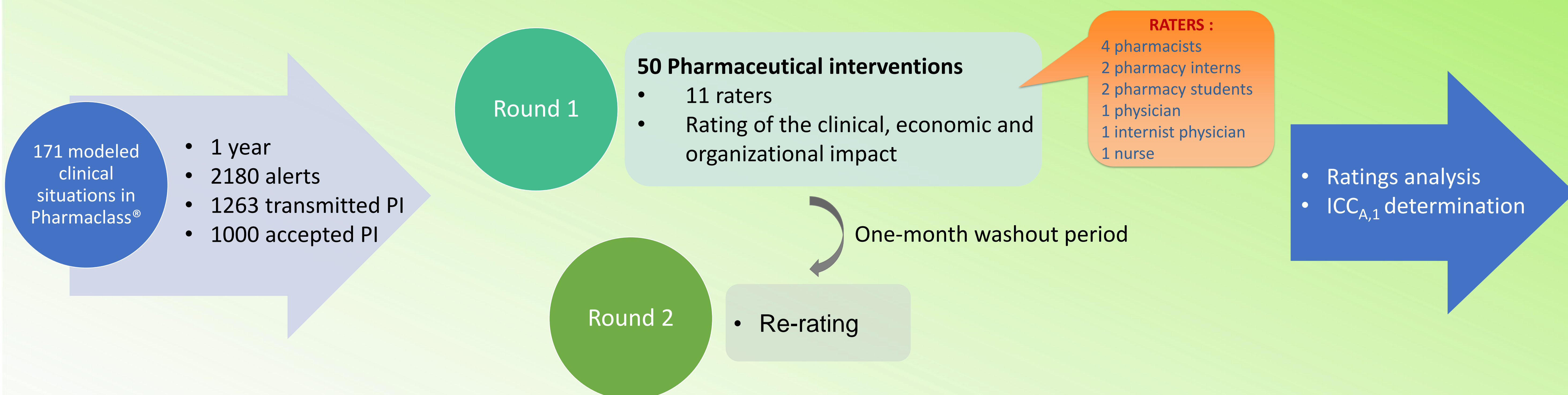
### AIM

To analyze the reliability of the CLEO scale.

### MATERIALS AND METHODS

From the 171 modeled clinical situations in PharmaClass®, the 50 most frequent were chosen.

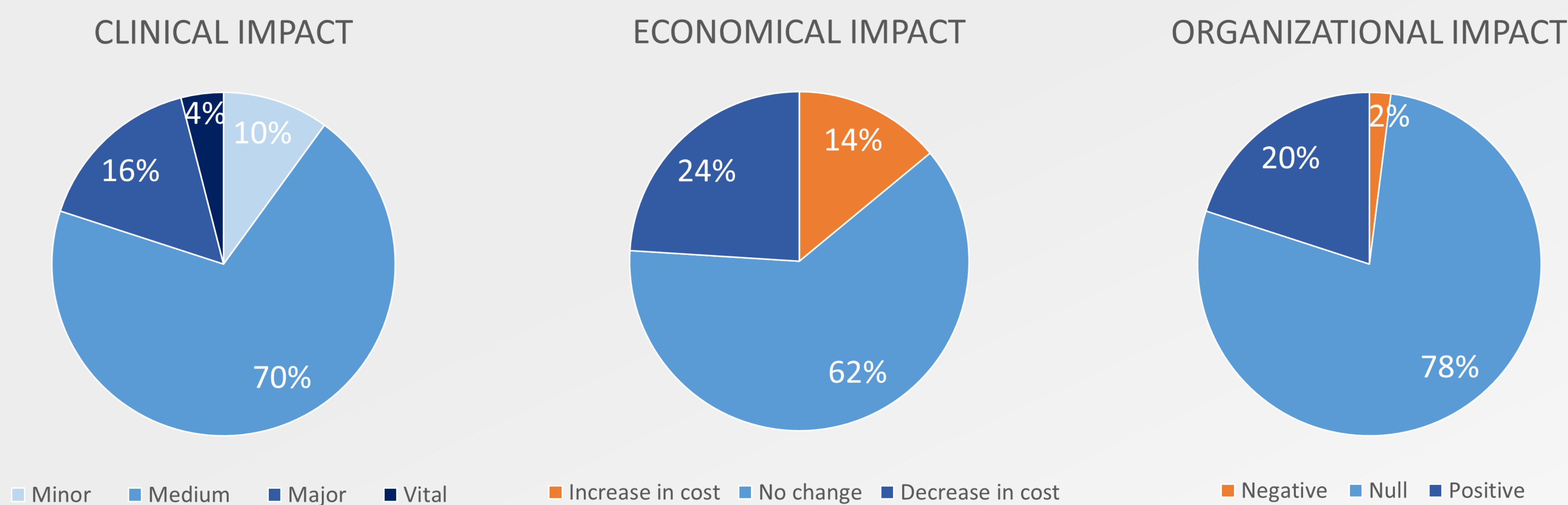
For each situation a PI was retrospectively and randomly selected between November 2019 and November 2020 in the AVICENNE database. It contained 1263 PI transmitted after of PharmaClass® alerts' analysis in 1700 beds of two health facilities.



A multiprofessional panel of 11 clinicians have rated independently the PIs using the CLEO scale. They re-rated them after a one-month washout period.

Intra-class correlation coefficients in absolute agreement on single unit ( $ICC_{A,1}$ ) are calculated using the "Psych" package on Rstudio® to measure inter- and intra-rater reliabilities of the panel.

### RESULTS



On average **less than 3 minutes** are needed per evaluation.

Interrater reliability ( $ICC_{A,1}$ ) was poor for clinical and organizational dimensions and moderate for economic dimensions.

Intra-rater reliability was moderate for clinical and organizational dimensions and excellent for economic dimensions.

IMPACT	Interrater reliability			Intrarater reliability		
	CLINICAL	ECONOMIC	ORGANIZATIONAL	CLINICAL	ECONOMIC	ORGANIZATIONAL
Raters	0,297	0,655	0,338	0,611	0,914	0,726
Pharmacists	0,278	0,622	0,302	0,755	0,908	0,740
Physicians & nurse	0,333	0,798	0,467	0,577	0,914	0,658

Koo and Li (2016)  
 < 0,50 Poor  
 0,50 - 0,75 Moderate  
 0,75 - 0,90 Good  
 > 0,90 Excellent

Table 1. Inter and intra rater reliability of the CLEO tool

### CONCLUSION

- Almost all of AVICENNE PIs prevent a temporary or permanent damage or the need of care to reduce their gravity.
- The CLEO tool offers a limited validity when used by untrained clinicians.
- Symbolic artificial intelligence reinforces the therapeutic safety of patients and the relevance of care.