



Covid 19: An Evaluation of Predictive Scoring Systems in South Africa

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Background

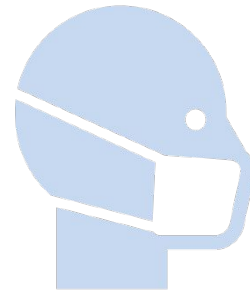
- More than 700 million cases Worldwide
- Low-middle-income countries (LMIC)
- Limited critical care resources
- Clinical severity and frailty scores
- Community acquired pneumonia

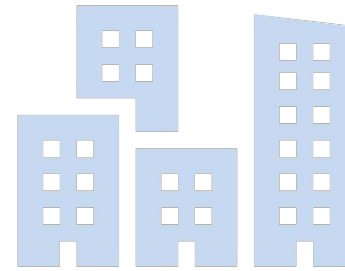


Early
2023

Evidence before our study?

- **CURB65** Score
- Mortality (Low-risk thresholds)
- Non-SARS-CoV-2 **vs** SARS-CoV-2 pneumonia
- National Early Warning Score (**NEWS2**)
- **ISARIC-4C** Mortality Score
- Paucity of clinical data in **Africa**





Methods

- Retrospective single centre cohort study
- Charlotte Maxeke Johannesburg Academic Hospital
- Laboratory confirmed RT-PCR
- Variant of concern (VOC) – **Ancestral**
- Score parameters (CURB65/NEWS2/ISARIC-4C)
- Low cell frequency -> continuous **vs** re-categorised



Statistical analysis



- Correlation analysis
- Multiple imputation by Random Forest
- Univariate logistic regression
- Backward stepwise regression
- Multivariable models (amended regression parameters)
- Area Under Receiver Operator Characteristic Curve (AUROC)



Findings

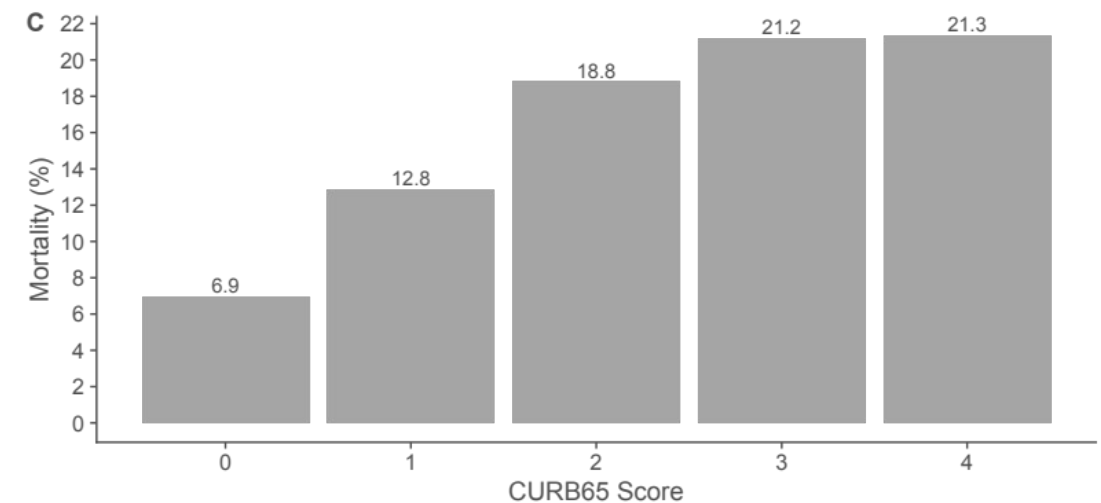
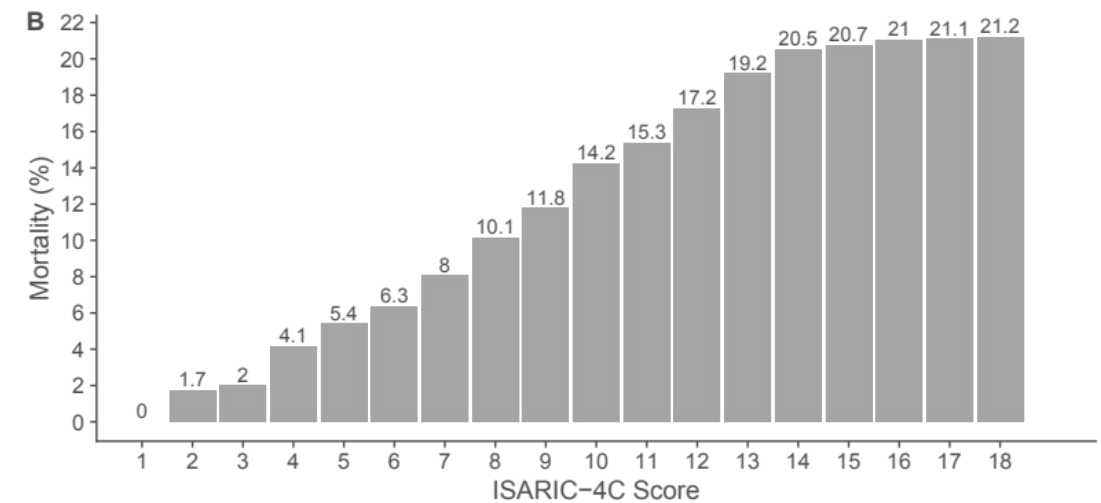
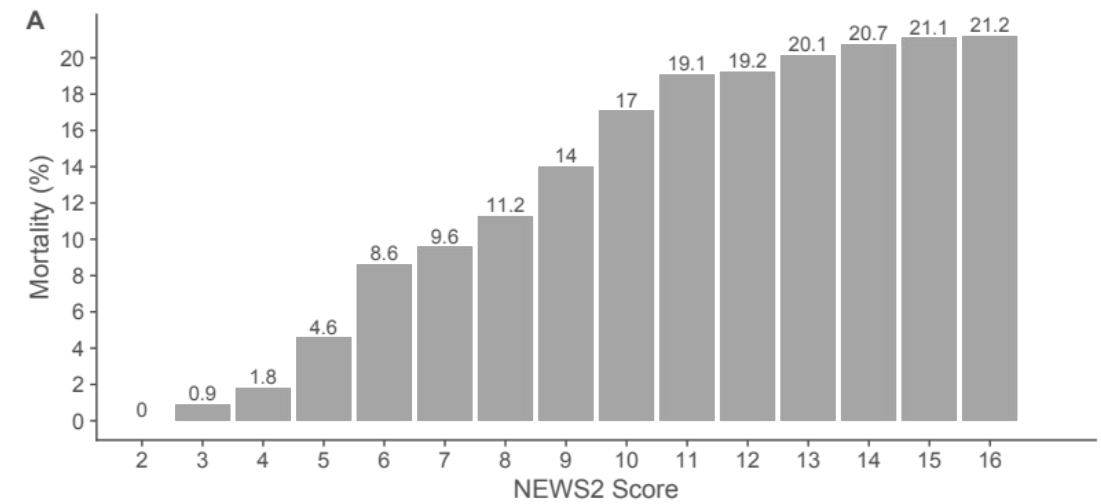
- **Primary outcomes**

- Total of 605 records

- Mortality (129 non-survivors), 21%

- ICU admission (101), 17%

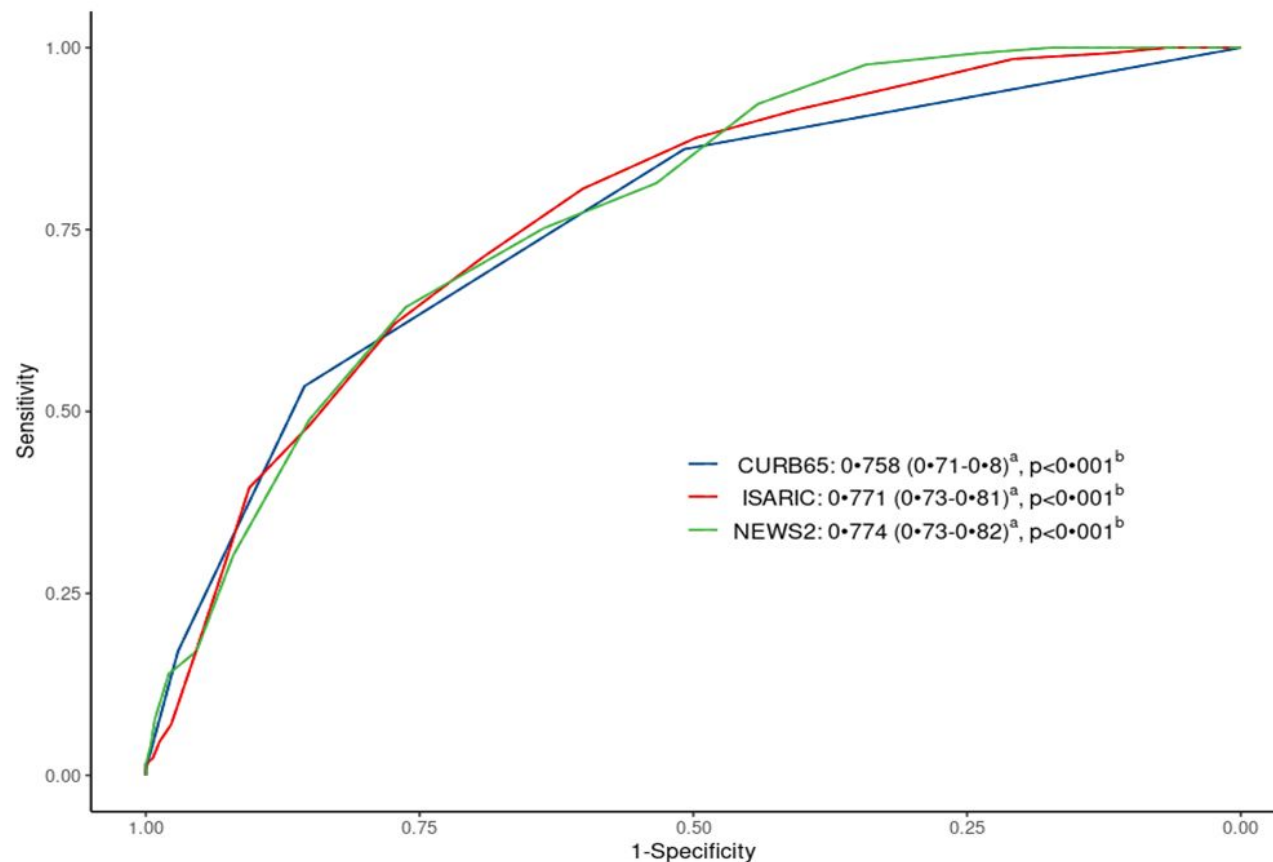
- Invasive ventilation (77), 13%



Findings

•Mortality AUROC

- CURB65 score 0·76 (95% CI: 0·71–0·8), Sn 86% with 12·8% mortality
- ISARIC-4C score 0·77 (95% CI: 0·73–0·81), Sn 87·6% with 8% mortality
- NEWS2 score 0·77 (95% CI: 0·73–0·82), Sn 92·2% with 8·6% mortality



Added value of study

- Low-risk group CURB65 (12·8% mortality)
- Unexplained factors
- NEWS2 most sensitive at 92·2%



Low-Middle-Income

Implications of evidence

- CURB65 score shows high mortality rate in low risk stratified patients
- Conflicting data from South Africa
- Explore NEWS2 and ISARIC-4C score in Africa



Low-Middle-Income



Thank You



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