

**TO CAPTURE PREDICTABLE VERSUS ACTUAL
MORTALITY FOR INTENSIVE CARE UNITS (ICU'S)
AT
BLK-MAX SUPER SPECIALTY HOSPITAL**

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INTRODUCTION

- **Intensive care unit (ICU)** is a special setting in which patients have a higher baseline severity at the time of admission and hospital-associated infections.
- Due to the high mortality rate of ICU patients, several scoring systems have been used to predict patient's prognosis. Conventional scoring systems such as the Assessment and Chronic Health Evaluation (APACHE) II, the Sequential Organ Failure Assessment (SOFA), Paediatric Index of Mortality (PIMS) III, Score for Neonatal Acute Physiology (SNAPPE) II, EUROSCORE II, POSSUM are moderately accurate in predicting individual mortality.
- These scoring systems have the advantage of standardizing studies and allowing the comparison of quality of care between ICUs. However, the prognostic predictive power of conventional models may vary depending on the characteristics of the hospitals in which they are to be applied, such as the demographic composition of inpatients, underlying comorbidities, and the percentage of surgical or medical admissions

IMPORTANCE OF SCORING IN ICUS

- The score shows excellent discrimination and that mortality depends not only on the admission score but also on the course of ICU stay and therefore, may prove useful as an alternative end point for clinical trials involving critically ill patients.
- Clinically relevant outcome measures in order to evaluate the effectiveness of treatment practices.
- The outcome of intensive care patients depends on several factors present on the 1st day in the ICU and subsequently on the patient's course in ICU. For such populations, many scoring systems have been developed
- A scoring system usually comprises of two parts – a score (a number assigned to disease severity) and a probability model (equation giving the probability of hospital death of the patients).

SCORING SYSTEM FOR MORTALITY PREDICTION

ICU's	Scoring System
MICU	Apache II
NSICU	Apache II
SICU	Possum
CCU	SOFA
CTVS	Euro Score II
PICU	PIMS III
NICU	SNAPPE II



OBJECTIVES

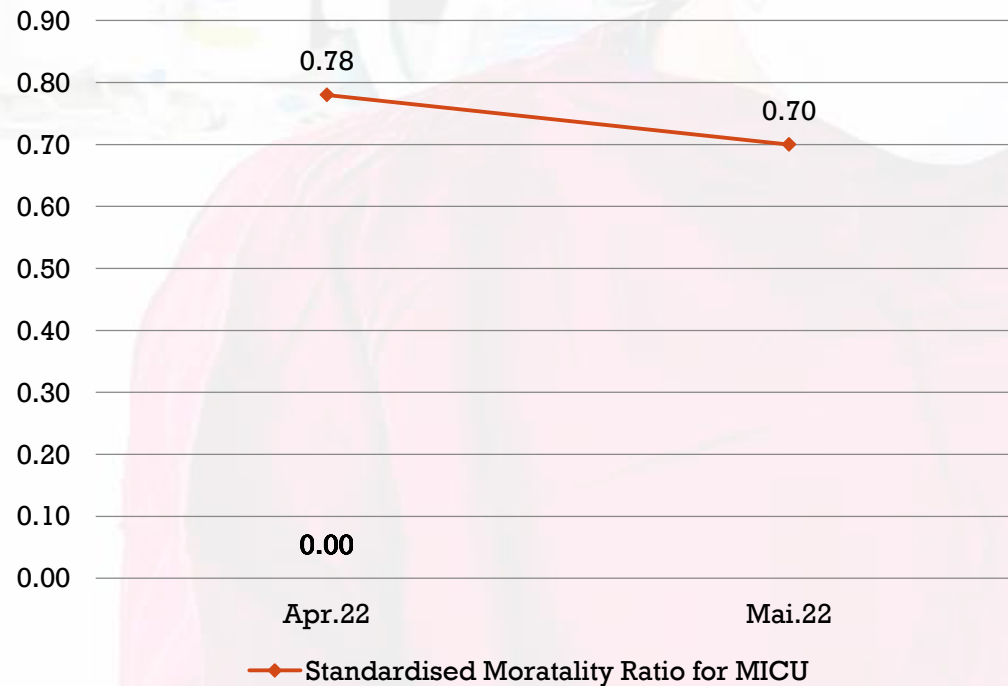
- To calculate standardized mortality for all ICUS
- Analysis of all the mortalities

METHODOLOGY

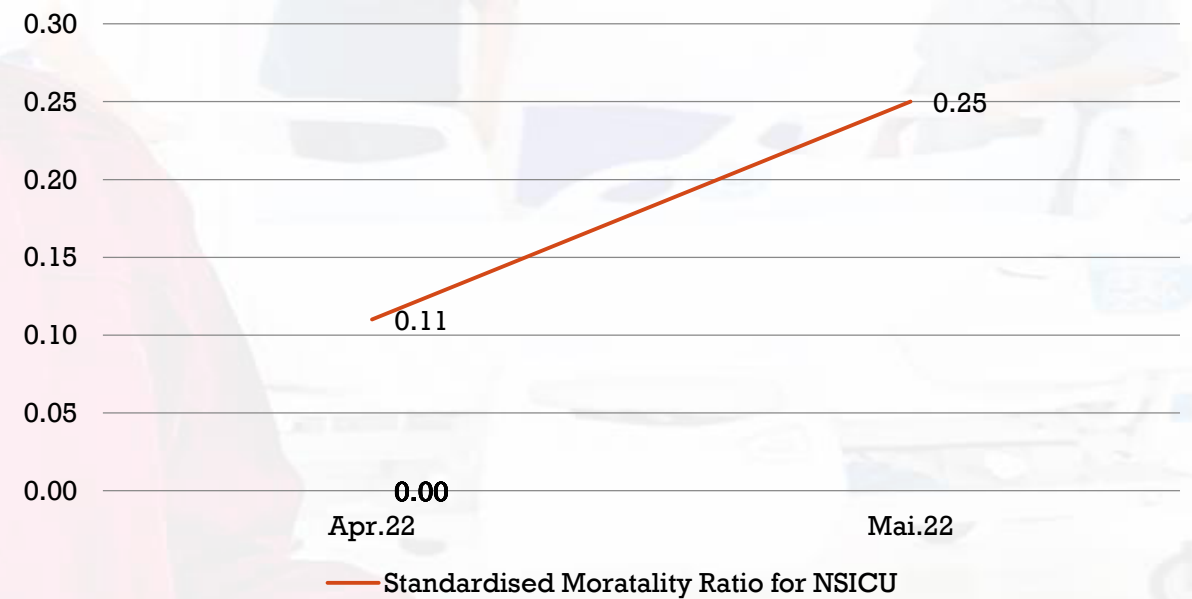
- **RESEARCH QUESTION:** This is new addition in NABH 5th edition and hence needs to be implemented across Intensive care areas of the Hospital.
- **STUDY DESIGN:** Concurrent Audit for all ICU admitted patients after 24 hours of admission.
- **STUDY SETTING:** Intensive Care Area of BLK Max hospital
- **STUDY PERIOD:** 2 months 24 March, 2022 to 23 June, 2022
- **STUDY POPULATION:**
 1. **Inclusion Criteria:** All ICU patients after 24 Hours of admission
 2. **Exclusion Criteria:** All ICU patient who expired/transferred with in 24 Hours of admission
 3. **Study tools:** APACHE, SOFA, POSSUM, SNAPPE, PIMS, Euro Score II
- **SAMPLE SIZE:** All ICU admitted
- **DATA COLLECTION PROCEDURE:** Data will be collected Manually and through online tools.
- **Research Methodology:** Quantitative Research

RESULTS

Standardized Mortality Ratio for MICU

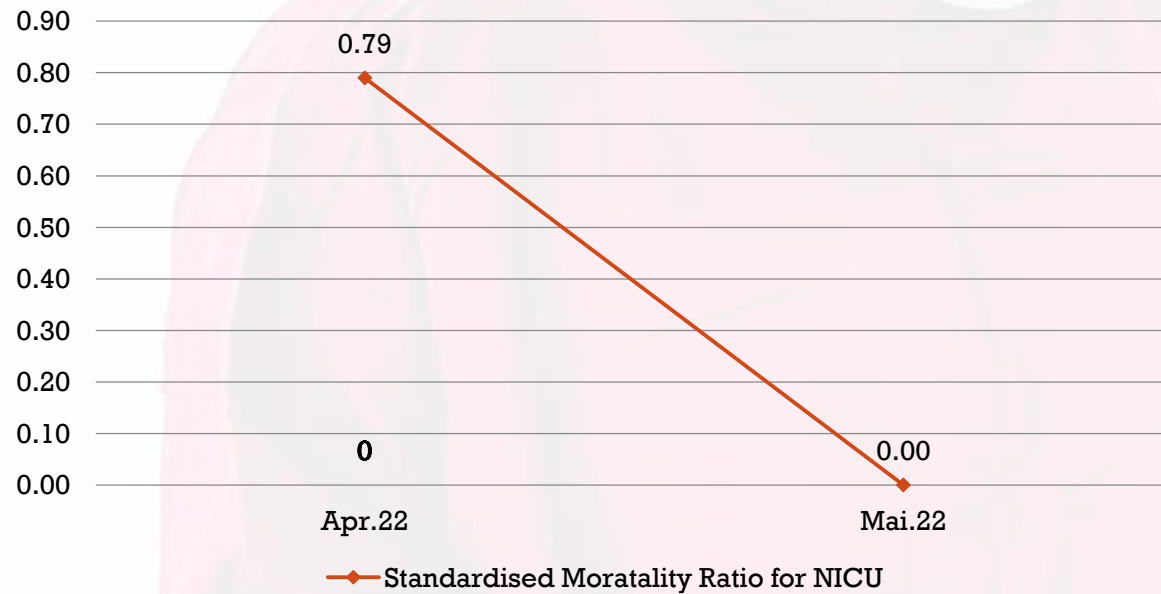


Standardized Mortality Ratio for NSICU

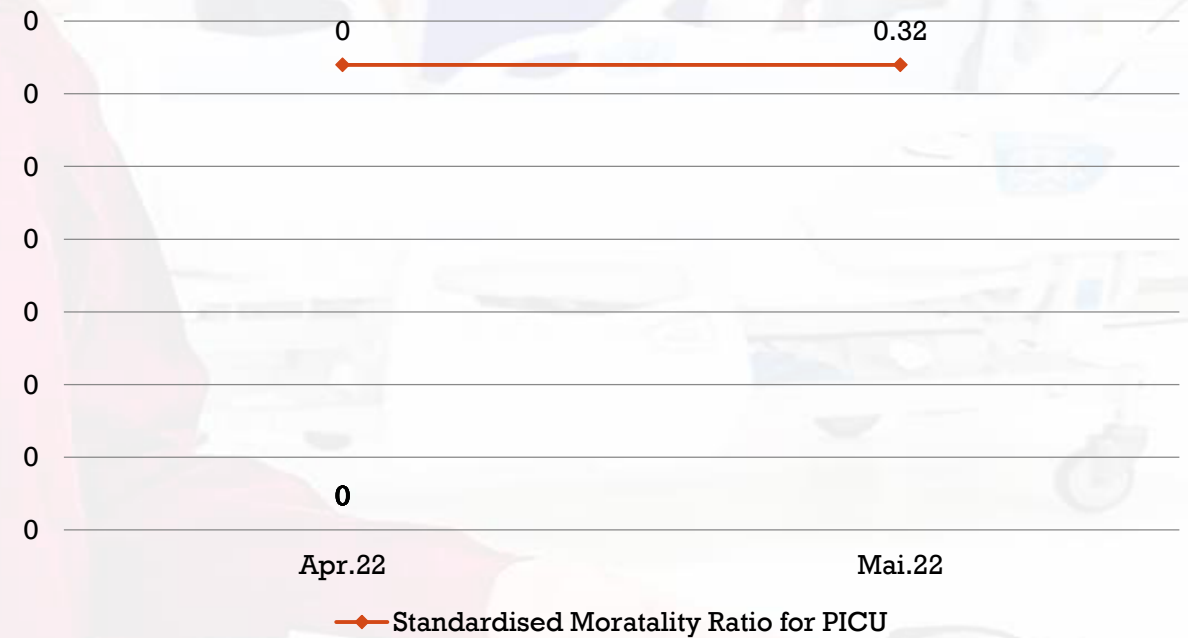


RESULTS

Standardized Mortality Ratio for NICU

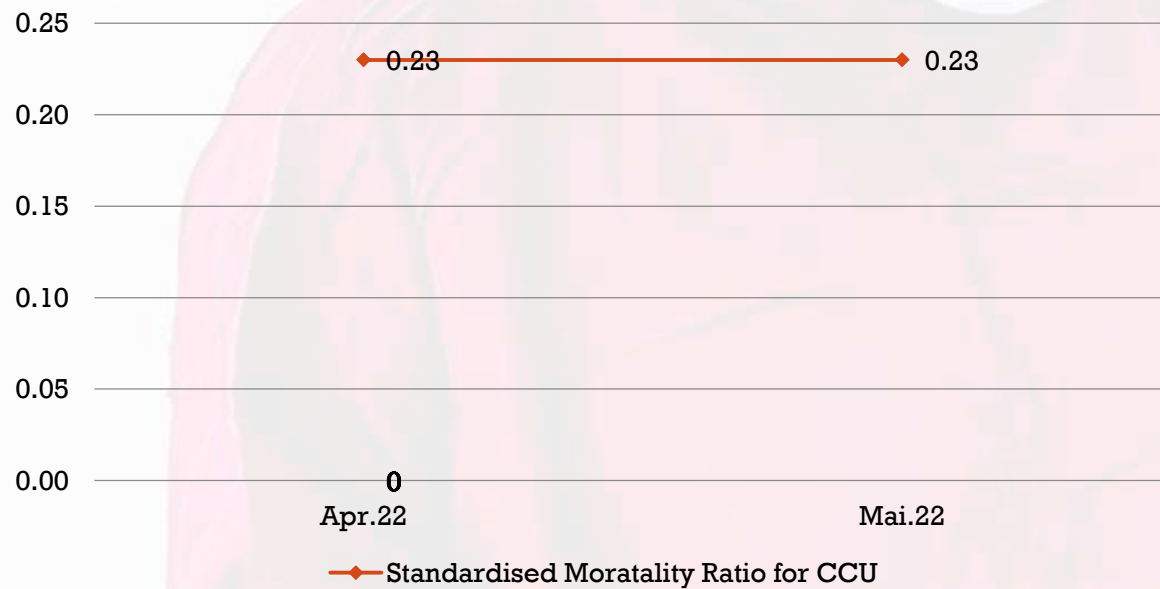


Standardized Mortality Ratio for PICU

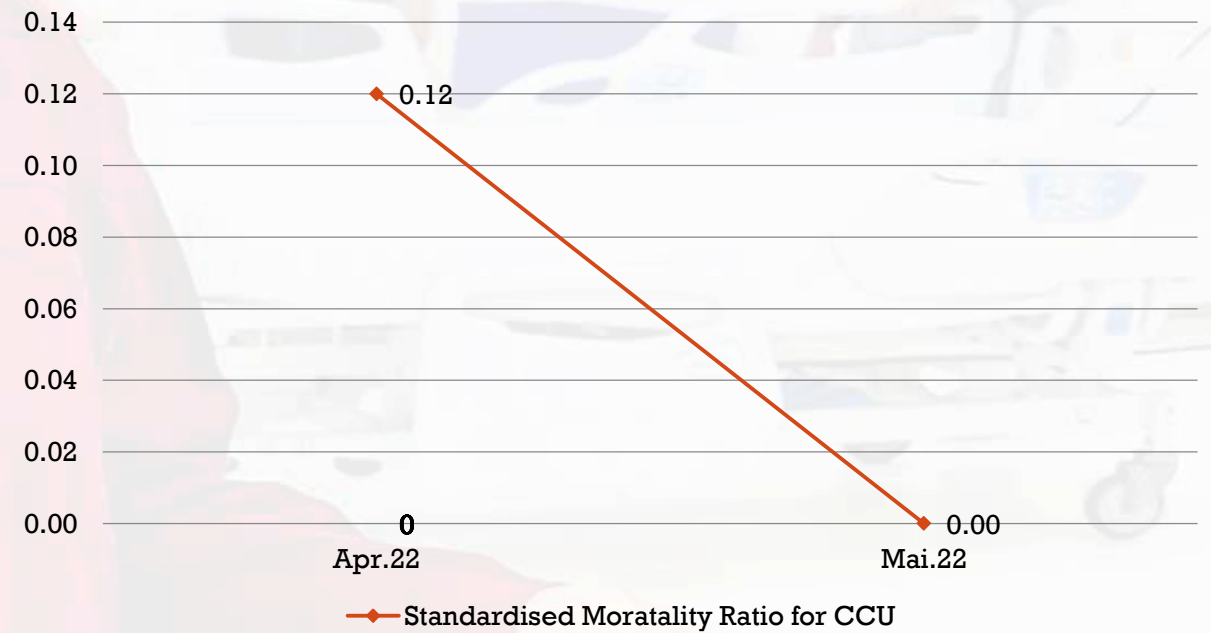


RESULTS

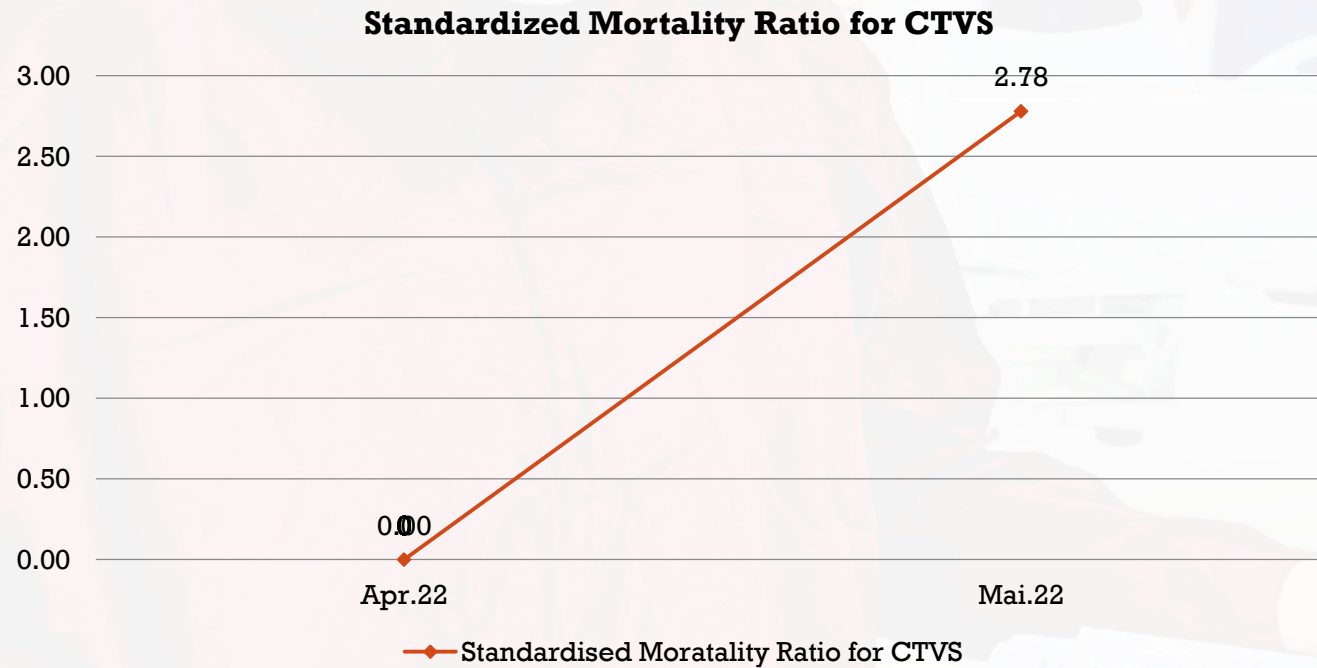
Standardized Mortality Ratio for CCU



Standardized Mortality Ratio for SICU



RESULTS



DISCUSSION

- This study demonstrated the severity of patient conditions in all ICU (MICU, SICU, NSICU, CCU, CTVS, NICU, PICU) in terms of APACHE II, SOFA, POSSUM, SNAPPE, PIMS and EUROSCORE score which probably reflects the mortality prediction by different scores.
- For the performance of mortality prediction, different scores have been validated and accepted in many settings of ICU's, with the AUC varying from 0.74 to 0.86
- The practical reason that was different from the others was the primary patient condition. Comparing the accuracy of different scoring systems is difficult because of differences in populations used to derive these scores and different statistical methods.
- Some studies suggest that the ICU scores may be better calibrated to critically ill patients than the ED scores, particularly at the upper score range in the sickest patients with greater disease severity.

DISCUSSION

- Auditing of practice and comparison of mortality data is essential to ensure that patients are well informed of risks and to improve quality of care in hospitals.
- The results of this study suggest that the SOFA score functions with fair to good accuracy for predicting in-hospital mortality when applied to patients with severe sepsis with evidence of hypoperfusion at the time of ED presentation.
- As SNAPPE II score is an admission score, it doesn't correctly predict the outcome in neonates whose internal milieu is undergoing dynamic changes and in those preterm neonates who are going to develop nosocomial infections.
- PIM2 score is done within 1 hour of PICU admission, resulting in early identification of severity of illness and stratification of children for necessary intervention.

CONCLUSION

- The general **conclusion** is that the decision on the continuation of treatment should not be made solely on the basis of the value of these scoring systems, but they are to be used only to evaluate the predicted mortality
- After analysing the data, we can conclude that standardised mortality more mortality has occurred in CTVS that is 2.78 as the ratio is greater than 1.0 which indicates that there is more mortality has been occurred than would be expected
- The SOFA score demonstrated fair to good accuracy for predicting in-hospital mortality when applied to patients with severe sepsis with evidence of hypoperfusion at the time of ED presentation.
- For clinicians, this research draws attention to the problem of missing values in variables over time in order to emphasize on the importance of collecting certain measurements early on, this will influence the predictive performance of mortality prediction model.

SUGGESTIONS TO THE ORGANIZATION WHERE THE STUDY WAS CONDUCTED

- Regular training and update sessions for every employee for their regular up gradation about quality parameters of different scoring done in different ICUS.
- Staff should be sensitized about the regular scoring being done in all the ICUS
- Regular audit of the documentation should be done on regular basis and respective team should be trained accordingly.
- The scoring systems are not adequate to make decisions for the management of individual patients due to the relatively high mortality rate predicted in survivors and the low one predicted in non-survivors
- As there is Incomplete reporting of deaths which can affect the actual outcome
- Clinicians to be aware about problem of missing values in variables of the scores will influence the predictive performance of mortality prediction model.

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THANK YOU