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Comparison of the Society of Thoracic Surgeons Predicted Risk of Mortality, Logistic EuroScore I and EuroScore II in Israeli Patients Undergoing Cardiac Surgery

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The Society of Thoracic Surgeons

EACTS European Association For Cardio-Thoracic Surgery

Background

- **The Israeli Society of Cardiothoracic Surgery and the Ministry of Health recently established the 1st national-level adult cardiac surgery database linked to the STS ACSD**

EDITORIAL

International Participation in The Society of Thoracic Surgeons Adult Cardiac Surgery Database: From Institutional to National

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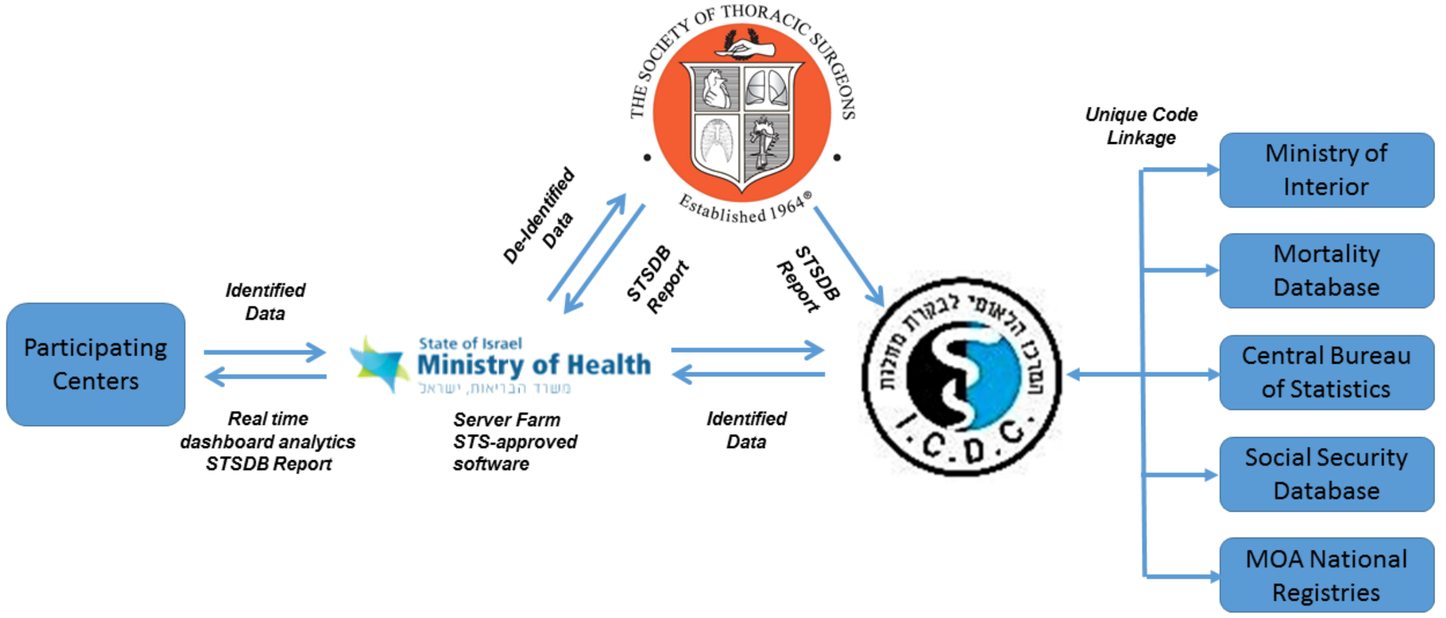

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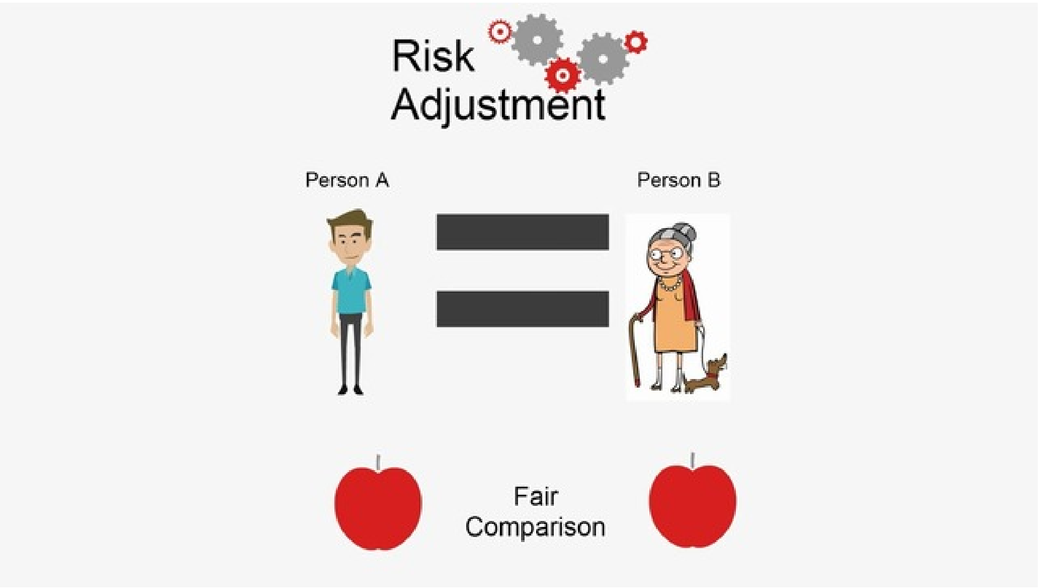
Background

- **Accurate and fair measurement of performance must be based on**

Risk-Adjustment

- **STS ACSD risk-prediction models**
  - **Huge amount of data**
  - **Sophisticated algorithms**



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Background

- **Fundamental social, economic and cultural differences**
- **Markedly different healthcare systems, infrastructure, patient profiles, referral and practice patterns between US and Israel**

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Background

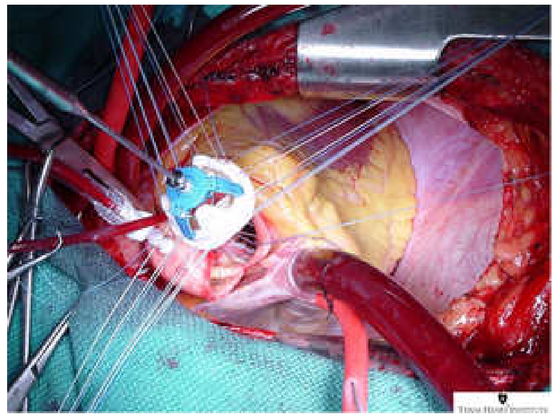
- **STS ACSD risk-prediction models in Israeli patients**
  - **Applicability?**
  - **Validity?**

Aim of the Study

- **Compare the accuracy of the STS PROM, the Logistic EuroScore I and EuroScore II in Israeli patients undergoing cardiac surgery**

The Society of Thoracic Surgeons

STS National Database
Using data to drive quality



EuroSCORE II
European System for Cardiac Operative Risk Evaluation

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Methods

- **Study cohort – 1279 patients who underwent cardiac operation with a calculable STS PROM**
- **Departmental STS-linked database was used to calculate the STS PROM, EuS I and EuS II**
- **Overall Observed vs. Expected mortality (O/E Ratio) and across 5 risk-score sub-groups**
- **Model discrimination - ROC curves with AUC**
- **Correlation among the 3 scores**

Observed vs. Expected Mortality

Score	Observed Mortality	Expected Mortality	O / E Ratio	P value*
STS PROM	1.95%	3.12%	0.62	
EuS II	1.95%	3.31%	0.59	0.36
L EUS I	1.95%	7.97%	0.24	0.0001

* Versus STS PROM

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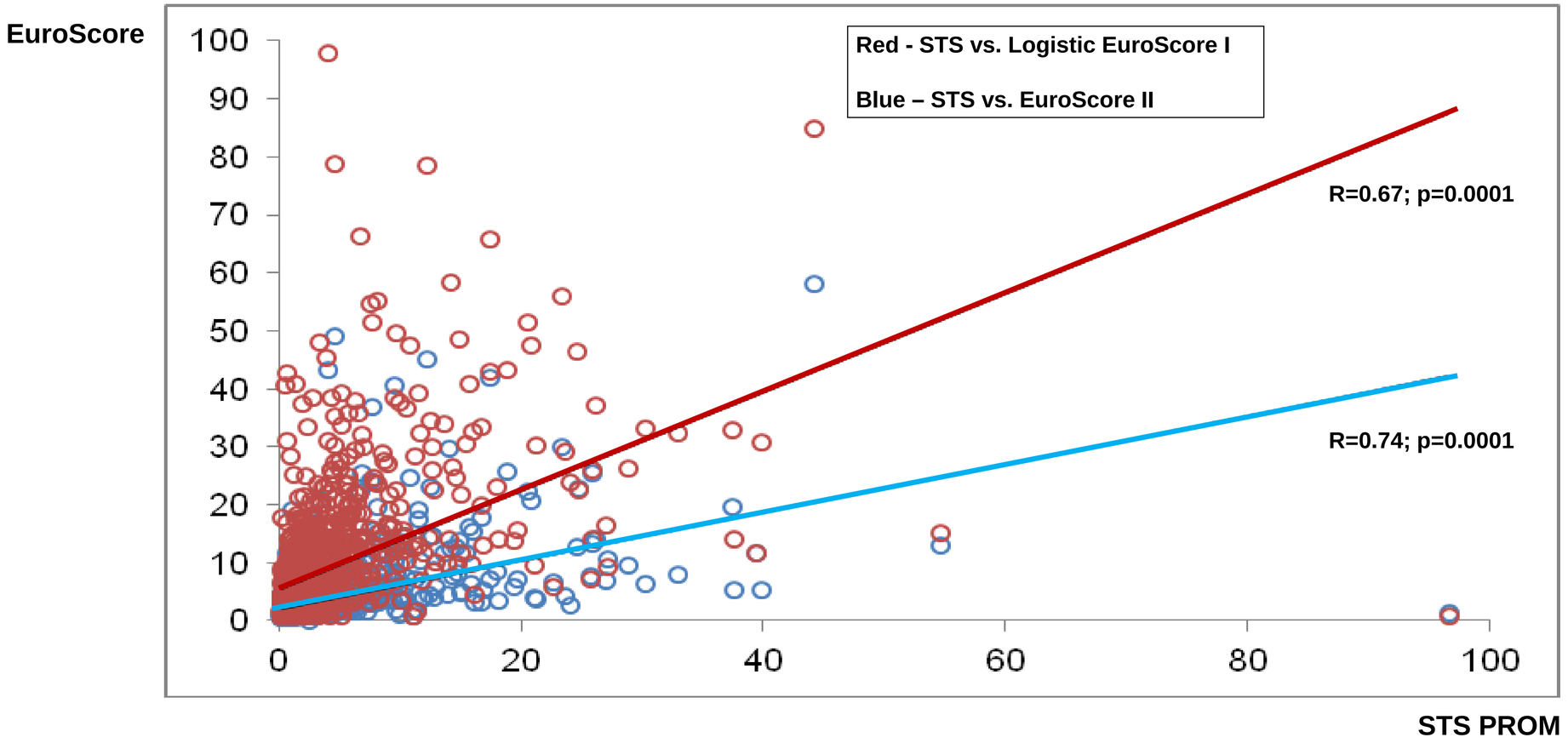
Correlation Among the Scores



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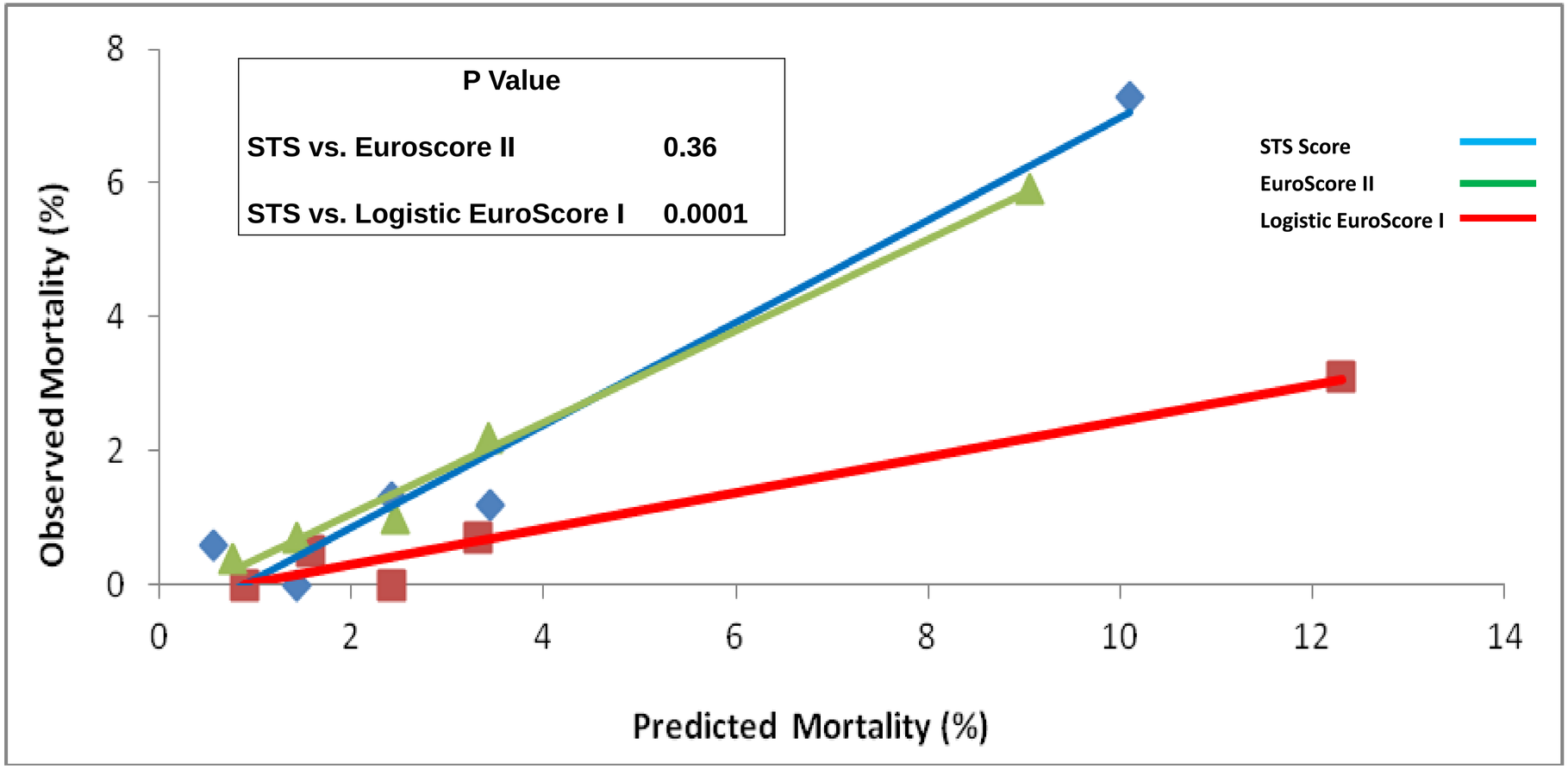
Observed vs. Expected Mortality Ratio



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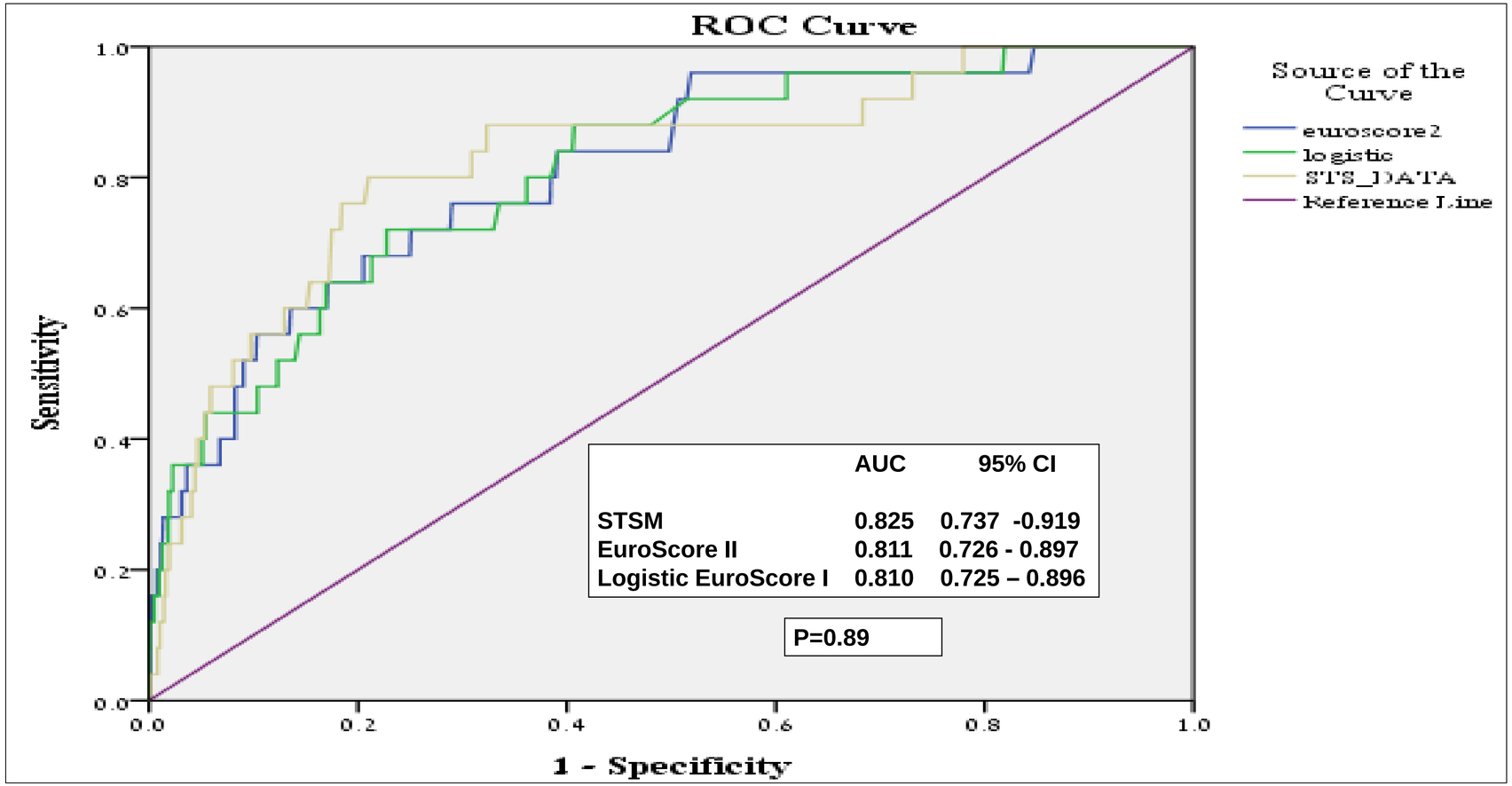
Model Discrimination

Receiver Operating Curves and Area Under the Curve (AUC)



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Conclusions

- **The STS PROM and EuS II performed equally well**
- **EuS I overestimated mortality**
- **Further studies in much larger cohorts are necessary to validate the entire spectrum of the STS risk-prediction models of procedural outcomes**

The Observed vs STS PROM Ratio is an accurate quality metric in Israeli patients undergoing cardiac surgery

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Thank You

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