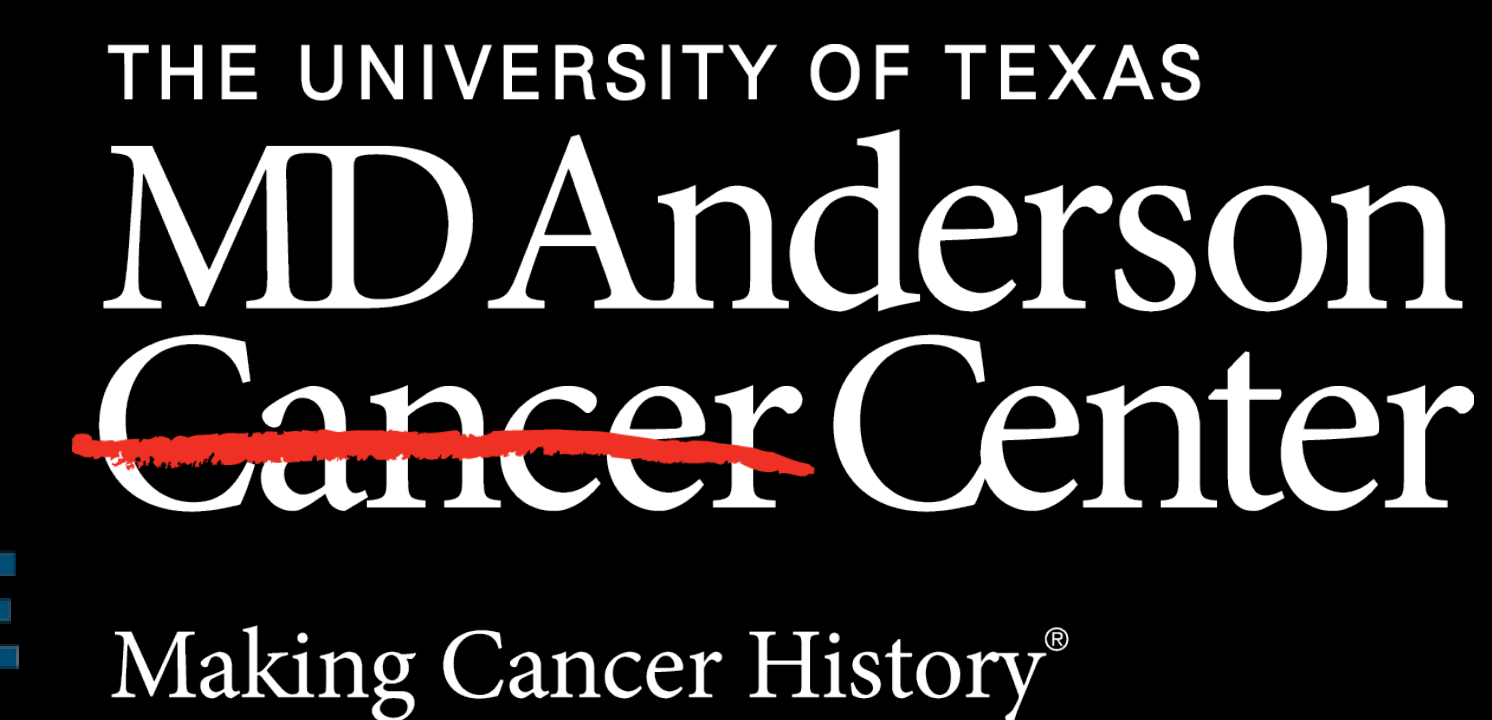
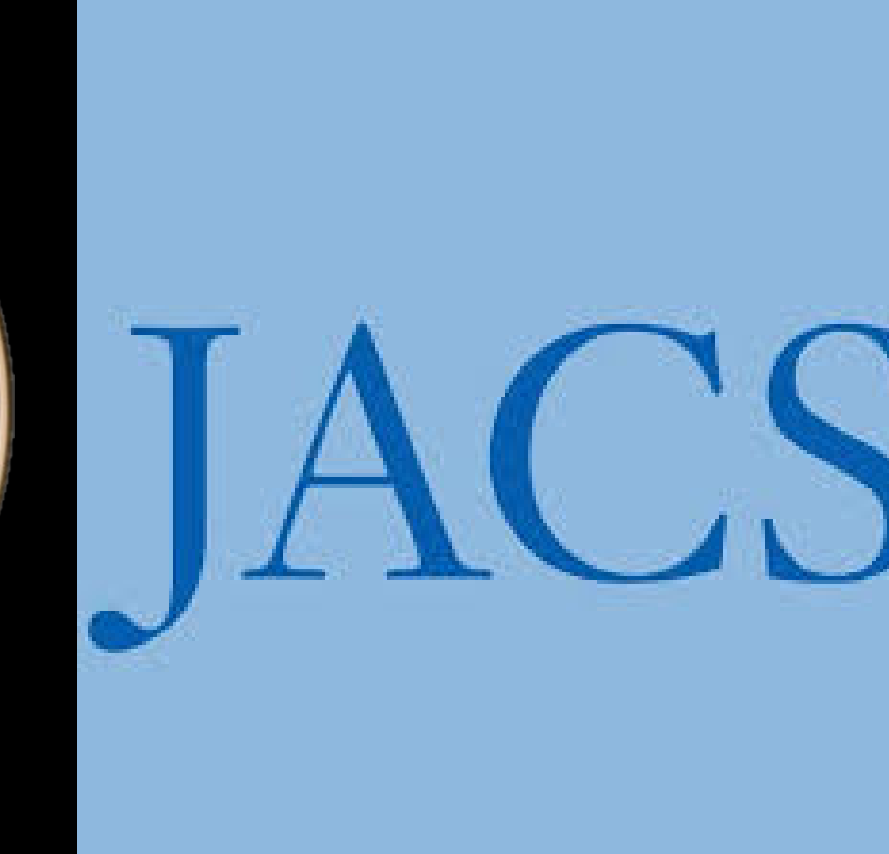


Development and Assessment of Artificial Intelligence-Driven Models to Predict Hernia Recurrence, Surgical Complications, and 30-Day Readmission Following Abdominal Wall Reconstruction

Abbas M Hassan, MD; Malke Asaad, MD; Anaeze C Offodile II, MD, MPH, FACS; Charles E Butler, MD, FACS

Department of Plastic and Reconstructive Surgery, The University of Texas MD Anderson



AWR is common but not without complications

>400,000 operations performed annually in the US alone.

Costs >\$3 billion

Complication rates remain far from acceptable:

Hernia Recurrence	42%
Surgical complications	44%
30-day readmission	13%

Complications following AWR are devastating

↓ Quality of life ↑ Morbidity ↑ Healthcare Costs*

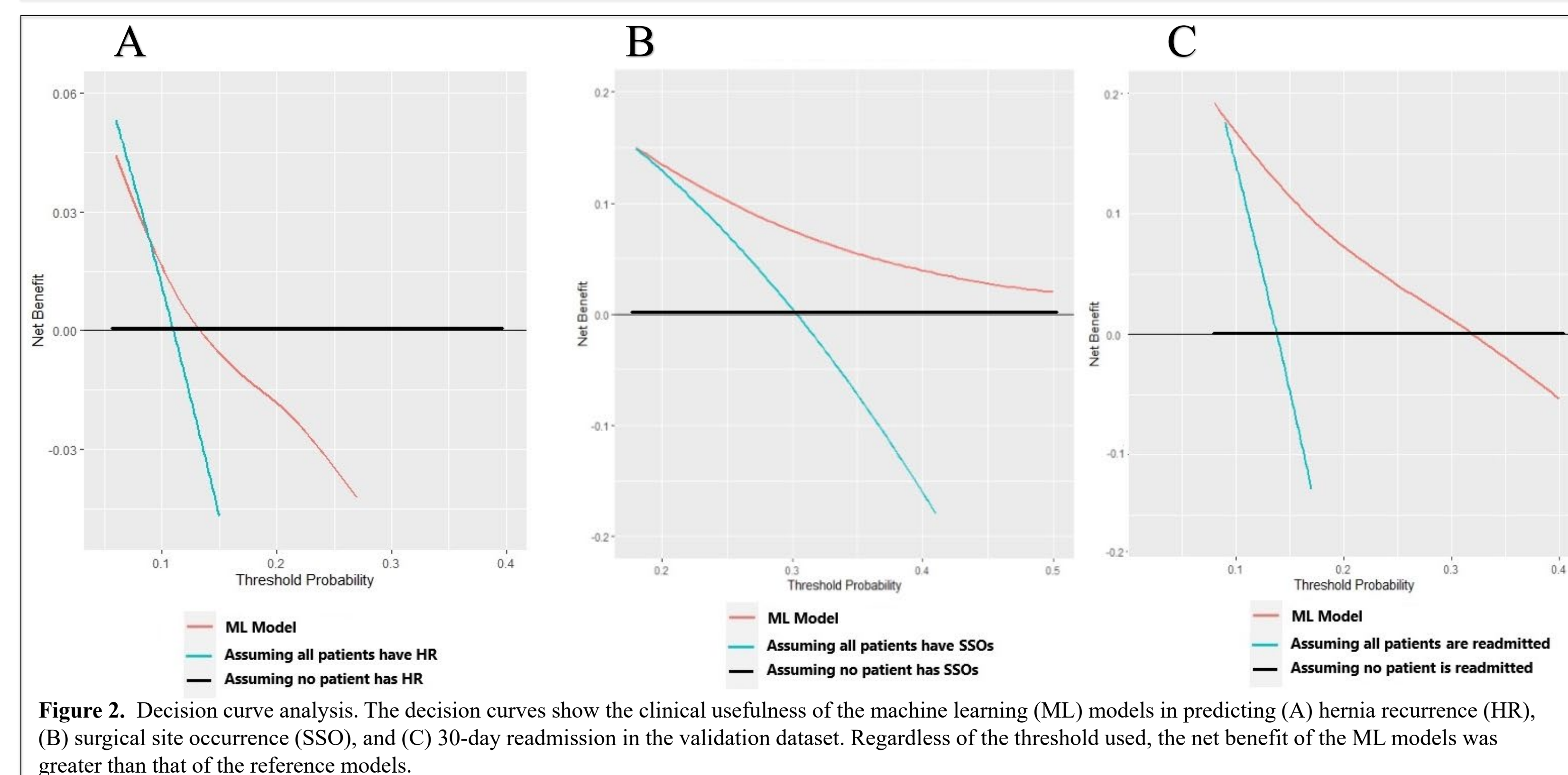
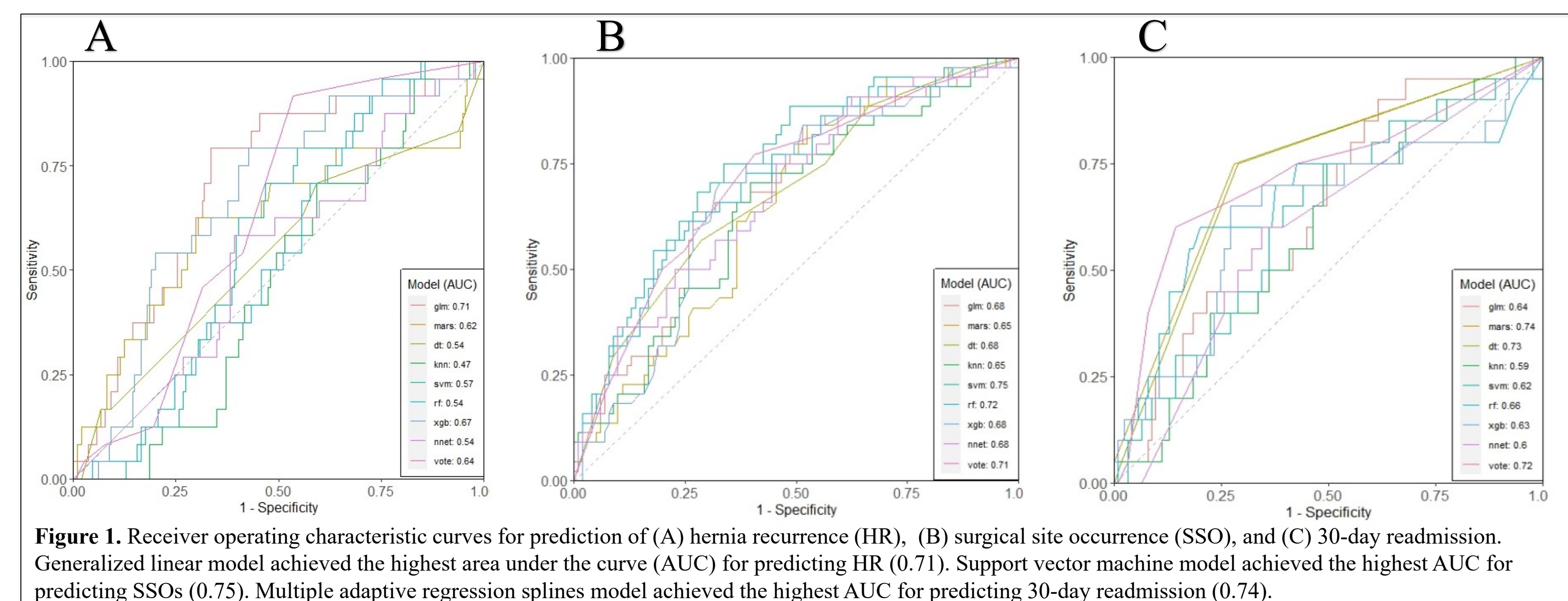
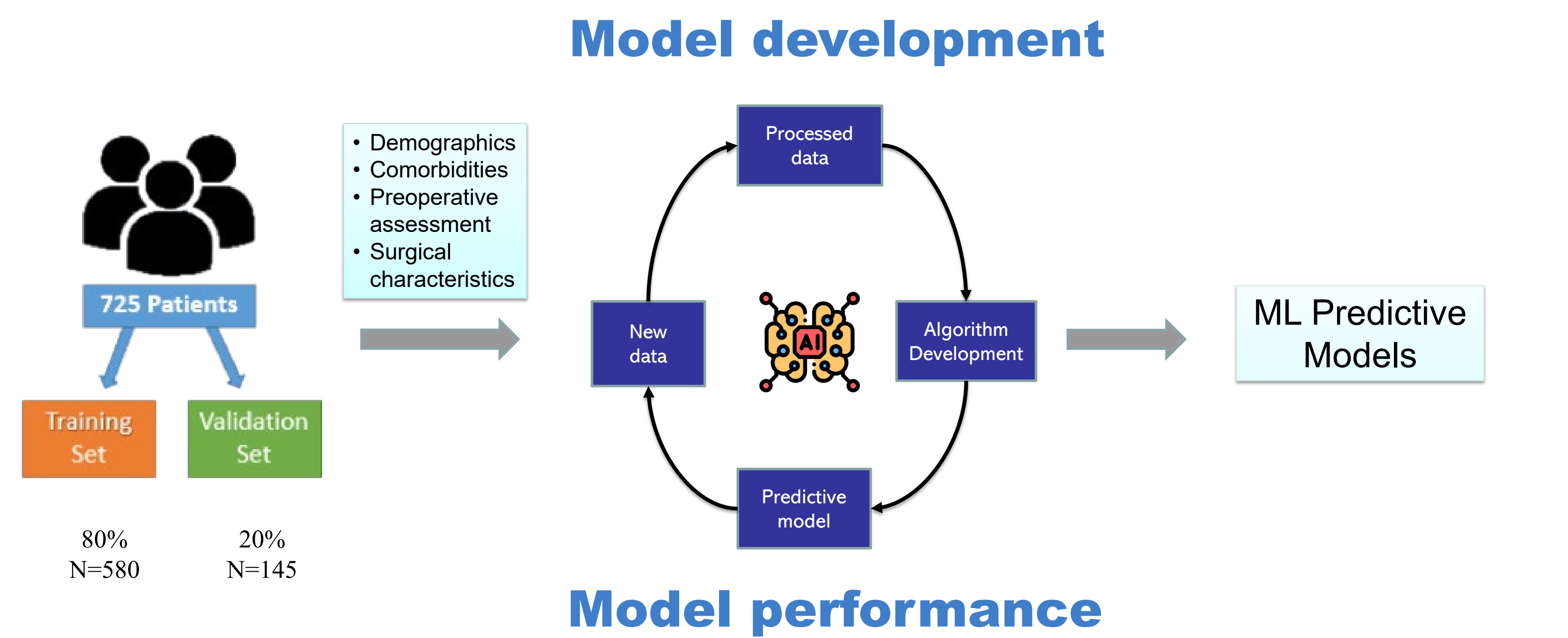
*1% reduction in HR alone → >\$30 million would be saved annually

Machine learning may improve AWR outcomes

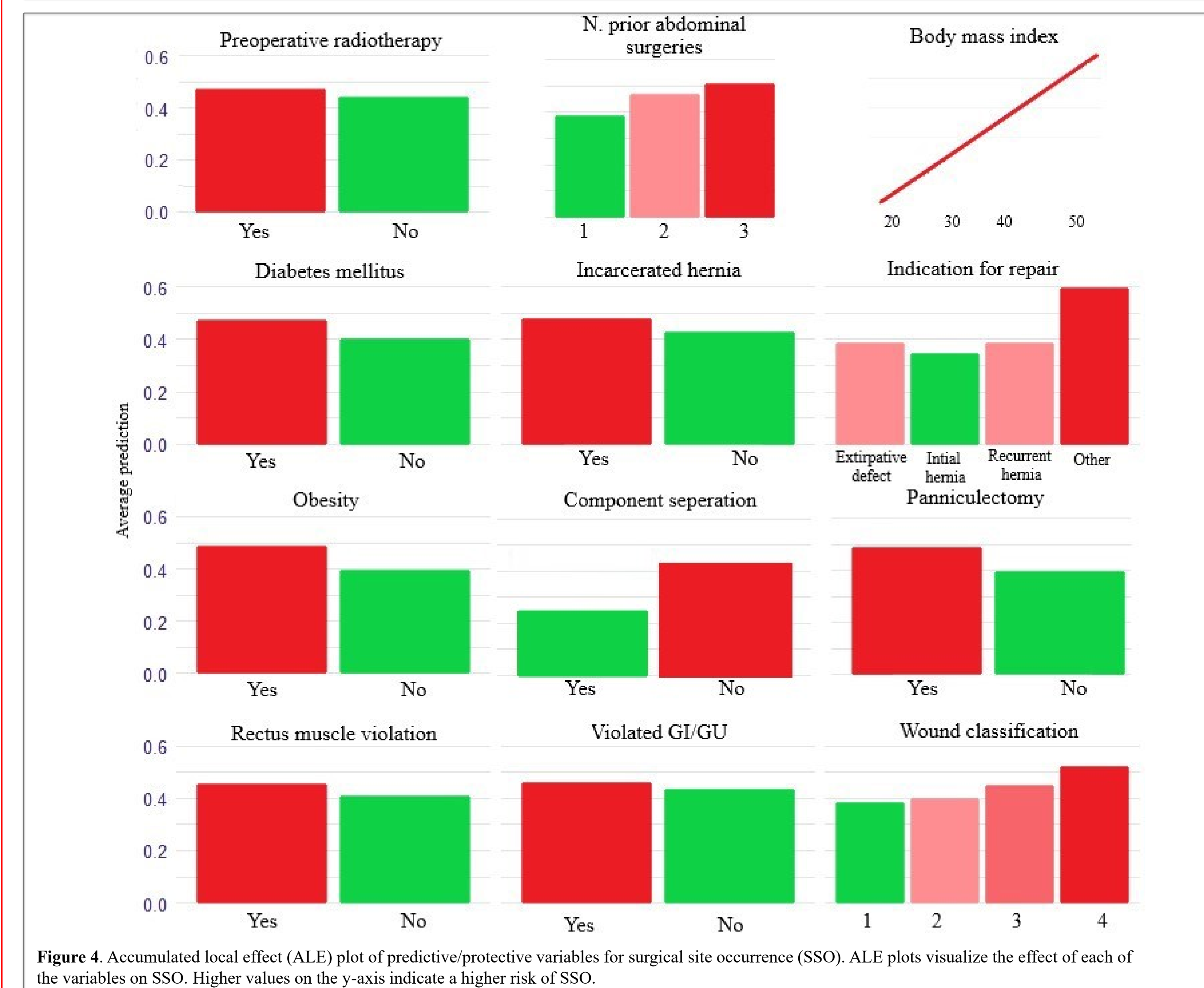
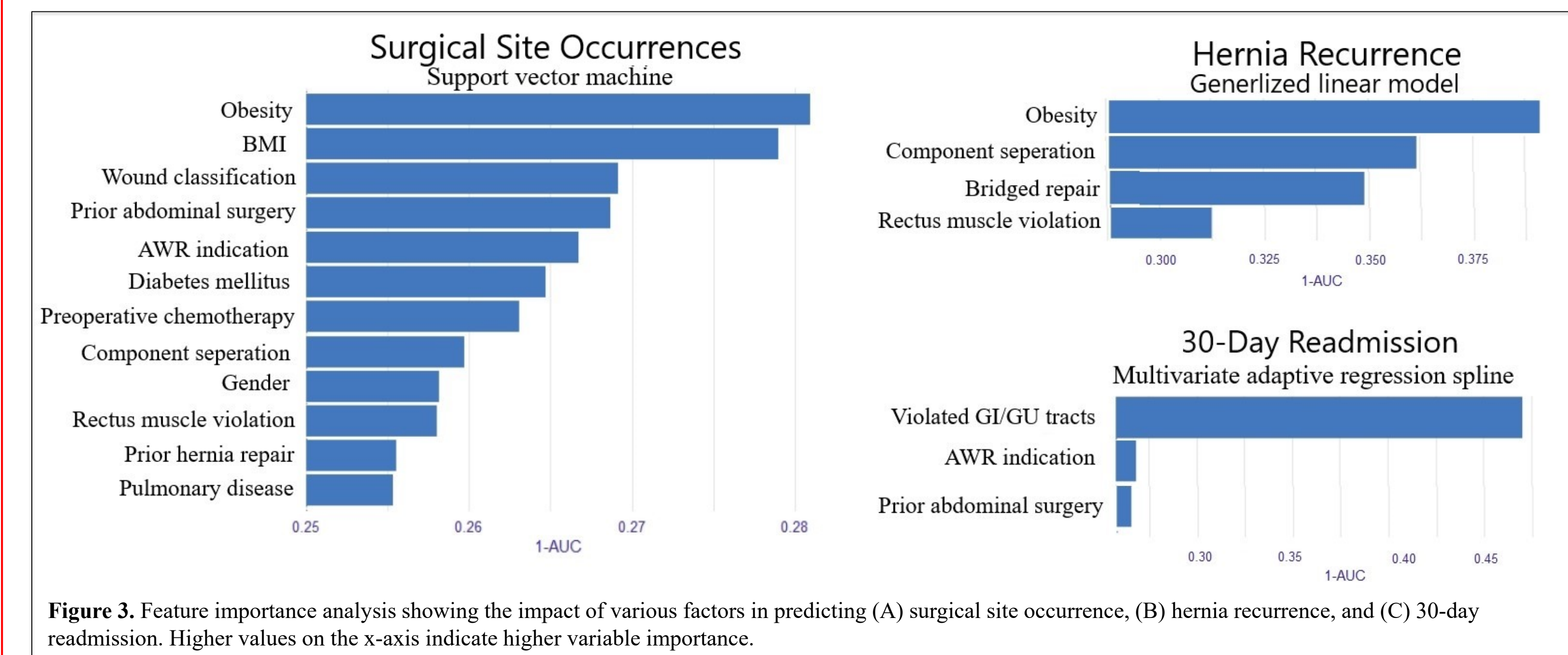
ML: branch of artificial intelligence

ML learns relationships and patterns between complex variables.

ML can identifies patients at high risk of developing complications



Predictive factors for complications



Clinical impact



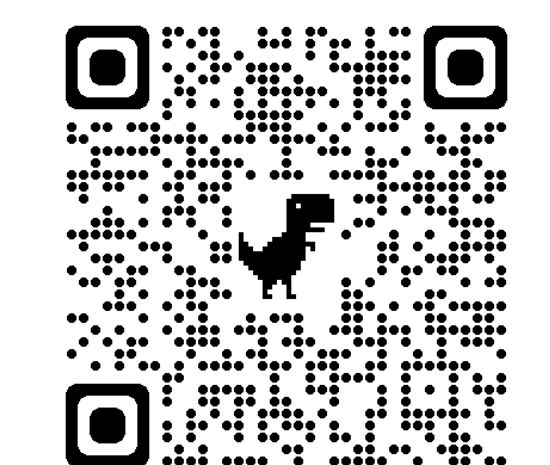
Conclusion

ML accurately predicts the occurrence of complications

ML identified non-linear risk predictors of complications

ML should be incorporated in perioperative AWR care

References



Collaborate with us

