TIDE Score: A Socioeconomic Risk Tool to Predict Breast Cancer Treatment Delays and a Navigator-Led QI Workflow in Community Oncology Authors:

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Introduction

Delays in initiating breast cancer treatment are consistently linked to worse outcomes and disproportionately burden underserved patients. Although socioeconomic disparities are well described, clinicians lack a simple, standardized tool to identify patients at high risk of delay at the point of diagnosis. We addressed this gap by developing a concise, SES-informed risk score and pairing it with a navigator-driven, EMR-triggered intervention.

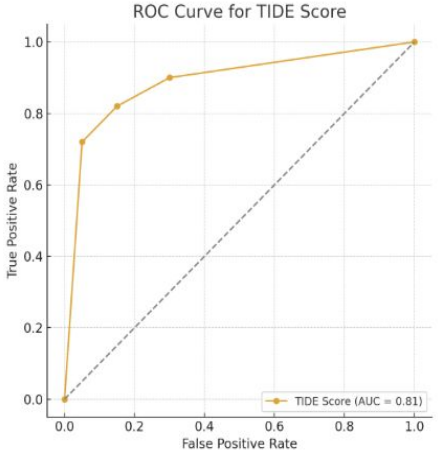
Aim: To develop and internally evaluate the Treatment Initiation Delay Estimator (TIDE) Score and to design a scalable navigator workflow that operationalizes risk stratification into timely action.

Methods

We performed a retrospective cohort study of 609 consecutive breast cancer patients treated at a community cancer center (2018–2023). The index date was clinical/pathologic diagnosis. The primary outcome was treatment delay (binary), defined a priori by modality-specific, guideline windows (first-definitive surgery; neoadjuvant/adjuvant systemic therapy; radiation). Candidate predictors available at diagnosis (e.g., insurance type, marital status, age, AJCC stage) were abstracted from the EMR; records with missing outcome or key covariates were excluded. We fit a multivariable logistic regression to identify independent predictors and converted regression coefficients to a simplified point-based score (TIDE) by scaling to the smallest non-zero β and rounding to integers. We prespecified that score-based risk strata would trigger a navigator-led QI pathway embedded in the EMR: as shown in the figure.

TIDE Calculator

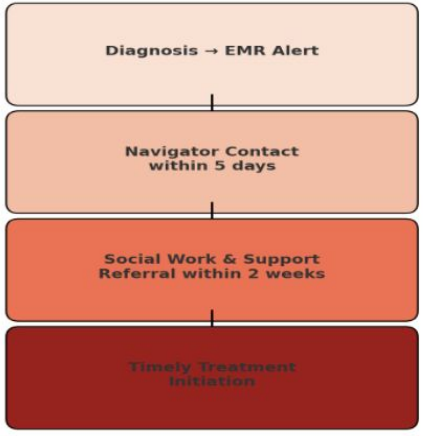
Variable	Points
Medicaid Insurance	2
Unmarried Status	1
Age < 50	1
Stage ≥ II	1
No Medicare	1



Results

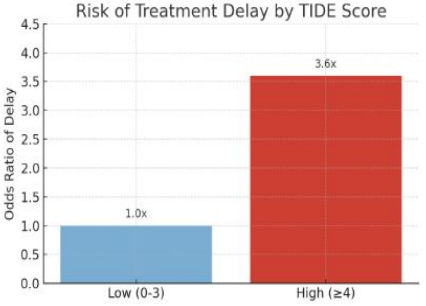
The final model demonstrated good discrimination (AUC = 0.81). The TIDE Score (0–6 po
ints) assigned: Medicaid insurance (2), unmarried status (1), age <50 years (1), AJCC stage ≥II (1), and absence of Medicare (1). Patients with TIDE ≥4 had 3.6-fold higher odds of treatment delay ($p < 0.001$) compared with those scoring 0–3. The proposed navigator-led QI workflow operationalizes risk stratification into earlier outreach and barrier resolution.

Navigator-Led QI Workflow



Discussion

The TIDE model demonstrates that early identification of high-risk patients enables targeted navigator intervention within existing EMR infrastructure. This approach can streamline care coordination and improve treatment timeliness in community oncology settings



Conclusions

The TIDE Score is a concise, Socio economic status (SES) informed tool that identifies breast cancer patients at elevated risk for treatment delay. Coupled with a navigator-driven workflow, it offers a pragmatic, low-cost strategy to reduce disparities in timely cancer care.

Clinical Impact: Embedding TIDE within the EMR to trigger navigator outreach can align limited resources to those most likely to benefit, accelerating time-to-treatment for vulnerable patients in community settings..

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