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| **Study** | **Method** | **Pros** | **Cons** | **Results** |
| Pakbin et al. (2018) | EHR data for ICU readmissions | High AUROC values, specific time intervals | Limited to ICU readmissions, may not generalize | AUROC: 0.76 (72 hours), 0.84 (24 hours bounceback) |
| Matheny et al. (2021) | Comparison of 5 ML models for 30-day readmission | Emphasized calibration, feasibility of using EHR data | Similar AUROC values, varying calibration levels | 0.686 - 0.695 for parametric & 0.686 - 0.704 for nonparametric |
| Yu et al. (2005) | Feasibility study for Institution-specific readmission prediction | Flexible, adaptable to context | Requires customization for each institution | Framework with context-aware adaptation |
| Golas et al. (2018) | Deep Unified Networks (DUN) | Better prediction than traditional methods | Computationally intensive | Improved 30-day readmission prediction with AUC of DUNs: 0.705 ± 0.015 |
| Xue et al. (2018) | Logistic regression, functional independence measures | High validation concordance | Specific to rehabilitation inpatients | Validation concordance: 0.85 |
| Park et al. (2023) | Patient-reported outcome measures for 90-day TJA readmissions | Considered patient-reported outcomes | Focused on 90-day (total joint arthroplasty)TJA readmissions | Readmission rate: 5.8%, AUC, recall, precision > 0.5 |
| Hond et al. (2023) | ML model retraining and recalibration | Improved AUC with isotonic regression | Focused on short-term (7 days) post-ICU discharge | AUC improved from 0.72 to 0.79 |
| Silva et al. (2023) | Comparison of ML algorithms for 30-day pediatric readmissions | Found best algorithm (XGBoost), high AUC | Pediatric-specific, avoidable readmissions only | AUC: 0.814, Readmission rate: 9.5% |
| Zeinalnezhad & Shishehchi (2024) | Data mining, genetic algorithms, SVM | Improved accuracy with genetic algorithms | Diabetic readmissions specific | Accuracy: 73.52%, Readmission rate: 11.4% |
| Betts et al. (2020) | Boosted trees model for postpartum psychiatric admissions | Good discrimination and calibration | Specific to postpartum psychiatric admissions | Gradient boosted trees gave AUC: 0.80 |
| Morel et al. (2020) | XGBoost for mental/substance use disorders | Large dataset, better performance than other models | Specific to mental or substance use disorders and based on claims data | AUC: 0.73 |