Evaluating Initial Medication Adherence Thresholds as Predictors of Continuation Adherence Among Patients With Major Depressive Disorder: A Claims-Based Analysis

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BACKGROUND

- Major depressive disorder (MDD) requires sustained antidepressant use, yet adherence is often suboptimal early in treatment. [1]
- Initial medication adherence (IMA) may indicate subsequent treatment engagement. [2]
- The optimal IMA threshold for predicting future adherence remains unclear, with most studies using cutoffs for overall adherence. [2,3]
- Identifying optimal IMA thresholds may improve early identification of patients at risk for poor long-term adherence.

OBJECTIVE

To compare the predictive performance of IMA thresholds (70–90%) and quantify their association with continuation-phase adherence (CPA) in patients with major depressive disorder.

METHODS

- **Study Design & Data Source:** Retrospective cohort study using 2015–2024 Merative MarketScan Commercial Claims data.
- **Population:** Adults with MDD initiating antidepressant therapy, identified using a new-user design with ≥12 months of continuous enrollment pre- and post-initiation.
- **Exposure (IMA):** Proportion of days covered (PDC) during the first 90 days; evaluated at thresholds of 70%, 80%, and 90%.
- **Outcome (CPA):** Continuation-phase adherence measured during months 4–12; defined as optimal if PDC ≥80%.
- **Analysis:** Multivariable logistic regression models assessed the association between IMA thresholds and CPA, adjusting for demographic, clinical, and healthcare utilization factors.
- **Model Performance:** Predictive performance compared using area under the curve (AUC), Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC).

RESULTS

Figure 1. Model Performance Across IMA Thresholds

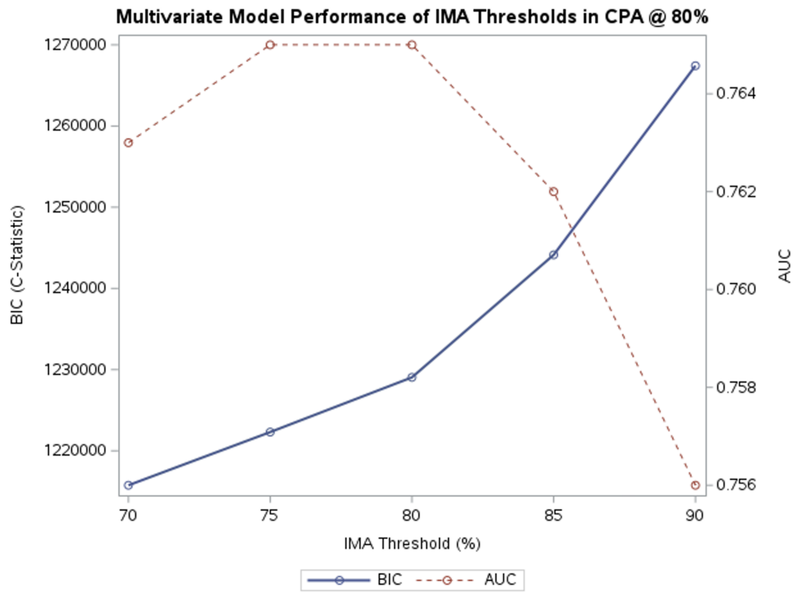

Figure 2. Proportion of Patients Achieving IMA by Threshold

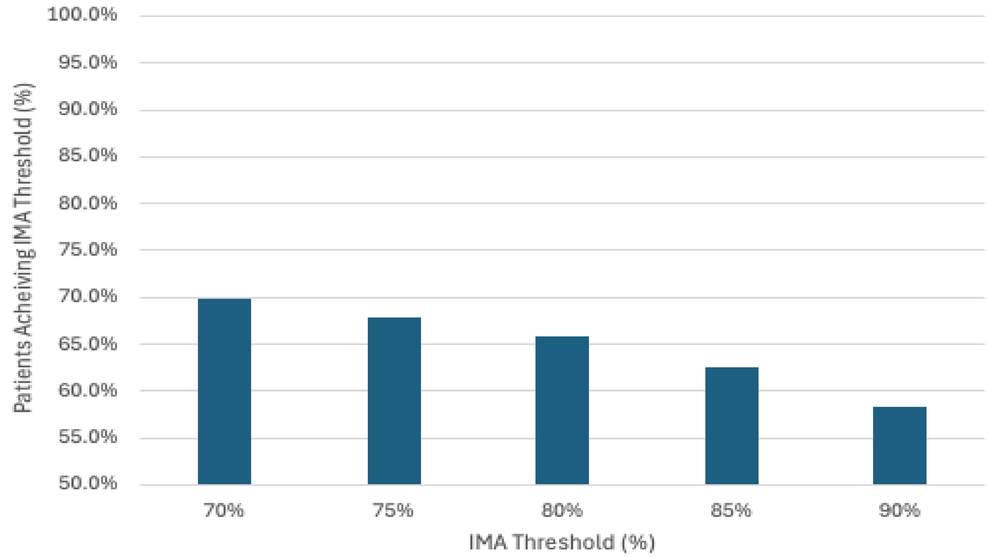

Table 1. Adjusted Odds Ratios Across Thresholds

IMA Cutoff	OR	95% CI LL	95% CI UL	AIC	BIC	AUC
70%	16.44	16.20	16.68	1215109.60	1215753.90	0.763
75%	13.34	13.17	13.52	1221659.30	1222303.60	0.765
80%	11.39	11.25	11.53	1228399.30	1229043.60	0.765
85%	8.99	8.90	9.09	1243489.30	1244133.50	0.762
90%	7.02	6.96	7.09	1266781.00	1267425.30	0.756

IC: Akaike Information Criterion, AUC: Area Under the Receiver Operating Characteristic Curve, BIC: Bayesian Information Criterion, CI: Confidence Interval, IMA: Initial Medication Adherence, OR: Odds Ratio

CONCLUSIONS

- Initial medication adherence (IMA) was strongly associated with CPA across all evaluated thresholds.
- An IMA threshold of **≥70% demonstrated the best predictive performance** (AUC: 0.763) compared with more restrictive thresholds.
- Increasing IMA stringency reduced model performance and attenuated effect estimates, without improving discrimination.
- Higher thresholds also classified fewer patients as adherent, potentially limiting early identification of at-risk individuals.
- These findings support the use of **IMA ≥70% as a practical threshold** for predicting CPA and identifying patients at risk for suboptimal long-term adherence.
- Further research is needed to evaluate IMA thresholds and associated clinical and economic outcomes to strengthen early adherence intervention efforts and to improve long-term treatment outcomes.

LIMITATIONS

- **Claims-based measurement:** Adherence was estimated using pharmacy claims and may not reflect actual medication use or capture factors such as tolerability, patient preferences, or symptom response.
- **Residual confounding:** Unmeasured variables (clinical-based depression severity, behavioral factors, access to care) may influence both IMA and CPA, potentially biasing observed associations.
- **Generalizability:** Findings are based on a commercially insured population and may not be generalizable to Medicaid, Medicare, or uninsured populations.

REFERENCES

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