

Supplementary Table S1

Table S1. Operational definitions and provenance of the SIPAT-derived indicator targets.

Indicator	Source definition	Positive, n (%)	Timing and independence	Missingness	Adjudication/blinding	Intended meaning
Depression-related	SIPAT item IXa ≥ 2	32 (6.5%)	Same pre-transplant SIPAT; not independent	0	None; no blinded assessment	Threshold-coded depressive concern; not a diagnosis
Anxiety-related	SIPAT item IXb ≥ 2	11 (2.2%)	Same pre-transplant SIPAT; not independent	0	None; no blinded assessment	Threshold-coded anxiety concern; not a diagnosis
Nicotine-related	SIPAT item XVIII ≥ 3	56 (11.3%)	Same pre-transplant SIPAT; not independent	0	None; no biological verification	Elevated nicotine-related concern; not confirmed current use or relapse
Alcohol-related	SIPAT item XV ≥ 2	22 (4.4%)	Same pre-transplant SIPAT; not independent	0	None; no independent diagnostic assessment	Elevated alcohol-related concern; not an alcohol-use diagnosis
Illicit drug-related	SIPAT item XVII ≥ 2	11 (2.2%)	Same pre-transplant SIPAT; not independent	0	None; no toxicological verification	Elevated drug-related concern; not confirmed current use or relapse
Social-support deficit	SIPAT Domain B score ≥ 6	37 (7.5%)	Same pre-transplant SIPAT; not independent	0	None; no separate adjudication	Elevated SIPAT social-support burden; not a confirmed unmet need
Non-adherence-related	SIPAT item IV = 4	10 (2.0%)	Same pre-transplant	0	None; no longitudinal	Severe SIPAT-recorded

			SIPAT; not independent		adherence assessment	adherence concern; not observed post-transplant non-adherence
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Supplementary Table S2

Table S2. Reconstruction concordance between deterministic SIPAT-derived source rules and application upper display-band classifications ($n = 496$).

Indicator	Source-rule positive, n (%)	Upper display band, n (%)	TP	FP	TN	FN
Depression-related	32 (6.5%)	32 (6.5%)	32	0	464	0
Anxiety-related	11 (2.2%)	11 (2.2%)	11	0	485	0
Nicotine-related	56 (11.3%)	56 (11.3%)	56	0	440	0
Alcohol-related	22 (4.4%)	22 (4.4%)	22	0	474	0
Illicit drug-related	11 (2.2%)	11 (2.2%)	11	0	485	0
Social-support deficit	37 (7.5%)	40 (8.1%)	37	3	456	0
Non-adherence-related	10 (2.0%)	7 (1.4%)	7	0	486	3

Note: Source-rule positivity was determined using the deterministic SIPAT-derived definitions presented in Supplementary Table S1. The upper display band was defined as a percentage-scaled application output $\geq 50\%$. TP, true positive; FP, false positive; TN, true negative; FN, false negative, with the deterministic source rule treated as the reference. These values describe reconstruction concordance within the same development cohort and must not be interpreted as measures of clinical diagnostic performance, prognostic accuracy, or validation against independently assessed outcomes.