Clinical AI Monitoring & Model Performance Plan

Artifact 7 | NorthStar Health Network

NorthStar Health Network is a fictional regional health system comprising 12 hospitals, 70 outpatient facilities, approximately 18,000 employees, and roughly 3 million annual patient encounters. All systems, metrics, incidents, vendors, and findings in this portfolio are simulated.

Monitoring Objective

Define what must be watched after deployment, who reviews it, and which thresholds trigger investigation, retraining, rollback, or system pause.

Sepsis Model Monitoring Dashboard

Metric	Target / threshold	Frequency	Owner	Action on breach
AUROC	≥ 0.80; drop >0.05 from validated baseline	Monthly	Model Risk / Analytics	Investigate drift; revalidation
Sensitivity	≥ 0.85 overall; ≥ 0.82 at each site	Weekly / monthly	Clinical Analytics	Pause expansion; site review
Positive predictive value	≥ 0.28	Monthly	Clinical Analytics	Threshold / prevalence review
Alert acknowledgment ≤30 min	≥ 90%	Weekly	Nursing Ops	Workflow remediation
False-negative safety events	0 unreviewed	Continuous	Patient Safety	Immediate incident review
Subgroup sensitivity gap	No >10-point unexplained gap	Quarterly	Quality + DEI / Equity	Stratified analysis; mitigation
Input missingness / latency	Within validated range	Daily	IT / Data Engineering	Interface incident; suppress score if unsafe
Clinician complaints	No unresolved critical complaint >1 day	Continuous	Clinical AI Safety Lead	Triage; consider pause

System-Level Monitoring

System	Primary KRIs / KPIs
Radiology Prioritization AI	Sensitivity for target findings; worklist latency; missed urgent cases; site/device variation; override rate
Patient Portal Chatbot	Unsafe answer rate; human-escalation rate; hallucination / unsupported claim rate; privacy incidents; complaint volume
Clinical Note Summarizer	Clinician correction rate; unsupported statement rate; omission rate; time saved; copy-forward incidents
Bed Allocation Predictor	Forecast error; capacity impact; site drift; manual override
Revenue Cycle AI	Coding disagreement; denial rate; compliance findings; appeal outcomes

Pause / Rollback Authority

Immediate pause authority: Clinical AI Safety Lead, Chief Medical Information Officer, Patient Safety leader, or designated incident commander for credible patient-safety risk. Reinstatement requires documented root cause, corrective action, validation evidence, and approval appropriate to the system tier.

Review Cadence

- Critical systems: monthly governance review plus continuous safety surveillance.
- High systems: quarterly formal review plus service-line monitoring.
- Moderate systems: semiannual review unless thresholds breach.
- Low systems: annual review and acceptable-use monitoring.