Reducing Missed Remote Monitoring Alerts: A Quality Improvement Playbook

Executive Summary

Missed remote monitoring alerts and unclear escalation pathways represent common, preventable system failures in cardiac device programs, particularly in community and hybrid care settings. These gaps can delay clinical response, increase patient risk, and contribute to staff burnout. This toolkit provides practical, scalable quality improvement (QI) resources focused on standardizing remote monitoring alert management and establishing clear staffing and escalation protocols.

Problem Statement

Remote monitoring generates a high volume of device alerts. Without standardized triage, ownership, and escalation processes, critical alerts may be delayed or missed due to alert fatigue, staffing variability, or unclear responsibility between device company specialists and clinical teams.

QI Aim

To reduce missed or delayed remote monitoring alerts by implementing a standardized, role-defined alert triage and escalation workflow.

Core QI Interventions

1. Alert Categorization Framework

All incoming alerts are classified into three tiers:

- **Red (Urgent):** Sustained ventricular arrhythmias, device malfunction, lead failure, battery depletion
- **Yellow (Semi-Urgent):** New atrial arrhythmias, rising pacing thresholds, frequent non-sustained events
- **Green (Routine):** Scheduled transmissions, stable trends, nonactionable notifications

2. Defined Ownership

- **Device Company Specialist:** Initial alert review, technical validation, identification of true events
- **Device Clinic Staff (RN/APP):** Clinical correlation, patient contact when indicated
- **Physician (EP/Cardiologist):** Medical decision-making and escalation approval

3. Response Time Targets

- Red alerts: Same-day review and escalation
- Yellow alerts: Review within 1–3 business days
- Green alerts: Routine documentation

4. Escalation Pathway

A standardized escalation algorithm defines when alerts move from technical review to clinical action, urgent physician notification, or emergency referral.

5. QI Monitoring Metrics

- Percentage of alerts reviewed within target time
- Number of missed or delayed alerts
- Alert-related adverse events
- Staff-reported alert fatigue