To Fib or Not to Fib: Misdiagnosis of Atrial Fibrillation on Telemetry
Case Presentation and Root Cause Analysis

Brittany Heckel, Sarah Feldman RN, Andrew W. Panakos MD, Loheetha Ragupathi MD, Susannah Eckman, Rebecca Jaffe MD
Thomas Jefferson University Hospital, Philadelphia, PA

CASE PRESENTATION

Day 0

A patient with a complex past medical history was admitted to a community hospital with symptoms of stroke, and he was found to have multiple acute cerebral infarctions on MRI.

He was transferred to Jefferson for further management, and he was admitted to a telemetry unit.

Day 1

Morning and afternoon EKGs showed normal sinus rhythm. PGYI notes atrial fibrillation on review of telemetry alerts. Heparin infusion started.

Day 2

Cardiology was consulted, and they determined that the atrial fibrillation alert was actually from the day prior to when this patient was admitted.

Summary of Error : The patient was started on anticoagulation for atrial fibrillation; however atrial fibrillation was not present .
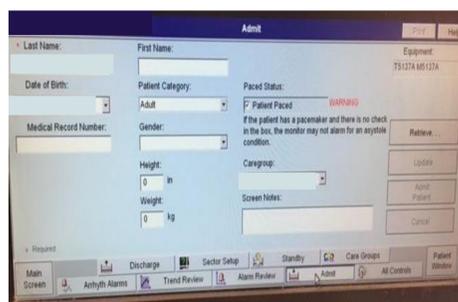
CURRENT PRACTICES OF TELEMETRY MANAGEMENT
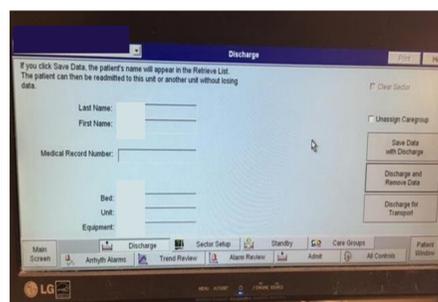
Admission Process
- Patient is connected to a telemetry unit.
- Entering information is optional (except for patient last name), but there is space for several identifiers.
- These can be updated at any time.

Discharge Process
- Patient is disconnected from telemetry unit.
- Click one of the discharge buttons.
- Patient data may be saved (stored remotely by vendor for 24 -72 hours) or discarded.
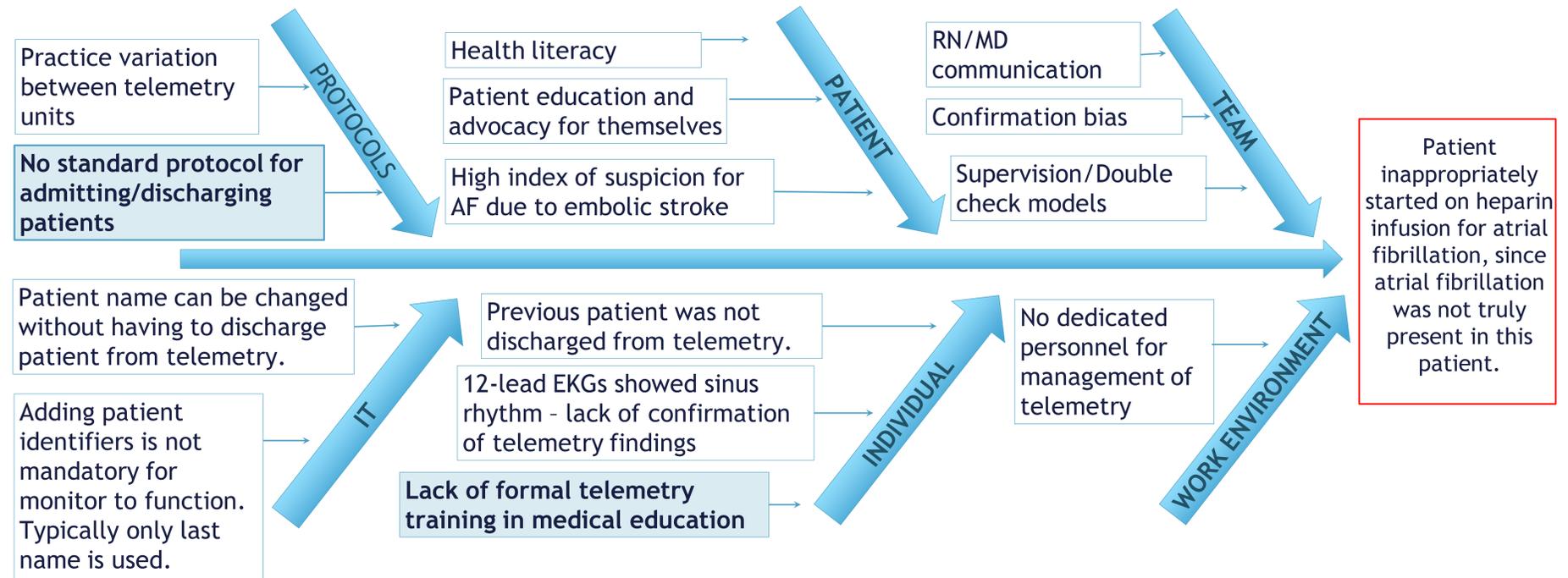
Admit Screen   Discharge Screen

ROOT CAUSE ANALYSIS

PROTOCOLS
- Practice variation between telemetry units
- No standard protocol for admitting/discharging patients

PATIENT
- Health literacy
- Patient education and advocacy for themselves
- High index of suspicion for AF due to embolic stroke

TEAM
- RN/MD communication
- Confirmation bias
- Supervision/Double check models

IT
- Patient name can be changed without having to discharge patient from telemetry.
- Adding patient identifiers is not mandatory for monitor to function. Typically only last name is used.

INDIVIDUAL
- Previous patient was not discharged from telemetry.
- 12-lead EKGs showed sinus rhythm – lack of confirmation of telemetry findings
- Lack of formal telemetry training in medical education

WORK ENVIRONMENT
- No dedicated personnel for management of telemetry

Patient inappropriately started on heparin infusion for atrial fibrillation, since atrial fibrillation was not truly present in this patient.

GOALS FOR IMPROVEMENT

GOALS:
(1) To standardize the process for telemetry admission and discharge so that patients are always correctly identified on telemetry.
(2) To incorporate telemetry interpretation into medical education curricula so that providers can accurately identify arrhythmia events.
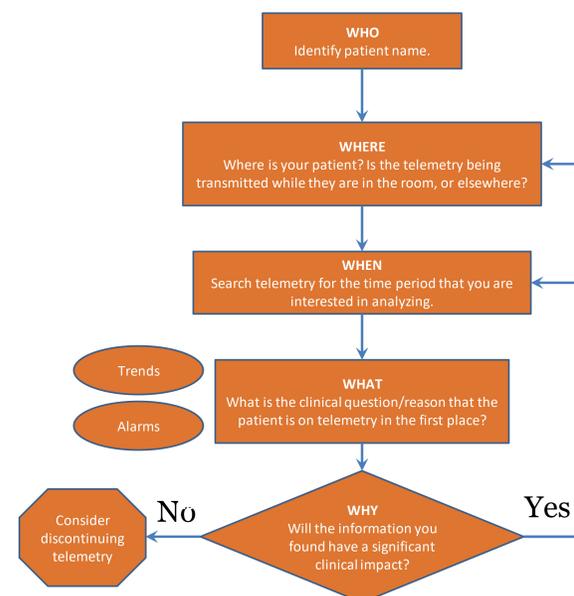
SMART Aims:

By the end of the 2017 academic year:
(1) 90-percent of nursing staff on the inpatient medicine units will know the procedure for telemetry admission and discharge;
(2) 90-percent of internal medicine residents will be able to describe a process for telemetry interpretation.

PROPOSED INTERVENTION

(1) Create a **standardized module** for nurses which will teach the telemetry admission and discharge process

(2) Develop **an algorithm for telemetry interpretation** to be used by house staff.

WHO
Identify patient name.

WHERE
Where is your patient? Is the telemetry being transmitted while they are in the room, or elsewhere?

WHEN
Search telemetry for the time period that you are interested in analyzing.

Trends
Alarms

WHAT
What is the clinical question/reason that the patient is on telemetry in the first place?

WHY
Will the information you found have a significant clinical impact?

No → Consider discontinuing telemetry
Yes

NEXT STEPS

1. Partner with nursing leadership on telemetry units to implement education sessions on the telemetry admission/discharge process.

2. Incorporate telemetry interpretation into intern orientation and signoff requirements.

3. Survey medical staff to assess completion of the training module as well as its implementation in clinical practice.

4. Continue to encourage providers to report telemetry errors through the Error Reporting System, and ask those who interpret telemetry often (i.e. cardiology) for their assessment of the type and frequency of telemetry errors to monitor future issues.