Telemetry Safety Bundle: Practice Standards & Communication

Purpose: The Telemetry Safety Bundle will set a standard of care for HCA Healthcare Divisions and Facilities that provide telemetry monitoring of heart rhythms for patients.

Scope: This guidance applies to all patients requiring ECG monitoring via wireless telemetry and not intended for bedside or holter monitoring.

Responsibility: Telemetry monitoring must administered under physician/provider order and placed on a patient within 30min of arrival. Furthermore, the temporary interruption (bathing, cleaning, etc.) and discontinuation must also be permitted only under the order of a physician/provider.

Considerations: Telemetry monitoring must be further administered by trained individuals, who are competent in the application/maintenance of telemetry devices as well as cardiac monitoring and rhythm interpretation.

Accuracy: Accurate electrode placement cannot be overemphasized as essential to the accurate identification of monitored rhythms. For arrhythmia monitoring, V1 is commonly utilized because of its helpfulness in distinguishing Ventricular Tachycardia from aberrancy (wide atrial tachycardia).

Staff Roles and Responsibilities

Registered Nurses	Telemetry Technicians
✓ **Ensure patient is appropriately monitored at all times. If RN chooses to delegate any element of responsibility, tasks must be performed by a caregiver who has documented & demonstrated competency.** ✓ **Telemetry must be placed on patient within 30 minutes of newly admitted/transferred patient.** ✓ **Telemetry patients should not travel off telemetry or off the unit without an RN, unless authorized by a physician/provider order.** ✓ **Telemetry application should be performed with 2 patient identifiers, telemetry box number, and rhythm transmission confirmation completed by RN.** ✓ **Notification and confirmation of telemetry monitoring should be documented by the RN as "Initiation of Cardiac Telemetry Monitoring" in the Manage/Refer/Contact/Notify screen within the EHR.** ✓ **For continuous monitoring, ensure that ECG electrodes are changed every 48 hours.** ✓ **Interpretation will be documented by the RN, no less than once per shift.**	✓ **Ensure telemetry boxes are cleaned and lead wires are free of damage.** ✓ **Upon transmission confirmation from RN, a printed strip will be completed and provided for initial cardiac rhythm interpretation.** ✓ **Notify Primary RN promptly of rhythm changes and/or alarms requiring intervention. Document method of notification and time of alarm resolution.** ✓ **Record alarm notification and communication in a facility-specific Telemetry Notification Log.** ✓ **Ensure that all ECG leads are connected at all times.** ✓ **Ensure immediate notification of battery changes as soon as screen displays *low battery* warning. Most devices only have 1 hour remaining once warning is displayed on screen.** ✓ **Customization of alarm settings outside of default parameters is only permitted with a provider order.** ✓ **Ensure by verbal or written communication with RN that temporary discontinuation of telemetry has been approved with physician/provider order.** ✓ **Maintain constant count of available telemetry boxes and those assigned to patients.**

See back for additional information

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Communication Escalation Matrix

Alert Type	Agent	Documentation of Notification	Documentation of Response/ Resolution (close the loop)	Communication	Tracing/ Retrieving	Technology
Leads off - signal still transmitting	Telemetry Tech	M/R/C/N screen by Telemetry Tech	M/R/C/N screen by RN	Phone call/iMobile	EHR	EHR
	Primary RN					
Leads off - tele NOT transmitting	Telemetry Tech	M/R/C/N screen by Telemetry Tech	M/R/C/N screen by RN	Phone call/iMobile If unanswered via standard escalation pathway - Call "Telemetry Alert"	EHR	EHR
	Primary RN					
	Charge RN					
	Response Team					
Battery	Telemetry Tech	M/R/C/N screen by Telemetry Tech	M/R/C/N screen by RN	Phone call/iMobile	EHR	EHR
	Primary RN					
Non-Lethal Rhythm	Telemetry Tech	M/R/C/N screen by Telemetry Tech	M/R/C/N screen by RN RN Notifies Provider	Phone call/iMobile If unanswered – Call a "Telemetry Alert" or "Rapid Response"	EHR	EHR
	Primary RN					
	Charge RN					
Lethal Rhythm	Telemetry Tech	M/R/C/N screen by Telemetry Tech	M/R/C/N screen by RN RN Notifies Provider	Call a Code AND Phone call/iMobile	EHR	EHR
	Primary RN					
	Charge RN					
	Code Team					

Telemetry Notification and Escalation Pathways:
- ✓ Monitoring Telemetry Technicians should notify the Primary RN promptly of any cardiac arrhythmias, rhythm changes, and/or alarms requiring intervention.
- ✓ Rhythm changes, life-threatening arrhythmias, and/or loss of signal will be responded to in an immediate manner.
  - ➤ Record of alarm notifications & communications should be captured by the Telemetry Technician on the facility-specific Telemetry Notification Log, and documented by the RN in the Manage/Refer/Contact/Notify screen in EBCD.
    - ❖ The *Manage/Refer/Contact/Notify* screen is not an assessment screen, therefore provisioning of Telemetry Technicians is an option.
- ✓ Defined communication escalation pathways should be utilized to ensure timely notification and treatment as indicated.
  - ➤ Use of overhead paging as an escalation strategy should follow facility-specific policy.
    - ❖ Overhead paging can be a minimally effective intervention, and should be used as a last line of defense.
- ✓ If an alert exceeds the third level of the defined escalation pathway or remains unmanaged, a "*Near Miss*" should be reported and investigated per facility specific procedures.

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Telemetry Safety Bundle: Documentation Changes

RN Documentation of Telemetry Start Initiation – *Current* State

Manage Refer Contact Notify 12/09 1053   J00021061518 FINE,EBCDMALE

Entity attempted/notified: [or free text]

1☐Assisted living facility	7☐Court representative	13☐Infection control
2☐Case management	8☐Employer representative	14☐Law enforcement
3☐Child protective services	9☐Environmental services	15☐Listed emergency contact
4☐Cardiac rehab	10☐Family member	16☐Meals on wheels
5☐Chaplain	11☐Funeral home	17☐Mental health therapist
6☐Coroner	12☐Home health	18☐or<F9> For More Options

Action:→Notified

Reason notified:→Telemetry start confirmed

Entity attempted/notified:→Telemetry Tech – Stefanie Fine

Provider attempted/notified:

Sepsis notification:
PEDS concerning event:
Family member notified:
Chain of command contact name: (Next Page)

Free text entries

RN Documentation of Telemetry Start Initiation – *Future* Changes
(*Anticipated with 2021.2 release*)

Manage Refer Contact Notify 11/29 1623   J00021061518 FINE,EBCDMALE

Action: [or free text]
✓ 1 Notified
2 Paged (not notified)
3 Re-paged (not notified)
4 Invoked chain of command
5 Multidisciplinary rounds

Action:→Notified

Reason notified:→

Entity attempted/notified:→

Provider attempted/notified:
Entity attempted/notified:
Sepsis notification:
PEDS concerning event:
Family member notified:
Chain of command contact name:

Manage Refer Contact Notify 11/29 1623   J00021061518 FINE,EBCDMALE

Reason notified: [or free text]

1☐Abnormal vital signs	7☐Disability	13☐PEDS concerning event
2☐Change in pt condition	8☐Family meeting	14☐Rhythm chg/arrhythmia
3☐Collateral information	9☐Order clarification	15☐Sepsis notification
4☐Continuity of care	10☐Pain management	16☐Stroke alert
5☐Critical value	11☐Patient concern	17☐Suicide risk
6☐Diagnostic test/lab	12☐Patient medication	18☐Tele discontin/renewal

Action:→Notified

Reason notified:→

Entity attempted/notified:→

Provider attempted/notified:

Sepsis notification:
PEDS concerning event:
Family member notified:
Chain of command contact name: (Next Page)

☐ Telemetry discont/renewal
☐ Telemetry start confirmation

See back for additional information

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Manage Refer Contact Notify 11/29 1623   J00021061518 FINE,EBCDMALE

Entity attempted/notified: [or free text]
- 1☐Assisted living facility
- 2☐Case management
- 3☐Child protective services
- 4☐Cardiac rehab
- 5☐Chaplain
- 6☐Coroner
- 7☐Court representative
- 8☐Employer representative
- 9☐Environmental services
- 10☐Family member
- 11☐Funeral home
- 12☐Home health
- 13☐Infection control
- 14☐Law enforcement
- 15☐Listed emergency contact
- 16☐Meals on wheels
- 17☐Mental health therapist
- 18☐or<F9> For More Options

Action: →Notified
Reason notified: →
Entity attempted/notified: →
Provider attempted/notified:
Sepsis notification:
PEDS concerning event:
Family member notified:
Chain of command contact name: (Next Page)

1	Nurse
2	Nursing home
3	Nutrition
4	Occupational therapy
5	Pastoral care
6	Physical Therapy
7	Post-acute care
8	Probate officer
9	Respiratory therapy
10	Speech therapy
11	Social work
12	Security
13	Senior services
14	Significant other
15	Surrogate
16	Swallow therapy
17	Telemetry tech
18	Wound/ostomy care

Manage Refer Contact Notify 11/29 1623   J00021061518 FINE,EBCDMALE

Entity attempted/notified:

1	2	3	4	5	6	7	8	9	0	Del
Q	W	E	R	T	Y	U	I	O	P	\
A	S	D	F	G	H	J	K	L
Z	X	C	V	B	N	M	,	.	Lookup

Action: →Notified
Reason notified: → **Tele start confirmation**
Entity attempted/notified: → **Telemetry tech**
Provider attempted/notified:
Entity attempted/notified: **Stefanie F**
Sepsis notification:
PEDS concerning event:
Family member notified:
Chain of command contact name: (Next Page)

✓ **Following confirmation of telemetry transmission, the Telemetry Technician will print a telemetry strip and provide to the RN for initial cardiac rhythm interpretation. Workflow for completion of this critical step will follow facility-specific procedures.**

➢ **Once received by the RN, first review and interpretation of the cardiac rhythm should occur and be documented in the EBCD cardiac assessment screen.**

Cardiovascular 02/03 0818   J00021061518 FINE,EBCDMALE

Cardiac monitor:
1 None
2 Present/Exists

Heart sounds normal (S1,S2): →
Jugular distension:
Cardiac monitor: →
Cardiac pacer/AICD:
Ventricular assist device:

Heart Rhythm 12/03 2001   J00021061518 FINE,EBCDMALE

Monitored heart rhythm:
- 1☐Sinus +
- 2☐Atrial +
- 3☐Junctional +
- 4☐Blocks +
- 5☐Ventricular +
- 6☐Pacing +

Last 4 Heart Rhythm and Ectopy Entries (Past 30 days)

Date	Time	Heart rhythm	Ectopy	Ectopy freq	QT int
12/03	0730	Sinus arrhythmia		6 or more/	
		Wandering atrial pa			
12/03	1800	Sinus bradycardia	PACs	6 or more/	
12/03	1948	Sinus arrhythmia	PACs	1-5/min	

Monitored heart rhythm: →
Ectopy:
Ectopy frequency:
QT interval (in seconds):

(End)

'Sinus' Options

1. Normal sinus rhythm
2. Sinus arrest
3. Sinus arrhythmia
4. Sinus bradycardia
5. Sinus tachycardia

'Atrial' Options

1. Atrial fibrillation
2. Atrial flutter
3. Atrial fib with rvr
4. Atrial tachycardia
5. Multifocal atrial tachycardia
6. PACs
7. Supraventricular tachycardia
8. Wandering atrial pacemaker
9. Wolff parkinson white syndrome

'Junctional' Options

1. Junctional
2. Accelerated junctional
3. Junctional escape
4. Junctional tachycardia
5. PJCs

'Blocks' Options

1. Bundle branch block
2. Bundle branch block left
3. Bundle branch block right
4. 1st Degree av block
5. 2nd Degree av block type 1
6. 2nd Degree av block type 2
7. 3rd Degree av block

'Ventricular' Options

1. Accelerated idioventricular
2. Asystole
3. Idioventricular
4. PVCs
5. PVCs with bigeminy
6. PVCs with trigeminy
7. PVCs with quadgeminy
8. Ventricular fibrillation
9. Ventricular tachycardia
10. Torsades de pointes

'Pacing' Options

1. Pacing
2. Pacemaker failure to capture
3. Pacemaker failure to pace

✓ **Verify and select appropriate rhythm or arrhythmia, along with any associated ectopy, frequency of ectopy, and QT interval (in seconds).**

Heart Rhythm 02/03 0818   J00021061518 FINE,EBCDMALE

Ectopy:
1 ☐ Atrial
2 ☐ Bigeminy
3 ☐ PACs
4 ☐ PVCs
5 ☐ Trigeminy
6 ☐ Ventricular

Last 4 Heart Rhythm and Ectopy Entries (Past 30 days)
Date Time Heart rhythm   Ectopy   Ectopy freq QT int

Monitored heart rhythm:
Ectopy:
Ectopy frequency:
QT interval (in seconds):

Heart Rhythm 02/03 0818   J00021061518 FINE,EBCDMALE

Ectopy frequency:
1 1-5/min
2 6 or more/min

Last 4 Heart Rhythm and Ectopy Entries (Past 30 days)
Date Time Heart rhythm   Ectopy   Ectopy freq QT int

Monitored heart rhythm:
Ectopy:
Ectopy frequency:
QT interval (in seconds):

Heart Rhythm 10/23 1623   J00021061518 FINE,EBCDMALE

QT interval (in seconds):
7 8 9 Del
4 5 6
1 2 3
- 0 . Calc

Last 4 Heart Rhythm and Ectopy Entries (Past 30 days)
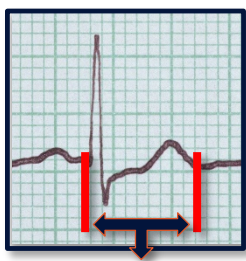Date Time Heart rhythm   Ectopy   Ectopy freq QT int

Monitored heart rhythm:
Ectopy:
Ectopy frequency:
QT interval (in seconds):

(End)

⚠ **QT Interval is measured from the beginning of the QRS complex (ventricular depolarization) to the end of the T-wave (ventricular repolarization)**

QT Interval

Documentation – Telemetry Discontinue

Remember to manually discontinue patient from telemetry

Enter/Edit Responses Telemetry Discontinue

Procedure Ordered
Telemetry Discontinue

OK Comments:
Enter free text.

Comments:

| Ok | Cancel | Help | Prev | Next |

NOTE: Even if this order for "Telemetry Discontinue" is entered, the initial order for telemetry will still be active until manually discontinued by a nurse/provider.

Integration of Telemetry Reporting into Safety Huddle

➢ Effectively discussing cardiac telemetry monitoring at facility safety huddle can assist in preventing serious safety events.

➢ Integration into facility safety huddles will present an opportunity to validate appropriate and safe monitoring practices, thus helping to prevent serious safety events.

➢ Safety huddle reporting of Telemetry can easily be integrated using the "*STEPS*" framework.

-S- **S**afety Events	-T- **T**hroughput	-E- **E**nvironment/**E**xposure	-P- **P**eople	-S- **S**ervice Recovery
✓ Alerts without a response ✓ Missed telemetry order ✓ Lapses in Monitoring	✓ Telemetry monitor box capacity ✓ Missing telemetry box(es)	✓ Rooms/areas/ department experiencing a lapse in remote telemetry monitoring	✓ Telemetry Monitor Technician Staffing	✓ Interdisciplinary issues regarding monitoring –MD, PT/OT, RN, etc.

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