Care of the Patient Requiring Telemetry Monitoring			
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SCOPE:

This policy applies to all health care providers who care for patients requiring telemetry monitoring at the Royal Victoria Regional Health Centre (RVH).

POLICY STATEMENT:

It is the policy of RVH that:

1. An order from the Most Responsible Provider (MRP) or appropriate consult service shall be obtained to:
    a. initiate telemetry
    b. continue monitoring beyond the initial recommended monitoring period as indicated in the Criteria for Application and Discontinuation of Cardiac Monitoring Via Remote Telemetry RVH policy and procedure
    c. discontinue telemetry monitoring
    d. suspend telemetry monitoring if a patient is required to leave the inpatient unit for diagnostic testing purpose or transfers. If continued monitoring is required, a nurse certified in arrhythmia interpretation, electrical defibrillation and life-saving drug administration shall accompany the patient with a portable cardiac monitor/defibrillator
    e. suspend telemetry monitoring in order to perform personal hygiene. If the temporary discontinuation of telemetry has been ordered, telemetry pack shall be left in patient's room until telemetry pack can be reapplied
2. The MRP or appropriate consult service shall review and document the need for telemetry monitoring every 24 hours until telemetry monitoring has been discontinued.
3. The surgical patient who requires telemetry monitoring shall be placed on the inpatient unit that can best meet the patient's medical and surgical needs.
4. A Consent for Short Term Absence form (RVH-0102B) and the Record of Short Term Absence form (RVH #0102) shall be signed by the patient/substitute decision maker if the patient insists on leaving the inpatient unit or knowingly removes the telemetry monitoring pack. MRP is to be notified and documentation regarding discontinuation of telemetry by a patient shall occur in the Electronic Medical Record (EMR).
5. Telemetry packs shall not be used in monitor mode for transporting patients off unit for diagnostic testing purposes or during patient transfers.
6. An order from MRP or appropriate consulting service is required to perform a 12-Lead ECG.
7. The wireless nurse call system and alarm notification device shall be carried at all times by the nurse responsible for the care of the patient requiring telemetry

monitoring where applicable (e.g. Cardiac and Renal and Inpatient Surgery 2 Unit). Staff shall ensure that all alarms are transmitted to the appropriate device carried by the covering nurse during periods of time when the primary nurse is off the inpatient unit (e.g. break time). The primary nurse must select “unavailable” in the wireless nurse call system and alarm notification device.

8. A hard disconnect shall be performed every shift and/or when reconnected to ensure functionality & connectivity with the wireless nurse call system and the central nursing monitoring system.
9. A Registered Nurse (RN) who has successfully completed the arrhythmia interpretation evaluation, who is certified in cardiac rhythm monitoring, and who demonstrate the knowledge, skill and judgement for rhythm interpretation shall perform the analysis of the patient’s cardiac rhythm.

All staff shall adhere to the principles outlined in this policy.

DEFINITIONS:

Artifact: Electrical "noise" that can take place during the recording of the heart rhythm as a result of body movement or poor skin-to-electrode contact.

DARP format: A structured approach to narrative documentation that reflects interventions and their purpose, therapy and outcomes. **D**ata, **A**ction, **R**esponse, **P**lan.

Primary Care Provider: The nurse who is providing and accountable for the care and assessment of the patient during the nurse’s shift.

Telemetry Monitoring: The monitoring of the patient’s cardiac rhythm through the transmission of signals or data via radio waves utilizing a device that provides real-time measurement of the patient’s cardiac rhythm. Telemetry monitoring uses five cardiac leads that connect to five electrodes that are placed on the patient’s torso (Figure 1).

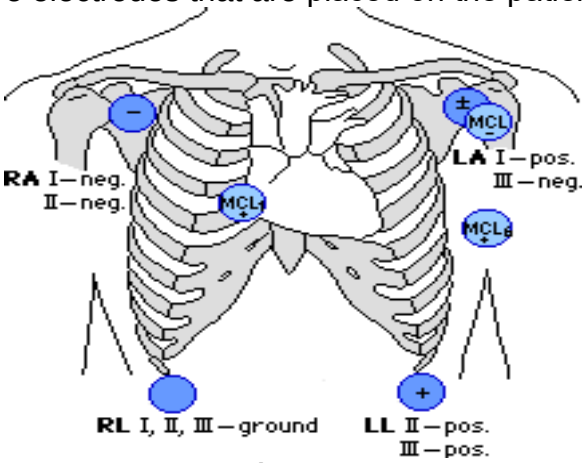

Figure 1

Central Telemetry Surveillance: Transmission of signals or data via radio waves utilizing a device that provides real-time measurement of the patient's cardiac rhythm to a proximate monitoring system.

Remote Telemetry Surveillance: Transmission of signals or data via radio waves utilizing a device that provides real-time measurement of the patient's cardiac rhythm to a remote monitoring location.

Secondary Care Provider: The nurse who provides and is accountable for the care and assessment of the patient while the primary care provider is unavailable.

Planned Downtime: Planned downtime is defined as scheduled time that the telemetry central monitors will be unavailable for telemetry. Users are notified prior to such downtime.

Unplanned Downtime: Unplanned downtime of the telemetry central monitors is defined as that which takes place unexpectedly and without announcement.

PROCEDURE:

Equipment:

1. Telemetry transmitter pack with leads
2. Five electrodes
3. Battery power supply
4. Nurse call system and alarm notification device
5. Alcohol swab for site cleansing
6. Wash cloth for site preparation
7. Razor (if applicable)

Application of Telemetry

1. Review the MRP order for telemetry and enter into Meditech.
2. Gather appropriate equipment.
3. Perform risk assessment, perform hand hygiene and don appropriate personal protective equipment (PPE).
4. Identify patient utilizing two patient identifiers.
5. Use AIDET to introduce yourself and explain the procedure to the patient.
6. Prepare skin by shaving electrode placement sites if required and removing skin oils and cutaneous debris with use soap and water. If soap and water are ineffective use alcohol with a washcloth.
7. Apply telemetry electrodes (See Figure 1) and cardiac leads to patient.
8. Insert battery power supply in the telemetry pack and ensure that it is functioning. Ensure electrodes are properly applied.

Initiation of Telemetry Surveillance

1. The RN or RPN on the inpatient unit requiring remote telemetry surveillance (e.g. Inpatient Surgery 2) shall notify the Cardiac Care Unit (CCU) via telephone of the admission to telemetry immediately following lead application. The CCU will initiate telemetry monitoring into the CCU central monitor for patient's requiring telemetry monitoring on the inpatient unit requiring remote telemetry surveillance. MRP order to initiate the telemetry must be entered in the electronic documentation system.
2. Central telemetry surveillance units (e.g. Cardiac and Renal, Cardiac Catheterization Lab, Diagnostic Imaging and CCU) will activate the telemetry sector and enter admission data into central monitor immediately following application of telemetry leads, including the patient's full name, "V" number, room number, telemetry pack number, and the reason the patient is requiring telemetry.
3. Central telemetry surveillance units shall ensure there is an adequate tracing of cardiac rhythm on the central monitor with no artifact.
4. The default telemetry monitoring leads are II and V lead. Telemetry monitoring shall always take place in two different cardiac leads.
5. For remote telemetry surveillance units, staff shall place the printed rhythm with analysis of patients requiring telemetry in the unit specific telemetry binder until telemetry has been discontinued. The printed rhythm strips will be placed into the patients chart once telemetry has been discontinued or patient is discharged from unit.
6. Verify monitor alarm parameters are appropriate and safe for that patient.
7. Complete the Cardiac Rhythm Interpretation intervention in EMR within one hour of initiation of telemetry.
8. Obtain, analyze and document the initial cardiac rhythm every shift. Analyze the initial cardiac rhythm, including time intervals (PR, QRS, QT), T wave and ST segment characteristics, rate, interpretation, and document analysis in the EMR. Nurses will verify that the option to initiate telemetry in the EMR has been selected.

Initiation of Telemetry on the Wireless Nurse Call System and Alarm Notification Device:

1. The primary and secondary care providers shall ensure that the patient is entered into their wireless nurse call system and alarm notification device.
2. Ensure that a new battery is inserted into the telemetry transmitter pack at the beginning of each day and as indicated by the low battery icon on the telemetry transmitter pack.
3. The Resource Nurse/Charge Nurse shall download the "charge nurse" icon in wireless nurse call system and alarm notification device.
4. Perform a "hard disconnect" by disconnecting the leads from the pack to ensure that arrhythmia alarms transmit to the alarm notification device. A vibration alarm shall be transmitted to the alarm notification device within one minute. If the alarm is not transmitted to the alarm notification device, ensure that the patient assignment has been properly selected in the wireless nurse call system and alarm

notification device. If the patient assignment has been correctly selected, notify the resource nurse/charge nurse of the alarm failure and contact Biomedical Engineering and/or Informatics Technology (IT). The Resource Nurse/Charge Nurse shall monitor the cardiac rhythm at the telemetry central station until alarms can be generated to the wireless nurse call system and alarm notification device.

5. Central telemetry surveillance units will complete the Cardiac Rhythm Interpretation intervention in EMR within one hour of initiation of telemetry.
6. Remote telemetry surveillance units will complete the intervention screen in the EMR. CCU will complete the Cardiac Rhythm Interpretation for remote telemetry surveillance unit(s) intervention in EMR within one hour of initiation of telemetry.
7. Initiate and document health teaching provided to the patient and family/SDM.

<u>Ongoing Monitoring on Central Telemetry Surveillance Units (e.g. CCU, Cath Lab, Cardiac and Renal):</u>

1. Perform assessments as per ordered parameters. Document all acute changes to patient status, suspension or discontinuation of telemetry in the EMR. Assessment shall include heart rate, blood pressure, respiratory rate, oxygen saturation, level of consciousness, and presence of any chest pain or shortness of breath. Complete and document a cardiovascular and respiratory assessment in EMR. Notify the MRP of any acute change in patient condition.
2. Obtain, analyze and print the cardiac rhythm at the beginning of each shift, on initiation of telemetry, when a change in rhythm occurs, or a new arrhythmia is observed. Additionally, documentation of rhythm analysis and arrhythmias will be performed q4 hours. Analysis shall include rate, PR Interval, QRS interval, T wave position, corrected QT interval, ectopic beats, interpreted rhythm, and description of arrhythmias. Document all rhythm analysis and arrhythmias in the EMR.
3. Assess electrode sites with each physical systems assessment and prn. Change electrode sites as needed and document in the notes section of the section of the cardiac rhythm analysis screen in the EMR.
4. Assess the battery power in the telemetry transmitter pack with each physical systems assessment. Battery power supply will be changed in the telemetry pack daily with morning point of care checks and as needed according to the “low battery” alarm transmitted to the wireless nurse call system and alarm notification device or if the red battery light is highlighted on the screen of the telemetry transmitter pack.
5. In the event of cardiac and/or respiratory arrest, call a “Code Blue.” Please refer to RVH Emergency Plan (2014) *Cardiac Arrest (Code Blue and Code Pink)*.
6. Notify the MRP of changes in heart rate or rhythm, significant arrhythmias, newly occurring arrhythmias, deterioration in clinical condition, and abnormal blood work. Document notification to MRP in the EMR using DARP format.
7. Verify alarm parameters at the beginning of each shift and with every four hours assessment of rhythm and alarms.

8. If a wireless nurse call system and alarm notification device is used in the central telemetry monitoring unit (i.e. Cardiac and Renal) alarms will be responded to by assessing the patient accordingly to the alarm received. The alarm severity are as follows:
    a. Blue alarm – low severity with low severity audible alarm signal (e.g mechanical)
    b. Yellow alarm - medium severity with medium severity audible alarm (e.g. HR LOW)
    c. Red alarm – high severity with high severity audible alarm (ASYSTOLE, VTACH)
9. Staff in areas of central telemetry surveillance shall place the printed rhythm with analysis in the central telemetry binder and shall be filed chronologically in the patient's chart after 2400 hours.

<u>Ongoing Monitoring and Care on Remote Telemetry Surveillance Units (e.g. Inpatient Surgical 2):</u>

1. Perform assessments as per ordered parameters. Assessment shall include heart rate, blood pressure, respiratory rate, oxygen saturation, level of consciousness, and presence of any chest pain or shortness of breath. Complete and document a cardiovascular and respiratory assessment in EMR. If there are any acute changes to patient status, suspension or discontinuation of telemetry, document in the EMR and notify the CCU via telephone. Notify the MRP of any acute change in patient condition.
2. CCU will assess and document in the EMR the patient's rhythm and review stored alarms every four hours and prn. Documentation shall include heart rate, rhythm and description of arrhythmias including the frequency of occurrence.
3. Assess electrode sites with each assessment and prn. Change electrode sites as needed and document in the "Notes" section of EMR.
4. Assess the battery power in the telemetry transmitter pack with each physical systems assessment. Battery power supply will be changed in the telemetry pack daily with morning point of care checks and as needed according to the "low battery" alarm transmitted to the wireless nurse call system and alarm notification device or if the red battery light is highlighted on the screen of the telemetry transmitter pack.
5. If a red or green (mechanical) alert is transmitted to the telemetry phone or upon notification from CCU, assess the patient immediately. Assessment shall include vital signs, level of consciousness and presence of any chest pain or shortness of breath. Complete and document a cardiovascular and respiratory assessment in PCS. Notify the MRP of any change in patient condition.
6. In the event of cardiac and/or respiratory arrest, call a "Code Blue." Please refer to RVH Emergency Plan (2014) *Cardiac Arrest (Code Blue and Code Pink)*.

7. Notify CCU via telephone as soon as possible if the patient develops chest pain, syncope, palpitations, shortness of breath, or any other significant changes in condition or vital signs.
8. Document and notify CCU via telephone when suspending telemetry when the patient leaves the unit for a procedure or pass, and immediately upon return to the inpatient unit.
9. Provide name and designation during all phone and written communications with CCU.
10. When call is received from CCU regarding significant changes in heart rate and/or rhythm, the nurse shall assess patient.

Ongoing Monitoring in the CCU of the Remote Telemetry Surveillance Unit:

1. The RN in CCU shall notify the remote telemetry surveillance unit immediately of any significant changes in heart rate and/or rhythm. If indicated, remote telemetry surveillance unit shall contact CCOT to assist in the care of the patient.
2. Give name and designation during all conversations with the surgical inpatient unit.
3. Obtain, analyze and print the cardiac rhythm at the beginning of each shift, on initiation of telemetry, when a change in rhythm occurs, or with a reported change in the patient's condition Analysis shall include rate, PR Interval, QRS interval, T wave position, corrected QT interval, ectopic beats, interpreted rhythm, and description of arrhythmias. Document rhythm analysis in the EMR.
4. Verify alarm parameters at the beginning of each shift and with every 4 hour assessment of rhythm and alarms and adjust based on patient condition/need.
5. Assess the patient's rhythm and review stored alarms every four hours and PRN. Document in the patients EMR. Documentation shall include heart rate, rhythm, and description of arrhythmias including the frequency of occurrence.

Discontinuation of Telemetry:

1. Verify MRP order.
2. Perform hand hygiene and don appropriate PPE as per risk assessment.
3. Identify patient utilizing two patient identifiers.
4. Use AIDET method to explain procedure to patient.
5. Remove electrodes from the patient and battery from telemetry pack.
6. Cleanse telemetry pack and leads using disinfectant.
7. Remove PPE and gloves then perform hand hygiene.
8. Document discontinuation of telemetry in Cardiac Rhythm Interpretation intervention in PCS and place telemetry documentation in the patient's chart.
9. Enter the order to "discontinue telemetry" into the patients EMR.
10. Ensure the telemetry back has been returned to the provided area with the rechargeable battery removed from the pack and into the appropriate docking station.

Downtime Procedures:

1. In the event of a telemetry central station or Philips® server downtime, telemetry pack will change from “telemetry mode” to “monitor mode”. In Monitor Mode, monitoring in leads II and V will be displayed on the main screen of the telemetry packs.
2. A network downtime will result in the telemetry pack changing from telemetry mode to monitor mode. In Monitor Mode, monitoring in leads II and V will be displayed on the main screen of the telemetry packs.
3. All downtime events will be reported to Information Technology Services (ITS) at extension 45000. Outside regular business hours, in addition to notifying ITS the Hospital Service Leader (HSL) shall also be notified.
4. The MRP or appropriate consult service shall review and document the need for telemetry monitoring in the event of a downtime event.
5. Cardiac and Renal and Inpatient Surgery 2 Units will consider cohorting telemetry patients for advanced monitoring of patients in “monitor mode” of telemetry pack.
6. Staffing levels of appropriately skilled and competent RN’s will need to be considered who are certified in cardiac rhythm monitoring, who have the knowledge, skill and judgement for interpretation, and treatment of a patient requiring telemetry monitoring.
7. A physician order is required to perform a 12-Lead ECG other than those performed on lead II. This is to be completed with each admission, beginning of each shift or with a change in the patient’s condition. Staff will obtain, analyze and document the initial cardiac rhythm by using the 12 lead ECG machine, print a rhythm strip for Lead II only and placing it in the patients chart. Analyze the initial cardiac rhythm, including time intervals (PR, QRS, QT), T wave and ST segment characteristics, rate, interpretation, and document analysis in the EMR.
8. For remote telemetry surveillance units (e.g. Inpatient Surgery 2), the 12-Lead ECG on Lead II for admissions, beginning of each shift or with a change in the patient’s condition will be carried out by a nurse who who has successfully completed the arrhythmia interpretation evaluation, who are certified in cardiac rhythm monitoring, who demonstrate the knowledge, skill and judgement for rhythm interpretation shall perform the analysis of the patient’s cardiac rhythm.
9. Functionality and alarm parameters will be validated once system is operational, this will be carried out by Biomedical Engineering.

CROSS REFERENCES:

Royal Victoria Regional Health Centre (2014) Corporate Clinical Policy and Procedure *Cardiovascular Assessment.*

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