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| **NHSGGC SYRINGE PUMP COMPETENCY FRAMEWORK for PALLIATIVE CARE**  **in ADULTS PRIMARY CARE** |

**In compliance with professional guidelines, NMC: The Code (2018) Professional standards of practice and behaviour for nurses, midwives and nursing associates, staff will be responsible for ensuring that they are competent to operate the syringe pump in their clinical area.**

**PRIMARY CARE STAFF**

All registered nurses working within district nursing teams must have attended a one day syringe pump mandatory training. A pre-requisite for attending this training requires staff to have completed the LearnPro module on Drug Calculations. To complete training, registered nurses are required to have the syringe pump competency framework signed off by the designated assessor in their clinical area.

The mandatory syringe pump training day, LearnPro module and the competency framework must be completed every three years.

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| **NHSGGC SYRINGE PUMP COMPETENCY FRAMEWORK for PALLIATIVE CARE**  **in ADULTS PRIMARY CARE** |

**REGISTERED NURSE**

|  |  |  |
| --- | --- | --- |
| Name |  | |
| Base |  | |
| Designation |  | |
| LearnPro Module | Date completed |  |
| Syringe Pump Training Day | Date completed |  |

**ASSESSOR**

|  |  |
| --- | --- |
| Name |  |
| Base |  |
| Designation |  |

**LEGISLATION**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COMPETENCY**  **Knowledge Area** | | **OUTCOME/EXPECTATION** | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| The registered nurse is able to locate and have a working knowledge of the current NHSGGC Guideline for the use of the T34 Ambulatory Syringe Pump by CME Medical for adults in palliative care (2016). | | Is able to refer to NHSGGC Guidelines.  Has clear understanding of NHSGGC Guidelines on administering medication and use of syringe pumps including safeguarding with understanding of mental capacity and consent to ensure safe and effective person centred care. |  |  |
| The registered nurse understands: | | | | |
| 1. | NHSGGC Professional Standards for Record Keeping (2015).  NMC: The Code (2018): (Section 10) Record Keeping Guidance  NMC: The Code (2018) Professional standards of practice and behaviour for nurses, midwives and nursing associates.  Caldicott Principles (2020) | Demonstrates appropriate record keeping and completion of syringe pump documentation.  Demonstrates knowledge and understanding for personal, professional accountability and standards to be maintained.  Awareness and understanding of Caldicott Principles and the importance of safe and clear documentation. |  | . |
| 2. | NHSGGC Incident Management and Recording Policy (2020) and use of Datix | Safe effective practice with access to incident reporting systems. |  |  |
| 3. | NHSGGC Infection Prevention and Control guidelines/resources and NHSGGC Waste Management Policy (2019). | Awareness and understanding of resources/policy and has previously undertaken the appropriate training on these subjects. |  |  |

**PROFESSIONALISM / ACCOUNTABILITY**

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| **COMPETENCY**  **Knowledge Area** | **OUTCOME/EXPECTATION** | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| Reflection on own practice and maintaining clinical skills. | Ability to recognise own learning needs and identify how to meet these.  Takes responsibility for completing mandatory training and maintaining current knowledge and skills regarding the Syringe pump. (LearnPro module – drug calculations GGC:100) |  |  |

**COMMUNICATION, CLINICAL SKILLS AND MEDICATION KNOWLEDGE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COMPETENCY**  **Knowledge Area** | | **OUTCOME/EXPECTATION** | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| 1. | The registered nurse:  Understands the influence of culture, ethnicity, race and faith on patient and family decision making. | Demonstrates consideration of individual factors which are taken into account when planning and delivering care interventions. |  |  |
| 2. | Communicates effectively with the patient/carer and family.  Provides clear information regarding the use of the syringe pump, taking into account patient/carer and family concerns and reservations.  Gains and records verbal consent from patient/carer or family prior to setting up syringe pump.  Provides written guidance on the syringe pump. | Creates awareness of the purpose of the syringe pump and medication with clear explanation to patient/carer and family, addressing concerns and reservations (risks and benefits).  Verbal consent obtained to commence syringe pump.  Understands the importance of providing written information to patient/carer and family regarding the syringe pump.  Demonstrates awareness of where to access the NHS GGC Patient Information on Syringe Pump leaflet. |  |  |
| 3. | Have knowledge and understanding of appropriate equipment required, e.g. appropriate cannula for s/c medications, correct syringe make and size, infusion line and needle free device and that these are appropriate and compatible with the syringe pump and the drugs prescribed. | Demonstrates knowledge of NHSGGC Syringe Pump Guidance relating to the selection of equipment required to deliver a s/c infusion via the syringe pump, ensuring safe care. |  |  |
| 4. | Demonstrate required safety checks, ensuring the syringe pump is clean, visually intact, in working order and that it is asset tagged and has been serviced within the last year. | Demonstrates knowledge of safety checks required to safely set up the syringe pump.  Ensure safe, harm free care. |  |  |

**COMMUNICATION, CLINICAL SKILLS AND MEDICATION KNOWLEDGE (cont)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **COMPETENCY**  **Knowledge Area** | | **OUTCOME/EXPECTATION** | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| 5. | Demonstrates that the current prescription is both legal and clinically appropriate on the Palliative Care Subcutaneous Infusion Prescription and Monitoring Chart / Primary Care Palliative Care Kardex. | Demonstrates knowledge of safe prescribing especially pertaining to controlled drugs, correct completion of Palliative Care Subcutaneous Infusion Prescription and Monitoring Chart / Primary Care Palliative Care Kardex.  Confirms that dose conversions are appropriate and has recognised compatibilities of drugs and diluents.  Advises colleagues, notes and reports any errors, via Incident Management and Recording Policy.  Demonstrates knowledge of opioid conversions. |  |  |
| 6. | Sourcing knowledge for medication advice. | Demonstrates knowledge of available resources.  Can state from whom and where to seek further advice. |  |  |
| 7. | Select and safely insert needle free cannula.  On-going maintenance of site. | Demonstrates knowledge of :   * Selection of appropriate comfortable site * Correct insertion and securing of s/c needle free cannula * Frequency of replacing s/c cannula, infusion line and needle free device as per NHSGGC Guideline for the use of the T34 Ambulatory Syringe Pump by CME Medical for adults in palliative care (2016) * Is able to utilise clinical judgement and justify decision making when appropriate |  |  |
| 8. | Demonstrate the knowledge, understanding and skill in the preparation, setting up, monitoring and closing down of the syringe pump.  Demonstrates safe use of lock box for syringe pump. | Successfully demonstrate the procedure to set up a syringe pump under supervision on **three** occasions.  Two occasions may be in the nursing base. The other occasion should be in the patient’s home.  Will be able to provide evidence using the “Procedure to set up a syringe pump” documentation signed off and dated by designated assessor for each occasion. |  |  |
| 9. | Disposal of sharps and clinical  waste following NHSGGC policy. | Demonstrates knowledge of the policies and procedures relating to the safe handling and disposal of sharps and clinical waste. |  |  |
| 10. | Maintaining accurate documentation. | Evidences the correct documentation has been completed accurately. |  |  |

**COMMUNICATION, CLINICAL SKILLS AND MEDICATION KNOWLEDGE (cont)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **COMPETENCY**  **Knowledge Area** | | | **OUTCOME/EXPECTATION** | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| 11. | Storage and decontamination of used equipment. | Able to state procedure for local area:   * Removing from stock * Returning to stock * Lending out syringe pump * Returning syringe pump to correct base/care setting * Sending syringe pump to medical physics * Decontamination before returning to stock | |  |  |

**CLINICAL JUDGEMENT**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **COMPETENCY**  **Knowledge Area** | | **OUTCOME/EXPECTATION** | | **DATE** | **REGISTERED NURSE and**  **ASSESSOR’S SIGNATURES** |
| The registered nurse has knowledge of symptom assessment and management and is able to: | | Demonstrates the ability to assess and monitor symptoms and plan for appropriate interventions. | |  |  |
| 1. | Monitor continuous subcutaneous infusion for any malfunction which may affect symptom management. | | Able to give rationale for carrying out the checks.  Able to say how frequently these checks should be carried out. |  |  |
| 2. | Monitor for any change in patient’s symptom control.  Determine appropriate intervention and administer breakthrough medication as prescribed, when necessary. | | Demonstrates knowledge of individual patient's symptoms and their management.  Effective symptom management as per NHS Scotland Palliative Care Guidelines (2019) and can state from whom and where to seek further advice. |  |  |
| 3. | Monitor for side effects of medication and undertake appropriate responsive action. This includes seeking advice from medical and multi-disciplinary colleagues. | | Demonstrates early recognition of potential adverse effects of medication administered via s/c infusion.  Patient's safety and comfort maintained and symptom management optimised. |  |  |

**PROCEDURE TO SET UP A SYRINGE PUMP**

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPETENCY LEVEL REACHED** | **DATE / COMMENT ASSESSOR'S SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S**  **SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S SIGNATURE** |
| Able to demonstrate procedure for identification of correct patient and gain verbal consent from the patient or, if necessary, from carer/family. |  |  |  |
| Demonstrates ability to select correct equipment to undertake the procedure. |  |  |  |
| Demonstrates how to load a battery. |  |  |  |
| Demonstrates correct procedure for insertion of the appropriate cannula for s/c medications and needle free device and able to state frequency of when to renew. |  |  |  |
| Able to identify correct size, luer lok and brand of 30ml syringe required and understand the importance of correct identification during the set up process. |  |  |  |
| Demonstrates ability to select and use the infusion line. |  |  |  |
| Demonstrates knowledge of where to find advice on medicines compatibilities. |  |  |  |
| Demonstrates ability to prepare medication safely and correctly, including the maximum volume of fluid for syringe using 30ml syringe. |  |  |  |
| Demonstrates how to correctly complete and secure the pink medication label for syringe. |  |  |  |
| Demonstrates knowledge and skills to load the syringe correctly. |  |  |  |
| Demonstrates when and why a new infusion site may be required. |  |  |  |

**PROCEDURE TO SET UP A SYRINGE PUMP (cont)**

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPETENCY LEVEL REACHED** | **DATE / COMMENT ASSESSOR'S SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S**  **SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S SIGNATURE** |
| Demonstrates how to start the infusion. |  |  |  |
| Demonstrates knowledge and understanding of syphonage. |  |  |  |
| Demonstrates how to lock key pad and check battery  status. |  |  |  |
| Correct disposal of sharps. |  |  |  |

**KNOWLEDGE OF COMPLICATIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPETENCY LEVEL REACHED** | **DATE / COMMENT ASSESSOR'S SIGNATURE** | **DATE / COMMENT ASSESSOR'S SIGNATURE** | **DATE / COMMENT ASSESSOR'S SIGNATURE** |
| Demonstrates knowledge and understanding of the different alarms and how to correctly deal with them.  Any telephone advice to patient/carer or family regarding the pump must be followed up with a visit to check patency of infusion, pump and equipment. |  |  |  |
| Demonstrates knowledge and understanding of what to do should the pump appear to malfunction, e.g. running fast/slow. |  |  |  |
| Demonstrates knowledge of what to do should an error alarm show or the device appears to malfunction. |  |  |  |

**DOCUMENTATION**

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPETENCY LEVEL REACHED** | **DATE / COMMENT**  **ASSESSOR'S SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S**  **SIGNATURE** | **DATE / COMMENT**  **ASSESSOR'S SIGNATURE** |
| Demonstrates knowledge of and understands the importance of correct documentation. |  |  |  |
| Able to correctly complete the NHSGGC Palliative Care Subcutaneous Infusion Prescription and Monitoring Chart / Primary Care Palliative Care Kardex. |  |  |  |
| Describe what procedures are in place for lending out and returning a syringe pump. |  |  |  |
| Demonstrate knowledge of how to order further supplies of syringe pump sundries and documentation. |  |  |  |

**Appendix 1**

**PREPARATION AND SETTING UP OF SYRINGE PUMP – Additional Notes**

|  |  |  |
| --- | --- | --- |
| 1. | **CHOICE OF CANNULA** | The Saf-T-Intima (single lumen) 22g cannula is the needle free s/c cannula of choice as:-   * Needle stick injury is reduced * Is less likely to cause site reactions * Can remain in situ longer than other devices |
| 2. | **EQUIPMENT REQUIRED** | * Syringe pump designated for palliative care use and plastic lock box and key * Holster for mobile patient * 1 x lock box and key * 1 x 9v alkaline battery – Panasonic or Duracell Plus * 1 x 30ml luer lok Braun Syringe - depending on quantity of drug/s and diluent to be drawn up (22mls for a 30ml syringe). In exceptional circumstances a 50ml luer lok syringe may be used under the guidance of a palliative care pharmacist. The maximum practical fill volume in a 50ml syringe is 34ml (this would need a 50ml lock box) * 1 x s/c needle free cannula and needle free device * 1 x infusion line with anti-siphon valve for use with ambulatory syringe pump for s/c infusions * Prescribed medication, including correct diluent * Transparent surgical dressing * Pink medication label * Syringes and needles to prepare medication * Disposable gloves * 1 x sharps box * NHSGGC Palliative Care Subcutaneous Infusion Prescription and Monitoring Chart for Syringe Pumps / Primary Care Palliative Care Kardex. |
| 3. | **PROCEDURE FOR SETTING UP A SYRINGE PUMP** | The registered nurse must check the entire process of setting up and commencing the continuous s/c infusion |
| 4. | **SYRINGE PUMP** | The syringe pump will automatically calculate the rate of administration based on the volume in the syringe.  For information on drug combinations, compatibilities and calculating dosages please see NHS Scotland Palliative Care Guidelines website or contact the Specialist Palliative Care Team / Pharmacist. |
| 5. | **OCCLUSIVE DRESSING** | A 10cm x 10cm occlusive dressing allows observation of the site and prevents cannula movement. |

**PREPARATION AND SETTING UP OF SYRINGE PUMP – Additional Notes (cont)**

|  |  |  |
| --- | --- | --- |
| 6. | **SHARPS BOX** | A sharps box should be readily available to dispose of sharps to reduce risk of injury. |
| 7. | **NEEDLES** | Green needles are required to draw up medication. |
| 8. | **PRESCRIPTION CHART** | A clearly written and signed prescription chart should be available. This should include the drug/s, doses and diluent to be used. In very rare circumstances a 50ml syringe may be used only with specialist advice. |
| 9. | **BATTERY** | * A 9v alkaline battery is recommended – Panasonic or Duracell Plus. * Batteries should always be readily available. * Check that the battery fits securely. * When not in use the battery should be kept in the syringe pump. * **Always** check the battery power before commencing the infusion. * The average battery life commencing with 100% is 2 days when using a syringe pump. The battery power should be checked daily and if less than 40% the battery should be changed. |
| 10. | **DRAWING UP THE MEDICATION** | * Always wash your hands and wear gloves to draw up medications. * Prescribed medication (starting with the smallest volume) and diluent should be drawn up into the syringe of suitable size, as directed by the signed prescription. * The syringe should be gently inverted to ensure mixture of the contents. * Check the solution for cloudiness or crystallisation. If in any doubt regarding medication compatibility please contact Primary Care specialist palliative care pharmacy team or your local hospice. * Always attach a pink medication label to the syringe ensuring that it is still possible to read the amount of fluid in the syringe. Ensure the label contains patient identification, date, time, drugs in the syringe and is signed by those who have drawn up and checked the drugs. The label should be 'flagged' at the syringe tip end to ensure that it is clear of the barrel arm clamp sensor. |
| 11. | **PRIMING THE INFUSION LINE** | At the commencement of using the syringe pump, or when the infusion site is changed, the infusion line is primed by hand, using approximately 0.5ml of syringe contents before attaching the syringe to the pump. It is only after the syringe has been safely loaded onto the pump that it should be attached to the patient.  **NOTE: ANY CHANGE** in medication doses or type requires a change of infusion line. |

**Appendix 2**

**PROBLEM SOLVING AND TROUBLE SHOOTING WHEN USING A SYRINGE PUMP – Additional Notes**

|  |  |  |
| --- | --- | --- |
| **PROBLEM** | POSSIBLE CAUSE | SOLUTION |
| **The syringe pump will not start** | No battery present Battery incorrectly inserted  Cap on the battery terminal  Battery is depleted/very low  Faulty pump | Fit a battery Re-align battery terminals  Remove the cap  Fit a new battery  Replace pump and send faulty one for servicing |
| **Infusion ended early/late** | Drug incompatibility or site problems Disconnection of syringe, line or cannula  Air is present in the syringe  Faulty pump | Re-assess patient / consider need for PRN medications if infusion is running late Check placement of syringe, line and cannula  Check if the syringe barrel is cracked  Replace pump and send faulty one for servicing |
| **Infusion is running slow** | The syringe pump may have stopped S/c cannula site needs changing  Pressure on / kinking of infusion line  Disconnection of any part of the infusion – line, syringe, cannula  Faulty pump | Check if pump stopped at any point. Assess patient and consider need for PRN medications if infusion is running slow Change s/c cannula and needle free device. Set up a new infusion line if required or if there is a change in prescribed medication.  Check the line  Reconnect infusion as per NHSGGC Guideline for the use of the T34 Ambulatory Syringe Pump by CME Medical for adults in palliative care (2016).  If user error seek appropriate training.  Replace pump and send faulty one for servicing |
| Cannula site requires frequent changes | Irritation from prescribed medication Cannula insertion technique | Discuss with specialist palliative care team. Review medications If user error – seek appropriate training. |
| The pump has stopped before the syringe has emptied | Battery exhausted Faulty pump | Fit new battery, turn syringe pump on, confirm syringe size and brand and then **resume** infusion.  Replace pump and send faulty one for servicing. |

### OTHER PROBLEMS:

1. **Precipitation**

Syringe contents become cloudy or change colour. Stop the infusion. Seek advice from pharmacy, specialist palliative care team / pharmacist.

Reasons may include: exposure to sunlight or direct heat, drug incompatibility, or insufficient diluent. Assess patient, consider bolus dose medication.

1. **The syringe pump alarms.**

Alarm Conditions   
(LED light turns red)

|  |  |  |  |
| --- | --- | --- | --- |
| **LCD DISPLAY** | **ALARM TYPE** | **POSSIBLE CAUSE** | **ACTION** |
| **Occlusion or syringe empty** | Audible and visual (**red** flashing LED) alarm | Patient cannula/line blocked, kinked.  Occlusion.  Actuator has reached minimum travel position | Remove occlusion and restart pump.  Flush/change cannula as per NHSGGC Guideline.  End of programme - switch pump off. |
| **Syringe displaced** | Audible and visual (**red** flashing LED) alarm | Syringe has been removed or displaced | Check and confirm syringe seated correctly and resume infusion.  Syringe flanges need to be in the vertical position at all times. |
| **Pump paused too long** | Audible and visual alarm (**yellow** solid LED)  Intermittent beep | Pump left or no key presses detected for 2 minutes | Start infusion, continue programming or switch off |
| **Near end**  alert only (infusion doesn’t stop) | Audible and visual alarm (**yellow** solid LED)  Intermittent beep | 15 minutes from end of infusion | Prepare to change syringe or switch off |
| **End program**  **Press YES to confirm** | Audible and visual (**red** flashing LED) alarm | Infusion complete | Pump will alarm. Press Yes to confirm end of program and change syringe or switch off. |
| **Low battery**  alert only (infusion doesn’t stop) | Audible and visual alarm (**yellow** solid LED)  Intermittent beep | Battery is almost depleted  (30 minutes left) | Prepare to change battery |
| **End battery** | Audible and visual (**red** flashing LED) alarm | Battery is depleted | Change battery |

**FINAL SIGN-OFF**

This confirms that reflective discussion has taken place and (Name)

has been deemed competent / not competent to set up a syringe pump independently. This follows one theoretical and three observed practical sessions.

If not deemed competent, further education and support will be required and agreed by your Line Manager.

**REGISTERED NURSE**

|  |  |
| --- | --- |
| **NAME** |  |
| **SIGNATURE** |  |
| **DATE** |  |

**ASSESSOR**

|  |  |
| --- | --- |
| **NAME** |  |
| **SIGNATURE** |  |
| **DATE** |  |

**Websites**

|  |
| --- |
| Equalities and Health (2010)  <http://www.legislation.gov.uk/ukpga/2010/15/pdfs/ukpga_20100015_en.pdf>  GOV.UK – The Caldicott Principles (2020) <https://www.gov.uk/government/publications/the-caldicott-principles>  NES Spiritual Care – A multi-faith resource for healthcare staff (2021)  [Multi-Faith Resource for Healthcare Staff | Turas | Learn (nhs.scot)](https://learn.nes.nhs.scot/50422/person-centred-care-zone/spiritual-care-and-healthcare-chaplaincy/resources/multi-faith-resource-for-healthcare-staff)  NHSGGC Guidelines for the use of the T34 Ambulatory Syringe Pump by CME Medical for adults in palliative care (2016) <https://clinicalguidelines.nhsggc.org.uk/palliative-care/>  NHSGGC Incident Management and Recording Policy (2020)  <https://www.nhsggc.scot/staff-recruitment/hrconnect/safety-health-and-wellbeing/policies-guidance-documents-and-forms/>  NHSGGC Infection Prevention and Control Homepage  <https://www.nhsggc.scot/hospitals-services/services-a-to-z/infection-prevention-and-control/> |
| NHSGGC Palliative Care Website Syringe Pumps page  [Syringe Pumps (palliativecareggc.org.uk)](https://www.palliativecareggc.org.uk/?page_id=3323)  NHSGGC Professional Standards for Record Keeping Policy (2015)<http://www.staffnet.ggc.scot.nhs.uk/Applications/PM/Policy%20Documents/Professional%20Standards%20for%20Record%20Keeping%20May%202016.doc> |
|  |
| NHSGGC Waste Management Policy (2019)  <https://www.nhsggc.scot/staff-recruitment/hrconnect/safety-health-and-wellbeing/policies-guidance-documents-and-forms/> |
| NHS Scotland Palliative Care Guidelines (2019)  [www.palliativecareguidelines.scot.nhs.uk](http://www.palliativecareguidelines.scot.nhs.uk) or via App.  NMC: The Code (2018) Professional standards of practice and behaviour for nurses, midwives and nursing associates  <http://www.nmc.org.uk/standards/code/> |

**NHSGGC Primary Care Syringe Pump Competency Framework**

Updated April 2023

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