



# Family Nursing & Home Care

## **Standard Operating Procedures Preparation of Injectable Medicines**

**December 2023**

## Document Profile

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## Version control / changes made

Date	Version	Summary of changes made	Author
November 2023	2.0	<ul style="list-style-type: none"> <li>Routine review of procedures</li> <li>Hyperlinks to other FNHC Policies removed</li> </ul>	Rachel Foster
September 2022	1.1	Purpose, Scope and Core Requirements amended to include pre-registration student nurses, encompassing the revised scope of practice for pre-registration student nurses, as per the Nursing and Midwifery Council "Future Nurse: Standard of proficiency for registered nurses" (2018).	Mo de Gruchy

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## Introduction

These Standard Operating Procedures provide step by step guidance in the preparation of an Injectable Medicine.

For further guidance on bolus or intermittent infusion please refer to [clinicalskills.net](https://www.clinicalskills.net) and follow the link for procedures. You will need to have your login details to access the information.

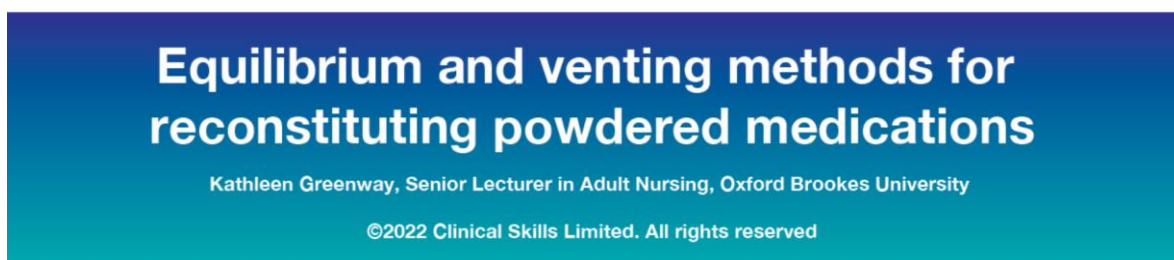


Figure 1 <https://www.clinicalskills.net/node/17378>



Figure 2 <https://www.clinicalskills.net/node/104>

In following the Standard Operating Procedures within this document, please also refer to the **Sharps Safety Policy** and the **Waste Management Policy**.

## SOP 1 Withdrawing solution from an ampoule into a syringe

### **Purpose**

To support Registered Nurses and pre-registration student nurses in the administration of injectable medicines.

### **Scope**

All Registered Nurses and pre-registration student nurses administering injectable medicines to patients referred to FNHC.

### **Core Requirements**

Injectable medicines may only be administered by healthcare professionals who have the necessary knowledge and skills and who feel competent and confident in this practice. Pre-registration student nurses will remain under the direct and constant supervision of a registered nurse.

#### **Withdrawing solution from an ampoule (glass or plastic) into a syringe**

- practice aseptic technique by washing hands, sanitising, and wearing latex-free disposable gloves.
- clean the ampoule's exterior surface with an alcohol swab.
- tap the ampoule gently to dislodge any medicine in the neck
- snap open the neck of glass ampoule, using an ampoule snapper if required
- safely dispose of the top of the ampoule in a sharps container
- attach a filter needle to a syringe, insert the syringe needle into the ampoule without touching the rim and draw the required volume of solution into the syringe. Tilt the ampoule if necessary
- invert the syringe and tap lightly to aggregate the air bubbles at the needle end. Expel the air carefully
- remove the filter needle from the syringe, dispose in sharps container and fit a new needle
- label syringe if the medication is not to be administered immediately. Only one unlabelled medicine must be handled at one time.
- keep the ampoule and any unused medicine until administration to the patient is complete to enable further checking
- for ampoules containing a suspension, gently swirl to mix the contents before drawing into the syringe.

**NB the neck of some plastic ampoules are designed to connect directly to a syringe, after the top of ampoule has been twisted off.**

## SOP 2 Withdrawing a solution or suspension from a vial into a syringe

### **Purpose**

To support Registered Nurses and pre-registration student nurses in the administration of injectable medicines.

### **Scope**

All Registered Nurses and pre-registration student nurses administering injectable medicines to patients referred to FNHC.

### **Core Requirements**

Injectable medicines may only be administered by healthcare professionals who have the necessary knowledge and skills and who feel competent and confident in this practice. Pre-registration student nurses will remain under the direct and constant supervision of a registered nurse.

#### **Withdrawing a solution or suspension from a vial into a syringe**

- Remove the tamper-evident seal from the vial and wipe the rubber septum with an alcohol and chlorhexidine wipe. Allow to dry for at least 30 seconds
- With the filter needle sheathed, draw into the syringe a volume of air equivalent to the required solution volume
- Remove the filter needle cover and insert the needle into the vial through the rubber septum
- Invert the vial. Keep the needle in the solution and slowly depress the plunger to push air into the vial
- Release the plunger so that solution flows back into the syringe
- For large volumes, use a push-pull technique, injecting small volumes of air and drawing up an equal volume of solution until the required total is reached. This 'equilibrium method' minimises the build-up of pressure in the vial
- Alternatively, pierce the rubber septum with a second needle to let air into the vial as solution is withdrawn ensuring the tip is kept above the solution to prevent leakage
- With the vial still attached, invert the syringe. With the needle and vial uppermost, tap the syringe lightly to aggregate the air bubbles at the needle end. Push the air back into the vial
- Fill the syringe with the required volume of solution then draw in a small volume of air. Withdraw the needle from the vial
- Expel excess air from the syringe, remove the needle, dispose in a sharps container and exchange it for a new needle or a sterile blind hub
- Keep the vial(s) and any unused medicine until administration to the patient is complete

- If the vial contains a suspension, gently swirl to mix the contents immediately before drawing into the syringe

## **SOP 3 Reconstituting powder in a vial and drawing the resulting solution or suspension into a syringe**

### ***Purpose***

To support Registered Nurses and pre-registration student nurses in the administration of injectable medicines.

### ***Scope***

All Registered Nurses and pre-registration student nurses administering injectable medicines to patients referred to FNHC.

### ***Core Requirements***

Injectable medicines may only be administered by healthcare professionals who have the necessary knowledge and skills and who feel competent and confident in this practice. Pre-registration student nurses will remain under the direct and constant supervision of a registered nurse.

#### **Reconstituting powder in a vial and drawing the resulting solution or suspension into a syringe**

- remove the tamper-evident seal from the vial and wipe the rubber septum with an alcohol and chlorhexidine wipe. Allow to dry for at least 30 seconds
- use the procedure in SOP 1 to withdraw the required volume of diluent from ampoule into the syringe
- inject the diluent into the vial. Keeping the needle tip above the solution level in the vial, release the plunger, allowing air displacement (if packed under a vacuum, solution will be drawn into the vial with no air). For larger diluent volumes, use a push-pull technique
- with the syringe and needle still in place, gently swirl the vial(s) to dissolve all the powder, unless otherwise indicated by the product information. This may take several minutes
- follow the relevant steps in SOP 1 to withdraw the required volume of solution from the vial into the syringe
- alternatively, pierce the rubber septum with a second needle to let air into the vial as solution is withdrawn, ensuring the vent needle tip is kept above the solution to prevent leakage



## SOP 4 Adding medicine to an infusion

### **Purpose**

To support Registered Nurses and pre-registration student nurses in the administration of injectable medicines.

### **Scope**

All Registered Nurses and pre-registration student nurses administering injectable medicines to patients referred to FNHC.

### **Core Requirements**

Injectable medicines may only be administered by healthcare professionals who have the necessary knowledge and skills and who feel competent and confident in this practice. Pre-registration student nurses will remain under the direct and constant supervision of a registered nurse.

#### **Adding a medicine to an infusion**

- prepare the medicine in a syringe using one of the methods described in SOP 1 or 2
- check the outer wrapper of the infusion container for any damage
- remove the wrapper and check the infusion container under good light, ensuring it is intact and free of cracks, punctures/leaks
- examine the infusion solution for clarity, confirming it is free of haziness, particles and discolouration
- where necessary, follow the manufacturer's instructions to remove the tamper-evident seal on the additive port or wipe the rubber septum on the infusion container with an alcohol and chlorhexidine wipe. Allow it to dry for at least 30 seconds (Note: no cleaning is needed if the bag has just been taken out of its sterile packaging)
- if the volume of medicine solution to be added exceeds 10% of the initial infusion container contents (more than 50ml to a 500ml or 100ml to a 1litre infusion), use a syringe and needle to remove an equivalent volume first
- inject the medicine into the infusion container through the centre of the injection port, ensuring the needle tip is kept away from the side of the infusion container. Withdraw the needle and invert the container at least five times to ensure thorough mixing before starting the infusion
- check the final infusion for absence of particles, cloudiness or discolouration