1. **Purpose**

This SOP describes the process for preparation of ready to administer 0.5mL (primary course dose) and 0.25mL (booster dose) syringes of Spikevax COVID-19 mRNA (nucleoside modified vaccine 0.1mg/0.5mL dose dispersion for injection (Spikevax **Original**) prior to immediate administration.

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| Different strengths / formulations of Spikevax vaccine are available. Ensure the correct procedure is selected for the strength / formulation required. This SOP is for use with Spikevax **Original** with the label format: |  |

1. **Scope**

This procedure covers the process from the removal of vials of thawed vaccine from the outer carton in the refrigerator, or removal of individual vials from a cool box, up until the point of administration. This includes assigning an expiry date and time after the first dose withdrawal and the preparation of syringes for administration.

This procedure may be adapted to suit either of the following models:

* One person to both draw up individual doses into syringes and administer the vaccine.
* One person to draw up individual doses into syringes and pass the syringe to a vaccinator. This model requires additional local risk assessment, and the introduction of local controls to reduce the risk of needle stick injuries on transfer between individuals.
1. **Responsibility**

Staff performing any stage of the preparation of the vaccine are responsible for following this procedure.

The responsible Pharmacist must ensure that appropriate and formal authorisation for vaccine administration is in place such as a Patient Group Direction (PGD), National Protocol, Patient Specific Direction (PSD) or other appropriate legal mechanism. In addition, the responsible Pharmacist must ensure that the staff groups who are undertaking the processes are those defined as eligible to do so.

1. **Procedure**
	1. Prepare the workstation for use:
		* + ensure the preparation workstation is clear and free from any other vials of vaccine.
			+ ensure a yellow lidded sharps bin with sufficient free capacity and an indelible pen are available
			+ clean workstation with a disinfectant wipe and discard into a clinical waste bin.
	2. [Insert statement on local practice for wearing of aprons and other PPE / sanitising hands / donning gloves for preparing injectable medicines]
	3. When ready to begin preparation select one vial of Spikevax **Original** vaccine.
		1. If working with vials stored in a refrigerator:
* If there is more than one batch of vaccine vials, use the one with the shortest expiry
* Check the post thaw expiry on the carton has not been exceeded.
* Remove a single vial and close the carton.

N.B It is permissible to remove multiple vials from the refrigerator if local systems are in place to ensure segregation of punctured and unpunctured vials.

* + 1. If working with vials from a cool box at 2-8OC:
			- Check the vial is within the post-thaw expiry date by checking the label on the vial transport container. Refer to SOP HCV 6: *Use of cool boxes to transport Covid-19 vaccines to end user locations*
			- Remove a single vial and close the lid of the cool box.
		2. Check the identity of the vial. This procedure is intended for use with the Spikevax **Original** vaccine. Check label format on the vial selected matches the image below:



* + 1. Assemble the following materials required to prepare syringes:
			- Spikevax **Original** vial X 1
			- 1mL syringe with integrated 23g (or finer) x 25mm needle x 1 per dose
			- Sterile single use 70% alcohol swab x 1 per dose
		2. Swirl the vial by gently rotating in a circular motion several times. Do not shake.
		3. Inspect the vial visually for foreign particulate matter and/or discoloration prior to administration. If foreign particulate matter or discolouration are present, the vaccine should not be administered.

N.B. Spikevax **Original** is a white to off-white dispersion. It may contain white or translucent product-related particulates.

* + 1. Confirm if the **0.5mL** primary course dose or the **0.25mL** booster dose is required by the patient
		2. Cleanse the vial stopper with a single use 70% alcohol swab, and discard swab in a clinical waste bin.
		3. Using aseptic technique, draw up **0.5mL** primary course dose or the **0.25mL** booster dose of the vaccine using a new 1mL syringe with integrated 23g or finer x 25mm needle.

N.B.

* A 21g or finer x 38mm needle and 1mL syringe should be used for administering the vaccine to morbidly obese patients.
* If using a syringe with an auto retracting needle depressing the plunger will cause the needle to retract prematurely.
	+ 1. Adjust to remove air bubbles with the needle still in the vial to avoid loss of vaccine.
		2. Check volume withdrawn is **0.5mL** for a primary course dose or **0.25mL** for a booster dose**. [May require independent 2nd check depending on local policy]**
		3. Visually inspect the syringes for foreign particulate matter and leaks. Discard if these are observed.
		4. The newly filled syringe must be used for immediate administration. **[Local risk assessment may be required to manage risk of needle stick injury when handling unsheathed needles]**

After first dose withdrawal, use the vial as soon as practically possible and within 6 hours (stored at 20C to 250C). Document the expiry date and time (24-hour format, e.g. 14:00) on the vial after first use.

* + 1. Steps 4.3.6 to 4.3.14 may be repeated to produce further doses. The vial may only be punctured a maximum of 20 times. It is normal for liquid to remain in the vial after withdrawing the final dose.

N.B. To minimise the risk of stopper coring and particles entering the vial:

* Insert the needle through a fresh point in the inner ring of the vial stopper each time
* Each time the vial bung is punctured this should be in a different location to previous points of puncture on the bung. Work methodically around the inner ring of the vial stopper tracking previous puncture points.
* Do not puncture the stopper outside of the inner ring as this may increase the risk of coring.
	+ 1. If the amount of vaccine remaining in the vial cannot provide a full dose discard the vial and any excess volume. Do not pool excess vaccine from multiple vials.
		2. Once empty, or no longer needed, immediately discard the used vaccine vial into a yellow lidded sharps bin.
	1. At the end of the session, discard any punctured vials. Punctured vials must not be stored between sessions or returned to the refrigerator
	2. Dispose of outer cartons by defacing using permanent black marker pens, and placing in the confidential waste stream. Note: the packaging can be flattened easily. For mass vaccination centres packaging must be stored in a secure container(s) and shredded on-site.
1. **Document history**

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| **Date** | **Version** | **Section** | **Details** |
| 18/08/2022 | 1.0 | All | This is the first version published. Adapted from and consolidates MDH4a, MVH8a and MVH3a |
| 27/09/2022 | 1.1 | 4.44.3.1 | Removed reference to lidded box, and clarified statement relates to punctured vialsAdded statement regarding removal of multiple vials from refrigerator |

1. **References**

Spikevax Original SPC Available at: <https://www.gov.uk/government/publications/regulatory-approval-of-covid-19-vaccine-moderna/information-for-healthcare-professionals-on-covid-19-vaccine-moderna>

1. **Supporting documents**

SOP HCV 6: Use of cool boxes to transport Covid-19 vaccines to end user locations.