



SOP for Vaccination of Farm Animals

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Document Approval

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Revision History

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	NVH-P-U1-08	01/01/2019	31/12/2021	001

## Table of Contents

- 1 Purpose
- 2 Scope
- 3 Responsibilities
- 4 Definitions
- 5 Process Map in Flow Chart
- 6 Procedures
- 7 Related Forms or Work Instructions
- 8 References

### 1 Purpose

1.1 This SOP describes the procedures for vaccination of farm animals.

### 2 Scope

2.1 This SOP covers the procedures for vaccination of farm animals.

### 3 Responsibilities

3.1 All the staffs of veterinary hospitals/ animal health centers and farms should follow these procedures.

Sl. No.	Official Designation	Responsibilities
1.	Veterinarians/Para-veterinarians	Administering the vaccine. Recording in the vaccination register.
2.	Animal attendant	To restrain animals.
3.	Community animal health worker	Administering/ assisting in vaccination, recording in the vaccination register.

### 4 Definitions

**4.1 AHD:** It refers to Animal Health Division under the Department of Livestock.

**4.2 Animal attendants:** It refers to a person who helps in restraining of animals and ensures the well being of the animals during the treatment procedures.

**4.3 Community animal health worker:** It refers to rural people who are trained to provide basic veterinary services like treatment, deworming, vaccination and other animal health related advices to the farmers.


**4.4 DoL:** It refers to Department of Livestock.

**4.5 DRA:** It refers to Drug Regulatory Authority.

**4.6 Effective Date:** It is the date that a document becomes effective for use.

**4.7 Farm Animals:** It refers to animals that are raised for home use or for profit. Farm animals include cattle, yak, sheep, goat, pig and horse.

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	NVH-P-U1-08	01/01/2019	31/12/2021	001

**4.8 NVH:** It refers to National Veterinary Hospital, Thimphu.

**4.9 Para-veterinarian:** It refers to a person with diploma in Animal Science and is authorized to provide treatment to the animals.

**4.10 Primary vaccination:** It refers to initial/first vaccination.


**4.11 Restrain:** It refers to application of any procedure designed to restrict its movements in order to facilitate examination of patient.

**4.12 SOP:** It refers to Standard Operating Procedure.

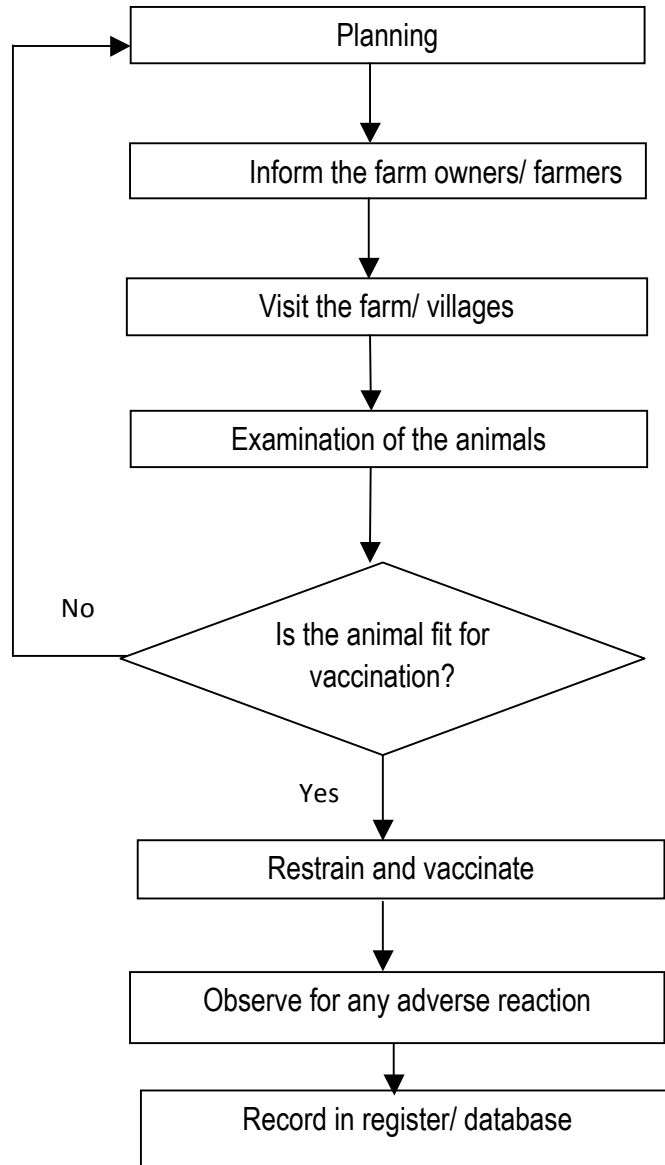
**4.13 Vaccination:** It is the administration of vaccine to stimulate an individual immune system to develop adaptive immunity to a pathogen

**4.14 Veterinarian:** It refers to a person holding a bachelors degree in Veterinary Science and Animal Husbandry and is authorized to practice veterinary medicine.


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### 5 Process Map in Flow Chart



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	NVH-P-U1-08	01/01/2019	31/12/2021	001

## 6 Procedure

- 6.1 Plan the vaccination program as per the work plan and/ or standard vaccination schedule according to the animal species (annexure 9.1).
- 6.2 Inform the farm owners/ farmers about the plan and communicate about the details of the vaccination program.
- 6.3 Arrange for all the materials required.
- 6.4 Visit the farm/ village/ herd.
- 6.5 Vaccines should be carried in the cool box ensuring cold chain is maintained by keeping the temperature between 2-8<sup>o</sup> C.
- 6.6 Examine and screen the healthy animals that need vaccination. The vaccination of farm animal involves the following steps
  - 6.6.1 Preparing for vaccine administration
    - 6.6.1.1 Identify the animals that are healthy and need vaccination. Don't vaccinate animals, in poor health, poor body condition and/ or in stress. This can lead to a poor vaccine response.
    - 6.6.1.2 Restrain the animal appropriately; either in a squeeze chute if available or with the help of some people if chute is not available. Ensure the animal is adequately restrained before any vaccine is administered to avoid accidents.
    - 6.6.1.3 Read the vaccine label. Always read and follow the directions on the label of the medication or vaccination for required dosage and routes of administration. The drug manufacturer is obliged by law to print instructions on the injection bottle and provide such information, as well as warnings.
    - 6.6.1.4 Identify the injection site and stand on a comfortable side on a level footing.
  - 6.6.2 Selecting the syringe/ dosing gun
    - 6.6.2.1 Use the size of syringe needed according to the dose requirements for a single animal, and one dose in a syringe should only be used for one animal.
    - 6.6.2.2 Give different injections in different places. This is if you have more than one vaccination to give. The next shot should be administered in a place that is at least four inches (about a palm's width) away from the first shot site. If you keep putting medication into the same spot, the animal's body will have a harder time absorbing it, because the medications could react to each other causing ineffectiveness, or an adverse reaction that may kill the animal.
  - 6.6.3 Selecting the needle

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	<p>6.6.3.1 Choosing appropriate needle size: Choose a needle based on the animal's weight. Needle size is measured in 'gauges'. The gauge of a needle is inversely proportional to its diameter, such that the lower the gauge, the bigger the needle. For small farm animals, an 18-20 gauge needle with an inch (2.5 cm) length is used and for larger animals, a 16-18 g needle with a 1 ½ inch length is ideal.</p> <p>6.6.3.2 Choosing appropriate needle length: Choose needle length based on the type of injections that need to be administered. Usually shorter needles are needed for subcutaneous injections, and longer needles are needed for intramuscular and intravenous injections. You won't need a needle longer than ½ inch (1.3 cm) to 1 inch (2.5 cm), for SQ injections because you only need to penetrate the skin. For IM injections, needles that are around 1.5 inch (3.8 cm) or more are best.</p> <p>6.6.3.3 It is recommended to use a new and sterile needle per animal. However, it is acceptable to use the same needle for up to ten injections, provided it remains sharp and straight. Always change to a new needle when a fresh draw is made from a different bottle of vaccine because using the old needle may introduce contamination.</p> <p>6.6.4 Giving a subcutaneous vaccination</p> <p>6.6.4.1 Ensure the site of injection is clean and dry.</p> <p>6.6.4.2 Choose the preferred and/ or recommended subcutaneous vaccination sites for respective farm animal species (annexure 9.1).</p> <p>6.6.4.3 Lift the skin up and form a pocket/ tent with your finger.</p> <p>6.6.4.4 Insert the needle into the skin. Needle length of ½” to 1” and a gauge of 18 to 20 is generally used.</p> <p>6.6.4.5 If blood is aspirated, pull out, refill the syringe with fresh vaccine and insert again.</p> <p>6.6.4.6 If no blood is aspirated, give the vaccine, withdraw the needle and massage the area for better dispersion and absorption of the vaccine.</p> <p>6.6.4.7 After you have removed the syringe, press the spot with your fingers for a few moments to keep the spot from bleeding.</p> <p>6.6.5 Giving an intramuscular vaccination</p> <p>6.6.5.1 Use appropriate syringe and needle for administering the vaccine.</p> <p>6.6.5.2 Insert the needle into the vial and pull back the plunger slowly to draw the desired volume of vaccine.</p> <p>6.6.5.3 Choose the preferred/ recommended site for intramuscular vaccination (annexure 9.1).</p> <p>6.6.5.4 Wipe the skin with cotton dipped in spirit. Generally a needle length of 1” to 1 ½” and gauge of 18- 20 is used.</p>
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	NVH-P-U1-08	01/01/2019	31/12/2021	001

6.6.5.5 Before injecting the vaccine, withdraw the plunger. If blood is aspirated, pull out, refill the syringe with fresh vaccine and insert again. If no blood is aspirated, give the injection, withdraw the needle and massage the muscle.

6.6.5.6 After removing the syringe, press the spot with your fingers for a few moments to keep the spot from bleeding.

6.7 Dispose the syringe and needle separately as per the SOP for Disposal of Pharmaceutical and Biological Wastes.

6.8 Observe the animal for any adverse reaction.

6.9 Record the vaccination details in the vaccination register/ database.

## 7 Related Forms or Work Instructions

7.1 SOP for Case Registration

7.2 SOP for Consultation

7.3 SOP for Customer Care

7.4 SOP For Treatment of Farm Animals

7.5 SOP for Surgery of Farm Animals

7.6 SOP for Vaccination of Pet Animals

7.7 SOP for Storage and Management of Medicines, Non-Drug Items and Equipment

7.8 SOP for Disposal of Pharmaceutical and Biological Wastes.

## 8 References

8.1 Responsible use of vaccines and vaccinations in farm animal production guidelines. <https://www.ruma.org.uk>.

8.2 Livestock vaccination, Queensland government. <https://www.daf.qld.gov.au>.

8.3 National Veterinary Drug Formulary 2016, Third Edition.

8.4 Images for Vaccination sites adopted from Google images.

## 9 Annexure

### 9.1 Vaccination Schedule for Farm Animals (cattle, yak, pig, sheep and goat)

Sl. No	Vaccine	Dosage and route	Primary vaccination	Booster	Re-vaccination	Remarks
1.	Anthrax spore vaccine (live)	Cattle, buffalo, sheep, goat & pigs Dosage and route: 1ml, Subcutaneous (S/C)	3-4 months of age	Not required	Annually in March/ April	Vaccination is not required in a particular area if there has not been outbreak for three years after the last outbreak
2.	Black quarter	Cattle, buffalo,	3-4 months	Not	Annually in	Vaccinate animals up to 3

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	vaccine (killed)	yak, sheep & goat Dosage and route: 5ml S/C	of age	required	March/ April	years of age. In endemic areas, healthy adults may be vaccinated.
3.	Haemorrhagic Septicaemia alum precipitated vaccine (killed)	Cattle, buffalo & yaks Dosage and route: 4ml S/C	3- 4 months of age	6 months	Every 6 months in April/May & Aug/Sept	Vaccination is to be done prior to onset of monsoon season and migration.
4.	Classical Swine fever vaccine	Pigs Dosage and route: 1ml, S/C	45-60 days	Not required		The animals should be observed for about an hour after vaccination for any hypersensitivity reaction. <i>If occurs, immediate treatment with antihistamines is advocated</i>
5.	E. coli oral vaccine	Pigs (pregnant sows)	75 days of gestation	Not required		One vial broth culture vaccine is mixed with 1.5 kg of feed and fed per sow. <i>The vaccine should be given for 3 consecutive days starting from 75 days of gestation. <b>Used only in farms.</b></i>
6.	Raksha O Vac Foot and Mouth Disease vaccine (FMD)	Cattle, buffalo yaks & calves Dosages and route: 2ml deep I/M Sheep & goat Dosage & route: 1ml deep I/M	4 months of age	9 months after primary vaccination	Annual	6 monthly re-vaccination is recommended in the high risk zones in the southern districts.
7.	Raksha HS+BQ combined vaccine	Cattle, buffalo & calves Dosage and route: 3ml S/C (mid-neck region)	6 months of age or above		Annual	Revaccination is recommended in case of adverse climatic conditions like unseasonal rains, cyclones etc
8.	Anti-rabies vaccine	Cattle & horses Dosage and	A single injection		Annual vaccination is	Primary vaccination can be administered at an

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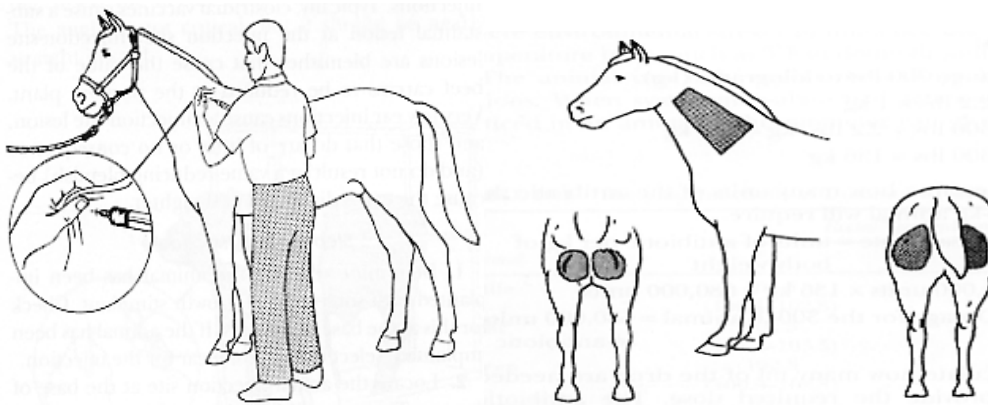
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	NVH-P-U1-08	01/01/2019	31/12/2021	001

	(Rabigen)	route: 1ml I/M	from 6 months of age		recommended	early age, but a repeat injection must be given at 3 or 6 months of age depending on the species
9.	Raksharab rabies vaccine	Cattle & all other species Dosage and route: 1ml I/M	At 3 months of age and above			In case primary vaccination is given below 3 months, a booster dose should be given at the age of 3 <sup>rd</sup> month.

Courtesy: National Veterinary Drug Formulary 2016, Third Edition

## 9.2 Vaccination sites in different species


### A. Vaccination sites in horse



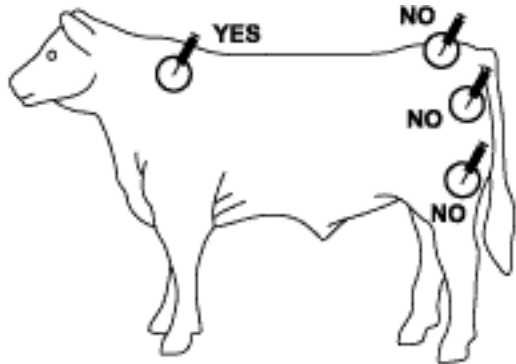
Subcutaneous site (neck skin)

Intramuscular sites (neck, thigh and pectoral muscles)

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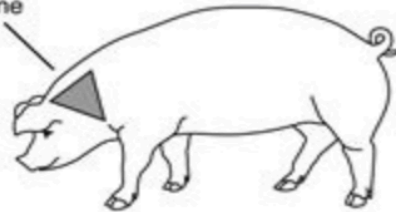
**B. Vaccination sites in cattle**



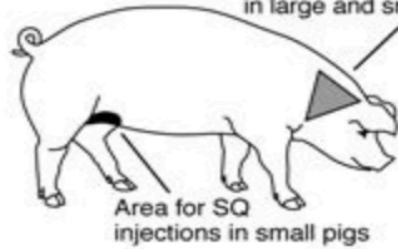
\* It is not advisable to inject in the hindquarters in meat animals to prevent the meat from getting degraded.

**C. Vaccination sites in pigs**

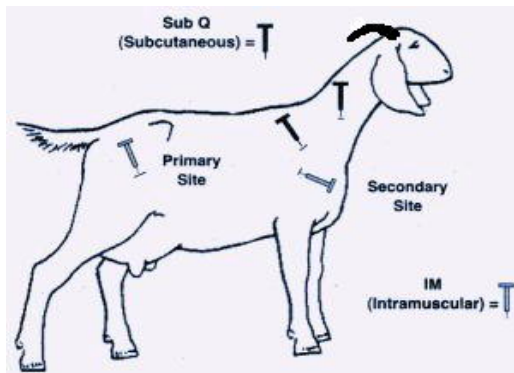
**Intramuscular (IM)**  
Area for IM injections in swine



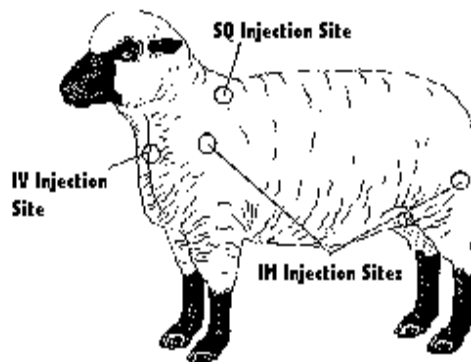
**Subcutaneous (SQ)**  
Area for SQ injections in large and small pigs



**D. Vaccination sites in goats**



**E. Vaccination sites in sheep**



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