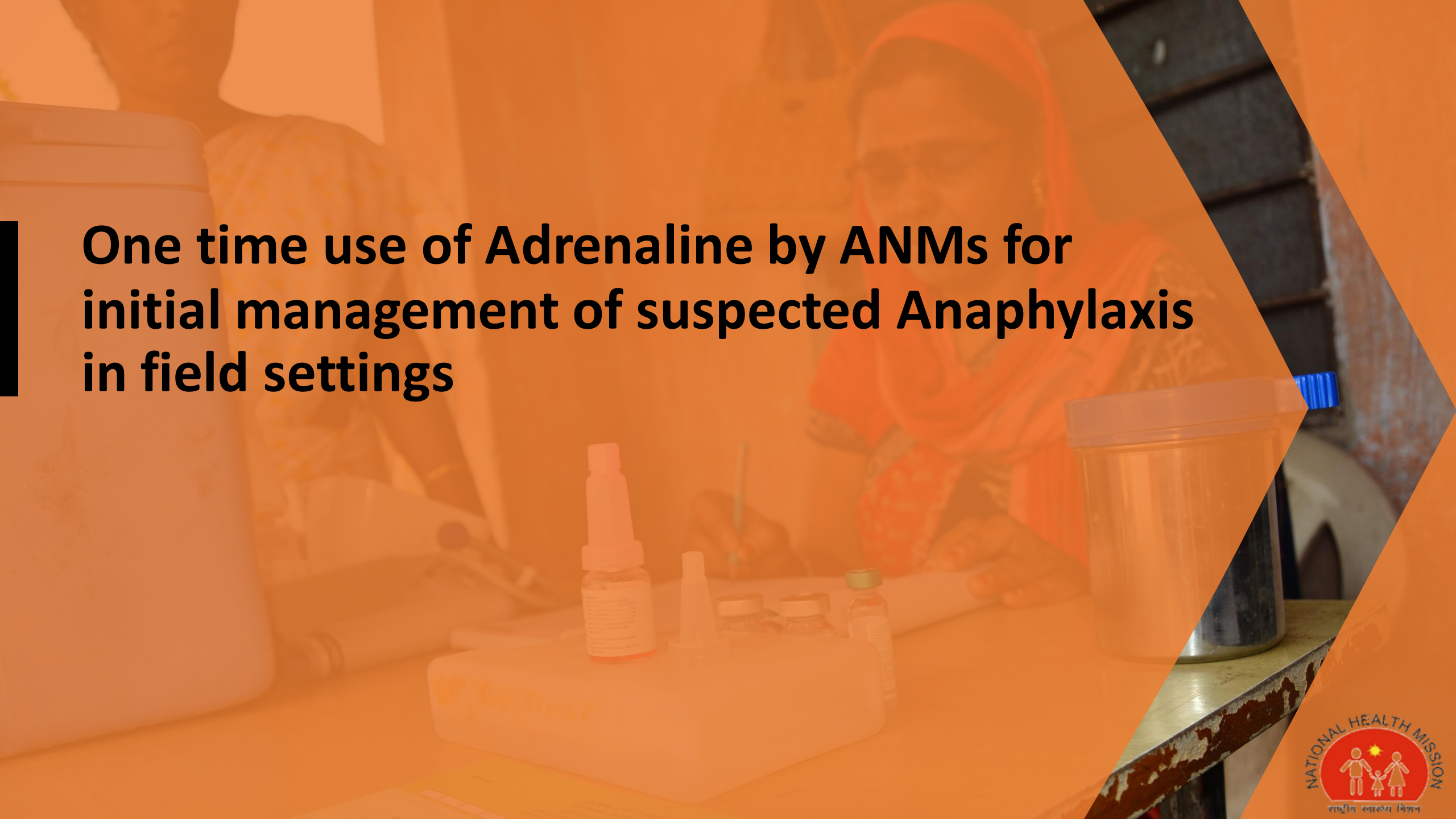
One time use of Adrenaline by ANMs for initial management of suspected Anaphylaxis in field settings



- Risk of anaphylaxis following vaccination is very rare (1-2 cases per million doses)
- The onset of anaphylaxis occurs usually between few minutes to upto few hours following vaccination.
- A case of **anaphylaxis is suspected** if the following criteria are met:
    - Sudden onset and rapid progression
    - At least **one** sign/symptom related to at least **two** of the following **three** systems - **respiratory, cardiovascular** and **dermatological/mucosal**

Recognising Anaphylaxis

Signs and symptoms of Anaphylaxis

Picture 1: Angioedema

Picture2 : Cyanosis

Picture 3: Urticaria

Dermatological or mucosal:

- Raised red skin lesion, rash with itching over body – generalized urticaria
- Redness of skin - generalized erythema
- Itchy/ painful swelling of subcutaneous tissues such as upper eyelids, lips, tongue, face etc.
- Itching of skin - generalized

Signs and symptoms of Anaphylaxis

Respiratory:

- Swelling of tongue, lip, throat
- Difficulty in breathing
- Harsh vibrating sounds during breathing from chest - stridor
- Breathing with whistling or rattling sound in chest - wheezing
- Bluish discoloration of arms and legs, tongue, ears, lips, etc.)- cyanosis
- Noisy breathing - grunting

Cardiovascular:

- Fainting, dizziness - Decreased level /loss of consciousness
- Low blood pressure (measured hypotension)
- Increased heart rate, palpitation- tachycardia

Differentiating anaphylaxis from fainting/syncope

	Fainting/syncope	Anaphylaxis
Onset	**Immediate** - At the time or soon after injection	Usually **some delay** between 5–30 minutes after injection
Skin	Pale, sweaty, cold and clammy	Urticaria, swollen eyes, face; generalized rash.
Respiratory	Normal to deep breaths	Noisy breathing from airways obstruction
Cardiovascular	Bradycardia **Strong carotid pulse**	Tachycardia Weak carotids
	Transient hypotension	Hypotension
Gastrointestinal	Nausea/Vomiting	Abdominal cramps
Neurological	Transient loss of consciousness, good response once prone	Loss of consciousness, little response once prone

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सत्यमेव जयते

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स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110011

Dated: 26th July, 2017

Dear, Principal Secretaries / Secretaries.

You may be aware that life threatening anaphylaxis and severe allergic reactions may follow vaccination as very rare adverse event. Injection adrenaline is an effective medication to counter anaphylaxis and severe allergic reactions. Inj. adrenaline is a part of Adverse Events Following Immunization (AEFI) kit, wherever immunization sessions are organized in the country.

Most immunization sessions in the country are conducted in the outreach where vaccines are administered by Auxiliary nurse mid wives (ANMs) & ANMs are the first responders in such crisis, therefore empowering them to inject adrenaline to manage a case of anaphylaxis can be a life saving intervention.

In view of the above, on recommendations of experts, usage of a single intramuscular dose of Inj. Adrenaline by ANMs to manage a case of anaphylaxis following vaccination has been approved by the competent authority in Govt. of India. ANMs are to be trained on usage of inj. adrenaline. Detailed operational guidelines on the trainings will be shared with the states shortly.

with regards

Yours sincerely

Vandana Gurnanai
JS (RCH)

To,

Principal Secretaries
All States/UTs

Policy decision

- Policy decision taken to allow HWs to administer single age-appropriate dose of injection adrenaline intramuscularly in field settings for initial management of suspected anaphylaxis

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

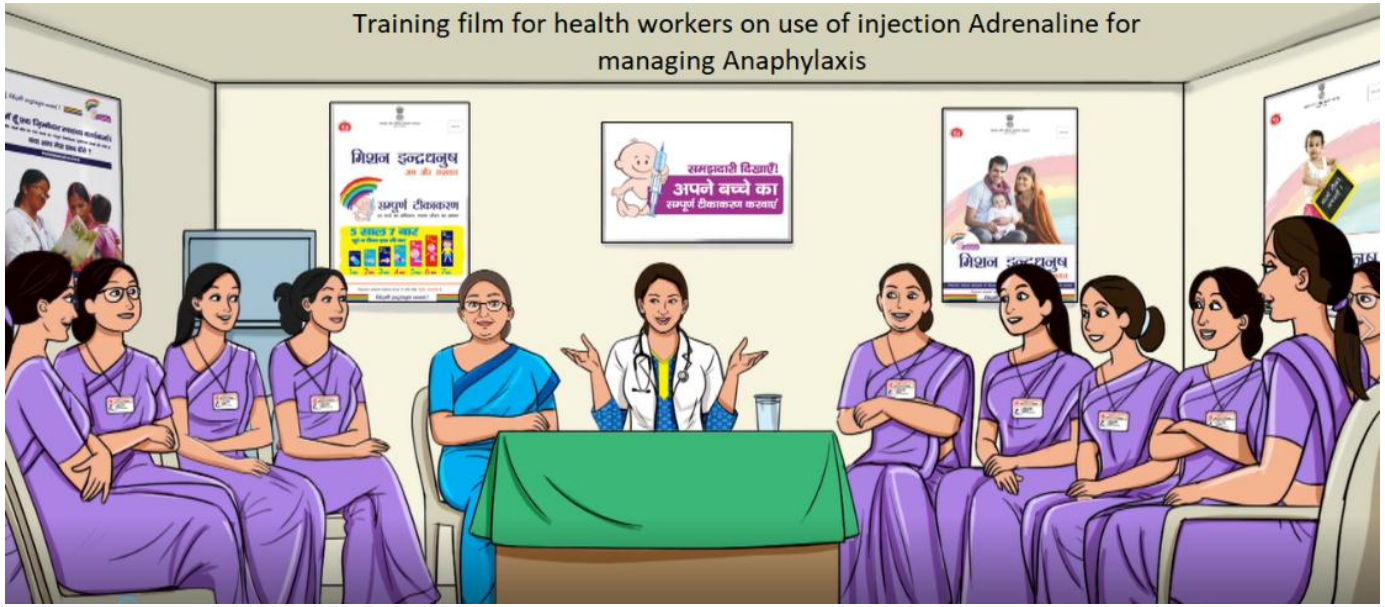
Ministry of Health & Family Welfare
Government of India

OPERATIONAL GUIDELINES
INITIAL MANAGEMENT OF
ANAPHYLAXIS USING
INJECTION ADRENALINE BY ANMs

2018

Operationalization

- Operational Guidelines
- Animated training video



NATIONAL HEALTH MISSION

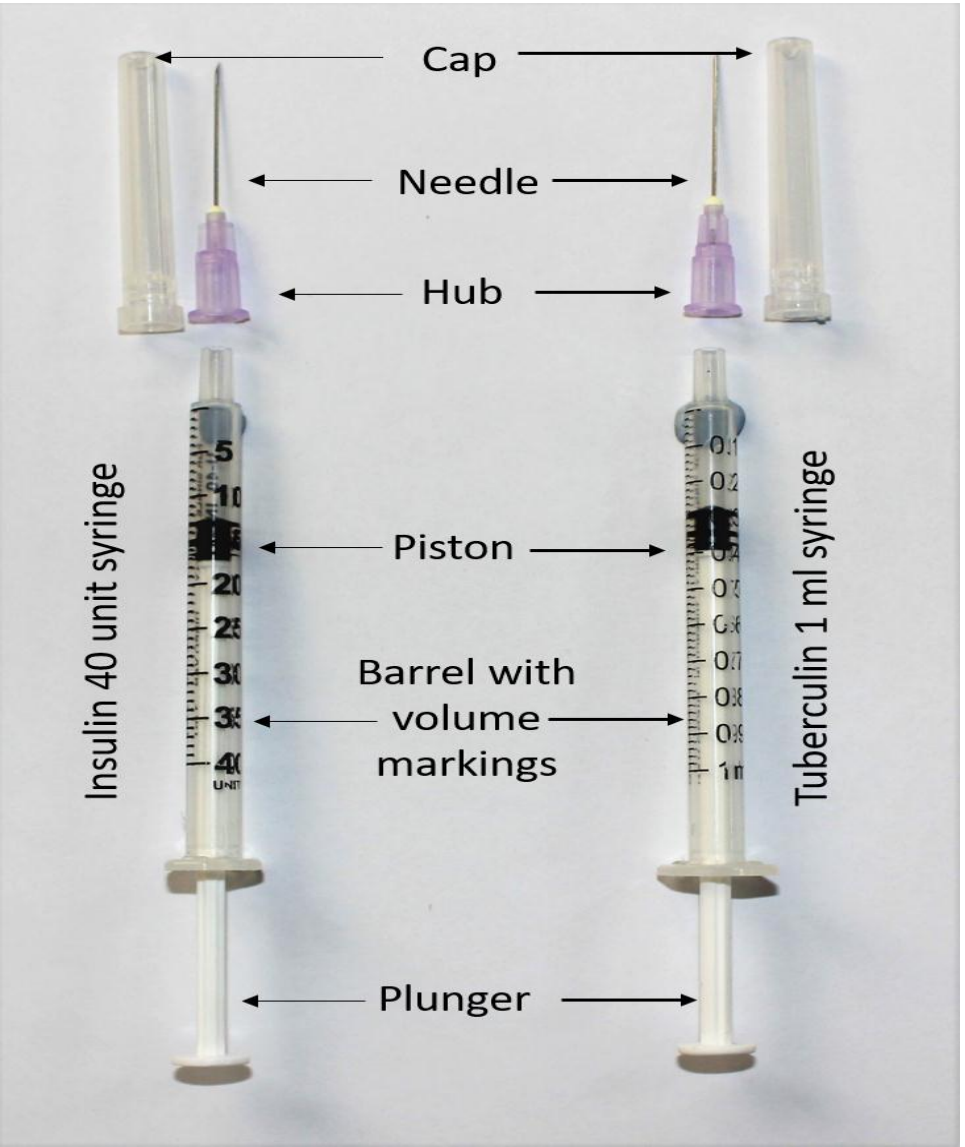
Training and logistics

- Monitoring and documentation of health worker training for use of adrenaline
- Ensuring availability of Anaphylaxis kit (forecasting and distribution)

Immediate management of Anaphylaxis

- **Reassure** patient, parents/ relatives
- **Immediately administer** single and age-appropriate dose of injection Adrenaline by deep IM route on anterolateral aspect of thigh
- **Seek help to immediately arrange for ambulance/vehicle** to transport the patient to the nearest referral centre - PHC/CHC/District Hospital, etc.
- **Do not leave patient alone**
- If patient is **conscious**, keep in **supine position with lower limbs raised** higher than head
- If patient is **unconscious**, keep in **left lateral position**

Intramuscular administration of adrenaline



- ANMs already give most vaccinations intramuscularly (IM)
- Adrenaline is also to be given IM
- Use tuberculin or insulin syringe (without fixed needle)
- Recommended needle size for intramuscular administration of adrenaline is 24 or 25 G one inch long.
- Give single age –appropriate dose using tuberculin / insulin syringe.

Steps for administration of injection Adrenaline

Adrenaline is also supplied in ampoules labelled as Epinephrine.

- Take one ampoule of adrenaline (1:1000) solution from Anaphylaxis kit
- Check name, dilution and expiry date on label of vial
- Take a 1 ml tuberculin or a 40 units insulin syringe and 24/25 G one inch long needle

Steps for administration of injection Adrenaline

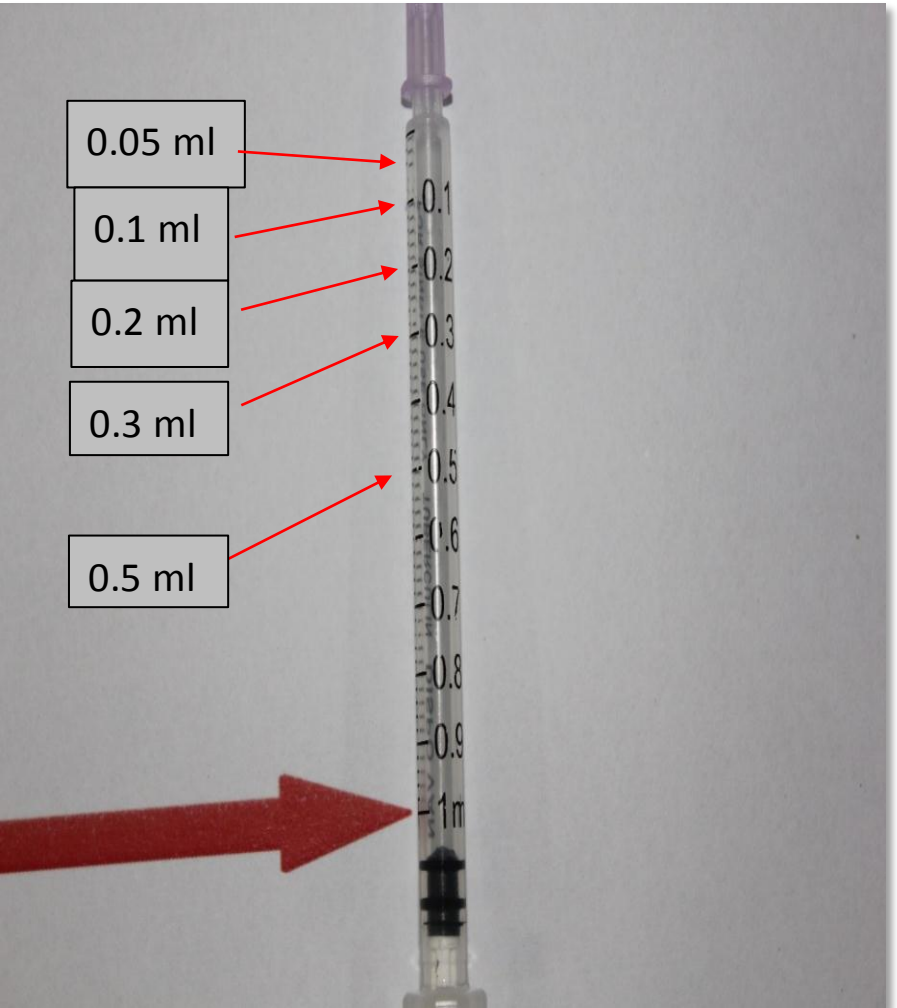
- Use table for choosing adrenaline dose to be administered as per age of patient and available syringe
- Load required dose of adrenaline in the syringe.

Age specific dosing chart of adrenaline (1:1000) dose for management of anaphylaxis

Age group (in years)	Needle	Dose for single administration in ml (tuberculin) or units (insulin)
0-1	1 inch long of 24G or 25G	0.05 ml / 2 units
1-6		0.1 ml / 4 units
6-12		0.2 ml / 8 units
12-18		0.3 ml / 12 units
Adults		0.5 ml / 20 units

Availability of appropriate syringes and needles

Gradations on 1 ml (tuberculin) **syringe**

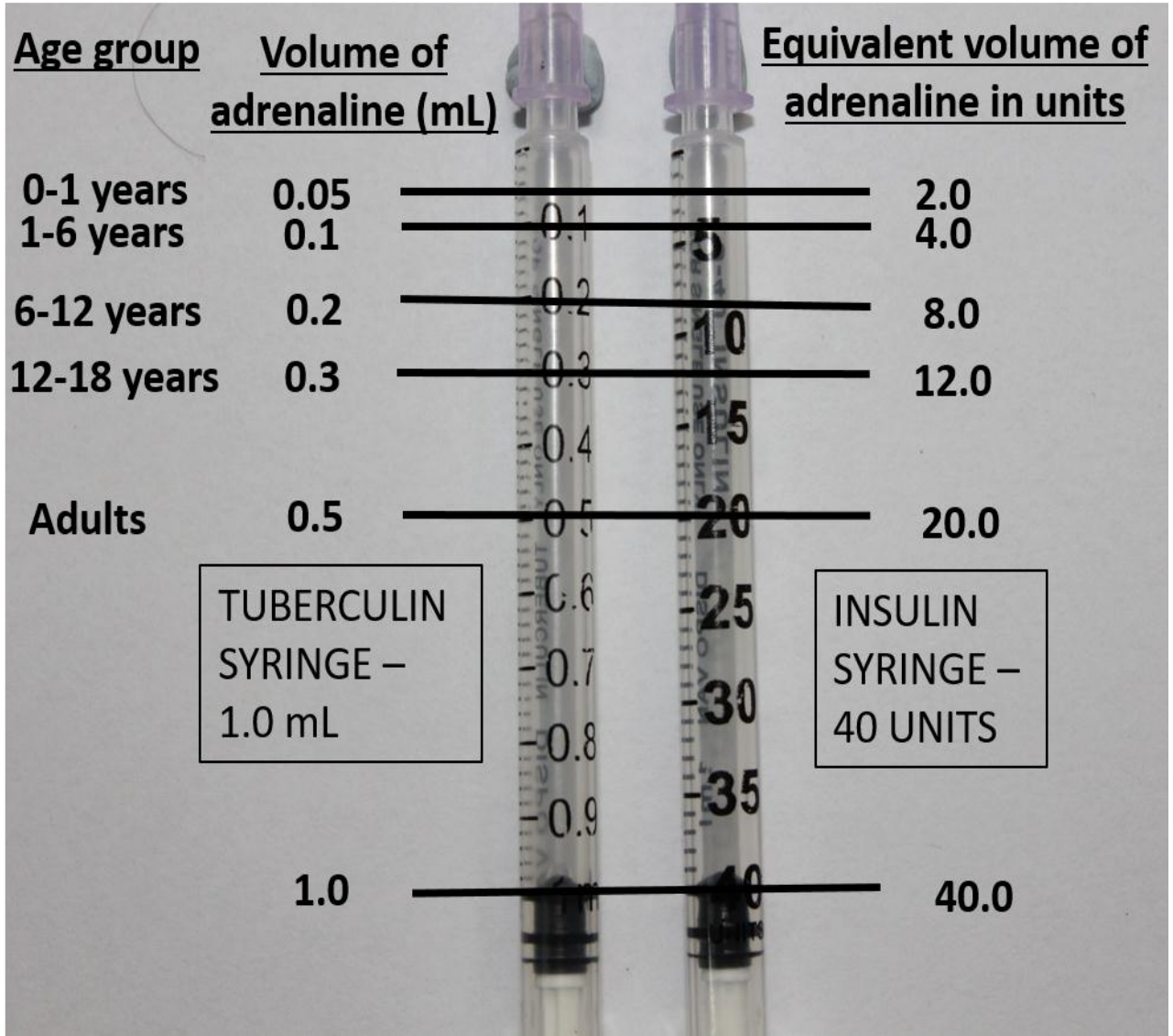


- As part of Anaphylaxis kit, states/district will procure and supply
  - **1 ml syringe (tuberculin)** with **50 gradations** (one gradation = 0.02 ml) without fixed needles – **3 nos./sub centre or ANM**

    OR

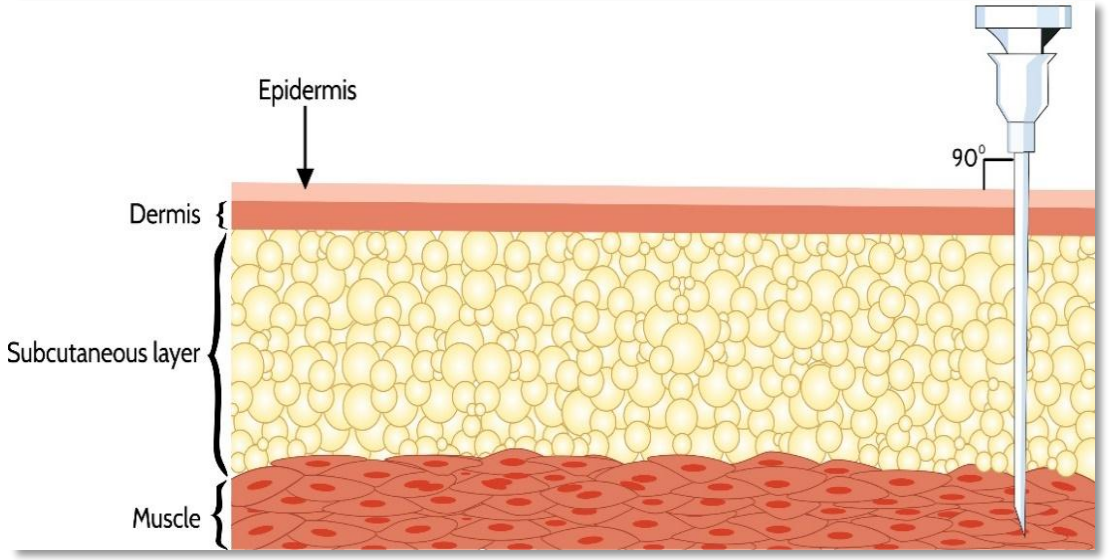
    40 units syringe (insulin) with 40 gradations (one gradation – 1 unit) without fixed needles – **3 nos./sub centre or ANM**
  - **1 inch needle** of 24/25 G – **3 nos./sub centre or ANM**

Corresponding volume markings on Insulin & tuberculin syringes



Markings of age appropriate dosage of adrenaline in mL (tuberculin syringes) and equivalent volume in units (insulin syringes)

Steps for administration of injection Adrenaline



- Use swab to clean skin on mid 1/3rd of anterolateral aspect of thigh of the opposite limb to that in which vaccine was given.
- Hold the muscle mass on the anterolateral aspect of thigh with hands, stretch the skin (do not bunch) with fingers.
- Give deep intramuscular injection at 90 degree angle to skin in middle 1/3rd of anterolateral aspect of thigh.

Summary

- Anaphylaxis post-vaccination is rare. If not recognized and treated early, it can be fatal.
- Adrenaline is the drug of choice to treat anaphylaxis
- HWs/ANMs are allowed to administer single age-appropriate dose of injection adrenaline intramuscularly in field settings for initial management of suspected anaphylaxis
- Training of HWs/ANMs for use of adrenaline should be monitored for quality and well documented
- Anaphylaxis kit containing adrenaline, syringes and needles should be available at session site

THANK YOU