

Vaccine Administration

Ruth Dougan – 22nd Sep 2016





Primary Care Vaccinations

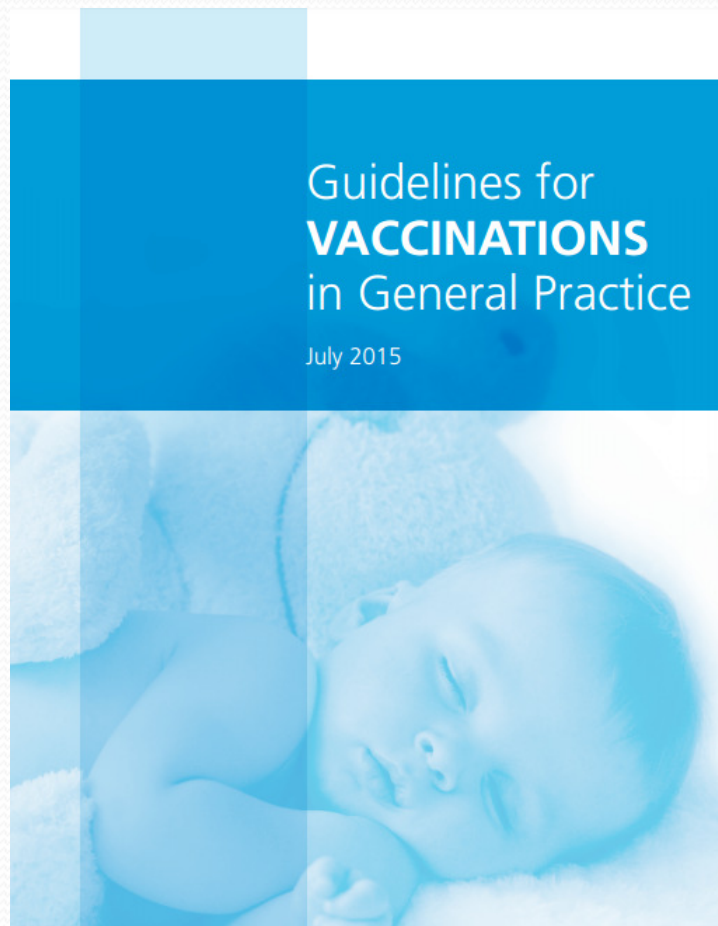
- Primary Childhood Immunisation Programme
- Schools Immunisation Programme
- Seasonal influenza and pneumococcal polysaccharide vaccination campaigns
- Vaccination of late entrants/defaulters from vaccination programmes
- Vaccinations carried out for public health and occupational health purposes



Objective

Administration of vaccinations
according to NIAC guidelines.

Self Assessment Form



APPENDIX E

<https://www.hse.ie/eng/health/immunisation/infomaterials/pubs/guidelinesGP.pdf>

APPENDIX E

Self assessment of competency to supply and administer vaccinations under medication protocol

I have attended an Immunisation Study Day/Update in the past 2 years Yes ☐ No ☐

I have attained/have plans to attain competencies noted in 'Guidelines for Immunisations carried out in General Practice' and in practice Medication Protocols Yes ☐ No ☐

Date of planned training _____

Domain of Practice	Performance Criteria: Critical Element	Needs Theory Date/Initial	Needs Practice Date/Initial	Competent Date/Initial
1, 2, 4, 5	I understand the role and function of medication protocols in the context of Nursing and Midwifery Board guidelines: <ul style="list-style-type: none"> The Code of Professional Conduct Guidance to Nurses and Midwives on Medication Management Scope of Nursing and Midwifery Practice. 			
1, 2, 4, 5	I carry out vaccination according to 'Guidelines for Immunisations carried out in General Practice'.			
1, 2, 4, 5	I can utilise the guidance document produced by NIAC "Immunisation Guidelines for Ireland" in application of practice.			
1, 2, 4	I am aware of and comply with the guidance on ordering, storage and stock rotation of vaccines.			
1, 2, 3, 4	I can obtain informed consent from parent/guardian including the information regarding the indications.			
1, 2, 3	I can explain the expected side effects post vaccination and management of same.			
1, 2, 4	I am aware of all vaccines given in general practice and their role in the management of vaccine preventable illness.			
1, 2, 4	I can outline the inclusion/exclusion criteria for use of the medication protocols.			
1, 2, 3, 4	I can refer those who are excluded from the protocol to GP for individual assessment.			
1, 2, 3, 4	I can undertake a clinical assessment of a patient within the scope of the medication protocols.			
2, 4	I am aware of the correct dosage of each vaccine.			
1, 4	I am aware of the correct preparation/reconstitution of vaccines.			
2, 4	I can prepare all vaccines using aseptic technique.			
1, 2, 4	I can follow the correct procedure for the intramuscular administration of vaccine(s).			
1, 2, 3	I am aware of potential adverse reactions in relation to vaccination.			

APPENDIX E Continued

1, 2, 4	I am aware of the procedures for treatment of adverse reactions			
1, 2, 3	I understand the procedure for reporting and documentation of medication errors/near misses.			
1, 2, 3	I understand the procedure for the reporting and documentation of adverse drug reactions.			
1, 2, 3, 4	I am aware of relevant written/oral instructions to be given to patients, parents/guardians with regard to completion of their vaccination programme.			
1, 4	I dispose of all equipment and sharps in accordance with standard precautions and local policies.			
1, 2, 4	I record the administration of vaccines as required by practice and HSE documents and update patients record as appropriate.			

I have sufficient theoretical knowledge and practice to undertake this role, and I acknowledge my responsibility to maintain my own competence in line with the Scope of Nursing Practice

Practice Nurse's Signature: _____ Date: _____

If any deficits in theory and/or practice identified, the nurse must discuss with authorising General Practitioner and implement appropriate action plan to achieve competency within an agreed time frame.

Action necessary to achieve competency:

Date to be achieved: _____

Supporting evidence of measures taken to achieve/enhance competency:

Practice Nurse's Signature: _____ Date: _____

The Nursing and Midwifery Board defines medication protocols as:

Written directions that allow for the supply and administration of a named medicinal product by a registered nurse or midwife in identified clinical situations.

*A medication protocol involves the authorisation of the nurse/midwife to supply and administer a medication to groups of patients in a defined situation **meeting specific criteria** and **who may not be individually identified** before presentation for treatment. An individually named prescription is not required for the supply and administration of medication when a medication protocol is in effect.*

<http://www.nmbi.ie/nmbi/media/NMBI/Publications/Guidance-Medicines-Management.pdf?ext=.pdf>



Training and Education

- Code of Professional Conduct
- Scope of Nursing and Midwifery Practice
- Utilise the guidance document produced by NIAC
Immunisation Guidelines for Ireland
<http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines/>
- Guidance to Nurses and Midwives on Medication management. HSELAND: 2 hours e-module

HSELAND

Medicines ManagementMenu | Resources



Medicines Management

This E-Learning programme has been designed to support you in the facilitation of safe and effective use of medicines in your day-to-day practice and has been developed by the HSE.

Click **START** to begin.



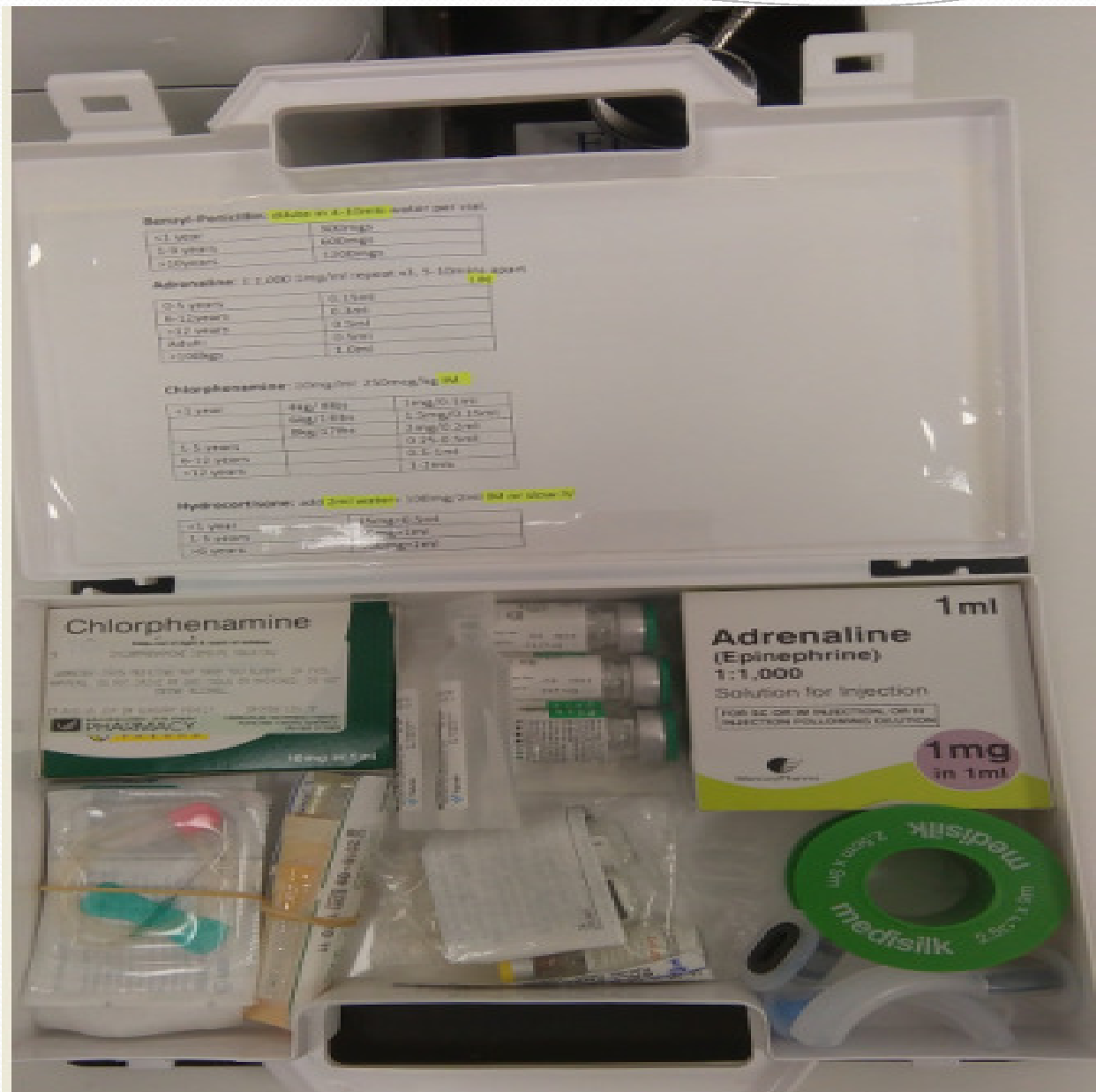
Read the **Nursing and Midwifery Board of Ireland: Scope of Nursing and Midwifery Framework, 2015** before you start the programme as it is referenced throughout the programme and acts as the underpinning framework for your medicines management practice.

START



Training and Education continued

- Basic Life Support and Anaphylaxis - every 2 years.
- Medication Protocol or individual prescription
- Equipment





Obtain informed consent

- Vaccination is not compulsory
- Information provided to consenter prior to vaccination
- Leaflets: <https://www.healthpromotion.ie/publication/fullListing?category=Immunisation>
- Age thresholds
- Children in Care
- Duration of Consent
- Further Info: <http://www.hse.ie/eng/health/immunisation/hcpinfo/trainingmanual/chap6.pdf>



Pre-Administration issues:

- GP present in the building
- Establish rapport
- Nurse to take lead in organising the sequence of the consultation
- Confirms client's identity/contact details
- Advise what is normal post vaccination



Meningitis B: Prophylactic Paracetamol advised



Pre-Administration Issues continued

Five Rights Of Vaccine Administration:

1. The right patient
2. The right vaccine
3. The right dosage
4. The right route
5. The right time



Pre-Administration issues continued

- Physical exam (e.g. Temperatures) NOT recommended for those who appear to be healthy.
- Check interval between vaccinations is appropriate.
- No break to the **cold chain**.
- Vaccination name and expiry date checked with patient/parent
- Hand Hygiene



Contraindications

All vaccines:

- Anaphylaxis to a vaccine or to one of its constituents or a constituent of the syringe, syringe cap or vial (e.g. Latex anaphylaxis).
- Contact allergy to latex gloves, vaccines supplied in vials or syringes that contain dry natural rubber or rubber latex may be given.

Live vaccines:

- Rotavirus vaccine after 8 months 0 days of age
- **Pregnancy.**
- Some immunocompromising conditions due to disease or treatment



Precautions

- Acute severe febrile illness: defer until recovery
- Immunoglobulin administration may impair the efficacy of MMR and varicella vaccines
- Topical immunomodulators (Tacrolimus e.g. Protopic etc.) **avoid live vaccines for up to 28 days before initiation and after cessation of topical tacrolimus** (see Chapter 3).
- Previous Type III (Arthus) hypersensitivity reaction

Not Contraindications

1. Family history of adverse reaction following immunisation.
2. Minor infections with fever $<38^{\circ}\text{C}$.
3. Family or personal history of convulsions.
4. History of vaccine-preventable infection.
5. Prematurity or low birth weight (defer Hepatitis B vaccine in those under 2kg until 1 month of age unless there is a maternal history of HBV infection).
6. Stable neurological conditions e.g. cerebral palsy.
7. Recent contact with an infectious disease.
8. Corticosteroid treatment a) short term (<14 days) b) long-term with less than 20mg/day (0.5mg/kg/day in children $<40\text{kgs}$) or equivalent c) long-term, alternate-day treatment with short-acting preparations d) maintenance physiologic doses (replacement therapy) e) topical (skin or eyes), or by inhalation f) intra-articular, bursal, or tendon injection.
9. Low dose methotrexate (< 0.4 mg/kg/week), azathioprine (<3.0 mg/kg/ day) or 6-mercaptopurine (<1.5 mg/kg/day).
10. Asthma, eczema, hay fever, or food allergy.
11. Therapy with antibiotics.
12. Child's mother is pregnant.
13. Child being breastfed unless the mother is on immune modulators.
14. History of jaundice.
15. Recent or imminent surgery or general anaesthesia .
16. Non-anaphylactic allergy.

The mercury in thimerosal is **ethyl mercury**, which gets flushed out of the body.

Unlike its brother, **methyl mercury**, which is the bad mercury.



You know what has the bad mercury in it? Tuna.

Immunisation of specific groups

- Women of childbearing age: rubella/ varicella
- Pregnant women: Pertussis (new recommendation / influenza)
- Specific high-risk groups
- Travel Vaccines
- > 65 Years: PPV23
- An algorithm outlining the requirement for booster doses of PPV23 is available at <http://www.hse.ie/eng/health/immunisation/hcpinfo/OtherVaccines/pneumo/ppv.pdf>
- Influenza: note: egg anaphylaxis. child dose.
- Children 12 to 23 months – 1week between Flu/PCV

Immunisation of specific groups continued

- Bleeding disorders / Anticoagulants
- Preterm infants
- Immunocompromised: Chapter 3 www.immunisation.ie

Disease:

- Primary immunodeficiency,
- asplenia,
- HIV

Treatment:

- Cancer chemotherapy,
- corticosteroid,
- antimetabolite,
- biologic immunomodulator therapy.

Immunisation of specific groups continued

- Immunocompromised persons are at increased risk from vaccine preventable diseases and should receive appropriate vaccines.
- A review of immunisation status and administration of required vaccines should be an integral part of the assessment pre transplant or before starting immunomodulatory treatment.
- Non-live vaccines can be given but recipients may not develop an adequate protective response, depending on the degree of immune suppression at the time of immunisation.
- With some important exceptions (see text) **live vaccines** should not be given to immunocompromised persons.
- For complex cases, relevant specialist advice should be sought from an appropriate physician.

Recommended intervals between vaccine doses

Antigen combination	Recommended interval between doses
MMR and yellow fever*	MMR and yellow fever should not be administered on the same day. They should be given at least 4 weeks apart
MMR, varicella and zoster vaccine	Can be given on the same day, if not they should be given at least 4 weeks apart
BCG, rotavirus, live attenuated influenza vaccine (LAIV), MMR, oral typhoid vaccine, varicella, yellow fever, and zoster	Apart from the combinations listed above , can be given on the same day or at any time before or after each other
Non live vaccines	May be administered simultaneously or at any interval between doses
Non live and live vaccines	May be administered simultaneously or at any interval between doses

Note: Four day rule (pg3 Chapter 2)

Vaccine preparation

- **Vaccines should be prepared according to NIAC Guidelines.**
May differ from SmPC (Summary of Product Characteristics).
- **Some vaccines require reconstitution.** Not necessary to change needles.
- **Separate vaccines must not be mixed in the same syringe and must be administered in different sites.**
- Small air bubbles (less than the internal diameter of the syringe) do not need to be expelled except for intradermal injections .
- Large air bubbles – expel, but do not prime the needle.
- The skin does not require cleaning
- Gloves are not normally required.
- Be consistent in where vaccines are injected.

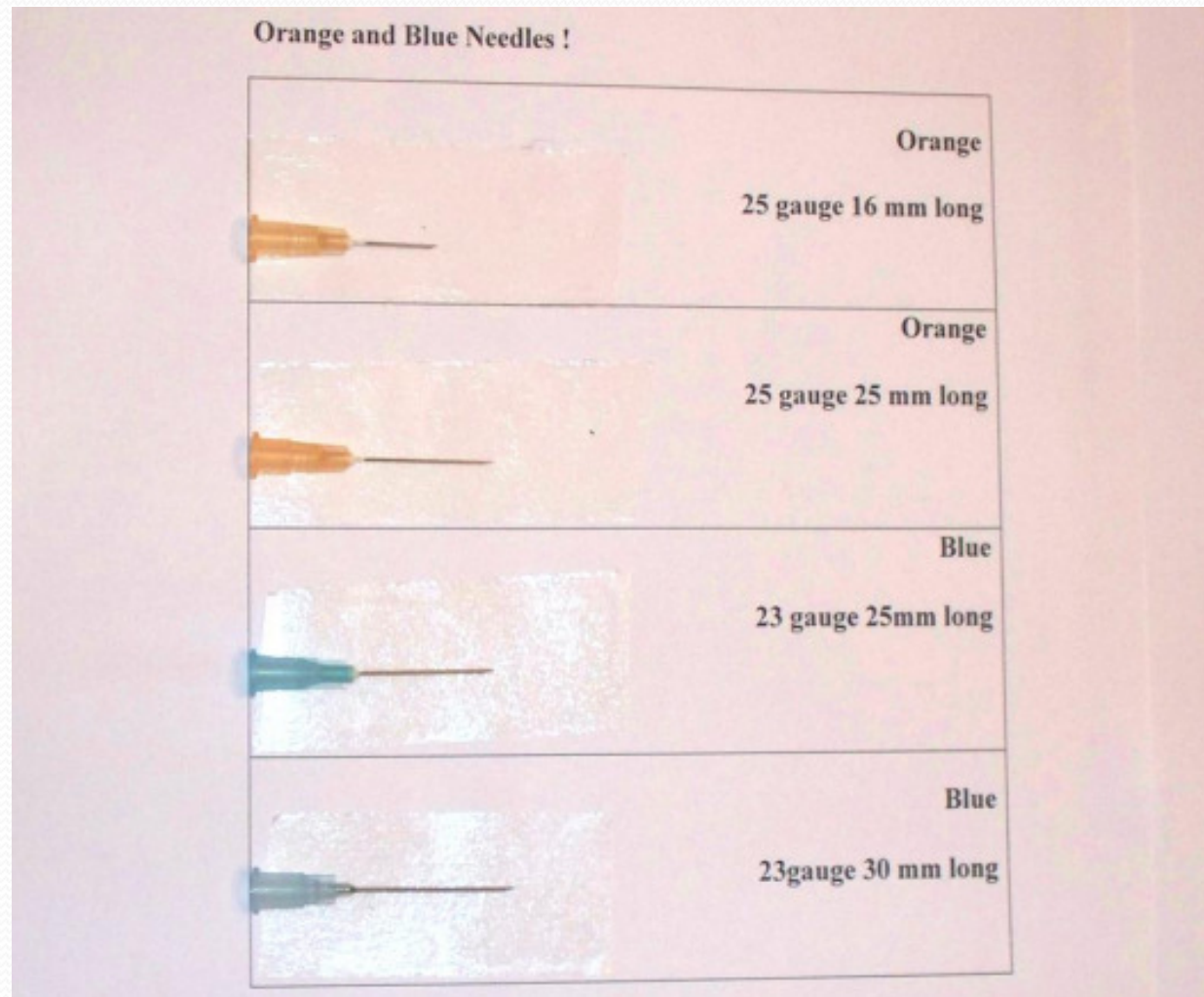
Needle Size

Patient's age	Site (see illustrations below)	Needle length and size
Birth to <12 months	Vastus lateralis muscle in anterolateral aspect of mid or upper thigh	25 mm* 23-25 gauge
12 to <36 months	Vastus lateralis or deltoid muscle (depending on muscle mass)	25 mm 23-25 gauge
3 years and older	Deltoid muscle (see diagram page 17)	25 mm** 23-25 gauge

* Use a 16 mm needle in infants under 2.5-3 kg.

** Use 40 mm needle in females >90 kg, males >118 kg.

Needle Size continued



jantoo

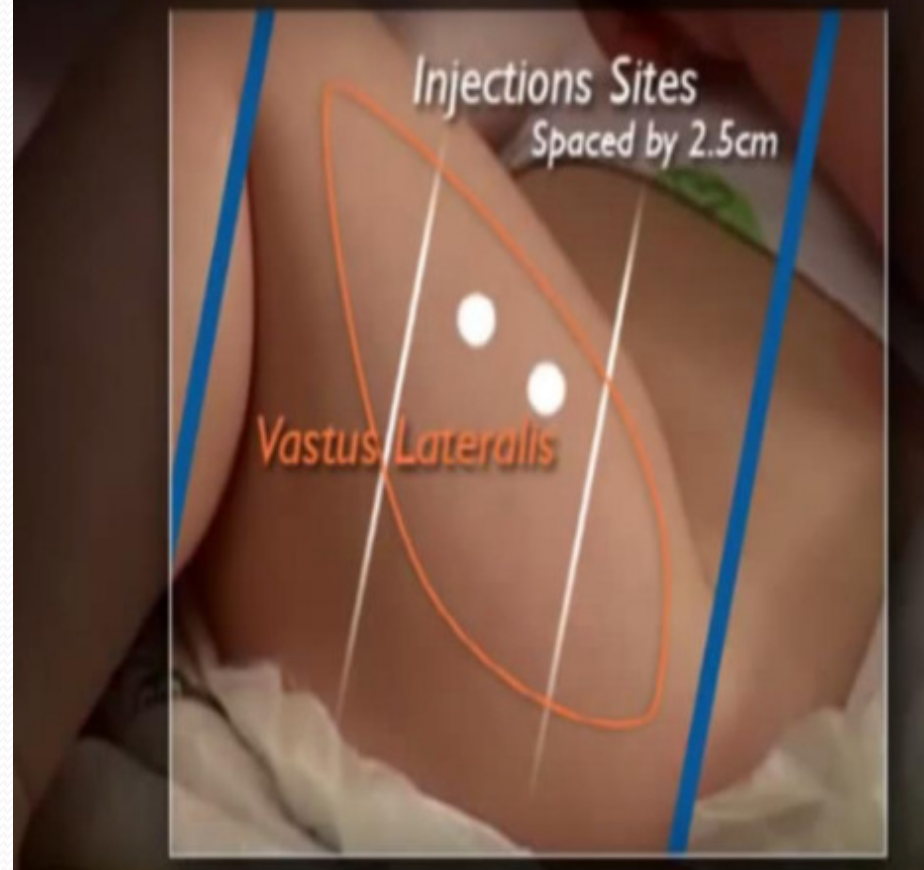
CARTOONS



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Child Intramuscular Sites

Multiple Injection technique for children



Patient position

COMFORTING RESTRAINT

FOR IMMUNIZATIONS

- **The method:**

This method involves the parent in embracing the child and controlling all four limbs. It avoids “holding down” or overpowering the child, but it helps you steady and control the limb of the injection site.

- **For infants and toddlers:**



Have parent hold the child on parent's lap.



1. One of the child's arms embraces the parent's back and is held under the parent's arm.
2. The other arm is controlled by the parent's arm and hand. For infants, the parent can control both arms with one hand.
3. Both legs are anchored with the child's feet held firmly between the parent's thighs, and controlled by the parent's other arm.

Patient position continued

- **For kindergarten and older children:**



Hold the child on parent's lap or have the child stand in front of the seated parent.

1. Parent's arms embrace the child during the process.
2. Both legs are firmly between parent's legs.



- **Adolescent: sit or lie down. Offer choice.**

Route of administration

- Oral: <https://www.merckvaccines.com/Products/RotaTeq/Pages/dosageandadministration>
 - Reclining position
 - To reduce the likelihood of significant regurgitation
 - the vaccine should be given at the **beginning** of the visit, while the infant is still happy, and before administering injections. As the vaccine contains sucrose it will help reduce the pain of the injections.
 - the dropper containing the vaccine should be aimed down one side and toward the back of the infant's mouth. The dropper should not be inserted so far back that the infant gags.
 - In the unlikely event that an infant spits out or regurgitates most of the vaccine dose, a single replacement dose should be given at the same vaccination visit.
- SC
- Intradermal
- IM

After Vaccine Administration

- Disposes of sharps immediately, without recapping the needle, into the sharps containers provided.
- Washes their hands or uses disinfectant gel.
- Completes the administration details including the vaccine name, manufacturer, batch number and expiry date.
- Ensures the **immunisation passport** for children is completed and given to the parent/legal guardian/client before they leave the practice.
- Ensures that each client remains in the practice under observation for 15 minutes as most anaphylaxis episodes begin within 15 minutes of vaccination.
- Gives parents/legal guardians of children attending for vaccination under the PCIP a copy of the HSE post vaccination information “tear pad” :put date of next vaccination on it; put alert on computer for bookings.
- Out of hours if required.
- Reports adverse events to the HPRA (DR role)

Baby vaccine protocol



☐ check baby age and interval from last vaccination

Checklist

- ☐ fever >38 today
- ☐ Allergy: eggs/diphtheria vacc/ neomycin/polymycin/ latex
- ☐ Thrombocytopenia
- ☐ Hx: fits/convulsions/ epilepsy
- ☐ Immunosuppressed due to medications or illness
- ☐ If 2nd or subsequent vaccine, any adverse reaction to previous vaccines?
- ☐ Active TB
- ☐ Born at <28/40? Care with PCV: longer breaths.
- ☐ no contraindication to vaccination today.

☐ refer to GP

Consulation

- ☐ Post vaccination info sheet given and discussed
- ☐ Consent signed
- ☐ Possible side effects and how to deal with these
- ☐ Vaccines checked with parent
- ☐ Questions answered

Vaccine administration procedure, as per instruction from immunisation guidelines. Chapter 2

- ☐ Position baby in parent lap
- ☐ Vaccines administered intramuscularly anterolateral thigh up to age 36 months
- ☐ In the surgery x 15mins for observation
- ☐ Anaphylaxis treatment available
- ☐ Sweet drink/ sweet/ comforter if required to distract after vaccine admin

OK

Cancel

Influenza Protocol



Yes to any of the following excludes patient from protocol

- ☐ Allergy to egg
- ☐ Allergy to neomycin
- ☐ Allergy to previous flu vacc
- ☐ Temperature/sick today
- ☐ <9 years
- ☐ Thrombocytopenia/bleeding disorder

☐ No exclusion criteria noted

☐ Exclusion criteria noted, see Doctor

Consultation information

- ☐ information leaflet offered
- ☐ side effects
- ☐ consent
- ☐ wait 15mins post vaccination
- ☐ report adverse effects
- ☐ Paracetamol for minor side effects

Given by

Site of injection

Injection site

- ☐ left deltoid
- ☐ right deltoid

Inclusion criteria

- ☐ Heart Disease
- ☐ Respiratory Disease
- ☐ Renal / Liver Failure
- ☐ Chronic Neurological Disease
- ☐ Immunosuppression
- ☐ Diabetes mellitus
- ☐ Over 65
- ☐ BMI >40
- ☐ Pregnancy
- ☐ Immunsuppressed
- ☐ Downs Syndrome
- ☐ >9 yrs, long term aspirin
- ☐ Health care worker/ carer
- ☐ Pig/poultry worker
- ☐ Neurodevelopmental disorder

Side effects

- ☐ Allergic reaction
- ☐ Local inflammation at injection site
- ☐ Temperature
- ☐ Headache
- ☐ Aches/pains

Inactivated influenza Vaccine (split virion)BP

OK

Cancel



Reporting Adverse Events

- **Adverse Reaction:**

<https://www.hpra.ie/homepage/about-us/report-an-issue/human-adverse-reaction-form>

- **Near Miss / Medication Error**

<http://www.hse.ie/eng/staff/safetywellbeing/nims/reportformaccid.pdf>

Vaccination Defaulter FORM

GP Name _____ GMS No: _____
Child's Name _____ DOB: ____/____/____
Parent/Guardian's Name _____ Tel: _____
Address _____

REASON FOR NOT COMPLETING VACCINATION SCHEDULE

Please tick to the right of the Yes to indicate reason.

1. Allergic Reaction/Contraindications – Yes _____

Please specify _____

2. Deceased – Yes _____

Give DOD and cause if known _____

3. Moved out of MWHB area – Yes _____

Please give new address/area if you can _____

4. Other reason – Yes _____

Reason is _____

5. Parent was informed and still refuses to have child vaccinated – Yes _____

I enclose a standard Refusal Form signed by the Parent/Guardian.

This child is a defaulter whom I am unable to vaccinate. My practice has carried out the following actions in order to complete the vaccination schedule –

Telephone call made on - _____

Letter on need for vaccination sent to Parent/Guardian on _____

Discussed with Parent/Guardian on _____

Appointment made for _____ but child was not brought in

Liaison with the Public Health Nurse _____

Signature of GP _____ Date ____/____/____

POST TO – MWHB, Immunisation Section, Sandfield Centre, Ennis, Co. Clare.



Relevant Documents

- Immunisation Guidelines for Ireland:
<http://www.hse.ie/eng/health/immunisation/hcpinfo/guidelines>
- A Practical Guide to Immunisation, National Immunisation Office, 2008:
<http://www.hse.ie/eng/health/immunisation/hcpinfo/trainingmanual/>
- Immunisation training slides for Health Professionals, National Immunisation Office 2011:
<http://www.hse.ie/eng/health/immunisation/hcpinfo/trainingmanual/>
- Summary of Product Characteristics (SmPCs) for each of the vaccines available at www.hpra.ie or www.medicines.ie
- NIAC newsletters:
<http://www.hse.ie/eng/health/immunisation/infomaterials/newsletter/>