EASTERN HEALTH BOARD

GUIDELINES FOR THE MANAGEMENT, STORAGE & DISTRIBUTION OF VACCINES AND THE SCHOOL IMMUNISATION PROGRAMME

March, 1998

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Preface

The Immunisation Ad-Hoc Committee reconvened to review the protocols drawn up in December, 1996. Extensive consultation with medical, nursing and administrative personnel in all 10 Community Care Areas was undertaken as part of the review. The committee acknowledges, with thanks, the enthusiastic co-operation of the Directors of Community Care and their staff in this process. The Committee also wish to express their thanks to Miriam King (Secretary to the Group) for her assistance.

The members of the reconvened committee were:

Mr. P. Bennett, Area Administrator, CCA 9, Kildare, EHB
Mr. A. Charles, Senior Administrative Officer, Community Service, EHB
Dr. M. Cronin, Director of Community Care, CCA8, EHB (Chairperson)
Ms. T. Downes, Area Administrator, CCA3, EHB
Ms. C. Hickey, Grade V11, Dept. of Public Health, EHB
Dr. L. Hickey, Director of Community Care, CCA9, Kildare, EHB
Dr. Derval Igoe, Specialist Registrar in Public Health Medicine, EHB
Ms. C. Kerr, Community Pharmacist, EHB
Ms. M. King, Grade V, Dept. of Public Health, EHB (Secretary to the Group)
Ms. A. Murphy, RICHS Administrator, EHB
Dr. S. McCarthy, General Practitioner Unit, EHB
Dr. D. O'Flanagan, Specialist in Public Health Medicine, EHB
Ms. E. Weir, Supt. Public Health Nurse, CCA6, EHB

Chapter 1: General Recommendations

The following general recommendations with regard to immunisation were agreed by the Committee:

1. It is the right of every child to be protected against infectious disease and no child should be denied immunisation without serious thought to the consequences, both for the individual and the community. Therefore **the committee recommends that the practice of immunising captive populations of children in school, in order to maximise uptake of DT and OPV at school entry and MMR at school leaving should continue.**

2. **All vaccines administered by the Eastern Health Board should be recorded on RICHS computerised system and uptake of immunisation monitored. In the interim, each Community Care Area should audit uptake of all vaccines using a school roll based system.**

3. The Eastern Health Board Pharmacy Steering Group is overseeing the reorganisation of the pharmaceutical services in the board's area. **The committee recommends that 2 options for the management of vaccines should be examined:**

   (a) The Pharmacy Steering Group should be asked to consider the feasibility and resource implications of arranging for proposed regional pharmacies to store vaccines for supply to general practitioners and Area Medical Officers in their catchment areas;

   (b) Health Board pharmacists should have a supervisory role in monitoring the quality assurance of vaccine storage and distribution in Community Care headquarters.

4. **The committee recommends that a computer based stock system be introduced.**

5. **The committee recommends that the Departments of Health and Education are appraised of the new arrangements/requirements regarding school immunisation.**

6. **The committee recommends that all Eastern Health Board immunisation procedures should be audited annually.**

7. **The committee recommends that the guidelines for management of vaccines, for Medical Officers immunising children, and for Public health Nurses involved in immunisation, be reviewed regularly.**

8. The committee recommends that where a complete programme of primary immunisation has not been successfully completed within a reasonable time, programmes should be developed to maximise uptake of immunisation in these children.

Chapter 2: Guidelines for the Proper Management, Storage, Stock Control, Distribution And Disposal Of Vaccines.

The General Manager is the person who has overall responsibility for vaccine matters in the area. An administrative person designated by the General Manager should have responsibility in regard to the day to day receipt, storage and issue of vaccines. This person should have a designated deputy to cover in times of absence. All significant difficulties should be brought to the attention of the General Manager.

Receipt of Vaccines

Care should be taken that, on receipt, the order is checked so that the vaccine received is the vaccine which was ordered. The person receiving the vaccines must make a physical count of the vaccine before signing the delivery docket. The number of doses and date received, the company, batch numbers, expiry dates and invoice/delivery docket number should be recorded on a stock control system (manual or computer). It is recommended that vaccines nearing their expiry date should be identified, e.g. by tagging with a red sticker.

Managing Vaccine Stocks

Care should be taken to avoid over-ordering or stockpiling of vaccines. When vaccine stocks deplete to about 20% of the normal amount, supplies should be ordered from the approved drug company. A stock control system, preferably computerised, should be in place and rotation of stock should be monitored. Checks on stock levels and expiry dates of vaccines and removal of time expired vaccines, should be made weekly or fortnightly depending on local usage. Vaccines nearing their expiry date should be identified e.g. by tagging with a red sticker.

Storage

Vaccine refrigerators should be used for storage of vaccines. Manufacturer's recommendations on storage should be observed. Vaccines must not be kept at temperatures below 0^0C as freezing can cause deterioration of the vaccine and breakage of the container.

Ideally, if space in the refrigerator permits, different vaccines should be stored on different shelves in the refrigerator. Vaccines should be stored in the refrigerator proper, allowing air to circulate around the packages. They should not be stored on the shelves or storage compartments of the refrigerator door.

Food and drink must not be stored in refrigerators used for vaccines. Door opening should be kept to a minimum.

Care should be taken to ensure that the electricity supply to the vaccine storage refrigerator cannot be accidentally interrupted this can be achieved by using a switchless socket or by placing cautionary notices on plugs and sockets.

A maximum/minimum thermometer should be used in refrigerators where vaccines are stored, irrespective of whether the refrigerator incorporates a temperature indicator dial. The maximum and minimum temperatures reached should be monitored and recorded daily by the clerical officer responsible for vaccine matters. Temperature record logs are best kept close to the refrigerator for ease of reference. If temperatures are recorded outside the permitted range, the Senior Area Medical Officer should be contacted for further advice.

All vaccine refrigerators should be kept locked and keys should be kept in a safe location.

<u>Maintaining the Cold Chain During Transport Of Vaccines</u>
The cold chain must be maintained during transport of vaccines. **Vaccines may be collected from community care refrigerators on the day of use in clinics or schools.**

Recommended procedure when vaccines are returned to vaccine fridge within 6 hours of removal:
When vaccines are being transported by Health Board staff to schools or clinics, coolboxes with two freezer packs must be used. Frozen icepacks, which have been left at room temperature for 15 to 20 minutes, must be wrapped with foil bubble wrap in order to prevent vaccines adjacent to these packs from freezing. This procedure will keep vaccines at the required temperature of between +2°C and + 8°C for 6 hours.

Recommended procedure when vaccines are returned to vaccine fridge within 12 hours of removal:
As above, except use portable vaccine carrier instead of coolbox.

Recommended procedure when vaccines are kept overnight by AMO for use at a Clinic or School on the following day:
To keep vaccines overnight and maintain the integrity of the cold chain, two frozen ice packs which have been left at room temperature for 15 to 20 minutes should be wrapped in foil bubble wrap and placed in the cool box 20 minutes prior to the vaccine, together with a min/max. thermometer . After 20 minutes the AMO should check that the temperature has reached the required range of between plus 2° C and 8° C and place the vaccine in the cool box. The ice-packs should be replaced with pre-frozen ones approximately 6 hours later and the temperature should be checked again. The following morning, the temperature should be checked and the ice packs should be replaced with the original ice-packs which have been frozen overnight in a

domestic freezer. The vaccines should then transported to the school and the temperature checked in the usual way and at the beginning and at the end of the immunisation session. Vaccines may be kept out of the fridge in this way for up to 12 hours during the day until returned to the fridge in Area Headquarters.

Disposal of Vaccines

Reconstituted vaccine must be used within the recommended period, varying from one to four hours, according to the manufacturer's instructions. Single dose containers are preferable; once opened, multidose vials must not be kept after the end of the session, and any vaccine left unused must be discarded into the sharps bin.

Unused vaccine, spent or partly spent vials should be disposed of safely by incineration. Contaminated waste and spillage should be dealt with by heat sterilisation, incineration or chemical disinfection as appropriate.

Needles and Syringes

Needles and syringes must be securely stored and delivery and distribution recorded. Needles and syringes should be disposed of in sharps bins. Sharps bins must not be left unattended in schools. Sharps Bins should be collected regularly and be disposed of safely.

Distribution of Vaccines

The committee recommends that vaccines should be stored and distributed from Community Care Area Headquarters only. General practitioners should be informed that vaccines may be collected from the Community Care Headquarters most convenient to them.

When a GP or person on his or her behalf arrives at Community Care Headquarters to collect vaccines, if he or she is not known to Community Care staff, his or her identity should be checked by a phone call to the GPs surgery. A Vaccine Request/Issue Form should be completed and signed by the GP and countersigned by the designated Eastern Health Board clerical staff member (Appendix A1). Where another person arrives to collect vaccine on the GP's behalf, two designated Eastern Health Board personnel should check and countersign the form in addition to the person collecting the vaccine. Expiry dates must be checked before distribution of vaccines to GPs and Area Medical Officers. Supplies of forms for use when collecting vaccines, should be made available to GPs in the area for stamping with the GP's stamp. Area Medical Officers must complete the Area Medical Officer Vaccine Request/Issue Form when collecting vaccines (Appendix A2).

Where spare freezer capacity is not available, a small freezer chest should be acquired in each Community Care Area to allow ice packs which are not frozen to be replaced with pre-frozen ones when vaccines are being collected.

Under no circumstances should non-health board personnel have access to vaccine stocks while in Community Care Area Headquarters.

Audit

The procedures being followed should be audited regularly to ensure that they comply with written guidelines.

Chapter 3: Mobile Clinic For Travellers

The mobile clinic visits approximately 41 traveller sites in Areas 1 to 8 and in the Bray area. The main role of the clinic is in the area of health promotion and preventive health care. An opportunistic immunisation service is provided at the clinic as many travellers have not completed primary immunisation. This service is supervised and authorised by the Director of Public Health , who has delegated responsibility to 2 designated Public Health Nurses.

Culturally appropriate advisory leaflets are being developed to inform traveller parents/guardians about immunisation.

The Public Health Nurse must have received training and be proficient in the recognition and treatment of anaphylaxis.

PROTOCOL FOR PUBLIC HEALTH NURSES IMMUNISING CHILDREN AT MOBILE CLINIC FOR TRAVELLERS

1. Consent for immunisation must be established. A written consent for immunisation must be obtained, or mark witnessed where necessary. Information leaflets should be given to parents with the consent forms. The PHN must ensure that parents understand the information on the leaflets.

2. The Public Health Nurse must record the temperature of the cool box/vaccine carrier at the beginning of each immunisation session. Two Public Health Nurses must together verify the identity of the vaccine, it's expiry date and batch number, and record this information. Vaccines must not be used after the expiry date on the label.

3. The Public health Nurse should ensure that appropriate equipment and drugs for treatment of anaphylaxis are immediately accessible, and that these drugs and equipment are not time expired.

4. The Public Health Nurse must establish the fitness and suitability of the child for immunisation. If a child's fitness and suitability cannot be established, immunisation should be deferred and medical advice should then be obtained. The consent form should be scrutinised and the name of the child and the parent/guardian checked with the form.

5. Freeze dried vaccines must be reconstituted by the Public Health Nurse with the diluent supplied and used within the recommended period after reconstitution. The diluent should be added slowly to prevent frothing. A sterile 1ml syringe with a 21g needle should be used for reconstituting the vaccine, and a smaller gauge needle for injection, unless only one needle is supplied with a pre-filled syringe.

6. The Public Health Nurse must ensure that reconstituted vaccine is used within the recommended period, varying from one to four hours, according to the manufacturer's instructions. Once opened, multi dose vials of vaccine must not be kept after the end of the session and any vaccine left unused must be discarded.

7. If the skin is to be cleaned, alcohol and other disinfecting agents must be allowed to evaporate before injection of vaccine since they can inactivate live vaccine preparations.

8. Vaccines should be given by intramuscular or deep subcutaneous injection. In infants, a 23G or 25G needle should be used. For adults, a 23G needle is recommended. A 26G needle should be used for intradermal immunisations(BCG).

9. **The title of the vaccine and batch number must be recorded on the recipients record before each child is immunised, and the date of immunisation, vaccination site, route and signature of the immunising Public Health Nurse immediately after each child is immunised, and not at the end of the session.** When two vaccines are given simultaneously, the relevant sites of each vaccine should be recorded to allow any reactions to be related to the causative agent. Where BCG has been given within three months , an alternate limb should be used.

10. The Public Health Nurse must remain at the session for at least 30 minutes following vaccination of the last child.

11. The Public Health Nurse must ensure that the cold chain is maintained when the vaccine is in her possession.

12. The Public Health Nurse must use suitable containers for sharps disposal, and ensure that all needles and unused opened vaccine vials are disposed of safely. Sharps bins must not be left unattended, and every effort must be made to prevent unauthorised access to them.

13. The Public Health Nurses on the Mobile Clinic, in conjunction with all the CCAreas, should audit uptake among traveller children.

14. All suspected adverse reactions must be reported to the Director of Public Health , Dr Steeven's Hospital and the Irish Medicines Board.

Chapter 4: School Immunisations

The Senior Area Medical Officer has overall responsibility for the schools immunisation programme. The organisation of the programme of immunisation of children in primary schools is the responsibility of the clerical staff, medical officer, and the public health nurse. At the start of each school year, the school principal and board of management should be informed of the details of the immunisation programme, and the requirements for its successful operation. Each school principal should be requested to obtain permission from parents on registration of children entering school to provide names and addresses for the purposes of school health and school immunisation programmes.

School principals should be informed of proposed dates for the immunisation programme. Health Board personnel are responsible for distributing consent forms and vaccine information leaflets to the parents through the school, and for ensuring that the date for immunisation is known to the principal and to parents. A letter may be sent directly from Community Care Headquarters telling parents/guardians of the date and time of immunisation and that they may telephone a doctor in Community Care at a specified time if they have concerns or worries in relation to their child's immunisation (see Appendix B). Alternatively, the date of the immunisation may be written on the consent form and distributed to the parents through the school.

Local arrangements should be made for the distribution of consent forms for immunisation through the schools. Vaccine information leaflets should accompany the consent forms.

Every effort should be made to ensure consent forms are completed and that there is follow up on non returned consent forms. A system should be in place to follow up on children whose parents have not consented or those who have not presented for vaccination in school.

Where a parent/guardian has indicated on the consent form that a child has not completed primary vaccination or the parent/guardian is not sure, every effort must be made to locate the child's records. The Senior AMO has discretion to arrange for the primary immunisation course to be completed by a general practitioner. Arrangements should be made to ensure that the child completes the primary immunisation course in another setting.

The number of children in each school in the target age group should be ascertained using the school roll and this information used as the denominator in assessing uptake of immunisation. The uptake figure includes children immunised in another setting.

Where easy access to a telephone is not provided, a mobile phone should be provided for use for Health Board personnel, while in the school.

The medical officer who immunises children should have received training and be proficient in the appropriate techniques of vaccination. The medical officer and Public Health Nurse must be specifically trained in the recognition and treatment of anaphylaxis (Appendix C).

All significant adverse reactions or other difficulties should be brought to the attention of the Senior Area Medical Officer who will decide on the appropriate action.

A checklist should be completed, see Appendix D1 & D2. The clerical person should ensure that the checklist is completed. The names, date of birth, from the class school roll, are entered on the left hand column. Pages should be numbered i.e. Page 1 of 4, or Page 1 of 5, whichever is appropriate. The total number of children on the class roll, and the total number of children vaccinated should be subtotalled on each page with a grand total on the last page.

It is recommended that where adult OPV is required, this is done by a general practitioner and discretionary payment is arranged by the Senior AMO under the primary immunisation scheme.

Chapter 5: Guidelines For Medical Officers Immunising Children

These guidelines should be read in conjunction with the general section on schools immunisation.

1. Consent for immunisation must be established. A written consent for immunisation must be obtained, or mark witnessed where necessary, and parents/guardians offered the opportunity to discuss immunisation of their child with the doctor by telephone or in person if they have any serious concerns or worries, or be present when immunisation is being carried out.

2. The medical officer must record the temperature of the cool box at the beginning of each immunisation session. The medical officer and Public Health Nurse must together verify the identity of the vaccine, it's expiry date and batch number, and record this information on the school visit immunisation form (Appendix E). Vaccines must not be used after the expiry date on the label.

3. The medical officer should ensure that appropriate equipment and drugs for treatment of anaphylaxis are immediately accessible, and that these drugs and equipment are not time expired.

4. The medical officer must establish the fitness and suitability of the child for immunisation. If a child's fitness and suitability cannot be established, immunisation should be deferred and the child followed up later. The consent form should be scrutinised and the name of the child and the parent/guardian checked with the form. The medical officer should then complete the appropriate section of the checklist (see Appendix D1 & D2)

5. Freeze dried vaccines must be reconstituted by the medical officer with the diluent supplied and used within the recommended period after reconstitution. The diluent should be added slowly to prevent frothing. A sterile 1ml syringe with a 21g needle should be used for reconstituting the vaccine, and a smaller gauge needle for injection, unless only one needle is supplied with a pre-filled syringe.

6. The medical officer must ensure that reconstituted vaccine is used within the recommended period, varying from one to four hours, according to the manufacturer's instructions. Once opened, multi dose vials of vaccine must not be kept after the end of the session and any vaccine left unused must be discarded.

7. If the skin is to be cleaned, alcohol and other disinfecting agents must be allowed to evaporate before injection of vaccine since they can inactivate live vaccine preparations.

8. With the exception of BCG, oral typhoid vaccine and OPV, all vaccines should be given by intramuscular or deep subcutaneous injection. In infants, a 23G or 25G needle should be used. For adults, a 23G needle is recommended. A 26G needle should be used for intradermal immunisations(BCG).

9. **The title of vaccine and batch number must be recorded on the recipients record before each child is immunised, and the date of immunisation, vaccination site, route and signature of the immunising doctor immediately after each child is immunised, and not at the end of the session.** When two vaccines are given simultaneously, the relevant sites of each vaccine should be recorded to allow any reactions to be related to the causative agent. Where BCG has been given within three months , an alternate limb should be used.

10. The medical officer must remain at the session for at least 30 minutes following vaccination of the last child.

11. The medical officer must ensure that the cold chain is maintained when the vaccine is in his/her possession.

12. The medical officer must use suitable containers for sharps disposal, and ensure that all needles and unused opened vaccine vials are disposed of safely.

13. All suspected adverse reactions must be reported to the Irish Medicines Board, Block A, Earlsfort Terrace, Dublin 2, using the yellow card system. Reports should include the batch number of the vaccine. A copy of this should be sent to the Department of Public Health , Dr Steeven's hospital.

14. The Area Medical Officer must have received training and be proficient in the recognition and treatment of anaphylaxis.

Chapter 6: Guidelines For Nurses Involved In The Immunisation Programme

These guidelines should be read in conjunction with the general section on schools immunisation.

The Public Health Nurse must have received training and be proficient in the recognition and treatment of anaphylaxis.

1. The organisation of the immunisation programme is the responsibility of the team involved: the medical officer, the Public Health Nurse and the clerical person.

2. At the start of every immunisation session the attending Public Health Nurse and medical officer must together verify and record on the School Visit Immunisation Form(Appendix E) the following information:

    - the identity of the vaccines;
    - the batch number and expiry date;
    - the temperature of the coolbox.

    The Public Health Nurse may, with the agreement of the medical officer, administer oral polio vaccine(OPV).

3. The Public Health Nurse along with the medical officer must ensure that appropriate equipment and drugs for the treatment of anaphylaxis are immediately accessible.

4. Prior to each vaccine being administered, care must be taken by the Public Health Nurse and the medical officer to ensure that the consent matches with the recipient receiving the vaccine. The PHN ticks the appropriate columns on the checklist and presents the child to the AMO for vaccination.

5. The Public Health Nurse must not draw up vaccines.

6. The Public Health Nurse should remain with the AMO at the session for at least 30 minutes following vaccination of the last child.

Chapter 7: Guidelines for Clerical Staff involved in the Immunisation Programme

Clerical Officer

- Issue letters to Principals requesting information on the appropriate classes including name, address, d.of b., phone numbers (home & work), teachers' name and room number.
- Arrange dates with school in conjunction with the SAMO
- Write date and time of clinic on Consent Forms, if appropriate, and arrange delivery of forms to the school principals or secretaries for distribution to the children

  If it is policy in any Community Care Area to post Consent Forms/Letters of Invitation to parents' home address, arrange for the issue of such forms/letters stating date and time for parents to attend school clinic, if they so wish

- Arrange for return of consent forms 2-3 days before date of clinic
- **Hand to AMO:**
  a) all returned consent forms drawing attention to any anomalies
  and
  b) original school list
- Amend original school list and give the final checklist of all children for immunisation to PHN
- Check immunisation card and cross-reference with names on checklist as immunised with PHN
- If used, give post-vaccination information sheets to parents as they leave

Return to Office (Clerical Officer)

a) Compile list of vaccinated children for entry onto computer, if appropriate
b) Compile list for mop-up clinic or follow-up in school, in conjunction with SAMO
c) Arrange for mop-up clinic, if appropriate, with AMO/PHN and health centre
d) Send letters to parents informing them of details of mop-up clinic, if appropriate
e) When school completed, including mop-up clinic or follow-up, calculate uptake rate and, if appropriate, enter onto computer

Appendix A1(Pink)

GENERAL PRACTITIONERS
VACCINE REQUEST/ISSUE FORM

Doctors Name & Address (Block Letters)	GMS Stamp & GMS No. (if applicable) Immunisation No.

		FOR OFFICE USE ONLY		
Vaccine	**No. of Doses Requested**	**No. of Doses Issued**	**Batch No.**	**Expiry Date**
DTP(a) Single Dose				
DT Single Dose				
DT 10 Doses				
Polio Single Dose				
Polio 10 Doses				
MMR Single Dose				
HIB Single Dose				
Other Vaccines (specify)				
Syringes (specify)				

Signature of GP _____ **Date:** _____

I verify that I have received the items issued above

Received by: _____ Date: _____
(Signature)

Signature of 1) Issuing Officer _____ Date: _____

Signature of 2) Authorised Officer _____ Date: _____

Date Recorded on Stock Control System _____

Signature of Authorised Officer _____

Appendix A2(Green)

AREA MEDICAL OFFICERS/MOBILE CLINIC FOR TRAVELLERS
VACCINE REQUEST/ISSUE FORM

Doctors Name & Community Care Address

		FOR OFFICE USE ONLY						
Vaccine	**No. of Doses Requested**	**No. of Doses Issued**	**Brand Name**	**Batch No.**	**Expiry Date**	**No. of Doses Used**	**No. of Doses Returned**	**Batch No**
DTP(a) Single Dose								
DT Single Dose								
DT 10 Doses								
Polio Single Dose								
MMR Single Dose								
HIB Single Dose								
Other Vaccines (specify)								
Syringes (specify)								

Signature of AMO/PHN _____ Date: _____

MIN/MAX. TEMPERATURE	**Start of Session**		**Return to Refrigerator**	
	Min	Max.	Min	Max.

I verify that I have received the items requested above

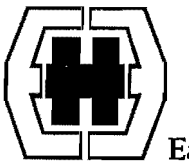
Received by: _____ Date: _____
(Signature)

Signature of 1) Issuing Officer _____ Date: _____

Signature of 2) Authorised Officer _____ Date: _____

Date Recorded on Stock Control System _____ Signature of Authorised Officer _____

APPENDIX B



Eastern Health Board

[Community Care address]
[Telephone Number]

To parent/guardian of : Name _____
Date of Birth _____

Dear Parent/Guardian,

The Booster Immunisation programme against diphtheria, tetanus and polio will be carried out at _____school between 9.30am and 12.00 noon on _____.

If you have any concerns or queries, you may telephone an Area Medical Officer at the above number between _____hrs and _____hrs each weekday. If you wish to be present at the session, please attend at the school at_____hrs.

Yours sincerely,

_____

Senior Area Medical Officer

APPENDIX C

ANAPHYLAXIS

Recipients of any vaccine should be observed for an immediate adverse reaction. The Medical Officer and the PHN should stay on the premises for 30 minutes after the last child has been immunised. Parents should be advised to seek medical advice should unexpected symptoms develop after immunisation. All cases of anaphylaxis should be reported to the Irish Medicines Board using the Yellow Card scheme.

Clinical characteristics of anaphylaxis
Anaphylaxis is typically rapid and unpredictable with variable severity and clinical features. The most serious features include cardiovascular collapse, bronchospasm, angioedema, pulmonary oedema, loss of consciousness and urticaria. Asthmatic patients often develop bronchospasm during anaphylaxis. Anaphylaxis generally responds promptly to parenteral adrenaline.

Anaphylactic reactions to vaccines are probably very rare, but they cannot be predicted and have the potential to be fatal. Most anaphylactic reactions occur in individuals who have no known risk factors, making it difficult to advise on special precautions. It is uncertain whether a history of hypersensitivity significantly increases the risk of anaphylaxis.

Management of anaphylaxis
Differential diagnosis
Medical and nursing staff can have difficulty distinguishing between anaphylactic reactions, convulsions and fainting. It is important that health professionals involved in immunisation are able to distinguish these conditions. Most convulsions reported after measles and rubella vaccine occurred within one hour of immunisation and had features suggesting syncope rather than epileptic fits. Syncope occurs commonly after any injection such as an immunisation in adults and adolescents. Very young children rarely faint and sudden loss of consciousness at this age should be presumed to be anaphylaxis if a central pulse (such as the carotid) cannot be felt. A central pulse is maintained during a faint or convulsion.

Anaphylaxis can occur without warning. Therefore, adrenaline and an appropriate sized oral airway must always be immediately available whenever immunisation is given. All health professionals responsible for immunisation must be familiar with techniques for resuscitation of a patient with anaphylaxis to prevent disability and loss of life.

IDENTIFICATION OF ANAPHYLAXIS, SYNCOPE AND PANIC ATTACKS

VACCINE GIVEN

symptoms develop

0 - 72 hours

symptoms suggestive of *anaphylaxis*

general signs:	*pallor, limpness, apnoea*
cardiovascular:	*profound hypotension in association with tachycardia; sinus tachycardia*
Upper airway obstruction:	*angioedema - swelling of lips, face, neck, tongue* *difficulty in breathing, speaking, swallowing; hoarseness, stridor*
Lower airway obstruction:	*subjective feelings of retrosternal tightness and dyspnoea*
bronchospasm -	*audible expiratory wheeze*
skin:	*diffuse erythema* *urticari - itchy weals with erythematous edges and pale blanched centres* *peripheral oedema*

0 - 1 hour

symptoms suggestive of *syncope or panic attacks*

general signs:	*sweating, nausea, dizziness, ringing in the ears, dimmed vision, weakness, may precede the event.*
cardiovascular:	*hypotension* *bradycardia*
neurological:	*transient jerking movements and eye rolling can occur rarely*

There should be rapid recovery. Although symptoms of malaise may persist, the patient should regain consciousness in 1-2 minutes. Any abnormal cardiovascular signs revert within a few minutes.

VERY YOUNG CHILDREN RARELY FAINT AND SUDDEN LOSS OF CONSCIOUSNESS AT THIS AGE SHOULD BE PRESUMED TO BE ANAPHYLAXIS IN THE ABSENCE OF A STRONG CENTRAL (CAROTID) PULSE, WHICH PERSISTS DURING A FAINT OR CONVULSION

TREATMENT: The patient should remain lying down for 10-15 minutes with their feet raised. At any age, if in doubt, treat the patient for anaphylaxis.

TREATMENT

1. Lie patient in left lateral position. If unconscious, insert airway.
2. Send for professional assistance. Never leave the patient alone.

Mild anaphylaxis/allergic reactions (slowly progressing peripheral oedema or changes restricted to the skin e.g. urticaria)
oral antihistamines or subcutaneous adrenaline with observation and reassurance. Nebulised salbutamol, oral or parenteral steroids, parenteral antihistamine, if necessary and/or available.

Severe anaphylaxis (with cardiovascular collapse)
Administer intramuscular adrenaline immediately. If appropriate, begin cardio-pulmonary resuscitation.

If there is no improvement in the patient's condition in 5/10 minutes, repeat the dose of adrenaline to a maximum of 3 doses.

Chlorpheniramine maleate (piriton) may be given intravenously by appropriately trained individuals. Intravenous hydrocortisone may also be given to prevent further deterioration in severely affected cases.

Bronchospasm
Administer nebulised adrenaline or adrenaline by intramuscular injection immediately.
Steroids may also be administered.

Angio-oedema/laryngeal oedma
Administer nebulised adrenaline or adrenaline by intramuscular injection.
Antihistamines should be given and incubation may be necessary.

Patients with anaphylaxis should be referred to hospital for assessment and further treatment may be necessary, such as provision of bronchodilators, adrenaline by infusion, colloids and assisted ventilation. NB. patients should be monitored after IV administration of adrenaline as adverse effects may be more common when the drug is given in this way.

All cases of anaphylaxis should be observed for at least 6 hours, in case of any delayed reactions.

REPORT ALL CASES OF ANAPHYLAXIS TO THE IRISH MEDICINES BOARD USING YELLOW CARDS

Adrenaline dosage: Adrenaline 1/1,000 (1mg/ml) by intramuscular or subcutaneous injection.

Adults: 0.5 to 1.0ml repeated as necessary up to a maximum of three doses. The lower dose should be used for the elderly or those of slight build.

Infants and children:

Age	Dose of adrenaline
Less than 1 year	0.05ml
1 year	0.1ml
2 years	0.2ml
3-4 years	0.3ml
5 years	0.4ml
6-10 years	0.5ml

Slow intravenous injection may be considered only in extreme emergency. Dilute adrenaline (1/10,000) should be used for the intravenous route. Where intramuscular injection might still succeed, time should not be wasted seeking intravenous access. Patients should be monitored after intravenous administration as adverse effects may be more common when the drug is administered in this way.

Chlorpheniramine maleate

Age	Dose of chlorpheniramine maleate
up to 1 year	200ug/kg body weight
1-5 years	2.5-5mg
6-12 years	5-10mg
over 12 years	10-20mg
By slow intravenous injection over 1 minute	

Hydrocortisone

Age	Dose of hydrocortisone
up to 1 year	25mg
1-5 years	50mg
6-12 years	100mg
adult	100-500mg
By slow IV injection	

APPENDIX D1

CHECKLIST

PAGE 1 OF ____

SCHOOL IMMUNISATION FORM

Name of School:_____

Name of Child	DOB	Class Room	Teacher Name	Consent Received ✓	Late Consent Date	Consent Checked PHN ✓	Vaccinated ✓	Vac. Deferred ✓	Comment (absent/ref used/sick)	Mop-up Clinic ✓
SUB TOTAL										

APPENDIX D2

PAGE 4 OF ____

CHECKLIST

SCHOOL IMMUNISATION FORM

Name of School:_____

Name of Child	DOB	Class Room	Teacher Name	Consent Received ✓	Late Consent Date	Consent Checked PHN ✓	Vaccinated ✓	Vac. Deferred ✓	Comment (absent/ref used/sick)	Mop-up Clinic ✓
GRAND TOTAL VACCINATED										

CLASS ROLL TOTAL: _____

*Signature of AMO*_____Date:_____ *Signature of PHN*_____Date:_____

*Signature of C.O.*_____ *Date:*_____

APPENDIX E

SCHOOL VISIT IMMUNISATION FORM

COMMUNITY CARE AREA
Name of Health Board Personnel
Doctor: _____ Nurse: _____ Administration: _____

Name and Address of School
_____ _____ _____ Date(s) of School Visit: _____

Vaccines Used	Batch No.	Brand Name	Expiry Date
Diphtheria/Tetanus Single Dose			
Diphtheria/Tetanus Multi Dose			
Polio			
MMR			

MIN/MAX. TEMPERATURE	Start of Session		Return to Fridge	
	Min	Max.	Min	Max.

Signature(s) of Health Board Personnel
_____ _____