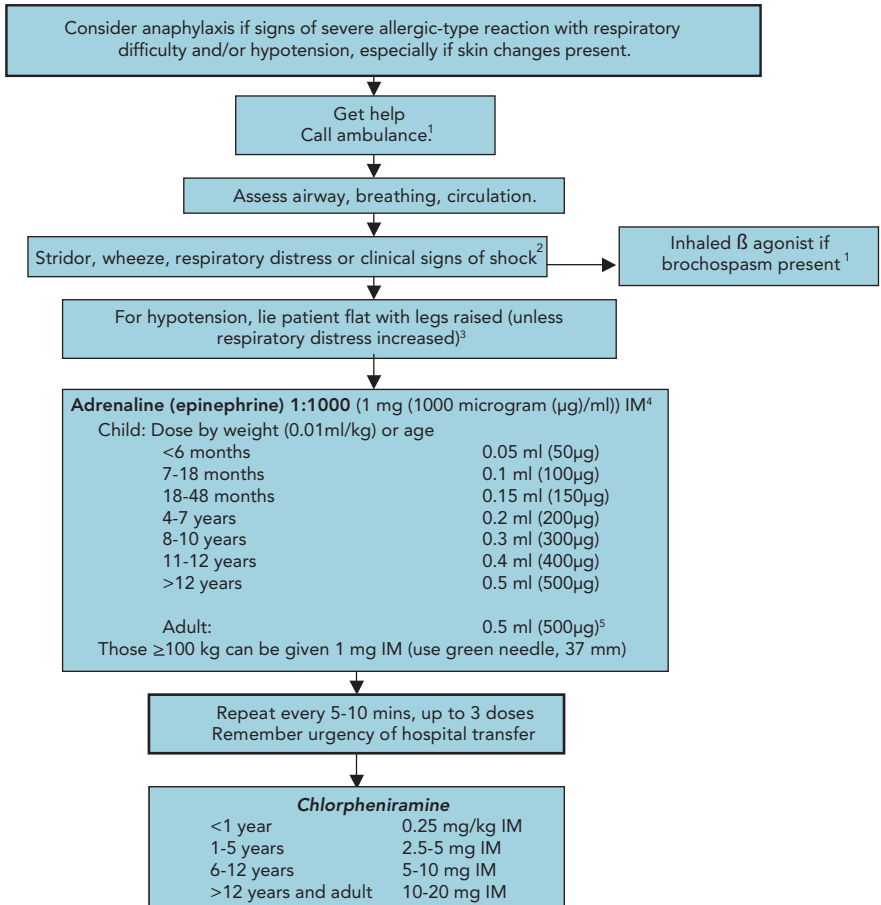


## Anaphylactic Reactions: Treatment in the Community

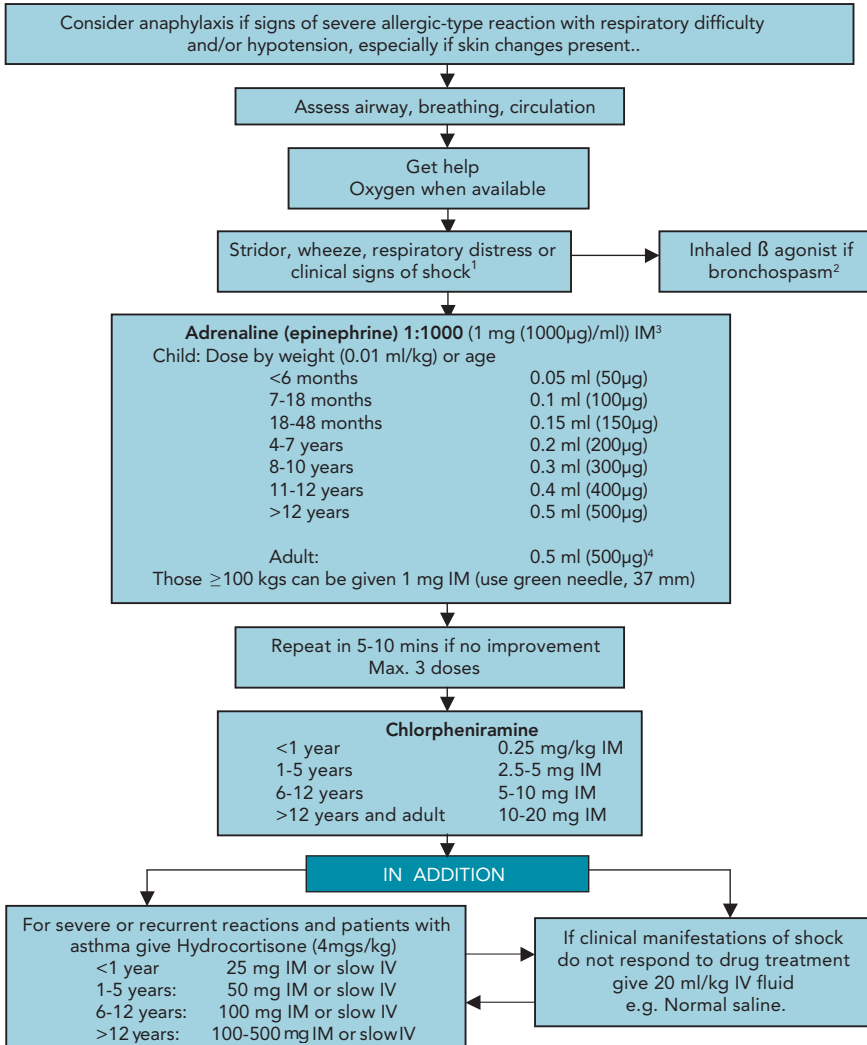


1. Ambulance will be equipped with oxygen, salbutamol and fluids.
2. If profound shock judged **immediately** life-threatening, give CPR if necessary.
3. If respiratory distress present, elevate head, provided BP adequate to prevent loss of consciousness.
4. Adrenaline maximum effect 10 minutes after IM injection.

Note: Microgram =  $\mu$ g

Note 5 deleted. Updated December 2009

## Anaphylactic Reactions: Treatment Algorithm for First Medical Responders



1. If profound shock judged **immediately** life-threatening, give CPR/ALS if necessary. Consider slow IV adrenaline (epinephrine) 1:10,000 solution if severe hypotension. Dose 10 microgram/kg, max. 500 micrograms, over several minutes. This is **hazardous** and is recommended only for hospital setting. Note the different strength for IV use.
2. An inhaled beta<sub>2</sub>-agonist such as salbutamol may be used if bronchospasm is severe and does not respond rapidly to other treatment.
3. Adrenaline maximum effect 10 minutes after IM injection.
4. If a patient on beta-blockers has not improved after 2-3 doses of Adrenaline, consider giving Glucagon, 2-3 micrograms/kg (max.1-2mgs) IV over 5 minutes, IV salbutamol, and/or IV atropine.

Note 4 replaced. Updated December 2009

## Preface & Anaphylaxis

### Anaphylaxis

Anaphylaxis is a potentially life-threatening allergic reaction to foreign protein antigens such as food and bee stings. It is a very rare complication of immunisation (0.4-2 per million doses). Most episodes begin within 30 minutes of vaccination. Shorter intervals to onset generally indicate more severe reactions. However, due to the unpredictable nature of anaphylactic reactions, it is not possible to define a particular time period over which all individuals should be observed following immunisation. When possible, patients should remain in the vicinity of the place of vaccination for up to 15 minutes, as typically onset of anaphylaxis occurs within minutes.

Anaphylaxis must be distinguished from fainting (vasovagal episode), anxiety and breath-holding episodes, which are more common.

Table 1 shows features which may assist in differentiating fainting from anaphylaxis. Those experiencing an anxiety spell may appear fearful, pale and sweaty, and complain of light-headedness, dizziness and numbness or tingling of their hands or feet. Hyperventilation is usually present. During a breath-holding episode the child is suddenly silent but obviously agitated. Facial flushing or pallor can occur as breath-holding continues. Some episodes end with a resumption of crying, but others can be followed by a brief period of unconsciousness during which breathing resumes.

Swelling and an urticarial rash may appear at the injection site but are not always caused by an allergic reaction and may disappear without additional treatment. However, if any other symptoms occur, even if considered mild (sneezing, nasal congestion, coughing, etc.), Adrenaline should be given. There is little risk with the unnecessary use of Adrenaline, whereas delay in its administration in anaphylaxis may result in severe anaphylaxis and death. The features of severe disease include obstructive swelling of the upper airway, marked bronchospasm and hypotension.

A number of drugs may interfere either with the action of Adrenaline (Epinephrine) or with the compensatory mechanisms, which occur in anaphylaxis. These drugs include beta-blockers, tricyclic antidepressants, ACE inhibitors, and Angiotensin 2 receptor blockers. As anaphylaxis is a life-threatening event, the benefits of giving the recommended doses of Adrenaline outweigh potential risks. Adrenaline doses should be titrated according to their effect. If a patient on beta-blockers has not improved after 2-3 doses of Adrenaline, consider giving Glucagon, 2-3 micrograms/kg (max. 1-2mgs) IV over 5 minutes, IV salbutamol, and/or IV atropine. These should only be used in hospital, preferably under the supervision of an intensivist.

**Table 1** Vasovagal episode v. Anaphylaxis

		<b>Vasovagal episode</b>	<b>Anaphylaxis</b>
<b>Onset</b>		Immediate	Usually within 5 mins, but can occur within 1-2 hours
<b>Symptoms/signs</b>	<b>Skin</b>	Generalised pallor; cold, clammy skin	Itch, generalised erythema, urticaria or angio-oedema (localised swelling of face, mouth, etc.)
	<b>Respiratory</b>	Normal or shallow, not laboured	Cough, wheeze, stridor, tachypnoea, recession, cyanosis
	<b>Cardiovascular</b>	Bradycardia but strong carotid pulse Hypotension corrected when lying down	Tachycardia, weak/absent pulse Sustained hypotension unless specific treatment
	<b>Neurological</b>	Light-headed Possible loss of consciousness Improves on lying down	Severe anxiety and distress Loss of consciousness

## Preface & Anaphylaxis

# National Immunisation Advisory Committee

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## Acknowledgements

The National Immunisation Advisory Committee wishes to particularly acknowledge the Department of Health, United Kingdom in relation to extracts from its 2006 report entitled 'Immunisation against infectious disease (the Green Book)'.



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PHYSICIANS OF IRELAND

The National Immunisation Committee wish to especially acknowledge the contribution of the staff at the Health Protection Surveillance Centre for the provision of data and their technical expertise in the preparation of these guidelines. We also wish to gratefully acknowledge the financial support of the Health Protection Surveillance Centre, Health Service Executive in the production of this report.

## Preface

This revised report on immunisation guidelines for Ireland has been prepared with the assistance of an active Committee from associated disciplines in Paediatrics, Infectious Diseases, General Practice, Public Health, Microbiology, Occupational Health, Travel Medicine and the Irish Medicines Board. The report itself continues to be simple and concise in design and of course does not claim to contain all information on any pharmacological material.

The report contains a considerable revision of chapters, reflecting updated epidemiological and vaccine information, and providing the current information and guidelines concerning immunisation. Since the last guidelines were issued in 2002 there has been an improvement in the uptake of childhood vaccines at 24 months, from 80% to 90% in 2006. There was a similar improvement for MMR vaccine uptake, from 70% to 85% over the same period. The health services have also undergone major reform and we have a new National Immunisation Office. There are exciting vaccine developments from the pharmaceutical industry and our guidelines will obviously change to reflect this.

As Chairman of the Committee I sincerely thank all those who spent so much time and put so much effort into this document. I also wish to thank those who participated in the concerted process, in particular the Chairpersons of each section, Dr Karina Butler, Dr Mary Cafferkey, Dr Jeff Connell, Dr Kevin Connolly, Dr Brenda Corcoran, Dr E. Gallagher and Dr Darina O'Flanagan. These Committees carried out their tasks with much enthusiasm and efficiency. It was indeed a pleasure to work with them. In particular, we must thank our Committee Medical Secretary, Dr Helena Murray, and past medical secretaries, Dr Denise McCarthy, Dr Patricia McDonald and Dr Emer Feely and also Ms Karen Doyle from the College. We would also like to thank Dr Paul Kavanagh and Ms Stephanie Mulcair who proof-read the document for their patience and time in delivering the final manuscript.

I would like to thank our many colleagues who made presentations to the committee, particularly Dr Michael Barry for his contributions to the economic evaluation of new vaccine programmes.

This document is not designed to be restricted to the medical profession alone and we hope it would be of interest to a broad section of our community involved in the medical, paramedical and tourist industry.

Finally, I would wish to thank the Department of Health and Children for their valuable input and the Health Protection Surveillance Centre, Health Service Executive for their financial support in producing this report.

Brian Keogh, MD  
Past President, RCPI  
Chairman, NIAC

## Preface & Anaphylaxis

### The 2008 Edition

#### Principal changes to this document

This publication continues to be A5 size but has changed to book format in the 2008 edition as this publication is larger. There is a folder in the back cover to hold additional information.

The year in which each of the principal childhood vaccines was introduced to Ireland is indicated at the start of the relevant chapter.

#### Changes to recommended immunisation schedule

Since the publication of the last version of these guidelines in 2002 there have been a number of changes to the recommended immunisation schedule:

- Hepatitis B vaccine is added to the routine childhood immunisation schedule (Hep B).
- Pneumococcal conjugate vaccine is added to the routine childhood immunisation schedule (PCV).
- Low-dose acellular pertussis vaccine is added to the current tetanus and low-dose diphtheria at 11-14 years (Tdap).
- A booster dose of Haemophilus influenzae type B (Hib) is to be given at 13 months, rather than at 12 months as at present.
- The Meningococcal C conjugate (MenC) vaccine is to be given at 4, 6 and 13 months of age.
- The indications for varicella vaccination have been updated for children and adults in the specified risk groups. All women of child-bearing age without a history of varicella infection should have their immunity checked. Women with negative serology should be vaccinated if no contraindications exist.
- NIAC recommends annual influenza vaccination for people aged 50 years or older. This may be implemented on a phased basis.

In addition, a catch-up schedule is set out for children aged 4 months to 10 years and for children aged 10 to 18 years.

Other chapters have been updated and expanded, particularly in relation to occupational risk from vaccine preventable disease. A new chapter on rabies was added because of occupational risk to this disease in Ireland.

### **New sections**

This document has a new chapter on

- Rabies

### **Expanded sections**

The following chapters have been expanded:

- Chapter 6, Hepatitis B, to reflect new recommendations for inclusion in primary immunisation schedule
- Chapter 12, Pneumococcal infection, to reflect new recommendations for inclusion in primary immunisation schedule
- Chapter 17, Varicella-Zoster, to include VZIG algorithms for neonates, pregnant women and immunosuppressed people who are exposed to chickenpox. Recommendations about active immunisation with varicella vaccine are given with an algorithm outlining the procedure for vaccinating health-care workers.

### **Amended sections**

The following amendments have been made:

- Chapter 5, Hepatitis A, has been amended to reflect recently published information on the effectiveness of post-exposure prophylaxis with HAV vaccine compared to Human Normal Immunoglobulin (HNIG).
- Chapter 10, Mumps, has been amended to include more information on mumps illness and all the information on MMR vaccine as in Chapter 8, Measles.
- Chapter 11, Pertussis, has been amended in relation to changes to the guidance on contraindications and precautions for pertussis vaccine to reflect change in primary immunisation schedule.
- Chapter 14, Rubella, has been amended to include more information on congenital rubella syndrome and all the information on MMR vaccine as in Chapter 8, Measles.

## Preface & Anaphylaxis

- Chapter 15, Tetanus, has been amended in relation to guidance for tetanus prophylaxis for clean and contaminated wounds.
- Chapter 16, Tuberculosis, has been amended to provide clearer guidance on indications for BCG vaccine other than newborn babies.

## Future Developments

As we publish the 2008 edition of the Immunisation Guidelines for Ireland we are aware of developments for new vaccines on the horizon. This reflects the rapidly expanding environment in the immunisation field. Updates and new recommendations will be published on the RCPI, NIO, HPSC and the Department of Health and Children websites along with the electronic version of these guidelines.

An example of this is the planned introduction of the human papillomavirus vaccine (HPV). Once the details of the HPV vaccination programme are finalised a chapter on HPV vaccine will be made available online.

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