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TRAINING IN HEALTH PROTECTION
Prepared for the Faculty of Public Health

1 INTRODUCTION

1.1 This document brings together in one setting a series of guidance documents prepared for the Faculty of Public Health. They describe the general training requirements in Health Protection for all trainees and the higher level of training for those specialist registrars and specialist trainees who wish to specialise in Health Protection.

1.2 The document is meant to be seen as guidance and is not prescriptive. It is meant to be enabling and to foster an environment where previously acquired skills and competencies are recognised and developed.

2 KEY PRINCIPALS

2.1 The documents have been governed by a number of key principles, which are:-

- training in whatever locations should address the 10 key public health competencies
- the 10 key public health competencies can be addressed through health protection training
- a minimum of 1 year (out of the 4 years) of training should be spent in general public health training
- the training programme should be orientated to meet the training needs of the individual trainee as trainees come to public health training from a wide variety of backgrounds and with a wide variety of skills and competencies
- health protection requires some key skills and knowledge which are usually acquired through clinically based training. Trainees coming to health protection without such a background or range of skills and knowledge will need to discuss their learning needs with their educational supervisor. Suggested training is described.

3 USING THESE DOCUMENTS

3.1 There is a degree of overlap between the three papers that comprise this suite of documents. However, to ensure consistency for each of the training programmes we decided that the pattern of training should be laid out clearly for each programme. Inevitably, this leads to some duplication.
4 ACKNOWLEDGEMENTS

A committee chaired by the Academic Registrar, Professor Ian Harvey, prepared this guidance. The members of the committee included:-

Dr Gerry Bryant, Dr Mike Catchpole, Rowena Clayton, Dr Ruth Gelletlie, Dr Jeremy Hawker, Dr Philip Monk, Dr Jackie Spiby and Dr James Stuart.
1 INTRODUCTION

1.1 *Getting ahead of the Curve*¹ published in 2002 announced the development of a new Health Protection Agency for England. This agency brings together into one body the range of organisations with the responsibility for health protection. The creation of the agency brings new opportunities but places demands on training to equip future generations of health protection specialists and their general public health colleagues for the challenges of the health protection role. Similar modernisation programmes are being developed in all of the home nations and the training programme recommended here is appropriate for all countries within the home nations.

1.2 This is the first in a suite of documents about training for Health Protection. It provides guidance for training in Health Protection for those wishing to become public health specialists, whether medical or non medical. The *Acheson Report* of 1988² had previously informed the framework for training in Communicable Disease Control. *Getting ahead of the Curve* announced a wider specialism of health protection which is recognised in this document which also takes account of changes to the NHS and to the practise of health protection that have occurred since that report. The emergence of larger local health protection teams will mean that most of the training in health protection for public health specialists is likely to take place at local level.

1.3 This guidance is intended to help Regional and Country Training Committees, Training Programme Directors, Faculty Advisors, Specialist Advisors, trainers and trainees to develop the Health Protection elements of public health training programmes.

1.4 Health protection is an integral part of public health and is ‘those public health activities intended to protect individuals, groups and populations from infectious diseases, environmental hazards such as chemical contamination, and from radiation’³. It includes:-

- the investigation and control of communicable diseases
- the public health aspects of environmental hazards (including chemical, radiological and nuclear hazards),
- managing ‘deliberate release’ incidents
- health emergency planning

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1.5 Specialists in public health need to understand the breadth of the speciality of health protection, to understand the networks and agencies involved, to be able to commission appropriate services to protect the health of the population as well as contribute to the emergency and on call elements of health protection. An essential element of the role is to understand Infectious Disease Services within the NHS and also Sexually Transmitted Infection Services.

1.6 People training to become public health specialists will enter training from a wide variety of backgrounds and have a wide variety of experience. Training programmes should be tailored to the identified training needs and preferred learning style of the individual, taking into account previous experience. Training in health protection needs to contain a significant element of practical learning.

2 GENERAL TRAINING PRIOR TO TRAINING IN HEALTH PROTECTION

2.1 People enter training in public health from different backgrounds. Broadly these fit into four categories:-

- medical
- clinical but not medical (e.g. pharmacy, nursing, therapist)
- bioscientist – no clinical experience (e.g. biologist, microbiologist)
- other

2.2 Training in public health needs to ensure all trainees understand professional principles, including confidentiality and ethics. Professional principles include a recognition of competence and knowing when to appropriately seek help and advice from more expert colleagues. They also include a commitment to continuing professional development in all areas of practise, including health protection.

2.3 To practise health protection, trainees must learn the skills necessary to undertake risk assessments, manage and communicate risk.

2.4 In order to practise health protection, trainees need an understanding of the health care system, history taking, diagnostic tests, the effects of illness on the carer and the effects on a community. As part of their orientation programme, trainees, particularly those from a non-clinical background, should follow a patient with infection or illness resulting from non-infectious environmental hazard through the pathway from admission to hospital to discharge. This will familiarise trainees with history taking, the timescales, diagnosis, and the effects of illness on the individual, their carers and the wider community. It is
anticipated that the output from this would be a written account of the patient experience. It is essential to gain from this part of training, not just an understanding of the patient experience, but an understanding of the timescales from taking a test, such as Cerebro Spinal Fluid (for the diagnosis of meningitis) to the results from such a specimen being available. In some instances, as part of public health practice, it may be necessary to visit patients on the ward and record advice in the notes of the patient. At the end of training, trainees should be familiar with medical notes and able to record advice in them in the appropriate way.

2.5 History taking is an essential skill in public health practice, especially in the area of health protection. Whilst observing a patient through the pathway of care, further experience in history taking may be necessary for those trainees who do not have a clinical background. This should be gained through experiential learning. As most trainees are likely to be based in Primary Care Trusts, a suitable location for this to take place will include general practice as a key learning location for the development of patient consultation and history taking skill. Other learning locations such as Accident and Emergency Departments, Infectious Diseases wards or Paediatric wards may be appropriate to the learning needs of the trainee. Links with local undergraduate medical schools (where history taking skills are taught) will be important.

2.6 Communication with people is an essential skill in public health. In health protection this may be with individuals, their families and friends. Often this communication involves communicating bad news. An example of this is when a meningococcal death occurs. Public Health Specialists frequently find that they take the lead in breaking bad news to the community, often through the media. The threat of bioterrorism and deliberate release, sadly makes it more likely that such skills may be required in the future. All trainees must therefore learn the skills of breaking bad news. In the wider practise of public health this usually occurs with groups of people or populations. Courses are available to general practice specialist registrars and to medical students and access to these should be negotiated through programme directors.

2.7 Dependent upon their background, experience and previously acquired knowledge, trainees may need specific tailored learning programmes to develop an understanding of the principles of:

- Microbiology and Virology
- Chemistry (as needed for toxicology)
- Toxicology
- Immunology
• Genetics

• Aetiology and pathogenesis of infectious and environmentally caused diseases

• Therapeutics

• Basic radiation physics

3 TRAINING IN HEALTH PROTECTION

3.1 For General Specialists, as opposed to Health Protection Specialists, this will occur during the three month attachment to the health protection team. It may not be possible to achieve all of the RITA health protection competencies during this time period. If this is the case, then a learning plan should be developed with the trainee’s educational supervisor to complete the achievement of the health protection competencies.

3.2 Training is likely to include the topic areas listed under each heading below. In keeping with the principles in this document, these lists are illustrative and not meant to be exhaustive. They should be used as a guide to develop and meet the identified training needs of the trainee.

3.2.1 Surveillance systems

• routine early warning or safety net surveillance e.g. notifications, routine laboratory reporting, COVER

• enhanced disease surveillance e.g. tuberculosis, meningococcal disease, HIV

• non-routine surveillance systems e.g. special surveys

• environmental health surveillance

3.2.2 Other Agencies involved in health protection

• Local authority departments of environmental health

• Food Standards Agency

• Water companies

• Health and Safety executive

• Department of Environment Food and Rural Affairs Veterinary Investigation Centres

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• Environment Agency

3.2.3 The legal system governing health protection

• Public Health Law
• Environmental Law

3.2.4 The Management of common public health emergencies / problems. Some of these problems are rare but it is essential that all trainees understand the principles of managing such incidents and the sources of advice.

• Meningitis
• Food poisoning (for example, E coli O157)
• Tuberculosis
• Cryptosporidium
• Legionellosis
• Blood borne viruses (especially those associated with needle stick injuries)
• Rabies
• Diphtheria
• Viral haemorrhagic fevers

3.2.5 Commissioning health protection services

• Immunisation services
• Sexual Health
• Tuberculosis Control

3.2.6 The principles of infection control

3.2.7 Emergency planning

• The principles of emergency planning and the networks involved in the emergency planning process
• The principles involved in the management of threats from chemical, biological, nuclear and radiological warfare

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3.2.8 The principles of outbreak management.

3.2.9 Nature of Environmental Hazards

- Chemical hazards
- Routes of exposure
- Basic toxicology

3.2.10 Health impact assessment

- Measuring hazards and exposure
- Using common standards
- Identifying and responding to risks
- Long-term follow up

3.2.11 Global Environmental Health

- Climate Change
- Sustainability
- Role of health agencies globally

3.2.12 Pollution and health (Industrial and other causes) and their management

- The principles governing Integrated Pollution Prevention and Control (IPPC)

3.3 The assessment method for this training programme should be via a portfolio and log of activity.

4 ‘ON CALL’

4.1 An essential element in the development of preparedness for public health emergencies, non-infectious environmental incidents and ‘deliberate release’ is the understanding of working ‘out of hours’ when normal support networks are unavailable. Directors of Public Health have their own important role in these events in addition to Health Protection Specialists. To prepare for this core element of NHS specialist practice, taking part in an ‘on call’ rota is seen as essential way of acquiring this practical knowledge and skills.
5 CONTINUING TRAINING

5.1 During the time spent in general public health settings, it is important that trainees maintain their competence in areas of public health practice pertaining to health protection, recognising that it is an integral part of NHS based public health practice at specialist level.

REFERENCES

1 Getting Ahead of the Curve HMSO London 2002
3 Health Protection a Consultation Document on Creating a Health Protection Agency DH June 2000

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Acknowledgements
A committee chaired by the Academic Registrar, Professor Ian Harvey, prepared this guidance. The members of the committee included:-
Dr Gerry Bryant, Dr Mike Catchpole, Rowena Clayton, Dr Ruth Gelletlie, Dr Jeremy Hawker, Dr Philip Monk, Dr Jackie Spiby and Dr James Stuart.
1 INTRODUCTION

1.1 This is the second in a suite of documents about training for Health Protection. It provides guidance for higher specialist training (HST) in Public Health Medicine for Specialist Registrars (SpRs) who wish to specialise in health protection. It recognises the wider specialism of health protection that was announced in *Getting ahead of the Curve*¹. The emergence of larger local health protection teams will mean that more of the work and training capacity will be at local level.

1.2 This guidance is intended to help Regional and Country Training Committees, Training Programme Directors, Faculty Advisors, trainers and SpRs to develop training programmes in Health Protection.

1.3 The Acheson Report of 1988² set the framework for training in Communicable Disease Control. This document takes account of changes to the NHS and to the practise of health protection that have occurred since that report.

1.4 Health protection is an integral part of public health and is ‘those public health activities intended to protect individuals, groups and populations from infectious diseases, environmental hazards such as chemical contamination, and from radiation’³.

1.5 There are no recognised sub-specialities for training purposes within Public Health Medicine. Since 1997, training for those who wish to be Consultants in Communicable Disease Control (CCDCs) has been achieved by following a programme of HST leading to a CCT in Public Health Medicine, medical microbiology, or clinical infectious diseases⁴. There is no separate CCT in health protection.

1.6 In order to obtain a CCT in Public Health Medicine, SpRs who wish to follow a career in health protection must acquire all RITA competencies and obtain MFPHM. They must complete at least one year (WTE) of training in general NHS public health; the remaining three years of training may be completed in health protection. This document demonstrates how the competencies in public health may be achieved through such a training programme of at least one year in general public health and up to three years spent training in health protection (see Appendix A at the end of this section). SpRs decide that they wish to specialise in Health Protection at various stages in their training and may therefore not be able to spend three years in health protection settings.
Training programmes should in any case be tailored to the identified training needs and preferred learning style of the individual.

1.7 Consultant posts will continue to be open to individuals on the appropriate Specialist Register, and it will continue to be the decision of the Appointments and Advisory Committee to determine the suitability of each applicant for any given post. It is not at this stage envisaged that Consultant posts in Health Protection will necessarily only be open to those who have followed a programme of specialist training in Health Protection. The ultimate responsibility for making those decisions rests with appointments committees.

2 RECENT DEVELOPMENTS

2.1 Getting ahead of the Curve\(^1\) published in 2002 announced the development of a new Health Protection Agency for England. This agency brings together into one body the range of organisations with the responsibility for health protection. The creation of the agency brings new opportunities but places demands on training to equip future generations of health protection specialists and their general public health colleagues for the challenges of the health protection role. Similar modernisation programmes are being developed in all of the home nations and the training programme recommended here is appropriate for all countries within the home nations.

2.2 In addition to expertise in the investigation and control of communicable diseases, specialists in health protection are now seen as the lead specialists for the public health aspects of environmental hazards (including chemical, radiological and nuclear hazards), bioterrorism and health emergency planning. They have the relevant epidemiological skills and the appropriate working relationships necessary for field investigations whether the disease is infectious or not. Previous Department of Health guidance stated that health authorities must have arrangements for dealing with the health aspects of contamination of air, soil, water or food, including the follow up of people exposed to pollution.\(^5,6\)

3 GENERAL ISSUES

3.1 In order to achieve a CCT in Public Health Medicine, by the end of the four year programme of higher specialist training, all SpRs in Public Health Medicine must have achieved competence in all ten areas of specialist public health practice as detailed in the RITA training portfolio, and obtained MFPHM by examination. It is important to appreciate that competence and skills acquired in one setting are transferable to other settings (e.g. between areas of general and specialist public health practice).
3.2 In addition to generic public health competencies, many specialists in Health Protection are required to demonstrate competence in making clinical decisions about the management of individual patients. Being able to use clinical skills is therefore an important part of the role of the health protection specialist e.g. in any possible bioterrorist incident such as smallpox. These clinical skills will have been gained during general professional training, but SpRs wishing to specialise in health protection need to maintain or refresh these skills during higher professional training. This may be achieved through working with general practitioners, and with hospital specialists including paediatricians, respiratory physicians or infectious disease physicians.

3.3 An SpR needs to be able to use clinical, microbiological and epidemiological skills to assess the likelihood that a patient or group of patients has a given infection that has public health implications.

3.4 SpRs in Public Health Medicine need to acquire knowledge of the wide range of hazards to health both infectious and environmental in origin.

3.5 Training programmes must be designed to take into account the needs of the individual SpR including their clinical background and experience.

3.6 Training in health protection can be gained through a planned programme including experiential learning in specialist attachments, and specific pieces of work as appropriate to the identified needs of the SpR. Attachments may be for periods of time or specific pieces of work dependent upon the preferred learning style of the SpR. Examples of how experiential learning can be mapped onto public health competencies are shown in Appendix A (at the end of this section, p20).

3.7 Those wishing to pursue a training programme in health protection should have a health protection specialist as their educational supervisor. During general public health training, educational supervisors can be either generalists or specialists in health protection.

3.8 All RITA panels should include a specialist in health protection. It is very important that RITA panels of those specialising in Health Protection include at least one specialist in HP.

3.9 Specialist training in health protection should give a high level of knowledge, skills and experience in communicable disease and environmental epidemiology and in the investigation and public health management of communicable diseases and environmental hazards.

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3.10 SpRs should have the opportunity to be involved in research in the field of health protection, and some may wish to pursue a career in academic health protection.

3.11 During the later stages of training, SpRs may wish to develop special interests within the field of health protection. This should be supported by training programmes and opportunities for specialisation should be available to SpRs.

4 ‘ON CALL’

4.1 An essential element in the development of preparedness for public health emergencies, non-infectious environmental incidents and ‘deliberate release’ is the understanding of working ‘out of hours’ when normal support networks are unavailable. To prepare for this core element of NHS specialist practice, taking part in an ‘on call’ rota is seen as essential way of acquiring this practical knowledge and skills.

5 FIELD SERVICES TRAINING IN HEALTH PROTECTION

5.1 Health protection activities take place at local, regional and national levels. Most specialists in health protection will work at the local level. The emergence of larger local teams will mean that the majority of training will be available in local health protection teams. These teams may be separate or co-located with other public health functions.

5.2 Training with local health protection teams should cover the following areas:-

- appropriate management response to the full range of health protection incidents both during and out of office hours, including the prevention, investigation and control of outbreaks and incidents involving communicable diseases, chemical, radiological and other environmental hazards;

- surveillance programmes for communicable diseases, chemical, radiological and other environmental hazards, including enhanced disease surveillance and other non-routine surveillance systems;

- knowledge and ability in the planning of health emergency response;

- emergency preparedness for bioterrorist incidents;

- knowledge and understanding of the principles of immunity and immunisation;

- implementation and management of immunisation programmes;
• implementation of communicable disease screening and prevention programmes together with community involvement and risk communication;

• knowledge and understanding of diagnostic and public health microbiology;

• knowledge and understanding of clinical infectious diseases in adults and children including sexually transmitted infections;

• health protection specialist input into policy making, addressing inequalities, health service commissioning and other advisory functions.

5.3 SpRs should obtain adequate experience in the following areas:-

• infectious diseases;

• diagnostic and public health microbiology;

• hospital infection control;

• genito-urinary medicine;

• tuberculosis;

• environmental public health including legal aspects.

5.4 It is not sensible to be prescriptive as to the length of time that should be spent in each of these areas as the training needs will vary depending upon the background of the SpR. These elements of training are most likely to be met whilst attached to a local health protection team and should be decided upon by the educational supervisor in negotiation with the SpR, dependent upon training needs and preferred learning styles.

5.5 There are however key principles. SpRs require a period of orientation in all relevant clinical disciplines (general practice, infectious diseases, microbiology, paediatrics, respiratory medicine and sexually transmitted infections). Thereafter the SpR needs to maintain this contact through regular clinical meetings and case discussions. Regular contact is more representative of the working practice of specialists in health protection than having periods of time in one area and then moving to another different clinical area. It has the advantage of maintaining an understanding of current practice in these areas, continuing contact with health protection and being closely related to the job of work that the SpR will be expected to undertake at a specialist level.

5.6 During their training, all specialist trainees should develop an understanding of the role of other agencies and develop local working relationships and
partnerships with these agencies. They include Local Authorities, Primary Care Trusts, Water Companies, Food Standards Agency, Environment Agency, Health and Safety Executive, State Veterinary Service, Veterinary Laboratories Agency and other organisations.

5.7 During training, those wishing to specialise in health protection should acquire knowledge, skills and experience to enable them to communicate effectively with the public and the media in incidents and outbreaks which affect the public health.

5.8 All SpRs should have an attachment to a regional unit for the following elements:-

- regional surveillance programmes;
- health emergency planning;
- regional microbiology
- interface with public health observatory, regional government offices and the work of the RDPH;
- chemical incident provider unit;
- understanding of the management of complex or inter-district/regional outbreaks;
- performance management issues.

6 TRAINING IN HEALTH PROTECTION AT NATIONAL LEVEL

6.1 As well as experience at local and regional levels, SpRs specialising in health protection should have opportunities for attachments to national centres.

6.2 Possible attachments to national centres include:

- the Communicable Diseases Surveillance Centre, Scottish Centre for Infection and Environmental Health or PHLS Wales;
- Departments of Health in England, Scotland, Wales and Northern Ireland;
- the National Radiological Protection Board;
- toxicology units;
- Food Standards Agency;
• Environment Agency;

• Veterinary Laboratories Agency.

6.3 For personal reasons, not all SpRs will be able to undertake a full-time secondment. Therefore other ways to enable SpRs to have experience at a national level should be considered e.g. a longer attachment of 1-2 days a week for specific projects.

7 MICROBIOLOGY FOR THOSE WISHING TO SPECIALISE IN HEALTH PROTECTION

7.1 A understanding of microbiology is an essential element of public health practice within health protection to enable the SpR to interpret microbiological results and recognise timescales and limitations. One way of achieving this is through an initial orientation attachment of 1 to 2 days followed by regular contact throughout the period of training. This would enable an SpR to see at first hand how a laboratory operates. Such a programme would enable the achievement of core skills and competencies in this area. There are alternative ways of achieving these skills such as a more prolonged attachment.

7.2 An SpR would be expected to:-

• learn what it is realistic to expect a laboratory to do with its available resources;

• become familiar with modern diagnostic microbiological techniques and follow new developments in medical microbiology, including near patient testing and molecular typing;

• be familiar with the public health role of microbiologists;

• become familiar with the work of hospital infection control teams, and learn about the surveillance of hospital infection and the control of hospital outbreaks;

• become familiar with the food and environmental work of a laboratory (in most areas this work will be undertaken by a HPA laboratory);

• develop an understanding of the role of the reference laboratories;

• have regular involvement with the microbiology network in their area.

7.3 Skills are transferable and therefore the requirement for formal training in this area will depend upon the previous experience of the SpR. The needs of the individual SpR should be agreed with the educational supervisor.
8 CLINICAL INFECTIOUS DISEASES FOR THOSE WISHING TO SPECIALISE IN HEALTH PROTECTION

8.1 An essential element of public health protection practice is to understand the clinical presentation, investigation, epidemiology, clinical and public health management of common and important communicable diseases.

8.2 The investigation and management of people with infectious diseases takes place in many clinical settings e.g. primary care, infectious diseases, general medicine, paediatrics and genito-urinary medicine. All are relevant to SpRs in health protection, as interaction with clinicians from all of these areas is an essential element of day to day specialist working.

8.3 Skills are transferable and therefore the requirement for formal training in this area will depend upon the previous experience of the SpR. The needs of the individual SpR should be agreed with the educational supervisor.

8.4 Regular contact with these clinical areas is the best way to achieve and maintain the essential knowledge, skills and competencies in these areas.

9 ENVIRONMENTAL PUBLIC HEALTH

9.1 Acute environmental incidents call for a high level of commitment at short notice from a wide range of individuals. The SpR should learn about the operation of the emergency services (fire, police, ambulance), the role of social services in emergencies, and the functions of the Environment Agency, NRPB, HSE, Nuclear Installations Inspectorate, water companies and similar expert organisations. The SpR is not expected to become very knowledgeable in toxicology, but should learn to use and work with the expert toxicological advice from the national centres.

9.2 The SpR should aim to become able to:-

- act as a local source of medical advice e.g. to the emergency services, primary care and the public;
- to understand how to access, interpret and apply toxicological advice to protect public health;
- assess the health care service interventions likely to be required;
- arrange for biological and environmental sampling;
- propose appropriate measures to prevent damage to health;
• arrange the follow-up of people exposed to the chemical(s) or otherwise affected by the incident.

9.3 *Non-acute environmental hazards* are abundant and Health Protection Teams are required to undertake surveillance for unusual patterns of disease or disability. Training should cover the investigation of environmental hazards, including water and food safety, air pollution, land contamination and health impact assessment.

9.4 All SpRs should be trained to have knowledge of potential bioterrorist threats and develop competence to deal with these emergencies. The importance of this has been highlighted since the events of September 11th 2001.

10 DISEASE PREVENTION PROGRAMMES

10.1 The SpR should be familiar with health promotion / disease prevention programmes as applied to diseases caused by infectious and environmental hazards. They should work with an immunisation co-ordinator and be familiar with the systems for monitoring vaccine uptake, adverse events and the vaccine supply chain. They should also be familiar with different approaches to running immunisation campaigns such as the childhood immunisation programme and the influenza immunisation campaign. They should have direct involvement in supporting parents who find it difficult to make positive choices in favour of having their children immunised as health protection is defined as protecting individuals as well as populations.

10.2 The SpR in health protection should gain knowledge, skills and experience in travel health and prevention of travel associated disease.

11 TRAINING IN GENERAL PUBLIC HEALTH

11.1 SpRs aspiring to a career in health protection should spend a minimum of 12 months working in general public health. They should see the range of activities in departments of public health in Primary Care Trusts or equivalent organisations that have the lead responsibility for public health. They should aim to understand the population approach, health needs assessment, commissioning of services, and inequalities in health. They should gain experience of working with local government departments other than environmental health, with voluntary organisations and other community services, and with NHS trusts. In addition to experience gained in a general public health setting, competence in many areas of public health practice can be achieved and maintained through training in a health protection setting.

11.2 During periods of time spent in general public health settings, it is important that SpRs specialising in Health Protection concentrate on obtaining
competence in areas of public health practice that are less easy to obtain in a health protection setting (see Appendix A – at the end of this section).

December 2002

REFERENCES
3. Health Protection a Consultation Document on Creating a Health Protection Agency DH June 2000
5. NHS Management Executive. Arrangements to deal with health aspects of chemical contamination incidents. HSG (93) 38, 20 August 1993

Acknowledgements
A committee chaired by the Academic Registrar, Professor Ian Harvey, prepared this guidance. The members of the committee included:-
Dr Gerry Bryant, Dr Mike Catchpole, Rowena Clayton, Dr Ruth Gelletlie, Dr Jeremy Hawker, Dr Philip Monk, Dr Jackie Spiby and Dr James Stuart.
## 1 TEN AREAS OF SPECIALIST PUBLIC HEALTH PRACTICE

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<th>AREA OF SPECIALIST PUBLIC HEALTH PRACTICE</th>
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<td><strong>1 Surveillance and assessment of the population’s health and well-being (including managing, analysing and interpreting information, knowledge and statistics)</strong></td>
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<td><strong>2 Promoting and protecting the population’s health and well-being</strong></td>
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<td><strong>3 Developing quality and risk management within an evaluative culture</strong></td>
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<td><strong>5 Developing health programmes and services and reducing inequalities</strong></td>
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* Must be addressed in health protection setting
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<tr>
<th>AREA OF SPECIALIST PUBLIC HEALTH PRACTICE</th>
<th>Addressing in Health Protection setting</th>
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<td>8  Strategic leadership for health</td>
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<td>10 Ethically managing self, people and</td>
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<td>resources (including education and</td>
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<td>continuing professional development)</td>
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* 10.4 not assigned in RITA portfolio
## 2 EXAMPLES OF DEMONSTRATION OF RITA COMPETENCIES IN A HEALTH PROTECTION SETTING

<table>
<thead>
<tr>
<th>Competency</th>
<th>How demonstrated</th>
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<tbody>
<tr>
<td>1.4</td>
<td>Undertake a needs assessment for a target group or service.</td>
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<td>1.6</td>
<td>Obtain and use relevant Hospital episode statistics, laboratory requests etc to audit notifications of meningitis.</td>
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<td>1.8</td>
<td>Descriptive epidemiology of tuberculosis in a locality, analysing routine data to describe the epidemiology of tuberculosis e.g. describing the pattern of disease over time, geographical distribution, age, gender and ethnicity.</td>
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<td>1.9</td>
<td>Investigate reports of an excess of childhood cancer in a small town.</td>
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<td>1.10</td>
<td>Undertake HNA for GUM Services in a Young Offenders Institute, using epidemiological, corporate &amp; comparative methods.</td>
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<tr>
<td>2.2</td>
<td>Develop strategy to increase the uptake of childhood immunisations in inner city.</td>
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<td>2.3</td>
<td>Develop a Sexual Health Strategy to reduce sexually transmitted diseases among sex workers.</td>
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<td>2.9</td>
<td>Provide advice to LA as Proper Officer in respect of Public Health (Control of Disease) Act of 1984 (give evidence in application for detention).</td>
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<tr>
<td>2.13</td>
<td>Contribute to the health input to IPPC application.</td>
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<tr>
<td>3.1</td>
<td>Undertake peer-review for scientific journals.</td>
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<tr>
<td>3.2</td>
<td>Undertake a critical appraisal of a systematic review of scabies treatments.</td>
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<tr>
<td>3.3</td>
<td>Undertake a literature review of the effectiveness BCG vaccination.</td>
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<tr>
<td>3.4</td>
<td>Evaluation of management of cases of meningococcal disease: outcome measures include mortality, morbidity, number of secondary cases, satisfaction with health protection service provided.</td>
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<tr>
<td>3.5</td>
<td>Assessment of the evidence for HIV screening of pregnant women.</td>
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<td>3.7</td>
<td>Contribute to working group to develop standards for Health Protection.</td>
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<tr>
<td>3.9</td>
<td>Use epidemiological data collected in an outbreak of tuberculosis to evaluate BCG vaccine efficacy.</td>
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<tr>
<td>Competency</td>
<td>How demonstrated</td>
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<tr>
<td>4.2 Able to bring an articulate public health perspective to a decision-making forum in health, social care or public policy</td>
<td>Presentation of paper about BCG vaccine efficacy to BCG subcommittee of Joint Committee on Vaccination &amp; Immunisation</td>
</tr>
<tr>
<td>4.4 Understand, contribute to and value the work of local authorities and their role in improving the public health</td>
<td>Work with LA to reduce risk of IID at livestock market by improving layout, investing in appropriate hand-washing and toilet facilities</td>
</tr>
<tr>
<td>4.5 Understand, contribute to and value the work of the non-statutory sector and their role in improving the public health</td>
<td>Collaborative project with Rotary Club to raise awareness about tuberculosis, including presentations to clubs, developing literature and advertising</td>
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<tr>
<td>4.7 Demonstrate effective intervention in a multi-agency setting, e.g. by participation or chairing a multi-agency group containing representatives from at least three different organisations</td>
<td>Chair Hepatitis B Incident Management Team (involving several different organisations e.g. Health Protection Team, GUM services, microbiology, PCT, Homeless Service, DAAT, women’s health workers)</td>
</tr>
<tr>
<td>5.1 Provide professional advice to health authorities and other bodies understanding the impact of such advice on both populations and individuals</td>
<td>Provide health protection advice to PCTs e.g. by presentations to the Board, and immunisation advice to GP practices</td>
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<td>5.3 Use performance indicators for the NHS and other relevant bodies in an appropriate fashion</td>
<td>Using Healthcare Associated Infection indicators such as %MRSA to set targets to improve hospital infection control</td>
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<tr>
<td>5.4 Provide a population perspective to the development of clinical guidelines and protocols in the light of current knowledge and practice</td>
<td>Contribute to Infection Control Guidelines</td>
</tr>
<tr>
<td>5.6 Provide a population perspective to confidential enquiries and investigate other clinical incidents in the light of current knowledge and practice</td>
<td>Undertake critical incident audit of deaths attributed to tuberculosis</td>
</tr>
<tr>
<td>6.4 Understand the term attributable risk and able to apply the concept to identify potentially effective public health interventions</td>
<td>Participation in Campylobacter Sentinel Surveillance study to understand the proportion attributable to different risk factors to inform prevention strategies</td>
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<td>6.6 Influence resource allocation decisions in light of policy recommendations both within and outside the health care setting</td>
<td>Work with PCTs to distribute resources for Hepatitis B immunisation of foster carers</td>
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<td>6.7 Understand threats to health, communicate these to as wide an audience as possible and exploit opportunities to address them</td>
<td>Participate in local radio phone-in programme about influenza vaccination</td>
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<td>7.1 Able to listen to and help local communities articulate their own health concerns</td>
<td>Attend public meeting about concerns of the possible adverse health effects of a landfill site</td>
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<td>7.2 Appreciate the importance, relevance and limitations of non-NHS data sources on health and determinants of health e.g. police, social services, economic and NIEHs</td>
<td>Use LA air quality monitoring data as part of an investigation of health professional concerns about an increase in childhood asthma in an inner city</td>
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<td>7.6 Understand and use appropriate methods of involving the public and communities in improving health and reducing inequalities</td>
<td>Work with Asian Women, and faith leaders to understand and find ways to reduce the stigma associated with tuberculosis</td>
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<td>8.2 Give appropriate verbal presentations to multi-agency groups (and lay) audiences external to the organisation</td>
<td>Address staff and parents after a secondary case of meningococcal disease at a nursery</td>
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<td>8.10 Demonstrate the ability to teach and to educate a wide range of audiences on public health issues</td>
<td>Speaker at multi-disciplinary, multi-agency courses on the management of exceptional emergencies at Emergency Planning College.</td>
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<td>8.12 Prepare appropriate written work and give an appropriate verbal presentation of the work at executive/board or equivalent level</td>
<td>Prepare and present paper about communication in CJD Incidents to CJD Incidents Panel</td>
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June 2003
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<tr>
<th>Competency</th>
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<tr>
<td>8.16</td>
<td>Demonstrate vision in designing the long-term strategy based on the assessment of research evidence of effectiveness</td>
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<tr>
<td>9.1</td>
<td>Identify clear aims and objectives for a research project</td>
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<td>9.4</td>
<td>Design, contribute to and conduct original research</td>
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<td>10.11</td>
<td>Understand and apply the principles of budget management, compose and appraise a business case and demonstrate project management skills in specific pieces of work</td>
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<td>10.15</td>
<td>Understand the principles and importance of mentoring</td>
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June 2003
TRAINING FOR PUBLIC HEALTH SPECIALIST TRAINEES WHO WISH TO SPECIALISE IN HEALTH PROTECTION

Prepared for the Faculty of Public Health

1 INTRODUCTION

1.1 Getting ahead of the Curve\textsuperscript{1} published in 2002 announced the development of a new Health Protection Agency for England. This agency brings together into one body the range of organisations with the responsibility for health protection. The creation of the agency brings new opportunities but places demands on training to equip future generations of health protection specialists and their general public health colleagues for the challenges of the health protection role. Similar modernisation programmes are being developed in all of the home nations and the training programme recommended here is appropriate for all countries within the home nations.

1.2 This is the third in a series of documents about training for Health Protection. The other documents deal with training in Health Protection for specialist registrars and training in Health Protection for those people training for careers as Specialists in Public Health. This document provides guidance for the training of Public Health Specialist trainees who wish to specialise in Health Protection. The Acheson Report of 1988\textsuperscript{2} had previously informed the framework for training of Consultants in Communicable Disease Control. Getting ahead of the Curve announced a wider specialism of health protection which is recognised in this document which also takes account of changes to the NHS and to the practise of health protection that have occurred since that report. This document is intended to help Regional and Country Training Committees, Training Programme Directors, Faculty Advisors, trainers and Public Health Specialist trainees to develop training programmes in Health Protection.

1.3 Health Protection is an integral part of public health and is ‘those public health activities intended to protect individuals, groups and populations from infectious diseases, environmental hazards such as chemical contamination, and from radiation’\textsuperscript{1}. It includes:-

1. the investigation and control of communicable diseases
2. the public health aspects of environmental hazards (including chemical, radiological and nuclear hazards),
3. managing ‘deliberate release’
4. health emergency planning
1.4 Specialists in Health Protection, along with their generalist colleagues, need to understand the breadth of the speciality of health protection, to understand the networks and agencies involved as well as contributing to the emergency and on call elements of health protection. An essential element of the role of the specialist in order to fulfil this function is to understand Infectious Disease Services within the NHS and also Sexually Transmitted Infection Services. In addition, the specialist in Health Protection will need to develop an understanding of the role of Primary Care Trusts, in their commissioning role as well as their public health role together with the performance management role of the Strategic Health Authorities. This will enable them to provide specialist advice to Directors of Public Health in areas of commissioning that concern Health Protection.

1.5 The aim of this document is to be permissive rather than prescriptive and to provide a framework that enables all trainees to develop a training programme that meets their training needs as identified with their educational supervisor.

1.6 Public Health Specialist trainees entering a training programme are drawn from a wide variety of backgrounds and bring with them a wide range of knowledge, competence and experience. Training programmes should be tailored to the identified training needs and preferred learning style of the individual, taking into account previous experience. Training in health protection needs to contain a significant element of practical learning.

1.7 In order to gain entry onto the Voluntary Register as a Specialist in Public Health, all trainees, including those who wish to follow a career in health protection must acquire all RITA competencies and obtain MFPHM. They should aim to complete at least one year (WTE) of training in general NHS public health; the remaining three years of training may be completed in health protection. This document demonstrates how the competencies in public health may be achieved through such a training programme of at least one year in general public health and up to three years spent training in health protection (see Appendix A in document entitled Training for Specialist Registrars in Public Health Medicine who wish to specialise in Health Protection). The decision to specialise in Health Protection may be reached at various stages of training and it may therefore not be possible for the trainee to spend three years in health protection settings. Training programmes should in any case be tailored to the identified training needs and preferred learning style of the individual.

1.8 Specialist posts will be open to individuals on the appropriate Specialist Register, either the Specialist Register held by the GMC, or the Voluntary Register of Specialists in Public Health. It is the decision of the Appointments and Advisory Committee to determine the suitability of each applicant for any
given post. It is not at this stage envisaged that specialist posts in Health Protection will necessarily only be open to those who have followed a programme of specialist training in Health Protection. The ultimate responsibility for making those decisions rests with appointments committees.

1.9 Training should consist of a mixture of service work and specific project work. Public health training is ultimately to develop a skilled workforce and this can only be demonstrated by the satisfactory completion of in service work as part of the learning environment of the trainee.

1.10 Trainees should have the opportunity to be involved in research in the field of health protection, and some may wish to pursue a career in academic health protection.

2 ENVISAGED ROLES FOR THOSE TRAINING IN HEALTH PROTECTION

2.1 As the Health Protection Agency develops, the range of specialists working within it will broaden. The document entitled Training for specialist registrars in Public Health Medicine who wish to specialise in Health Protection describes the training pattern for those people who come from a medical background.

2.2 This document describes the training for those with a background other than medical practice, who are likely to undertake either a specialist role in General Health Protection or for those who are likely to take a more specialised role within Health Protection, such as environmental toxicology or in the field of radiation.

3 UNDERPINNING PRINCIPLES

3.1 The training programme for specialists in health protection recognises that trainees will enter training from a wide variety of backgrounds. For those whose intended career is in a highly specialised field, such as radiological protection, the part of their training that relates to specialised work, whilst addressing RITA competencies, is likely to be centred on their chosen area of expertise. Throughout their training, those trainees who envisage a career in highly specialised areas of health protection need to ensure that they maintain regular contact with their chosen area of expertise to ensure that their knowledge base in that area is maintained. A programme to ensure that this occurs should be agreed with their educational supervisor.

3.2 Those wishing to pursue a more generalist career should have opportunities to train in all areas of health protection.
4 GENERAL TRAINING PRIOR TO TRAINING IN HEALTH PROTECTION

4.1 The training programme in Public Health to achieve a CCT, or equivalent for those planning to achieve registration on the Voluntary Register, is a four year programme of higher specialist training, with a minimum period of one year being spent in general public health. All Specialist Trainees in Public Health must have achieved competence in all ten areas of specialist public health practice as detailed in the RITA training portfolio, and obtained MFPHM by examination.

4.2 An important principle is the recognition that competence and skills acquired in one setting are transferable to other settings (e.g. between areas of general and specialist public health practice).

4.3 People will enter specialist training in Health Protection from a wide variety of backgrounds and workplace settings and consequently with widely differing learning needs. It is essential that the training programme takes account of these needs and is developed to meet the learning needs of the individual specialist trainee. Some may require more generalist training than the suggested minimum of one year.

4.4 It is essential that during the year of training in general public health, the majority of training time be spent at Primary Care Trust or equivalent level, where public health practice is currently centred. Dependent on previous experience, training at Strategic Health Authorities and Government Offices of the Regions will add valuable breadth to general public health training. Trainees should aim to understand the population approach, health needs assessment, commissioning of services, and inequalities in health. They should gain experience of working with local government departments other than environmental health, with voluntary organisations and other community services, and with NHS trusts.

4.5 During the period of time spent in general public health settings, it is important that specialist trainees specialising in Health Protection concentrate on obtaining competence in areas of public health practice that are less easy to obtain in a health protection setting (see (p20) Appendix A in Training for Specialist Registrars in Public Health Medicine who wish to specialise in Health Protection).

4.6 To enter higher specialist training, the trainee should ideally have a primary degree, or equivalent and have worked either in public health or in scientific work related to health protection for a period of at least 4 years.

4.7 Training in public health needs to ensure all trainees understand professional principles, including confidentiality and ethics. Professional principles include a
recognition of competence and knowing when to appropriately seek help and advice from more expert colleagues. They also include a commitment to continuing professional development in all areas of practise, including health protection.

4.8 To practise health protection, trainees must learn the skills necessary to undertake risk assessments, manage and communicate risk.

4.9 In order to practise health protection, trainees need an understanding of the health care system, history taking, diagnostic tests, the effects of illness on the carer and the effects on a community. As part of their orientation programme, trainees, particularly those from a non-clinical background, should follow patients with infection or illness resulting from non-infectious environmental hazard through the pathway from admission to hospital to discharge. This will familiarise trainees with history taking, the timescales, diagnosis, the effects of illness on the individual, their carers and the wider community. It is anticipated that the output from this would be a written account of the patient experience. It is essential to gain from this part of training, not just an understanding of the patient experience, but an understanding of the timescales from taking a test, such as Cerebro Spinal Fluid (for the diagnosis of meningitis) to the results from such a specimen being available. In some instances, as part of public health practice, it may be necessary to visit patients on the ward and record advice in the notes of the patient. At the end of training, trainees should be familiar with medical notes and able to record advice in them in the appropriate way.

4.10 Dependent upon their background, experience and previously acquired knowledge, trainees may need specific tailored learning programmes to develop an understanding of the principles of:-

- Microbiology and Virology
- Chemistry (as needed for toxicology)
- Toxicology
- Immunology
- Genetics
- Aetiology and pathogenesis of infectious and environmentally caused diseases
- Basic radiation physics
5 ‘ON CALL’

5.1 An essential element in the development of preparedness for public health emergencies, non-infectious environmental incidents and ‘deliberate release’ is the understanding of working ‘out of hours’ when normal support networks are unavailable. To prepare for this core element of NHS specialist practice, taking part in an ‘on call’ rota is seen as essential way of acquiring this practical knowledge and skills. Whatever ‘on call’ experience is gained at the national level, it is essential that experience of ‘on call’ is gained during training at the local level.

6 TRAINING IN HEALTH PROTECTION (LOCAL AND REGIONAL LEVELS)

6.1 Health protection activities take place at local, regional and national levels. Specialist trainees may already have worked or be working at regional or national level. As many of the specialist roles will be at either the regional or national level it is likely that some elements of specialist training will take place at those levels. It is however essential that the specialist trainee also gains training experience with local teams. All specialist trainees require a period of orientation in all relevant disciplines at the local level to familiarise them with the breadth of health protection practice.

6.2 As with general training, the training should consist of a mixture of project and service work to gain an understanding of the breadth of field service based work.

6.3 Training is likely to include the topic areas listed under each heading below. In keeping with the principles in this document, these lists are illustrative and not meant to be exhaustive. They should be used as a guide to build on the identified training needs of the trainee.

6.4 For all of the areas listed below, it is not sensible to be prescriptive as to the length of time that should be spent in each of these areas as the training needs will vary depending upon the background of the specialist trainee. The educational supervisor should decide the time to be spent in negotiation with the specialist trainee, dependent upon training needs and preferred learning styles.

6.5 The following are currently seen as critical areas of Health Protection Practise in which all trainees should gain knowledge and competence.

- an understanding of the response at the local level to the range of health protection incidents both during and out of office hours, including the prevention, investigation and control of outbreaks and incidents involving
communicable diseases, chemical, radiological and other environmental hazards;

- surveillance programmes for communicable diseases, chemical, radiological and other environmental hazards, including enhanced disease surveillance and other non-routine surveillance systems;

- knowledge and ability in the planning of health emergency response;

- emergency preparedness for bioterrorist incidents;

- health protection specialist input into policy making, addressing inequalities, health service commissioning and other advisory functions.

6.6 In addition, knowledge and competence in the following areas is likely to be important in preparing for careers in health protection, but may not be essential for all health protection careers or trainees:-

- implementation of communicable disease screening and prevention programmes together with community involvement and risk communication;

- knowledge and understanding of diagnostic and public health microbiology;

- knowledge and understanding of clinical infectious diseases in adults and children;

- knowledge and understanding of the principles of infection control;

- knowledge and understanding of sexually transmitted infections;

- knowledge and understanding of tuberculosis;

- knowledge and understanding of environmental public health including legal aspects.

6.7 During their training, all specialist trainees should develop an understanding of the role of other agencies and develop local working relationships and partnerships with these agencies. They include Local Authorities, Primary Care Trusts, Water Companies, Food Standards Agency, Environment Agency, Health and Safety Executive, State Veterinary Service, Veterinary Laboratories Agency and other organisations.

6.8 During training, those wishing to specialise in health protection should acquire knowledge, skills and experience to enable them to communicate effectively with the public and the media in incidents and outbreaks that affect the public health. This training may be acquired at the local, regional or national levels.
6.9 All specialist trainees should develop an understanding of the role of the regional unit within field services. For the individual trainee, the regional level may be more or less important in their future career and the knowledge and competencies to be gained at this level should be developed with their educational supervisor. Knowledge that a specialist trainee is expected to gain from the regional level is detailed below.

- An understanding of regional surveillance programmes;
- An understanding of health emergency planning;
- An understanding of the role of the regional microbiologist;
- An understanding of the interface with public health observatory, regional government offices and the work of the RDPH;
- An understanding of the chemical incident provider unit;
- An understanding of the management of complex or inter-district/regional outbreaks;
- An understanding of performance management issues.

7 TRAINING IN HEALTH PROTECTION AT NATIONAL LEVEL

7.1 As well as experience at local and regional levels, specialist trainees specialising in health protection should have opportunities for attachments to national centres. The knowledge and competencies that they acquire from this level should be reviewed with their educational supervisor and attachments arranged to meet their agreed learning needs.

7.2 As with other areas of health protection training, the training experience should be a mixture of real day to day work and project based work in order to ensure that trainees are adequately prepared for future roles within the Health Protection Agency as it develops.

7.3 Possible attachments to national centres include:

- the Communicable Diseases Surveillance Centre, Scottish Centre for Infection and Environmental Health or PHLS Wales;
- Departments of Health in England, Scotland, Wales and Northern Ireland;
- the National Radiological Protection Board;
- toxicology units;
• Food Standards Agency;
• Environment Agency;
• Veterinary Laboratories Agency;
• International Work.

7.4 For personal reasons, not all specialist trainees will be able to undertake a full-time national attachment. Therefore other ways to enable specialist trainees to have experience at a national level should be considered e.g. a longer attachment of 1-2 days a week for specific projects or pieces of work.

8 SPECIALISED AREAS OF HEALTH PROTECTION

8.1 Specialist areas of knowledge in health protection include advanced epidemiological and statistical skills together with microbiology, infectious diseases, environmental public health including toxicology and radiobiology. For the specialist trainee some of these may already be areas of expertise. Some of them will be of limited value in achieving future career intentions.

8.2 All specialist trainees need to address all of the RITA competencies in the 10 key areas of Public Health Practice. It is recognised however that the knowledge that they require in all areas of health protection will differ between trainees. All trainees need to acquire sufficient knowledge to enable them to have an attachment to the local team and to ensure that they are able to address and therefore achieve the RITA competencies. Learning needs will need to be individually addressed and should be agreed with the educational supervisor.

8.3 There are many areas of specialist health protection. It is not possible within the confines of this document to lay out a training scheme for all of these areas. The Appendix on page 34 illustrates some of the specialist areas and possible training in those areas. The list is not exhaustive. It is intended as a guide and is by no means to be considered to be prescriptive. For all areas of specialist training, the key principles in this document should be followed. They are:-

5. that RITA competencies can be achieved through training in health protection
6. that the trainee must decide and agree their learning needs and methods of learning with their educational supervisor
7. that a mixture of project and service work should be carried out, with the trainee developing a portfolio of work to demonstrate competencies and experience
8. not all trainees will acquire knowledge in all specialist areas of health protection
9. training should be permissive rather than prescriptive in meeting the needs of the trainee

REFERENCES
1 Getting Ahead of the Curve HMSO London 2002

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APPENDIX

1 MICROBIOLOGY FOR THOSE WISHING TO SPECIALISE IN HEALTH PROTECTION

1.1 Skills are transferable and therefore the requirement for formal training in this area will depend upon the previous experience of the specialist trainee. The educational objectives and the depth to which these have to be pursued should be agreed with the educational supervisor.

1.2 For the specialist trainee who envisages a career in general health protection, an understanding of microbial threats to health is essential. This enables the specialist to interpret microbiological results and recognise timescales and limitations. One way of achieving this is through an initial orientation attachment of 1 to 2 days followed by regular contact throughout the period of training. This would enable a specialist trainee to see at first hand how a laboratory operates. Such a programme would enable the achievement of core skills and competencies in this area.

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1.3 All trainees should ideally undertake training in field services work as part of their training. Field services work depends on an understanding of the microbial threats to health and all trainees need to develop an understanding of these threats. A specialist trainee would be expected to:

- learn what it is realistic to expect a laboratory to do within its available resources;
- become familiar with modern diagnostic microbiological techniques and follow new developments in medical microbiology, including near patient testing and molecular typing;
- be familiar with the public health role of microbiologists;
- become familiar with the work of hospital infection control teams, and learn about the surveillance of hospital infection and the control of hospital outbreaks;
- become familiar with the food and environmental work of a laboratory (in most areas this work will be undertaken by a HPA laboratory);
- develop an understanding of the role of the reference laboratories;
- have regular involvement with the microbiology network in their area.

2 ENVIRONMENTAL PUBLIC HEALTH

2.1 This area is likely to involve those who already have skills in this area, including those with knowledge and skills in toxicology and radiobiology. For those with a background in this area, they should agree further learning objectives with their educational supervisor. It is important that trainees with skills in this area learn to apply them to the RITA competencies to be achieved during training.

2.2 For those who wish to pursue a career in general health protection, knowledge and understanding of this area is an important part of health protection practise.

2.3 Acute environmental incidents call for a high level of commitment at short notice from a wide range of individuals. The specialist trainee should learn about the operation of the emergency services (fire, police, ambulance), the role of social services in emergencies, and the functions of the Environment Agency, NRPB, HSE, Nuclear Installations Inspectorate, water companies and similar expert organisations. The specialist trainee who wants to work in general areas of health protection is not expected to become very knowledgeable in toxicology, but should learn to use and work with the expert toxicological advice from the national centres.

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2.4 The specialist trainee should aim to become able to:-

• understand how to access, interpret and apply toxicological advice to protect public health;

• assess the health care service interventions likely to be required;

• arrange for biological and environmental sampling;

2.5 Non-acute environmental hazards are abundant and Health Protection Teams are required to undertake surveillance for unusual patterns of disease or disability. Training should cover the investigation of environmental hazards, including water and food safety, air pollution, land contamination and health impact assessment.

2.6 All specialist trainees should be trained to have knowledge of potential threats from deliberate release and develop competence to play a role appropriate to their competence and skills in dealing with these emergencies. The importance of this has been highlighted since the events of September 11th 2001.