RECORD OF LABORATORY TRAINING FOR THE IBMS SPECIALIST DIPLOMA VIROLOGY

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Personal Details
Name:
IBMS Membership Number:
IBMS Membership Grade:
HCPC Registration Number:
Date of HCPC Registration:
Employment Address:
Telephone Number:
Date Specialist Training Commenced:
Name of Training Officer:

Confirmation of Completed Training		
Date Training Completed	Training Officer's Signature	Candidate's Signature

Recommendation for Award of Specialist Diploma		
Date of External Examination	External Examiner's Signature	External Examiner's Name

Training Review A training review should occur on a monthly basis between the trainee and training officer. These will provide an opportunity for feedback, set targets, agreed deadlines and monitor progress.		
Reviewed by	Date	Comments

Contents

1. INTRODUCTION

1.1. In order for you to be awarded an Institute Specialist Diploma you must be a current member of the Institute since the time you were issued with the portfolio. You must have held corporate membership for at least one year and be a current member at the time of the examination.

1.2. The Institute of Biomedical Science (Institute/IBMS) Specialist Portfolio provides the opportunity for you to gain recognition that you have finished a programme of structured, standardised post-registration training. This requires you to complete the IBMS Record of Training for the Specialist Diploma (Specialist Portfolio), submit a portfolio of evidence for assessment and undertake an oral examination of your specialist knowledge and understanding in your chosen field, in order to be awarded the Institute's Specialist Diploma.

1.3. Holding a Specialist Diploma demonstrates that you have been assessed against a benchmark standard for a specialist practitioner in your chosen discipline. It can be used by your employer to demonstrate specialist knowledge and skills linked to career and pay progression.

1.4. The Specialist Portfolio is considered to be the property of the individual as it represents a commitment by the employer for professional development specific to them. It is not 'owned' by the laboratory. If you are re-employed in another laboratory and you wish to continue with a partially completed portfolio, it is at the discretion of your new employer whether or not they wish to continue with the same portfolio or restart the process. If they opt to continue with the existing portfolio, the new employer is responsible for reviewing the evidence in your portfolio and confirming your competence in line with the requirements of your position.

1.5. To support completion of this Specialist Portfolio a separate guidance document has been produced (*Institute of Biomedical Science Specialist Portfolio Guidance for Candidates, Training Officers and External Examiners).* This provides all of the information required to ensure the portfolio is completed and assessed in accordance with the Institute's requirements. Following the guidance in this document is essential to your success.

1.6. It is strongly recommended that you and your training officer/mentor read and understand this document. Failure to do so could jeopardise your chances of success. External examiners for the portfolio are required to read and understand it as part of their responsibility as a representative of the Institute.

1.7. A discipline specific portfolio reflects the range of analyses that are considered to be relevant to your specialty. All sections must be completed in order to express your ability to operate at the specialist level. Completion of the sections should follow the formal training programme that is submitted by your laboratory to the IBMS as part of the laboratory training approval process.

1.8. The IBMS Specialist Portfolio can only be completed in laboratories which hold IBMS approval for post-registration training.

1.9. The following sections highlight some key points **but are not a substitute** for reading the information contained in the *Institute of Biomedical Science Specialist Portfolio Guidance for Candidates, Training Officers and External Examiners.*

2. TRAINING

2.1. As a requirement for IBMS approval of your laboratory for training you must have an indicative training programme which sets out the sections of the laboratory they will rotate through, the expected duration in each area, the module(s) that are covered and how training is assessed.

2.2. In-service training and assessment must demonstrate good scientific practice based on the knowledge and competence in the stated modules in order to meet the requirements of the external examination process. Each module requires you to demonstrate knowledge and competence elements specific to an investigation or task. It is the responsibility of the trainer(s) to ensure that you meet the expected level defined by the following learning outcomes which have been subdivided into three areas.

Knowledge and understanding
As a successful candidate you will be able to:

a. Demonstrate knowledge and understanding of complex scientific and technical aspects of their specialist discipline including: correct procedures for handling specimens before, during and after analysis; maintenance of routine equipment; principles of in-house data management systems and quality control/assurance procedures.

b. Demonstrate knowledge and understanding of the scientific basis of the laboratory tests and the disease process under investigation.

c. Show an awareness of current issues and developments within healthcare and biomedical science.

These are evidenced by in-house assessments of training and examination of knowledge during the *viva voce* with the external examiner to assess the ability of the candidate to describe/discuss these aspects of their work.

Professional skills
As a successful candidate you will be able to:

a. Competently perform a range of laboratory tests without immediate supervision.

b. Demonstrate self-direction in solving problems and exercising personal autonomy in relation to scope of practice.

c. Demonstrate a systematic application of professional knowledge and understanding in the interpretation of laboratory data to determine action based on best practice.

These are evidenced by the in-house assessments of training and portfolio of evidence.

Transferable skills
As a successful candidate you will be able to:

a. Demonstrate communication skills within the healthcare environment and as part of the laboratory team. This is evidenced by the presentation.

b. Demonstrate the ability to critically reflect in order to inform best practice. This is evidenced by personal reflective statements.

2.3. Where you do not have access to a particular technique, knowledge must still be demonstrated together with an understanding of the key skills required to perform the test. There may also be other tests your laboratory includes within its basic in-house repertoire in which you are additionally required to be competent. These can be assessed and then recorded in the reflective practice statement at the end of each sub-section.

2.4. The Institute recommends that you have a regular review of your training (e.g. on a monthly basis) with your training officer in order to monitor your progress. These sessions will provide an opportunity for you to receive feedback on how your training and completion of your portfolio is progressing against the structured departmental training programme you will be following, which is a requirement for IBMS training laboratory approval). It is a time to take into consideration issues that have impacted

on your training, and whether additional support is required or available. Targets to complete stages of your training can be set and deadlines for meeting them, agreed.

3. EVIDENCE

3.1. Evidence is generated through the internal assessment of your training and can be from a variety of sources (see section 5.11 in the guidance document for some examples). Many pieces of evidence will be generated and you will need to select those most suitable for the Specialist Portfolio module. Your training officer should be asked to check these are appropriate and confirm meet the requirements of the standards for external examination.

3.2. Evidence must be filed in a single specialist portfolio of evidence.

3.3. In addition to evidence of answering questions set by the trainer only ONE other example of evidence is required for the **Evidence of Achievement** section. This is chosen by you as an example of evidence that demonstrates your knowledge and competence in performing a particular technique.

3.4. You are required to justify your choice of evidence in a reflective practice statement at the end of every module.

3.5. Evidence must be sufficient to enable an informed judgement by the external examiner on whether the standard in terms of knowledge and skills for the module has been met.

The amount of evidence must not exceed the requirement for evidence stipulated in the evidence of achievement section and should be presented in one A4 size lever arch folder.

3.6. Your portfolio of evidence will be externally assessed as part of examining your suitability for the award of an IBMS Specialist Diploma. It is very important that it is well organised and an index for the evidence is provided.

4. COMPLETING THE RECORD OF LABORATORY TRAINING

4.1. Once you have completed your training for a particular module it must be signed off by the trainer to confirm that the knowledge and competence requirements and the Evidence of Achievement sections have been met.

4.2. You are required to complete a reflective practice statement at the end of each module to justify your selection of evidence.

4.3. All sections of your record of training for the Specialist Portfolio must be completed and signed off by the trainer, and your portfolio of supporting evidence checked, to confirm your suitability for the specialist examination.

5. END-POINT ASSESSMENT

5.1. On completion of training and in accordance with the requirements of the Specialist Diploma, your employer should apply to the Institute for the appointment of a visiting external examiner.

5.2. Accompanying the portfolio should be a signed statement from the laboratory manager testifying to the range of laboratory investigations that you undertake in your own laboratory. This will be used by the external examiner to guide the areas for questioning during the laboratory tour. Please note the external examiner can ask questions on any of the modules in the record of training for the Specialist Portfolio and your portfolio of evidence.

5.3. The external examiner will determine your suitability for the award of the Specialist Diploma by assessing your knowledge and understanding of your specialty through: the oral presentation; the evidence of training you have provided and questions asked during the laboratory tour.

5.4. Your presentations should not be overcomplicated and slides should be kept simple: they are really a prompt to give your talk a structure. You are talking about things you know: how you gained your experience, key aspects of your work, recent developments that may have occurred, or are planned and any particular interests you have. The external examiner may also wish to ask some questions related to the presentation or seek points of clarification.

5.5. Your portfolio of evidence will provide the examiner with an opportunity to assess the quality of your training (e.g. through the questions asked by the trainer) and your understanding of the techniques (e.g. annotated evidence, witness statements, reflective statements).

5.6. During the laboratory tour with *viva voce* the external examiner will not assess your practical competence; this was the responsibility of your trainer. However, they will expect you to be able to demonstrate knowledge and understanding of the practical

aspects underpinning a techniques and corrective action you might take if things go wrong.

It is reasonable for the examiner to ask questions on any aspect covered in the portfolio. A theoretical knowledge is required as a minimum on tests performed outside of the department. Questions may include references to equipment in use, samples that are being processed, investigative techniques being performed, quality control, results and health and safety.

5.7. After this you will be informed of the outcome (Pass or Fail) and verbal feedback will be provided by the examiner. If you have not been successful the examiner will provide more detailed written feedback explaining the reason(s) for this outcome and providing guidance on how to address them. This will be recorded in the examiner's report. A timeline will be agreed by the candidate, training officer and examiner to address any shortfalls. A subsequent full or partial examination will be required and this must be arranged through the IBMS.

6. COMPLETION OF REPORTS AND AWARD

6.1. Check with your trainer that they have submitted the feedback report form to the Institute. Both the external examiner and the laboratory trainer are required to submit reports, and delays in this part of the process will delay the award of your Specialist Diploma.

6.2. Once the reports have been received the Institute will issue your Specialist Diploma. If you are currently in the class of Licentiate you will be eligible to apply to upgrade your membership to become a Member. Upgrading to the next level of membership is not automatic and you are advised to make an application to the Institute as soon as possible in order to access the Institute's higher level qualifications to assist you in furthering your career.

Section 7: Virology

This section covers the range of procedures and diagnostic techniques that have been identified as being most relevant to practice as a specialist biomedical scientist working in virology. Candidates completing these are expected to be able to demonstrate the application of knowledge and skill defined in section 2 of this portfolio.

It is accepted that some of these tests may not be performed in the candidate's own laboratory. Whilst practical skills may not be achievable (for example through secondment to another laboratory) to the level of someone performing them regularly, knowledge and understanding of its application is still required and may be examined.

There may be other tests, outside of those listed in this portfolio, that are part of the training laboratory's basic repertoire in which the individual is required to be competent. These can be recorded in the reflective statement at the end of each sub-section.

Section 7.1 Standard Laboratory Tests
Subsection 7.1a Immunoassays

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles and practice of a range of techniques designed to detect both viral antigens and patients' antibody responses as markers of infection:
   - Immunoassays in various formats and detection systems
   - Immunochromatographic lateral-flow assays in point-of-care testing (POCT)
   - Agglutination techniques
2. Factors affecting sample integrity and appropriate corrective action.
3. Specific risks associated with the reagents or method.
4. Significance of abnormal results.
5. Internal quality control and external quality assessment procedures.

COMPETENCE

Be able to:

a. Describe the principles of various immunoassay techniques and the limitations of each.
b. Perform routine immunoassays in accordance with laboratory procedures.
c. Critically evaluate assay results.
d. Follow up positive results by confirmation.
e. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.1 Standard Laboratory Tests
Subsection 7.1b Molecular techniques

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles and practice of molecular techniques for the following:
   - Viral detection, quantitation and genotypic analysis
   - Antiviral resistance determinants
   - Epidemiological study
2. Principles of nucleic acid extraction.
3. The limitations of the extraction method for a range of sample types.
4. The importance of ultracentrifugation for concentration of nucleic acid.
5. The significance of contamination prevention in nucleic acid extraction.
6. Principles of:
   - Target amplification
   - Polymerase chain reaction (PCR), RT-PCR and kinetic PCR
   - Strand displacement assays (SDA)
   - Nucleic acid sequence-based amplification (NASBA)
   - Kinetic PCR
   - Transcription-mediated amplification (TMA)
   - Probe-primer amplification
   - Ligase chain reaction (LCR)
   - Signal amplification
   - Branched DNA (bDNA)
   - Whole genome sequencing
   - Hybridisation
7. Principles and practice of molecular techniques for detection of viral disease.
8. Recent developments and newly introduced technology being applied to the molecular detection and typing of viruses.
9. Internal quality control and external quality assessment procedures.

COMPETENCE

Be able to:

a. Describe the principles of molecular techniques.
b. Select molecular-based assays for diagnosis, monitoring viral load, viral resistance testing and epidemiological surveillance.
c. Perform a selection of routine molecular techniques in accordance with laboratory procedures.
d. Critically evaluate assay results.
e. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.1 Standard Laboratory Tests
Subsection 7.1c Other diagnostic techniques

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles and practice of immunofluorescence techniques and their application to diagnostic virology.
2. The role the following techniques have played in the development of diagnostic virology services:
   - Cell culture techniques
   - Virus identification in culture
   - Electron microscopy
   - Animal and egg culture
   - Neutralisation assays
   - Immunoblot techniques
   - Electrophoresis and gel diffusion
   - Complement fixation tests
3. Appropriate methods for sample selection and collection.
4. Factors affecting sample integrity and appropriate corrective action.
5. Advantages, disadvantages and the limitations of each technique.
6. The requirements for quality control and audit.
7. How to follow up positive results by confirmation.

COMPETENCE

Be able to:

a. Discuss the principles and practice of immunofluorescence techniques and their application to diagnostic virology.
b. Discuss the role the following techniques have played in the development of diagnostic virology services, and their advantages and limitations compared with other available virus detection methods:
    - Cell culture techniques
    - Virus identification in culture
    - Electron microscopy
    - Animal and egg culture
    - Neutralisation assays
    - Immunoblot techniques
    - Electrophoresis and gel diffusion
    - Complement fixation tests

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required)

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.1 Standard Laboratory Tests
Subsection 7.1d General principles of assay selection

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Predictive values of various assays in different population groups.
2. Current and future trends for assay development in light of service delivery needs.
3. The role of reference laboratories in diagnostic virology services.
4. Policies and regulations for packaging and sending samples to reference centres.
5. How the legislation within the Human Tissue Act affects handling and storage of samples.
6. The importance of statutory and mandatory reporting systems in diagnostic virology.
7. The role of guidelines and standards in assay selection (e.g. Standards for Microbial Investigations [SMIs]; National Institute for Health and care Excellence).

COMPETENCE

Be able to:

a. Discuss positive and negative predictive values for assays using appropriate examples.
b. Discuss validation, verification, acceptance testing and measurement uncertainty.
c. Discuss current and future trends for assay development, including detection at syndromic level, using multiplex systems.
d. Describe the tests which are performed in reference laboratories.
e. Describe correct packaging and transport of samples to other laboratories.
f. Discuss how the Human Tissue Act affects work in diagnostic laboratories.
g. Describe how results are reported within statutory and mandatory systems, and how the data is used.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.1 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.1 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.2 Respiratory Virus Infections

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of potential respiratory viruses that may infect the human respiratory tract, including new and emerging viruses.
2. Common causes of respiratory infection and appropriate investigations that should be used for diagnosis.
3. Principles and limitations of techniques available for the detection of respiratory viruses in samples.
4. Less common causes of respiratory infection and when to consider using appropriate investigations for diagnosis.
5. The cyclical nature of some respiratory viral pathogens and the alert mechanisms used to establish when they should be investigated and which tests to use.
6. Other important potential non-viral respiratory infections (e.g. *Mycoplasma pneumoniae*, *Pneumocystis jiroveci*).
7. Respiratory virus infections that have the potential to cause outbreaks or epidemics, especially those that might be circulating worldwide.
8. Requirements for appropriate samples from patients with potential respiratory virus infections (e.g. nasopharyngeal aspirate (NPA), bronchoalveolar lavage (BAL), sputum, nasal washings, nose and throat swabs, acute and convalescent serum).
9. Procedures involved in the collection of the above sample types and understanding of the optimal time for collection of these samples.
10. Potential therapy that may be available for prophylaxis and treatment of respiratory viral infections (e.g. antivirals, immunoglobulin and vaccines).
11. Patient groups that are at high risk with regard to respiratory virus infections.
12. Infection controls issues and the measures that may be taken with regard to respiratory virus infections in hospital and within the community.

COMPETENCE

Be able to:

a. Describe the causes of respiratory viral infections and relevant investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how respiratory viral pathogens are transmitted and how patients with each of these infections would be managed and treated.
d. Perform techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.2 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.2 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.3 Enteric Virus Infections

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of enteric viruses that may infect humans and important non-viral causes of enteric infections.
2. Common causes of viral enteric infection and which range of investigations should be used for diagnostic testing and screening purposes.
3. Requirements and procedures involved for collection of samples (including optimal time) from patients with potential enteric virus infections (e.g. faeces, rectal swabs and vomit).
4. Potential therapy that may be available for prophylaxis and treatment of enteric viral infections and rationale for use (e.g. antivirals, immunoglobulin and vaccines).
5. Patient groups that are at high risk with regard to enteric virus infections.
6. Infection control issues and measures that may be taken with regard to enteric virus infections in hospital and within the community.
7. The requirement for confirmatory assays and the role of reference laboratories.
8. Internal quality control and external quality assessment procedures.

COMPETENCE

Be able to:

a. Describe the causes of enteric viral infections and relevant investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how enteric viral pathogens are transmitted and how patients with each of these infections would be managed and treated.
d. Perform techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Refer specimens to a specialist centre in accordance with laboratory procedures.
g. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.3 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.3 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.4 Sexually Transmitted Disease

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of sexually transmitted viruses that may infect humans, and importance of infections such as *Treponema Pallidum* and *Chlamydia*.
2. Common and less common causes of sexually transmitted infection and the range of investigations used for diagnostic testing and screening.
3. Internal quality control and external quality assessment procedures.
4. Requirements for samples from patients with potential sexually transmitted infections (e.g. genital tract, rectal swab, urine, and blood), and optimal collection time and requirements relating to patient confidentiality and chain of custody
5. Principles and limitations of diagnostic techniques available for the detection of sexually transmitted infections including the importance of confirmatory assays.
6. Potential therapy that may be available for prophylaxis and treatment of sexually transmitted infections, including antivirals, immunoglobulin and vaccines.
7. Patient groups that are at high risk with regard to sexually transmitted infections.
8. Infection control issues and measures that may be taken with regard to sexually transmitted infections.
9. Potential infection risk to the fetus.
10. The importance of screening programmes and their role in prevention of disease.

COMPETENCE

Be able to:

a. Describe the causes of sexually transmitted infections and investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how sexually transmitted viral pathogens may infect humans and how patients with these infections would be managed and treated.
d. Perform a range of immunological investigative techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Refer specimens to a specialist centre in accordance with laboratory procedures.
g. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.4 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.4 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.5 Infections in Pregnancy (Pre- and Post-Delivery)

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of viruses and non-viral organisms that may pose a risk to the mother and fetus when acquired during pregnancy, and identification of the common viral causes.
2. Techniques available for the detection of viruses, viral antigen and viral antibody for infection in pregnancy for both common and less-common causes.
3. Internal quality control and external quality assessment procedures.
4. Requirements for samples from patients with potential virus infections in pregnancy (e.g. urine, swabs, products of conception, acute and convalescent sera).
5. Procedures involved in the collection of the above sample types and the optimal time for collection of various samples.
6. Potential therapy that may be available for prophylaxis and treatment of viral infections in pregnancy (e.g. antivirals, immunoglobulin and vaccines).
7. Which trimester patients are at highest risk with regard to specific viral infections.
8. The implication of diagnostic test results on the counselling and management of patients from both clinical and patient viewpoints.
9. Antenatal screening programmes and antenatal failsafes.
10. Infection control issues and measures that may be taken with regard to virus infections in pregnancy in hospital and within the community.

COMPETENCE

Be able to:

a. Describe the range of viruses that may cause infection in pregnancy and investigations for diagnosis and screening.
b. Describe the rationale behind why screening is undertaken for certain viruses and not others (e.g. rubella, hepatitis C).
c. Explain factors that should be taken into consideration when selecting an investigation.
d. Describe how viral pathogens may cause infection in pregnancy and how patients with these infections would be managed and treated.
e. Perform techniques in accordance with standard laboratory procedures.
f. Critically evaluate and report results.
g. Refer specimens to a specialist centre in accordance with laboratory procedures.
h. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.5 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.5 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.6 Neurological Disease including Prion Disease

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The main viral causes of acute and chronic neurological disease (e.g. meningitis, encephalitis, encephalopathies and dementia), and how they are transmitted.
2. The most serious non-viral causes of neurological disease.
3. Different mechanisms by which viruses affect the central nervous system (CNS).
4. The difference between encephalitis and meningitis.
5. Principles for investigating possible viral causes for encephalitis and meningitis including:
   - Rabies and lyssavirus
   - Herpes simplex and other herpes viruses
   - Poliovirus
   - Other enteroviruses, mumps and measles
6. Laboratory tests used to diagnose viral neurological disease.
7. Advantages and disadvantages of serological and molecular methods.
8. The requirement for confirmatory assays and the role of reference laboratories.
9. Predictive value of various assays in different population groups.
10. Internal quality control and external quality assessment procedures.
11. Tests other pathology departments must perform on a sample of cerebrospinal fluid.
12. Management and effective treatment for viral causes of neurological disease.
13. Viral causes of neurological disease that can be diagnosed serologically.
14. The significance of paired sera in the diagnosis of neurological disease.
15. Principles and limitations of immunological techniques available for the detection of neurological viral infections in samples.

COMPETENCE

Be able to:

a. Describe the causes of viral neurological disease and investigations for diagnosis.
b. Explain the factors that should be taken into consideration when selecting an investigation.
c. Describe how viral pathogens that can cause neurological disease may infect humans and how patients with these infections would be managed and treated.
d. Describe which results chemistry tests can provide and their significance to a possible viral diagnosis.
e. Perform techniques in accordance with standard laboratory procedures.
f. Critically evaluate and report results.
g. Refer specimens to a specialist centre in accordance with laboratory procedures.
h. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.6 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.6 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.7 Rashes and Systemic Infections including Vesicular and Red Rashes

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Common viral causes of vesicular and red rashes (including varicella zoster virus, rubella, human herpes virus 6) and which panels of tests should be used for diagnostic testing.
2. Less common viral causes of vesicular and red rashes and when to consider using which test.
3. Common and less common viral causes of vesicular and red rashes which may cause systemic infections and when additional diagnostic tests should be used.
4. The cyclical nature of viral pathogens that cause vesicular and red rashes and the alert mechanisms used to establish when they should be investigated and which tests to use.
5. The common and less common non-viral causes of vesicular and red rashes, and which may cause systemic infections.
6. Requirements and procedures involved for collecting samples from patients with potential viral rash and systemic infections (e.g. vesicle fluid, skin scrapings, nose and throat swabs, acute and convalescent sera).
7. Control of infection measures required to prevent laboratory, hospital and community-acquired infection from patients with a vesicular or red rash.
8. First-line treatment considerations used for patients with a vesicular or red rash, or patients with a systemic viral infection preceded by a vesicular or red rash.
9. Principles and limitations of diagnostic techniques available for the detection of viruses and antibodies from patients with rashes or systemic infections.
10. Advantages and disadvantages of the methods.
11. Predictive value of various assays in different population groups.
12. Internal quality control and external quality assessment procedures.
13. The requirement for confirmatory assays and the role of reference laboratories.

COMPETENCE

Be able to:

a. Describe the causes of vesicular, red rash and systemic infections and investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how vesicular, red rash and systemic infections may infect humans, and how patients with these infections would be managed and treated.
d. Perform techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Refer specimens to a specialist centre in accordance with laboratory procedures.
g. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.7 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.7 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.8 Bloodborne Virus Infections

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of bloodborne viruses that may infect humans and important non-viral infections.
2. Common causes of bloodborne virus infection.
3. The range of investigations that should be used for diagnostic testing and screening purposes.
4. Advantages and disadvantages of the methods.
5. The requirement for confirmatory assays and the role of reference laboratories.
6. The predictive value of various assays in different population groups.
7. Internal quality control and external quality assessment procedures.
8. Less common causes of bloodborne virus infection and when to consider using investigations that may be used for diagnostic purposes.
9. Potential therapy that may be available for prophylaxis and treatment of bloodborne viral infections (e.g. antivirals, immunoglobulin and vaccines).
10. Patient groups that are at high risk with regard to bloodborne virus infections.
11. Potential routes of infection by bloodborne viruses that are caused by human intervention.
12. Procedures that are put in place to prevent human-to-human transmission.
13. Infection control issues and measures that may be taken with regard to bloodborne virus infections in hospital and within the community.

COMPETENCE

Be able to:

a. Describe the causes of bloodborne viral infections and investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how bloodborne viral pathogens may infect humans and how patients with these infections would be managed and treated.
d. Describe the routes of transmission of bloodborne viruses that may be caused by human intervention.
e. Perform relevant techniques in accordance with standard laboratory procedures.
f. Critically evaluate and report results.
g. Refer specimens to a specialist centre in accordance with laboratory procedures.
h. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.8 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.8 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.9 Investigation of Viral Hepatitis

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of viruses that may cause liver disease.
2. Other important non-viral infections of the liver.
3. Common causes of viral liver infection and which range of investigations should be used for diagnostic testing and screening purposes.
4. Advantages and disadvantages of the methods.
5. Predictive value of various assays in different population groups.
6. The requirement for confirmatory assays and the role of reference laboratories.
7. Internal quality control and external quality assessment procedures.
8. Less common causes of viral liver infection and when to consider using investigations that may be used for diagnostic purposes.
9. Any potential therapy that may be available for prophylaxis and treatment of viral hepatitis (e.g. antivirals, immunoglobulin and vaccines).
10. Patient groups that are at high risk with regard to viral hepatitis.
11. Infection controls issues and measures that may be taken with regard to viral hepatitis in hospital and within the community.

COMPETENCE

Be able to:

a. Describe the causes of viral hepatitis and investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how viral pathogens in hepatitis may infect humans and how patients with these infections would be managed and treated.
d. Perform relevant techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

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Date of completion:

Trainer's name:

Trainer's signature:

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Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.9 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.9 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.10 Infections in Newborns and Infants

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The range of viruses that need to be ruled out in cases of sudden unexpected death in newborns and infants (e.g. respiratory syncytial virus [RSV], enteroviruses).
2. Other important non-viral infections that have been linked to newborns and infants as a cause of sudden unexpected death in infants (SUDI).
3. Common causes of infection in newborns/infants and which range of investigations should be used for diagnostic purposes.
4. Advantages and disadvantages of the methods.
5. Predictive value of various assays in different population groups.
6. Internal quality control and external quality assessment procedures.
7. The requirement for confirmatory assays and the role of reference laboratories.
8. Less common causes of infection in newborns/infants and when to consider using investigations that may be used for diagnostic purposes.
9. The importance of obtaining a relevant clinical history of the patient and mother if appropriate.
10. Requirements for samples from patients according to the clinical syndrome.
11. The requirement to communicate with other pathology disciplines in the case of SUDI to direct appropriate investigation selection.
12. Potential therapy that may be available for prophylaxis and treatment of these infections (e.g. antivirals, immunoglobulin and vaccines).
13. Infection control issues and measures that may be taken with regard to these infections.
14. Potential infection risk posed to the newborn.
15. Potential use of stored antenatal samples from mother in diagnostic investigations.

COMPETENCE

Be able to:

a. Describe the causes of neonatal and paediatric infections, and investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how neonatal and paediatric viral pathogens may infect humans and how patients with these infections would be managed and treated.
d. Perform relevant techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Refer specimens to a specialist centre in accordance with laboratory procedures.
g. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.10 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.10 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.11 Immunocompromised Patients

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The causes of primary and secondary immunodeficiency, including:
   - Viral
   - Hereditary
   - Physiological
   - Drug induced
2. Range of viruses that may infect immunocompromised patients (e.g. JC, BK virus, herpes viruses).
3. Other important non-viral infections in immunocompromised patients.
4. Common causes of viral infections in immunocompromised patients and which range of investigations should be used for diagnostic testing and screening purposes.
5. Advantages and disadvantages of the methods.
6. Internal quality control and external quality assessment procedures.
7. Requirement for confirmatory assays and the role of reference laboratories.
8. Less common causes of viral infections in immunocompromised patients and when to consider using investigations that may be used for diagnostic purposes.
9. Potential therapy that may be available for prophylaxis and treatment of infections in immunocompromised patients, including antivirals, immunoglobulin and vaccines.
10. Potential infection risk posed to immunocompromised patients, and infection control issues and measures that may be taken with regard to these infections.

COMPETENCE

Be able to:

a. Describe the causes of viral infections in immunocompromised patients and relevant investigations for diagnosis.
b. Explain factors that should be taken into consideration when selecting an investigation.
c. Describe how immunocompromised patients with infections would be managed and treated.
d. Perform techniques in accordance with standard laboratory procedures.
e. Critically evaluate and report results.
f. Refer specimens to a specialist centre in accordance with laboratory procedures.
g. Complete documentation in accordance with quality control and audit requirements.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

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Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.11 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce.*

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.11 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.12 Travel Related and Exotic Infections

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The main causes of viral infections likely to have been acquired in unusual circumstances or outside the UK (e.g. arboviruses, filoviruses, arenaviruses, hantaviruses, rhabdoviridae, enteroviruses).
2. Laboratory diagnosis for each virus listed and whether these are available in a routine diagnostic virology department.
3. Sample types that are appropriate for investigation.
4. Principles and limitations of the techniques, which immunoglobulin class should be assayed and whether paired sera are required.
5. Internal quality control and external quality assessment procedures.
6. Risk factors, patient history and clinical symptoms that would indicate a possible travel related or exotic infection.
7. Information that can be obtained from examination of bites and wounds and how that contributes to diagnosis of travel-related and exotic infections.
8. Groups of virus transmitted via animal bites and arthropod bites.
9. Important bacterial and parasitic causes of serious illness associated with travel and exotic infections.
10. Hazards of laboratory-acquired infection with such viral, bacterial and parasitic pathogens.
11. How arboviruses, filoviruses, arenaviruses, hantaviruses, rhabdoviridae, enteroviruses are transmitted.
12. Control measures that are required to prevent or limit the spread of these viruses.
13. Economic and political factors that affect spread and control of these infections.
14. Management in the UK of a patient suspected of infection with a travel related or exotic infection, particularly highly infectious viruses such as Lassa virus.

COMPETENCE

Be able to:

a. List the major viral causes of travel related and exotic infections.
b. Describe the information that would lead to a suspicion that a patient was infected with these viruses.
c. Name the important bacteria and parasites that could also be implicated in travel related and exotic infections.
d. Describe the procedure for diagnosing infection with these pathogens, including where specimens should be sent for specialised tests and how specimens would be transported to a reference laboratory.
e. Describe how the most dangerous travel-related and exotic viral infections are transmitted.
f. Explain how spread of these infections would be controlled or limited.
g. Give details of the quality assurance procedures that may be used in the serological tests described.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.12 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.12 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.13 Infection Control

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles on which control of infection are based:
   - Removal of sources (e.g. decontamination of equipment)
   - Blocking of routes of spread (e.g. isolation, hand washing etc)
   - Enhancing resistance of patient (e.g. immunisation, prophylaxis)
2. Infection control procedures within the laboratory.
3. Activities of the hospital infection control team (ICT) and where to reference their guidelines.
4. The importance of infection control in the hospital setting.
5. Different infection control methods available to prevent transmission of infection.
6. Production and collation of virology tests and results in order to help epidemiological investigations to support infection control in the hospital.
7. The importance of infection control in the community setting.
8. The role of the Consultant in Communicable Disease Control (CCDC).

COMPETENCE

Be able to:

a. Describe the principles of infection control.
b. Describe the infection control procedures used in the laboratory, hospital and community.
c. Produce and collate virology tests and results for epidemiological investigations to support infection control in the hospital.
d. Describe the roles and responsibilities of the laboratory, ICT and CCDC, and the requirements for mandatory reporting of infections.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.13 Reflective Practice

This section is used to demonstrate that you can relate knowledge from several areas, draw conclusions and reflect on your own performance with regard to current and future practice as an independent professional learner. It is therefore a useful source of information for your CPD profile should you be audited by the Health and Care Professions Council (HCPC).

The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce.*

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.13 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.14 Pre- and Post-Exposure Prophylaxis and Vaccination
Subsection 7.14a Pre- and post-exposure prophylaxis

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles of and strategies for the use of pre-exposure prophylaxis.
2. Biological mechanisms of pre-exposure prophylaxis.
3. Biological mechanisms of post-exposure prophylaxis.

COMPETENCE

Be able to:

a. Describe the main uses of pre- and post-exposure prophylaxis for viral infections.
b. Describe the goals and limitations of pre- and post-exposure prophylaxis for viral infections.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.14 Pre- and Post-Exposure Prophylaxis and Vaccination
Subsection 7.14b Immunisation

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Principles of and strategies for using active immunisation programmes.
2. Biological mechanisms of active and passive immunisation.
3. Vaccination strategies and the principles behind the current UK approach to vaccinating against particular viral infections.
4. International immunisation.
5. Principles of herd immunity.
6. The need for targeted vaccination (e.g. hepatitis B virus in prisons).
7. Vaccinations that are available for healthcare workers, and why.
8. Statutory regulations regarding healthcare workers and vaccination.

COMPETENCE

Be able to:

a. Describe how vaccination is intended to work.
b. Discuss the goals and limitations of active immunisation.
c. Discuss the goals and limitations of passive immunisation.
d. Describe the legal requirements of healthcare worker vaccinations.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required)

Date of completion:

Trainer's name:

Trainer's signature:

Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

Date of completion:

Trainer's name:

Trainer's signature:

One other piece of evidence chosen by the candidate as an example of their competence in this area.

Date of completion:

Trainer's name:

Trainer's signature:

This is to confirm that the knowledge and competence requirements for this section and the requirements in the Evidence of Achievement section have been met.

Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.14 Reflective Practice

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The external examiner will review this reflective report which should cross reference to the evidence contained in the portfolio. This may lead to further discussion during the *viva voce*.

Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.14 Candidate's Reflective Practice Statement Part 2.

The ethos of undertaking reflective practice should be the recognition that it is a naturally occurring characteristic of those wishing to develop. How you complete this section is personal to your own circumstances. It should be approached by recognising you have a responsibility to demonstrate self-awareness when analysing gaps in your knowledge. This is therefore an opportunity to reflect on aspects of training, the application of new knowledge and skills, and how goals have been achieved.

Personal reflection on your training and examples of evidence for this section.

Section 7.15 Antiviral Treatment and Resistance
Subsection 7.15a Antiviral therapy

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. Strategy for the development of antiviral agents.
2. Various processes by which antiviral agents target viruses.
3. Clinical application of the most widely used antiviral agents in areas such as prophylaxis, reactivation, prevention of complications and treatment of acute disease.
4. Clinical application of antiviral agents in long-term therapy of chronic infections and in immunocompromised patients.

COMPETENCE

Be able to:

a. Describe the anti-viral agents that are currently available, and their mode of action.
b. Describe when, where and why antiviral agents are used.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

Candidate has been assessed by the trainer to work in accordance with standard laboratory procedures. (No other evidence is required).

Date of completion:

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Candidate has answered questions set by the trainer on the knowledge and skill components required to complete this module. (Evidence to support this is required).

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Date of completion:

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Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.15 Antiviral Treatment and Resistance
Subsection 7.15b Viral load monitoring

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The importance and relevance of monitoring viral load in some infections.
2. The relevance of emergence of drug-resistant mutants in the treatment of patients on long-term therapy.
3. Principles and practice of techniques available for measuring viral load, including target amplification.
4. Internal quality control and external quality assessment procedures.

COMPETENCE

Be able to:

a. Describe the importance of viral load monitoring.
b. Describe when, where and why viral load monitoring is used.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

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Date of completion:

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Internal Assessor's signature:

Internal Assessor's name:

Date:

Section 7.15 Antiviral Treatment and Resistance
Subsection 7.15c Antiviral resistance testing

KNOWLEDGE

The candidate is expected to be able to demonstrate knowledge and understanding of the following:

1. The relevance of emergence of drug-resistant mutants in the treatment of patients on long-term therapy.
2. Techniques available for resistance testing using molecular sequencing, including gel- and capillary- based and cell culture techniques for genotype and phenotype resistance.
3. Internal quality control and external quality assessment procedures.

COMPETENCE

Be able to:

a. Describe the importance of antiviral resistance testing.
b. Describe the principles and practice of the techniques available for antiviral resistance testing.

EVIDENCE OF ACHIEVEMENT

This section requires the trainer to sign that the candidate has successfully achieved fitness to practice as a biomedical scientist at the specialist level. The candidate is required to present the supporting evidence indicated below as a separate specialist portfolio of evidence.

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Internal Assessor's name:

Date:

Section 7.15 Reflective Practice

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Candidate's Reflective Practice Statement Part 1.

Summarise your role within the laboratory in the context of this section.

Section 7.15 Candidate's Reflective Practice Statement Part 2.

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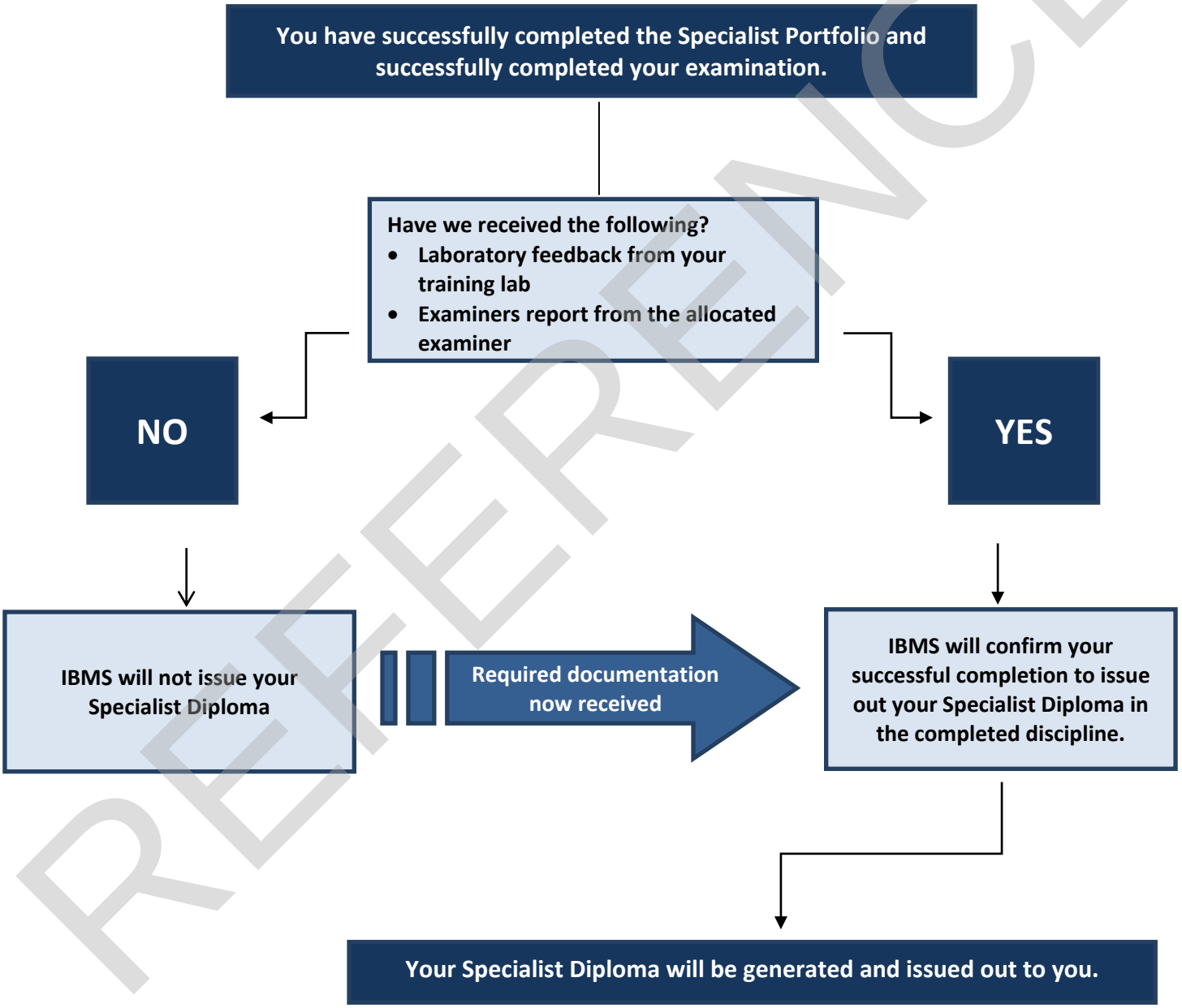
Personal reflection on your training and examples of evidence for this section.

Steps to IBMS Specialist Diploma

What is next: Your Specialist Diploma

Upon successful completion of the Specialist Portfolio, successful candidates are awarded the Specialist Diploma in the discipline(s) completed which will be issued out and sent to your provided address.

Note: The IBMS will also issue your award to your provided address.



About this document

Document title: Record of Laboratory Training for the Specialist Diploma in Virology

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