Health Clearance and Immunisation of staff for Infectious Diseases Policy

Policy Number – IC/306/07

Supersedes: Hepatitis B Immunisation Policy for Staff

<table>
<thead>
<tr>
<th>Owner</th>
<th>Name</th>
<th>Andrew Nicoll</th>
</tr>
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<tr>
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<td>Head of Occupational Health and Safety</td>
<td></td>
</tr>
<tr>
<td>Final approval committee</td>
<td>Name</td>
<td>Corporate Governance Board</td>
</tr>
<tr>
<td>Date of meeting</td>
<td>September 2007</td>
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</tr>
<tr>
<td>Authoriser</td>
<td>Name</td>
<td>Yvonne Coventry</td>
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<td>HR Director</td>
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<tr>
<td>Signature</td>
<td></td>
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<tr>
<td>Date of authorisation</td>
<td></td>
<td></td>
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<tr>
<td>Review date</td>
<td>(maximum 3 years from date of authorisation)</td>
<td>September 2010</td>
</tr>
<tr>
<td>Audience</td>
<td>(tick all that apply)</td>
<td>Trust staff✓ NHS General public</td>
</tr>
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<td>Standards for Better Health</td>
<td>C3, C4, D2, C10, D13</td>
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<td>NHSLA</td>
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Summary
This purpose of this policy is to outline the health clearance requirements for new staff and also the screening tests and immunisations that will be offered to new staff.

The policy identifies the immunisations required by all staff

This policy applies to all staff employed by Basingstoke and North Hampshire NHS Foundation Trust
Implementation Plan

New Staff
It is planned to implement the policy with regards to new staff as soon as the policy has been has been approved.

Existing Staff
As soon as the policy has been approved the occupational health department will begin a programme of reviewing the immunisation status of all staff and where necessary arranging for testing and vaccination of staff to ensure compliance with the policy. It is anticipated that full compliance will be achieved within three years.

Summary of changes
The main changes from current practices are as follows:

1. New staff who will perform exposure-prone procedures (EPPs) will require additional health clearance to include tests to ensure that they are;
   - non-infectious for HIV (antibody negative)
   - non infectious for hepatitis B (surface antigen negative or, if positive, e-antigen negative with a viral load of $10^3$ genome equivalents/ml or less), and
   - non infectious for hepatitis C (antibody negative or, if positive, negative for hepatitis C RNA)

2. These checks should be completed before confirmation of an appointment to an EPP post, as the healthcare worker will be ineligible if found to be infectious.

3. The criteria for what is considered as acceptable evidence of proof of immunity has been clarified e.g. photocopies of documents will no longer be accepted as proof of immunity

4. All new healthcare workers will be offered testing for HIV and Hepatitis C.

5. All staff with regular patient contact will be screened for varicella zoster and vaccinated if found to be susceptible.

6. All staff will be screened for measles, and rubella and vaccinated if found to be susceptible.

7. The main changes for existing staff are the additional requirement for screening and vaccination against varicella zoster and measles, mumps and rubella. Whilst the majority of staff will be aware of their history of chickenpox very few will be able to provide documented evidence of immunity to measles, mumps and rubella and will require testing and possibly vaccination.

Due to the numbers of staff involved and the limited resources of the Occupational Health Department, it is planned that the updating of existing staff immunisation and vaccination will take place over the next 36 months.
Action needed and owner of action
All new staff will be affected as they will require additional screening and vaccinations. Some existing staff may require additional screening and vaccination.

Pathology
Additional screening tests will be required. The cost of undertaking the additional screening tests will depend on the number of new staff who are able to demonstrate immunity.

It is anticipated that the number of staff who are able to demonstrate immunity to rubella and measles will initially be low and therefore most new staff will require testing. The majority of new recruits should be aware of their Varicella status and therefore only around 25% of new recruits will require testing, of those that do require testing the majority will be immune to varicella and less than 10% of new staff will require vaccination. It is estimated that the number of new recruits who will take up the offer of testing for HIV and Hepatitis C will be around 10%. As the new guidance is adopted by NHS Trusts across the country then most staff moving from within the NHS will be able to demonstrate immunity and the number of tests required will reduce.

Occupational Health Department
All Occupational Health Department staff will be affected as the new policy will require staff to undertake additional screening and the administration of additional vaccines.

Some further training of OH staff may be required in order to ensure that they are able to perform the additional screening tests and are able to administer the additional vaccines, it is anticipated that any additional training required can be self directed or delivered from within the Trust.

It is believed that there are sufficient resources within the department to be able to undertake this additional work for new staff. The occupational health department has sufficient resources to undertake a planned programme over the next three years to ensure that all existing staff meets the requirements of the new policy.

Funding will need to allocated to meet the cost to the additional vaccines and screening tests.
Cost of Additional Vaccines
Measles, Mumps and Rubella

MMR vaccine is supplied by healthcare logistics as part of the national immunisation programme without any additional cost to the trust.

Varicella

The cost of vaccinating against Varicella Zoster is approximately £60 per course. 90% of adults raised in the UK are immune and therefore only 10% of new recruits will require vaccination. The incidence of varicella is much lower in some countries and therefore consideration will need to be given to the additional cost of vaccination if recruiting staff from overseas. For existing staff then up to 10% of staff may require vaccination; however if it is planned to complete this over the next three years then this could cost up to an additional £4980 per year.

Assuming a 15% turnover of staff the cost of additional varicella vaccines will be £2,340 per annum. As this guidance is adopted across the NHS then it is likely that the cost will diminish as increasing numbers of staff recruited will already have evidence of immunity. No additional money was made available by the department of health when this guidance was first published as it was anticipated that the introduction of this policy would have an overall cost neutral impact on Trusts.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Estimated additional number of vaccine required</th>
<th>Cost of vaccine</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varicella</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Existing Staff</td>
<td>83</td>
<td>£60</td>
<td>£4980.00</td>
</tr>
<tr>
<td>New Staff</td>
<td>40</td>
<td>£60</td>
<td>£2400.00</td>
</tr>
<tr>
<td>MMR</td>
<td>1200</td>
<td>nil</td>
<td>£0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>£7380.00</strong></td>
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Cost of Additional Screening Tests – New Staff

Assuming a 15% turnover of staff then the cost of additional vaccines has been estimated as follows:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Estimated additional number of test required</th>
<th>Cost per test</th>
<th>Cost</th>
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<tr>
<td>HIV</td>
<td>40</td>
<td>£4.42</td>
<td>£176.80</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>40</td>
<td>£9.37</td>
<td>£374.80</td>
</tr>
<tr>
<td>Varicella Zoster</td>
<td>100</td>
<td>£8.23</td>
<td>£823.00</td>
</tr>
<tr>
<td>Measles</td>
<td>350</td>
<td>£10.00</td>
<td>£3500.00</td>
</tr>
<tr>
<td>Rubella</td>
<td>350</td>
<td>£2.45</td>
<td>£857.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>£5732.10</strong></td>
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Currently the tests for measles are undertaken outside of the Trust. Investigations are underway to see if the tests can be undertaken within the Trust and this should significantly reduce the cost.
Cost of Additional Screening Tests - Existing staff

The changes in the guidelines for the immunisation of staff now recommend that staff should have evidence of immunity to varicella zoster (VZ) and measles, mumps and rubella. It is expected that whilst most staff will be able to provide a satisfactory history of having VZ (chickenpox) very few will be able to provide documented evidence of immunity to rubella and measles and will therefore require testing. It is planned that over the next three years the occupational health department will ensure that all staff comply with the guidelines. It is estimated that this will require the following additional tests to be undertaken on existing staff each year.

<table>
<thead>
<tr>
<th>Test type</th>
<th>Estimated additional test required each year</th>
<th>Cost per test</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Varicella Zoster</td>
<td>125</td>
<td>£8.23</td>
<td>£1028.75</td>
</tr>
<tr>
<td>Measles</td>
<td>400</td>
<td>£10.00</td>
<td>£4000.00</td>
</tr>
<tr>
<td>Rubella</td>
<td>400</td>
<td>£2.45</td>
<td>£980.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>£6,008.75</td>
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Audit and monitoring:

Standards:
- All staff will be screened prior to commencing employment; all staff will be offered an appointment with Occupational health to ensure that they have the required vaccinations within two weeks of commencing employment.
- All staff are aware of this policy and adhere to it

Method of monitoring:
- Audit of new staff recruited to ensure that all staff are screened.
- Audit of staff OH records to ensure that all staff have been offered vaccinations in line with policy.
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1. Introduction
Any disease that is transmissible from person to person poses a risk to both healthcare professionals and their patients. Healthcare workers have a duty of care towards their patients which includes taking reasonable precaution to protect them from communicable disease. Many of these diseases are vaccine preventable and therefore when appropriate to do so healthcare workers should be vaccinated.

In March 2007 the Department of Health published guidance on the requirements for health clearance for Tuberculosis, Hepatitis B, Hepatitis C and HIV for new healthcare workers.

This policy identifies how the requirements of this guidance will be implemented within Basingstoke and North Hampshire NHS Foundation Trust (the Trust). The policy also encompasses the requirements of earlier guidance issued by the Department of Health and identifies how the guidance on other infectious disease will be implemented within the Trust.

2. Purpose
The primary purpose of this policy is to outline the arrangements for the screening and vaccination of staff in order to:

- Protect the individual and their family from an occupationally acquired infection;
- Protect patients and service users, including vulnerable patients who may not respond well to their own immunisation;
- Protect other healthcare and laboratory staff; and,
- Allow for the efficient running of services without disruption.

3. Policy Statement
- All employees and workers will be screened on appointment and should not commence their duties until they have been cleared as fit to do so by the Occupational Health Department.

- All new employees and workers will be cleared to a level appropriate to the risk to themselves or patients.

- All employees and workers will be offered vaccination appropriate to the work that they are expected to undertake.

- For all health care workers whose post or training requires performance of EPPs, appointment should be conditional on satisfactory completion of standard and additional health clearance checks as required.

- New health care staff who will perform EPPs will require additional health checks to establish that they are not chronically infected with Hepatitis B, Hepatitis C, or HIV.
4. Categories of Health Clearance
The level of clearance required by staff working in the Trust will be determined by the risk to them and to patients from the work that they do.

Health clearance for staff and the immunisations that they are offered will depend on the risk associated with the work that they undertake. Additional clearance may be required for staff employed whose work exposes them to additional risks (e.g. laboratory workers) or whose work could place others at increased risk (e.g. catering staff)

All staff regardless of the work that they do will be cleared by Occupational Health prior to employment to ensure that they do not pose a risk to others.

4.1 Standard health clearance
Standard health clearance is required for all categories of new healthcare worker employed or starting training (including students) in a clinical care setting, either for the first time or returning to work in the NHS

Those staff whose work will expose them to blood and body fluids will be offered additional immunisation in order to protect them from blood borne viruses.

4.2 Additional clearance required for staff undertaking EPP
Healthcare workers moving into training or posts involving EPPs for the first time will be treated as ‘new’, and additional health clearance is required. This will include, for instance, junior doctors entering surgical or other specialties involving EPPs, qualified nurses wishing to train as midwives and post-registration nurses moving into work in operating theatres and accident and emergency for the first time.

4.3 Health clearance for staff not directly employed by the Trust
Clinical students, agency and locum staff and contract ancillary workers who have contact with patients or clinical materials should be screened to the same standard as new employees in healthcare environments, according to the standards set out below. Documentary evidence of screening to this standard should be sought from locum agencies and contractors who carry out their own screening.

4.4 Health clearance for staff from outside of the UK and applying for work with the Trust
All health care workers who are applying for employment from outside of the UK will need to have standard clearance for serious communicable diseases (i.e. in relation to TB and hepatitis B). Where their employment involves, or may involve, the performance of EPPs, they will require additional health care checks for serious communicable disease (i.e. in relation to Hepatitis C and HIV). Where possible these health care checks should be carried out in their own country before the post is taken up. It should be made clear to applicants that all offers of employment will be conditional upon satisfactory health clearance.
5. Standard health checks for new employees
These must be conducted on appointment and must be completed before or as soon as possible after clinical duties commence.

5.1 Screening Tests
5.1.1 Tuberculosis (TB)
All new employees will be screened to ensure that they do not have signs or symptoms of TB.

All new employees who will have contact with patients or clinical specimens will be screened to ensure that

- they do not have signs or symptoms of TB.
- they have evidence of immunity to TB.

New employees who will have contact with patients or clinical specimens and cannot provide evidence of immunity to TB will be offered BCG immunisation.

All screening will be undertaken in accordance with the NICE guidelines on Tuberculosis.

5.1.2 Hepatitis C
All healthcare workers who have direct patient contact will be offered a pre-test discussion and hepatitis C antibody test (and, if positive, hepatitis C RNA test). A positive test, or declining a test for hepatitis C, will not affect the employment or training of healthcare workers who will not perform EPPs.

5.1.3 HIV
All healthcare workers who have direct patient contact will be offered an HIV antibody test with appropriate pre-test discussion. A positive test, or declining a test for HIV, will not affect the employment or training of healthcare workers who will not perform EPPs.

NOTE: The current guidance from the DH recommends that all health care workers who are new to the NHS should be offered a pre test discussion and hepatitis C and HIV antibody test. For the sake of clarity and in order to avoid any confusion over whether a member of staff is or is not new to the NHS it is the policy of this Trust that all new staff are offered pre test discussion and Hepatitis C and HIV antibody test.

5.2 Immunisations
In addition to undertaking health screening all staff will be offered immunisation on commencement appropriate to the risks posed to them from their work. Refusal to submit for an immunisation will not prevent employment, but may restrict the work that an individual can undertake. Where necessary suitable alternative employment will be sought for employees who refuse immunisation.

5.2.1 Hepatitis B
All healthcare workers who have direct contact with blood, blood stained body fluids or patients’ tissues will be offered immunisation against Hepatitis B and tests to check their response to immunisation, including investigation of non-response.
5.2.2 Tetanus, Diphtheria and Polio
All staff should be up to date with their routine tetanus, diphtheria and polio immunisations.

5.2.3 Measles, Mumps and Rubella
All staff must be immune to measles and rubella in order to assist in protecting patients. Satisfactory evidence of protection would include documentation of having received two doses of MMR or having had positive antibody tests for measles and rubella.

5.2.4 Influenza
Influenza vaccine will be offered on an annual basis to all healthcare workers directly involved in patient care.

5.2.5 Varicella (Chickenpox)
Varicella vaccine is recommended for all staff who are susceptible and who have regular patient contact. Those staff with a definite history of chicken pox or shingles can be considered protected. Healthcare workers with a negative or uncertain history of chickenpox or shingles will be serologically tested and vaccine administered to those without varicella zoster antibody.

6. Additional health checks health care workers performing EPPs

6.1 Hepatitis B
All staff currently employed in the NHS whose jobs involve 'exposure prone procedures' should now have been immunised against Hepatitis B.

Staff who are new to the Trust, but who are currently working in the NHS must be able to produce evidence of immunity to Hepatitis B. Where they are not able to produce evidence of immunity to Hepatitis B then they must produce evidence of a negative test for HBsAg within the last 12 months.

Laboratory results can only be accepted from an accredited laboratory that is experienced in performing the necessary tests and which participates in appropriate external quality assurance schemes. The laboratory report must be an original and contain the following information:

- Full name (first name and family name)
- Date of Birth
- Date of blood test
- A clearly indicated result
- Name of laboratory
- The laboratory result must be from a validated, identified sample and this should be stamped and signed.

Alternatively a report from an NHS Occupational Health Department or Occupational Health Smart Card will be acceptable provided that it indicates that the result was from a validated, identified sample and is stamped and signed.

New employees who are not able to produce the above will then be required to:
• be tested for Hepatitis B surface antigen (HBsAg), which indicates current Hepatitis B infection;
• if negative for HBsAg, be immunised (unless they have already received a course of vaccine) and have their response checked (anti-HBs). Where there is evidence that a healthcare worker, who is known to have had previous Hepatitis B infection which has cleared, now has natural immunity, immunisation is not necessary, but the advice of a local virologist or clinical microbiologist should be sought;
• if positive for HBsAg, be tested for Hepatitis B e-markers. If they are e-antigen (HBeAg) positive, they should not be allowed to perform EPPs. If they are HBeAg negative, they should have their Hepatitis B viral load (HBV DNA) tested. If the HBV DNA is greater than 10³ genome equivalents/ml, they should not be allowed to perform EPPs.

HBV DNA testing should be carried out in designated laboratories

Healthcare workers for whom Hepatitis B vaccination is contra-indicated, who decline vaccination or who are non-responders to the vaccine must be restricted from performing EPPs unless shown to be non-infectious. They must submit to annual re-testing to ensure that they remain non-infectious.

There are no restrictions on the working practices of Hepatitis B-infected healthcare workers who have HBV DNA at or below 10³ genome equivalents/ml, subject to annual measurement of their HBV DNA.

Hepatitis B infected healthcare workers who are e-antigen negative and have relatively low HBV DNA may perform EPPs, whilst taking continuous antiviral therapy that suppresses their HBV DNA to 10³ genome equivalents/ml or below. This is subject to regular monitoring by a consultant occupational physician.

Where necessary the consultant occupational physician will refer to an appropriate specialist for investigations and treatment prior to giving clearance for employees to undertake EPPs.

6.2 Hepatitis C
In August 2002 guidance was published by the Department of Health recommending that all staff undertaking EPP for the first time should be screened for Hepatitis C antibody. Any new employee who commenced training or posts involving EPPs for the first time after this date should have been have been tested for Hepatitis C.

Staff who are new to the Trust, but who are currently working in the NHS and who commenced training or posts involving EPPs for the first time after August 2002 must be able to produce satisfactory evidence that they have been tested for Hepatitis C and are negative to Hepatitis C antibody.

If they are not able to produce satisfactory evidence of a previous negative test then they will be tested for Hepatitis C antibody.

Those who are positive will be tested for Hepatitis C RNA to detect the presence of current infection.

Those who are Hepatitis C RNA positive should not be allowed to perform EPPs.
7. Additional health checks for EPP health care workers performing EPPs for the first time or who are new to the NHS

Healthcare workers moving into training or posts involving EPPs for the first time will be treated as ‘new’, and additional health clearance is required. This will include, for instance, senior house officers (or equivalent training grade under the Modernising Medical Careers initiative) entering surgical or other specialties involving EPPs, qualified nurses wishing to train as midwives and post-registration nurses moving into work in operating theatres and accident and emergency for the first time. This includes the following categories of staff:

- Health care workers who are returning to work in the NHS and who will be performing EPPs and who may have been exposed to serious communicable disease during their absence
- All staff new to the NHS who will perform EPPs regardless of career stage

All blood tests required for clearance for performing EPPs must be derived from an identified, validated sample (IVS)

7.1 Hepatitis B

New healthcare workers who will perform EPPs should:

- be tested for Hepatitis B surface antigen (HBsAg), which indicates current Hepatitis B infection;
- if negative for HBsAg, be immunised (unless they have already received a course of vaccine) and have their response checked (anti-HBs). Where there is evidence that a healthcare worker, who is known to have had previous Hepatitis B infection which has cleared, now has natural immunity, immunisation is not necessary, but the advice of a local virologist or clinical microbiologist should be sought;
- if positive for HBsAg, be tested for Hepatitis B e-markers. If they are e-antigen (HBeAg) positive, they should not be allowed to perform EPPs. If they are HBeAg negative, they should have their Hepatitis B viral load (HBV DNA) tested. If the HBV DNA is greater than $10^3$ genome equivalents/ml, they should not be allowed to perform EPPs.

HBV DNA testing should be carried out in designated laboratories

Healthcare workers for whom Hepatitis B vaccination is contra-indicated, who decline vaccination or who are non-responders to vaccine must be restricted from performing EPPs unless shown to be non-infectious. They must submit to annual re-testing to ensure that they remain non–infectious.

There are no restrictions on the working practices of Hepatitis B-infected healthcare workers who have HBV DNA at or below $10^3$ genome equivalents/ml, subject to annual measurement of their HBV DNA.

Hepatitis B infected healthcare workers who are e-antigen negative and have relatively low HBV DNA may perform EPPs, whilst taking continuous antiviral therapy that suppresses their HBV DNA to $10^3$ genome equivalents/ml or below. This is subject to regular monitoring by a consultant occupational physician.

7.2 Hepatitis C

All healthcare workers who will perform EPPs will be tested for Hepatitis C antibody. Those who are positive will be tested for Hepatitis C RNA to detect the presence of current infection. Qualitative testing for Hepatitis C virus RNA will be carried out in
accredited laboratories that are experienced in performing such tests and which participate in external quality assurance schemes. Those who are Hepatitis C RNA positive should not be allowed to perform EPPs.

Occupational Health will, with the patients consent, for those who are Hepatitis C RNA positive arrange for specialist counselling, treatment and follow-up.

Guidance on Hepatitis C-infected healthcare workers is contained in Health Service Circular HSC 2002/01020 and *Hepatitis C infected healthcare workers*.

### 7.3 HIV

Healthcare workers who will perform EPPs should be tested for HIV antibody. Those who are HIV antibody positive must not be allowed to perform EPPs.

Occupational Health will, with the patients consent, arrange for those who are HIV antibody positive to be referred to Genitourinary Medicine for counselling, treatment and follow-up.


### 7.4 Additional health checks for other groups of staff

There will be many other members of staff who are exposed to hazards in addition to those already identified, i.e. estates staff, laboratory staff. Where this is the case then a risk assessment will be undertaken and where it is identified as appropriate additional screening tests or immunisations undertaken.

### 8. Responsibilities

A number of individuals have responsibilities for ensuring the effective implementation of this policy and procedure. Their respective responsibilities are detailed below.

#### 8.1 Chief Executive

- To ensure that arrangements are in place to provide pre-employment standard health care checks for all new health care workers to include:
  - checks for TB disease/immunity
  - the offer of Hepatitis B immunisation with the post immunisation testing of response
  - the offer of testing for Hepatitis C and HIV,

- To ensure that additional health care checks for all new healthcare workers who will perform EPPs are undertaken prior to commencement of duties

- To ensure that suitable arrangements are in place for staff to be immunised to protect them from occupational acquired disease.

#### 8.2 Head of Occupational Health and Safety

- To ensure that the current Trust policy and practice for health screening and immunisation of staff is in line with best practice and guidance
To identify any areas of practice where improvements are required and to advise on the action required in order to ensure compliance.

To monitor the compliance of the policy within the Trust and to highlight any areas that require improvement.

To ensure that there are suitable arrangements for health clearance and immunisation of new staff.

8.3 Occupational Health Staff

- To undertake health screening in accordance with current guidance.
- To issue health clearance certificates promptly to managers indicating whether a member of staff is cleared to undertake EPPs and the time scale for any further testing required.
- Maintain the confidentiality of employee health information in accordance with their professional codes of conduct.
- To advise staff of the immunisation requirements and to administer the vaccine in accordance with current best practice.
- To remind all new staff of their professionally responsibilities and their duty of care to patients and that if they believe that they may have undertaken an activity that would have placed them at risk of a blood borne disease to ensure that they are tested.
- Remind staff of the signs and symptoms of TB and other potentially infectious diseases and how to report such symptoms.
- To inform staff of the results of any of their tests and the implication for their own health and with the patients consent arrange referral for specialist assessment and/or inform their General Practitioner.

8.4 HRM Operations Department

- To ensure that no staff commence employment until they have been cleared to do so by Occupational Health.
- To inform Occupational Health of all new recruits.
- To advise Occupational Health of any recruits whose role will require them to undertake EPPs.

8.5 Line Managers

To ensure that:

- All staff have been cleared fit by Occupational Health before allowing them to commence work.
- Any temporary staff employed have been cleared to the same standard as applied to Trust employees.
- The HR Recruitment Team is advised of all posts that will require staff to be cleared for EPP.
- No healthcare worker is allowed to undertake any EPP unless they have been cleared as fit to so by Occupational Health.
- Staff are not knowingly exposed to the vaccine preventable disease unless they have received the appropriate immunisation.

8.6 All Employees

- All employees have a duty of care to patients. Any healthcare worker who may have been exposed to a serious communicable disease, in whatever circumstances, must seek and follow confidential professional advice (e.g. from occupational health) about whether to undergo testing.
• All employees should inform their line manager if they have not been vaccinated against or are not immune to any of the vaccine preventable diseases for which they would routinely have been offered vaccination.
• All employees must report any signs or symptoms of TB or other potentially infectious disease to Occupational Health

9. Definitions

9.1 Exposure Prone Procedures (EPPs)  
EPPs are those invasive procedures where there is a risk that injury to the worker may result in exposure of the patient’s open tissues to the blood of the worker. These include procedures where the worker’s gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (e.g. spicules of bone or teeth) inside a patient’s open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times. Such procedures occur mainly in surgery, obstetrics and gynaecology, dentistry and some aspects of midwifery. Most nursing duties do not involve EPPs; exceptions include accident and emergency and theatre nursing.

9.2 Identified Validated Sample  
An IVS is defined according to the following criteria:

• the healthcare worker has shown proof of identity with a photograph – e.g. NHS trust identity badge, new driver’s licence, some credit cards, passport or national identity card – when the sample is taken.
• The sample of blood should be taken in the occupational health department.
• Samples should be delivered to the laboratory in the usual manner, not transported by the healthcare worker.
• When results are received from the laboratory, the clinical notes should be checked for a record that the sample was sent by the occupational health department at the relevant time.
10. References

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11. Contributors

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Dr. A. K. Dasgupta, Consultant Occupational Health Physician
# Summary of Screening Tests and Immunisations for New Staff

<table>
<thead>
<tr>
<th>Screening Tests</th>
<th>Immunisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>Hepatitis B</td>
</tr>
<tr>
<td>All new staff</td>
<td>✓</td>
</tr>
<tr>
<td>Staff with regular patient contact</td>
<td>✓</td>
</tr>
<tr>
<td>Staff with direct patient care</td>
<td>✓</td>
</tr>
<tr>
<td>Staff exposed to blood and body fluids</td>
<td>✓</td>
</tr>
<tr>
<td>Staff undertaking EPP</td>
<td>✓</td>
</tr>
<tr>
<td>Staff Undertaking EPP for the first time</td>
<td>✓</td>
</tr>
</tbody>
</table>
NICE GUIDELINES:
Screening New Employees for TB

Pre-employment questionnaire

New entrant?

Yes

Chest X-ray

No

Suspicious symptoms?

Yes

Medical assessment, chest X-ray

No

Normal?

Yes

Working with patients or clinical materials?

No

Prior BCG (scar or documented)?

Yes

Mantoux/interferon-gamma test, unless performed in past 5 years

No

Mantoux or interferon-gamma test positive?

Yes

Medical assessment

No

Suspicous symptoms or circumstances?

Yes

Chest X-ray normal?

No

TB clinic

Record refusals

Offer BCG

TB clinic

No action

Risk assessment

Inform and advise’, consider treatment for latent TB infection

TB clinic

Notify occupational health

Appendix B

a New entrants are people arriving in or returning to the UK from a high-incidence country (more than 40 cases per 100,000 per year, as listed by the Health Protection Agency; go to www.hpa.org.uk and search for ‘WHO country data TB’)

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Immunisation Schedule for Hepatitis B

1. Immunise with standard course if possible at 0, 1 and 6 months

2. Check surface antibody at 1-4 months after course

   a. Surface antibody <10 mIU/ml = non response
      - Check for markers of past current or past infection if not done
      - If negative re-immunise with repeat course recheck level 1-4 months after
      - If still < 10mIU/ml non-responder, will require counselling and immunoglobulin (HBIG) if exposed
      - If undertaking EPP will require annual testing for HBsAg

   b. Surface antibody level 10-100 mIU/ml
      - Give an additional dose of the vaccine - no need to check antibody level after
      - Give booster at 5 years
      - No need to check antibody level before or after booster

   c. Surface antibody level >100mIU/ml
      - Give booster at 5 years
      - No need to check antibody level before or after booster
EXPLANATORY NOTE
PROTECTIVE IMMUNISATION AGAINST CHICKEN POX

1. Live vaccines should not be administered to pregnant women particularly early in pregnancy, because of possible harm to the foetus. However, where there is a significant risk of exposure to such serious conditions as poliomyelitis or yellow fever the importance of vaccination may outweigh the possible risk to the foetus.

2. An interval of at least three weeks should be allowed between the administration of any two live vaccines. If this is not possible they should be given simultaneously at different sites rather than a few days apart when there may be immunological interference.

3. Live vaccines should not be administered to patients receiving corticosteroid or immunosuppressive treatment including general radiation, or to those suffering from malignant conditions such as lymphoma, leukaemia, Hodgkin’s disease or other tumours of the reticulo-endothelial system or where the normal immunological mechanism may be impaired such as in hypogammaglobulinaemia.

4. Pregnancy is an absolute contra-indication and must be avoided between vaccinations and for three months after vaccination. It should not be given to persons known to be hypersensitive to neomycin or any other components of the vaccine. Anyone suffering from an illness that weakens the immune system or receiving a treatment, which could weaken the immune system should not be given it either.

5. Aspirin or aspirin based products should be avoided between doses of the vaccination and for six weeks following it, due to the possibility of Reye’s Syndrome reported in people with Chicken pox who have taken aspirin.

6. Staff should avoid contact with pregnant women for a month and report to Occupational Health if they develop a rash after being vaccinated.
CONSENT FORM

VACCINATION AGAINST CHICKEN POX

I ..................................................................................................................DOB ....................

hereby consent to being vaccinated against Chicken Pox (Varicella).

I have read and understand the explanatory note provided. The OH Adviser has explained the nature and purpose of the vaccination to me and invited me to ask any further questions. I fully understand that it is important that I do not become pregnant for three months after receiving the vaccination. I am also aware of the need to report to Occupational Health if I develop a rash after vaccination.

Date ................................................ (Signed) ........................................

I confirm that I have explained the nature and purpose of this procedure.

Date ..................................................(Signed) ........................................

Occupational Health Nurse Advisor
Further Information about Varicella (Chickenpox) Vaccine for Health Professionals

Chickenpox, also known as varicella, is a highly infectious disease caused by the varicella zoster virus. The first sign of illness is usually a rash that looks like small blisters and is very itchy. The blisters can be found all over the body, on the face and scalp. The virus is spread easily through the air by infected people when they cough or sneeze. The disease also spreads through contact with an infected person's chickenpox blisters, either by direct contact with a person's blisters or clothing that has touched the blisters or though the air. When somebody has had chickenpox, the virus often stays in the nerve cells near the spinal cord and may be reactivated at any time in that person's life causing shingles. It is not always known what causes it to reactivate but it may be due to conditions that affect immunity such as immunosuppressive diseases or old age.

Q1 Why should I have the chickenpox vaccine?

Chickenpox vaccine is recommended for unprotected healthcare workers who have direct contact with patients and who work in general practice or in hospitals. This is because

- if you have not previously had chickenpox, you are at risk of catching the infection from patients and
- it will prevent you passing on chickenpox infection to vulnerable patients if you do become infected.

Chickenpox infection in adults is more serious than it is in children. It is more likely to cause pneumonia and infection of the brain. Catching chickenpox when you are pregnant can not only make you very sick but can also cause problems for the developing foetus or newborn infant. Some patients with certain conditions that lower their resistance to infection are also far more likely to develop serious illness and complications if they catch chickenpox infection. Having the chickenpox vaccine will protect both you and the patients you come into contact with from a potentially very serious disease.

Q2 Do I need the vaccine if I have already had chickenpox or shingles?

If you have already had chickenpox or shingles, you do not need to be immunised.

If you do not know or are unsure whether you have had either of these, you should have a blood test to check if you have antibodies to the varicella zoster virus. Your occupational health department will be able to arrange for you to have this blood test. Studies have shown that about 90% of adults are already immune to chickenpox despite being unable to remember having had the infection. This is because it is possible to have chickenpox infection without developing the
characteristic fluid-filled blister rash. However, if you receive the vaccine and you have previously had chickenpox, it will not cause you any harm as the vaccine is live.

Q3 How many doses of vaccine do I need?

The recommended schedule is two doses of chickenpox vaccine 4-8 weeks apart.

Q4 What adverse reactions might be seen after chickenpox vaccine?

On the whole, the vaccine is well tolerated and the most commonly reported reaction after vaccination is soreness and swelling at the site of the injection. About 10% of adults may also experience a fever or chickenpox-like rash around the site of the injection or, less frequently, a generalised rash all over the body in the first month after immunisation. If you develop a rash, you need to go to your Occupational Health Department to have a swab taken from the rash and to discuss whether you can continue working or not.

Q5 Can the vaccine cause chickenpox or shingles?

Because the vaccine is made from a live, but weakened virus it is possible to develop mild symptoms of the disease. You may experience a chickenpox-like rash around the site of the injection or a more generalised rash in the first month after immunisation.

Chickenpox vaccine can very rarely cause shingles (12 out of 9,543 people vaccinated in clinical studies) but the risk of getting shingles from the naturally occurring wild virus is higher. Where shingles infection has occurred following vaccination, the symptoms were mild.

Q6 Am I infectious if I develop a rash after having chickenpox vaccine?

People who develop a chickenpox rash after immunisation may very rarely, pass on the virus to other people. The risk of passing on the vaccine virus is not as high as the chance of passing the virus on from natural chickenpox infection. If you do develop a chickenpox rash after immunisation, you should go to your occupational health department for the rash to be checked and swabbed. The swab will show whether the rash has been caused by the virus in the vaccine or by the naturally occurring wild chickenpox virus (which you may coincidently have caught just before you were vaccinated). If the rash is found to be associated with the vaccine and the area cannot be covered, contact with patients should be avoided until all the blisters have crusted over as you are likely to be infectious. This is particularly important if you are caring for immunocompromised patients. Other live vaccines such as MMR and BCG can be safely given to staff who work with immunocompromised people without having to cover the site of injection as individuals given these vaccines do not shed the measles, mumps and rubella viruses. Contact with the site of a recently BCG-vaccinated individual does not cause tuberculosis.
Q7 Can I continue to go to work after I have received this vaccine?
You can return to work after you have received the chickenpox vaccine. However, if you develop a rash as described above – either at the vaccination site or all over your body – you should go to your Occupational Health Department who will advise whether you should still continue to work.

Q8 How is the vaccine made and what does it contain?

Chickenpox vaccine is made from a live, but weakened varicella zoster virus. The weakened virus is grown in the human diploid cell line MRC-5 before being extensively purified, removing all traces of the cells. The virus is then dried to a powder before being suspended in a solution containing sucrose, phosphate, glutamate and gelatin as stabilisers.

Q9 Does the vaccine contain porcine material?
Yes. The gelatin used as a stabiliser in chickenpox vaccine is porcine derived. This should not be a barrier to any individual having the vaccine. For statements on the Islamic and Jewish laws on the use of porcine materials in vaccines see www.immunisation.nhs.uk/porcine.htm

Q10 Do I need to avoid salicylates such as aspirin for 6 weeks after having chickenpox vaccine?
No.

Reye’s syndrome has been reported in children treated with aspirin during natural varicella infection. Aspirin and systemic salicylates should, therefore, not be given to children under 16 years of age, except under medical supervision, because of this risk.

However, there is no evidence to suggest that vaccination with chickenpox vaccine should be contraindicated for individuals 16 years and over who need to take aspirin.

Q11 Can I have chickenpox vaccine if I am pregnant or trying to get pregnant?
You should not have chickenpox vaccine if you are pregnant or trying to get pregnant as live vaccines are generally not advised in pregnancy. Pregnancy should also be avoided for 3 months after immunisation. Surveillance in the USA of cases where women were vaccinated without knowing they were pregnant has not identified any specific risk to the foetus. However, it is important to continue to record such cases in the UK and the outcome of pregnancy. If you are vaccinated with the chickenpox vaccine while pregnant or in the month before you become pregnant, you should report this to your Occupational Health Department. They will then inform the Immunisation Department of the Health Protection Agency (tel 0208 327 7680) You will then be followed up via 3 questionnaires sent to your GP or obstetrician.
Q12 Can I continue to breastfeed after I have had the chickenpox vaccine?

Yes – you can continue to breastfeed as studies have shown that the vaccine virus is not transferred to the infant through breast milk.

Q13 How effective is the chickenpox vaccine? Can I still get chickenpox if I am vaccinated?

A two dose vaccination schedule in adolescents and adults provides about 75% protection against chickenpox infection. For those people that have been vaccinated and get chickenpox, the disease is mild with fewer spots.

Q14 Do I need to have another blood test after I have completed the course of chickenpox vaccination?

Post-vaccination testing is not routinely recommended but is advised for health care workers who work in units where highly vulnerable patients are treated (e.g. in transplant units)