SECTION 13.0

SPECIMENS FOR LABORATORY EXAMINATION

• Introduction
• Collection of Specimens for Microbiological Examination:
• Safe Handling of Specimens
• Packaging & Transportation of Specimens
• Specimen Rejection

Table 1: The Importance of Data on Request Forms
**Introduction**

Collection and transport of specimens is the responsibility of the Doctor or Environmental Health Officer requesting the test. To obtain the best information from a laboratory the following general principles apply to any specimen for transport and should be observed.

**Collection of Specimens for Microbiological Examination:**

- Collect specimen at the appropriate time e.g. prior to the commencement of or administration of antimicrobial therapy when possible.
- Collect specimen with as little contamination as possible to ensure that the sample will be representative of the infective site.
- Collect an adequate amount of specimen. Inadequate amounts of specimen may yield false-negative results.
- Use sterile equipment and aseptic technique to collect specimens to prevent introduction of microorganisms during invasive procedures.
- Label laboratory approved containers with:
  - patient identification such as patient name,
  - identification number/address and date of birth,
  - specimen details and date specimen was taken, e.g. the site the swab was taken from; whether MSU or CSU.
  - The lids should be screwed on tightly.
- Label laboratory request form with:
  - Patient name, identification number,
  - Location (ward or GP) address,
  - Date of birth,
  - Sex,
  - Requesting clinician,
  - Site of swab or specimen type i.e whether CSU or MSU
  - Date of specimen collection.
  - State clearly the test required.

The patients’ clinical symptoms, reasons for taking the specimen and whether antibiotic therapy is in progress or not, should also be included. List antibiotics and duration if commenced, as this enables laboratory staff to streamline cultures and sensitivities and speeds up reporting. (See table 1).

- Please refer to Section 11.4 Wound Care for criteria for taking a wound swab.

**Note:** Separate forms should be sent for different specimen types e.g. one form for a urine specimen and another for a wound specimen etc.
Safe Handling of Specimens

- The container with specimen should be placed in an individual transparent plastic transport bag as soon as it has been labelled. The transport bag must be sealed.
- Specimen bags must not be sealed with pins, staples, metal clips etc. and must not be used more than once

Any specimen may contain potentially pathogenic organisms. To avoid presenting a hazard to anyone in contact with the specimens, it is most important to
- avoid contamination of the outside of specimen containers and
- to ensure that they are securely closed and safely handled.

Leaking specimens are a serious biohazard risk to persons transporting the specimen and laboratory staff. Blood stained forms should never be sent to the laboratory. Furthermore, if a specimen leaks, contaminating organisms may get into the container and a false result ensue.

To ensure safety:
- Adhere to Standard Precautions for taking and processing of all specimens regardless of the patients’ infectious status, known or unknown.
- Specimen containers are put in plastic bags with a self-sealing seal.
- The request form is kept separate from the specimen.

This system provides protection for all staff from any accidental spillage and prevents contamination of the accompanying request form.
A self-sealing plastic compartment with request form attached is the type used by the Microbiology Department.

Whilst awaiting transport, specimens should be stored appropriately and securely, away from patient and visitor areas, and from food and medicines.
- For microbiological investigation if processing is delayed, refrigeration is preferable to storage at ambient temperature, with the following exceptions:
  - Blood cultures – incubate the bottles at 35 - 37°C.
  - CSF – hold specimen at room temperature.
- Check the individual specimen requirements to determine if refrigeration is advisable as some organisms are temperature sensitive.
- There are specific collection requirements for some tests; where doubt exists, the appropriate laboratory should be consulted.

Packaging & Transportation of Specimens

Postal service
Specimens sent to the laboratory e.g. from GP surgeries should be packaged by the sender, in appropriate specimen containers and packaging, and should be properly labeled. Any package that is not packed correctly or marked as directed may result in delay/ rejection by An Post.

The following triple packaging system must be obeyed:
1. The specimen must be enclosed in a primary receptacle. The sender must ensure that the container is the appropriate one for the purpose, that the specimen
container is properly closed and that it is not externally contaminated by the contents.
2. The primary receptacle must be placed in a secondary watertight receptacle.
3. An outer packaging of adequate strength for its capacity mass and intended use with at least one surface having a minimum dimension of 100 X 100mm must be used to send the sample. Absorbent material must be placed between the primary and secondary receptacle.
The UN 3373 diamond shaped symbol must be displayed on the external surface of the outer packaging and clearly marked ‘Biological Substance, Category B’ adjacent to the symbol.
The outer package must show
• name and address of destination of sample
• name and address of sender
• who to contact in case of loss, damage or leakage.

**Courier, van or taxi** (i.e. by means other than by An Post)
Specimens sent to the laboratory must be packaged correctly according to guidelines for sending of samples through the normal post. Alternatively, special transport boxes may be used.
The transport box
• must be made of smooth impervious material such as plastic or metal, which can easily be cleaned and disinfected.
• must be secured with a fastenable lid.
• must retain liquid in the event of leakage of a specimen.
• must clearly labeled with the UN 3373 diamond shaped mark and the proper shipping name ‘Biological substance, Category B’ for new type transportation boxes and ‘Diagnostic Specimen-Fragile with Care’, for the older transportation boxes.
• must be labeled to identify the sender of the package, including relevant telephone numbers to be contacted in case of loss, damage or leakage.

**Where further advice on packaging for transportation of specimens is sought the laboratory to which the specimen is being sent should be contacted.**

**Specimen Rejection**
Unacceptable specimens may result in test cancellation or delay. Common causes of such action include:

• The samples are received in a hazardous condition.
• The sample identification on either the request form or the sample bottle is incomplete.
• The sample is unlabelled or incorrectly labelled.
• The sample is received with incorrect patient preparation.
• The sample has been collected under inappropriate conditions.
Supplies of Request forms and specimen containers:

Request forms and sample / specimen containers are issued from Hospital Stores/Laboratory. Order supplies in advance to facilitate timely delivery.

References & Bibliography

CUH Pathology User Handbook Revision 4 2011

Table 1: The Importance of Data on Request Forms

<table>
<thead>
<tr>
<th>Data</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s name &amp; identification number</td>
<td>Used for filing purposes or to distinguish between people of the same name.</td>
</tr>
<tr>
<td>Date &amp; time of specimen collection</td>
<td>Different organisms survive for varying periods. Delay in processing specimen may influence interpretation of results.</td>
</tr>
<tr>
<td>Location (Ward or GP address)</td>
<td>This allows the report to be returned to the ward/GP with minimum delay.</td>
</tr>
<tr>
<td>Patient’s date of birth:</td>
<td>The lab will investigate for different pathogens in accordance with the patient’s age; e.g., eye swab from a neonate would require detailed investigation for <em>Neisseria gonorrhoeae</em>. Some antibiotics would be contraindicated in certain age groups.</td>
</tr>
<tr>
<td>Relevant Info</td>
<td>Cellulitis, pyrexia, pus, discharge, treatment, wound infection, provisional diagnosis, chemotherapy etc.</td>
</tr>
<tr>
<td>Specimen details including site:</td>
<td>Be as specific as possible to help lab in distinguishing pathogens from normal flora e.g. <em>Staph aureus</em> may be considered normal flora in the nose but would be reported as a possible pathogen in other sites. A swab taken from an operative site following a “clean” operation (e.g. knee replacement), any organism would require investigation whereas a swab from a chronic leg ulcer will yield many potentially pathogenic organisms, which may be colonising the area.</td>
</tr>
<tr>
<td>Antibiotic therapy:</td>
<td>State if a patient is on antibiotics so that laboratory results can be correctly interpreted. Routine sensitivity testing may not always include the particular antibiotic that the patient is currently receiving, unless this is stated on the form. Antibiotic therapy should be based on clinical signs of infection and not solely on laboratory results.</td>
</tr>
<tr>
<td>Doctor requesting investigation</td>
<td>Enables lab staff to obtain further information or communicate important results quickly to the doctor concerned i.e. consultant or doctor requesting the test.</td>
</tr>
<tr>
<td>Investigation requested:</td>
<td>The form should state clearly what the specimen is and where it has been taken from with the correct request. N.B. A viral swab cannot be used for general bacteriological analysis. Viral swabs are available from the microbiology laboratory directly.</td>
</tr>
</tbody>
</table>