Audit means checking practice against a standard. It examines the actual situation and compares it to written policies or another benchmark.

Audit can help to improve health care service by providing a blame-free mechanism for changes in practice. It can also be used for risk assessment, strategic planning, and root cause analysis.

An audit team is essential to carry out a proper audit through good planning, performance, and feedback of results.

Audit results may be provided to others through various types of reporting.
IFIC Basic Concepts of Infection Control

Introduction

Healthcare-associated infections are generally related to multiple factors. Prevention of these infections depends on daily vigilance and implementation of infection prevention and control (IPC) practices. These practices are outlined in written guidelines, policies, and procedures.

Audit means checking actual practice against a standard; it should permit reporting of noncompliance or issues of concern by either healthcare workers (HCW) or the Infection Control Team (ICT). Providing results of the audit to staff enables them to identify where improvement is needed. Audit involves monitoring and evaluating the effectiveness of the organisation’s risk management process. Risk management involves setting objectives then identifying, analysing, and responding to those risks that could potentially impact the organisation’s ability to realise its objectives. Internal auditors can offer advice and help identify emerging risks.

Internal auditing standards require the development of a plan of audit engagement (project) based on an annually updated risk assessment using the concept: Plan, Do, Study, Act (PDSA). The PDSA cycle is shorthand for developing a plan to test a change (Plan), carrying out the plan (Do), observing and learning from the consequences (Study), and determining what modifications should be made (Act). (See Figure 6.1) Changes in processes often generate audit projects in addition to reviews of documents such as strategic plans.

![Figure 6.1 The PDSA cycle](image-url)
There is enormous scope for an audit in IPC. The audit can lead to improvement of services because it provides a blame-free mechanism for changes in practice. The results of audit, when provided back to staff, can turn defects into improvements after appropriate changes are completed.4 (See Figure 6.2)

Audit tools are commonly referred to as “quality improvement tools”.4 They are templates for ICTs to evaluate implementation of standard procedures, such as hand hygiene, isolation precautions, environmental cleaning, disinfection or sterilisation of equipment, handling linen/waste/sharps/supplies, etc., in their facility. In addition, specific practices may be monitored, e.g., use of personal protective equipment, insertion and care of intravascular, respiratory and urinary devices, and wound care. Operating room observations for practices such as patient preparation, hair removal, surgical team scrub, and prophylactic antibiotic use, may also be included. The audit can be performed by the ICT or other designated staff. The audit tool must match the recommended practices and resources of the health care setting.1

**Audit Method**

Initially it is probably worth selecting a few areas to audit, preferably those that are most important to the organisation. These may include high-risk areas highlighted through surveillance results or occurrence of outbreaks. An effective audit should include a description of the physical layout; review of traffic flow, protocols and policies, supplies and equipment; and observation of appropriate IPC practice.
IFIC Basic Concepts of Infection Control

The audit should take place over a defined time. A rapid audit cycle plan can be completed in a few days and the results provided very quickly. (See Table 6.1) In addition to the rapid cycle plan, an annual plan may be useful. (See Table 6.2) Link personnel and ward staff may assist with the process.

Table 6.1 Rapid Cycle Audit Plan

<table>
<thead>
<tr>
<th>Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Hand hygiene</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Indwelling lines</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urinary catheters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preparation of Audit Team

All HCWs and support staff must be included in preparing for an audit. They need to understand that its purpose is to improve IPC practice. It is in no way punitive or a search for weaknesses. Pre-audit meetings are essential to explain and discuss the goals and objectives of the audit, how it will be conducted, and how the results will be reported.

Staff should understand that an objective approach will be maintained, that the audit will be performed consistently across the facility, and anonymity will be protected. The audit team must identify the leaders in the area being audited and continue communication with them. Management and other key decision makers (e.g., educators) need to support the audit team in any changes required post-audit.

Knowledge Assessment

A questionnaire on employees’ knowledge of safe IPC practice should be developed and distributed prior to any audit. The questionnaire can assist in determining what areas of practice should be audited. Respondents should be identified only by job title (e.g., nurse, physician, radiographer, cleaner, etc.). The questionnaire can be modified to suit the department or area being audited. A deadline must be provided so that questionnaires are returned on time. One person in each survey area should be asked to
Audits in Infection Prevention and Control

ensure that questionnaires are completed and kept securely for collection and tabulation by the audit team. The results will allow the ICT to determine where additional education is needed. Dissemination of results and discussion of the correct answers can be used as an educational tool.

**Basic Principles**

**Bundles**

A bundle is a multi-model structured way of improving processes of care and patient outcomes. A bundle is a collection of processes needed to effectively and safely care for patients undergoing particular treatments with inherent risks. Several interventions are “bundled” together and, when combined, significantly improve patient care outcomes. Bundles are helpful and have been developed for ventilator-associated pneumonia, catheter-associated urinary tract infection, and central line-associated bloodstream infection prevention. A bundle pack includes:

1. A statement of commitment for the clinical team to sign.
2. A cause-effect chart describing the evidence for optimal practice (See Figure 6.3) and used also for root cause analysis of non-conformities, in reference to the standards.
3. Standard operating procedures for the bundle including specific criteria.
5. Explanation of the bundle to the clinical staff (e.g., group discussion, slide presentation)

![Figure 6.3 Fish-bone type of Cause and Effect diagram](image-url)
IFIC Basic Concepts of Infection Control

The bundle typically consists of a small (usually three to five) critical set of procedures, all determined by robust evidence, which when taken together create improved outcomes. Successfully completing each step is a straightforward process and can be audited.8

Types of audits
Toolkits to carry out different types of audits in health care settings are available.

- The Community and Hospital Infection Control Association-Canada audit toolkit.9
- World Health Organization audit toolkits.10

They include, but are not limited to:

- Hand hygiene (readiness and practice; supplies such as soap, paper towel, alcohol-based products).
- Use of standard precautions/routine practices.
- Use of isolation/precautions.
- Use of personal protective equipment.
- Monitoring of sterilisation equipment.
- Cleaning, disinfection, and sterilisation of reusable equipment and devices, such as bronchoscopes and surgical instruments.
- Health care environment cleaning.
- Haemodialysis practices, equipment, facility.
- Operating room IPC practices, asepsis and preoperative antisepsis, traffic control, patient skin preparation, hair removal, surgical scrub, and prophylactic antibiotics.
- Practice and medical device reprocessing in clinics and physician offices.
- Occupational health issues, such as, sharps injuries/needle sticks, vaccination rates.
- Outbreak management.
- Self-audit tool for ICT.

The data derived from audits can be used to direct the IPC program's annual goals and objectives. It also assists in meeting the needs of the health care setting in relation to IPC standards and safer health care practices.

Reports
Once the audit is completed, a draft, detailed report must be written and
Audits in Infection Prevention and Control

reviewed with management and key staff in the audit area before it is finalised and distributed. The report should include information on why the audit was performed, method used, findings, and recommendations. Compliance data should be included as appropriate.1 Reporting of audits could be in the form of:

**Weekly reports:** Providing rapid feedback on incidental issues while they are still fresh (e.g., during outbreaks or after occupational sharp injuries).

**Monthly reports:** A monthly report should include sections about surveillance, audit results, education, training, and consultations.

**Quarterly reports:** These are formal reports including recommendations and management of issues.

**Annual reports:** A summary of audits carried out during the year and the resulting improvement or changes during the rapid and annual audit plans, illustrated as appropriate with graphs.

Staff must learn to appreciate that the intent of audits is to promote good practice, improve patient care, and ensure safety. A key person must be identified in each area to help facilitate implementation of any recommendations within a specified time.4

**Behavioural Change**

Review of prevailing behavioural theories and their application to health professions is recommended in an attempt to understand how to target more successful interventions.11 In hand hygiene, although behavioural theories and secondary interventions have primarily targeted individual workers, this might be insufficient to produce sustained change.12 Interventions must account for different levels of behavioural interaction.13 Thus, the interdependence of individual factors, environmental constraints, and the institutional climate must be taken into account in the strategic planning and development of programs, e.g., hand hygiene campaigns.11

Factors necessary for change include 1) dissatisfaction with the current situation, 2) perception of alternatives, and 3) recognition, both at the individual and institutional level, of the ability and potential to change.
Although the latter implies education and motivation, the former two necessitate a system-wide change.

**Guidelines**

IPC audits ensure that written guidelines are in place for each procedure. These guidelines must be current, acceptable and practical, and used in developing the IPC program’s policies and procedures.

An audit checks whether these guidelines are being followed in actual practice. This can be accomplished by auditing practices with “Staff Interviews” and “Observational Tours”. This latter form of auditing is relatively simple, albeit time-consuming. Developing an audit calendar for planning the audit cycle may be useful from a time management perspective. (See Tables 6.1 and 6.2)
Summary

Health care requires an increased emphasis on the use of audits to measure the implementation of policies and procedures relating to IPC practices. Development of audit plans based on a risk assessment strategy, preparation of the audit team, tailoring of the audit method, and audit assessment of knowledge are pillars of internal audits in health care organisations.

The data from audits can be used to direct the IPC program to target more successful interventions. Audit reporting includes recommendations and guidelines to create a safer environment and to minimise the risk of healthcare-associated infections.

Acknowledgement

This chapter is an update of the earlier one by Dr. E. Bryce, S. Sharf, G. van Knippenberg-Gordebeke and M. Walker.

References

8. Mehtar S. Risk management in infection prevention and control. In:
IFIC Basic Concepts of Infection Control


