



## **Hygiene Services Assessment Scheme**

**Assessment Report October 2007**

**Mercy University Hospital**

# Table of Contents

Table of Contents .....	2
1.0 Executive Summary .....	3
1.1 Introduction .....	3
1.2 Organisational Profile.....	7
1.3 Notable Practice .....	8
1.4 Priority Quality Improvement Plan.....	8
1.5 Hygiene Services Assessment Scheme Overall Score .....	9
2.0 Standards for Corporate Management .....	10
3.0 Standards for Service Delivery .....	18
4.0 Appendix A.....	23
4.1 Service Delivery Core Criterion.....	23
5.0 Appendix B.....	30
5.1 Ratings Summary .....	30
5.2 Ratings Details.....	30

# 1.0 Executive Summary

## 1.1 Introduction

This is the first National Hygiene Services Assessment Scheme (HSAS). It is a mandatory scheme for all acute hospitals. The scheme aims to enhance cultural change in the area of hygiene services by not only focusing on the service delivery elements but also emphasising the importance of standards for corporate management. The HSAS is a patient-centred scheme which assists a hospital to prioritise the key areas in hygiene to be addressed. It is intended to promote a culture of best practice and continuous quality improvement.

The Irish Health Services Accreditation Board developed these, the first set of National Hygiene Assessment Standards in 2006. This development plan involved an extensive desktop review of national and international best practice literature, working groups and extensive consultation. The feedback from these development components formed the final draft Standards and Assessment Process, which were then piloted in a number of acute hospitals. (*The Irish Health Services Accreditation Board was subsumed into the Health Information and Quality Authority in May 2007.*)

**The Hygiene Services Assessment Scheme (HSAS) was launched by the Minister for Health Mary Harney on the 6<sup>th</sup> November 2006.**

Hygiene is defined as:

*“The practice that serves to keep people and environments clean and prevent infection. It involves the study of preserving one’s health, preventing the spread of disease, and recognising, evaluating and controlling health hazards. In the healthcare setting it incorporates the following key areas: environment and facilities, hand hygiene, catering, management of laundry, waste and sharps, and equipment”<sup>1-4</sup>*

More specifically, the Hygiene Services Assessment Scheme incorporates the following:

- Environment and Facilities: incorporates the condition of the building and all its fixtures, fittings and furnishings.
- Hand Hygiene: incorporates hand washing, antiseptic hand-rub and surgical hand antisepsis.
- Catering: incorporates kitchens (including ward kitchens) fixtures and fittings and food safety.
- Management of Laundry: incorporates management of linen and soft furnishings both in-house laundry and external facilities.
- Waste and Sharps: incorporates handling, segregation, storage and transportation.
- Equipment: incorporates patient, organisational, medical and cleaning equipment.

### 1.1.1 Standards Overview

The standards are divided into two sections: Corporate Management and Service Delivery. Each standard is divided into a number of criteria. These are specific steps, activities or decisions that must occur to achieve the standard.

The 14 Corporate Management standards facilitate the assessment of performance with respect to hygiene services provision to the organisation and patient clients at organisational management level. These standards commence at the planning stage and follow through to governing, implementation and evaluation. They incorporate four critical areas:

- Leadership and Partnerships
- Management of the Environment and Facilities
- Management of Human Resources
- Information Management.

The six Service Delivery standards facilitate the assessment of performance at team level. The standards address the following areas:

- Evidence based best practice and new interventions
- Prevention and Health Promotion
- Integration and coordination of hygiene services
- Implementing safe, efficient and effective hygiene services
- Protection of patient/clients rights
- Assessing and Improving performance.<sup>5</sup>

The standards and process have been assessed and internationally accredited by the International Society for Quality in Healthcare (ISQua).

### ***Core Criteria:***

To ensure that there is a continual focus on the principal areas of the service, 15 core criteria have been identified within the standards to help the organisation and the hygiene services to prioritise areas of particular significance.

In the Corporate Management standards, the core criteria cover:

Allocation of resources, accountability, risk management, contract management and human resource management.

In the Service Delivery standards, core criteria cover:

Waste management, hand hygiene, kitchens and catering, management of linen, equipment, medical and cleaning devices and the organisation's physical environment.

### **1.1.2 Rating Scale**

The rating of individual criterion is designed to assist self-assessment teams and the organisation in general, to prioritise areas for development. The rating for the criterion can be determined based on the percentage level of compliance.

The rating scale utilised by the Hygiene Services Assessment Process is a five-point scale:

#### **A Compliant - Exceptional**

- There is evidence of exceptional compliance (greater than 85%) with the criterion provisions.

#### **B Compliant - Extensive**

- There is evidence of extensive compliance (between 66% and 85%) with the criterion provisions.

- C Compliant - Broad**
  - There is evidence of broad compliance (between 41% and 65%) with the criterion provisions.
- D Minor Compliance**
  - There is evidence of only minor compliance (between 15% and 40%) with the criterion provisions.
- E No Compliance**
  - Only negligible compliance (less than 15%) with the criterion provisions is discernible.
- N/A Not Applicable**
  - The criterion does not apply to the areas covered by the Self Assessment Team. Rationale must be provided. This cannot be used for a core criterion.

### 1.1.3 Assessment process components

The assessment process involves four distinct components:

- **Preparation and self assessment undertaken by the organisation.**

The self-assessment process allows an organisation to systematically evaluate its hygiene services against a set of best practice standards. This was completed by a multidisciplinary team(s) over a period of two months. This process was preceded by regional education sessions.

- **Unannounced assessment undertaken by a team of external assessors**

The HIQA has recruited senior professionals from the areas of medicine, nursing and corporate management as assessors, in addition to independent senior professionals with specialist knowledge in the core areas. To assure consistency across all sites four leaders were chosen from this group to cover all unannounced visits. The assessor's performance was regularly evaluated based on feedback from participating organisations, HIQA staff and other assessors.

Site visits for the larger academic teaching hospitals were completed over 2.5 days with four assessors, and assessments were completed in the smaller hospitals over 2 days with three assessors. The assessment team were responsible for identifying the organisation's compliance with the standards and helping to guide its improvement.

The assessment included a comprehensive documentation review, meetings with management, staff and patients. Throughout the assessment process the assessors worked as a team to cross reference their findings. This ensured that the ratings for each criterion were agreed upon and reflected an accurate picture of the organisation's level of compliance. Feedback was provided to the Chief Executive / General Manager and senior management team by the Assessment Team Leader, at the end of each day of the assessment.

- **Provision of an outcome report and determination of award status.**

The Internal Review Committee of the HIQA reviewed all the reports to ensure consistency, and based on the quantifiable translation guidelines, awards were made. Only organisation's which received a "very good" score were acknowledged with an award for the duration of one year. By the end of

October 2007 all 51 acute care hospitals had received a copy of their individual report.

At the same time the HIQA launched a National Report of the findings of all assessment reports. These standards are different from the first two hygiene audits, therefore a direct correlation of results were not possible.

- **Continuous Improvement**

Going forward a quality improvement plan should now be structured from the self assessment and recommendations from the external report. This will then be monitored by the HIQA.

*The areas of notable practice, quality improvement plans, areas of priority action, overall score, criterion ratings and comment and are presented in the following pages of the report.*

---

<sup>1</sup> Boot, M and Cairncross, S "Actions Speak" Delft, The Netherlands, IRC and LSTHM, British Occupational Hygiene Society.

<sup>2</sup> New York Department of Health and Mental Hygiene

<sup>3</sup> The Columbia Electronic Encyclopaedia, Sixth Edition. Columbia University Press. 2003

<sup>4</sup> Irish Acute Hospitals Cleaning Manual, HSE (2006)

<sup>5</sup> Hygiene Services Assessment Scheme. Irish Health Services Accreditation Board (2006)

## **1.2 Organisational Profile**

The Mercy University Hospital is a 349-bed acute general hospital providing in-patient, day-patient, out-patient services and Accident & Emergency services. It is the second largest hospital in Cork, playing a very important role in the delivery of acute hospital care in Cork City and in the Health Service Executive—Southern Area.

### **Services provided**

The hospital offers in-patient, out-patient and day-patient services in a wide variety of areas including:

- Accident and Emergency
- Anaesthetics
- Clinical Pharmacology
- Dental and Oral Surgery
- Ear, Nose and Throat Surgery
- General Medicine
- Cardiology
- Gastroenterology
- Gerontology
- Haematology
- Infectious Diseases
- Neurology
- Oncology
- Respiratory Medicine
- Gynaecology
- Microbiology
- Ophthalmology
- Paediatrics
- Paediatric Neurology
- Palliative Care
- Pain Medicine
- Psychiatry
- Respiratory Medicine
- Surgery:
  1. General Surgery
  2. Colo-Rectal Surgery
  3. Vascular Surgery
  4. Upper and Lower GI Surgery

### **Allied Health Services in the Mercy University Hospital**

- Biochemistry
- Clinical Neurophysiology
- Clinical Nutrition
- Clinical Psychology
- Echocardiography and Holter Monitoring
- Endoscopy
- Haematology
- Histopathology
- Microbiology

- Occupational Therapy
- Pastoral Care and Chaplaincy
- Pharmacy
- Phlebotomy
- Physiotherapy
- Pulmonary Function Unit
- Social Work
- Speech & Language Therapy
- X-ray/Radiology & Imaging

### **Physical structures**

There are five negative pressure isolation rooms in the hospital.

The following assessment of the Mercy University Hospital took place between 27<sup>th</sup> and 28<sup>th</sup> August 2007.

### ***1.3 Notable Practice***

The following were found to be areas of best practice:

- Staff commitment to maintaining a high standard of hygiene within the organisation was very good.
- Multi-disciplinary audits and resultant actions were good.
- The upgrading of clinical areas was noted.
- The standard of cleanliness of equipment was high.
- The Emergency Department which has been recently developed.
- The induction and training of staff was good.
- The library facilities were good.

### ***1.4 Priority Quality Improvement Plan***

Areas where improvement is required included:

- The current Emergency Department is sub-optimal in relation to space, hygiene standards and ease of cleaning. The current Emergency Department should be moved at the earliest possible opportunity.
- The laundry facility should have an engineers/occupational health assessment.
- The food waste collection/storage area should have regular scheduled audits.
- An up-grade of catering staff changing and toilet facilities should be considered.
- The flat mop/colour-coding system should be fully implemented.
- The organisation should continue to monitor and improve waste segregation.
- The organisation should address the deficiencies in the existing sterilisation facilities.
- Staff who manage the shop should be included in all aspects of hygiene training.
- A review of storage space utilisation should be carried out.

### ***1.5 Hygiene Services Assessment Scheme Overall Score***

The decision mechanism used to translate an organisation's criteria, risk ratings to a Hygiene Service Assessment Scheme score is based on a quantitative analysis of the assessment results which ensures consistency of application. The decision regarding a score is made by the Internal Review Committee of HIQA, based on the findings of the Assessment Team; the Mercy University Hospital has achieved an overall score of:

**Fair**

**Award Date:** October 2007

## 2.0 Standards for Corporate Management

The following are the ratings for the Corporate Management standards, as validated by the Assessment team. The Corporate Management standards allow the organisation to assess and evaluate its activities in relation to Hygiene Services at an organisational level. There are fourteen Corporate Management standards, all of which are focused on four critical areas: leadership and partnerships, environment and facilities, human resources and information management. They include such subjects as corporate planning, allocating and managing resources, enhancing staff performance and contractual agreements. There are eight core criteria within these standards.

### PLANNING AND DEVELOPING HYGIENE SERVICES

#### CM 1.1 (B ↓ C)

**The organisation regularly assesses and updates the organisation's current and future needs for Hygiene Services.**

The organisation based its needs assessment on the outcomes of internal and national external audits of 2005/2006 and reports and submissions from in-house committees. Account was also taken of current legislation and best practice guidelines. Patient input was based on information gathered during focussed ward rounds and comment cards. The organisation had a Hygiene Corporate Strategic Plan for 2007/2008, which reflected short term, intermediate and long term goals within that time frame. The organisation should consider a longer-term strategic plan and include and cost necessary capital works related to hygiene services. The organisation had yet to formally assess the efficacy of the needs assessment process. However the internal hygiene audits showed improved standards.

The organisation should implement its Quality Improvement Plan (QIP) to publish internal audit reports and arrange for an annual contractor performance report.

#### CM 1.2 (B → B)

**There is evidence that the organisation's Hygiene Services are maintained, modified and developed to meet the health needs of the population served based on the information collected.**

There was evidence of extensive compliance, which included the establishment of a Hygiene Service Committee, upgrading of environment and facilities (which was on-going), introduction of new cleaning systems, improved education/training and implementation of an internal audit process. There was evidence of evaluation of audit outcomes and resultant continuous quality improvement in place.

### ESTABLISHING LINKAGES AND PARTNERSHIPS FOR HYGIENE SERVICES

#### CM 2.1 (C → C)

**The organisation links and works in partnership with the Health Services Executive, various levels of Government and associated agencies, all staff, contract staff and patients/clients with regard to hygiene services.**

There was evidence of broad compliance with this criterion. The Organisation links and works with the HSE and Department of Health and Environmental Health, and others. The establishment of the Hygiene Service Committee and the increased integration of working and hygiene assessment by the Organisation and Contract Cleaning Service were identified as a significant development in the improvement of cleaning standards. The audit results were evidence of these improvements. It is

recommended that the hospital consider increased integration in managing the hygiene services between the organisation and the contract cleaning service.

## CORPORATE PLANNING FOR HYGIENE SERVICES

### **CM 3.1 (B → B)**

**The organisation has a clear corporate strategic planning process for Hygiene Services that contributes to improving the outcomes of the organisation.**

There was a Hygiene Corporate Strategic Plan in place. The organisation was recommended to review its time frame, goals and priorities and related costing for the Hygiene Corporate Plan following this assessment and regularly thereafter. The committee had a representative multi-disciplinary team membership and should consider ways to enhance the involvement of patients/clients. The organisation communicates with its stakeholders through various committee meetings, the intranet and the hospital newsletter.

## GOVERNING AND MANAGING HYGIENE SERVICES

### **CM 4.1 (B → B)**

**The Governing Body and its Executive Management Team have responsibility for the overall management and implementation of the Hygiene Service in line with corporate policies and procedures, current legislation, evidence based best practice and research.**

The Executive Management Board had overall responsibility for Hygiene Services management and delivery. Day to day responsibility was delegated to the Deputy Chief Executive Officer who was supported by Director of Support Services to whom all Hygiene Service staff reported. Nurses and health care assistants report to the Director of Nursing. The organisation had a mission and values statement, which was widely displayed, and a memorandum of association. Evaluation of the organisation's adherence to legislation and best practice was based on adverse incident and near miss records, complaints and audit outcomes. The organisation used the outcomes of adverse incident and near miss reports, complaints reports and audit outcomes as indicators of their compliance with legislation and best practice.

### **CM 4.2 (B → B)**

**The Governing Body and/or its Executive Management Team regularly receive useful, timely and accurate evidence or best practice information.**

The main indicators reviewed included Infection Control, Health and Safety and Risk Management, complaints, occupational health and audit reports. There were members of the Executive Management Board (EMB) on the Hygiene Service Committee and submissions were made as deemed necessary to the Executive Management Board. The organisation's Quality Improvement Plan (QIP) to make quarterly formal reports to the EMB is commendable.

### **CM 4.3 (B ↓ C)**

**The Governing Body and/or its Executive Management Team access and use research and best practice information to improve management practices of the Hygiene Service.**

The Organisation had excellent library facilities and there was on-going education and in-house training as well as attendance at national and international meetings/conferences. The organisation also had a Quality Facilitator in Nursing and

should consider broadening its remit to include both clinical and non-clinical quality initiatives. The organisation should develop a structured system of evaluation of all new equipment and procedures.

**CM 4.4 (B ↓ C)**

**The organisation has a process for establishing and maintaining best practice policies, procedures and guidelines for Hygiene Services.**

Nursing used a standard template for the development of policies, procedures and guidelines. The organisation's Infection Control Manual had been reviewed recently and reflected its own unique structure. The organisation should evaluate current processes and consider developing a standard documented process for the development, approval, revision and control of all policies, procedures and guidelines to ensure consistency. This would include ease of use, reflection of current legislation and best practice.

**CM 4.5 (B ↓ C)**

**The Hygiene Services Committee is involved in the organisation's capital development planning and implementation process.**

There was evidence of involvement of Infection Control in the pre-development of existing sites with Aspergillus risk assessment and management. The staff of specific wards and departments had been involved in the development of their particular areas for example, ward and theatre upgrades. The membership of the Hygiene Service Committee ensured that there was an opportunity to be aware of all capital development planning and implementation. The terms of reference should make provision for the relevant consultation and evaluation of the efficacy of the consultation process.

## ORGANISATIONAL STRUCTURE FOR HYGIENE SERVICES

\*Core Criterion

**CM 5.1 (A → A)**

**There are clear roles, authorities, responsibilities and accountabilities throughout the structure of the Hygiene Services.**

There was evidence of exceptional compliance in this area. There were clear terms of reference for both the Hygiene Services Committee and the Hygiene Services Team. An annual report was completed in relation to Hygiene Services and this was submitted to the Executive Management Board for 2006. An organisation chart outlined the reporting relationships for Hygiene Services and overall responsibility was delegated to the Deputy Chief Executive Officer, who also chaired the Hygiene Services Committee. Nursing and healthcare assistants reported to the Director of Nursing who was also a member of the Hygiene Services Committee and integrally involved in the development of hygiene services. Ward/department managers were responsible for the overall standard of Hygiene Services in their areas and were actively involved in the audit and development of hygiene standards in their areas of responsibility.

\*Core Criterion

**CM 5.2 (B → B)**

**The organisation has a multi-disciplinary Hygiene Services Committee.**

The Hygiene Services Committee was multi-disciplinary and represented all aspects of Hygiene Services other than direct patient representation. There were terms of reference in place and administrative support was provided. The Committee met every two months and the Hygiene Services Team met monthly.

## ALLOCATING AND MANAGING RESOURCES FOR HYGIENE SERVICES

\*Core Criterion

### **CM 6.1** (C → C)

**The Governing Body and/or its Executive/Management Team allocate resources for the Hygiene Service based on informed equitable decisions and in accordance with corporate and service plans.**

The organisation had identified a human resource budget for Hygiene Services. Additional human resources had been provided based on the evaluation of need in 2006. Funding has been invested for the upgrading of wards, replacement of bins, wash hand basins, flat mop system and other improvements over the last two years. The organisation should develop an annual Hygiene Service Plan based on the Hygiene Corporate Strategic Plan to ensure the on-going progression of the corporate plan.

### **CM 6.2** (A ↓ C)

**The Hygiene Committee is involved in the process of purchasing all equipment/products.**

The Hygiene Services Committee's terms of reference made provision for their inclusion in the pre-purchasing of equipment and also for communications between the Committee and the Executive Management Board. The organisation should ensure that a documented process is used for the pre-purchasing evaluation of all equipment and products. The organisation should formally evaluate the efficacy of the consultation process between the Hygiene Services Committee and the Executive Management Board.

## MANAGING RISK IN HYGIENE SERVICES

\*Core Criterion

### **CM 7.1** (B ↓ C)

**The organisation has a structure and related processes to identify, analyse, prioritise and eliminate or minimise risk related to the Hygiene Service.**

There were documented processes for risk identification, reporting, analysis, minimisation and identification. There was a regular reporting system in place including Environmental Health Officer reports, and internal audits. There had been no major adverse events in the last two years. The organisation should implement its QIP to review frequencies for internal audit across all aspects of Hygiene Services. There should be continued on-going attention to reduction of needle stick injuries.

## CONTRACTUAL AGREEMENTS FOR HYGIENE SERVICES

\*Core Criterion

### **CM 8.1** (B → B)

**The organisation has a process for establishing contracts, managing and monitoring contractors, their professional liability and their quality improvement processes in the areas of Hygiene Services.**

There was evidence of extensive compliance in this area. The organisation had contract staff on site for cleaning services and that contract was due for renewal shortly. A detailed tender document was being prepared. Tender documents included provision for monitoring and evaluation of performance. The organisation has an effective system in place to monitor contractors, however they should ensure that the

hospital shop, which was contracted out, was included in all hygiene training and was checked for HACCP compliance.

**CM 8.2 (B → B)**

**The organisation involves contracted services in its quality improvement activities.**

The contract cleaning staff were represented on the Hygiene Services Committee and also on the Facilities Accreditation Self Assessment Team. Hygiene audits were a shared initiative and there was evidence of close working relationships between the contract managers and the hospital managers with regard to the continuous improvements in hygiene services.

PHYSICAL ENVIRONMENT, FACILITIES AND RESOURCES

**CM 9.1 (C → C)**

**The design and layout of the organisation's current physical environment is safe, meets all regulations and is in line with best practice.**

The new clinical areas and those which had been upgraded in Phase One of the environmental development were developed to a high standard. Shortage of storage space to facilitate a separate cleaners' room was identified. The organisation is encouraged to continue its Quality Improvement Plan to upgrade the remaining identified clinical areas. The organisation is encouraged to arrange an engineers' and occupation health assessment in this department as the design of the laundry was restrictive. The current Emergency Department was also very crowded, which makes cleaning difficult. The organisation is encouraged to progress the transfer of service to the new Department as quickly as possible. The lay out of the Central Sterile Supply Department within the theatre complex, needs to be reviewed as a priority. Staff were conscious of these limitations and were optimising the use of current facilities to minimise risk. Flash autoclaves were in use in the operating theatres to supplement the main autoclaves for the sterilisation of dropped instruments. The Organisation is encouraged to implement the recommendations of the Decontamination Audit Report as soon as it is issued.

\*Core Criterion

**CM 9.2 (B ↓ C)**

**The organisation has a process to plan and manage its environment and facilities, equipment and devices, kitchens, waste and sharps and linen.**

There was evidence of extensive progress in this area. The organisation is encouraged to continue to monitor the segregation of clinical and non-clinical waste and soiled linen to further improve compliance.

**CM 9.3 (B ↓ C)**

**There is evidence that the management of the organisation's environment and facilities, equipment and devices, kitchens, waste and sharps and linen is effective and efficient.**

There was evidence of considerable progress in the upgrade of kitchens, waste segregation, bin provision, colour coding for cleaning and linen in the last two years. The organisation is encouraged to continue the roll-out and of the new cleaning system and waste/linen segregation to ensure it is fully compliant in all areas. An evaluation of the implementation would also be appropriate.

**CM 9.4 (C ↑ B)**

**There is evidence that patients/clients, staff, providers, visitors and the community are satisfied with the organisation's Hygiene Services facilities and environment.**

Patient satisfaction was measured by the comments/complaints and patient questioning at specific weekend patient rounds by nurses. The outcomes of these processes were used to inform change and continuous quality improvement. The organisation is encouraged to consider documented processes for identifying patient satisfaction with its services and ensure documented continuous quality improvements are based on the evaluations.

**SELECTION AND RECRUITMENT OF HYGIENE STAFF**

**CM 10.1 (B ↓ C)**

**The organisation has a comprehensive process for selecting and recruiting human resources for Hygiene Services in accordance with best practice, current legislation and governmental guidelines.**

There was evidence of broad compliance in this area. Selection/recruitment records for contract staff were retained by the contractor. All other staff records were held by the organisation. The organisation is encouraged to evaluate the process for selecting and recruiting staff.

**CM 10.2 (C → C)**

**Human resources are assigned by the organisation based on changes in work capacity and volume, in accordance with accepted standards and legal requirements for Hygiene Services.**

There were no documented processes for reviewing changes in work capacity and volume. However this occurred in practice and had resulted in changes in cleaning and janitorial hours to meet changing needs. Specific situations warranting additional cleaning, for example, during structural upgrades, were addressed. These were provided for, based on capacity and a volume review between the organisation and contract cleaning supervisor at their weekly meetings. The outcomes of the hygiene audits were used to further validate these changes.

**CM 10.4 (B → B)**

**There is evidence that the contractors manage contract staff effectively.**

There was evidence of extensive compliance in this area. Outcomes of competency assessment and hygiene audits were used to inform the need for re-training, allocation to specific duties, including the cleaning of isolation rooms. There was evidence of staff working in designated areas over long periods for familiarity and continuity.

\*Core Criterion

**CM 10.5 (C → C)**

**There is evidence that the identified human resource needs for Hygiene Services are met in accordance with Hygiene Corporate and Service plans.**

The Hygiene Services Plan and Annual Report should identify the human resource provision as one of its Key Performance Indicators.

## ENHANCING STAFF PERFORMANCE

### **CM 11.2 (B ↓ C)**

**On-going education, training and continuous professional development is implemented by the organisation for the Hygiene Services team in accordance with its human resource plan.**

There was evidence of on-going hygiene education and training for all staff with yearly refreshers. Records of attendance were maintained. Training included waste segregation, sharps management, hand hygiene, fire safety, use of spill kits, personal protective equipment, and food safety for catering staff. Hygiene Services staff also participated in the SKILLS programme. The organisation should evaluate the relevance of education to each staff member.

## PROVIDING A HEALTHY WORK ENVIRONMENT FOR STAFF

### **CM 12.1 (B ↓ C)**

**An occupational health service is available to all staff.**

The organisation had a well-resourced Occupational Health Department and its services were available to all staff. The organisation should implement its Quality Improvement Plan (QIP) for the improvement of the clinical environment of the Department. The organisation should initiate a formal evaluation of the appropriateness of the service provided, and develop a continuous QIP for the Department.

### **CM 12.2 (C → C)**

**Hygiene Services staff satisfaction, occupational health and well-being is monitored by the organisation on an on-going basis.**

There was evidence of broad compliance in this area. The organisation should review the performance indicators used to monitor staff satisfaction, occupational health and well being to ensure their appropriateness.

## COLLECTING AND REPORTING DATA AND INFORMATION FOR HYGIENE SERVICES

### **CM 13.1 (B ↓ C)**

**The organisation has a process for collecting and providing access to quality Hygiene Services data and information that meets all legal and best practice requirements.**

The organisation had systems in place for the collection of data pertaining to hygiene which as in accordance with legislation and best practice. This included Infection Control data, HACCP compliance, cleaning records, equipment service records and waste and pest control records. The organisation should evaluate the reliability, accuracy and validity of these records.

### **CM 13.2 (B ↓ C)**

**Data and information are reported by the organisation in a way that is timely, accurate, easily interpreted and based on the needs of the Hygiene Services.**

There was evidence of broad compliance in this area. The organisation should develop formal processes for the evaluation of user satisfaction in relation to the reporting of data and information.

**CM 13.3 (B ↓ C)**

**The organisation evaluates the utilisation of data collection and information reporting by the Hygiene Services team.**

There was evidence of extensive data collection. Information gathered included HACCP compliance, audit reports, Health and Safety, Risk Management, and complaints. These were evaluated and reports were submitted to the Executive Management Board. Quality improvements were identified and followed up. The organisation should assess its data collection and information reporting with regard to hygiene services.

**ASSESSING AND IMPROVING PERFORMANCE FOR HYGIENE SERVICES**

**CM 14.1 (A → A)**

**The Governing Body and/or its Executive Management Team foster and support a quality improvement culture throughout the organisation in relation to Hygiene Services**

The organisation was to be commended on the extent of the quality improvement initiatives instigated over the last two years. It was evident that there was a culture of corporate ownership for the quality of the organisation's hygiene standards and that considerable work had gone into progressing the hygiene agenda in many aspects. For example, the management structures which were in place, the action plans for hygiene services developments, the commitment of staff across all disciplines and the progress to date on internal audit. The organisation should continue to ensure attention to detail and to build on the good foundations which had been established.

**CM 14.2 (B → B)**

**The organisation regularly evaluates the efficacy of its Hygiene Services quality improvement system, makes improvements as appropriate, benchmarks the results and communicates relevant findings internally and to applicable organisations.**

The organisation demonstrated extensive commitment to the continuous quality improvement of its hygiene services over the last two years. The Hygiene Services Committee had clear terms of reference, were meeting regularly and submitting reports to the Executive Management Board. They had introduced environmental improvements in many of the clinical areas and had plans and costings for the completion of this work. Cleaning processes had been improved, the contract cleaning service was operating with the hospital's own staff to provide an integrated service and internal hygiene audits were in place in most clinical areas.

The organisation is encouraged to review its Key Performance Indicators in relation to hygiene to ensure the relevant indicators for all aspects of the service are identified and included. The organisation is encouraged to review the frequencies for internal hygiene audits for all areas and continue to benchmark against the findings and enhance the culture of continuous quality improvement.

### 3.0 Standards for Service Delivery

The following are the ratings for the Service Delivery standards, as validated by the Assessment team. The service delivery standards allow an organisation to assess and evaluate its activities in relation to Hygiene Services at a team level. The Service Delivery standards relate directly to operational day-to-day work and responsibility for these standards lies primarily with the Hygiene Services Team in conjunction with Ward/Departmental Managers and the Hygiene Services Committee. There are six Service Delivery standards, which focus on such areas as prevention and health promotion, implementing hygiene services and patients/clients rights. There are seven core criteria within these standards.

#### EVIDENCE BASED BEST PRACTICE AND NEW INTERVENTIONS IN HYGIENE SERVICES

##### **SD 1.1 (B ↓ C)**

**Best practice guidelines are established, adopted, maintained and evaluated, by the team.**

There was evidence that best practice guidelines were established, adopted, maintained and evaluated, by the team, for example, hospital colour coding for linen and waste segregation. The organisation should continue to monitor and improve these areas. There was an extensive library facility available for all staff with internet access and a resident librarian to assist with queries. Staff could review protocols and best practice guidelines. It is suggested that the hospital enhance patient involvement in Hygiene Services, for example, through a patient satisfaction survey in relation to Hygiene Services.

##### **SD 1.2 (B ↓ C)**

**There is a process for assessing new Hygiene Services interventions and changes to existing ones before their routine use in line with national policies.**

Informal processes are in place for assessing new Hygiene Service interventions for example, trials of the flat mop system of cleaning. Findings are discussed at the Hygiene Services Committee. It was recommended that evaluation of new interventions is completed in a formalised manner.

#### PREVENTION AND HEALTH PROMOTION

##### **SD 2.1 (B ↓ C)**

**The team in association with the organisation and other services providers participates in and supports health promotion activities that educate the community regarding hygiene.**

Information leaflets and posters, regarding Hygiene are available throughout the hospital. Information sessions, were provided in the hospital in October 2006, for patients and families, by the Infection Control specialist, this included a poster display outside the canteen. Information leaflets including issues relating to hygiene, are sent with admission details to patients.

It is recommended that the organisation promote activities that educate the community regarding hygiene.

## INTEGRATING AND COORDINATING HYGIENE SERVICES

### **SD 3.1 (B ↓ C)**

**The Hygiene Service is provided by a multi-disciplinary team in cooperation with providers from other teams, programmes and organisations.**

The Hygiene Service was provided by a multi-disciplinary team. Team members' profiles, minutes of multi-disciplinary meetings and resultant action plans were available in the documentation provided by the organisation. There was evidence of education links with the Oncology service and community based staff. It is recommended that these processes are further enhanced.

## IMPLEMENTING HYGIENE SERVICES

\*Core Criterion

### **SD 4.1 (B ↑ A)**

**The team ensures the organisation's physical environment and facilities are clean.**

The organisation's physical environment and facilities were clean. Outside entrances, main kitchen and the Emergency Department needed attention. The hospital is encouraged to fully implement the flat mop and colour-coding system.

For further information see Appendix A.

\*Core Criterion

### **SD 4.2 (B ↑ A)**

**The team ensures the organisation's equipment, medical devices and cleaning devices are managed and clean.**

The cleaning of equipment was to a high standard.

For further information see Appendix A.

\*Core Criterion

### **SD 4.3 (B → B)**

**The team ensures the organisation's cleaning equipment is managed and clean.**

Equipment was clean. It was recommended that a review of the storage space for cleaning equipment is completed; this should include security and ventilation.

For further information see Appendix A.

\*Core Criterion

### **SD 4.4 (B ↑ A)**

**The team ensures the organisation's kitchens (including ward/department kitchens) are managed and maintained in accordance with evidence based best practice and current legislation.**

On-going work relating to structure, processes and procedures is commended. The completion of the kitchen refurbishment is recommended as is the implementation of the National Ward Kitchen policy.

For further information see Appendix A.

\*Core Criterion

**SD 4.5 (B ↑ A)**

**The team ensures the inventory, handling, storage, use and disposal of Hygiene Services hazardous materials, sharps and waste is in accordance with evidence based codes of best practice and current legislation.**

There were good systems in place for the management of waste. Evidence of Sharps Awareness Week completed in February 2006 was viewed. It was recommended that the organisation should continue to monitor, provide on-going training, and continue to improve waste segregation.

For further information see Appendix A.

\*Core Criterion

**SD 4.6 (B ↑ A)**

**The team ensures the Organisations linen supply and soft furnishings are managed and maintained.**

It was recommended an engineers/occupational health assessment of the laundry facility is completed. Staff in the laundry facility were providing a good service despite the physical conditions.

For further information see Appendix A.

\*Core Criterion

**SD 4.7 (B ↑ A)**

**The team works with the Governing Body and/or its Executive Management team to manage hand hygiene effectively and in accordance with SARI guidelines.**

Good compliance with hand hygiene was noted throughout the hospital. Training given by the Infection Control specialist and on-going audits are performed. The hospital is commended for commencing the replacement of sinks, however, the complete upgrade of sinks is recommended and hand wash posters should be sited at all sinks.

For further information see Appendix A.

**SD 4.8 (B ↓ C)**

**The team ensures all reasonable steps to keep patients/clients safe from accidents, injuries or adverse events.**

Processes were in place to ensure patients/clients are safe from accidents, injuries or adverse events. These need to be formalised.

**SD 4.9 (B ↓ C)**

**Patients/Clients and families are encouraged to participate in improving Hygiene Services and providing a hygienic environment.**

Patient feedback is welcomed as was evident by the number of comment boxes available throughout the organisation. Information sessions, provided by the Infection Control Specialist, were available for patients and families from June to October 2006. There was a robust complaints process in place. Information leaflets were available throughout the organisation. It is recommended that the hospital complete a formal evaluation of patient satisfaction.

## PATIENT'S/CLIENT'S RIGHTS

### **SD 5.1 (B ↓ C)**

#### **Professional and organisational guidelines regarding the rights of patients/clients and families are respected by the team.**

The rights of the patients/clients and families were respected by the team. The Patients' Charter and Hospital Mission Statement were observed on the notice boards. A Patient Dignity Policy and Consent Policy are being developed. It is recommended that these be implemented as soon as is practicable.

### **SD 5.2 (B ↓ C)**

#### **Patients/Clients, families, visitors and all users of the service are provided with relevant information regarding Hygiene Services.**

Information leaflets were available throughout the hospital and are provided to patients prior to admission. It was recommended that the hospital implement a formal evaluation of patient/client, family and visitor comprehension of, and satisfaction with, the information provided by the Hygiene Services Team.

### **SD 5.3 (B → B)**

#### **Patient/Client complaints in relation to Hygiene Services are managed in line with organisational policy.**

There was evidence of a robust complaints process with documented processes for dealing with patients/clients complaints. Complaints are investigated in a timely way and documented on a specific database with an action plan and a designated person assigned to respond to patients/clients and families.

## ASSESSING AND IMPROVING PERFORMANCE

### **SD 6.1 (B ↓ C)**

#### **Patients/Client, families and other external partners are involved by the Hygiene Services team when evaluating its service.**

The patients are given the opportunity to give feedback regarding Hygiene Services during ward rounds. Comment cards and complaints are documented on a complaints database. The Infection Control specialist coordinated informal sessions with patients and families regarding hygiene issues. It is recommended that the patient satisfaction survey with resultant action plans be completed.

### **SD 6.2 (B ↓ C)**

#### **The Hygiene Services team regularly monitors, evaluates and benchmarks the quality of its Hygiene Services and outcomes and uses this information to make improvements.**

The Hygiene Services Team were benchmarking with other areas within the organisation. There was evidence of quality initiatives based on these outcomes. Regular Environmental Health and Infection Control audits were performed with resultant action plans.

### **SD 6.3 (B ↓ C)**

#### **The multi-disciplinary team, in consultation with patients/clients, families, staff and service users, produce an Annual Report.**

The Annual Report was produced for 2006 incorporating Infection Control, Risk Management Statistics and Maintenance Department reports. There are plans in place to have wider involvement in the production of the 2007 Annual Report. The hospital has completed a review of staffing levels in 2006, to inform the input in the

annual report. This should be extended to include a review of all resources, requirements and utilisation.

## 4.0 Appendix A

The following are the scores received for the Service Delivery core criteria compliance requirements. The organisation must provide evidence of exceptional compliance (greater than 85%) to achieve an 'A' rating. All 'core criteria' must have achieved an 'A' rating to receive a score of 'very good' and be acknowledged with an award.

### 4.1 Service Delivery Core Criterion

#### **Compliance Heading: 4.1.1 Clean Environment.**

(1) The environment is tidy, well-maintained, free of rust, blood or body substances, dust, dirt, debris and spillages.

**Yes** - However, two trolleys were noted with rust—these were in storage.

(2) All high and low surfaces are free from dust, cobwebs and flaking paint.

**Yes** - Some flaking paint was observed in clinical areas. Further attention is required to cleaning in the Emergency Department.

(3) Wall and floor tiles and paint should be in a good state of repair.

**Yes** - Some floor covering was wooden but was in a good state of repair.

(5) Cleanable, well-maintained furniture, fixtures and fittings used.

**Yes** - Furniture, fixtures and fittings were found to be in good repair.

(7) Areas should be adequately ventilated with ventilation units cleaned and serviced accordingly and documentation available regarding service.

**No** - Documentation was available to support cleaning in June 2007 but vents observed were not cleaned.

(8) All entrances and exits and component parts should be clean and well maintained.

**No** - Entrances and exits to the hospital require attention.

(13) External areas including grounds, gardens, footpaths, ramps and car parks should be clean and well-maintained.

**Yes** - Attention to detail is required in some areas.

(15) Where present a designated smoking area must comply with the national legislation on tobacco control and local organisational policies, a cigarette bin must be available and the floor area should be free of cigarette ends, matches etc.

**Yes** - No designated smoking area was noted. Smoking was observed.

#### **Compliance Heading: 4.1.2 The following building components should be clean:**

(17) Switches, sockets and data points.

**Yes** - In the majority, however, the Emergency Department requires attention.

(19) Ceilings

**Yes** - The Emergency Department requires review. Some missing tiles need to be replaced in the Out-Patient Department.

(20) Doors.

**Yes** - Some of the doors in areas to be refurbished were damaged.

(21) Internal and External Glass.

**No** - External glass requires further attention.

(24) Ventilation and Air Conditioning Units.

**No** - Maintenance of vents and units should be addressed.

(25) Floors (including hard, soft and carpets).

**Yes** - Some areas were clean, however, carpets were found to be in poor condition in X-ray and adjacent to the toilet near main entrance.

**Compliance Heading: 4.1.3 Organisational Buildings and Facilities (note: while list is not exhaustive, the following compliance is required):**

(30) Fixtures: Fixtures (i.e. a piece of equipment or furniture which is fixed in position) should be clean. This includes all electrical fixtures e.g. all light fittings and pest control devices.

**Yes** - Some Bait traps need attention.

(208) There should be a process for the cleaning of curtains and blinds. Curtains should be changed after each known case of infected patient/client where required. Records should be maintained of curtain changing.

**Yes** - Blinds need attention in the staff changing facility.

(209) Air vents are clean and free from debris.

**No** - Air vents are not compliant.

**Compliance Heading: 4.1.5 Sanitary Accommodation.**

(44) Hand hygiene facilities are available including soap and paper towels.

**Yes** - However, no soap was available in the Emergency Department male toilet and an air hand dryer was present with cold air.

**Compliance Heading: 4.1.6 All sanitary fixtures and appliances should be clean and well-maintained. This includes but is not limited to:**

(52) Toilets and Urinals.

**Yes** - However, Bedpans and urinals require a deep clean. Some commodes were in poor repair.

(58) Sluice rooms should be free from clutter and hand washing facilities should be available.

**Yes** - In the majority, however the Emergency Department requires further attention.

**Compliance Heading: 4.2.2 Direct patient contact equipment includes:**

(68) Patient fans which are not recommended in clinical areas.

**Yes** - Fans were found to be in use in non-clinical areas and these require attention.

(70) Bedpans, urinals, potties are decontaminated between each patient.

**Yes** - The bedpan washer was repaired during the assessment.

**Compliance Heading: 4.2.3 Close patient contact equipment includes:**

(77) Loose items such as patients' clothing should be stored in the patients' lockers or property bag.

**Yes** - In the majority, however, some patients' clothing was observed on radiators.

(78) Personal food items, other than fruit, should only be brought in with the agreement and knowledge of the ward manager and should preferably be stored in an airtight container.

**No** - No separate fridges for patients were observed.

(80) All office equipment (e.g. telephones, computers, fax machines) should be clean and well-maintained.

**Yes** - All items were found to be clean, with the exception of the Emergency Department.

(272) Splashes of water or hand-wash gel should not be present on the wall, floor, bed or furniture, splash backs should be provided.

**Yes** - No splashes were observed.

**Compliance Heading: 4.3.1 Cleaning Equipment & Products (note: while list is not exhaustive, the following compliance is required):**

(85) Cleaning solutions should only be prepared in a well ventilated area and should never be mixed.

**No** - Some areas require ventilation, in particular where cleaning solutions were prepared.

(90) Storage facilities for Cleaning Equipment should be provided in each work area with adequate ventilation, a hot and cold water supply and hand-wash facilities.

**No** - Some areas were not compliant in this regard.

(92) Cleaning products and consumables should be stored on shelves in locked cupboards.

**No** - Some products and consumables were stored in shared areas which were not locked.

**Compliance Heading: 4.4.1 Kitchens, ward/department kitchens & kitchen fittings/appliances (note: while list is not exhaustive, the following compliance is required):**

(212) Irish Standard 340: 2006 Hygiene in Food Service (Draft) of the National Standards Authority of Ireland (NSAI) specifies guidance to compliance with the requirements of S.I. 369 of 2006 EC (Hygiene of Foodstuffs) Regulations and Regulation (EC) No. 852/2004 on Hygiene of Foodstuffs. This should be complied with.

**No** - Draft 5 IS340 was on file. The current Standard, IS 340; 2007 was not in use.

(215) There should be a documented ward kitchen food safety policy which should be signed off by the person in charge of the ward kitchen and the hospital manager.

**Yes** – However, the National Ward Kitchen Policy was not in place.

#### **Compliance Heading: 4.4.2 Facilities.**

(217) Access to the main kitchen and ward kitchens should be restricted to designated personnel i.e. food workers.

**Yes** - However, the ward kitchen doors were found in an open position and not locked. Staff only signs were in place.

(220) Staff must not consume food or beverages intended for patient use, food should not be consumed in the ward kitchen and no food is to be routinely prepared in the ward kitchen other than beverages and toast.

**No** - A policy is required regarding the storage of these food items.

(221) Staff clothing/uniforms/shoes personal belongings should not be stored in food rooms.

**Yes** - Staff clothing and personal belongings were observed in the staff room in the X-ray Department.

(222) A wash hand basin should be provided at the ward kitchen, in addition to a sink, along with a liquid soap dispenser and hygienic hand drying (e.g. paper towels).

**Yes** - A Quality Improvement Plan is in progress.

(223) Separate toilets for food workers should be provided.

**Yes** - Male toilets are some distance from the kitchen.

(224) The ventilation provided for all cooking and steam emitting equipment shall be sufficient to prevent condensation on walls, ceilings and overhead structures during normal operations.

**No** - The Main kitchen ventilation (extraction) was not working during the assessment. This was addressed.

#### **Compliance Heading: 4.4.3 Waste Management.**

(229) Animal and pest control measures shall be in place in all waste handling and storage areas.

**Yes** - These measures were observed. However, these were in poor condition and required cleaning.

(230) A supply of water should be available to clean down external waste storage areas.

**Yes** - However, attention to detail is required in relation to cleaning.

(233) In food preparation areas where lidded bins are provided they shall be foot pedal operated.

**Yes** - However, some bins were still in need of upgrade in the main kitchen. This issue is being addressed by the hospital.

#### **Compliance Heading: 4.4.4 Pest Control.**

(238) Electric fly killer (EFK) units when used shall be located in an area free from draughts, away from natural light and not directly above an area where food or materials that come into contact with food are located. The EFK units shall be left on at all times and have shatter proof sleeves. The ultraviolet (uv) light tubes shall be replaced at least annually and records of replacement should be retained. The EFK shall be fitted with a catch tray and emptied as required.

**Yes** - These are in place; however extra units may be required in some areas.

(239) Fly screens should be provided at windows in food rooms where appropriate.

**Yes** - However, a fly screen is required at the main kitchen entrance.

#### **Compliance Heading: 4.4.5 Management of Chill Chain in a Hospital.**

(240) A Hospital using a cook-chill system should comply with Guidance Note No. 15 Cook-Chill Systems in the Food Service Sector (Food Safety Authority of Ireland) The temperatures of fridges, freezers, cold rooms and chill cabinets shall be capable of maintaining the temperature of foodstuffs

**Yes** - A cook-chill system is not in use.

#### **Compliance Heading: 4.4.10 Plant & Equipment.**

(249) Machines should dispense ice but where ice-scoops are used, they should be stored separately from the ice-making machine and there should be a process for the appropriate decontamination of the ice scoops. The making of ice cubes other than in ice machines is prohibited.

**No** - The practice of making ice was discussed with management. A review in this area is recommended.

(250) The dishwasher's minimum temperature for the disinfecting cycle should be compliant with I.S.340:2006 requirements and should be monitored regularly. There should be digital readouts on dishwashers.

**No** - The service company monitors temperatures and no documentation was available.

#### **Compliance Heading: 4.5.1 Waste including hazardous waste:**

(138) Details of current legislation and codes of best practice adhered to in relation to all waste types.

**No** - Attention is required to the segregation of waste.

(152) When required by the local authority the organization must possess a discharge to drain license.

**Yes** - This license is not required by Cork City Council.

#### **Compliance Heading: 4.5.3 Segregation.**

(156) Healthcare risk waste must be segregated from healthcare non risk waste.

**No** - Further attention is required in this area.

(256) Mattress bags are available and are used for contaminated mattresses ready for disposal; mattresses are disinfected.

**No** - These measures were not in place.

**Compliance Heading: 4.5.5 Storage.**

(169) Documented process(es) for the replacement of all bins and bin liners.

**No** - No documented process was found but bins were all maintained to a high standard.

**Compliance Heading: 4.6.1 Management of Linen and Soft Furnishings (note: while list is not exhaustive, the following compliance is required):**

(261) Clean linen store is clean, free from dust and free from inappropriate items.

**Yes** - However, wooden shelving present in some wards.

(271) Hand washing facilities should be available in the laundry room.

**Yes** - However, these need to be upgraded.

**Compliance Heading: 4.7.1 Management of hand hygiene (note: while list is not exhaustive, the following compliance is required):**

(187) Nails should be kept short and nail varnish or false nails should not be worn by those working in a clinical setting.

**Yes** - However, some exceptions were noted.

(188) Hand and wrist jewellery should be removed prior to performing all levels of hand hygiene with the exception of a plain wedding band.

**Yes** - However, one exception was noted.

(189) Clinical hand wash sinks are required in all areas where clinical activities are performed. They should be centrally located and free from obstruction.

**Yes** - A Quality Improvement Plan is in progress.

(190) All sinks should be fitted with washable splash backs with all joints completely sealed.

**Yes** - New sinks are compliant however, some of the older sinks are still in use, and this is being addressed.

(192) Taps should be hands free and should be mixer taps to allow temperature regulation.

**No** - Taps observed were not compliant.

(193) Liquid soap is available at all hand washing sinks. Cartridge dispensers must be single use.

**Yes** - However, an exception was noted in the male toilet in the Emergency Department.

(198) Hand hygiene posters and information leaflets should be available and displayed throughout the organization.

**No** - Posters and leaflets were not available at all wash hand sinks in clinical areas.

(203) Hand wash sinks are dedicated for that purpose, are free from used equipment and inappropriate items (e.g. nail brushes).

**Yes** - However, reusable nail brushes were in evidence in theatre and should be replaced with disposable brushes.

(204) Hand wash sinks conform to HBN 95. They should not have plugs, overflows and the water jet must not flow directly into the plughole.

**Yes** - New sinks were found to be compliant.

## 5.0 Appendix B

### 5.1 Ratings Summary

	Self Assessor Team		Assessor Team	
	FREQ	%	FREQ	%
A	3	05.36	8	14.29
B	45	80.36	16	28.57
C	8	14.29	32	57.14
D	0	00.00	0	00.00
E	0	00.00	0	00.00
N/A	0	00.00	0	00.00

### 5.2 Ratings Details

Criteria	Self Assessment	Assessor	Difference
CM 1.1	B	C	↓
CM 1.2	B	B	→
CM 2.1	C	C	→
CM 3.1	B	B	→
CM 4.1	B	B	→
CM 4.2	B	B	→
CM 4.3	B	C	↓
CM 4.4	B	C	↓
CM 4.5	B	C	↓
CM 5.1	A	A	→
CM 5.2	B	B	→
CM 6.1	C	C	→
CM 6.2	A	C	↓
CM 7.1	B	C	↓
CM 7.2	B	B	→
CM 8.1	B	B	→
CM 8.2	B	B	→
CM 9.1	C	C	→
CM 9.2	B	C	↓
CM 9.3	B	C	↓
CM 9.4	C	B	↑
CM 10.1	B	C	↓
CM 10.2	C	C	→
CM 10.3	C	C	→
CM 10.4	B	B	→
CM 10.5	C	C	→
CM 11.1	B	B	→
CM 11.2	B	C	↓
CM 11.3	B	B	→
CM 11.4	B	B	→
CM 12.1	B	C	↓

CM 12.2	C	C	→
CM 13.1	B	C	↓
CM 13.2	B	C	↓
CM 13.3	B	C	↓
CM 14.1	A	A	→
CM 14.2	B	B	→
SD 1.1	B	C	↓
SD 1.2	B	C	↓
SD 2.1	B	C	↓
SD 3.1	B	C	↓
SD 4.1	B	A	↑
SD 4.2	B	A	↑
SD 4.3	B	B	→
SD 4.4	B	A	↑
SD 4.5	B	A	↑
SD 4.6	B	A	↑
SD 4.7	B	A	↑
SD 4.8	B	C	↓
SD 4.9	B	C	↓
SD 5.1	B	C	↓
SD 5.2	B	C	↓
SD 5.3	B	B	→
SD 6.1	B	C	↓
SD 6.2	B	C	↓
SD 6.3	B	C	↓