

# Infection Control Coordination Management



**Draft**



**December 2020**



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HESAS EMS Standards Document

Published by HESAS and ReXcels Press

Boston, MA, USA.

Initial draft publication, June 2014.

## Message from the chairman

It is vividly evident that the world witnessed the worst public health and economic crisis due to COVID-19 pandemic. This inevitably mobilized the international community to act seriously and swiftly. However, the mortalities and morbidities induced by healthcare-acquired infections (HAI) are equally fatal, but the international community did not act similarly. Consequently, we are continuously and chronically suffering from HAI.

The current intervention for HAI is merely based on passively-set standards and enforcing these standards via regulatory agencies such as the centre for disease control and prevention (CDC), joint commission international (JCI), ministries of health, and other regulatory agencies. To efficiently address HAI, we inevitably need to mobilize the international community because HAI traverses a multitude of epistemological dimensions, requiring multidisciplinary tacit knowledge, and mandates active international collaboration. Besides, we believe that we can efficiently traverse deeply into the root-causes and solution landscapes by automating the entire healthcare environmental services and infection control within healthcare institutions using the latest advancements in computational epistemology, computational infection control models, computational epidemiological models, artificial intelligence, machine learning, distributed ledger technology, collective intelligence, cognitive technologies, internet of things, ubiquitous technologies, intelligent micro-measurement frameworks, artificial life, evidence-based program implementation, patient-centric care, strategy anchored execution, and symbiotic healthcare ecosystem services. Consequently, we developed these open standards that were tailored from diverse international standards to promote the automation of healthcare environmental services and infection control processes and best practices.

The Healthcare Environmental Services Operational Map (HESOM) and other standards were developed to efficiently leverage multidisciplinary experts and practitioners to contribute towards the eradication of HAI-induced mortalities and morbidities. Using ReXcels research and innovation environment, we cultivate collective intelligence by bringing together these multidisciplinary experts to iteratively develop these standards and adaptively support the innovation of computational technology that automates the execution and enforcement of these standards. As such, we cordially invite you to use these documents and participate actively in the further development of these standards to significantly reduce HAI-induced mortalities, morbidities, and their enormous negative economic externalities.

**Hamid Adem**

Interim Chairman, and Chief R&D Officer

# Change Control

## Change Control

Version:	Date:	Changes:

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# Infection Control Coordination Management

## Purpose





# 1 Purpose

## 1. PURPOSE

The purpose of this document is to establish Infection Control Coordination Management process that would:

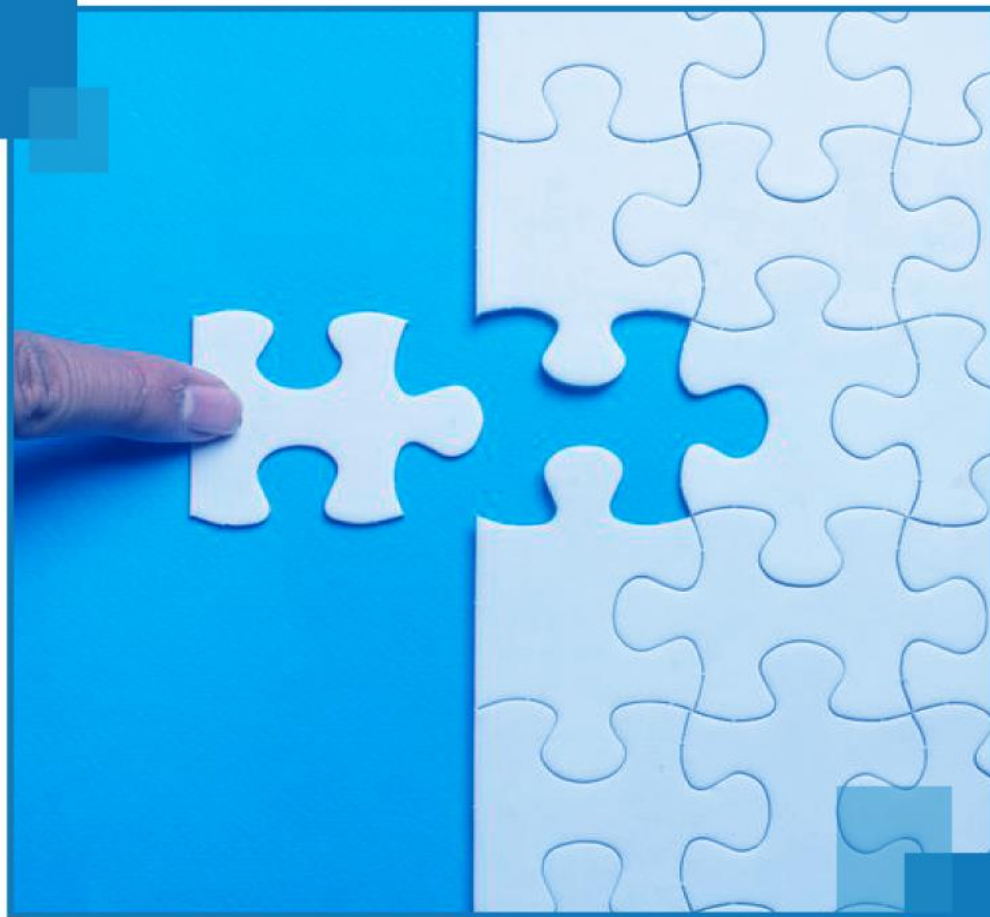
- Efficiently coordination all the infection control activities
- Remove any of mis-coordination that can affect the overall performance of the process.
- Manage dependencies among tasks and agents in order to reduce time and costs and improve the outcome.
- Smoothen the communication between all the agents involved in infection coordination.
- Ensure effective infection control endorsement.

This process is based on international well acclaimed standards like:

- *NHS- National Health Services Standard*
- *OSHA- Occupational Safety and Health Administration standard*
- *CDC- Centers for Disease Control and Prevention standard*
- *Lean six sigma- Quality Standard*
- *JCI- Journal of Clinical Investigation standard*
- *JCAHO- Joint Commission on Accreditation of Healthcare Organizations (JCAHO)*
- *EPA- US Environmental Protection Agency*
- *HCAHPS - Hospital Consumer Assessment of Healthcare Providers and Systems*
- *HIPA- Health Information Privacy Act standard.*

*P.S: This process is a derivation from **ESM (Environmental Service Map)**, which is a holistic and a comprehensive model for Environmental Services Management.*

## Structure of the Document



# 2 Structure of the Document

## 2. STRUCTURE OF THE DOCUMENT

The Infection Control Coordination Management process document comprises the following chapters:

**Chapter-3:** Scope: This chapter describes the scope of the document and the Infection Control Coordination Management process.

**Chapter-4:** General Assumptions: This chapter describes the underlined assumptions made for both the document and Infection Control Coordination Management process.

**Chapter-5:** Infection Control Coordination Management Framework: This chapter exhibits the interaction of Infection Control Coordination Management process with other related processes and also describes the high level process sequence for Infection Control Coordination Management based on EMS framework.

**Chapter-6:** Infection Control Coordination Management Process: In this chapter Infection Control Coordination Management process and sub processes (if any) will be depicted and specified using rigorous BPMN and process specification templates.

**Chapter-7:** References: This chapter serves as a prime reference to Infection Control Coordination Management process and presents the details supporting it in tabular formats. The chapter describes relevant Business Rules, Risks, Quality Attributes, Data Quality Dimensions, Operation Policies, KPIs, CTQs, Abstract Time-scales and SLAs terms specific to Infection Control Coordination Management process.

The Infection Control Coordination Management process is supposed to be a living document and consists of various variable values which would frequently evolve or change as Infection Control Coordination Management process matures or changes.

## Scope



# 3 Scope

## 3. SCOPE

The scope of this process is applicable to all the processes and activities involved in infection control.

## General Assumptions





## 4. GENERAL ASSUMPTIONS

The following are the general assumptions made:

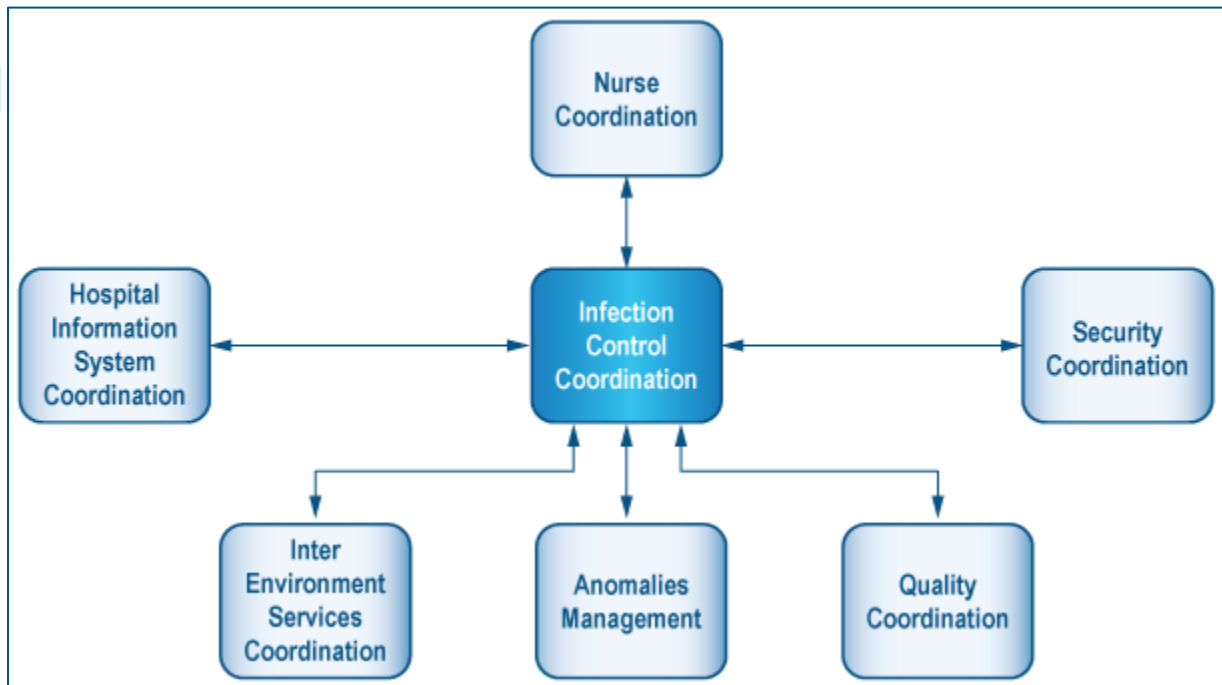
- Inputs to the process are accurate.
- This process is supported by automated tools that would enable detailed analysis and management capabilities for this process.
- The roles defined in this document can be attached to the existing position
- Any process or sub process related assumptions are explicitly identified in related Process Specification table in Chapter 6.

## Infection Control Coordination Management Framework



## 5.1 Infection Control Coordination Management Interactions

The following depiction shows the points of interaction Infection Control Coordination Management process with other related EMS processes. The arrows moving into Infection Control Coordination Management process signify the inputs from the other process to Infection Control Coordination Management process, and the arrows moving out of the Infection Control Coordination Management process signify the inputs from Infection Control Coordination Management process to other related EMS processes. All these processes depicted below are defined in their own respective dedicated documents.



## 5.2 Infection Control Coordination Management Process Sequence

The Infection Control Coordination Management process comprises of following high level sequence of activities:

1. **Establishing Infection Control Coordination Board**

2. Identification of Infection control Process
3. Identifying Infection control relationships
  - Perform Infection control data collection
  - Enforcing Infection control
  - Optimization of coordination.
  - Monitor Performance.

**Section 5.2.1 -5.2.6** describes the high level process sequence for Environmental services department Infection Control Coordination Management based on EMS framework. **Section 6.1** Process Model sheds more light on the flow of Infection Control Coordination Management process.

## 5.2.1 Establishing Infection Control Coordination Board

This involves establishing a governing body to look over infection control coordination for the entire organization. This body would comprise of members taken across the organization. The infection coordination board would comprise of following:

- Infection control coordination team
- Roles and responsibilities
- Chain of Authority
- Coordination Methodology

## 5.2.2 Identification of Infection Control Processes

This comprise of identification of:

- **All Core processes.** These are core infection control processes such as infection management, housekeeping process, waste management
- **All supporting processes.** Those processes which support the infection control management process in the organization, such as quality management, logistics, supplier management etc.

## 5.2.3 Identifying Infection Control Relationships

This comprises of following:

- **Identification of activities** .Decomposition of the entire process into activities.
- **Identification of critical activities**. These are the actual activities which are implemented in order to manage infection control process.
- **Identification of dependencies**. This comprises of identification of all the possible dependencies which the critical processes need for their smooth functioning activities.
- **Identification of coordinating resources**. This comprises of
  - **Identification of actors**. This comprises identification of actors who are responsible for coordinating task.
  - **Identification of resources**. This comprises identification of resources which are responsible for coordinating task.

## 5.2.4 Perform Infection control data collection

- **Establish Data collection Capability.**

This involves:

- **Establishing Data collection policy**. A written plan, endorsed by environmental services department management, documenting the objectives, methodology, tools and techniques, and resource requirements.
- **Identification of goals**. This involves establishing goals of the data collection:
- **Accountability for service**
  - reducing infection rates
  - Establishing baseline for infection rates
  - Identifying infection outbreaks, trends
  - Meeting regulatory requirements
  - Benchmarking
- **Resource Requirement**. Identification of adequate resources
  - **Trained infection control officer**. A practitioner appropriately trained in infection control will be required in order to collect accurate data. The level of human resources required for this activity will depend on the method of data collection chosen

- **Infrastructure support.** Adequate computer support is required to speed up the work and to increase accuracy.
- **Review frequency.** regular program review to ensure the design meets the specified objectives
- **Establish the focus for data collection**

This involves establishing the scope of data collection. Typically data collection is focused at one or more of the following:

  - Surgical site infection (SSI)
  - Blood stream infection (BSI)
  - Device-related infection (eg IDC, intravenous line, ventilator)
  - Environment related Infection (air, water, surface)
- **Sampling**

This refers to the collection of data and measuring techniques. This involves following:

  - **Identification of parameters.** This involves identification of :
    - Population. The actual target audience of the data collection.
    - Sampling. The sample representation of the population.
    - Hypothesis. Test to ensure that the sample selected is actual representation of the population.
    - Sample size. The optimal sample size to establish purposeful results
  - **Data collection.** This comprises of following:
    - Instantaneous data collection. This refers to a conditions where by certain events can result into instantaneous data collection, for example a patient profile shows TB, would be a instantaneous data source rather than identification of microbes in the environmental conditions
    - Implicit plan. This refers to the computer generated automated plan.
    - Explicit plan. this refers to the whereby data collection is done for certain situations such as virus outbreaks and requires human intervention.
  - **Sampling techniques.** This comprise of following:
    - Simple random sampling. In a simple random sample ('SRS') of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided or partitioned



- Systematic sampling. Systematic sampling relies on arranging the target population according to some ordering scheme and then selecting elements at regular intervals through that ordered list.
  - Stratified sampling. Where the population embraces a number of distinct categories, the frame can be organized by these categories into separate "strata." Each stratum is then sampled as an independent sub-population, out of which individual elements can be randomly selected
  - Line-intercept sampling. Line-intercept sampling is a method of sampling elements in a region whereby an element is sampled if a chosen line segment, called a "transect", intersects the element.
- **Data Survey methods**

Following data survey method(s) can be chosen and tailored to the specific needs:

    - **Incidence surveys (infection rate calculation)**

Infection rates indicate the incidence of new cases of infection in a population with similar intrinsic infection risks who are exposed to similar extrinsic risks in a designated time period.
    - **Signal infection Surveys.** 'Signal infection' involves viewing all preventable health care associated infections as a 'signal' to review associated processes and procedures. This entails retrospective review of the details of the event, the factors involved, review of systems and processes that underlie identified factors and development of a plan of corrective action where indicated.
    - **Control charts.** Control charts identify variation in infection frequency related to systems and processes, and in the way processes are implemented. Control charts do not rely on large data sets and thus enable timely analysis of data and rapid response to problem areas.
    - **Prevalence surveys.** Prevalence surveys enable identification of all active (i.e. existing plus new) cases of infection in a defined population on a single day ('point prevalence'), or over several days ('period prevalence'). This entails review of each individual in the setting, with data collected through direct assessment, chart review and discussion with caregivers. This is a rapid means for identifying the range and number of infections present in facility occupants
  - **Choosing appropriate method**

Depending on data collection objectives and the resources available, prevalence surveys and control charts may be used to detect infection. Signal infection surveillance is recommended in the case of small data sets.

- **Identify Data collection techniques**

Following technique(s) can be utilized for data collection:

- **In ward technique**
  - Direct observation
  - Chart review
  - Review of reports
  - Discussion with staff
  - Review of medication records
  - Clinical surveillance
  - Ward rounds
  - Screening admission records to identify patients re-admitted with infection
- **Post-discharge Technique**
  - questionnaires (posted to patient and/or to the surgeon/general practitioner)
  - telephone survey (involving patient and/or surgeon/general practitioner)

## 5.2.5 Enforcing Infection control

This comprises of following:

- **Establish Infection enforcement team**

This comprises of following:

- **Establishing Enforcement team members.** This comprises of:
  - Working Group
  - Governance Group
- **Establish Enforcement team roles and responsibilities.** This elucidates as to what rules are to be performed by the committee members, who do they report to, level of authority that they have.
- **Establish infection control enforcement Action Plan.** this comprises of following:
  - Establish Infection control procedures.
  - Establishing enforcement operations procedures.
  - Roles and responsibilities
  - Performance Metrics.

- **Enforce Infection control measures.**

- **Administrative controls**

- Establish Infection control officer/nurse for each shift
- Mandatory infection control training.
- Establish Cross department communication capability

- **Technical Controls**

- Establish automated infection identification, control and investigation. mechanism
- Environmental Monitoring capability.
  - Aerial infection control. Performing regular air sampling and keep a track of it desired purity level.
  - Water infection control. Performing regular water sampling and keep a track of it.
  - Surface infection control. Performing regular environmental (surface) sampling and keep a track of it.

- **Performing Enforcement audits**

This comprises of performing regular audits, planned as well as unplanned and identify any deviations with regards to infection control. In case, any deviations are identified this process is responsible for highlighting it to senior management, and establishing improvement plan. The improvement plan implementation is closely monitored by the senior management.

## 5.2.6 Optimization of Coordination

This comprise of following:

- **Aligning goals.** Aligning goals so that each actor and activity has accountability in the entire infection control management.
- **Removal of interaction complexity.** This involves resolving conflicts arising from unexpected task interactions. Smooth communications between all the parties can help control this constraint
- **Ensuring Information sharing.** This ensures that a free information flow happens across all the activities so that the activities can operate in harmony with each other.
- **Enabling Synchronization.** Some activities need to be synchronized with other activities so as to ensure that they do not impact the over all process goal.
- **Establish Behavior Harmony.** This activity ensures that all the actors/ agents involved in the coordination process trust each other, and see the entire process as one and the vicious cycle of blame game doesn't happen.

- **Use of Automation.** Using automated tools to facilitate coordination would ensure that the processes remains accurate and is free from error.
- **Ensure Mutual Exclusiveness.** This activity ensures that two coordinating activities do not share a resource at the same time. This ensure that the processes do not suffer from:
  - **Deadlock.** Deadlock is a situation where by two activities are waiting for each other and neither can proceed.
  - **Starvation.** Starvation occurs when a blocked activity is consistently not allowed to proceed

## 5.2.7 Monitor performance

This process involves monitoring the performance of the entire process to identify:

- **Conflicts.** If any conflicts are identified, they are highlighted to senior management, who would draft resolution plan to optimize the infection control coordination process
- **Improvisations.** If any improvisation needs are identified, they are highlighted to senior management, who would draft improvisation plan to optimize the infection control coordination process
- **Anomalies.** The anomalies found in the process are escalated to the anomalies management process.

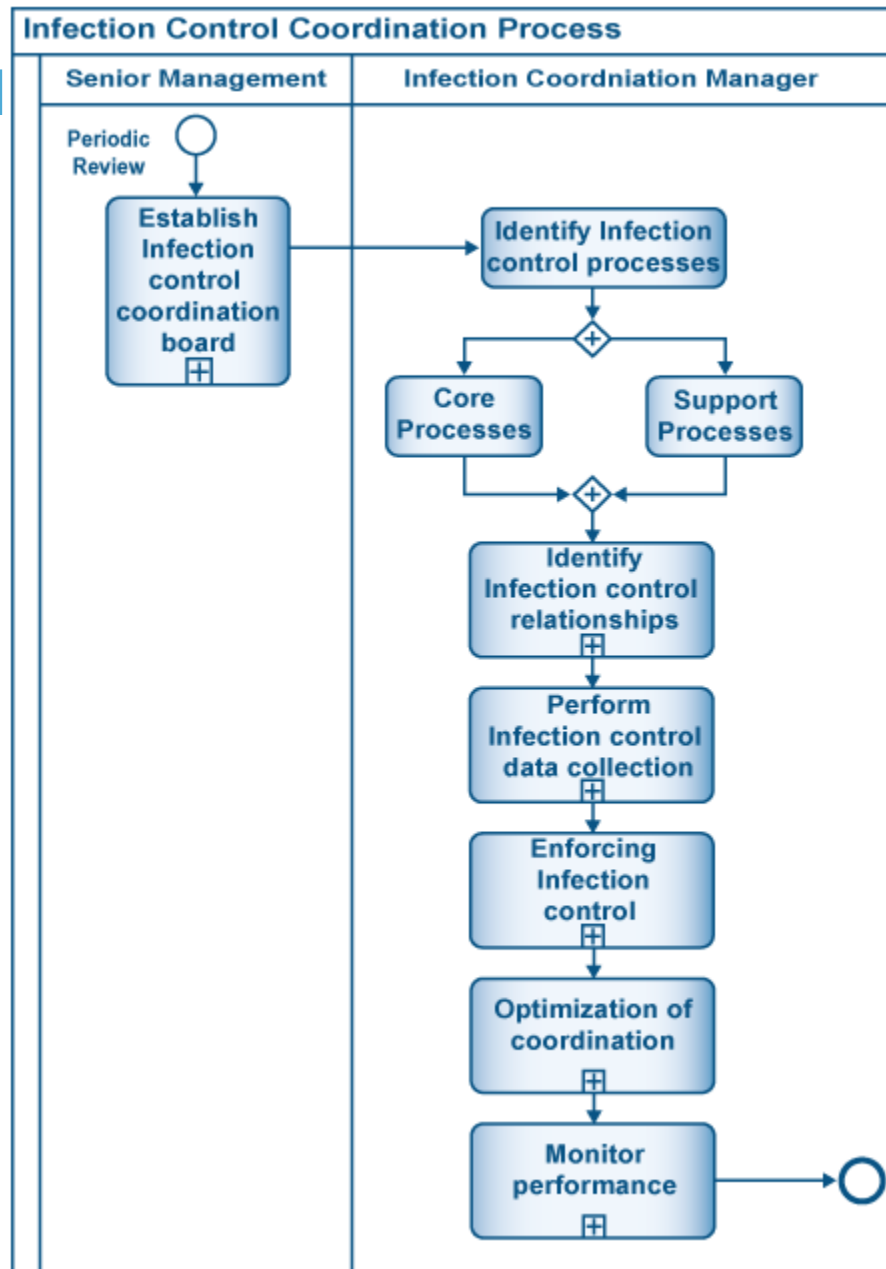
## Infection Control Coordination Management Process



# 6

## Infection Control Coordination Management Process

### 6.1 Process Model





## 6.2 Process Specification

Specification	Description
<b>Summary/Purpose</b>	The purpose of this process is to create Infection Control Coordination Management process for environmental services.
<b>Scope</b>	This is a Level 1 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma Standard, OSHA, NHS
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Coordination of Infection related activities across organization.
<b>Related Operational Policies</b>	OP-001, OP-002, OP-003, OP-004, OP-005, OP-006 (Ref. 7.5)
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>Inputs to the process are accurate.</li> <li>Top level management commitment exists.</li> </ul>
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>Periodic Activities.</li> </ul>						
<b>Basic Course of Event</b>	<p><b>Infection Control Coordination Management</b></p> <ol style="list-style-type: none"> <li>Senior Management establishes infection control coordination board</li> <li>Infection coordination Manager identifies infection control processes (core processes and supporting processes)</li> <li>Infection coordination Manager identifies infection control relationships</li> <li>Infection coordination Manager performs optimization of infection control coordination</li> <li>Infection coordination Manager monitors performance.</li> <li>End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>Keep paper track until system is up and running</li> <li>Update the System and clear all logs.</li> <li>End.</li> </ol>						
<b>Extension points</b>	Anomalies Management						
<b>Preconditions</b>	Automated tools are provided to the process to ensure smooth and effective operations.						
<b>Post -conditions</b>	Infection Control Coordination Management process is established.						

## 6

# Infection Control Coordination Management Process

<b>Related Business Rules</b>	BR-001, BR-002, BR-003, BR-004, BR-005, BR-006 (Ref 7.1)
<b>Related Risks</b>	RR-001, RR-002,(Ref. 7.2)
<b>Related Quality Attributes</b>	Reliability, Availability, Accountability, Performance, Auditability, confidentiality, non repudiation, adaptability (Ref 7.3)
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, timeliness, understandability, concise representation (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	IER, NCP,DR, CCR, CRR, SSIR, BSIR, DRIR, ERIR, PDIR, AIR, WIR, SIR, DR, STR (Ref 7.6)
<b>Related CTQs</b>	IERV, NCPV, DRV, CCRV, CRR, SSIR, BSIR, DRIR, ERIR, PDIR, AIR, WIR, SIR, DRV, STRV, MOM, PWOM, CTQ, IOM, TOM, WRM, DRM (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1

# 6

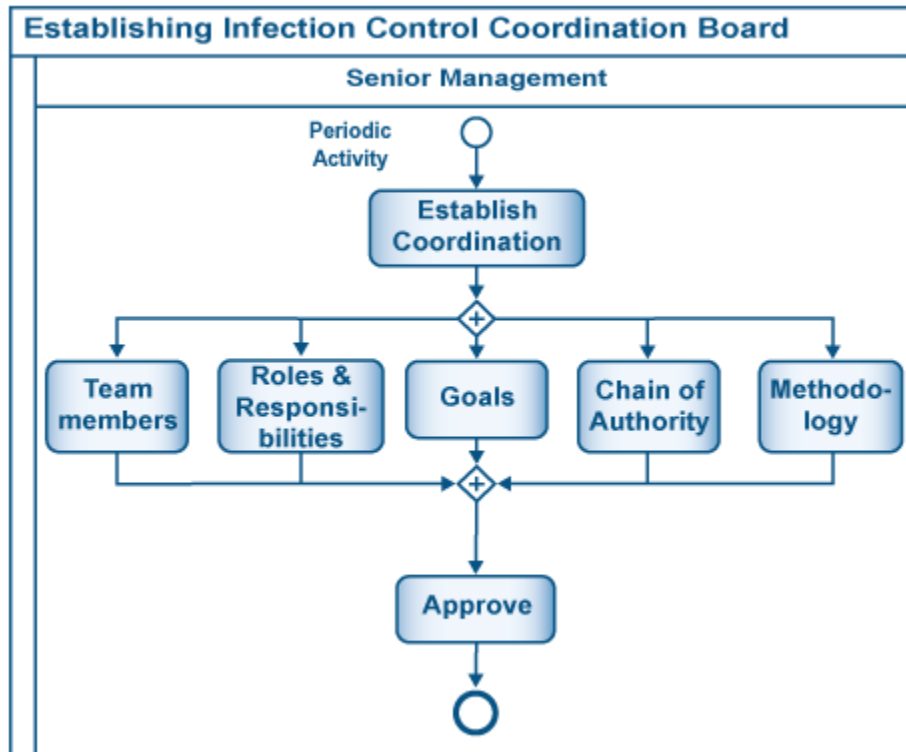
## Infection Control Coordination Management Process

<b>Process Model</b>	6.1
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

### 6.3 Roles and Responsibilities

<b>Roles</b>	<b>Responsibilities</b>
<b>Infection coordination Manager</b>	<ul style="list-style-type: none"><li>• Infection coordination Manager identifies infection control processes (core processes and supporting processes)</li><li>• Infection coordination Manager identifies infection control relationships</li><li>• Infection coordination Manager performs optimization of infection control coordination</li><li>• Infection coordination Manager monitors performance.</li></ul>
<b>Senior Management</b>	<ul style="list-style-type: none"><li>• Senior Management establishes infection control coordination board</li></ul>

## 6.4 Sub Process – Establishing Infection Control Coordination Board



## 6.5 Sub Process – Establishing Infection Control Coordination Board Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the infection control coordination governing body
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management
<b>Related Business Driver</b>	Proper management of the process.
<b>Related Operational Policies</b>	OP-001 (Ref. 7.5)
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>Inputs to the process are accurate.</li> </ul>
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
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Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>Periodic Activity</li> </ul>						
<b>Basic Course of Event</b>	<p><b><u>Establishing Infection Control Coordination Board</u></b></p> <ol style="list-style-type: none"> <li>Senior management establishes coordination team members, roles and responsibilities, goals chain of authority, and coordination methodology.</li> <li>End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>Keep paper track until system is up and running</li> <li>Update the System and clear all logs.</li> <li>End.</li> </ol>						
<b>Extension points</b>	Identify Infection control processes.						
<b>Preconditions</b>	The senior management is very committed to ensure that this process is well governed.						
<b>Post -conditions</b>	Infection Control coordination management team gets formulated.						
<b>Related Business Rules</b>	BR-001 (Ref 7.1)						
<b>Related Risks</b>	RR-001(Ref. 7.2)						
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)						

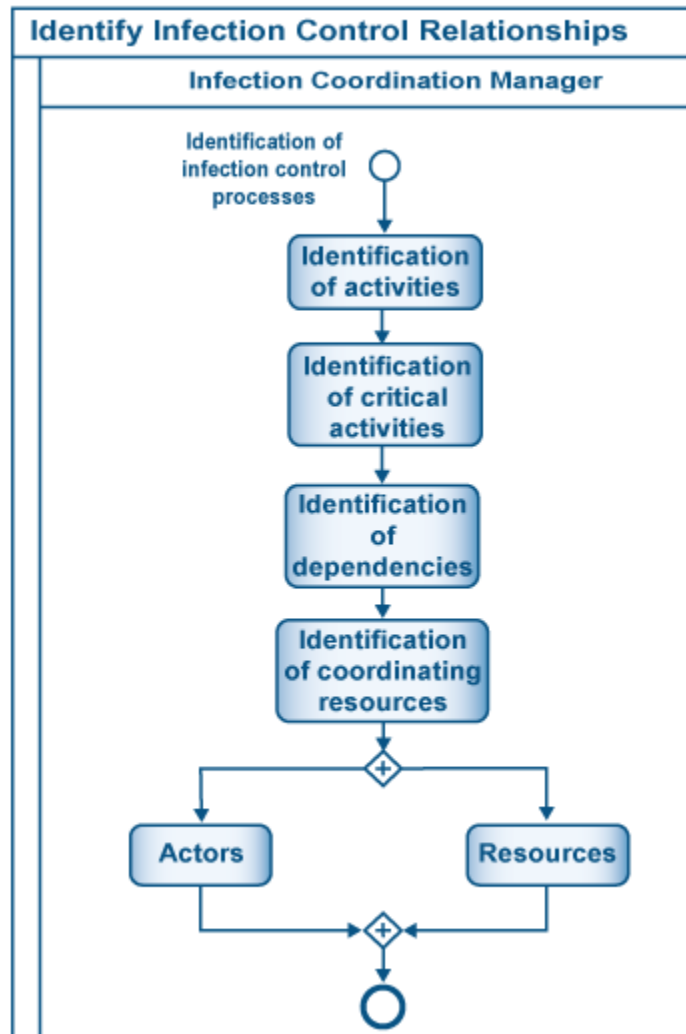


<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	IER(Ref 7.6)
<b>Related CTQs</b>	IERV (Ref 7.7)
<b>Actors/Agents</b>	Senior Management
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.4
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.6 Sub Process – Establishing Infection Control Coordination Board Roles and Responsibilities

Roles	Responsibilities
Senior Management	Responsible for effective operations and formation of infection coordination control body.

## 6.7 Sub Process – Identify Infection Control relationships



## 6.8 Sub Process – Identify Infection Control relationships Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process to identify infection control relationships
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Better understanding of the coordination activities.
<b>Related Operational Policies</b>	OP-002 (Ref. 7.5)
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>Inputs to the process are accurate.</li> </ul>
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>• Identification of infection control process</li> </ul>						
<b>Basic Course of Event</b>	<p><b><u>Identify Infection control relationship</u></b></p> <ol style="list-style-type: none"> <li>1. Infection coordination Manager performs identification of process activities.</li> <li>2. Infection coordination Manager performs identification of critical activities.</li> <li>3. Infection coordination Manager performs identification of dependencies.</li> <li>4. Infection Coordination identifies coordinating resources ( actors as well as resources)</li> <li>5. End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>1. Keep paper track until system is up and running</li> <li>2. Update the System and clear all logs.</li> <li>3. End.</li> </ol>						
<b>Extension points</b>	Optimization of Coordination						
<b>Preconditions</b>	This process is supported by automated tools.						
<b>Post -conditions</b>	Coordination related relationships are understood						
<b>Related Business Rules</b>	BR-002(Ref 7.1)						

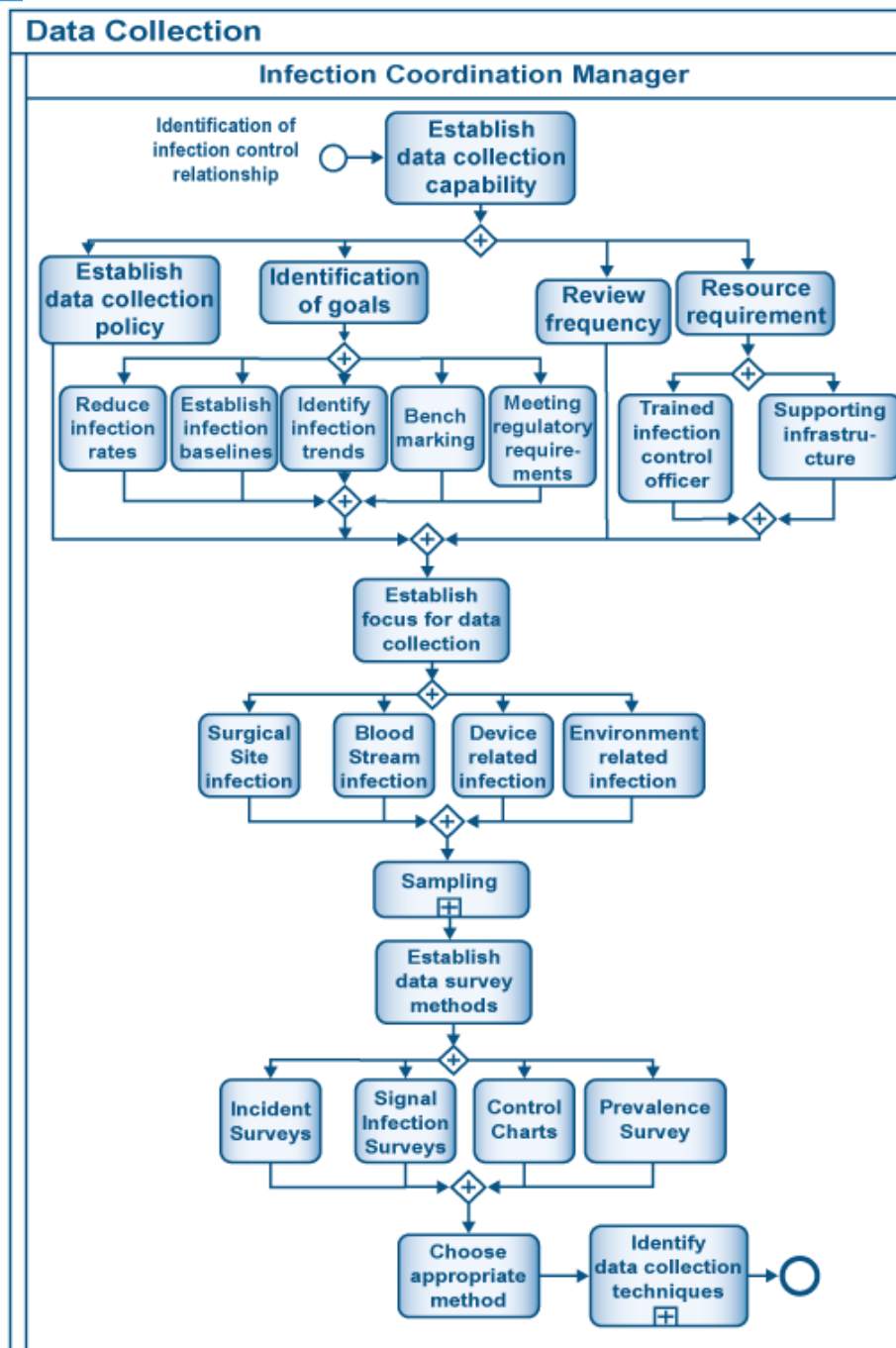
<b>Related Risks</b>	RR-002(Ref. 7.2)
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	NCP(Ref 7.6)
<b>Related CTQs</b>	NCPV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.7
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.9 Sub Process – Identify Infection Control relationships Roles and Responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	<ul style="list-style-type: none"><li>• Infection coordination Manager performs identification of process activities.</li><li>• Infection coordination Manager performs identification of critical activities.</li><li>• Infection coordination Manager performs identification of dependencies.</li><li>• Infection Coordination identifies coordinating resources ( actors as well as resources)</li></ul>



## 6.10 Sub process – Perform Infection control data collection



## 6.11 Sub Process – Perform Infection control data collection Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process to explain the process of data collection.
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Efficient data collection
<b>Related Operational Policies</b>	OP-005 (Ref. 7.5)
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>Inputs to the process are accurate.</li> </ul>
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>• Identification of infection control relationship</li> </ul>						
<b>Basic Course of Event</b>	<p><b><u>Data collection</u></b></p> <ol style="list-style-type: none"> <li>1. Infection coordination Manager establishes data collection capability (establish data collection policy, identification of goals (reduce infection rates, establish infection baselines, identify infection trends, bench marking, meeting regulatory requirements), review frequency of the data collection capability, resource requirements (trained infection control officer and supporting infrastructure)</li> <li>2. Infection coordination Manager establishes the focus for data collection (surgical site infection and or blood stream infection and or device related infection and or environment related infection)</li> <li>3. Infection coordination Manager performs sampling.</li> <li>4. Infection coordination Manager establishes data survey methods (incident survey, signal infection survey, control charts, prevalence surveys)</li> <li>5. Infection Coordination Manager chooses the appropriate method</li> <li>6. Infection coordination manager identifies the collection technique</li> <li>7. End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>1. Keep paper track until system is up and running</li> <li>2. Update the System and clear all logs.</li> </ol>						

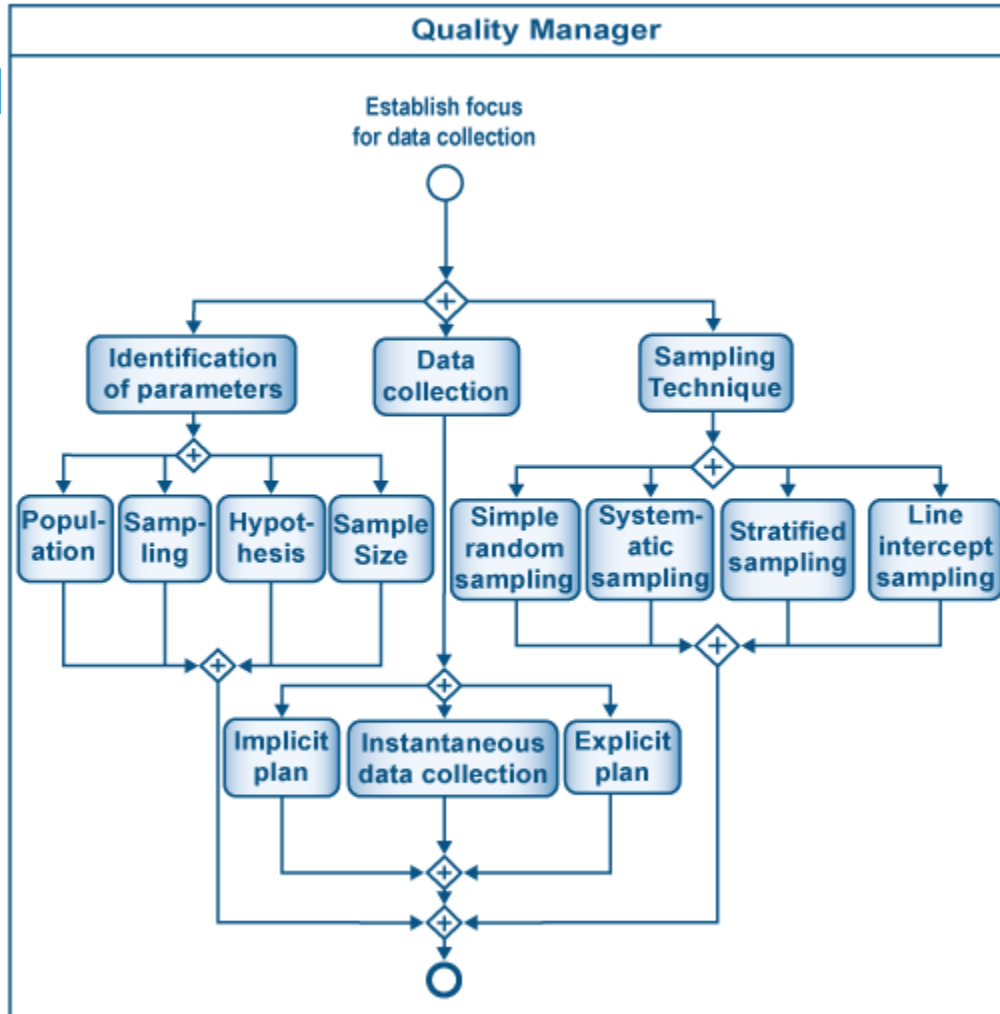
	3. End.
<b>Extension points</b>	Identification of data collection technique, sampling
<b>Preconditions</b>	This process is supported by automated tools.
<b>Post -conditions</b>	Data collection process is established.
<b>Related Business Rules</b>	BR-003(Ref 7.1)
<b>Related Risks</b>	RR-002(Ref. 7.2)
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	SSIR, BSIR, DRIR, ERIR(Ref 7.6)
<b>Related CTQs</b>	SSIRV, BSIRV, DRIRV, ERIRV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> </ol>

	2. Log Escalation
<b>Process Map</b>	5.1
<b>Process Model</b>	6.10
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.12 Sub Process – Perform Infection control data collection Roles and Responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	<ul style="list-style-type: none"> <li>• Infection coordination Manager establishes data collection capability (establish data collection policy, identification of goals (reduce infection rates, establish infection baselines, identify infection trends, bench marking, meeting regulatory requirements), review frequency of the data collection capability, resource requirements (trained infection control officer and supporting infrastructure)</li> <li>• Infection coordination Manager establishes the focus for data collection (surgical site infection and or blood stream infection and or device related infection and or environment related infection)</li> <li>• Infection coordination Manager establishes data survey methods (incident survey, signal infection survey, control charts, prevalence surveys)</li> <li>• Infection Coordination Manager chooses the appropriate method</li> <li>• Infection coordination manager identifies the collection technique</li> </ul>

## 6.13 Sub process – Sampling



## 6.14 Sub Process – Sampling data collection Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process to explain the process of sampling
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Efficient data collection
<b>Related Operational Policies</b>	OP-005 (Ref. 7.5)
<b>Assumptions</b>	1. Inputs to the process are accurate.
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination, ATP device
<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)



## 6

# Infection Control Coordination Management Process

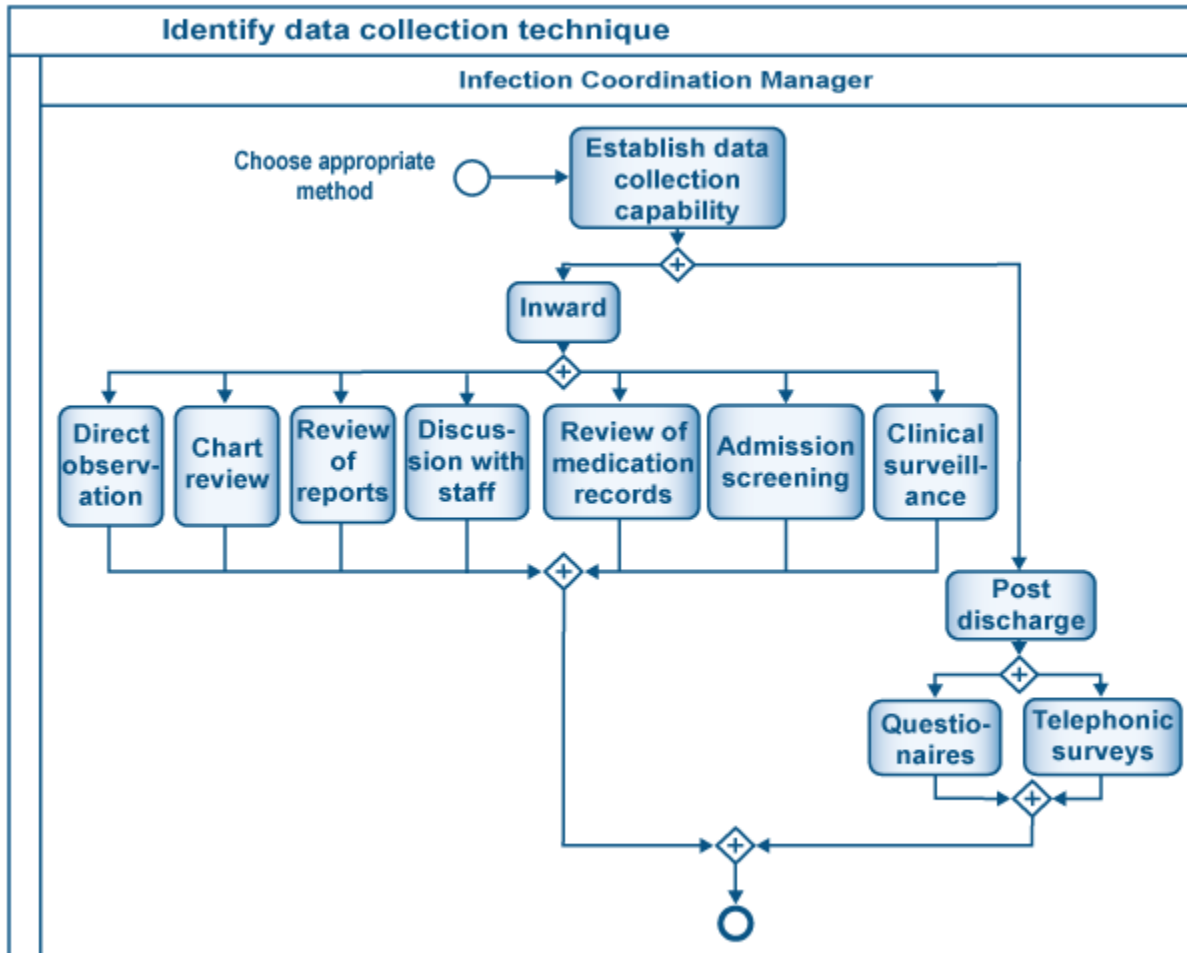
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>Establish focus for data collection</li> </ul>						
<b>Basic Course of Event</b>	<p><b>Sampling</b></p> <ol style="list-style-type: none"> <li>Quality Manager establishes sampling(identification of parameters (population, sampling, hypothesis, sample size) data collection categories (instantaneous data collection, implicit plan and explicit plan) and sampling techniques (simple random sampling, systematic sampling, stratified sampling, line intercept sampling)</li> <li>End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>Keep paper track until system is up and running</li> <li>Update the System and clear all logs.</li> <li>End.</li> </ol>						
<b>Extension points</b>	Identify data collection technique						
<b>Preconditions</b>	This process is supported by automated tools.						
<b>Post -conditions</b>	Sampling process is established.						
<b>Related Business Rules</b>	BR-006(Ref 7.1)						
<b>Related Risks</b>	RR-002(Ref. 7.2)						
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)						
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability						

	(Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	STR(Ref 7.6)
<b>Related CTQs</b>	STRV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.13
<b>Other References</b>	<p>Appendix A: Business Process Modeling Notation Reference</p> <p>Appendix B: Chain of Infection</p>

## 6.15 Sub Process – Perform Infection control data collection Roles and Responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	Quality Manager establishes sampling (identification of parameters (population, sampling, hypothesis, sample size) data collection categories (instantaneous data collection, implicit plan and explicit plan) and sampling techniques (simple random sampling, systematic sampling, stratified sampling, line intercept sampling)

## 6.16 Sub process – Identify Data collection technique



## 6.17 Sub Process – Identify control data collection technique Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process of data collection techniques.
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Efficient data collection
<b>Related Operational Policies</b>	OP-005 (Ref. 7.5)
<b>Assumptions</b>	Inputs to the process are accurate.
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	Choose appropriate method						
<b>Basic Course of Event</b>	<p><b><u>Identify data collection technique</u></b></p> <ol style="list-style-type: none"> <li>Infection coordination Manager establishes collection capability inward (via direct observation, chart review, review of reports, discussion of staff, review of medication records, admission screening, clinical surveillance) and post discharge (via questionnaires, and telephonic surveys)</li> <li>End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>Keep paper track until system is up and running</li> <li>Update the System and clear all logs.</li> <li>End.</li> </ol>						
<b>Extension points</b>	Enforcing infection control						
<b>Preconditions</b>	This process is supported by automated tools.						
<b>Post -conditions</b>	Data collection technique is established.						
<b>Related Business Rules</b>	BR-003(Ref 7.1)						
<b>Related Risks</b>	RR-002(Ref. 7.2)						

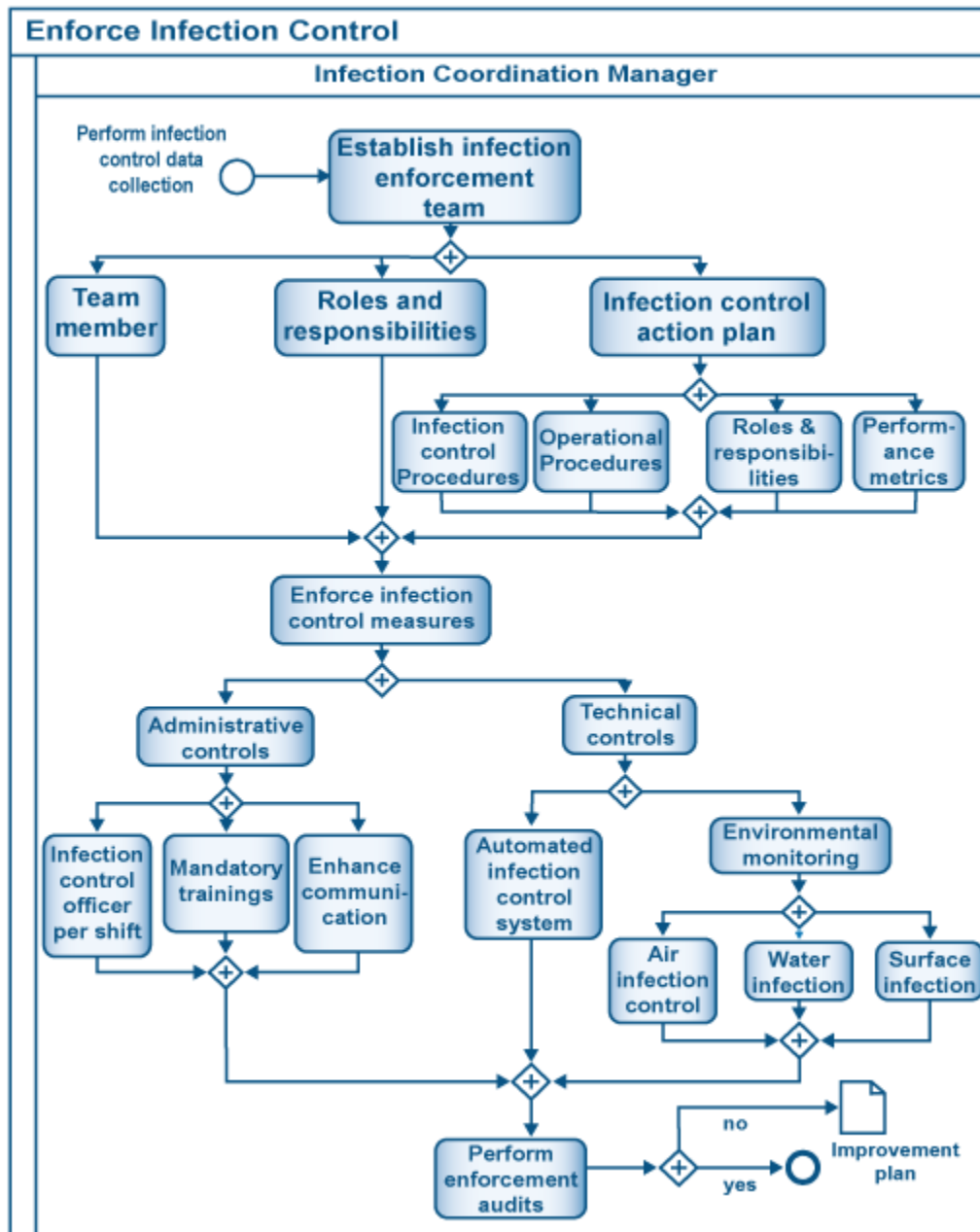
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	PDIR(Ref 7.6)
<b>Related CTQs</b>	PDIRV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.16
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection



## 6.18 Sub Process – Identify control data collection technique Roles and Responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	Infection coordination Manager establishes collection capability inward (via direct observation, chart review, review of reports, discussion of staff, review of medication records, admission screening, clinical surveillance) and post discharge (via questionnaires, and telephonic surveys)

## 6.19 Sub process – Enforcing Infection control



## 6.20 Sub Process – Enforcing Infection control Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process for enforcing infection control
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Efficient infection control implementation
<b>Related Operational Policies</b>	OP-006 (Ref. 7.5)
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>Inputs to the process are accurate.</li> </ul>
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	Perform infection control data collection.						
<b>Basic Course of Event</b>	<p><b><u>Enforce infection control</u></b></p> <ol style="list-style-type: none"> <li>1. Infection coordination Manager establishes infection enforcement team (team members, roles and responsibilities, infection control action plan (infection control procedures, operational procedures, plan roles and responsibilities, performance metrics)</li> <li>2. Infection coordination Manager enforces infection control measures administrative controls(infection control officer per shift, enhance communication, mandatory trainings) and technical controls (automated infection control system, environmental monitoring (air infection control, water infection, surface infection)</li> <li>3. Infection coordination Manger performs enforcement audits.</li> <li>4. End</li> </ol>						
<b>Alternative Path</b>	<p><b><u>Enforce infection control process (audit not up till mark)</u></b></p> <ol style="list-style-type: none"> <li>1. Infection coordination manager establishes improvement plan.</li> <li>2. End.</li> </ol>						
<b>Exception Path</b>	<p><b><u>System Down</u></b></p> <ol style="list-style-type: none"> <li>1. Keep paper track until system is up and running</li> <li>2. Update the System and clear all logs.</li> <li>3. End.</li> </ol>						

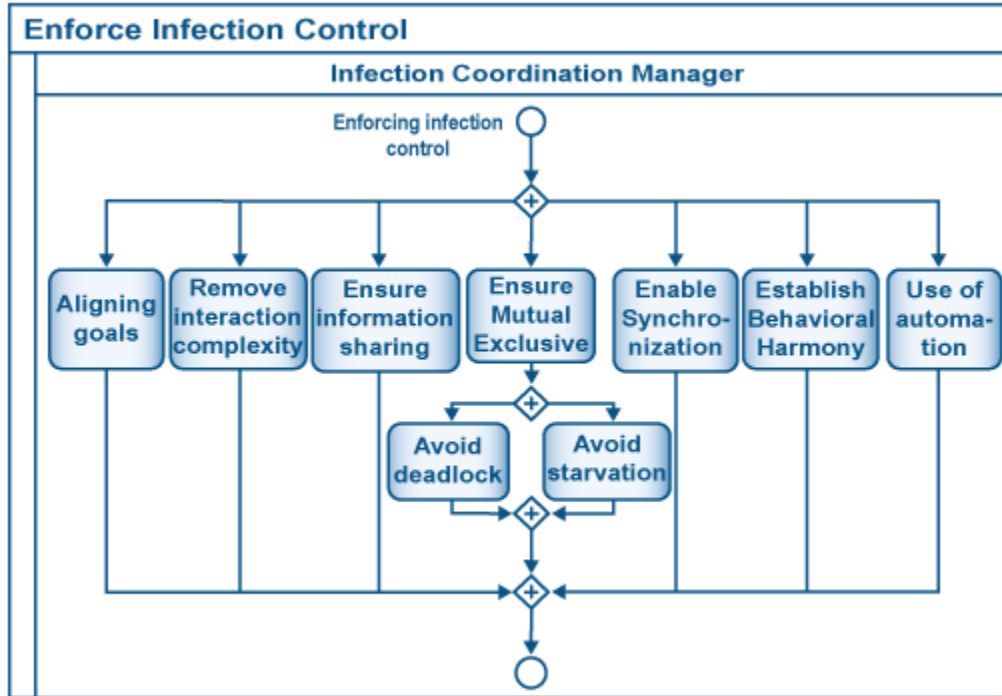
<b>Extension points</b>	Optimization of coordination.
<b>Preconditions</b>	This process is supported by automated tools.
<b>Post -conditions</b>	Enforcement of infection control happens.
<b>Related Business Rules</b>	BR-005(Ref 7.1)
<b>Related Risks</b>	RR-002(Ref. 7.2)
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)
<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	AIR, WIR, SIR, DR(Ref 7.6)
<b>Related CTQs</b>	AIRV, WIRV, SIRV, DRV(Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>

<b>Process Map</b>	5.1
<b>Process Model</b>	6.19
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.21 Sub Process – Enforcing infection control Roles and Responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	<ul style="list-style-type: none"> <li>Infection coordination Manager establishes infection enforcement team (team members, roles and responsibilities, infection control action plan (infection control procedures, operational procedures, plan roles and responsibilities, performance metrics)</li> <li>Infection coordination Manager enforces infection control measures administrative controls (infection control officer per shift, enhance communication, mandatory trainings) and technical controls (automated infection control system, environmental monitoring (air infection control, water infection, surface infection)</li> </ul>

## 6.22 Sub Process – Optimization of Coordination



## 6.23 Sub Process – Optimize of Coordination Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process to optimize coordination for infection control.
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Optimization of the coordination process.
<b>Related Operational Policies</b>	OP-003 (Ref. 7.5)
<b>Assumptions</b>	Inputs to the process are accurate.
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.
<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)



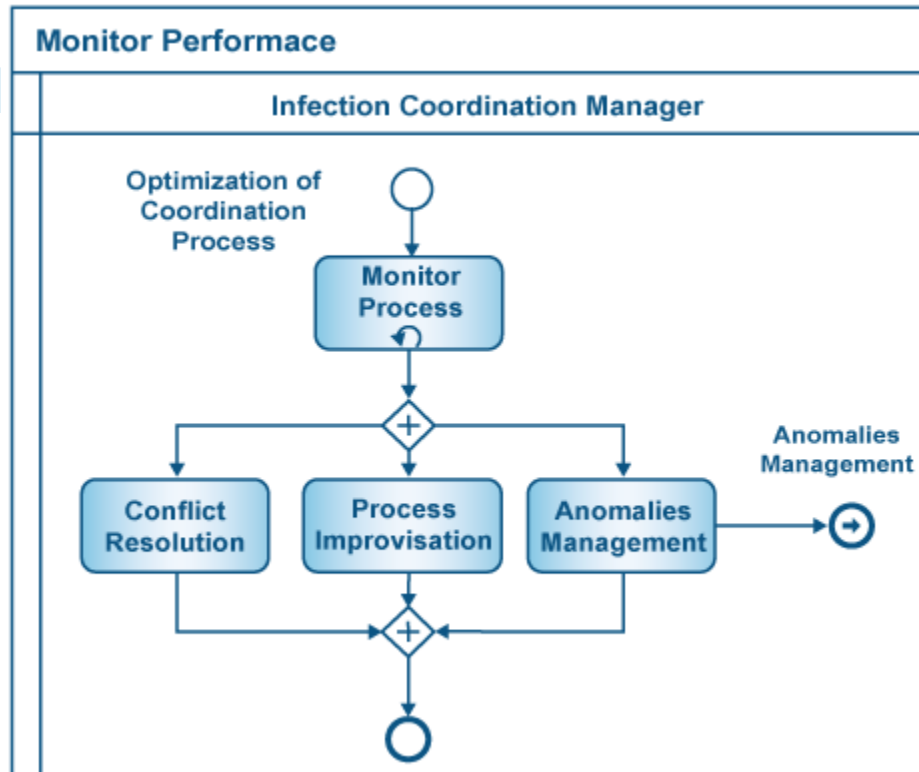
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <tr> <td><b>Type</b></td> <td>Normal</td> </tr> <tr> <td><b>Average</b></td> <td>30 min</td> </tr> <tr> <td><b>Std</b></td> <td>12 min</td> </tr> </table>	<b>Type</b>	Normal	<b>Average</b>	30 min	<b>Std</b>	12 min
<b>Type</b>	Normal						
<b>Average</b>	30 min						
<b>Std</b>	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>Enforcing infection control</li> </ul>						
<b>Basic Course of Event</b>	<p><b><u>Optimization of coordination</u></b></p> <ol style="list-style-type: none"> <li>Infection coordination Manager aligns goals, removes interaction complexity, ensures information sharing, ensures mutual exclusiveness (avoid deadlock and starvation), enable synchronization, establish behavioral harmony, ensure use of automation.</li> <li>End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>Keep paper track until system is up and running</li> <li>Update the System and clear all logs.</li> <li>End.</li> </ol>						
<b>Extension points</b>	Monitoring process.						
<b>Preconditions</b>	This process is supported by automated tools.						
<b>Post -conditions</b>	Coordination process is optimized.						
<b>Related Business Rules</b>	BR-003 (Ref 7.1)						
<b>Related Risks</b>	RR-002(Ref. 7.2)						
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)						

<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	DR(Ref 7.6)
<b>Related CTQs</b>	DRV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.22
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.24 Sub Process – Optimize of Coordination Roles and responsibilities

Roles	Responsibilities
Infection coordination Manager	<ul style="list-style-type: none"><li>• Performs optimization of this process.</li></ul>

## 6.25 Sub Process – Monitor Performance



## 6.26 Sub Process – Monitor Performance Specification

Specification	Description
<b>Summary/Purpose</b>	To establish the process of monitoring the process performance.
<b>Scope</b>	This is a Level 2 Process Specification.
<b>Primary Reference</b>	Lean Six Sigma standard, NHS, OSHA
<b>Related ESM Practices</b>	Quality coordination, Nurse coordination, security coordination, hospital information system coordination, inter environment services coordination, Anomalies Management.
<b>Related Business Driver</b>	Process improvement.
<b>Related Operational Policies</b>	OP-002 (Ref. 7.5)
<b>Assumptions</b>	Inputs to the process are accurate.
<b>Voice of Customer</b>	Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude. (Ref 7.10)
<b>Customer Satisfaction Measure</b>	Customer satisfaction index
<b>COI Correlation</b>	None
<b>Raw Materials</b>	None
<b>Equipment &amp; Accessories</b>	Automated System for infection control coordination.

## 6

# Infection Control Coordination Management Process

<b>MSD Management</b>	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)						
<b>EBC Procedures</b>	None						
<b>Timing Dimensions</b>	<table border="1"> <thead> <tr> <th>Type</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>30 min</td> </tr> <tr> <td>Std</td> <td>12 min</td> </tr> </tbody> </table>	Type	Normal	Average	30 min	Std	12 min
Type	Normal						
Average	30 min						
Std	12 min						
<b>Trigger</b>	<ul style="list-style-type: none"> <li>• Identification of infection control process</li> </ul>						
<b>Basic Course of Event</b>	<p><b><u>Monitoring performance</u></b></p> <ol style="list-style-type: none"> <li>1. Infection coordination Manager monitors process continuously for conflict resolution, process improvisation, and anomalies management.</li> <li>2. End</li> </ol>						
<b>Alternative Path</b>	None						
<b>Exception Path</b>	<p><b>System Down</b></p> <ol style="list-style-type: none"> <li>1. Keep paper track until system is up and running</li> <li>2. Update the System and clear all logs.</li> <li>3. End.</li> </ol>						
<b>Extension points</b>	Anomalies Management						
<b>Preconditions</b>	This process is supported by automated tools.						
<b>Post -conditions</b>	Coordination process is improved.						
<b>Related Business Rules</b>	BR-001 (Ref 7.1)						
<b>Related Risks</b>	RR-005(Ref. 7.2)						
<b>Related Quality Attributes</b>	Reliability, Accountability, Performance, Auditability, Extensibility (Ref 7.3)						

<b>Related Data Quality Dimensions</b>	Accuracy, Reputation, Objectivity, free of error, Relevance, completeness, Value added, Believability (Ref 7.4)
<b>Related Primary SLA Terms</b>	(Ref 7.9)
<b>Related KPIs</b>	PAR, CAR, CTAR(Ref 7.6)
<b>Related CTQs</b>	PARV, CARV, CTARV (Ref 7.7)
<b>Actors/Agents</b>	Infection coordination Manager.
<b>Delegation</b>	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> <li>1. Delegate the task to the agent with same Role</li> <li>2. Update the task</li> <li>3. Log the delegation</li> </ol>
<b>Escalation</b>	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> <li>1. Escalate to environmental services department head.</li> <li>2. Log Escalation</li> </ol>
<b>Process Map</b>	5.1
<b>Process Model</b>	6.25
<b>Other References</b>	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

## 6.27 Sub Process – Monitor Performance Roles and responsibilities

Roles	Responsibilities
<b>Infection coordination Manager</b>	<ul style="list-style-type: none"><li>• Infection coordination Manager monitors process continuously for conflict resolution, process improvisation, and anomalies management</li></ul>



## Reference



## 7.1 Business Rules

BR ID	Description	Context	Rule	Source
BR-001	Infection control board enjoys full authority for the infection control coordination process.	Operations	TBD	NA
BR-002	All coordination related processes would be managed at a micro level	Operations	TBD	NA
BR-003	Automated tools should be used everywhere possible for optimizing the process.	Operations	TBD	NA
BR-004	All coordination activities would be monitored for improvement	Operations	TBD	NA
BR-005	Infection control would be handled proactively.	Operations	TBD	NA
BR-006	Sampling would be done via automated processes	Operations	TBD	NA

## 7.2 Risk

Risk ID	Description	Source	Severity Level	Status	Resolution
RR-001	Infection control board member team doesn't have right mix of people.	NA	Medium	NA	The board members should be all well qualified and should belong to different departments of the organization which are vital for the success of this process.

RR-002	Lack of accuracy	NA	High	NA	.Employ automated tools and techniques wherever possible.
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### 7.3 Quality Attribute

QA ID	Description	Threshold
QA-001	Interoperability	TBD
QA-002	Reliability	TBD
QA-003	Service Reliability	TBD
QA-004	Availability	TBD
QA-005	Usability	TBD
QA-006	Normal Usability Operations	TBD
QA-007	Confidentiality	TBD
QA-008	Authenticity	TBD
QA-009	Data Integrity	TBD
QA-010	Availability	TBD
QA-011	Non-repudiation	TBD
QA-012	Accountability	TBD
QA-013	Security Integration	TBD
QA-014	Performance	TBD

QA-015	Scalability	TBD
QA-016	Extensibility	TBD
QA-017	Adaptability	TBD
QA-018	Testability	TBD
QA-019	Auditability	TBD
QA-020	Operability and Deployability	TBD

## 7.4 Data Quality Dimensions

DQ ID	Description	Threshold
DQ-001	Accuracy	TBD
DQ-002	Believability	TBD
DQ-003	Reputation	TBD
DQ-004	Objectivity	TBD
DQ-005	Free-of-Error	TBD
DQ-006	Value Added	TBD
DQ-007	Relevance	TBD
DQ-008	Completeness	TBD
DQ-009	Timeliness	TBD
DQ-010	Appropriate Amount	TBD

DQ-011	Understandability	TBD
DQ-012	Interpretability	TBD
DQ-013	Concise Representation	TBD

## 7.5 Operation Policy

Policy ID	Description	Context	Importance (1-5)
OP-001	All members of the board would be appointed for a period of 1 year.	Operations	TBD
OP-002	All critical process and their supporting processes would be decomposed to activities level for better understanding	Operations	TBD
OP-003	Optimization should be done via automated tools	Operations	TBD
OP-004	All anomalies identified should be escalated to the anomalies management process.	Operations	TBD
OP-005	All data collected would be normalized to remove seasonal effect	Operations	TBD
OP-006	All enforcement activities would be regularly audited to ensure accuracy	Operations	TBD

## 7.6 KPI

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard Threshold
Sample truthiness rate	STR	The percentage of accuracy in samples representation of population.	TBD	TBD	TBD	TBD
Infection effective rate	TTRA	Increase or decrease in the infection control rate	TBD	TBD	TBD	TBD
Number of coordination points	NCP	Number of coordinating points per process	TBD	TBD	TBD	TBD
Deadlock rate	DR	Number of deadlock encounter per process	TBD	TBD	TBD	TBD
Conflict resolution rate	CRR	Number of conflicts resolved per month	TBD	TBD	TBD	TBD
Surgical site infection rate	SSIR	Percentage increase in surgical site related infections	TBD	TBD	TBD	TBD

<b>Blood stream infection rate</b>	<b>BSIR</b>	Percentage increase in blood stream related infections	TBD	TBD	TBD	TBD
<b>Device related infection rate</b>	<b>DRIR</b>	Percentage increase in device related infections	TBD	TBD	TBD	TBD
<b>Environment related infection rate</b>	<b>ERIR</b>	Percentage increase in environment related infections	TBD	TBD	TBD	TBD
<b>Post discharge infection rate</b>	<b>PDIR</b>	Percentage increase in post discharge infections	TBD	TBD	TBD	TBD
<b>Air infection rate</b>	<b>AIR</b>	Percentage increase in air related infections	TBD	TBD	TBD	TBD
<b>Water infection rate</b>	<b>WIR</b>	Percentage increase in water related infections	TBD	TBD	TBD	TBD
<b>Surface infection rate</b>	<b>SIR</b>	Percentage increase in surface related infections	TBD	TBD	TBD	TBD

<b>Deviation rate</b>	<b>DR</b>	Percentage of deviation found in enforcement of infection control management	TBD	TBD	TBD	TBD
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## 7.7 CTQ

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard Threshold
<b>Infection effective rate variation</b>	<b>TTRAV</b>	Standard Deviation of TTRA	TBD	TBD	TBD	TBD
<b>Sample truthiness rate variation</b>	<b>STRV</b>	Standard deviation of STR	TBD	TBD	TBD	TBD
<b>Number of coordination points variation</b>	<b>NCPV</b>	Standard Deviation of NCP	TBD	TBD	TBD	TBD
<b>Deadlock rate variation</b>	<b>DRV</b>	Standard Deviation of DR	TBD	TBD	TBD	TBD
<b>Conflict resolution rate variation</b>	<b>CRRV</b>	Standard Deviation of CCR	TBD	TBD	TBD	TBD



<b>Surgical site infection rate</b>	<b>SSIRV</b>	Standard Deviation of SSIR	NA	TBD	TBD	TBD
<b>Blood stream infection rate</b>	<b>BSIRV</b>	Standard Deviation of BSIR	NA	TBD	TBD	TBD
<b>Device related infection rate</b>	<b>DRIRV</b>	Standard Deviation of DRIR	NA	TBD	TBD	TBD
<b>Environment related infection rate</b>	<b>ERIRV</b>	Standard Deviation of ERIR	NA	TBD	TBD	TBD
<b>Post discharge infection rate</b>	<b>PDIRV</b>	Standard Deviation of PDIR	NA	TBD	TBD	TBD
<b>Air infection rate</b>	<b>AIRV</b>	Standard Deviation of AIR	NA	TBD	TBD	TBD
<b>Water infection rate</b>	<b>WIRV</b>	Standard Deviation of WIR	NA	TBD	TBD	TBD
<b>Surface infection rate</b>	<b>SIRV</b>	Standard Deviation of SIR	NA	TBD	TBD	TBD
<b>Deviation rate</b>	<b>DRV</b>	Standard Deviation of DR	NA	TBD	TBD	TBD

<b>Motion Optimization Measure</b>	<b>MOM</b>	Management of motion optimization measure	NA	TBD	TBD	TBD
<b>Paper work Optimization Measure</b>	<b>PWOM</b>	Management of Paper work Optimization Measure	NA	TBD	TBD	TBD
<b>Correction reduction measure</b>	<b>CRM</b>	Management of Correction reduction measure	NA	TBD	TBD	TBD
<b>Materials Optimization Measure</b>	<b>IOM</b>	Management of Materials Optimization Measure	NA	TBD	TBD	TBD
<b>Transportation Optimization Measure</b>	<b>TOM</b>	Management of Transportation Optimization Measure	NA	TBD	TBD	TBD
<b>Waiting Reduction Measure</b>	<b>WRM</b>	Management of Waiting reduction Measure	NA	TBD	TBD	TBD
<b>Delays reduction measure</b>	<b>DRM</b>	Management of delays reduction measure	NA	TBD	TBD	TBD

# 7 Reference

## 7.8 Abstract Time-Scale

Name	Acronym	Description	Quantification
TBD	TBD	TBD	TBD

## 7.9 SLA Terms

SLA ID	Description	Context	KPI	CTQ
TBD	TBD	TBD	TBD	TBD

## 7.10 Voice of Customer

VOC	Customer	Description	Perceived Value
<b>Hygiene</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Housekeepers, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker.	The environment should be attributing with great hygiene level.	<ul style="list-style-type: none"> <li>• High quality healthcare services</li> <li>• Safe environment</li> <li>• Low infection rate</li> <li>• Low risk</li> </ul>
<b>High and Consistent</b>	Doctors, Patients, Nurses, Housekeeping	High and Consistent Quality of standards.	<ul style="list-style-type: none"> <li>• Reputation of organization or hospital</li> </ul>

<b>Quality of standards</b>	Supervisors, Clerks, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers		<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Trust</li> <li>• Positive psychological bias</li> </ul>
<b>Free of Infections</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	Infections free and healthy environment.	<ul style="list-style-type: none"> <li>• Safe environment</li> <li>• Reputation of hospital or organization</li> <li>• Trust</li> <li>• Quick healing</li> <li>• Positive psychological bias</li> <li>• Low risk</li> </ul>
<b>Timely Services</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	The response time for any request should be very short.	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Trust</li> <li>• Positive psychological bias</li> <li>• Reputation of hospital or organization</li> <li>• Safe environment</li> </ul>
<b>High Coordinating</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks,	There should be high level of coordination between hospital employees and departments.	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Trust</li> <li>• Low risk</li> </ul>

	Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers		<ul style="list-style-type: none"> <li>• Excellent Ergonomic</li> </ul>
<b>Remove Waste</b>	Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	Wastes should be either removed or minimized.	<ul style="list-style-type: none"> <li>• Safe environment</li> <li>• Low infection rate</li> <li>• Low risk</li> <li>• Reputation of hospital or organization</li> <li>• Low cost</li> <li>• Timely response</li> <li>• High quality</li> </ul>
<b>Excellent Ergonomic</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	The hospital environment and policy should comply with physical, organization and cognitive ergonomics.	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Trust</li> <li>• Job accuracy</li> <li>• Excellent communication</li> <li>• Low risk</li> <li>• Reputation of hospital or organization</li> </ul>
<b>Safety</b>	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental	Hospital environment should comply with occupational health and safety procedures.	<ul style="list-style-type: none"> <li>• Safe environment</li> <li>• Professionalism</li> <li>• Low risk</li> </ul>

	Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers		
<b>Appearance</b>	Housekeeping Supervisors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	The appearance of the workers, supervisors and manager should induce positive biases.	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Reputation of hospital or organization</li> <li>• Trust</li> <li>• Positive psychological bias</li> </ul>
<b>Excellent Worker Attitude</b>	Housekeeping Supervisors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	The environment service employee should be free from negative attitudes.	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Reputation of hospital or organization</li> <li>• Trust</li> <li>• Positive psychological bias</li> <li>• Minimum disputes</li> <li>• Less employee turn over</li> </ul>

## 7.11 Customer Context Matrix

Name of Customer	Acronym	Context of Customer	Coordination Process Area
Doctors	DOC	Direct	HIS Coordination
Patients	PAT	Direct	HIS Coordination
Nurses	NUR	Direct	HIS Coordination, Nurse Coordination
Housekeeping Supervisors	HKS	Direct	Quality Coordination, Nurse Coordination, infection control coordination
Clerks	CLR	Direct	HIS Coordination
Visitors	VIS	Indirect	HIS Coordination
Environmental Services Management	ESM	Direct	Nurse Coordination, infection control coordination
Other hospital workers	OHW	Indirect	Security coordination
Laundry worker	LDW	Direct	Nurse Coordination, HIS Coordination
Transportation worker	TRW	Direct	Quality Coordination, HIS Coordination
Maintenance worker	MAW	Direct	Quality Coordination, HIS Coordination
Waste management worker	WMW	Direct	Quality Coordination, HIS Coordination

Infection control professional	ICP	Indirect	infection control coordination
Housekeepers	HK	Direct	HIS Coordination, Nurse Coordination

## 7.12 MSD Attributes

MSD Attribute	Description
Lifting/carrying	Large vertical movements, long carry distances.
Disability	Pose a risk to those with a health problem or a physical or learning disability.
Force	High initial forces to get the load moving.
Loaded motion	High forces to keep the load in motion.
Physical ergonomics	Constraints on body posture/positioning, confined spaces/narrow doorways.
Posture change	Strong force and awkward movement/posture. E.g. bent wrists.
Excessive force	Excessive force to grip raw materials, product or tools
Scarceness	Inadequate tools for repetitive use screwdrivers, pliers, hammers.
Noise	Noise which cause stress and muscle tension.
Concentration	Tasks require high levels of attention/concentration especially where the worker has little control over allocation of effort to the task.
Floor hazards	Remove slip and trip hazards through provision of appropriate floor surfaces and good keeping.
Clothing	Clothing/PPE may prevent sufficient movement for the task or reduce capability. E.g. to grip consider handling needs when selecting work wear/gloves.
Psychosocial factors	Adverse psychosocial factors can increase the potential for manual handling injuries. A workers psychosocial response to work and the workplace conditions



# 7 Reference



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	can affect their health in general and MSDs in particular. The factors include the content, design, organization and management of the work
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## Glossary / Acronyms



**GLOSSARY**

Terminology	Description
<b>Abstract Time Scale</b>	Time Scale that will be quantified both during operations and continuous process improvement. These time identifiers are correlated with the soft thresholds that are dynamically specified during life span of the process.
<b>BPMN</b>	<b>Business Process Modelling Notation</b> Business Process Modelling Notation is the practice of documenting an organisation's key business processes in a graphical format.
<b>Business Rules</b>	Business Rules are intended to assert business structure or to control or influence the behaviour of the Business. Business rules describe the operations, definitions and constraints that apply to an organization
<b>CRR</b>	Contract Review Rate
<b>CRRV</b>	Contract Review rate Variation.
<b>CTQ</b>	<b>Critical to Quality</b> Critical To Quality (CTQ) is continuous measuring and monitoring tool agreed between the internal processes to achieve greater customer satisfaction.
<b>COI</b>	Chain of infection
<b>Data Quality Dimensions</b>	The totality of features and characteristics of data that bears on their ability to satisfy a given purpose
<b>EBC</b>	Evidence Based Cleaning
<b>ESM</b>	Environmental services Map
<b>KPI</b>	<b>Key Performance Indicator</b> A metric that is used to help manage a process, IT service or activity. Many metrics may be measured, but only the most important of these are defined as KPIs and used to actively manage and report on the process, IT service or activity. KPIs should be selected to ensure that efficiency, effectiveness, and cost effectiveness are all managed.
<b>MSD</b>	Macro Skeleton Disorder

# Glossary / Acronyms

<b>OLA</b>	<b>Organization level Agreement</b> An Agreement between an IT Service Provider and another part of the same Organization
<b>Operational Policy</b>	Rules defined to operate the process.
<b>Quality Attributes</b>	Quality attributes are non-functional requirements used to evaluate the performance of a process.
<b>Risk</b>	A possible event that could cause harm or loss, or affect the ability to achieve Objectives. A risk is measured by the probability of a threat, the vulnerability of the asset to that threat, and the impact it would have if it occurred.
<b>SLA</b>	<b>Service Level Agreement</b> An Agreement between an IT Service Provider and a Customer. The SLA describes the IT Service, documents Service Level Targets, and specifies the responsibilities of the IT Service Provider and the Customer
<b>VOC</b>	<b>Voice of Customer</b>



## Appendix A: Business Process Modeling Notation Reference



APPENDIX.  
A



# Appendix A: Business Process Modeling Notation Reference







## INTRODUCTION

Business Process Modelling (“BPM”) is the practice of documenting an organisation’s key business processes in a manner which:

- is highly graphical
- focuses on business terminology rather than technical
- allows all business steps/tasks to be included, not just those which involve a computer system




Mentioned below are the various core concepts of BPMN with the relevant definition and graphic notation.

## PROCESS START







All processes have to start somehow, general notation for a process models commence with the START event, is a circle.	
One can use simply the <i>basic unmarked</i> start event as above, or one of the different types of start event, to provide more detail as described below.	
If a process starts when some sort of message arrives, mail, email, text. Following notation can be used	<b>Message start</b> 
If a process starts by virtue of the passage of time – e.g. 1st Jan review or 4 days after the purchase order is sent, following notation can be used	<b>TIMER Start</b> 
If the process starts when a rule/condition is met – e.g. when Incident Impact is more than 100,000.	<b>RULE Start</b> 
If a process starts when another process finishes. Following notation can be used	<b>LINK Start</b> 
If there is more than one ‘trigger’ for a process to start. Following notation can be used	<b>MULTIPLE Start</b> 

# Appendix A: Business Process Modeling Notation Reference

## TASK AND SUB PROCESS

<b>Task</b>	Task is a lowest level activity in a process map. A task is used when the work is not broken down to a finer level of detail	
<b>Sub Process</b>	A Sub-process is a compound activity which can be broken down into finer details.	
<b>Loops</b>	Loops task or sub process continues to iterate until the loop condition is true.	

## INTERMEDIATE EVENTS

Following notation can be used to display the intermediate event, similar to start and end events.						
	<b>BASIC</b>	<b>MESSAGE</b>	<b>TIMER</b>	<b>RULE</b>	<b>LINK</b>	<b>MULTIPLE</b>
						

## PROCESS END

All processes have to end somehow, general notation for a process models end will be a circle with a solid line.	
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# Appendix A: Business Process Modeling Notation Reference

One can use simply use the *basic* end event as above, or you can use one of the different types of end event, to provide more detail, as described below:

If a process ends by something being sent via a message of some sort e.g., mail, email, document, following notation can be used.

MESSAGE End



If the end of this process causes the start of another, following notation can be used.

LINK End





If more than one consequence of the process ending, following notation can be used.


MULTIPLE End



## SWIMLANES


<b>Pool</b>	A <i>Pool</i> represents a participant in a Process. It is also acts as a “swimlane” and a graphical container for partitioning a set of activities from other Pools	
<b>Lane</b>	A <i>Lane</i> is a sub-partition within a Pool and will extend the entire length of the Pool, either vertically or horizontally. Lanes are used to organize and categorize activities.	

## CONNECTORS

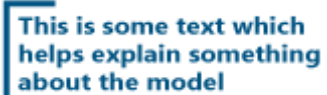


<b>Sequence Flow</b>	A <i>Sequence Flow</i> is represented by a solid line with a solid arrowhead (see the figure to the right) and is used to show the order (the sequence) that activities will be performed in a Process.	
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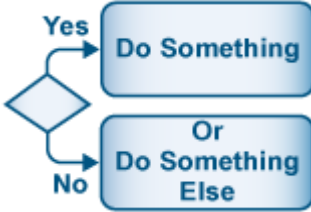
# Appendix A: Business Process Modeling Notation Reference

<b>Message Flow</b>	A <i>Message Flow</i> is represented by a dashed line with an open arrowhead (see the figure to the right) and is used to show the flow of messages between two separate Process Participants. In BPMN, two separate Pools in the Diagram will represent the two Participants.	
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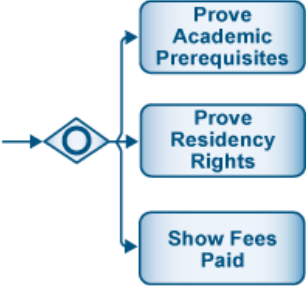
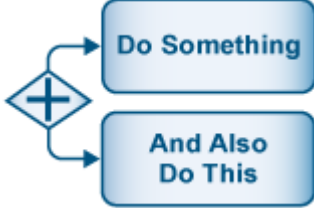
## ARTIFACTS

<b>Annotation</b>	The ANNOTATION shape is used to add comments to a process model. It consists of text in a square left bracket	
<b>Data Object</b>	A data object represents a piece of data which is required or produced by the process eg. Customer details, output.	
<b>Group</b>	A grouping is purely for documentation or explanatory purposes. It has no impact on the model. It consists of a rectangle with dashed lines and rounded corners, usually enclosing other objects.	

## GATEWAYS

<b>Exclusive</b>	The values of the process are examined to determine which path to take	
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# Appendix A: Business Process Modeling Notation Reference

<p><b>Inclusive</b></p>	<p>Each branch will be evaluated and will not stop when one branch condition becomes true.</p>	 <p>The diagram shows an inclusive gateway (diamond with a circle) on the left. Three arrows branch out to the right, leading to three rounded rectangular task boxes: 'Prove Academic Prerequisites', 'Prove Residency Rights', and 'Show Fees Paid'.</p>
<p><b>Parallel</b></p>	<p>Provides a mechanism to synchronise parallel flow and to create parallel flow.</p>	 <p>The diagram shows a parallel gateway (diamond with a plus sign) on the left. Two arrows branch out to the right, leading to two rounded rectangular task boxes: 'Do Something' and 'And Also Do This'.</p>



## Appendix B: Chain of Infection



APPENDIX.  
B



# Appendix B: Chain of Infection

In order to control or prevent infection it is essential to understand that transmission stages of a pathogen resulting in infection requires the six vital links (Refer to the table below).

Each link mentioned below must be present for infection or colonization to proceed, and breaking any of the links can prevent the infection.

The section below details out the six stages:

Stage	Link	Description
1	Infectious Agent	Any disease-causing microorganism (pathogen)
2	The Reservoir Host	The organism in which the infectious microbes reside
3	The Portal of Exit	Route of escape of the pathogen from the reservoir.
4	The Route of Transmission	Method by which the pathogen gets from the reservoir to the new host
5	The Portal of Entry	Route through which the pathogen enters its new host
6	The Susceptible Host	The organism that accepts the pathogen

## Link 1: Infectious Agent

The causative agent for infection is any microorganism capable of producing disease. Microorganisms responsible for infectious diseases include bacteria, viruses, rickettsiae, fungi, and protozoa. Sometimes, microorganisms are part of patient's own body flora and can cause infection in the immunocompromised host. These infections are called endogenous infections. Infections which are acquired from external sources are called exogenous infections.

## Link 2: Reservoir Host

The second link in the chain of infection is the reservoir, i.e. the environment or object in or on which a microorganism can survive and, in some cases, multiply. Inanimate objects, human beings, and animals can all serve as reservoirs, providing the essential requirements for a microorganism to survive at specific stages in its life cycle.

Infectious reservoirs abound in health care settings, and may include everything from patients, visitors, and staff members to furniture, medical equipment, medications, food, water, and blood.

## Link 3: Portal of Exit

The portal of exit is the path by which an infectious agent leaves its reservoir. Usually, this portal is the site where the microorganism grows. Common portals of exit associated with human reservoirs include the respiratory, genitourinary, and gastrointestinal tracts, the skin and mucous membranes and the placenta (transmission from mother to fetus)

## Link 4: Route of Transmission

The microorganism can be acquired by inhalation (through respiratory tract), ingestion (through gastrointestinal tract), inoculation (through accidental sharp injury or bites), contact (during sexual intercourse) and transplacental transmission (microbes may cross placenta from the mother to fetus). It is important to remember that some microorganisms use more than one transmission route to get from the reservoir to a new host.

Of the six links in the chain of infection, the mode of transmission is the easiest link to break and is key to control of cross-infection in hospitals.

## Link 5: The Portal of Entry

The portal of entry is the path by which an infectious agent invades a susceptible host. Usually, this path is the same as the portal of exit. For example, the portal of entry for tuberculosis and diphtheria is through the respiratory tract, hepatitis B and Human Immunodeficiency Virus enter through the bloodstream or body fluids and Salmonella enters through the gastrointestinal tract. In addition, each invasive device, e.g. intravenous line, creates an additional portal of entry into a patient's body thus increasing the chance of developing an infection.

## Link 6: The Susceptible host

The final link in the chain of infection is the susceptible host. The human body has many defense mechanisms for resisting the entry and multiplication of pathogens. When these mechanisms function normally, infection does not occur. However, in immunocompromised patients, where the body defenses are weakened, infectious agents are more likely to invade the body and cause an infectious disease. In addition, the very young and the very old are at higher risk for infection because in the very young the immune system does not fully develop until about age 6 months, while old age is associated with declining immune system function as well as with chronic diseases that weaken host defenses.