HEALTHCARE ENVIRONMENTAL SERVICES
HESAS
AUTOMATION SOICETY

Customer Complaint Management

Draft

December 2020

Copyrights © HESAS Community

HESAS EMS Standards Document
Published by HESAS and ReXcels Press
Boston, MA, USA.
Initial draft publication, June 2014.
Final draft publication, December 2020.

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

Version:	Date:	Changes:

Table of Contents

Table of Contents

Table of Contents

1

Customer Complaint Management

Purpose

1 Purpose

1. PURPOSE

The purpose of this document is to establish a Customer Complaint Management process for organization's Environmental Services to improve customer satisfaction and hence increase retention rate of organization customers.

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.*

2

Customer Complaint Management

Structure of the Document

2 Structure of the Document

2. STRUCTURE OF THE DOCUMENT

The Customer Complaint Management process document comprises the following chapters:

Chapter–3: *Scope*: This chapter describes the scope of the document and the Customer Complaint Management process.

Chapter–4: *General Assumptions*: This chapter describes the underlined assumptions made for both the document and Customer Complaint Management process.

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

Chapter–6: *Customer Complaint Management Process***:** In this chapter Customer Complaint 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 Customer Complaint 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 Customer Complaint Management process.

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

3

Customer Complaint Management

Scope

3 Scope

3. SCOPE

This process is applicable to all the organization (environmental services) customers.

4 Customer Complaint Management

General Assumptions

4 General Assumptions

4. GENERAL ASSUMPTIONS

The following are the general assumptions made:

- Inputs to the process are accurate.
- Senior management is fully committed to this process.
- This process utilizes automated tools wherever required.
- 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.

5

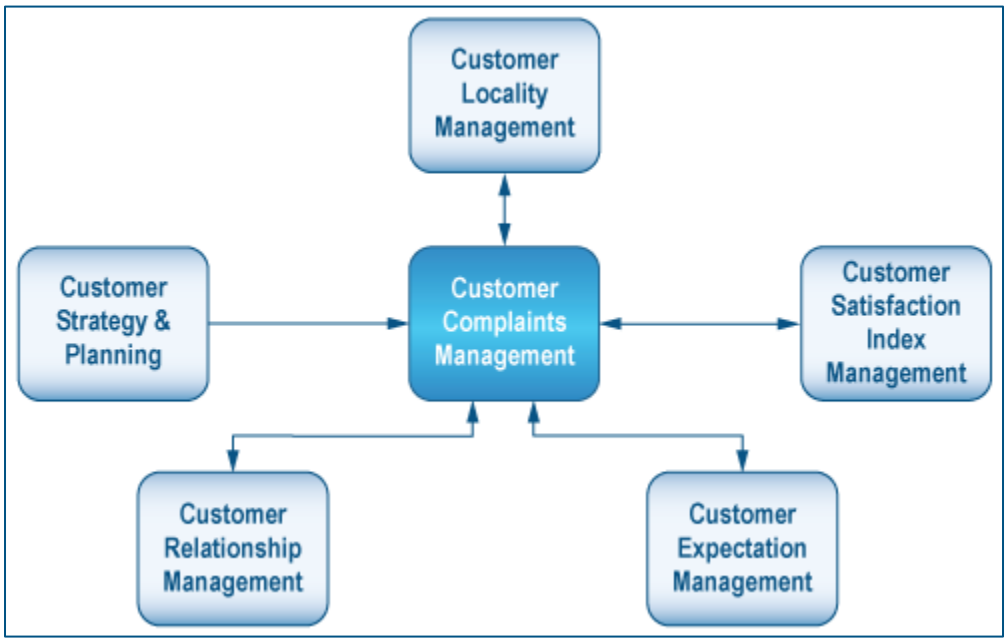
Customer Complaint Management

Customer Complaint Management Framework

5 Customer Complaint Management Framework

5.1 Customer Complaint Management Interactions

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



5.2 Customer Complaint Management Process Sequence

The Customer Complaint process comprises of following high level sequence of processes:

- **Establish waste control model**
- **Reduce Variation**
- **Establish continuous improvement practice**

5 Customer Complaint Management Framework

- **Log Complaint**
- **Investigate Complaint**
- **Track & Report customer Complaint**
- **Close customer Complaint**

Customer Complaints Management process follows sequential steps mentioned below (**Section 5.2.1-5.2.6**). **Section 6.1** Process Model sheds more light on the flow of this process.

5.2.1 Establish Waste Control model

This step involves minimization and control of wastes with regards to customer complaint management performance management. Wastes can lead to variation which can lead to customer complaint performance management quality degradation. Following are the various wastes that this quality process would effectively control.

- **Minimizing Inventory Wastes**. Unneeded inventories related to customer complaints performance process can lead to most costs in terms of space occupation and supplies expiration concerns. The best method to deal with this is to enforce **JIT inventory (Just in time inventory).** Just-in-Time inventory system focus is having the right material, at the right time, at the right place, and in the exact amount.
- **Minimizing Motion Wastes**. This refers to reducing unorganized movement (spaghetti motion) of staff, which can lead to budget over runs.
- **Minimizing Over production**. This refers to reduction of unnecessarily over working or over doing of things which results into over budgeting with regards to customer complaints management process. Asking too many questions and doing unrelated researches would lead to over production
- **Minimizing Over processing**. This refers to the removing the tendency of over complicating things than what is required e.g., doing extra background check on the problem than that is required can cause over budgeting.
- **Minimizing Transportation**. Unnecessary movement of equipment and staff (round traffic) would result into fatigue for the employees and also waste their precious time which can be utilized for some other productive work.
- **Minimizing Rework/ Correction**. This refers to doing the correct thing at the first time. Reworks in terms of creating new requests, errors would result into reworking time which would affect the overall variation (sigma) and deter the performance of the process.
- **Minimizing Idle time.** This refers to the time spend in waiting for critical input or resource for the complaint process, without which the process can't proceed for example approval from finance management.

5 Customer Complaint Management Framework

5.2.2 Reduce variation

Customer complaint performance management variation can affects almost every key performance measure and key dimensions of entire operations such as efficiency, effectiveness, safety, satisfaction, access and equity. This leads to customer dissatisfaction as well as inefficient processes and output.

- **Identification of variation**. Typically variation can be classified into two types:
  This comprises of following:
  - **Common Cause**. Common-cause variation appears as random variation in all measures from healthcare processes.
  - **Special Cause**. Special-cause variation appears as the effect of causes outside the core processes of the work.

Management can reduce this variation by enabling the easy recognition of special-cause variation and by changing healthcare processes by DMAIC six sigma methodology. Six sigma's main objective is to minimize customer complaint management variation.

Following are the various activities for six sigma quality program.

- **Define.**
  - **Goal establishment**. This comprises of establishing and defining target to achieve. For example, reduction in complaints by 25%.
  - **Establish tasks**. This involves setting up of task:
    - Implicit task. Implicit task which can be accomplished via automation.
    - Explicit task. Explicit tasks which require human intervention.
- **Measure.**
  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 scenario whereby data collection is done for certain situations such as infection outbreaks and requires human intervention.

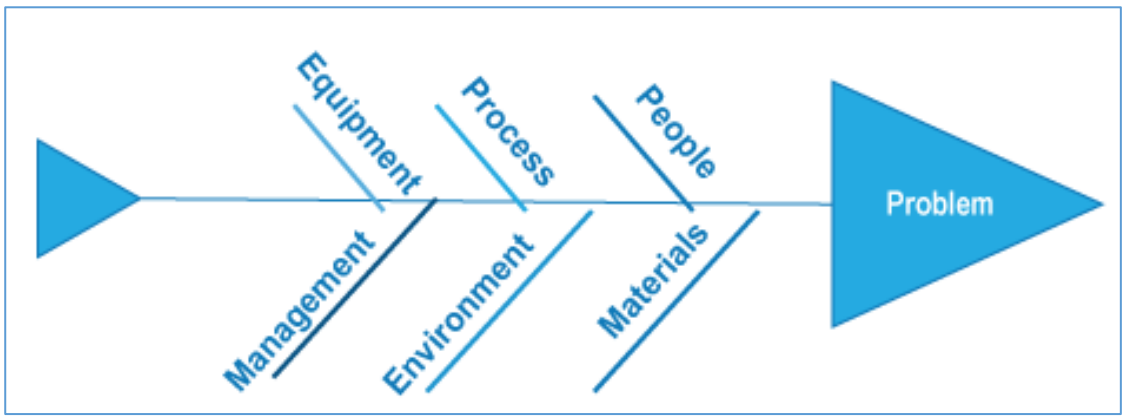
- **Sampling techniques.**
  This comprise of following:
  - **Simple random sampling**
    In a simple random sample ('SRS') of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided 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

- **Analyze Phase**
  In the Analyze phase, information gathered in the Measure phase, is analyzed to pinpoints the root cause of variation, and identify improvement opportunities where non-value-add tasks can be removed. Following are various methods to do so:
  - **Ishikawa Diagram.** This method can be useful in helping identify where something may be going wrong, or be improved. Such a diagram is typically the outcome of a brainstorming session where problem solvers can offer suggestions. The main goal is represented by the trunk of the diagram, and primary factors are represented as branches. Secondary factors are then added as stems, and so on. Creating the diagram stimulates discussion and often leads to increased understanding of a complex problem.

    Causes are usually grouped into major categories to identify the sources of problem. The categories typically include:
    - **People**: Anyone involved with the process
    - **Process**: How the process is performed and the specific requirements for doing it, such as policies, procedures, rules, regulations and laws
    - **Equipment**: Any equipment, computers, tools etc. required to accomplish the job

5 Customer Complaint Management Framework

- **Materials**: Raw materials, parts, pens, paper, etc. used to produce the final product
- **Management**: Management related issues, decisions.
- **Environment**: The conditions, such as location, time, temperature, and culture in which the process operates.



- **Pareto Analysis.** This is a technique for separating important potential causes from more trivial issues. The following steps should be taken:
  - Form a table listing the causes and their frequency as a percentage.
  - Arrange the rows in the decreasing order of importance of the causes, i.e. the most important cause first.
  - Add a cumulative percentage column to the table

  Pareto Analysis signifies 80-20 rule, meaning that by doing 20% of work, 80% of the advantage of doing the entire job can be generated. Or in terms of Problem Management, a large majority of problems (80%) are produced by a few key causes (20%).This technique helps to identify the top 20% of causes that needs to be addressed to resolve the 80% of the problems. Once the top 20% of the causes are identified, then tools like the Ishikawa diagram or Fish-bone Analysis to be used to identify the root causes of the problems.
- **Root cause Analysis tree.**

  Root cause analysis tree is a structured evaluation method that identifies the root causes for an undesired outcome and the actions adequate to prevent recurrence. Root cause tree analysis continues until organizational factors have been identified, or until data are exhausted. Root cause tree analysis

enables organization to make informed decisions and also serve as a mean to implement close loop knowledge management in the organization. The root cause analysis can be utilized by any employee irrespective of his background and skill level to rectify a problem.

- **Improve Phase.**
  The Improve phase is when findings are implemented, workflows are streamlined and variations removed.
- **Control Phase.**
  This involves implementing monitoring and sustaining procedures to facilitate over all improvisation.

5.2.3 Establish Continuous Improvement Practices

Quality improvement consists of a wide array of managerial and organizational activities designed to streamline production processes, to remove waste and unpredictability, and to achieve previously unprecedented levels of performance.

This comprises of establishing various continuous improvement practices, for following continuous improvement domain.

Continuous Improvement Domains	Improvement Areas	Continuous Improvement Practices
Management	• Leadership • Mission and shared vision • Targets • Resources • Favourable changes in organisation	• Set targets based on realistic expectations towards practice development and long term policy of the professional organisation • Make plans on improvement • Establish priorities towards subjects that particularly need improvement • Designate a staff as the quality coordinator • Hold quality meetings with all staff at regular intervals (for example, once a month) • Establish a quality board in practice • Integrate the activities in daily work
Record keeping	• Performance measures • Analysis of the organisation	• Collect data on specific subjects (according to priorities set or projects run and including patient

	• Satisfaction	satisfaction), if possible form electronic medical files (other sources include insurers, laboratories, pharmacists, appraisals, etc) • Make annual / monthly/ quarterly reports on outcomes of care • Make annual reports on improvement activities
Systematic approach	• Planned activities • Use of the quality cycle • Use of specific tools and techniques • Learn from experience	• Run small improvement projects on prioritised issues (management of chronic disease, preventive activities, accessibility, workload) • Use tools and techniques that are simple to use and not time consuming (brainstorming, analysis of strengths and weaknesses, flow charts, cause and effect diagrams, etc) • Aim at changes in which existing processes are adapted or re-engineered (and build on experience) (ideas to improve processes can come from peer review, continuing medical education, guidelines, publications, etc)
Collaboration	• Everyone involved • Positive attitude towards continuous • quality improvement • Team building • Participation	• Involve everyone in quality improvement activities (everyone is aware of tasks and responsibilities) • Build teams for systematic improvement activities • Involve patients (and other external customers) in improvement activities

5.2.4 Log Complaint

This process is responsible for establishing the identity of the customer and creating a customer problem report. Following information is stored when customer problem report gets created: Report ID, Customer ID, Problem category, Problem Priority, problem date and time, problem description, problem resolution, current status of the problem, related problem and problem time and closure.

5.2.5 Investigate Compliant

This process aims at verifying whether the complaint actually exists or not. The purpose of this process is to provide education to the customers on the correct usage of the product and service in case the customer is not aware. For genuine complaints this process establishes the further resolution actions.

5.2.6 Track and report customer Complaint

This process is responsible for:

- Assigning a resource to monitor the resolution activity.
- For monitoring the overall progress of the complaint, and providing reports and notifications.

5.2.7 Close Customer Complaint

This process aims at verifying whether the complaint was handling as per customers satisfaction. This process receives confirmation of complaint solution from customer, verifies the documentation is correction, and formally closes the complaint.

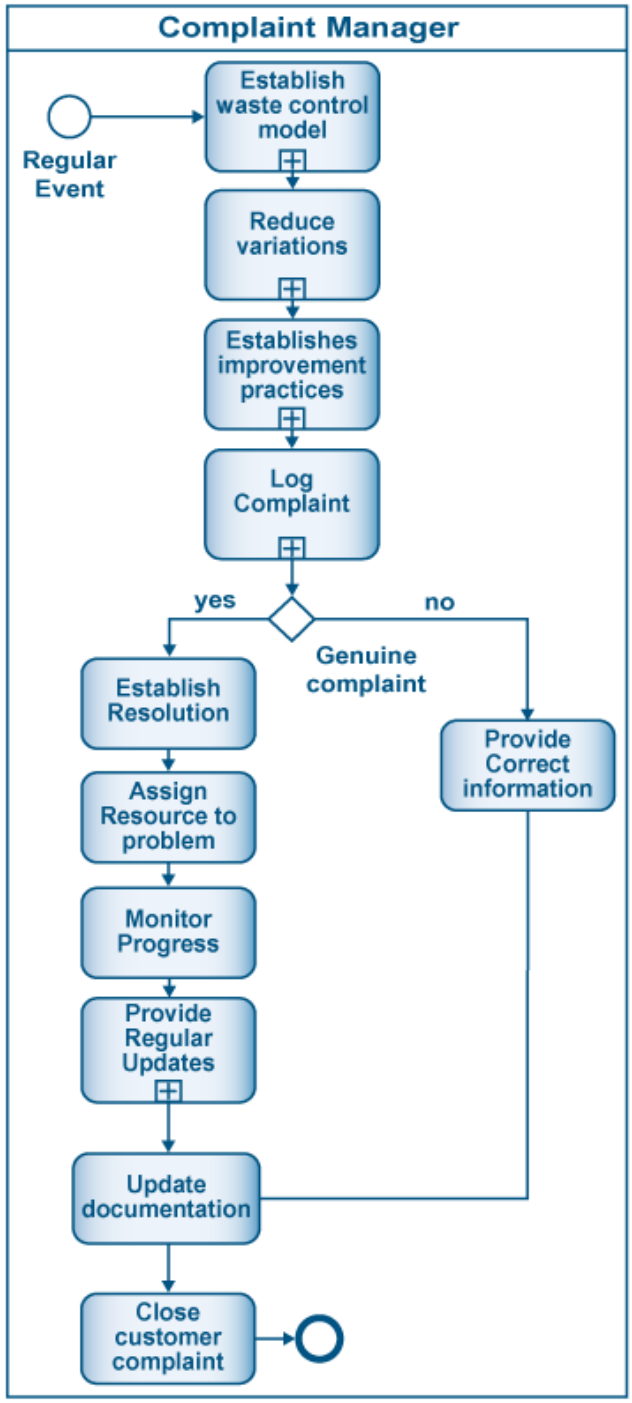
6

Customer Complaint Management

Customer Complaint Management Process

6 Customer Complaint Management Process

6.1 Process Model



6 Customer Complaint Management Process

6.2 Process Specification

Specification	Description
Summary/Purpose	The purpose of this process is to create Customer Complaint Management process for organization environmental services.
Scope	This is a Level 1 Process Specification.
Primary Reference	Lean six sigma- Quality Standard
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Customer satisfaction.
Related Operational Policies	OP-001, OP-002, OP-003, OP-004, OP-005 (Ref. 7.5)
Assumptions	• Inputs to the process are accurate. • Top level management commitment exists.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaint management.

6 Customer Complaint Management Process

<table>
<tr><td>MSD Management</td><td>Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)</td></tr>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>• Regular event</td></tr>
<tr><td>Basic Course of Event</td><td>Customer Complaint Management (Correct information)
1. Complaint manager establishes waste control model
2. Complaint manager reduces variations
3. Complaint manager establishes improvement practices
4. Complaint Manager logs complaint
5. Complaint Manager provides correct information
6. Complaint Manager updates documentation
7. Complaint Manager closes customer complaint.
8. End</td></tr>
<tr><td>Alternative Path</td><td>Customer Complaint Management (genuine complaint)
1. Complaint Manager establishes resolution
2. Complaint Manager assigns resource to problem
3. Complaint Manager monitors progress
4. Complaint Manager provides regular updates
5. Complaint Manager updates documentation
6. Complaint Manager closes customer complaint.
7. End</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running</td></tr>
</table>

6 Customer Complaint Management Process

	2. Update the System and clear all logs. 3. End
Extension points	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Preconditions	Adequate resources are available to the process.
Post -conditions	Complaint Management process is established.
Related Business Rules	BR-001, BR-002, BR-003, BR-004, BR-005 (Ref 7.1)
Related Risks	RR-001, RR-002, RR-003, RR-004, RR-005, RR-006 (Ref. 7.2)
Related Quality Attributes	Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, confidentiality, (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, free of error, concise representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	CRR, CR, RR, WMR, VR, ITR (Ref 7.6)
Related CTQs	CRRV, CRV, RRV, MOM, PWOM, CTQ, IOM, TOM, WRM, DRM, WMRV, VRV, ITRV (Ref 7.7)
Actors/Agents	Complaint Manager
Delegation	Delegation Rule -1: Complaint Manager Not Available 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation

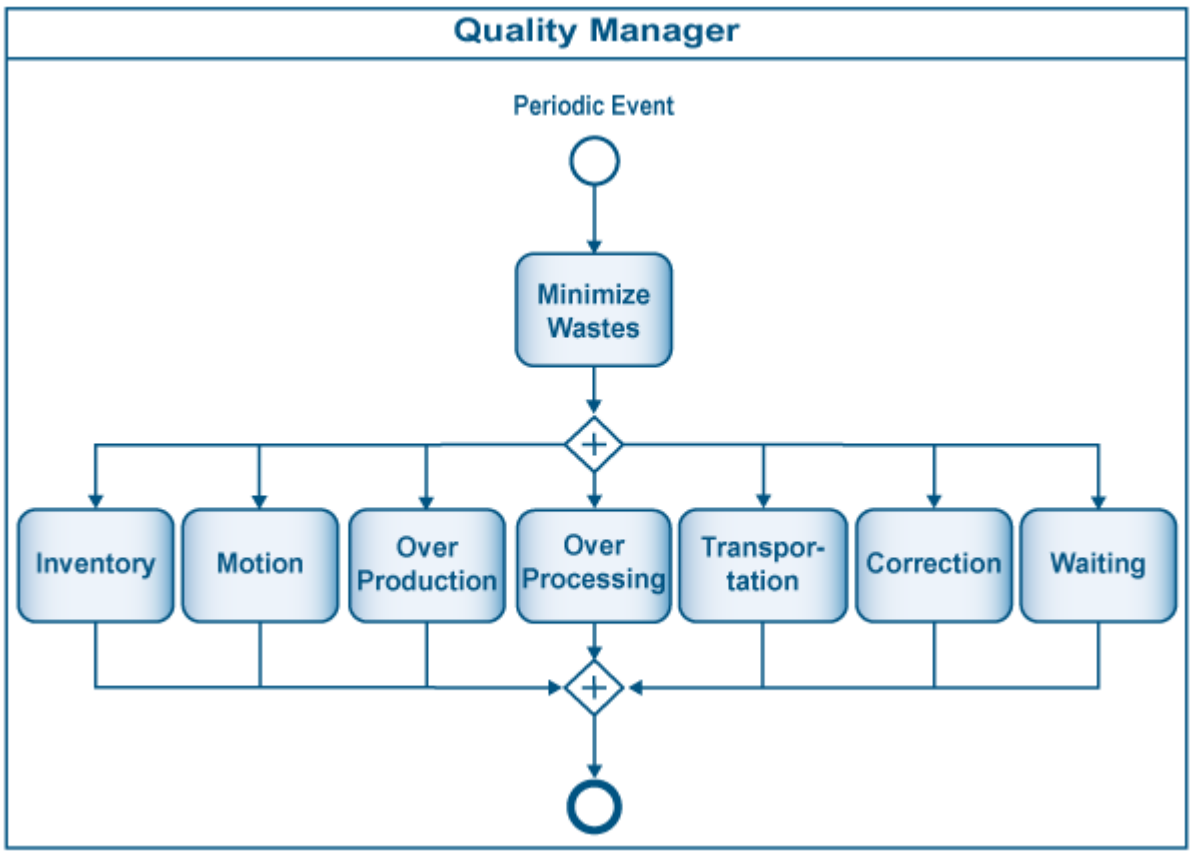
	Delegation Rule -2: Complaint Manager Overloaded 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	Rule 1: Performance, operational legal Issues 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	5.1
Process Model	6.1
Other References	Appendix A: Business Process Notation Reference

6.3 Roles and Responsibilities

Roles	Responsibilities
Customer Complaint Management	• Manages the entire process of complaint management.

6 Customer Complaint Management Process

6.4 Sub Process – Establish Waste Control Quality model



6 Customer Complaint Management Process

6.5 Sub Process – Establish Waste Control Quality model Specification

Specification	Description
Summary/Purpose	The purpose of this process is to establish customer complaint quality control
Scope	This is a level 1 Process Specification.
Primary Reference	• Lean Six sigma
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Reduction of wastes and improvement of quality.
Related Operational Policies	OP-003 (Ref 7.5)
Assumptions	Senior Management Support exists.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaint management

6 Customer Complaint Management Process

<table>
<tr><td>MSD Management</td><td>Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)</td></tr>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>• Periodic event</td></tr>
<tr><td>Basic Course of Event</td><td>Waste Quality control model
1. Complaint Manager minimizes wastes (inventory, motion, over production, transportation, correction, idle time, knowledge, material, equipment)
2. End</td></tr>
<tr><td>Alternative Path</td><td>None</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running
2. Update the System and clear all logs.
3. End.</td></tr>
<tr><td>Extension points</td><td>Reduce variation</td></tr>
<tr><td>Preconditions</td><td>There exists a capability at environmental Services department to monitor the performance of customer complaints management.</td></tr>
<tr><td>Post -conditions</td><td>Waste quality control gets formulated.</td></tr>
<tr><td>Related Business Rules</td><td>BR-003(Ref 7.1)</td></tr>
<tr><td>Related Risks</td><td>RR-003 (Ref. 7.2)</td></tr>
</table>

6 Customer Complaint Management Process

Related Quality Attributes	Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, Service reliability, confidentiality, authenticity, availability, non repudiation, testability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, Reputation, Objectivity, Free-0f Error, Relevance, Completeness, Timeliness, Concise Representation (Ref 7.4)
Related Primary SLA Terms	TBD (Ref 7.9)
Related KPIs	WMR (Ref 7.6)
Related CTQs	WMRV, (Ref 7.7)
Actors/Agents	Complaint Manager
Delegation	Delegation Rule -1: Agent Not Available 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation Delegation Rule -2: Agent Overloaded 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation
Escalation	Rule 1: Performance or operational or legal Issues 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.4

6 Customer Complaint Management Process

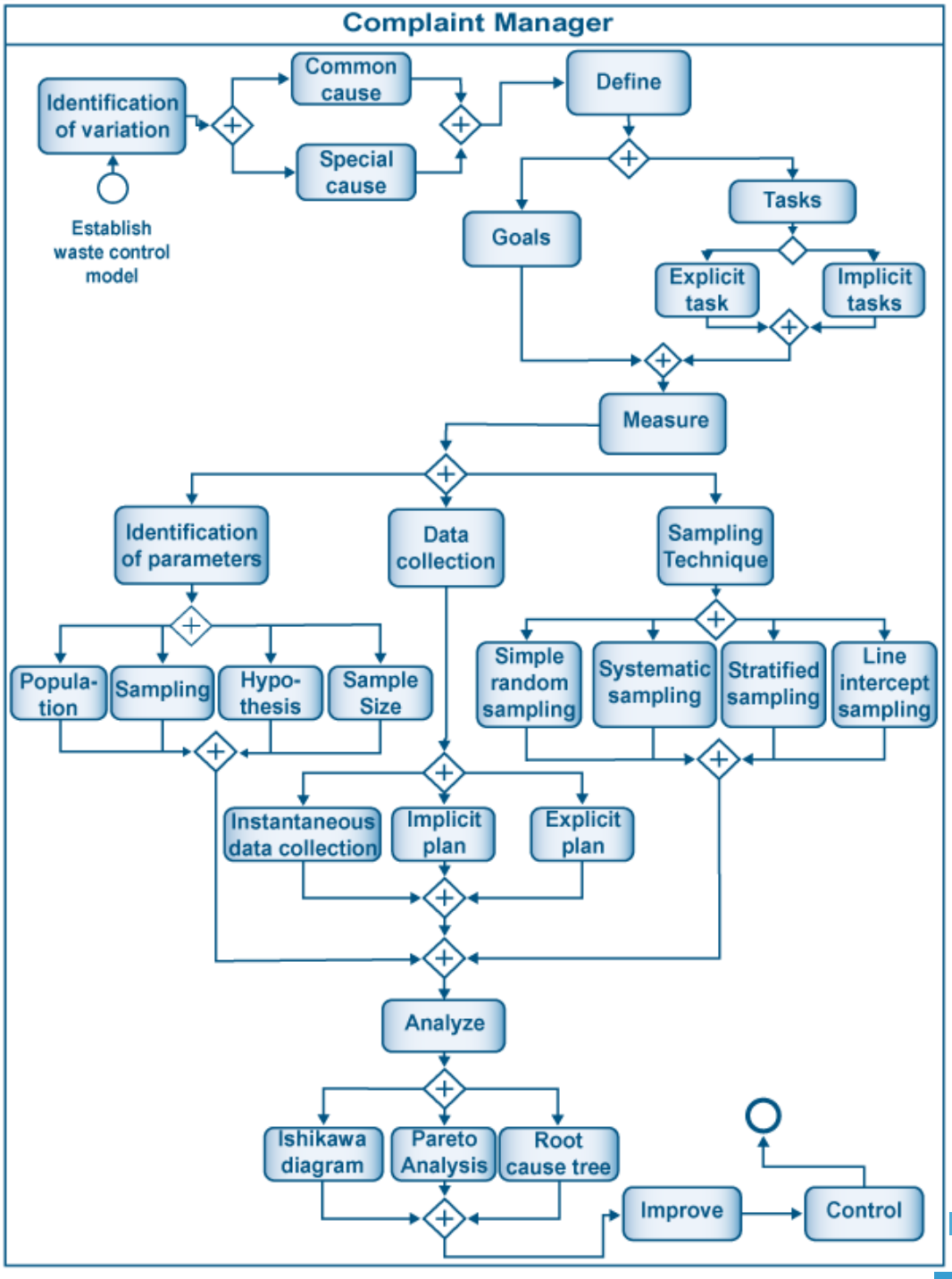
Other References	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

6.6 Sub Process – Establish Waste Control Quality Model Roles and responsibilities

Roles	Responsibilities
Complaint Manager	Complaint Manager minimizes wastes (inventory, motion, over production, transportation, correction, idle time)

6 Customer Complaint Management Process

6.7 Sub Process – Reduce variation



6 Customer Complaint Management Process

6.8 Sub Process – Reduce Variation Specifications

Specification	Description
Summary/Purpose	The purpose of this process is to reduce variation.
Scope	This is a level 1 Process Specification.
Primary Reference	• Lean waste minimization • Six sigma quality model
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Perfection and accuracy
Related Operational Policies	OP-004 (Ref 7.5)
Assumptions	Senior Management Support exists.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaint Management

6 Customer Complaint Management Process

<table>
<tr><td>MSD Management</td><td>Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)</td></tr>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>• Waste control model</td></tr>
<tr><td>Basic Course of Event</td><td>Reduce variation
1. Complaint Manager identifies variation (common cause and specific cause)
2. Complaint Manager defines quality goals and related task (explicit as well as implicit tasks)
3. Complaint Manager establishes measure phases(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)
4. Complaint Manager establishes analyzes phase (via ishikawa diagram, pareto analysis and root cause tree)
5. Complaint Manager improves the overall procedures and work flow
6. Complaint Manager controls the process.
7. End</td></tr>
<tr><td>Alternative Path</td><td>None</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running
2. Update the System and clear all logs.
3. End.</td></tr>
<tr><td>Extension points</td><td>Establish continuous improvement practices.</td></tr>
</table>

6 Customer Complaint Management Process

Preconditions	There exists a capability to monitor the performance of customer complaints.
Post -conditions	Six sigma approached based variation control process gets formulated.
Related Business Rules	BR-004 (Ref 7.1)
Related Risks	RR-004 (Ref. 7.2)
Related Quality Attributes	Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, Service reliability, confidentiality, authenticity, availability, non repudiation, testability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, Reputation, Objectivity, Free-0f Error, Relevance, Completeness, Timeliness, Concise Representation (Ref 7.4)
Related Primary SLA Terms	TBD (Ref 7.9)
Related KPIs	VR (Ref 7.6)
Related CTQs	VRV (Ref 7.7)
Actors/Agents	Complaint Manager
Delegation	Delegation Rule -1: Agent Not Available 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation Delegation Rule -2: Agent Overloaded 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation

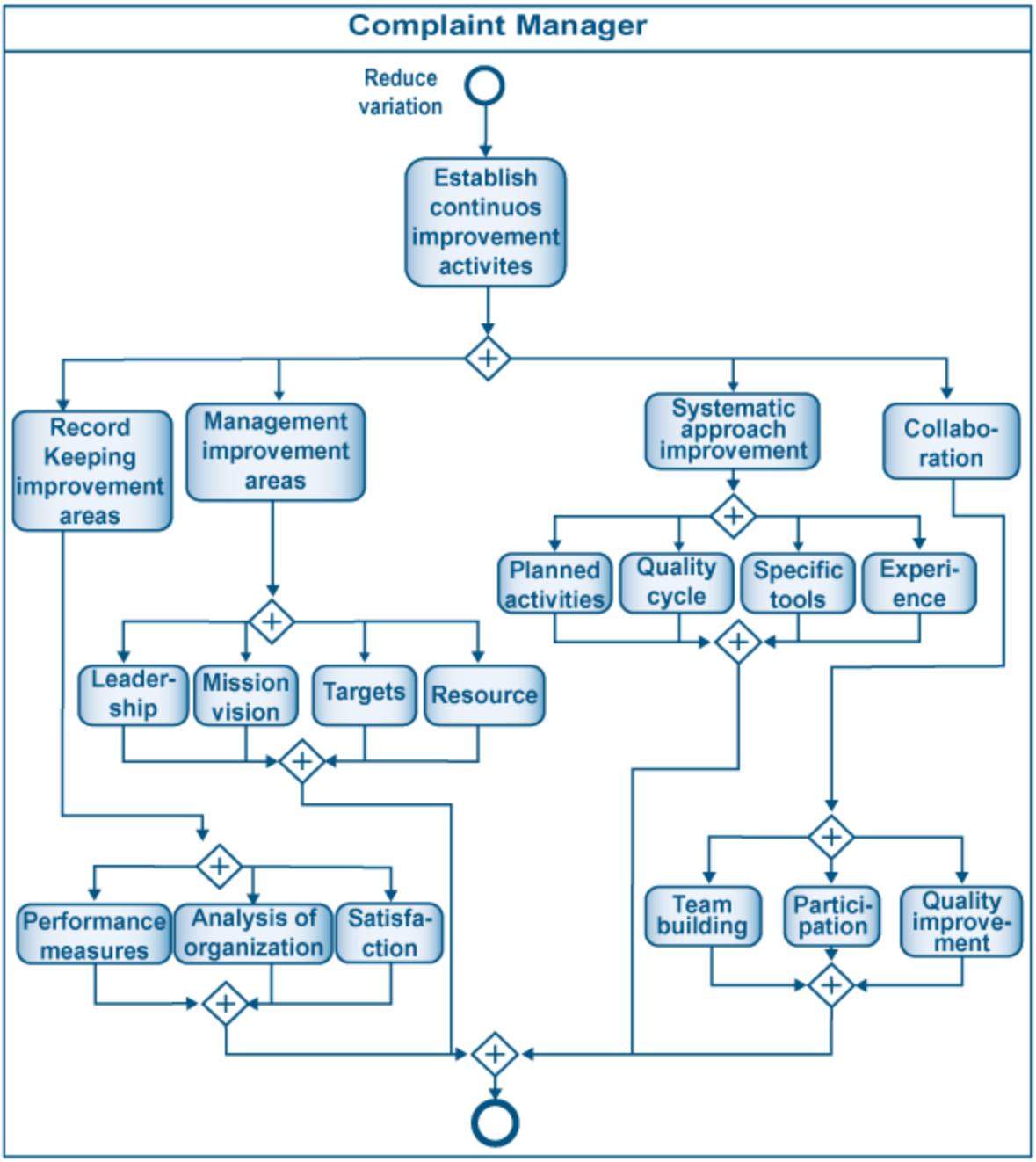
Escalation	Rule 1: Performance or operational or legal Issues 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.7
Other References	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

6.9 Sub Process – Reduce Variation Roles and responsibilities

Roles	Responsibilities
Complaint Manager	• Complaint Manager identifies variation (common cause and specific cause) • Complaint Manager defines quality goals and related task (explicit as well as implicit tasks) • Complaint Manager establishes measure phases(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) • Complaint Manager establishes analyzes phase (via ishikawa diagram, pareto analysis and root cause tree) • Complaint Manager improves the overall procedures and work flow • Complaint Manager controls the process.

6 Customer Complaint Management Process

6.10 Sub Process – Establish Continuous Improvement Practices



6 Customer Complaint Management Process

6.11 Sub Process – Establish Continuous Improvement Practices Specifications

Specification	Description
Summary/Purpose	The purpose of this process is to establish continuous improvement practices.
Scope	This is a level 1 Process Specification.
Primary Reference	• Lean waste minimization • Six sigma quality model
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Continuous improvement
Related Operational Policies	OP-005 (Ref 7.5)
Assumptions	Senior Management Support exists.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaints Management,

6 Customer Complaint Management Process

<table>
<tr><td>MSD Management</td><td>Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)</td></tr>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>• Reduce variation</td></tr>
<tr><td>Basic Course of Event</td><td>Continuous Improvement process
1. Complaint Manager establish continuous improvement activities for record keeping improvement areas (performance measures, analysis of organization, satisfaction), management improvement areas (leadership, mission & vision, targets, resource), systematic approach improvement (planned activities, quality cycle, specific tools, experience) and collaboration (team building, participation, quality improvement)
2. End</td></tr>
<tr><td>Alternative Path</td><td>None</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running
2. Update the System and clear all logs.
3. End.</td></tr>
<tr><td>Extension points</td><td>Log complaints</td></tr>
<tr><td>Preconditions</td><td>There exists a capability to monitor the performance of customer complaints management.</td></tr>
<tr><td>Post -conditions</td><td>A continuous improvement practice gets formulated.</td></tr>
</table>

6 Customer Complaint Management Process

Related Business Rules	BR-005 (Ref 7.1)
Related Risks	RR-005 (Ref. 7.2)
Related Quality Attributes	Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, Service reliability, confidentiality, authenticity, availability, non repudiation, testability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, Reputation, Objectivity, Free-0f Error, Relevance, Completeness, Timeliness, Concise Representation (Ref 7.4)
Related Primary SLA Terms	TBD (Ref 7.9)
Related KPIs	ITR (Ref 7.6)
Related CTQs	ITRV (Ref 7.7)
Actors/Agents	Complaint Manager
Delegation	Delegation Rule -1: Agent Not Available 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation Delegation Rule -2: Agent Overloaded 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation
Escalation	Rule 1: Performance or operational or legal Issues 1. Escalate to environmental services department head. 2. Log Escalation

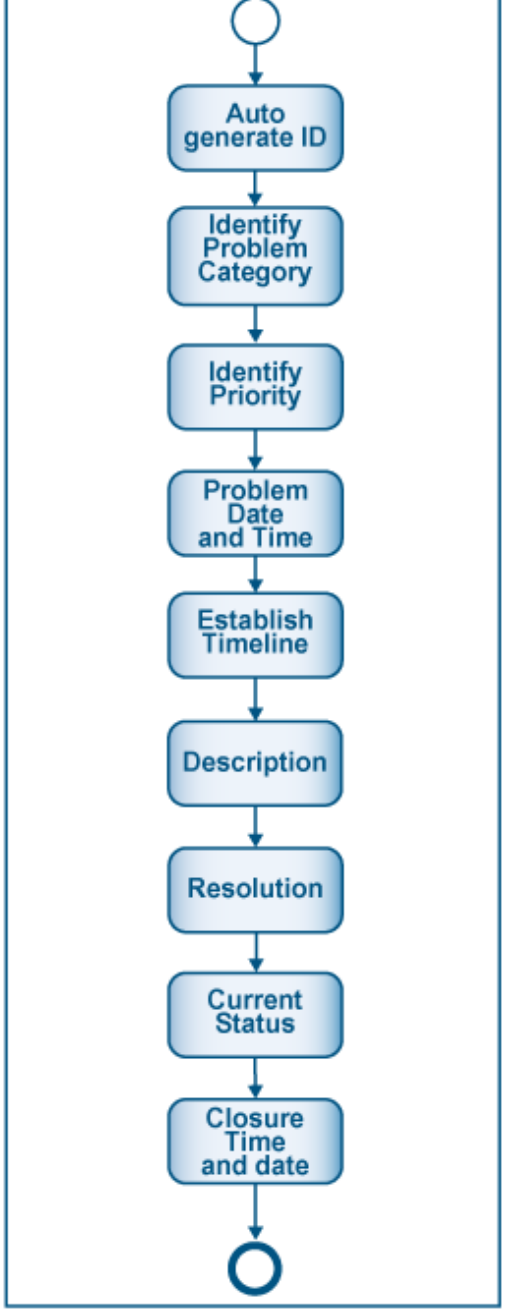
Process Map	Section 5.1
Process Model	Section 6.10
Other References	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

6.12 Sub Process – Establish Continuous Improvement Practices Roles and responsibilities

Roles	Responsibilities
Complaint Manager	Complaint Manager establish continuous improvement activities for record keeping improvement areas (performance measures, analysis of organization, satisfaction), management improvement areas (leadership, mission & vision, targets, resource), systematic approach improvement (planned activities, quality cycle, specific tools, experience) and collaboration (team building, participation, quality improvement)

6 Customer Complaint Management Process

6.13 Sub Process – Log Complaint



6 Customer Complaint Management Process

6.14 Sub Process – Log Complaint Specification

Specification	Description
Summary/Purpose	The purpose of this process is to log complaint.
Scope	This is a level 2 Process Specification.
Primary Reference	Lean six sigma- Quality Standard
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Establishing the complaint record.
Related Operational Policies	OP-001 (Ref 7.5)
Assumptions	Complaint has been accurately identified.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaint management.
MSD Management	Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)

6 Customer Complaint Management Process

<table>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>Customer Complaint</td></tr>
<tr><td>Basic Course of Event</td><td>Performance degradation Report
1. Complaint Manager establishes a report ID
2. Complaint Manager identifies problem category.
3. Complaint Manager identifies priority
4. Complaint Manager identifies problem date and time
5. Complaint Manager identifies time and date of the report
6. Complaint manager describes the complaint
7. Complaint Manager identifies resolution
8. Complaint Manager updates the current status from time to time based on the progress
9. Complaint Manager enters the closure time and date upon completion of the service degradation report
10. Ends.</td></tr>
<tr><td>Alternative Path</td><td>None</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running
2. Update the System and clear all logs.
3. End.</td></tr>
<tr><td>Extension points</td><td>Track and Manage Service Management performance</td></tr>
<tr><td>Preconditions</td><td>Identification of quality performance failure.</td></tr>
<tr><td>Post –conditions</td><td>Degradation report gets formulated.</td></tr>
</table>

6 Customer Complaint Management Process

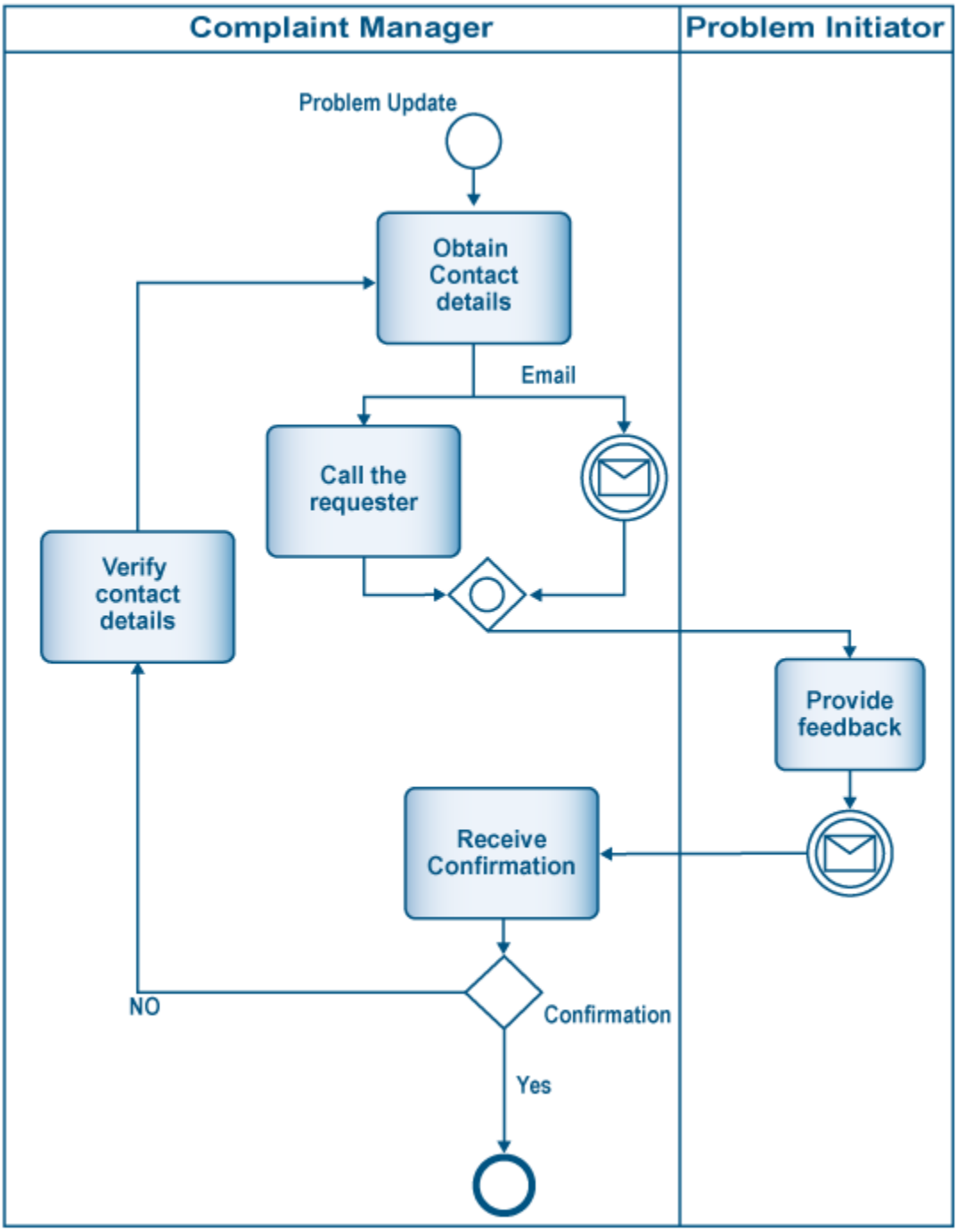
Related Business Rules	BR-003 (Ref 7.1)
Related Risks	RR-002 (Ref. 7.2)
Related Quality Attributes	Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, confidentiality, (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, free of error, concise representation (Ref 7.4)
Related Primary SLA Terms	TBD (Ref 7.9)
Related KPIs	CR (Ref 7.6)
Related CTQs	CRV (Ref 7.7)
Actors/Agents	Complaint Manager.
Delegation	Delegation Rule -1: Agent Not Available 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation Delegation Rule -2: Agent Overloaded 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation
Escalation	Rule 1: Performance, operational legal Issues 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.13
Other References	Appendix A: Business Process Modeling Notation Reference

	Appendix B: Chain of Infection

6.15 Sub Process – Log Complaint Roles and Responsibilities

Roles	Responsibilities
Complaint Manager	Complaint Manager logs complaint.

6.16 Sub Process – Provide Regular Updates



6 Customer Complaint Management Process

6.17 Sub Process – Provide Regular Updates Specification

Specification	Description
Summary/Purpose	The purpose of this process is to provide reports on complaint resolution
Scope	This is a level 2 Process Specification.
Primary Reference	Lean six sigma- Quality Standard
Related ESM Practices	Customer loyalty management, customer satisfaction index management, customer expectation management, customer relationship management, customer strategy & planning.
Related Business Driver	Customer remains up to date.
Related Operational Policies	OP-002 (Ref 7.5)
Assumptions	Supplier or vendors involved are committed in rectifying the performance degradation caused.
Voice of Customer	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)
Customer Satisfaction Measure	Customer satisfaction index
COI Correlation	None
Raw Materials	None
Equipment & Accessories	Automated System for customer complaint management.

6 Customer Complaint Management Process

<table>
<tr><td>MSD Management</td><td>Lifting/carrying, Disability, Force, Loaded motion, Physical ergonomics, Posture change, Excessive force, Scarceness, Noise, Concentration, Floor hazards, Clothing, Psychosocial factors. (Ref 7.12)</td></tr>
<tr><td>EBC Procedures</td><td>None</td></tr>
<tr><td>Timing Dimension</td><td><table><tr><th>Type</th><th>Normal</th></tr><tr><td>Average</td><td>30 min</td></tr><tr><td>Std</td><td>12 min</td></tr></table></td></tr>
<tr><td>Trigger</td><td>• Problem Update</td></tr>
<tr><td>Basic Course of Event</td><td>Reporting
1. Complaint Manager obtains contact detail
2. Complaint Manager calls and emails the customer
3. Problem initiator provides feedback
4. Complaint Manager receives confirmation
5. Ends.</td></tr>
<tr><td>Alternative Path</td><td>Track and Manage Service Management (Not received confirmation)
1. Complaint Manager verifies contact detail
2. Complaint Manager obtains contact detail
3. Complaint Manager calls and emails the customer
4. Problem initiator provides feedback
5. Complaint Manager receives confirmation
6. End</td></tr>
<tr><td>Exception Path</td><td>System Down
1. Keep paper track until system is up and running
2. Update the System and clear all logs.
3. End.</td></tr>
<tr><td>Extension points</td><td>Update documentation.</td></tr>
<tr><td>Preconditions</td><td>Progress of the complaint is monitored accurately.</td></tr>
</table>

6 Customer Complaint Management Process

Post –conditions	Customer gets update on the resolution of his complaint.
Related Business Rules	BR-002 (Ref 7.1)
Related Risks	RR-002(Ref. 7.2)
Related Quality Attributes	Service Reliability, Usability, Data Integrity, Non-repudiation, Accountability, Performance, Auditability, availability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Objectivity, Relevance, Completeness, timeliness, Understandability, interpretability, reputation, free of error (Ref 7.4)
Related Primary SLA Terms	TBD (Ref 7.9)
Related KPIs	RR (Ref 7.6)
Related CTQs	RRV (Ref 7.7)
Actors/Agents	Complaint Manager, Problem initiator
Delegation	Delegation Rule -1: Agent Not Available 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation Delegation Rule -2: Agent Overloaded 1. Delegate the Issue to additional Agent with same Role 2. Update the Issue 3. Log the Delegation
Escalation	Rule 1: Performance, operational legal Issues 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.10

Other References	Appendix A: Business Process Modeling Notation Reference Appendix B: Chain of Infection

6.18 Sub process – Provide regular updates Roles and Responsibilities

Roles	Responsibilities
Complaint Manager	• Complaint Manager obtains contact detail • Complaint Manager calls and emails the customer • Problem initiator provides feedback • Complaint Manager receives confirmation
Problem Initiator	Provides feedback.

7

Customer Complaint Management

Reference

7 Reference

This chapter serves as a prime reference to Chapter 6 and presents the details supporting Chapter 6 in tabular formats. This chapter consists of various variable values which would frequently evolve or change as organization's Environmental Services' Customer Complaint Management process matures or changes.

At minimal this document can be updated biannually. However, if need arises this document may be updated earlier than its prescribed revision period.

7.1 Business Rules

BR ID	Description	Context	Rule	Source
BR-001	All complaints should be recorded	TBD	TBD	TBD
BR-002	All resolution delays should be reported to top management	TBD	TBD	TBD
BR-003	All wastes should be minimized.	Business	TBD	TBD
BR-004	Lean Six sigma would be use as the prime standard for variance minimization	Business	TBD	TBD
BR-005	All quality initiatives should be improvised.	Business	TBD	TBD

7.2 Risk

Risk ID	Description	Source	Severity Level	Status	Resolution
RR-001	The complaint resolution results are not accurate.	NA	High	NA	Strict resolution tools and techniques should be employed to ensure that the quality of analysis remain excellent.

RR-002	Performance degradation records are not stored	NA	High	TBD	All performance records should be stored and used to identify various trends and patterns so as to identify root cause.
RR-003	Waste minimization measure are not effective	NA	High	TBD	Waste minimization KPI should be established are accurately measured.
RR-004	Staff do not follow the quality program	NA	High	TBD	Staff should be well trained and familiarized with the quality process so that they would act as desired.
RR-005	The improvement practices are not in line with the goals	NA	High	TBD	The improvement practices should be aligned to the target objective via proper discussion so that it is acceptable to all.

7.3 Quality Attribute

QA ID	Description	Threshold
QA-001	Interoperability	TBD
QA-002	Reliability	TBD
QA-003	Service Reliability	TBD

7 Reference

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 Dimension

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 Reference

7.5 Operation Policy

Policy ID	Description	Context	Importance (1-5)
OP-001	All the Complaint reports are resolved within 5 working days from the day of identification(maximum)	TBD	TBD
OP-002	Customer should be notified about every stage of the complaint resolution process	TBD	TBD
OP-003	Waste minimization would be done in following perspectives: inventory, motion, over production, over processing, transportation, correction, waiting	TBD	TBD
OP-004	All staff which deal with the performance of this process would be fully trained six sigma trained	TBD	TBD
OP-005	Improvements should be monitored regularly	TBD	TBD

7.6 KPI

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard threshold
Complaint rate	**CR**	Number of complaint per month	NA	TBD	TBD	TBD
Complaint resolution rate	**CRR**	Number of complaint resolved per month	NA	TBD	TBD	TBD

Waste minimization rate	**WMR**	Percentage increase in waste minimization	NA	TBD	TBD	TBD
Variation rate	**VR**	percentage decrease in variation	NA	TBD	TBD	TBD
Improvement Target rate	**ITR**	Number of improvement targets met per month	NA	TBD	TBD	TBD
Reporting rate	**RR**	Number of reports generated per month	NA	TBD	TBD	TBD

7.7 CTQ

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard Threshold
Complaint rate variation	**CRV**	Standard deviation of CR	NA	TBD	TBD	TBD
Complaint resolution rate variation	**CRRV**	Standard deviation of CRR	NA	TBD	TBD	TBD
Reporting rate variation	**RRV**	Standard deviation of RR	NA	TBD	TBD	TBD
Motion Optimization Measure	**MOM**	Management of motion optimization measure	NA	TBD	TBD	TBD

7 Reference

Paper work Optimization Measure	**PWOM**	Management of Paper work Optimization Measure	NA	TBD	TBD	TBD
Correction reduction measure	**CRM**	Management of Correction reduction measure	NA	TBD	TBD	TBD
Inventory Optimization Measure	**IOM**	Management of Inventory Optimization Measure	NA	TBD	TBD	TBD
Transportation Optimization Measure	**TOM**	Management of Transportation Optimization Measure	NA	TBD	TBD	TBD
Waiting Reduction Measure	**WRM**	Management of Waiting reduction Measure	NA	TBD	TBD	TBD
Delays reduction measure	**DRM**	Management of delays reduction measure	NA	TBD	TBD	TBD
Waste minimization rate variation	**WMRV**	Standard deviation of WMR	NA	TBD	TBD	TBD
Variation rate variation	**VRV**	Standard deviation of VR	NA	TBD	TBD	TBD

Improvement Target rate variation	**ITRV**	Standard deviation of ITR	NA	TBD	TBD	TBD

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
Hygiene	Doctors, Patients, Nurses, Housekeeping Supervisors, Housekeepers, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker,	The environment should be attributing with great hygiene level.	• High quality healthcare services • Safe environment • Low infection rate • Low risk

	Waste management worker.		
High and Consistent Quality of standards	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	High and Consistent Quality of standards.	• Reputation of organization or hospital • Professionalism • Trust • Positive psychological bias
Free of Infections	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.	• Safe environment • Reputation of hospital or organization • Trust • Quick healing • Positive psychological bias • Low risk
Timely Services	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.	• Professionalism • Trust • Positive psychological bias • Reputation of hospital or organization • Safe environment

7 Reference

High Coordinating	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	There should be high level of coordination between hospital employees and departments.	• Professionalism • Trust • Low risk • Excellent Ergonomic
Remove Waste	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.	• Safe environment • Low infection rate • Low risk • Reputation of hospital or organization • Low cost • Timely response • High quality
Excellent Ergonomic	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.	• Professionalism • Trust • Job accuracy • Excellent communication • Low risk • Reputation of hospital or organization
Safety	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks,	Hospital environment should comply with occupational health and safety procedures.	• Safe environment • Professionalism • Low risk

	Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers		
Appearance	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.	• Professionalism • Reputation of hospital or organization • Trust • Positive psychological bias
Excellent Worker Attitude	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.	• Professionalism • Reputation of hospital or organization • Trust • Positive psychological bias • Minimum disputes • Less employee turn over

7.11 Customer Context Matrix

Name of Customer	Acronym	Context of Customer	Coordination Process Area
Doctors	**DOC**	Direct	HIS Coordination

7 Reference

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 Reference

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

8

Customer Complaint Management

Glossary / Acronyms

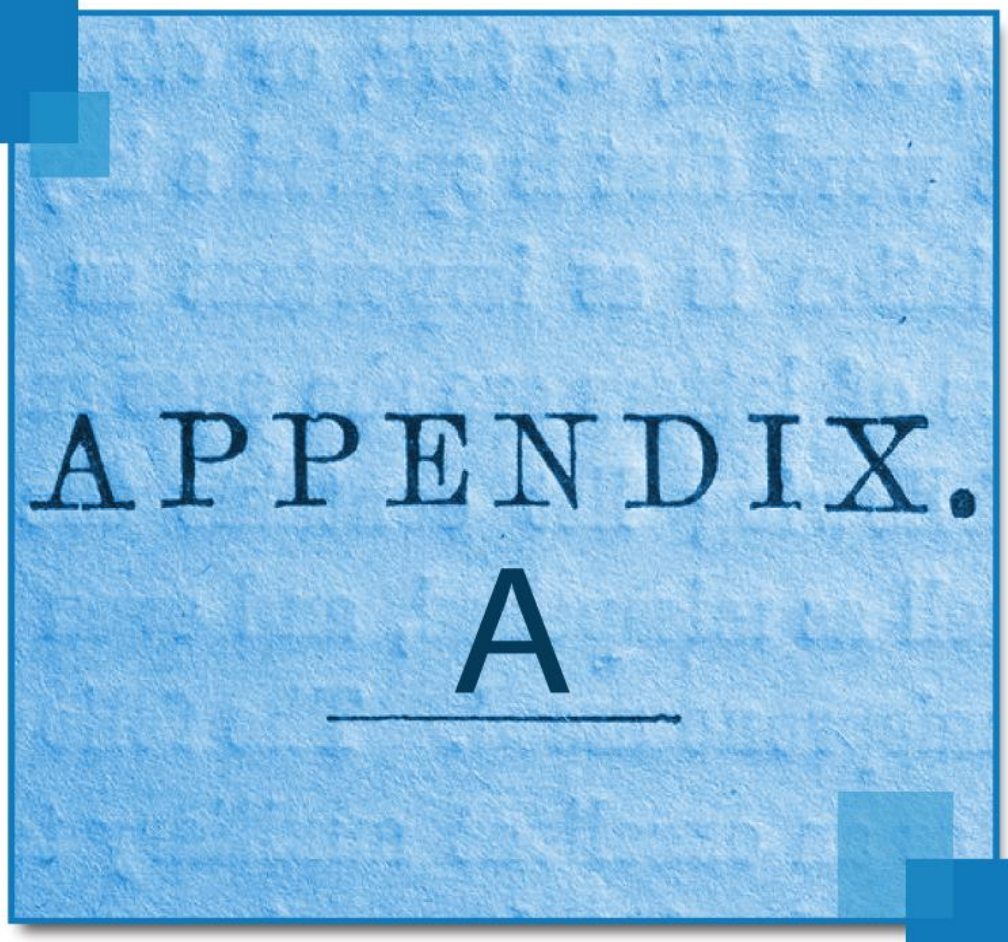
8 Glossary / Acronyms

Terminology	Description
Abstract Time Scale	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.
BPMN	**Business Process Modelling Notation** Business Process Modelling Notation is the practice of documenting an organisation's key business processes in a graphical format.
Business Rules	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
CRR	Contract Review Rate
CRRV	Contract Review rate Variation.
CTQ	**Critical to Quality** Critical To Quality (CTQ) is continuous measuring and monitoring tool agreed between the internal processes to achieve greater customer satisfaction.
COI	Chain of infection
Data Quality Dimensions	The totality of features and characteristics of data that bears on their ability to satisfy a given purpose
EBC	Evidence Based Cleaning
ESM	Environmental services Map
KPI	**Key Performance Indicator** 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.
MSD	Macro Skeleton Disorder

8 Glossary / Acronyms

OLA	**Organization level Agreement** An Agreement between an IT Service Provider and another part of the same Organization
Operational Policy	Rules defined to operate the process.
Quality Attributes	Quality attributes are non-functional requirements used to evaluate the performance of a process.
Risk	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.
SLA	**Service Level Agreement** 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
VOC	**Voice of Customer**

Appendix A: Business Process Modeling Notation Reference



9 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 *basic unmarked* 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	**Message start** 
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	**TIMER Start** 
If the process starts when a rule/condition is met – e.g. when Incident Impact is more than 100,000.	**RULE Start** 
If a process starts when another process finishes. Following notation can be used	**LINK Start** 
If there is more than one 'trigger' for a process to start. Following notation can be used	**MULTIPLE Start** 

9 Appendix A: Business Process Modeling Notation Reference

TASK AND SUB PROCESS

Task	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	
Sub Process	A Sub-process is a compound activity which can be broken down into finer details.	
Loops	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.	**BASIC**	**MESSAGE**	**TIMER**	**RULE**	**LINK**	**MULTIPLE**
						

PROCESS END

All processes have to end somehow, general notation for a process models end will be a circle with a solid line.	
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 

9 Appendix A: Business Process Modeling Notation Reference

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

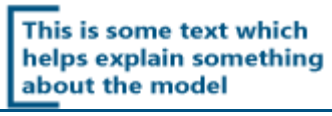
Pool	A *Pool* represents a participant in a Process. It is also acts as a "swimlane" and a graphical container for partitioning a set of activities from other Pools	
Lane	A *Lane* is a sub-partition within a Pool and will extend the entire length of the Pool, either vertically or horizontally. Lanes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

CONNECTORS

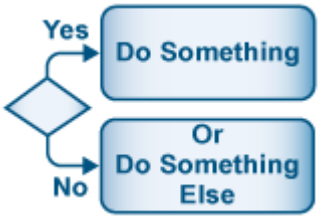
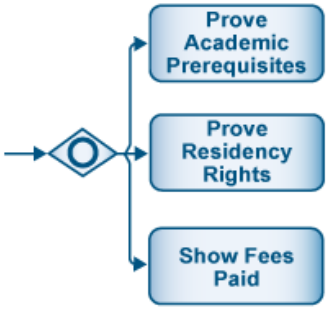
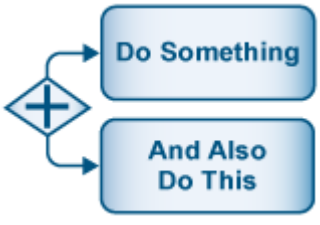
Sequence Flow	A *Sequence Flow* is represented by a solid line with a solid arrowhead (see the figure to the right) and is used to show the order (the sequence) that activities will be performed in a Process.	
Message Flow	A *Message Flow* is represented by a dashed line with an open arrowhead (see the 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.	

9 Appendix A: Business Process Modeling Notation Reference

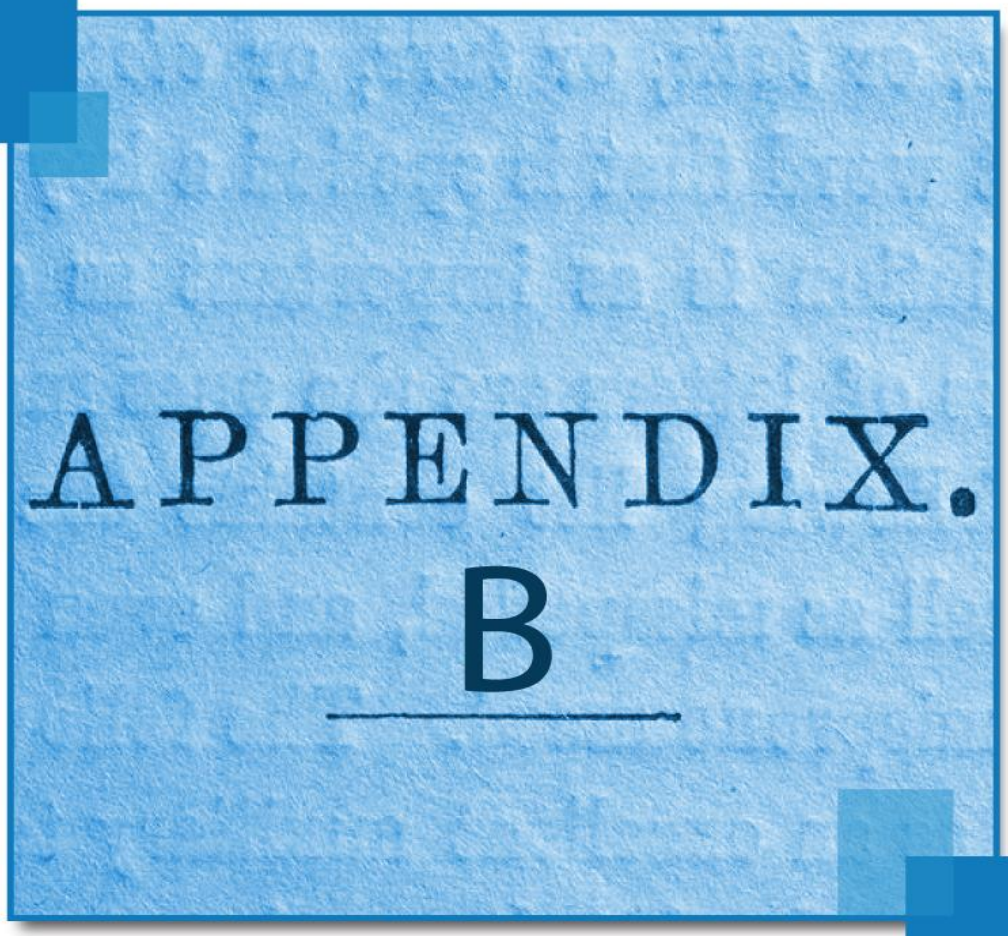
ARTIFACTS

Annotation	The ANNOTATION shape is used to add comments to a process model. It consists of text in a square left bracket	
Data Object	A data object represents a piece of data which is required or produced by the process eg. Customer details, output.	
Group	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

Exclusive	The values of the process are examined to determine which path to take	
Inclusive	Each branch will be evaluated and will not stop when one branch condition becomes true.	
Parallel	Provides a mechanism to synchronise parallel flow and to create parallel flow.	

Appendix B: Chain of Infection



10 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.

10 Appendix B: Chain of Infection

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.