



Standard Management Integration Process

13th Dec 2020



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HESAS EMS Standards Document

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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:

Table of Contents

Table of Contents

1. PURPOSE	7
2. STRUCTURE OF THE DOCUMENT	9
3. SCOPE	11
4. GENERAL ASSUMPTIONS	13
5. STANDARD MANAGEMENT INTEGRATION FRAMEWORK	15
5.1 Standard Management Integration Process Interactions	16
5.2 Standard Management Integration Process	16
5.2.1 Identification of Standard Management Integration Goals	17
5.2.2 Standard's Management Process re-Engineering	17
5.2.3 Data and Records Integration	18
5.2.4 Establish ES Standards Management capability	18
5.2.5 Standards requirements Integration	19
5.2.6 Establishing Environmental Service Standards	20
5.2.7 Standards Maintenance Integration	20
5.2.8 Integrated Reporting	21
6. STANDARD MANAGEMENT INTEGRATION PROCESS	22
6.1 Standard Management – Process Model	23
6.2 Standard Management – Process Specification	24
6.3 Standard Management Integration – Roles & Responsibilities	28
6.4 Sub – Process – Business Process Re-engineering	29
6.5 Sub Process – Business Process Re-engineering Specification	30
6.6 Sub Process – Business Process Re-engineering Roles & Responsibilities	33
6.7 Sub-Process – Establish ES Standards Management capability	34
6.8 Sub Process – Establish ES Standards Management capability Specification	35

Table of Contents

6.9	Sub process – Establish Standards Management capability Roles & Responsibilities	38
6.10	Sub – Process – Standards requirements Integration	39
6.11	Sub Process – Standards requirements Integration Specification	40
6.12	Sub process – Standards requirements Integration Roles & Responsibilities.....	43
6.13	Sub – Process – Establish ES Standards.....	44
6.14	Sub – Process – Establish ES Standards Specifications.....	45
6.15	Sub process – Establish ES Standards Roles and Responsibilities	48
6.16	Sub process – Standards Maintenance Integration	49
6.17	Sub process – Standard Maintenance Integration Specifications	50
6.18	Sub process – Standard Maintenance Integration Roles and Responsibilities	53
6.19	Sub process – Integrated Reporting	54
6.20	Sub process – Integrated Reporting Specifications	55
6.21	Sub Process – Reporting Roles and Responsibilities	58
7.	REFERENCE	59
7.1	Business Rules.....	60
7.2	Risk	60
7.3	Quality Attribute	61
7.4	Data Quality Dimension	63
7.5	Operation Policy	64
7.6	KPI	64
7.7	CTQ.....	65
7.8	Abstract Time-Scale	67
7.9	SLA Terms	67
7.10	Voice of Customer	68
7.11	Customer Context Matrix	71
7.12	MSD Attributes	72

Table of Contents

8. GLOSSARY / ACRONYMS.....	74
9. APPENDIX A: BUSINESS PROCESS MODELING NOTATION REFERENCE.....	77
10. APPENDIX B: CHAIN OF INFECTION	83

Standard Management Integration Process

Purpose



1 Purpose

1. PURPOSE

The purpose of this document is to establish a Standard Management Integration process that integrates environmental service Standard's management process with the existing organizational Standards Management process.

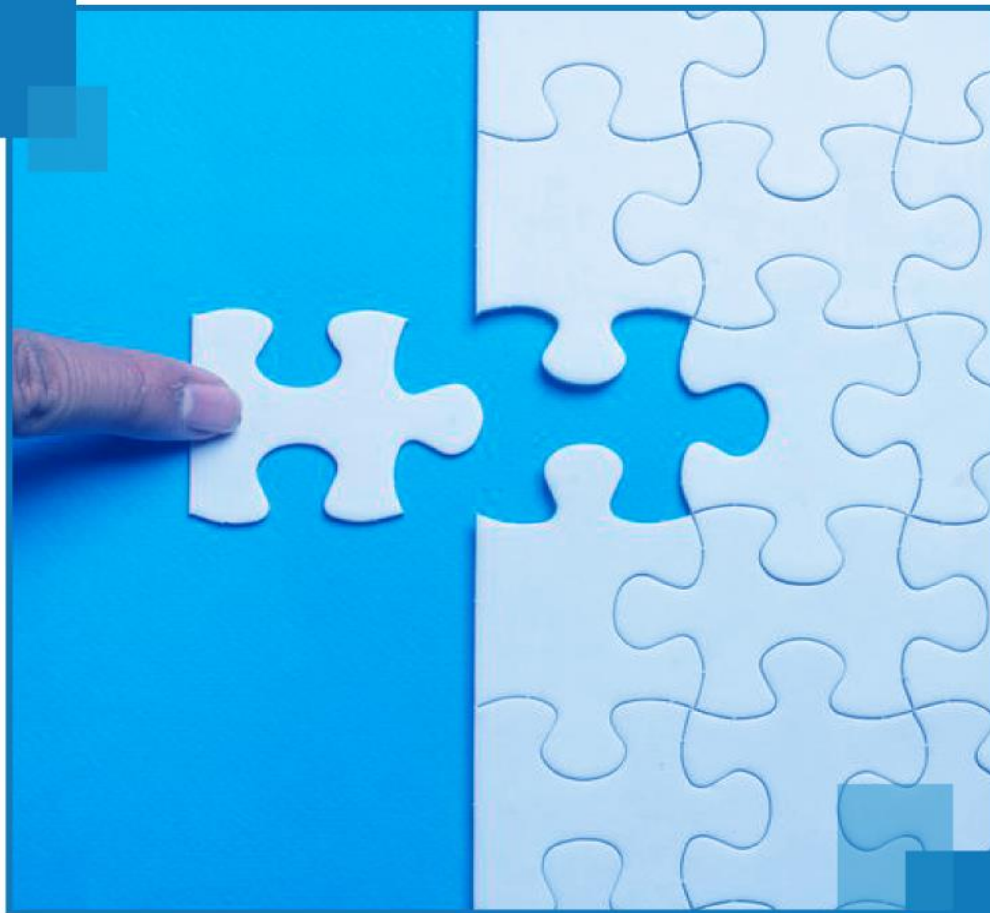
The main purpose of this document is to enable environmental services standards management process to Integrate with the existing enterprise standards, to ensure that same standards are referred likewise throughout the organization.

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.*
- *Activity based Accounting.*

*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

The Environmental services Standard Management Integration process document comprises the following chapters:

Chapter–3: Scope: This chapter describes the scope of the document and the Cleaning process.

Chapter–4: General Assumptions: This chapter describes the underlined assumptions made for both the document and Cleaning process.

Chapter–5: Standard Management Integration Framework: This chapter exhibits the interaction of Standard Management Integration Process with other related processes and also describes the process sequence for cleaning process.

Chapter–6: Standard Management Integration Management Process: In this chapter Standard Management Integration 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 Standard Management Integration 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 cleaning process.

This Standard Management Integration Process is supposed to be a living document and consists of various variable values which would frequently evolve or change as organization's Standard Management Integration Process matures or changes

Scope



3 Scope

3. SCOPE

This process is applicable to environmental service standards.

General Assumptions



4. GENERAL ASSUMPTIONS

Following are general assumption made for the Standard Management Integration process.

- Senior Management Support is available throughout for integration with the current Standard management process.
- This process uses automated tools to ensure smooth and efficient integration with the current process.
- Any activity related assumptions are explicitly identified in related Process Specification table in Chapter 6.

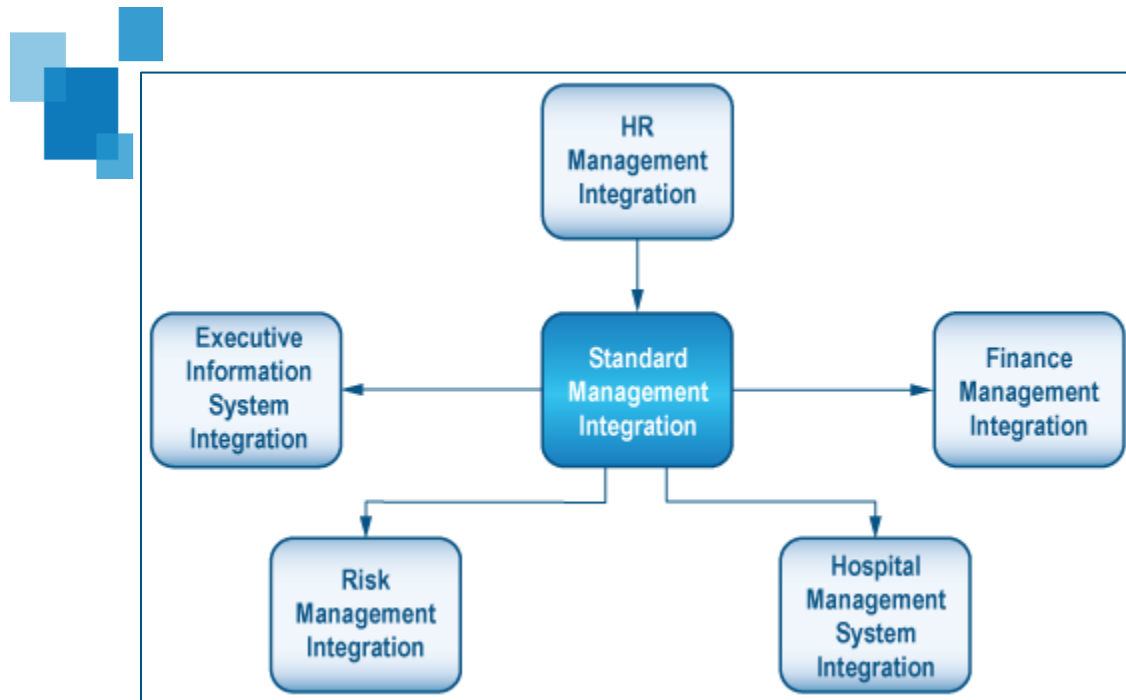
Standard Management Integration Process

Standard Management Integration Framework



5.1 Standard Management Integration Process Interactions

The following depiction shows the points of interaction of organization's Standard Management Integration process with other related enterprise processes. All the processes depicted below are defined in their own respective dedicated documents.



5.2 Standard Management Integration Process

The Standard Management Integration process comprises of following high level sequence of processes:

1. Identification of Standard Management Integration Goals
2. Standard Management process re-engineering
3. Establish Standard Management Integration capability
4. Identify standards requirements
5. Establishing enterprise standards
6. Standards Maintenance

7. Integrated Reporting

Section 5.2.1 -5.2.7 describes the flow of high level process sequence for organization Standard Management Integration process. **Section 6.1** Process Model sheds more light on the entire flow of Standard Management Integration Process.

5.2.1 Identification of Standard Management Integration Goals

This comprises of identification of following goals:

- **ES Standard Management Optimization.** This focuses on streamlining and improving environmental services standard management processes to align with the organizational standard management process to ensure better, comprehensive and greater quality.
- **Efficient ES Standard related decision making.** This ensures the smooth and seamless information flow between organizational and environmental services' standard management processes, for effective decision making.
- **Better Standards Coordination.** This ensures better coordination between the two processes, to enable comprehensive and easy retrieval of information and data when required, which would facilitate the harmonization between environmental services standards management process and organizational standards management process.

5.2.2 Standard's Management Process re-Engineering

This comprises of re-engineering the existing standard management process of organization as well as environment services to streamline and optimize information flow between the two processes.

This comprises of following steps:

- **Identify Integration goals.** This comprises of identification of strategic and informative goals between the processes.
- **Analyze "as is" Processes.** This comprises of analyzing the current processes, to identify points of failure, disconnections, and current values of the processes.
- **Design "to be" process.** The objective of this phase is to produce one or more alternatives to the current situation, which satisfy the strategic goals of the integration. This comprises of using innovative methods and practices and identifying the desired state of processes.
- **Implement Change.** This comprise of planning a transition from "As is" to the desired process. This plan must align the organizational structure, information systems, and the business policies and procedures with the redesigned processes.

5.2.3 Data and Records Integration

This process ensures that the record and data pertaining to the standards are well integrated and that the integrated data remains true and pure with the following attributes:

- Authenticity
- Integrity
- Accuracy
- Reliability
- Free from error.

5.2.4 Establish ES Standards Management capability

This process is responsible for establishing regulatory capability at environmental services level. This process is responsible for:

- **Environmental standards Integration**

The purpose of this sub process is to ensure that the organization standards comprehensively covers environmental services aspects such OSHA, JCI, six sigma etc. This sub process comprises of integrating the environmental services standards with the defined and documented organizational Standard. This comprises of integrating at following levels:

- **Policies integration.** This involves Integration of Environmental services policies with the organizational policies. For example environmental services policy such as fire-prevention and safety which would be applicable to the entire organization such be incorporate into the enterprise standards of safety.
- **Procedure integration.** This involves Integration of Environmental services procedures with the organizational policies.
- **Guidelines integration.** This involves Integration of Environmental services guidelines with the organizational policies

- **Ensure Compliance with Organizational Standard.**

This addresses the following:

- **Addressing Integration risks.** This involves identification of integration risk which might be encountered during integration process, and taking appropriate steps to address them.
- **Removing discrepancies.** This step involves removing of any discrepancies arising out of integration to standard management.

- **Harmonization activities.** The integration identifies standard related roles and responsibilities clearly, thus removing any room for inconsistency.
- **Establishing Standards management committee.**
This comprises of:
 - **Working Group.** The working group comprises of team members from the environmental services.
 - **Governance Group.** This comprises of enterprise senior team member.
 - **Operation procedure.** How the two groups would communicate in order.

5.2.5 Standards requirements Integration

This process is responsible for integrating with enterprise standards requirements process to identify current environmental services standards. For example, the infection prevention and control program should be based on current scientific knowledge, accepted practice guidelines, applicable laws and regulations, and standards for sanitation and cleanliness.

This would include identifying:

- **Industry related standard.** Environmental service related regulatory standards (industry standards). This also involves maintaining relationships with other organizations so as to compare results and researches with other organizations when available, and with scientific standards and desirable practices. This would also involve enabling the organization the use and participation in external environmental service related databases.
- **Quality Standard.** This would comprise of following:
 - **Technological Standard.** New technologies used in environmental services which would enhance the quality of the services.
 - **Procedural Standards.** New procedures used for environmental services, such as cleaning standards, disinfection standards etc.
 - **Operation Standard.** New mode of operations standards the environmental service field.
- **Regulatory standards.** This comprises Government imposed requirements of license, certificates, etc. that the environmental services should comply to. For example, the organization should report on the desired information on infections to appropriate external public health agencies. Also organization should comply to entire fire safety requirements, as desired by the fire department.

5.2.6 Establishing Environmental Service Standards

This step comprises of tailoring the environmental services standards to meet the enterprise requirements. This step comprises of following:

- **Establish draft.** This step comprises of drafting the environmental services standards to meet enterprise requirement and establishing standard document draft. Typically this step is undertaken by the standard working group.
- **Group review.** This step comprises of review done by the governance standard work group.
- **Establishing prototype.** This comprises of establishing a proper standard prototype.
- **Review of prototype.** This involves performing multiple reviews of the prototype.
- **Obtaining Consensus.** This step involves reaching consensus from all the stakeholders on the prototype.
- **Publication.** This involves publishing the standard document and providing it to the entire environmental as well as enterprise staff member who are effect by the standard.
- **Implementation.** This involves applying the environmental standards to the organization and establishing means and methods to have conformance to the standard. Implement comprises of following:
 - **Training and awareness.** Training and making staff aware of the standards, and enforcing them to use them in their day to day work operations.
 - **Implementation roadmap.** The implementation plan of the standard with milestones.
 - **Establishing standards metrics.** To measure the conformance level to the standard.

5.2.7 Standards Maintenance Integration

This process comprises of integrating with organization's standard maintenance sub process in order to:

- **Monitoring change.** This comprises of monitoring change in:
 - **Regulatory standards.** This process is also responsible to be in consistent communication with the authorities, regulatory bodies, and Standard Management organizations to identify any modifications to current environmental standards.
 - **Standards requirement changes.** This comprises of monitoring organization's internal requirement changes, which might cause changes to the environmental standards.
- **Updating enterprise standard.** This involves updating of standards content, and performing multiple reviews of the standards and formal endorsement from the Standard Management committee.

5.2.8 Integrated Reporting

This process is responsible for provision of various comprehensive reports which takes into account ES finance management results for example

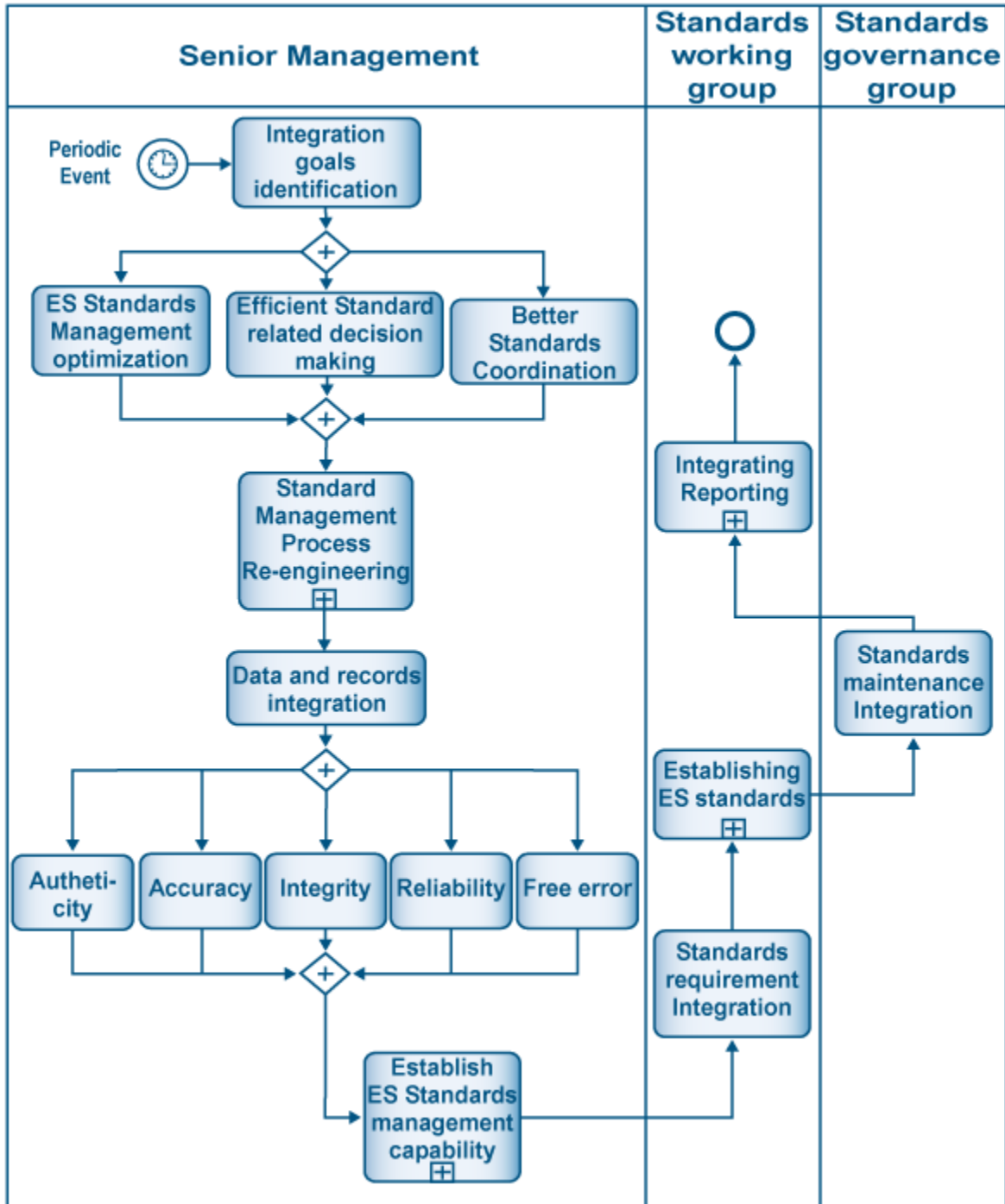
- Financial management deviations Reports
- Finance performance reports
- Financial Risks compliance Reports

Standard Management Integration Process

Standard Management Integration Process



6.1 Standard Management – Process Model



6.2 Standard Management – Process Specification

Specification	Description
Summary/Purpose	To establish environmental services Standard Management Integration process.
Scope	This is a Level 1 Process Specification.
Primary Reference	<ul style="list-style-type: none"> AS-NZ Risk 4360- Risk Management. Lean six sigma- Quality Standard JCI- Journal of Clinical Investigation standard
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	<ul style="list-style-type: none"> Consistency and process standardization Regulatory compliance.
Related Operational Policies	OP-001, OP-002, OP-003, OP-004, OP-005, OP-006 (Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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 to facilitate Standard 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)						
EBC Procedures	None						
Timing Dimensions	<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						
Trigger	<ul style="list-style-type: none"> Periodic review 						
Basic Course of Event	<p>Standard Management Integration Process</p> <ol style="list-style-type: none"> 1. Senior Management identifies integration goals (ES standards management optimization, efficient standard related decision making, better standards coordination) 2. Senior management performs standards management re-engineering process 3. Senior management ensure data and record integration (authenticity, accuracy, integrity, reliability, free errors) 4. Senior Management establishes environmental services standards management capability 5. Standard working group performs standards requirements integration 6. Standard working group establishes environmental services standards 7. Standard governance group performs standards maintenance integration 8. Standard governance group performs integrated reporting. 9. End 						

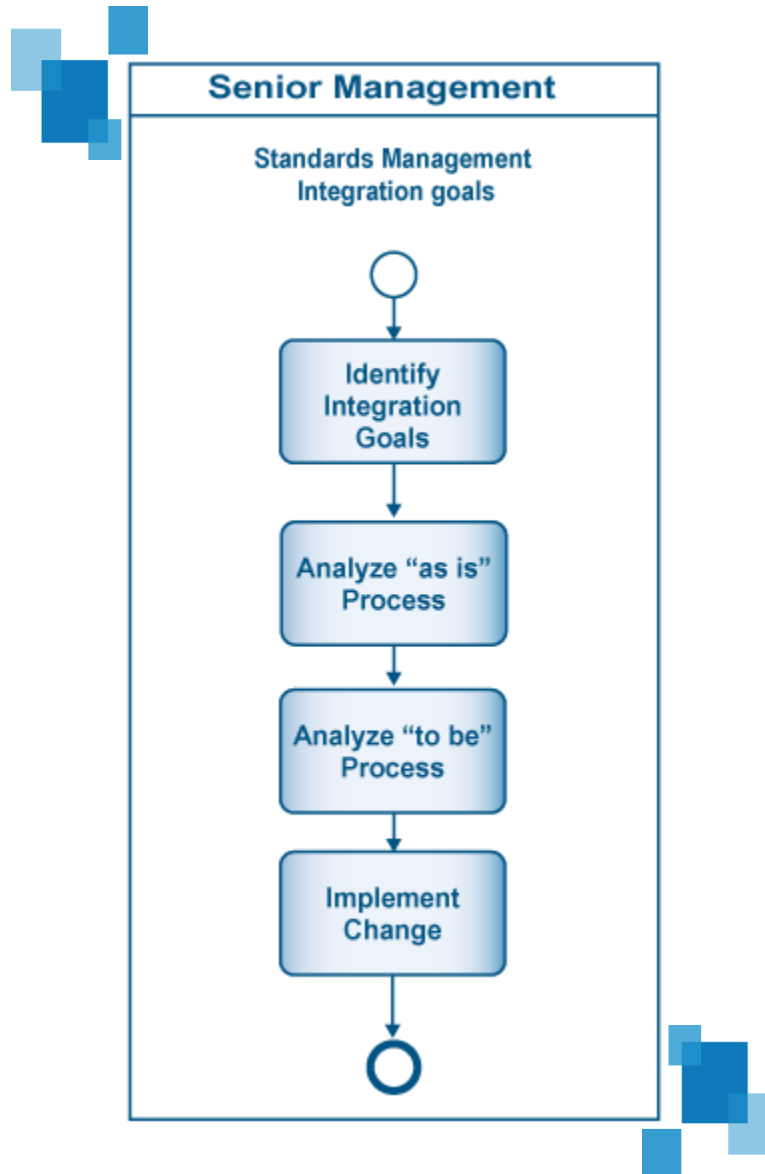
Alternative Path	None
Exception Path	System Down <ol style="list-style-type: none"> 1. Keep paper track until system is up and running 2. Update the System and clear all logs. 3. End.
Extension points	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Preconditions	All relevant information is available to the process.
Post – conditions	Organization Standard Management Integration Process gets established.
Related Business Rules	BR-001, BR-002, BR-003, BR-004, BR-005, BR-006 (Ref 7.1)
Related Risks	RR-001, RR-002, RR-003, RR-004, RR-005, RR-006(Ref 7.2)
Related Quality Attributes	Reliability, Availability, Confidentiality, Authenticity, Data Integrity, Non-repudiation, Accountability, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Believability, Reputation, Objectivity, Free-of-Error, Value Added, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	IDR, PRR, SAR, PR, SUR, RPR, SCR,(Ref 7.6)
Related CTQs	IDRV, PRRV, SARV, PRV, SURV, RPRV, SCR, MOM, PWOM, CTQ, IOM, TOM, WRM, DRM (Ref 7.7)

Actors/Agents	Senior Management, Standards working group, Standards governance group
Delegation	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.1
Other References	Appendix A: Business Process Notation Reference

6.3 Standard Management Integration – Roles & Responsibilities

Roles	Responsibilities
Senior Management	<ul style="list-style-type: none"> • Senior Management identifies integration goals (ES standards management optimization, efficient standard related decision making and better standards coordination). • Senior management performs standards management re-engineering process. • Senior management ensure data and record integration (authenticity, accuracy, integrity, reliability, free errors). • Senior Management establishes environmental services standards management capability.
Standards working group	<ul style="list-style-type: none"> • Standard working group performs standards requirements integration • Standard working group establishes environmental services standards
Standards governance group	<ul style="list-style-type: none"> • Standard governance group performs standards maintenance integration • Standard governance group performs integrated reporting

6.4 Sub – Process – Business Process Re-engineering



6.5 Sub Process – Business Process Re-engineering Specification

Specification	Description
Summary/Purpose	To establish the process of business process re-engineering.
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> • 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
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	Streamline coordination between processes.
Related Operational Policies	OP-005 (Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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 standards 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)						
EBC Procedures	None						
Timing Dimension	<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						
Trigger	Standard management integration goals						
Basic Course of Event	Standards Management Business Process Re-engineering <ol style="list-style-type: none"> 1. Process integrator identify integration goals 2. Process integrator analyze “as in” process 3. Process integrator analyze “to be” process 4. Process integrator implements change. 5. End 						
Alternative Path	None						
Exception Path	System Down <ol style="list-style-type: none"> 1. Keep paper track until system is up and running 2. Update the System and clear all logs. 3. End. 						

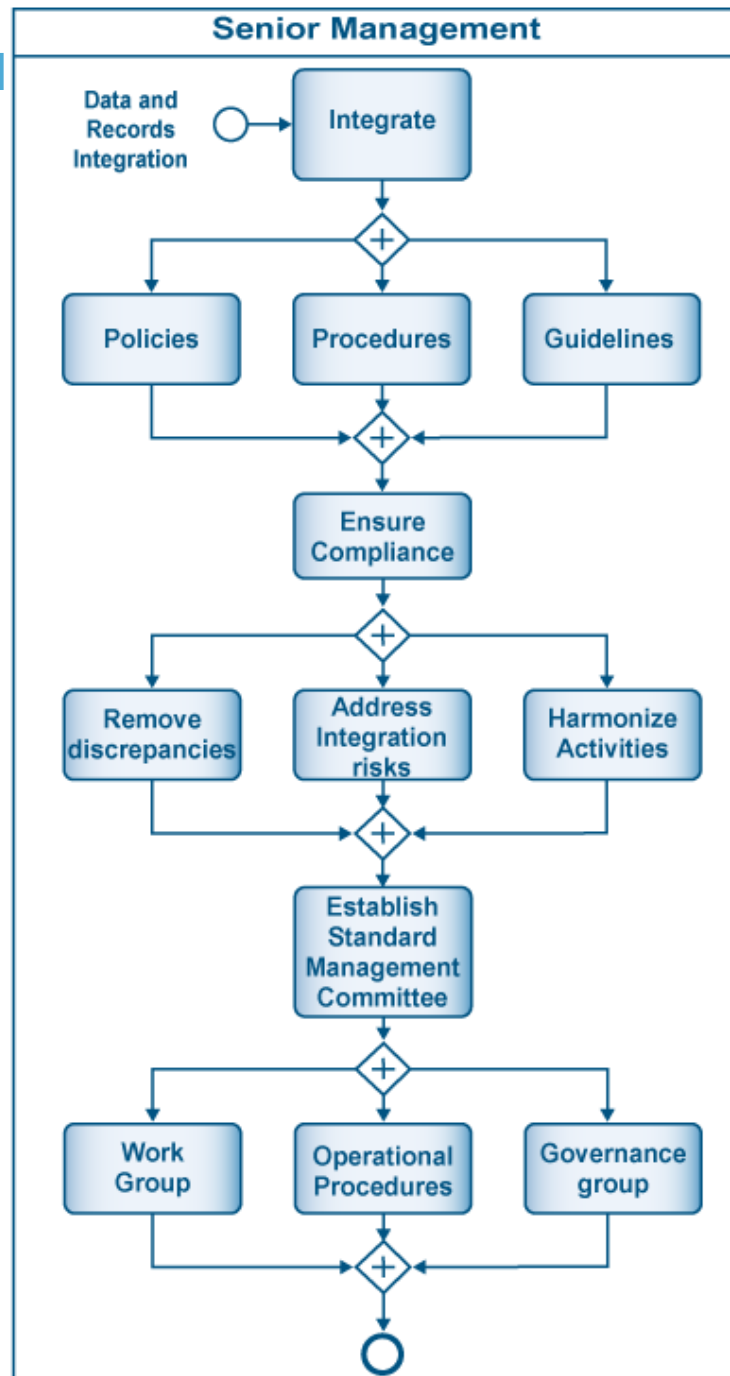
Extension points	Data and record integration
Preconditions	The management is supportive of changes in the processes.
Post –conditions	Business process re-engineering process is established.
Related Business Rules	BR-005 (Ref 7.1)
Related Risks	RR-005 (Ref 7.2)
Related Quality Attributes	Reliability, Confidentiality, Authenticity, Data Integrity, Availability, Non-repudiation, Accountability, Security Integration, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Reputation, Objectivity, Free-of-Error, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	RPR (Ref 7.6)
Related CTQs	RPRV (Ref 7.7)
Actors/Agents	Senior Management
Delegation	<u>Delegation Rule -1: Agent Not Available</u> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation

	<u>Delegation Rule -2: Agent Overloaded</u> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<u>Rule 1: Performance, operational legal Issues</u> <ol style="list-style-type: none"> 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 Notation Reference

6.6 Sub Process – Business Process Re-engineering Roles & Responsibilities

Roles	Responsibilities
Senior Management	<ul style="list-style-type: none"> • Process integrator identify integration goals, analyze “as in” process, analyze “to be” process and implements change.

6.7 Sub-Process – Establish ES Standards Management capability



6.8 Sub Process – Establish ES Standards Management capability Specification

Specification	Description
Summary/Purpose	To establish ES Standard Management Integration capability in the enterprise
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> AS-NZ Risk 4360- Risk Management. Lean six sigma- Quality Standard JCI- Journal of Clinical Investigation standard SEI –Risk Management Integration framework.
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	<ul style="list-style-type: none"> Consistency and process standardization Regulatory compliance.
Related Operational Policies	OP-001 (Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
Voice of Customer	<p>Hygiene, High and Consistent Quality of standards, Free of Infections, Timely Services, High Coordinating, Remove Waste, Excellent Ergonomic, Safety, Appearance, Excellent Worker Attitude.</p> <p>(Ref 7.10)</p>

Customer Satisfaction Measure	Customer satisfaction index						
COI Correlation	None						
Raw Materials	None						
Equipment & Accessories	Automated System to facilitate Standard 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)						
EBC Procedures	None						
Timing Dimensions	<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						
Trigger	<ul style="list-style-type: none"> Data and record integration 						
Basic Course of Event	<p>Establish ES Standards management capability</p> <ol style="list-style-type: none"> Senior Management establishes integration with organizational standards at policy, procedures and guidelines level. Senior Management ensures that integration compliance occurs (removing discrepancies, by addressing integration risks and by harmonizing activities) Senior management establishes standards management committee by appointing standards work group, standards governance group and operational procedures. End 						
Alternative Path	None						

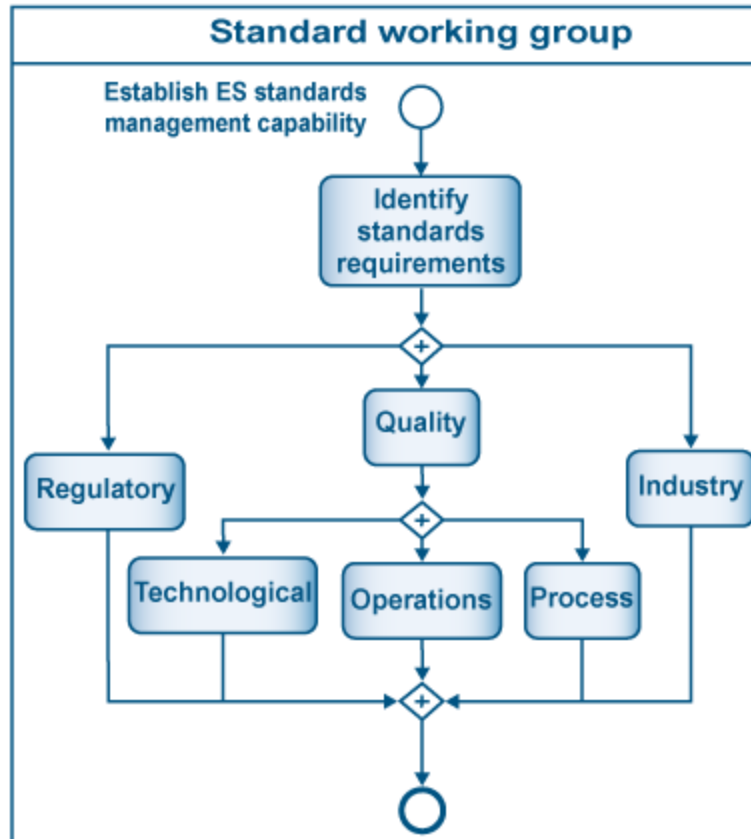
Exception Path	System Down <ol style="list-style-type: none"> 1. Keep paper track until system is up and running 2. Update the System and clear all logs. 3. End.
Extension points	Identify standards requirement
Preconditions	Accurate information is available to the process.
Post –conditions	ES Standards management integration process is established.
Related Business Rules	BR-001 (Ref 7.1)
Related Risks	RR-001 (Ref 7.2)
Related Quality Attributes	Reliability, Availability, Confidentiality, Authenticity, Data Integrity, Non-repudiation, Accountability, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Believability, Reputation, Objectivity, Free-of-Error, Value Added, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	IDR, PRR (Ref 7.6)
Related CTQs	IDR, PRRV (Ref 7.7)
Actors/Agents	Senior Management
Delegation	<u>Delegation Rule -1: Agent Not Available</u> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task

	<p>3. Log the delegation</p> <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.4
Other References	Appendix A: Business Process Notation Reference

6.9 Sub process – Establish Standards Management capability Roles & Responsibilities

Roles	Responsibilities
Senior Management	<ul style="list-style-type: none"> • Senior Management establishes integration with organizational standards at policy, procedures and guidelines level. • Senior Management ensures that integration compliance occurs (removing discrepancies, by addressing integration risks and by harmonizing activities) • Senior management establishes standards management committee by appointing standards work group, standards governance group and operational procedures.

6.10 Sub – Process – Standards requirements Integration



6.11 Sub Process – Standards requirements Integration Specification

Specification	Description
Summary/Purpose	To establish the process of ES standards requirements integration.
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> AS-NZ Risk 4360- Risk Management. Lean six sigma- Quality Standard JCI- Journal of Clinical Investigation standard
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	<ul style="list-style-type: none"> Consistency in standardization Regulatory compliance.
Related Operational Policies	OP-002(Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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

6

Standard Management Integration Process

Raw Materials	None						
Equipment & Accessories	Automated System to facilitate Standard 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)						
EBC Procedures	None						
Timing Dimensions	<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						
Trigger	Establish ES standards management capability						
Basic Course of Event	<p>Standards requirement Integration</p> <ol style="list-style-type: none"> Standard working group identifies standards requirements Standard working group establishes regulatory standard, quality standard (technological standard, operations standard, process standard) and industry standard. End 						
Alternative Path	None						
Exception Path	<p>System Down</p> <ol style="list-style-type: none"> Keep paper track until system is up and running Update the System and clear all logs. End. 						
Extension points	Establish ES Enterprise standards.						

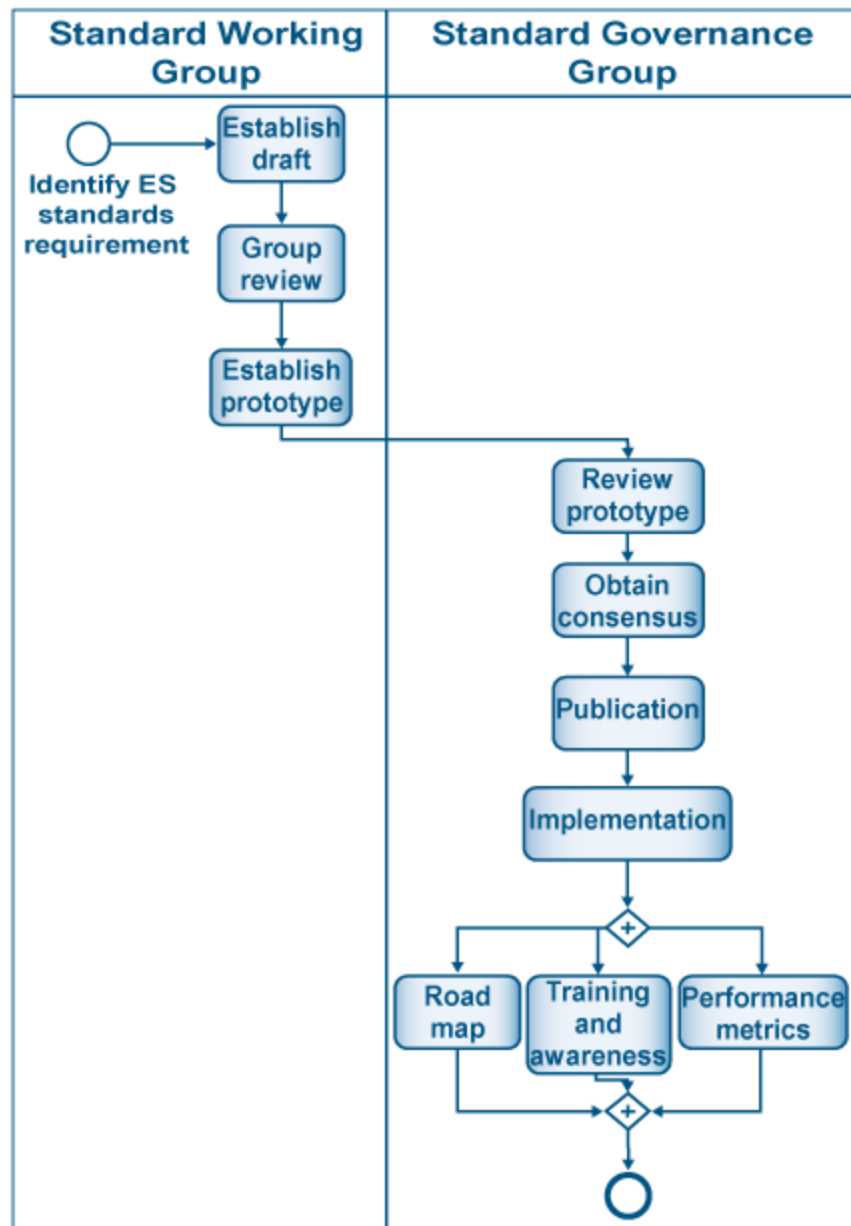
Preconditions	Accuracy of information.
Post – conditions	Enterprise standards integration process is established.
Related Business Rules	BR-002 (Ref 7.1)
Related Risks	RR-002 (Ref 7.2)
Related Quality Attributes	Reliability, Data Integrity, Accountability, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Reputation, Objectivity, Free-of-Error, Value Added, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	SAR (Ref 7.6)
Related CTQs	SARV (Ref 7.7)
Actors/Agents	Standard working group
Delegation	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation

Escalation	<u>Rule 1: Performance, operational legal Issues</u> 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.8
Other References	Appendix A: Business Process Notation Reference

6.12 Sub process – Standards requirements Integration Roles & Responsibilities

Roles	Responsibilities
Standard working group	<ul style="list-style-type: none"> Standard working group identifies standards requirements Standard working group establishes regulatory standard, quality standard (technological standard, operations standard, process standard) and industry standard.

6.13 Sub – Process – Establish ES Standards



6.14 Sub – Process – Establish ES Standards Specifications

Specification	Description
Summary/Purpose	To establish process for establishing ES standards
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> AS-NZ Risk 4360- Risk Management. Lean six sigma- Quality Standard JCI- Journal of Clinical Investigation standard
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	<ul style="list-style-type: none"> Consistency in standardization process Regulatory compliance.
Related Operational Policies	OP-003 (Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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 to facilitate Standard 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)						
EBC Procedures	None						
Timing Dimensions	<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						
Trigger	<ul style="list-style-type: none"> Identify ES standardize requirement 						
Basic Course of Event	<p>Establish enterprise Standards</p> <ol style="list-style-type: none"> Standard working group establish draft Standard working group performs group review Standard working group establish prototype Standard governance group reviews prototype Standard governance group obtains consensus Standard governance group publishes the standards Standard governance group implements roadmap, training and awareness plan and performance metrics End 						
Alternative Path	None						
Exception Path	System Down						

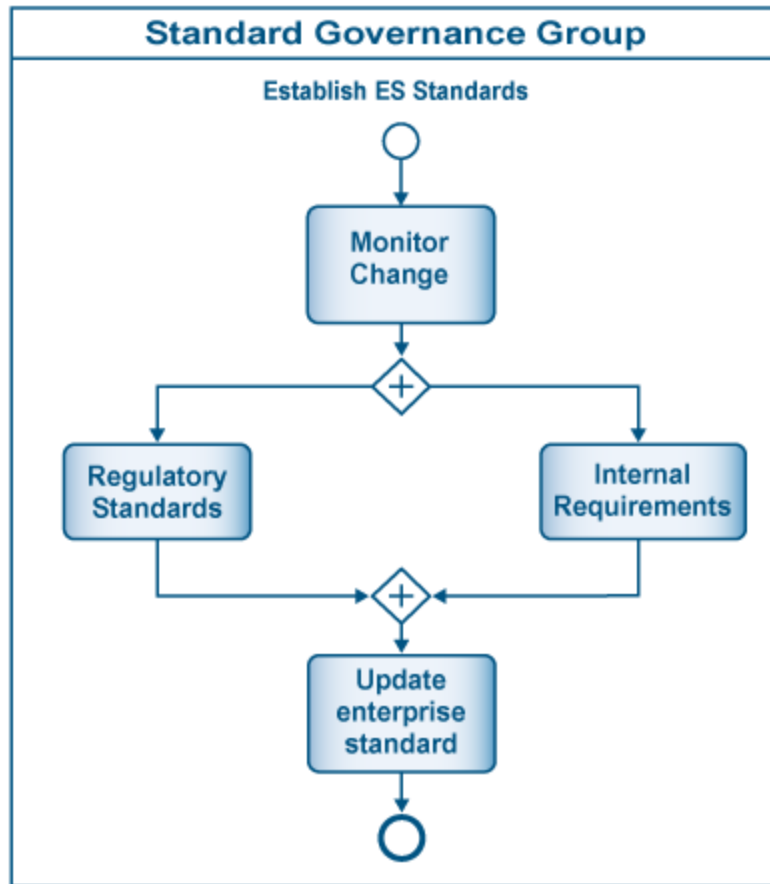
	<ol style="list-style-type: none"> 1. Keep paper track until system is up and running 2. Update the System and clear all logs. 3. End.
Extension points	Standard Maintenance integration
Preconditions	All reviews are done meticulously.
Post –conditions	Enterprise standard are established.
Related Business Rules	BR-003 (Ref 7.1)
Related Risks	RR-003 (Ref 7.2)
Related Quality Attributes	Reliability, Availability, Confidentiality, Authenticity, Data Integrity, Non-repudiation, Accountability, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Believability, Reputation, Free-of-Error, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	PR (Ref 7.6)
Related CTQs	PRV (Ref 7.7)
Actors/Agents	Standard working group, Standard Governance group
Delegation	<u>Delegation Rule -1: Agent Not Available</u> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation

	<u>Delegation Rule -2: Agent Overloaded</u> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<u>Rule 1: Performance, operational legal Issues</u> <ol style="list-style-type: none"> 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.11
Other References	Appendix A: Business Process Notation Reference

6.15 Sub process – Establish ES Standards Roles and Responsibilities

Roles	Responsibilities
Standard working group	<ul style="list-style-type: none"> • Standard working group performs group review • Standard working group establish prototype
Standard governance group	<ul style="list-style-type: none"> • Standard governance group reviews prototype • Standard governance group obtains consensus • Standard governance group publishes the standards • Standard governance group implements roadmap, training & awareness group and performance metrics

6.16 Sub process – Standards Maintenance Integration



6.17 Sub process – Standard Maintenance Integration Specifications

Specification	Description
Summary/Purpose	To establish standard maintenance integration process.
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> AS-NZ Risk 4360- Risk Management. Lean six sigma- Quality Standard JCI- Journal of Clinical Investigation standard
Related ESM Practices	Enterprise Information system integration, Hospital Management system integration, HR Management integration, finance Management integration, risk management integration
Related Business Driver	<ul style="list-style-type: none"> Consistency and process standardization Regulatory compliance.
Related Operational Policies	OP-004(Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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 to facilitate Standard 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)						
EBC Procedures	None						
Timing Dimensions	<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						
Trigger	Establish ES standards						
Basic Course of Event	Standard Maintenance Integration <ol style="list-style-type: none"> Standard governance group monitors change regulatory standards and internal standard requirement. Standard governance group updates enterprise standard. End. 						
Alternative Path	None						
Exception Path	System Down <ol style="list-style-type: none"> Keep paper track until system is up and running Update the System and clear all logs. End. 						
Extension points	Integrated reporting.						
Preconditions	Automated tool exists to monitor the changes.						

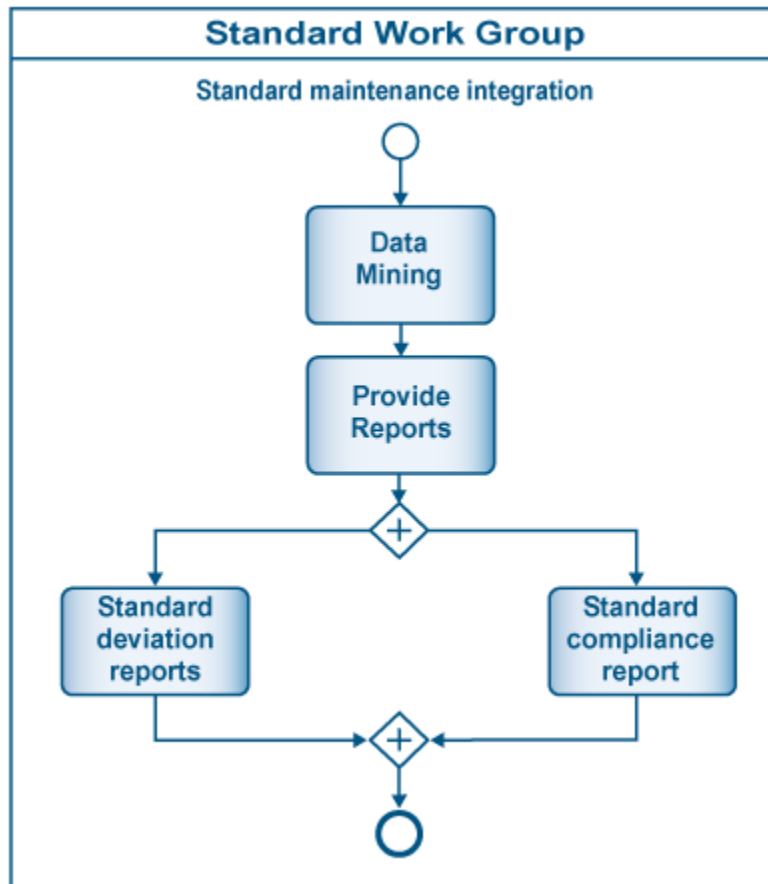
Post –conditions	Standard Management Integration process is established.
Related Business Rules	BR-004 (Ref 7.1)
Related Risks	RR-004 (Ref 7.2)
Related Quality Attributes	Reliability, Availability, Data Integrity, Accountability, Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, Operability and Deployability (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Believability, Reputation, Free-of-Error, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.9)
Related KPIs	SUR (Ref 7.6)
Related CTQs	SURV (Ref 7.7)
Actors/Agents	Standard governance group
Delegation	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> 1. Escalate to environmental services department head.

	2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.11
Other References	Appendix A: Business Process Notation Reference

6.18 Sub process – Standard Maintenance Integration Roles and Responsibilities

Roles	Responsibilities
Standard Governance group	<ul style="list-style-type: none"> Standard governance group monitors change regulatory standards and internal standard requirement. Standard governance group updates enterprise standard

6.19 Sub process – Integrated Reporting



6.20 Sub process – Integrated Reporting Specifications

Specification	Description
Summary/Purpose	To establish standards management integrated reports
Scope	This is a Level 2 Process Specification.
Primary Reference	<ul style="list-style-type: none"> • 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
Related ESM Practices	Enterprise Information system integration, Finance Management integration, HR Management integration, Standard Management integration, Risk Management integration.
Related Business Driver	<ul style="list-style-type: none"> • Better and comprehensive reporting
Related Operational Policies	OP-006 (Ref 7.5)
Assumptions	Senior Management support is available throughout this process.
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 standards 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)						
EBC Procedures	None						
Timing Dimension	<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						
Trigger	ES maintenance integration						
Basic Course of Event	<p>Integrated report Reporting Process</p> <ol style="list-style-type: none"> 1. Standard Governance Group performs data mining 2. Standard Governance Group provides standards deviation reports, standard compliance performance report 3. End 						
Alternative Path	None						
Exception Path	<p>System Down</p> <ol style="list-style-type: none"> 1. Keep paper track until system is up and running 2. Update the System and clear all logs. 3. End. 						
Extension points	Enterprise Information system integration, Finance Management integration, HR Management integration, Finance Management integration, Risk Management integration.						
Preconditions	The data stored in system is accurate and free from error.						
Post –conditions	Reports are established.						

Related Business Rules	BR-006 (Ref 7.1)
Related Risks	RR-006 (Ref 7.2)
Related Quality Attributes	Reliability, Confidentiality, Authenticity, Data Integrity, Availability, Non-repudiation, Accountability, , Performance, Scalability, Extensibility, Adaptability, Testability, Auditability, (Ref 7.3)
Related Data Quality Dimensions	Accuracy, Reputation, Objectivity, Free-of-Error, Relevance, Completeness, Timeliness, Appropriate Amount, Understandability, Interpretability, Concise Representation (Ref 7.4)
Related Primary SLA Terms	(Ref 7.5)
Related KPIs	EFCR, EFNCR, SBP, CES (Ref 7.6)
Related CTQs	EFCRV, EFNCRV, SBPV, CESV (Ref 7.7)
Actors/Agents	Standard Governance Group
Delegation	<p><u>Delegation Rule -1: Agent Not Available</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same role 2. Update the task 3. Log the delegation <p><u>Delegation Rule -2: Agent Overloaded</u></p> <ol style="list-style-type: none"> 1. Delegate the task to the agent with same Role 2. Update the task 3. Log the delegation
Escalation	<p><u>Rule 1: Performance, operational legal Issues</u></p> <ol style="list-style-type: none"> 1. Escalate to environmental services department head. 2. Log Escalation
Process Map	Section 5.1
Process Model	Section 6.25

Other References

Appendix A: Business Process Notation Reference

6.21 Sub Process – Reporting Roles and Responsibilities

Roles	Responsibilities
Standard Governance Group	<ul style="list-style-type: none">• Standard Governance Group performs data mining• Standard Governance Group provides standards deviation reports, standard compliance performance report

Reference



7.1 Business Rules

BR ID	Description	Context	Rule	Source
BR-001	ES Standards management committee would comprise of working group and governance group.	NA	NA	NA
BR-002	All regulatory standards are compulsory and mandatory for implementation.	NA	NA	NA
BR-003	All standard should have a proper implementation roadmap.	NA	NA	NA
BR-004	Standards should be always up to date.	NA	NA	NA
BR-005	All changes done to standards would be thoroughly considered.	NA	NA	NA
BR-006	All the critical reports would be escalated to the senior management of the organization	NA	NA	NA

7.2 Risk

Risk ID	Description	Source	Severity Level	Status	Resolution
RR-001	Roles and responsibilities of the management committee is not clear.	TBD	High	TBD	The roles and responsibilities should be defined clearly to facilitate the process.

RR-002	Lack of research in the area of environmental standards	TBD	High	TBD	Proper research techniques and alliances should be undertaken for standards management.
RR-003	Standard Performance metrics are not accurate	TBD	High	TBD	Performance metrics should be very applicable and implementable.
RR-004	Changes in the standards are not updated immediately, resulting into two different standards running in the organization simultaneously.	TBD	High	TBD	Management should ensure all standards should have versions mentioned and announce the release of new version via email to every staff.
RR-005	Strong resistance from staff for follow new standards	TBD	High	TBD	Have a plan for implementation of standards which would smoothen the transition.
RR-006	The reports are not comprehensive and focused	TBD	High	TBD	The reports should be customized to meet the intended audience.

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 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

7.5 Operation Policy

Policy ID	Description	Context	Importance (1-5)
OP-001	In case of any discrepancies organizational standards would be followed.	TBD	TBD
OP-002	Alliance would be made with various industry research groups to remain abreast of the latest developments.	TBD	TBD
OP-003	Standard Management Integration Processes should be automated wherever required	TBD	TBD
OP-004	Change to the regulation should be incorporate ins standards as soon as possible	TBD	TBD
OP-005	All changes to the business processes would be approved by senior management	TBD	TBD
OP-006	The reports should comprise of the ES standard reporting capability	TBD	TBD

7.6 KPI

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard Threshold
Integration discrepancy rate	IDR	Number of discrepancies identified per policy	NA	TBD	TBD	TBD
Policies review rate	PRR	Operational policies review per year	NA	TBD	TBD	TBD

Standards adoption rate	SAR	Number of new ES standards being adopted per year	NA	TBD	TBD	TBD
Prototype review	PR	The number of reviews done to prototype	NA	TBD	TBD	TBD
Standard update rate	SUR	The number of updates done to standards per year	NA	TBD	TBD	TBD
Re-engineering performance rate	RPR	The time consumed for re-engineering the process	NA	TBD	TBD	TBD
Standard Compliance rate	SCR	Standard compliance rate per month	NA	TBD	TBD	TBD

7.7 CTQ

Name	Acronym	Description	Context	Importance	Soft Threshold	Hard threshold
Integration discrepancy rate variation	IDRV	Standard deviation of IDR	NA	TBD	TBD	TBD
Policies review rate variation	PRRV	Standard deviation of PRR	NA	TBD	TBD	TBD

Standards adoption rate variation	SARV	Standard deviation of SAR	NA	TBD	TBD	TBD
Prototype review variation	PRV	Standard deviation of PR	NA	TBD	TBD	TBD
Standard update rate variation	SURV	Standard deviation of SUR	NA	TBD	TBD	TBD
Re-engineering performance rate variation	RPRV	Standard deviation of RFR	NA	TBD	TBD	TBD
Standard Compliance rate variation	SCRV	Standard deviation of SCR	NA	TBD	TBD	TBD
Motion optimization measure	MOM	Management of motion optimization measure	NA	TBD	TBD	TBD
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	NA	TBD	TBD	TBD

7 Reference

		Optimization Measure				
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

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, Waste management worker.	The environment should be attributing with great hygiene level.	<ul style="list-style-type: none"> • High quality healthcare services • Safe environment • Low infection rate • Low risk
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.	<ul style="list-style-type: none"> • 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,	Infections free and healthy environment.	<ul style="list-style-type: none"> • Safe environment • Reputation of hospital or organization • Trust • Quick healing • Positive psychological bias • Low risk

	Maintenance worker, Waste management worker, Housekeepers		
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.	<ul style="list-style-type: none"> • Professionalism • Trust • Positive psychological bias • Reputation of hospital or organization • Safe environment
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.	<ul style="list-style-type: none"> • Professionalism • Trust • Low risk • Excellent Ergonomic
Remove Waste	Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker,	Wastes should be either removed or minimized.	<ul style="list-style-type: none"> • Safe environment • Low infection rate • Low risk • Reputation of hospital or organization • Low cost • Timely response • High quality

	Waste management worker, Housekeepers		
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.	<ul style="list-style-type: none"> • Professionalism • Trust • Job accuracy • Excellent communication • Low risk • Reputation of hospital or organization
Safety	Doctors, Patients, Nurses, Housekeeping Supervisors, Clerks, Visitors, Environmental Services Management, Laundry worker, Transportation worker, Maintenance worker, Waste management worker, Housekeepers	Hospital environment should comply with occupational health and safety procedures.	<ul style="list-style-type: none"> • Safe environment • Professionalism • Low risk
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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Professionalism • Reputation of hospital or organization • Trust • Positive psychological bias • Minimum disputes • Less employee turn over
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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

7 Reference

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

Glossary / Acronyms



GLOSSARY

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

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



APPENDIX.
A









INTRODUCTION

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

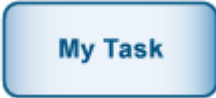


- Is highly graphical
- Focuses on business terminology rather than technical
- Allows all business steps/tasks to be included, not just those which involve a computer system.

Below is a mention of various 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	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 


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 <i>basic</i> 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


Pool	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	
Lane	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

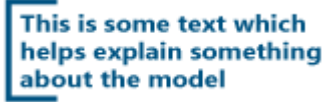


Sequence Flow	A <i>Sequence Flow</i> is represented by a solid line with a solid arrowhead (see the figure to the right) and is used to show the order (the sequence) that activities will be performed in a Process.	
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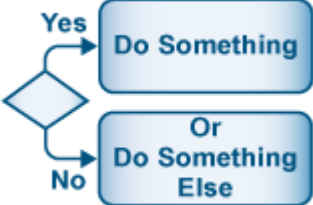
Appendix A: Business Process Modeling Notation Reference

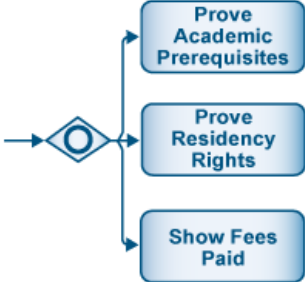
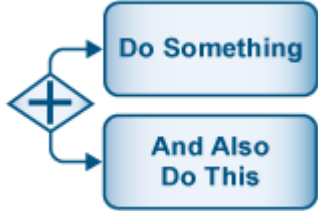
Message Flow	A <i>Message Flow</i> is represented by a dashed line with an open arrowhead (see the figure to the right) and is used to show the flow of messages between two separate Process Participants. In BPMN, two separate Pools in the Diagram will represent the two Participants.	
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ARTIFACTS

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	
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Inclusive	<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>
Parallel	<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

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.

10 Appendix B: Chain of Infection

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.