Electronic Tracking of Endoscopes: Benefits & Best Practices

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Michelle O’Hearn, Project Management Specialist, UVa Health System
Conflict of Interest

Michelle O’Hearn, CAPM, LSSGB

Has no real or apparent conflicts of interest to report.
Agenda

• Case background
• Approach / Purpose / Goal
• Challenges
• Planning and Business Analysis
• Outcomes
• Benefits / Best Practices / Lessons Learned
Learning Objectives

• Describe the **analysis and planning** involved to understand the business and workflows of each clinic in order to identify similarities for a standardized workflow of an integrated system

• Explain the **purpose and goals** of implementing an electronic tracking system

• Share the **benefits, best practices and lessons learned** from the implementation experience

• **Design an effective implementation** plan across an organization while maintaining patient-centered focus
Case Background

Distinctly different processes
Distinctly different environments
Differing workflows
The Initial Approach

1. The existing Manual process met minimum regulatory requirements but had flaws of inconsistency.

2. Data collection for enterprise governance remained elusive due to differing documentation formats and retention practices per clinical area.

3. A software tracking system was identified that appeared to be a potential solution
   - Not an organizational inventory system
   - Track steps from use at bedside to re-processing and back to clean storage

4. Implement the software…….not that simple upon analysis.
Project Approach

1. Waterfall approach not feasible with existing unknowns.
   a) All locations
   b) Report configurations
   c) Final state of renovations (facilities involved)
   d) Final necessary equipment and accessories (varied based on clinic design/set-up)

2. Hybrid Waterfall/Agile approach determined as best method
The Purpose and Goal

...of implementing an electronic tracking system:

1. To obtain real-time data on location/use of high-level disinfected endoscopes
2. To centralize data for enterprise governance of HLD endoscopes in standard format
3. To track endoscope use and re-processing steps for regulatory compliance
4. To efficiently and consistently document re-processing steps and storage for patient safety
5. To reduce loss of equipment
The Challenges to Implementation

• Differing Workflows – 
  *Prep Task:* Align core workflows across all areas

• Different hardware and accessory needs – 
  *Prep Task:* Identify needs in each area through physical walk-through

• Equipment ID standardization
  *Prep Task:* Identify a unique identifier

• Constant change
The Challenges to Implementation

• Distinguishing HLD from Sterilization for stakeholders outside of the re-processing areas.

• Slow-down of procedure time during Go-Live Prep task: Classroom training + Hands-on Dry Run in advance

• Go-Live Support coverage

• Geographically different locations

• Centralized governance
Planning and Business Analysis

- Agreement to complete Corrective Actions during analysis
- Agreement on Organizational Asset #
  - Leverage Inventory Management system and Clinical Engineering team
- Agreement on Standard Workflow
  - Allow minor process differences but use core workflow and environment
- Physically walk through and document processes
- Include internal infection control, quality and accreditation experts
- Get staff on board with understanding the importance of this system for patient safety
Planning/BA Details

Issue 1: We know there are inconsistencies
Resolution: Agree to complete Corrective Actions before Go-Live

Issue 2: Each clinic uses a different scope numbering system
Resolution: Agree to use a standard number across the enterprise
(Inventory Management System uses an Organizational Asset #)

Issue 3: Each clinic uses a slightly different workflow
(drop-off areas, wait times, transport points)
Resolution: Agree on a Standard Workflow to be configured in software
Issue 4: Uncertainty of uniform compliance to standard work
**Resolution:** Physically walk through and document actual processes, validate against standard work and software configuration

Issue 5: Uncertainty of compliance to infection control, quality and accreditation standards
**Resolution:** Include internal infection control, quality and accreditation experts on the team

Issue 6: User aversion to change
**Resolution:** Motivate staff to understand the importance of the system. Involve the users early and often
Workflows

**Analyze**
- Document Current State
- Compare to Software capability

**Execute**
- Document Final State
- Configure System with most efficient workflow

**Train**
- Create workstation guides
- Use in Tip Sheets
### Sample WBS

<table>
<thead>
<tr>
<th>Task</th>
<th>Start Date</th>
<th>Finish Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>1/1/2023</td>
<td>1/30/2023</td>
<td>On Track</td>
</tr>
<tr>
<td>Step 2</td>
<td>2/1/2023</td>
<td>2/28/2023</td>
<td>In Progress</td>
</tr>
<tr>
<td>Step 3</td>
<td>3/1/2023</td>
<td>3/31/2023</td>
<td>Delays</td>
</tr>
<tr>
<td>Step 4</td>
<td>4/1/2023</td>
<td>4/30/2023</td>
<td>Complete</td>
</tr>
</tbody>
</table>

- **Detailed task descriptions and dependencies**
- **Gantt chart visualization**
- **Timeline and milestone tracking**

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*Note: Detailed sample WBS with specific tasks, dates, and statuses.*
Create the Schedule

• Using your organizational expertise, begin to add dates and names to the WBS tasks to define

<table>
<thead>
<tr>
<th>Task</th>
<th>Start</th>
<th>Finish</th>
<th>Assignment</th>
</tr>
</thead>
</table>


## Potential Time Phases

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Sample Activities*</th>
<th>Length of Time**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Analysis</td>
<td>Workflow, Dataflow, etc.</td>
<td>5 months – 1 year</td>
</tr>
<tr>
<td>Initiation/Planning</td>
<td>Organizational Approval</td>
<td>3 months</td>
</tr>
<tr>
<td>Procurement</td>
<td>Contract negotiations and execution of order, license and maintenance agreements.</td>
<td>3 months – 6 months (Add ~6 months, if RFP needed)</td>
</tr>
<tr>
<td>Pilot Site #1</td>
<td>Go-Live &amp; Stabilization</td>
<td>3 months</td>
</tr>
<tr>
<td>Pilot Site #2</td>
<td>Go-Live &amp; Stabilization</td>
<td>1 month</td>
</tr>
<tr>
<td>Full Enterprise</td>
<td>Go-Live &amp; Stabilization</td>
<td>1 month</td>
</tr>
</tbody>
</table>

* This is not an inclusive list of activities and is only a representation.

** This is not an absolute guide but an estimation that must be modified based on your organization’s processes, practices and priorities. It is also not a true representation of every project within an organization but a sample to help guide your planning. Factors include size, geographical locations, support constraints and other considerations.
Overall Timeline

- Business Analysis (5 mo – 1 yr)
- Initiation & Planning (3 mo)
- Procurement (3 mo – 6 mo)
- Execution (4 mo – 6 mo)
- Pilot Site #1 (3 mo)
- Pilot Site #2 (1 mo)
- Full Enterprise (Large Organization)

Intro Video ➔ Training Video & Webinar ➔ Video, Classroom, Hands-on Support

1 ½ Years – 2 ½ Years
Longest Phases

- **Business Analysis**
  - Investigation time
  - Availability of information

- **Procurement**
  - Internal Security Processes

- **Execution**
  - Resource constraints
  - Competing priorities
Outcomes

Of the Project:

• User engagement and interest in improvements for the patient
• Customer understanding of agile approach and working with unknowns
• Sponsor trust in the team’s due diligence

Of the Product:

• Scope traceability
• Traceable reporting
• Improved Repair tracking
• Documented confirmations of completed processing
• Exception / Failure alerts
• Improved Expiration management
Lessons Learned

Things that went well:
• Champion availability at Go-Live
• Vendor on-site presence before, during and after Go-Live
• Continuous training: Intro video, Training Video, Webinar, Refresher Video, Class Training and Hands-on Support during Go-Live
• 2 self-contained pilot sites until system stabilized
• Nurse Managers/Leads at each site throughout the project

Opportunities for improvement:
• Obtain report samples from vendor in advance
  – Report configuration and testing
  – Testing can reveal missed or needed scan points (aka kiosks, tablets or computer stations)
• Configure data sets to sort by location; on-screen and reports
Value-Add Uncovered

1. Real-time location tracking
2. Process tracking
3. Efficiency through standard practice
4. Repair tracking included in the software
5. Software Alerts
Experiential Stories

• Welcome to Cathy Bauer, MSN RNBS MBA CGRN CFER
• Director of Endoscopy/Bronchoscopy and Motility
• SGNA 2018-2019 President
Search/Tracking (Time Savings)

Manual Tracking System = Year 1
1st Year with e-Tracking = Year 2
2nd Year with e-Tracking Stabilized = Year 3
Expired Scope Tracking

(Time Savings)

Manual Tracking System = Year 1
1st Year with e-Tracking = Year 2
2nd Year with e-Tracking Stabilized = Year 3
Prior to Go-Live, repair orders were recorded on paper without a shared tracking mechanism to identify reasons for repairs.

– Calls had to be made to Clinical Engineering for Out of Service detail.

The e-Tracking solution includes a location identifier when searching for out of service scopes. (Helpful for specialty scopes)
Repair Track

Analytical Benefits

Repair Time in Days

Vendor 1
Vendor 2
Vendor 3

This chart is a representation and not generated from actual data.
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Best Practices

• Create or leverage existing Scope Governance group
  – Decision-making

• Train the Trainer / Leverage your Champions
  – They know your business

• Involve the techs and users at every level and location

• Create or consider alternatives and back-up plans

• Remain flexible to ideas and solutions
Best Practices

• Don’t be afraid to uncover challenges

• Create mitigation plans in advance of implementation

• Team collaboration

• Service Agreements between departments to manage expectations

• Create a project website (central repository) for user and tech support information

• Print new workflows visuals or tip sheets at key locations for Go-Live
Don’t Forget to include

- Downtime procedures
- Tablet (new equipment) cleaning instructions
- Resident/Fellow management
- Data interfaces with other systems
Don’t Forget to include

- A 2nd Server for patch and report testing
- A process for adding new sites to the system (standard protocols)
- An internal process to review system alerts
Questions

Q & A Session

• For further collaboration, contact Michelle O’Hearn at mto8c@virginia.edu
Questions

Before you go:
Complete the Online Session Evaluation