Enhanced Process Control of Laundry Services in Hospital Authority

Antony LUI
Senior Manager (Business Support Services)
Hospital Authority
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Laundry Services
Background
Background

• In 1991:
  ➢ inherited 17 laundries of various size providing in-house services to HA hospitals and some government out-patient clinics

• In 2000:
  ➢ services re-organized and reduced to 10 laundries
Governance Structure

Head Office Level

- Planning and development of laundry services management in HA
- Co-ordination for urgent back-up or contingency support in emergency or disaster situations
- Performance benchmarking

SSDC - Supporting Services Development Committee
DM - Directors’ Meeting
BSSCMM - Business Support Services Corporate Management Meeting
BSSD – Business support Services Department
CGM(AS) - Cluster General Managers (Administrative Services)
Governance Structure
Hospital Level

- Daily operation monitoring and management
- Risk assessment
- Improvement planning

CCE - Cluster Chief Executive
HCE - Hospital Chief Executives
CGM(AS) - Cluster General Managers (Administrative Services)
GM(AS) - General Managers (Administrative Services)
Distribution of 10 Laundries

- 4 HA-operated Laundries
- 3 HA Laundries operated by contractor
- 3 CSD-operated Laundries
Laundry Operation
Mode of Operation (2014/15)

- HA Operated Laundries: 52%
- Laundries Operated by Contractor: 23%
- CSD Operated Laundries: 19%
- Outside Contractor: 6%
- HA Operated Laundries: 52%
Laundry Operation

Diagram showing the process of handling soiled linen:
- Soiled Linen
- Continuous Batch Washing Machine
- Washing
- Batch Dryer
- Drying
- Calendering
- Pressing
- Packing & Dispatching
- Clear Linen

Steps:
1. Soiled linen collected from hospitals
2. Washing
3. Drying
4. Calendering
5. Pressing
6. Folding
7. Packing & Dispatching
8. Clear Linen delivered to hospitals
Shum Wan Laundry (SWL) Incident

The incident at Queen Mary Hospital in June – July 2015 after investigation revealed that the source of infection was originated from patient linen.
1. Regular site inspections with records

- daily production, including soiled linen backlog
- environmental cleansing and housekeeping
- equipment maintenance
- occupational safety and health
- infection control
2. Daily quality control inspections

- visual quality checking
- rewash rate
- torn linen rejection
Service Monitoring before the SWL Incident (3/3)

3. Washing quality control

- Arrange monthly test with Drycleaning & Laundry Institute (DLI) (an independent accredited testing centre of the United States) measuring:
  - whiteness degree
  - yellowness
  - blood stain removal
  - soil removal
  - bleach effectiveness
  - tensile strength loss
After the SWL Incident …..
Review of Laundry Service Management

- Formation of Task Force & Working Groups at HAHO to
  - follow up on the recommendations of the Investigation Panel
  - conduct an overall review of the monitoring mechanism of laundry operation in HA
  - review the current mode of operation and propose the future direction for HA laundry services
  - provide input to Chief Infection Control Officer (CICO) on review of Infection Prevention and Control Guidelines for Healthcare Linen
Enhanced Process Control

- Workflow Design
- Staff Training
- Technology Control
- Process Audit
### Workflow Design (1/4)

<table>
<thead>
<tr>
<th>Work Process</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raised the washing temperature from 71°C to 75°C for 5 minutes as recommended by Chief Infection Control Officer (CICO)</td>
</tr>
<tr>
<td></td>
<td>Stopped the use of starch powder for ironing of staff uniform</td>
</tr>
</tbody>
</table>
## Workflow Design (2/4)

<table>
<thead>
<tr>
<th>Laundries</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work Process</strong></td>
<td>➢ <strong>Strengthening moisture control</strong> during the drying and packing process</td>
</tr>
<tr>
<td></td>
<td>➢ <strong>Cooling down of hot linen items</strong> before wrapping</td>
</tr>
<tr>
<td></td>
<td>➢ <strong>Further review of the segregation between clean and dirty areas</strong></td>
</tr>
</tbody>
</table>
## Workflow Design (3/4)

### Laundries

<table>
<thead>
<tr>
<th>Work Process</th>
<th>Clear segregation of soiled and clean containers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Labelling of washed trolleys</td>
</tr>
<tr>
<td>Environment Improvement</td>
<td>Periodic and thorough deep-cleaning and de-dusting</td>
</tr>
</tbody>
</table>
Workflow Design (4/4)

<table>
<thead>
<tr>
<th>Laundries &amp; Linen Exchange Rooms (LER)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Linen Storage</strong></td>
</tr>
<tr>
<td>➢ Must be in well ventilated environment</td>
</tr>
<tr>
<td>➢ Replacing wooden pallet with plastic pallet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Linen Consumption</strong></td>
</tr>
<tr>
<td>➢ “First-in-first-out” principle</td>
</tr>
</tbody>
</table>
Enhanced Process Control

- Workflow Design
- Staff Training
- Technology Control
- Process Audit
# Process Audit

## Laundries & Linen Exchange Rooms (LER)

<table>
<thead>
<tr>
<th>QA Enhancement</th>
<th>Checklists developed for implementation in laundry plants and linen exchange rooms to standardize work process monitoring</th>
</tr>
</thead>
</table>

- Checklist for laundry plant
- Checklist for LER
## Process Audit

<table>
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<tr>
<td><strong>QA Enhancement</strong></td>
</tr>
<tr>
<td>➢ <strong>Cross-cluster checking</strong> by laundry managers / hospital managers to enhance performance management and experience sharing</td>
</tr>
</tbody>
</table>
# Technology Control (1/2)

<table>
<thead>
<tr>
<th>Laundries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment Management</strong></td>
</tr>
<tr>
<td><strong>Equipment</strong></td>
</tr>
</tbody>
</table>

Use of Temp Data Logger
## Technology Control (2/2)

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Sample moisture retention checking by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) using <em>moisture meter by laundry</em> before delivery of clean linen to hospitals</td>
</tr>
<tr>
<td></td>
<td>(2) using <em>moisture meter by hospital LERs</em> upon receipt of clean linen from laundry</td>
</tr>
</tbody>
</table>

Use of Moisture Meter
# Staff Training

<table>
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<th>Laundries &amp; Hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff Training</strong></td>
</tr>
<tr>
<td>➢ Identify the training needs of HA laundry staff including managerial, supervisory and frontline staff and arrange training as appropriate</td>
</tr>
<tr>
<td>➢ Further assess and identify training partner in Hong Kong</td>
</tr>
<tr>
<td>➢ Review and arrange on the job and refresher training for staff</td>
</tr>
</tbody>
</table>
Way Forward

- All the above measures have been implemented
- Employed HKPC to further evaluate the effectiveness of the enhanced measures
- Review the mode of service delivery later
Thank you
Inspection Criteria

- **Appearance** (e.g. stains, colour fading)
- **Physical Defects**

  - Stains
  - Missing Snap
  - Tear
  - Hole
  - Missing Button
## Monthly DLI Report

### Drycleaning & Laundry Institute International

**Confidential Laundry Performance Evaluation**

Mr. Charles Cheung
Kreueller Hong Kong Ltd.
1102 Prosperity Ctr.
Kwon Tong, Kowloon
Hong Kong,
China

Location: D’Hooge SS SWL Form. 01

<table>
<thead>
<tr>
<th>CONDITION MEASURED</th>
<th>ACCEPTABLE</th>
<th>UNACCEPTABLE - MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Whiteness Degree</td>
<td>&gt;90.0 or more</td>
<td>&lt;79.9 or less</td>
</tr>
<tr>
<td>Final Yellowness</td>
<td>&gt;2.0 or lower</td>
<td>≤7.9 or higher</td>
</tr>
<tr>
<td>Blood Stain Removal</td>
<td>&gt;40.0 or more</td>
<td>≤29.9 or less</td>
</tr>
<tr>
<td>Soil Removal</td>
<td>&gt;20.0 or more</td>
<td>≤27.9 or less</td>
</tr>
<tr>
<td>Bleach Efficiency</td>
<td>&gt;22.0 or more</td>
<td>≤21.9 or less</td>
</tr>
<tr>
<td>Tensile Strength Loss</td>
<td>&gt;1</td>
<td>≤0.5</td>
</tr>
<tr>
<td>Whiteineness</td>
<td>&gt;97.5</td>
<td>≤95.9 or less</td>
</tr>
<tr>
<td>Yellowness</td>
<td>&gt;9.9</td>
<td>≤9.9 or less</td>
</tr>
</tbody>
</table>

LPT results should be used to monitor your particular wash formula. Fluctuations in an established pattern of results could warrant your investigation.

Possible causes for unacceptable results are on the reverse side of this report.
Cooling Down of Hot Linen Items before Wrapping
Clear Segregation of Soiled & Clean Areas
Clear Segregation of Soiled & Clean Containers
Labelling of Washed Trolley
Plastic Pallets