Reduction in Gross Accounts Receivable By Reducing Delays In Documentation, Coding and Billing At SMDC in Duluth, MN

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About SMDC Health System, Duluth, Minnesota

- **SMDC Health System** serves a regional Midwest population of 460,000
- 17 locations with 4 fully-owned hospitals and the 400+ physician multi-specialty Duluth Clinic

**Mission:** To bring the soul and science of healing to the people we serve.

**Vision:** Working together with our patients and communities, we are creating the next generation of integrated health care.
The Project Team

• VP, Revenue Services – Project leader
• Director of Decision Support – Project leader
• Director of Finance – Project leader
• Manager of Health Information Services
• Records Analysis Clerk
The Problem

• Dollars in accounts receivable (A/R) had increased in the discharged, not final billed (DNFB) portion of active A/R over the past 12 months.

• By reducing delays in documentation, coding and billing, gross A/R could be reduced by 2 gross days revenue outstanding (GDRO). 

• One GDRO = $1.8M.
Project Goals

• Develop a dashboard to measure and monitor the key processes affecting DNFB.
• Reduce the gross days revenue outstanding (GDRO) by 2 days by April 2009.
Root Cause Analysis of the Problem

**Brainstorming** techniques and the **5 Whys** methodology helped the team identify the following issues:

- Insufficient weekend staffing.
- Discharge report was printing in the morning after records had been retrieved from the floor. Staff was going back to the floor to find the missing records.
- Staff was not adequately cross-trained. For some functions, only one or two people were trained, which caused delays in processing when people were on vacation or out ill.
- Unnecessary steps were being completed on the charts once they reached the HIS department, which caused delay in processing.
Addressing Root Causes

• A PICK chart (shown on next slide) was used to evaluate improvements.

• The project involved approximately 475 worker hours, equaling approximately $19,000 in salary costs (475 x $40 per hour).
# Addressing Root Causes

## LEAN PROCESS: DISCHARGE TO SCANNING

### PICK CHART - TOOL TO PRIORITIZE IDEAS TO IMPLEMENT

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Ease of Implementation</th>
<th>Implement</th>
<th>Possible</th>
<th>Consider</th>
<th>Kill</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Easy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Cross Train the Analysis Function
2. Go to Doc View for Documents
3. On Demand Report of Discharges and also add field of old/new patient
4. Place Charts on Shelf after picked up from floor instead of put on desk
5. Weekend staffing - target 4/01/09

- Change Process order to: Assemble, Analyze, Scan
- Go to Doc View for Documents (Themis a record management tool) depends on Coding Process
- "U" Shaped Cell
- Heijunka
Net Return on Investment of the Project

• Lead time was improved 44% from 8 days to 4.6 days.
• This resulted in a reduction in gross days revenue outstanding by 2.75 days, improving cash on hand by over $5 million.
• The financial benefit on interest income annually was $152,831.
## DISCHARGE TO SCANNING - DNFB A/R COUNTERMEASURE PLAN WORKSHEET

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Action Step</th>
<th>Result of Action Step</th>
<th>Responsible Person</th>
<th>By When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly</td>
<td>Determine root cause of delay. Examples staffing, machine, population size. Assess staffing and only use overtime if necessary. (Majority of the time it is staffing.)</td>
<td>Additional staffing hours</td>
<td>Kerri Mesia</td>
<td>Call in addt'l staff same day matrics out of compliance</td>
</tr>
<tr>
<td>Scanning</td>
<td>Determine root cause of delay. Examples: staffing, machine, population size. Assess staffing and move resources as required.</td>
<td>Move resources</td>
<td>Kerri Mesia</td>
<td>Same day</td>
</tr>
<tr>
<td>Analyzing</td>
<td>Determine root cause of delay. Examples: staffing, machine, population size. Assess staffing and only use overtime if necessary. (Majority of the time it is staffing.)</td>
<td>Additional staffing hours</td>
<td>Kerri Mesia</td>
<td>Call in addt'l staff same day matrics out of compliance</td>
</tr>
</tbody>
</table>
Current and Future State Value Stream Maps

Discharge to Scanning New Current State Value Stream Map

- **Project Name:** DNFB A/R Reduction in Discharge to Scanning
- **Project Leader:** Kyle Dorow, Ruth Martin, Dan Trustem
  - **Team Members:** Barb Trempe, Peggy Lundgren, Gemma Moon, Kelly Calore, Kerri Mesia
  - **Sr. Process Expert:** Kri Henry
- **Sponsor:** Bert Norman

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick up Medical Record</td>
<td>9.65</td>
</tr>
<tr>
<td>Combine Records</td>
<td>1.07</td>
</tr>
<tr>
<td>Collate Files</td>
<td>1.66</td>
</tr>
<tr>
<td>Setup Patient Volume</td>
<td>2.21</td>
</tr>
<tr>
<td>Assemble File</td>
<td>12.58</td>
</tr>
<tr>
<td>Scan File</td>
<td>7.48</td>
</tr>
<tr>
<td>Analyze File</td>
<td>7.16</td>
</tr>
<tr>
<td>Total Lead Time</td>
<td>6670.21 sec</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>41.84 min</td>
</tr>
</tbody>
</table>

Value Quotient = 0.006%

Takt Time = 6.3 min

Discharge to Scanning Future State Value Stream Map

- **Project Name:** DNFB A/R Reduction in Discharge to Scanning
- **Project Leader:** Kyle Dorow, Ruth Martin, Dan Trustem
  - **Team Members:** Barb Trempe, Peggy Lundgren, Gemma Moon, Kelly Calore, Kerri Mesia
  - **Sr. Process Expert:** Kri Henry
- **Sponsor:** Bert Norman

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick up Medical Record</td>
<td>2.83</td>
</tr>
<tr>
<td>Combine/Setup New Volume</td>
<td>12.93</td>
</tr>
<tr>
<td>Analyze File</td>
<td>232.24</td>
</tr>
<tr>
<td>Assemble File</td>
<td>2577.39</td>
</tr>
<tr>
<td>Scan File</td>
<td>295.26</td>
</tr>
<tr>
<td>Value Quotient</td>
<td>0.086%</td>
</tr>
<tr>
<td>Takt Time</td>
<td>41.48 min</td>
</tr>
</tbody>
</table>

Value Quotient = %

Takt Time = 41.48 min

Cycle Time = 41.48 min
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