Developing A Sustainable Improvement Infrastructure

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Agenda

- The Nebraska Medical Center
- Operational Improvement (OI) Department Structure
- Project Generation and Prioritization Process
- Project Example
- Leadership Development
- Questions
This is The Nebraska Medical Center, but the methods that will be presented today can be applied to an organization of any size. It is not necessarily healthcare specific nor is it 600 bed academic hospital specific.
The Nebraska Medical Center has been recognized by multiple organizations. Some of these recognitions are:

- Consumer Choice #1 Award – Omaha’s Most Preferred Hospital
- The Edgerton Award of Progress (State Quality Award)
- BlueCross Blue Shield of Nebraska Recognition for Quality
- J.D. Power and Associates Distinguished Hospital
- Magnet Recognition by the American Nurses Association
- University HealthSystem Consortium Rising Star Award for Quality & Safety
- 100 Top Workplaces for Nursing
Operational Improvement Structure
Here is the organizational chart for our department. Our department reports to the Chief Medical Office, which is not very common. Must operational improvement department reports to the Chief Operating Officer. We are get involved in multiple quality improvement measures, like core measures, that for us it makes sense to report to the Chief Medical Officer.
The Operational Improvement Department was previously known as Six Sigma. We decided to change our name because Six Sigma is one of many methodologies we use for problem solving. The department was created in 2002.

Currently the department is budgeted to have 1 Manager, 2 Master Black Belts, 5 Black Belts, and 1 Operational Improvement Specialist. The people in the department have different backgrounds, we have Industrial Engineers, Nurses, Business Administration, among others.
We see ourselves as internal consultants as our department offers multiple services to the organization:
- We use the DMAIC approach for problem solving.
- We offer lean consultations.
- Before we start a project and get a team together we will scope requests to understand the magnitude of the problem.
- We offer consultation for measurement systems to make sure we have accurate data, but more importantly to make sure we are collecting meaningful data.
- We offer help on how to analyze data. We don’t analyze data for other areas unless we are working on a project.
- Finally we offer simulation consultations.
The Operational Improvement Department has an intranet page. We have examples from previous projects that we have worked on and the result of those projects. Employees can go to our intranet page and submit a project request. This is one way they can submit project requests.

One of our link deals with Education and Training. There we have a link to our scoping questions. These are the questions we use when we meet with our potential sponsor to get more information about the project. We get multiple requests and these questions help us determine if we should continue our scoping efforts. For example if the sponsor is not willing to commit 30 minutes per week for a meeting when the project is initiated then we won’t continue to scoping efforts.
The operational improvement department keeps track of the financial benefits for projects we have worked on. The financial benefit calculations are approved by our Director of Budgeting and we need to show her that the improvement was due to the changes made due to the project. The calculations are made using the contribution margin and we take into consideration our payer mix. This graph shows the net benefits not the gross benefits the projects have achieved.
Anybody can request a project and there are multiple ways they can request it. They can go to our intranet page and submit the project request form or they can simply call the Manager or Black Belts. We want the Black Belts to create a relationship with their project sponsors, owners, and team members because the majority of our project ideas come from repeated customers. Finally we incorporated a project generation meeting to get more people involve in submitting project ideas.
Project Generation and Prioritization
As a department we determine that we wanted to get more people involved in requesting projects. Each year our Operational Improvement Steering Committee will set our focal areas. With those in mind we asked for volunteers to come to a meeting to help us generate project ideas. From those ideas the Operational Improvement department will determine which ideas are appropriate for scoping and scope those ideas to determine the magnitude of the problem. After a 3-4 week period we bring the ideas back to the group for project prioritization. Our steering committee looks at the prioritization and determine if the ranking is accurate. Once a resource is available the department will start the first one from the list.
**Generation and Prioritization Teams**

- Teams rotate on six months basis
  - Always fresh ideas/opinions
  - Always some consistency and learning

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>MB</td>
<td>MA</td>
<td>JB</td>
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<tr>
<td>AB</td>
<td>NB</td>
<td>PD</td>
<td>RC</td>
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<td>TF</td>
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<td>CO</td>
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<td>AW</td>
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<td></td>
<td>AY</td>
<td>KW</td>
<td>MW</td>
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</tbody>
</table>
We send a list of questions to our volunteers to help them think of potential project ideas. We encourage them to start submitting their ideas before the meeting as we utilize these ideas to start the meeting and get people interacting. We also go through these questions throughout the meeting so we can get people engaged.
For the first meeting we divide the participants into 2 groups. We divide them into groups because we want to have smaller groups so we can generate as many ideas as we can. Each group we have at least one group facilitator that will write the ideas on the board and 1 person that will coordinate the group. Each idea must have 3 things to be considered:

1. A description of the problem
2. A Y metric or a way we can measure the magnitude of the problem
3. Who will be our contact person to get more information about the problem
This is an example of the project ideas that were generated during the first meeting.
The Black Belts are assigned to different project ideas to scope. The Black Belts and the Manager will determine who are the potential sponsors for the projects. They will first follow up with potential sponsor and go over the scoping questions. The Black Belts do not necessarily bring the handout with them, as they know they need to ask these questions and most of them have them memorized by now. From that meeting it is determined if we should continue with our scoping efforts or if the potential project should be put on hold.
When the Black Belt decides to continue with his/her scoping, he/she will look into what data is currently available and determine if the data is accurate to make a decision or not. If data is not available or is not accurate then the Black Belt will look into doing some manual data collection. After the data is gathered, he/she will analyze it to determine the magnitude of the problem and baseline. The Black Belt will meet again with the potential sponsor to inform them about the findings and determine what would be a goal for the potential projects.

The benefits for the organization are determined by what would happen if we close the gap between the baseline and our goal. Are we going to see more patients? Are we going to be more efficient in any way? Etc.
During the second meeting the group will go over the project ideas that are not going to be prioritized and give an explanation of why the idea was not scoped. The criteria to determine if a project is not going to be prioritized is: the sponsor did not approve the project idea, the project idea did not have an outcome metric, somebody besides the Operational Improvement department is working on fixing the issue, or it is not a project for Operational Improvement (these could be ideas that a department needs more rooms).

The projects that are going to be prioritized have the following information: problem description, Y metric (or what is our measurement of success), baseline information (how we are currently doing), goal performance (how well we want to do it), potential benefits (financial or any other type of benefit), strategic priority area (the focus area that our Operational Improvement Steering committee establishes). We use the n/3 method to determine how many votes each person has. We count the number of projects that we are going to prioritize and divide the number by 3. The result is the number of votes each person has. Then we go through each project to determine who wants to vote on it. The transparency on the voting helps to initiate conversation between team members.
Here is an example of a handout we give during our prioritization meeting.

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**Example of Handout**

<table>
<thead>
<tr>
<th>#</th>
<th>Problem Description</th>
<th>Y Metric</th>
<th>Approval to Proceed by Appropriate Sponsor(s)?</th>
<th>Baseline Performance</th>
<th>Goal Performance</th>
<th>Potential Benefit(s)</th>
<th>Resources Required (8 and hours)</th>
<th>COJ Strategic Priority Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pharmacy ’507 - Order Entry</td>
<td>Y = % need orders entered into CS + submitted prior to scheduled admin time</td>
<td>Yes - Director Pharmacy/Nutrition Care</td>
<td>Y = 42.8%</td>
<td>Y ≥ 75%</td>
<td>Patient Safety Reduction in NOV Sla Time $ per incident</td>
<td>2 people, $40/hour for 4 months, $1,600</td>
<td>Inpatient Care/ Processes</td>
</tr>
<tr>
<td>2</td>
<td>EMS Admin</td>
<td>Y = % of paper double checked</td>
<td>Yes - Director Cancer Service Line</td>
<td>Y ≤ 0%</td>
<td>Y &gt; 66%</td>
<td>Increase in patient safety, ability to track outcome</td>
<td>3 team members @ 2 hours/week</td>
<td>Inpatient Care/ Processes, Standardization of Practice</td>
</tr>
<tr>
<td>3</td>
<td>Cardiology Clinic Access</td>
<td>Y = % of patients seen on time</td>
<td>Yes - Cardiology Clinic</td>
<td>Y = 90%</td>
<td>Y = 90%</td>
<td>Patient satisfaction, Increased COVID Volume</td>
<td>4 team members @ 3 hours/week</td>
<td>Smart Growth</td>
</tr>
<tr>
<td>4</td>
<td>OR Supplies Expense/ Inventory Space</td>
<td>Y = % (expensed/yr)</td>
<td>Yes - Executive Director Radiology</td>
<td>Y1 = $105,571</td>
<td>Y2 = $85,111</td>
<td>Increase OR supplies</td>
<td>$20,459</td>
<td>Financial Benefit (Cost Reduction)</td>
</tr>
<tr>
<td>5</td>
<td>ED-Due to Doc Cycle Time Improvement</td>
<td>Y = % of pts seen at this department in 45 mins</td>
<td>Yes - Director Emergency Services/ Pharmacy</td>
<td>Y1 = 549</td>
<td>Y2 = 60 mins (avg)</td>
<td>Decrease ED Turnaround Time</td>
<td>ED EMR (2)</td>
<td>Financial Benefit (Cost Reduction)</td>
</tr>
</tbody>
</table>
The Operational Improvement Steering Committee looks is the one who decides where the Operational Improvement resources will be deployed. The committee members are: CEO, COO, CNO, CFO, Director of Budgeting (she approves our financial benefit calculations), CMO, VP HR, Director CQI, and myself. The committee will look at the project queue and determine if the ranking is accurate or they might adjust it accordingly. The majority of the time they leave the ranking the same.
Project Example
I am going to go over an example of a project that was brought up by the project generation and prioritization team.
The problem that the team brought up was that ED and Cancer Patients need to have certain labs results before the MD can make a decision for his plan of care. During the scoping period it was determined that from February 1st 2010 to April 30th 2010 the average TAT for the top 7 ED battery labs was 59 minutes and only 65% of the labs were resulted within 60 minutes. For cancer patients we looked at the top 9 tests and they had an average of 89 minutes and 48% of the time were resulted within 60 minutes. The goal was to get these labs resulted within 60 minutes 85% of the time.
We were clear that our clock started when the blood was collected and ended when the results appear in our computer system. We had members from the lab, ED, and Cancer Center to help us through the project.
There were the tests that ED was the most concerned about: BMET, CMET, CBC, PTT, PTTS, TROP, and UMAC and out baseline was 68%.
During the scoping we created a process map to determine the areas of opportunity. The boxes highlighted in red were areas that the team determine we had opportunity to improve. The boxes in green were areas that we did not have control over and the boxes in blue had minimal opportunity.
The team also perform a study on how many errors the lab receives a day in regards to labels. By labeling errors we mean the specimen had the right patient label but the specimen couldn’t be placed in the analyzers before somebody could intervene and fixed the error. We determine that every day the lab received approximately 1,000 errors.
These were the areas the team decided we needed to concentrate our efforts.
Each area that the team decided to improve has a solution attached to it.
We showed some improvements in the error rate. We are continuing to work on it because it affects our lab TAT not only for the ED and Cancer Center but for the entire hospital.
The team started to look how quickly we were sending specimens to the lab after collecting them and we saw a tremendous improvement in this process. Both the ED and the Cancer Center look at this graph on a monthly basis.
Our ED is consistently at our goal. We are starting to look if we can improve our TAT to 45 minutes.
Even though we made significant improvements in our Cancer Center results we are still not reaching our goal consistently. We are looking into this a little bit more and have been discovering that cancer patients specimens require a lot of manual interventions. The lab is looking at how we can alert lab personnel faster about this manual interventions.
Every project has a control plan. This control plan helps the project leader to transition and hand off the project to the project owner. At this point, the Black Belt needs to make sure data is been collected and shared with the team. The Black Belt will follow up with the project owner if an improvement item is out of control.
Leadership Development
Our Black Belts are seen as leaders in the organization. The reason why they are seen as leaders is because they get exposure to the entire hospital. They gain knowledge of how departments interact and have the tools to solve problems by using data. The operational improvement department is the first place were people from the organization look into for filling openings for manager positions or above. Our Black Belts are required to create a development plan. This development plan helps the manager and the director of the department to determine which areas of the hospital the Black Belts will be interested on working on. Also the development plan help us determine what areas the Black Belt would like to have more exposure too.
There are two potential paths the Black Belts could take in their careers. The quality path meaning becoming a Master Black Belt and continue their career on quality efforts or they could take the operations path which mean at some point go back to the organization.

The majority of the Black Belts are hired internally. Potential Black Belt candidates are individuals that have interest in quality and have shown leadership skills. We have hired staff nurses, lead nurses, business managers, engineers, etc. All the Black Belts go through our own Black Belt Training that was developed with the help of GE. This training is performed by the MBB or the Manager.

The time a Black Belt spends on their role depends on their own development and organizational needs. On average a Black Belt spends 2-3 years on their role before taking on another opportunity.
Here is a list of past Black Belts that have moved on to other areas of the organization.
Questions

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