Process to Select and Implement a Performance Management Information System

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Introduction

The Lake County Health Department and Community Health Center (LCHD/CHC) has recently created a performance management system, requiring all of its programs to create performance measures. In order to maintain sustainability of the system and its processes, an easy to use information system had to be created to assist programs in creating, analyzing and reporting their performance measures. The process to identify, select and implement an information system to support our performance management efforts was organized into 4 main categories of work. First, the constraints and assumptions were identified and a project statement was created. This was an important step to allow for the work to begin. Without this, there could have been project scope creep and the final system may not have been as successful. Next, we identified major problem areas, categorizing them into 5 main groups. This preemptive and active approach allowed for issues to be addressed early on without significant delays. Third, we identified two potential information systems, including out-of-the-box and in-house options. Each option was rated based on ease of use, aesthetics and cost. Finally, we implemented the system that was chosen, creating a template and training staff on its use. At each step, stakeholder input was gathered to assure the final system would meet everyone’s needs.

Constraints, Assumptions & Project Statement

The initial constraints and assumptions of the information system were identified as follows:

Constraints:
- *Ease of use* – The system had to be simply designed, easy to use and easy to navigate. Anything too complex or overly complicated may have been met with derision and frustration.
- *Aesthetically pleasing* – The system had to look nice in order to increase its use.
- *Cost* – The system could not cost more than the allotted budgeted amount.

Assumptions:
- The staff entering data will have access to a computer.
- The staff entering data will have basic computer skills.
- The information system will be maintained by MIS, but the data integrity will be maintained by the programs.

With these constrains and assumptions in mind, the initial step in the process was to define the project statement:

**Project Statement:**

“To create a robust, functional and fully integrated performance management information system capable of analyzing data, allowing the user the ability to easily and quickly assess progress.”
Barriers and Issues

The major problem areas were identified and divided into 4 main categories. This organizational technique allowed for an itemized list to be created by solving any issues preemptively.

1. Data Sources

Identify the current systems storing our data.

Issue:
  - LCHD/CHC is a large agency comprised of over 1,000 employees. The functions of the agency are varied, with data stored in many different systems. The largest system with the most data comes from operating an electronic health record (EHR) to assist the 6 federally qualified health center (FQHC) sites located throughout the county. The agency also stores data in state databases, 3rd party databases and locally created data systems.

Resolution:
  - The various sources of data were compiled, through meetings with each program, into one master list to make it easier to identify sources:

<table>
<thead>
<tr>
<th>Database</th>
<th>LCHD/CHC Program</th>
<th>Data</th>
<th>License</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chameleon</td>
<td>Animal Care and Control</td>
<td>Rabies tags</td>
<td>3rd Party</td>
</tr>
<tr>
<td>Cornerstone</td>
<td>CFC, Nutrition Services, FCM</td>
<td>Patient/Client Data</td>
<td>3rd Party</td>
</tr>
<tr>
<td>Filemaker</td>
<td>Sexually Transmitted Infections</td>
<td>HIV data</td>
<td>In House</td>
</tr>
<tr>
<td>Garrison</td>
<td>Food</td>
<td>Restaurant Permits/Inspections</td>
<td>3rd Party</td>
</tr>
<tr>
<td>Hansen</td>
<td>Well/Non-Community, Onsite Wastewater Treatment Systems</td>
<td>Construction permits</td>
<td>3rd Party</td>
</tr>
<tr>
<td>INEDSS</td>
<td>Immunizations, Communicable Disease</td>
<td>Reportable infectious diseases</td>
<td>3rd Party</td>
</tr>
<tr>
<td>Lab</td>
<td>EH Lab</td>
<td>Water samples</td>
<td>3rd Party</td>
</tr>
<tr>
<td>MS Access</td>
<td>Many (over 10)</td>
<td>Many</td>
<td>In House</td>
</tr>
<tr>
<td>MS Excel</td>
<td>Many (over 10)</td>
<td>Many</td>
<td>In House</td>
</tr>
<tr>
<td>NextGen</td>
<td>Many (over 10)</td>
<td>Patient/Client Data</td>
<td>3rd Party</td>
</tr>
<tr>
<td>SEMP</td>
<td>Emergency Management</td>
<td>EOP, Site plans</td>
<td>3rd Party</td>
</tr>
<tr>
<td>Stellar</td>
<td>Lead</td>
<td>Blood lead levels</td>
<td>3rd Party</td>
</tr>
</tbody>
</table>

2. Data Availability

Issue:
  - Much of the data required for the sustainability of the performance management system and the tracking of various performance measures is not currently available to program managers. Programs enter vast amounts of data into their databases, but do not have the mechanisms to query that data nor can they alter queries to specific designations.

Resolution:
  - A schedule of meetings was created to identify the data needs of all the programs. This meeting will have representation from the performance management team; one of our agency quality improvement specialists; an employee from MIS; and staff from the program. Having all these people in one room at the same time to discuss the sources of data and the techniques for querying and reporting allows for all stakeholders to be able to voice their opinions.
3. **Data Security & Sensitivity**

Two types of sensitive data were identified in this process:

**Issue: Financial Data**
- LCHD/CHC utilized a modified balanced scorecard tool to assist programs in selecting their measures. One of the perspectives of the modified balanced scorecard was Financial and Business Process, meaning that each program needs to have at least one financial measure. Many programs collect either client payments or permit fees.

**Resolution:**
- The financial measures are to be aggregated when reported. Additionally, no individual financial information will be made available for reporting.

**Issue: Patient Privacy and Health Information**
- Due to the sensitive nature of the data located in the EHR, including hypersensitive patient privacy and health information (PHI), LCHD/CHC needs to be careful when looking at health outcomes dealing with patients/clients. HIPAA rules and regulations restrict the viewing and distribution of these data. However, to improve on health outcomes, individual data needs to be available in reports.

**Resolution:**
- LCHD/CHC revised its PHI policies and has updated its training about the use and abuse of PHI in the workplace.

4. **Data Tracking and Reporting**

**Issue:**
- With so many programs and various data sources, there is a possibility of the data getting lost and/or not reported. There is also the possibility that, if not monitored, the data will not be entered in a timely fashion.

**Resolution:**
- Require data to be tracked by the program in which the performance measures reside, not by MIS or any individual entity. Additionally, the programs will be responsible for reporting their progress to the quality improvement council every 6 months. A policy has been drafted to codify this and senior level staff have been advised to discuss performance measure progress with their staff on a regular basis.
**Information System Selection**

LCHD/CHC is already a Microsoft shop, so we limited our potential system selection to using an MS SQL platform. This was done in order to facilitate lower costs and shorten learning curves. We developed the score sheet below to grade our options. Various stakeholders from the senior leadership level to the front line level were asked to give their input on which system would best fit our needs.

<table>
<thead>
<tr>
<th>System</th>
<th>End User – Ease of Use</th>
<th>Aesthetics</th>
<th>Cost</th>
<th>Maintenance</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Sharepoint Business Intelligence</td>
<td>Data still must be uploaded into system. Once uploaded, reports can be generated to view progress.</td>
<td>7</td>
<td>9</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Dashboard is pleasing. Can be viewed internally or externally. Allows for quick visualization of trends for KPIs.</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>Data still must be uploaded into system. Reports are difficult to create out of excel, but most users know how to use a spreadsheet. Ability to easily customize on the fly.</td>
<td>8</td>
<td>4</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>No dashboard built in, but can be created with charts and formulas. Can allow for quick visualization of trends.</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The final decision was to select Microsoft Excel, mainly due to the ease of use and low cost.
System Implementation
After selecting Microsoft Excel as our information system to support the performance management system, the following implementation steps were taken:

1. Created performance management intranet site to house spreadsheets.
2. Created spreadsheets for programs with approved performance measures.

3. Trained staff on how to use their spreadsheet.

   This was accomplished through a meeting where the intranet site was introduced, the performance measures were reviewed and the spreadsheet was customized to that programs specifications.

4. Began whole agency QI Council meetings

   These meetings provide an opportunity for the programs:
   - To report to the Directors the progress of their measures;
   - To gain feedback on their measures;
   - To discuss quality improvement efforts throughout the agency;
   - To overcome obstacles in reaching targets; and
   - To celebrate our successes.