University of Michigan Health System

Program and Operations Analysis

Analysis of Processes Used to Communicate Announcements
Regarding Clinical and Operational Policies

Final Report

To: Dawn Brennan, Senior Project Manager, Office of
Clinical Affairs

Richard Coffey, Director, Health System Planning,
Director, Program and Operations Analysis

From: IOE 481 Project Team 5, Program and Operations
Analysis

Carolyn Bertelsen

Tim Harms

Bobby Wider

Date: December 11, 2006
Table of Contents

Executive Summary 3
Introduction 4
Background 4
Key Issues 5
Project Scope 5
Goals and Objectives 5
Approach 6
Conducted Literature Search
Conducted Interviews
Developed Value Stream Map
Developed Survey
Conducted Focus Groups
Collected and Analyzed Email Statistics
Developed Recommendations

Findings 8
Conducted Focus Groups
Developed Value Stream Map
Analyzer Email Statistics
Developed Survey

Conclusions 13
Considered Alternatives 14
Recommendations 15
Expected Impact 18
Appendix A: Focus Group 19
Appendix B: Survey in Surveyshare Format 20
Appendix C: Value Stream Map 22
Appendix D: Email Statistics 23
Executive Summary

Effective communication in a hospital environment is essential. Informing hospital personnel of critical information in a timely and effective manner increases hospital efficiency while decreasing the potential for problems caused by confusion or misinformation.

The Office of Clinical Affairs (OCA) is one of the departments in the University of Michigan Health System (UMHS) that is responsible for distributing announcements and policy changes to physicians, house officers, and non-physician licensed. Their current method of communication is primarily email. They typically send between three and five emails per month. The OCA has recently become concerned with this method communication due to the perception that e-mails are being ignored by recipients.

To verify this perception, our team attempted to analyze the effectiveness of e-mail communications sent by the OCA. We accomplished this through five key tasks: conducting a literature search of large-scale communication systems, analyzing statistics for emails distributed by the OCA from the April 2006 to September 2006, conducting focus groups with physicians and house officers, distributing a survey to all physicians, house officers, and fellows, and interviewing key personnel involved with hospital communications. The goal of this project was to determine the most effective way for the OCA to communicate with hospital faculty and house officers and recommend any necessary changes. We believe our recommendations will increase the overall awareness of announcements and policy changes in the hospital.

From our analysis, we found that only 60-70% of e-mails distributed by the OCA are being read by recipients. After assigning a critical rating to each email, it was found that there was no significant difference regarding the urgency of a message and the amount of people who read that email. Feedback received from both the survey and focus groups indicated that email is believed to be the most effective form of communication, just not in its current state. Physicians highlighted the need for better indexing of emails, due to problems locating an email several months after it has been sent. Our survey showed that 80% of hospital faculty receives spam on a daily basis, indicating the need for better filtering of email. Through various interviews, we found that there was a need for just in time communication to deliver urgent messages.

In response to the proposed problem, our group has provided the following recommendations:

- Implement internal and external filtering of emails to separate spam from University distributed messages
- Develop a website to archive emails sent by the OCA; the link will be attached to the bottom of every email sent by the OCA
- Implement a system to deliver messages at log-in. The messages can be tailored to unique information based on what program the user is logging in to.

We believe these recommendations will increase the effectiveness of communication distributed by the OCA.
Introduction

The Office of Clinical Affairs (OCA) at the University of Michigan Hospital acts as a supervising sector that watches over all departments of the hospital and makes sure the policies and guidelines of the hospital are followed by all hospital personnel. Using email to communicate important administrative announcements or information such as new policies, changes to policies, and drug shortages, from OCA is perceived to be ineffective. However, the house officers, fellows, physicians, and non-physician licensed providers at the University of Michigan Health System (UMHS) need to be notified of changes to clinical and operational policies within an appropriate time window.

Therefore, the Senior Project Manager at OCA has asked our team to investigate the effectiveness of the current method used to communicate important announcements, to collect data about email statistics, and to develop recommendations to improve the method of communicating important announcements from OCA to the health professionals at UMHS in a timely manner.

This final report discusses our findings of the project and presents our recommendations. The following tasks were performed in order to complete this project: conducted a literature search, conducted interviews and focus groups, collected email statistical data, such as frequency of emails, significance of emails, lengths of emails, number of emails delivered, number of emails opened, and unopened number of emails; developed and distributed a survey to hospital personnel, developed a value stream map, and developed recommendations to improve communication between OCA and the house officers, fellows, physicians, and licensed providers at UMHS.

Background

OCA receives requests to communicate new information to many employees from a wide range of places including clinics, pharmacies, and many of the departments of the hospital (e.g. Surgery, Medicine, and Pediatric). Figure 1 demonstrates the information flow regarding the important announcements sent out through OCA.
When a request is sent, it must be approved by a designated approver - the Administrative Director Healthcare, Chief of Staff, or Associate Chiefs of Staff - before a mass email is sent to those the email concerns. However, OCA’s current process for emailing these messages is not effective. This lack of communication has caused problems in UMHS due to physicians and house officers not being aware of a policy change or other important announcements, such as changes to CareWeb, drug shortages, and new patient safety factor.

**Key Issues**

As proposed, the following key issues drove the need for this project:

- High percentages of the emails sent out by OCA are not being opened by the recipients
- Affected parties are perceived to be dissatisfied with the current form of communication
- Mass deletion of emails due to a large number of emails received from various different sources, including spam email
- Various problems that arise throughout the hospital due to a lack of communication of an important announcement sent by OCA

**Project Scope**

The project scope was determined to include and exclude the following to produce meaningful results.

The project scope included:
- House officers
- Physicians
- Fellows
- Emails sent by OCA
- Data collected between April 1 and September 30, 2006

The project scope excluded:
- Non-physician licensed providers
- Emails sent from other departments within the hospital
- Emails sent before April 1, 2006 and after September 30, 2006

**Goals and Objectives**

As proposed, to improve the process used to communicate important announcements sent out through OCA to the house officers, fellows, physicians, and licensed providers at UMHS, data was collected to determine the effectiveness of email communication. Specifically, our team performed the following tasks:

- Interviewed and surveyed house officers and hospital faculty to determine what communication process works best for them.
Collected email statistics, such as frequency of emails, significance of emails, lengths of emails, and number of emails delivered and opened, that were sent to UMHS house officers, fellows, and physicians.

With this information, we determined and developed recommendations to improve the process used to communicate important announcements sent by OCA to the house officers and physicians.

Approach

The Program and Operations Analysis team interviewed key personnel and examined the current communication process of the OCA. The primary parties involved in this project were the OCA staff, residents, attending physicians, house officers, departments of UMHS and other parties that wished to relay an important message.

This project was performed in four key phases: literature search, interviews, surveys, and recommendations.

Our methodology was as follows:
- Conducted literature search of large scale communication methods
- Interviewed four members of hospital faculty involved with communication
- Conducted focus groups – one with house officers, one with physicians
- Developed value stream map of current process
- Collected and analyzed email statistics
- Distributed survey to house officers and physicians
- Analyzed completed surveys and literature search
- Developed recommendations to improve communication process

Conducted Literature Search
We conducted a literature search of current large scale communication methods employed by large groups, including other hospitals with medical schools similar to the University of Michigan – Ann Arbor, and large corporations.

Conducted Interviews
We interviewed house officers, physicians, and the OCA staff. The OCA interviews focused on specific email data from 01Apr06-30Sep06. Specifics of the interviews included current process, frequency of emails, significance of emails, lengths of emails, number of emails delivered and opened, as well as mailing lists for the house officers and physicians.

Developed Value Stream Map
A value stream map was developed to document the current communication process. The value stream map is attached in Appendix C. The process time ranges from 75 to 87 minutes, wait time ranges from 1 to 5 hours, and first time quality is 53%.

Developed Survey
We developed a ten question survey that was distributed to 2362 people, 958 house officers and 1404 faculty that are within the scope of this project (see Appendix B). The survey was designed to gain feedback on what hospital personnel think about OCA’s current communication process and its associated problems. We developed the draft
survey and it was presented to the Senior Project Manager and the Administrative Director Healthcare, UMH Chief of Clinical Affairs. The Senior Project Manager and the Administrative Director Healthcare, UMH Chief of Clinical Affairs recommended changes to improve the survey. After revising the survey, we distributed the final survey to the hospital faculty. From past survey responses to OCA, we set our response goal for the survey between 10% and 20%.

Surveyshare
The final survey questions were presented on the Surveyshare website through OCA’s Surveyshare account. Surveyshare is a website designed to build and present surveys. An email containing the link to the survey was sent to 2362 hospital faculty by OCA’s Administrative Assistant. Surveyshare is effective, because it easily sorts information into graphs and statistically analyzes responses received from a survey. Surveyshare’s functions were beneficial to our analysis of the survey, since 2362 faculty were invited to fill out the survey.

Incentive
Historically, the response rate to surveys distributed electronically from OCA has been low. To increase responses to our survey, an incentive was offered. The Administrative Director Healthcare, UMH Chief of Clinical Affairs informed us that OCA has some money to invest in this project and she supported our idea to offer an incentive to get increased response. In our team meeting with the Senior Project Manager and the Administrative Director Healthcare, UMH Chief of Clinical Affairs we agreed to give away an Ipod Nano to one of the survey responders. If a person filled out our survey on the Surveyshare website, then they were automatically entered in a drawing to win a free Ipod Nano. We estimated that this incentive will increase the response rate to our survey.

Conducted Focus Groups
Two focus groups were conducted: one with a house officer majority, and another with a hospital faculty majority. Six questions were developed and asked to both groups. The questions highlighted the issues with the current email system, and the list of questions is in Appendix A. The hospital faculty focus group was conducted on Monday, October 30, 2006 at 9:00am and the house officer focus group was conducted on Wednesday, November 8, 2006 at 10:00am, with each group lasting 60 minutes.

Collected and Analyzed Email Statistics
We analyzed the emails that OCA sent out from 01Apr06-30Sep06. Eighteen emails sent out by the OCA to house officers and hospital faculty during this time. No emails sent out between 01Apr06-09Jun06. Appendix D displays the details of the emails sent out.

Developed Recommendations
Lastly, we used our research, interviews, and surveys to develop recommendations for the best possible communication system. We recommend the development of new information technology tools to help communicated announcements from OCA. The recommendations are an archival website, internal and external email filtering, a pop-up message at log-in on a computer, and education to house officers about OCA.
Findings

The findings of this project are presented. The findings include details of the hospital faculty focus group, email statistics, and survey results.

Focus Groups Findings
The faculty focus group was held on October 30, 2006. The faculty consisted of the Interim Chief of Staff, a neurologist, a neurosurgeon, an anesthesiologist, and the director of internal medicine. We also conducted a house officer group on November 8, 2006. We invited 5 house officers to the group, but because of unpredictable conflicts for four house officers, only one was able to attend our group. The house officer was from internal medicine and pediatrics. The questions asked are listed in Appendix A.

Faculty Group Findings
The participants were helpful in describing situations where they believed communication did not effectively work and also making suggestions for improvement.

The following are the highlights of the focus group:
- Agreed the current OCA communication method is not effective enough
- To improve the process, implementing new technology was a suggestion.
- Unanimous that email is important and should not be abandoned
- Suggestions to improve email communication include: filtering email into subcategories, color coding email depending on criticality of the message or departments that the message concerned, limiting the number of emails, and improving indexing to locate emails
- Lack of just-in-time communication

An example of just-in-time communication is when a policy change is emailed three months before the change is implemented. When the time comes to implement the change, the information has been forgotten and the email containing that information is buried under three months of emails. A goal developed in the focus group was to develop a just-in-time communication method that filters out undesirable information to the specified recipient and allows for the message to be easily retrievable in the future.

House Officer Group Findings
The house officer informed us that when he started at the hospital he was unaware of what OCA was and that he was currently unaware of their process for communication. He mentioned that after he became aware of what OCA was he started to read his emails more diligently and he is more apt to read an email if the subject line says that it is from the head of OCA.

The following are highlights from the focus group:
- Regarding just-in-time communication, internal medicine sends out an monthly email, even if no changes take place, so that every one concerned has an updated email of policies within the past month
- Shared the same opinions of the faculty focus group that some of the problems with the current method are that the messages come long before the policy goes into effect and that many of the emails don’t pertain to him
- Recommended that new residents should be made aware of OCA and its importance at the beginning of their employment
- Said that many residents pay very close attention to their specific program and may not know what OCA is
- Thought filtering emails that come to faculty and house officers would be an effective improvement technique
- Thought website with past OCA emails would be an effective improvement technique

**Email Statistics Findings**

Eighteen emails were collected from OCA’s administrative assistant and analyzed to determine the importance of each email and the percentage of emails opened. The results are presented in Table 1, which shows the average percentage of emails opened for a statistic defined as critical rating.

In a meeting with the Senior Project Manager and the Administrative Director Healthcare, a rating system was developed to give each email a critical rating. We decided on a scale from 1 to 3 with a rating of 1 being the most critical and 3 being the least critical. Emails with a rating of 1 contained important information that must be relayed to everyone such as bed shortages and critical drug shortages. The information in these emails is extremely important and could endanger lives if all concerned are not aware. Emails with a rating of 2 contained information that was less serious but all house officers and physicians should be aware of such as CareWeb Release information. Emails with a rating of 3 contained information that would be good for the recipients to know but not critical and could be relayed in another format such as the hospital newsletter.

<table>
<thead>
<tr>
<th>Critical Rating</th>
<th>Average Percentage of Emails Opened</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Most critical</td>
<td>65%</td>
</tr>
<tr>
<td>2 – Somewhat critical</td>
<td>61%</td>
</tr>
<tr>
<td>3 – Least critical</td>
<td>69%</td>
</tr>
</tbody>
</table>

Sample Size = 18 emails  Collection Dates: 01Apr06-30Sep06

Each critical rating average ranged from 61% to 69%. Appendix D displays information about each of the emails we collected, including description, date, critical rating, and percentage of emails opened.

**Survey Findings**

Our survey was sent to 1404 hospital faculty and 958 house officers for a total of 2362 survey requests. We received 397 responses, which is approximately 17% response rate. Out of the 397 responses, 108 of them were from house officers and 289 of them were from faculty. There was a considerably higher response rate from faculty members as opposed to house officers. Table 2 displays the breakdown of responders between house officers and faculty.

<table>
<thead>
<tr>
<th>Group</th>
<th>Survey requests sent out</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Officers</td>
<td>958</td>
<td>108</td>
<td>11%</td>
</tr>
<tr>
<td>Faculty</td>
<td>1404</td>
<td>289</td>
<td>21%</td>
</tr>
</tbody>
</table>

Data collection dates: 01Nov06-15Nov06
From past survey data and from interviewee’s recommendations we set our response goal for the survey to be 10 percent, which we nearly doubled. Appendix B contains the survey questions.

On a scale from 1 to 10 (1 being the worst and 10 being the best), most of the responders rated the current communication method between 5 and 8. Figure 2 displays the responses.

![OCA Communication Method Rankings](image)

Figure 2: Rankings of OCA Communication Method, primary communication tool is email. Data collection dates: 01Nov06-15Nov06

When asked how often the responders open and read messages from OCA the responses followed a normal curve, with the most responses as *Sometimes* and the least responses as *Never* and *Always*. Figure 3 displays the responses to this question.
How Often Emails are Opened and Thoroughly Read
(397 responses)

Figure 3: Frequency of emails being opened and thoroughly read, Sometimes had the largest response with 36%. Data collection dates: 01Nov06-15Nov06

The two most popular reasons for not opening emails were that responders did not have enough time or they did not believe the email pertained to them. Approximately 67% of the responders cited not having enough time as a reason and approximately 59% of the responders cited that they did not believe that the email pertained to them. Table 3 displays the list of reasons available in the survey and their response percentages.

Table 3: Reasons for Not Opening Email and Percentages

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent Responders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not have enough time</td>
<td>66.96%</td>
</tr>
<tr>
<td>Didn't believe email pertained to them</td>
<td>58.55%</td>
</tr>
<tr>
<td>Did not notice email</td>
<td>22.03%</td>
</tr>
<tr>
<td>Other</td>
<td>8.12%</td>
</tr>
<tr>
<td>Deleted email on accident</td>
<td>5.51%</td>
</tr>
<tr>
<td>Never checked email</td>
<td>0.87%</td>
</tr>
</tbody>
</table>

Data collection dates: 01Nov06-15Nov06

Approximately 80% of all of the responders said that they receive spam emails, see Figure 4. Of the responders that cited they received spam 37% reported receiving 1-5 spam emails a day and 25% largest percent reported receiving 6-10 per day, see Figure 5.
Figure 4: Percentage of responders who receive spam, 80% of responders said yes. Data collection dates: 01Nov06-15Nov06

Figure 5: Number of spam emails received per day if responder received spam. Data collection dates: 01Nov06-15Nov06
Approximately 73% of the responders said that they believed the current communication method is effective, see Figure 6.

![Effectiveness of Current OCA Communication Method (397 responses)](image)

Figure 6: Effectiveness of current OCA communication method, 73% said current method is effective. Data collection dates: 01Nov06-15Nov06

Of the 27% that believed that the current communication method was ineffective, the following reasons were cited.

- Emails did not pertain to them
- Did not notice emails
- Too much clutter in emails
- Never heard of OCA.

The same responders offered some suggestions for improvement such as keeping the messages brief and narrowing the scope of the emails.

**Conclusions**

After analyzing the findings from the completed tasks, we came to five main conclusions.

*House officers are less aware of OCA than faculty*

Our team concluded that house officers were less aware of what OCA is and its purpose than the hospital faculty. Out of all of the 397 survey responses, 289 of them were from hospital faculty and 108 of them were from house officers. The faculty responded at a rate of 21% (1404 surveys sent out) and house officers responded at a much lower rate of 11% (958 surveys sent out). We also learned from our house officer focus group that the house officer worked at the hospital for 3 months before he knew what the OCA was.

*Critical rating of email does not affect number of people that open them*
From emails sent out from 01Apr06-30Sep06, we concluded that the critical importance of the emails did not affect the amount of people that opened and read the emails. The emails that were rated 1 (most critical) averaged an open rate of 65%, the emails that were rated 2 (somewhat critical) averaged an open rate of 61%, and the emails that were rated 3 (least critical) averaged an open rate of 69%.

**Concern from faculty about the effectiveness of OCA communication process**
During the focus group with the hospital faculty, we received a lot of feedback from that the current OCA communication process needed to be improved. The results from our survey also helped our team reach the conclusion that the communication process should be improved.

**OCA is small fraction of total hospital communication**
From the email data from 01Apr06-30Sep06, we concluded that OCA sends approximately 4 to 5 emails out per month. Faculty and house officers receive many emails from other sources; the fraction of emails that are from OCA is small. At the house officer focus group, the house officer informed us that he receives many emails and the only ones he is greatly concerned with are the emails sent from within his department of the hospital.

**Two most important reasons that hospital employees do not read OCA emails**
From the survey, our team concluded that the two most important reasons why the hospital faculty and house officers do not open and read the emails sent out from OCA are that they do not have enough time and that they do not believe the emails pertain to them.

**Considered Alternatives**

We considered several alternatives, but ultimately decided against recommending them. Table 4 displays these considered alternatives and the reasons for not recommending these alternatives.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVs in lounges and throughout hospital</td>
<td>Easily accessible, used for variety of purposes</td>
<td>Expensive, easily ignored, focus groups did not like the idea, not necessarily seen by everyone</td>
</tr>
<tr>
<td>Pagers</td>
<td>Critical information can be distributed quickly, usually with person</td>
<td>Pagers reserved for messages that need immediate response, can’t send detailed messages</td>
</tr>
<tr>
<td>Cell phones (SMS)/Blackberry</td>
<td>Usually with person</td>
<td>Expensive, hard to mass communicate</td>
</tr>
<tr>
<td>Bulletin board</td>
<td>Inexpensive, easily set-up</td>
<td>Easily ignored, not necessarily seen by everyone, requires recipient to “pull” information</td>
</tr>
<tr>
<td>Hard copy distribution</td>
<td>Easily retrievable if stored properly</td>
<td>Time consuming, wasteful</td>
</tr>
<tr>
<td>MedHub</td>
<td>Easily updated, already in place</td>
<td>Only used by House Officers</td>
</tr>
</tbody>
</table>
Recommendations

Based on our findings and conclusions, we recommend the following changes to the current OCA process: An archival website, internal/external email filtering, messages at log-in for critical announcements, and education about OCA to house officers.

Create Archival Website

We recommend that a website be developed to archive all of OCA’s announcements. This was determined through the focus groups and interviews with hospital faculty. A concern of the faculty focus group was regarding just-in-time communication. For example, a policy change will be sent out three months before it takes effect. The faculty member reads the email, and three months does not remember the information presented and cannot easily retrieve the email.

A website with all of the OCA announcements from the past 12 months will make it easier to find the announcement. A link to the email archive website will be on the OCA homepage. The arrow in Figure 7 demonstrates the proposed location for this link. Since the OCA homepage can be difficult to find, a link will be prominently displayed in every email sent out by OCA. This will allow faculty to easily navigate to the website to find older announcements. If this project is expanded to other departments which send more emails, we recommend the emails be sorted on the website by the department that sent them out.

Implement Internal and External Filtering

We recommend that the OCA work with Medical Center Informational Technology (MCIT) to change the email software so that incoming emails to recipients will be separated into internal and external sections. The internal section will contain all emails that come from within the hospital and the external section will contain all emails from any other place. The hospital employees will know that the internal section will contain
no spam email and only messages from within the hospital. They will also know to check the external section if they are expecting an email from a family member or other important message that would be sent from outside of the hospital.

From the survey, the biggest reason that people did not open their emails from OCA was that they didn’t have enough time. In our focus groups and interviews it was widely agreed that filtering of some sort would be effective and could save time. In the survey that we created one of the questions asked the responders to describe the problem with the current OCA communication method. Two of the responses are displayed below in Figure 8:

| Response 17 | There is too much "junk mail" from inside the university, that it is difficult to screen important information from the background noise. |
| Response 56 | It is very very difficult to differentiate emails from OCA from the enormous number of spam emails and the concomitant barrage of emails from numerous other offices at the University itself. |

Figure 8: Responses from survey regarding problem with current OCA communication method.

There were other responders who had similar concerns. The arrow in Figure 9 points to the area where we recommend the mailbox be divided to have two different folders for internal and external folders.

Figure 9: Recommended location to filter email in internal and external folders.
Display Messages at Log-In
Delivering urgent messages to hospital faculty and House Officers is a key issue OCA is concerned with; e-mail is perceived to be ineffective in accomplishing this. Therefore, we are recommending a log-in message system be implemented. A message will appear in a pop-up box, and the rest of the computer applications will not load until the “OK” button on the pop-up window is selected. Figure 10 displays a pop-up window example.

Figure 10: Example of a message at log-in. Pop-up window appears, and the rest of the computer applications will not load until the “OK” button is selected.

Messages to be delivered by the OCA will be evaluated for their urgency by the following criteria:

- Timeline – how quickly the information needs to be distributed
- Criticality – how critical the information is to faculty and house officers
- Scope – how many people need to be informed of the message

If a message has sufficient requirements in all three areas, the log-in message system will be utilized. An OCA associate will determine the contents of the message and put it in the system. After the message has been entered, it will be displayed on each individual’s screen the first time they log-in to a computer. We feel this will be a more effective way of ensuring all parties receive the message, since e-mails can easily be overlooked or adjudged to be spam or unimportant. To maintain the effectives of the log-in message, it
is important to use this system only in necessary situations. If used too often, it will lose its sense of urgency and could lead to recipients ignoring the messages.

**Educate House Officers about OCA**

Based on our findings from the survey and house officer focus group, there is a lack of OCA awareness among the house officers. Eleven percent of house officers responded to the survey compared to 21% of faculty responded. Upon being hired, the house officers will receive introductory information about OCA and its importance. We recommend that this is a flyer is presented to them during hospital orientation. Also, at the bottom of every OCA email will be a brief summary of their purpose and a link to the OCA homepage.

**Expected Impact**

In conducting this project, our team collected information on the current system, and developed recommendations to improve the effectiveness of OCA communication in the hospital. Specifically, we expect the recommendations to result in:

- Changes to the current process used for communicating important announcements
- Improved awareness to announcements and information distributed by OCA

Also, a decrease in problems of UMHS due to failures in communication will be an added benefit.
Appendix A

Focus Group Questions

1. What are your thoughts about the current communication system? Is it working?

2. What is your favorite aspect about current process? Least favorite aspect?

21) On a scale of 1 to 10, with 10 being always and 1 being never, how often do you rate the following?

- Delete unopened email?
- Read entire email?
- Read first line or subject of email then delete it?
- Receive spam?

4. What are the pros/cons of emailed OCA announcements?

5. What features would you like to see improved, changed, or added to the current communication system?

6. What are your recommendations to improve the system?
### Appendix B

**Survey in Surveyshare Format**

- **Add a new question at the end of this page**
- **Add questions from the item bank to the end of this page**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Position?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>2) Department?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>3) On a scale from 1 to 10 (1 being the worst and 10 being the best) how would you rate the current method of communication (emails) from the OCA?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>4) How often do you open and thoroughly read the email messages from the OCA?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>5) If you DID NOT answer ALWAYS for the previous question, what are the top reasons for not opening the OCA emails? (check all that apply)</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Never checked email</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Did not believe email pertained to you</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Did not have enough time</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Did not notice specific email from OCA</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Deleted email on accident by a mass email deletion</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Other:</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>6) Do you receive spam email?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>Yes</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>No</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>7) If you responded YES to the previous question, how much spam do you receive?</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
<tr>
<td>8) Do you feel the current OCA communication method is</td>
<td><img src="#" alt="Select Here" /></td>
</tr>
</tbody>
</table>
### Effective?

- [ ] Yes
- [ ] No

9) If you answered NO to question 8, how would you describe the problem?

10) If you answered NO to question 8, what would you recommend to improve the problem? (i.e. New technology, revamp the email process, narrow the amount of emails sent out, etc)
Inform client of process

SUPPLIER:
Departments
Clinics
Pharmacy...

Draft e-mail with client

SUPPLIER:
Department

Review/Revise e-mail

OCA Admin. Assist.

Approve e-mail

OCA Admin.

Send to mailing list

OCA Admin. Assist.

Respond to questions

OCA Admin. Assist.

Delete/Respond

OCA Admin. Assist.

Respond to e-mail

Customer

Read e-mail

Customer

TOTAL PROCESS METRICS:
P/T 75 – 87 min
W/T 1 – 5 hr
FTQ 53%

INBOX 0 – 3 days

INBOX 0 – 1 hr

INBOX 0 – 5 days

INBOX 0 – 1 day

INBOX 0 – 2 hrs

INBOX 0 – 7 days

(most important) 1: 0 – 2 hrs
2: 0 – 2 days
(least important) 3: 0 – 5 days
## Appendix D

**Emails collected with statistics**

<table>
<thead>
<tr>
<th>Description</th>
<th>Date</th>
<th>Critical Rating</th>
<th>Percentage Emails Opened</th>
</tr>
</thead>
<tbody>
<tr>
<td>New time ranges for blood draws</td>
<td>9-Jun</td>
<td>2</td>
<td>54%</td>
</tr>
<tr>
<td>CareWeb release info</td>
<td>22-Jun</td>
<td>2</td>
<td>74%</td>
</tr>
<tr>
<td>BED SHORTAGE</td>
<td>10-Jul</td>
<td>1</td>
<td>77%</td>
</tr>
<tr>
<td>Rallying readiness Newsletter</td>
<td>12-Jul</td>
<td>2</td>
<td>45%</td>
</tr>
<tr>
<td>Critical Albumin Shortage</td>
<td>17-Jul</td>
<td>1</td>
<td>48%</td>
</tr>
<tr>
<td>Test changes from lab</td>
<td>17-Jul</td>
<td>1</td>
<td>64%</td>
</tr>
<tr>
<td>OCA summer update</td>
<td>19-Jul</td>
<td>3</td>
<td>73%</td>
</tr>
<tr>
<td>Schwartz rounds</td>
<td>19-Jul</td>
<td>3</td>
<td>79%</td>
</tr>
<tr>
<td>Radiology web PACS anncmt</td>
<td>3-Aug</td>
<td>2</td>
<td>67%</td>
</tr>
<tr>
<td>BED SHORTAGE</td>
<td>10-Aug</td>
<td>1</td>
<td>61%</td>
</tr>
<tr>
<td>Biogel gloves</td>
<td>15-Aug</td>
<td>3</td>
<td>70%</td>
</tr>
<tr>
<td>CareWeb release info</td>
<td>21-Aug</td>
<td>2</td>
<td>66%</td>
</tr>
<tr>
<td>Confronting flu pandemic</td>
<td>29-Aug</td>
<td>3</td>
<td>58%</td>
</tr>
<tr>
<td>OCA announcement</td>
<td>30-Aug</td>
<td>3</td>
<td>73%</td>
</tr>
<tr>
<td>CareWeb release info</td>
<td>7-Sep</td>
<td>2</td>
<td>61%</td>
</tr>
<tr>
<td>Tal Ben Shahar lecture</td>
<td>12-Sep</td>
<td>3</td>
<td>58%</td>
</tr>
<tr>
<td>PCA orders</td>
<td>19-Sep</td>
<td>1</td>
<td>76%</td>
</tr>
<tr>
<td>New patient safety intervention</td>
<td>21-Sep</td>
<td>1</td>
<td>62%</td>
</tr>
</tbody>
</table>

Sample Size = 18 emails

Collection Dates: 01Apr06-30Sep06