UNIVERSITY OF MICHIGAN
SCHOOL OF DENTISTRY
ORAL SURGERY DEPARTMENT

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TEAM DNA^3

FINAL REPORT
AND RECOMMENDATIONS
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Executive Summary

The Oral Surgery Department is a facet of the University of Michigan School of Dentistry. The department treats patients who require operations such as tooth removal and other procedures that may require anesthetics. A small but busy clinic, the department takes care of a high volume of patients, and this creates a lot of data and paperwork. Every day, a large quantity of information passes through the hands and attentions of several staff members such as doctors, nurses, secretaries, and students. Our job as an SI 501 group was to map the flow of patient information throughout the clinic and find spots that could be improved. After collecting data through a series of interviews with staff members, we came to a set of conclusions about the flow of information within the Oral Surgery Department, as well as recommendations to improve certain conditions within the clinic. Our findings are as follows:

1. Finding: Interviewees expressed concern that the Oral Surgery Department was understaffed.
-Interviewees who reported concerns about being understaffed do appear to be very busy during their daily work. However, statistics show that the number of patients coming into Oral Surgery has declined in recent years The perception of too much work load might bring negative effects to the job performance of staff who feel overburdened.

Recommendation
To consider having a student assistant of sorts to run physical errands for Front Desk outside of the OS department until digitization solves this need.

2. Finding: There is a communication breakdown between Oral Surgery and PAES
-U01, U02, and U06 all mentioned issues with scheduling between Oral Surgery and PAES.
-U01 mentions that they have to reschedule a lot.
-U06 mentions that they don't know what the Oral Surgery department's schedule looks like most days and they aren't updated frequently.

Recommendation- Give PAES access to the OS schedule and teach them how to use it
-Have regular meetings between PAES and OS to discuss the best way to schedule patients

3. Finding: Employees are disconnected from each other and departmental issues.
-Department meetings are usually canceled
-Employees who did not deal with paperwork consequences were unaware of issues
-Patients are confused by information received in appointments

Recommendation: Increase the quality of employee communication and involvement.
-Hold valuable, regular department meetings to establish common ground
-Digitization will not completely solve this problem, and may aggravate it further.

4. Finding: There is a lack of understanding concerning the future implementation of digital systems.
-The staff is not clear as to what specific changes the new system

With these findings and recommendations, we believe that we can realistically help the Oral Surgery Clinic increase its efficiency and make the information process an easier task for staff and patients alike.

Background

The University of Michigan Oral Surgery department is a bustling, relatively small unit within the School of Dentistry. The typical Oral Surgery patient requires more urgent, surgical care than the departments and businesses from which its patients have been referred are able to perform. The department is comprised of a small number of administrative and clerical staff, faculty, residents, and students, as well as a nurse and a few dental assistants. As both a place of learning and of professional practice, the two ideals are often at odds with one another. Students rotate out of the department frequently, and there are small numbers of doctors and regular staff. In this environment, the employees strive to be supportive and willing to help one another, although there is not much free time to do so. Due to the inherent busyness of the clinic, department-wide meetings are often canceled.

After a patient is referred to the clinic and an Oral Surgery doctor has approved the referral, the patient can schedule an appointment. On the day of the appointment, when the patient arrives to the Oral Surgery clinic they check in. If the paperwork and guardianship is in order, the patient will have their appointment or consultation with a doctor and a resident or student. During this appointment, the resident or student will fill out several paper forms with the patient's input. Sometimes, as with medical consultations, this process includes double-checking the patients' medical history. Every time, however, the resident or student estimates how much the service will cost and obtain the patient's signature to confirm this. After reviewing the paperwork with a faculty member, who can become quite busy at times, the resident or student will perform the patient procedure. After the procedure, the paper forms are delivered back to the front desk where the process began, which then deals with missing information from the forms, rescheduling patient appointments, and collecting patient payments, among other responsibilities.

Many of these steps will change as the Oral Surgery department transitions to a digitized system. Although the clinic's impending transition date has yet to be officially declared, some digital systems such as scheduling are currently in place. However, the bulk of the system is not in use yet. The goal of this contextual inquiry project was to gain insight into how the Oral Surgery department currently functions by observing and analyzing any gaps in this flow of information through the department currently, and with the knowledge of the future digitization process. to make recommendations as to how these gaps could best be repaired, both in the interim and after the digitization occurs.

This vignette depicted an ideal Oral Surgery patient situation. Our contextual inquiry process revealed that this seemingly methodological process can and does break down at nearly every major step. We have compiled a list of recommendations that address these issues based on data collected from interviews and observations conducted on site at the Oral Surgery department.

Data Collection

Data for this project was collected over a total of nine meetings and interviews with personnel from the University of Michigan School of Dentistry. The team met with the director of the digitization project and the head of the School twice to gain full understanding of their expectations of this project and the overall structure of the School. The team then developed open-ended questions designed to reveal the flow of information through the Oral Surgery Department and make recommendations as to how it could be improved, especially as the Department will be moving to a digital patient information system within the next few years. Over the next several weeks we held in-depth interviews and observations with six personnel from the Oral Surgery Department and the Patient Admitting and Emergency Services (PAES), consisting of an hour of one-on-one questioning and a period where the interviewer and note-taker could observe the interviewee doing their job.

Because of confidentiality requirements of the dental profession, each member of the investigation team underwent HIPAA training and was not allowed to enter procedure rooms (but could observe from the hallway). The team was not able to see filled out patient forms; however all people interviewed were more than willing to give blank documents to the team and go over them in detail.

Data Analysis

As a group, we interpreted each interview to gain a better understanding of the information and to organize original interview notes into affinity notes. Additionally, we created contextual inquiry models, both individually and as a group. These were helpful in our understanding of the potential information flow problems of our client. There are six contextual inquiry models: the communication flow model, which demonstrates various kinds of communications needed among different people in our client's daily work; the sequence model, which demonstrates the processes and specific procedures needed to complete certain work in order; the physical model, which depicts what the real physical environment in which our clients work; the artifact model, which shows what kind of tools are needed to complete certain work, including different forms, referrals; the cultural model, which provides us a more broad view of the often implicit or invisible cultural environment of our client; and the cultural assessment model, which provides a written explanation of findings illustrated in a cultural model. Each of these models granted us with a unique perspective of the data we collected. We created consolidated models of all six types to reflect more comprehensively of our observation of our client.

When we finished all six interviews, our group created the affinity diagram and identified four key issues that could be addressed, which helped us to examine all the information and data collected in a more organized and systematic way. The creation of affinity diagram was based on all our affinity notes of the six interviews. By discussing and analyzing each and every affinity note, we organized individual notes into categories by putting together notes of the same theme. Following this initial organization, the first level of categories, like the individual affinity notes, were further organized into a more encompassing themes. Based on this systematic description of affinity diagram, we performed two ‘walk-through’s’ of our affinity wall with our GSI and our clients respectively to try and provide some preliminary suggestions and possible recommendations to the identified issues at different levels of the affinity diagram. The most prevalent recommendations became apparent after discussion within the group and with the client.

Recommendations

Recommendation 1: Alleviate the Feeling of Being Overburdened

Evidence

Several interviewees reported that the Oral Surgery Department was understaffed. Though it is true that those interviewees who reported about the understaffed issue do appear to be very busy during their daily work, which is consistent with our observation, the feedback we received from another interview based on the statistics of actual patients number coming to Oral Surgery is that the number has been declining which is exactly the opposition of what some of our interviews' perception. Despite the statistics, an overburdened feeling amongst staff is a less-than-ideal work condition. And the discrepancies of understanding among different staff regarding "being understaffed" might just be a reflection of different personalities on the one hand, on the other hand, it is also possible that certain parts of the organization might bear an unequally higher burden of work which deserves manager's attention.

Recommendation

Superiors or managers should talk to those people who have the feeling of Oral Surgery being understaffed to gain a more direct understanding of the situation. Furthermore, given the fact that the front desk has the feeling of overstaffed, it might be possible to consider having a student assistant of sorts to run physical errands for them outside of the OS department until digitization solves this need.

Considering that the implementation of digitization would play a positive role in promoting daily work efficiency and fundamentally changing how work is done, it is difficult for us now to tell how everything would be like after digitization. This also means that, in order to address the perception of being understaffed, it is necessary to bear in mind that, if it is true that certain parts of Oral Surgery do bear a relatively higher burden of work, how will the digitization process change the kind of work done by those that feel overburdened? Moreover, if the problem remains after the completion of digitization, then consideration of potential new positions could be required.

Managers and relevant staff could devote extra time and efforts into the examination this issue. Uncertainty about how digitization process might affect the whole organization would bring complexity when addressing of this issue. Additionally, even if the digitization would help address this issue, there would be still a period of time before the full completion of digitization. Until then, only short term recommendations are conceivable. It might be reasonable for us to expect that a more supporting organizational atmosphere as well as a higher working efficiency would be achieved through this recommendation.

Recommendation 2: Improve Communication with PAES

Evidence

The Oral Surgery Department has a close relationship with the Patient Admitting and Emergency Services (PAES) Clinic. PAES sends up several patients to the Oral Surgery clinic everyday and because of this the clinics communicate with each other several times throughout the day. Most importantly the doctor from PAES contacts Oral Surgery in the early morning, before either clinic is too busy, to see what Oral Surgery's schedule looks like for the day. PAES talks with the Oral Surgery Clinic several other times, PAES tries to call Oral Surgery whenever they have a patient that needs an appointment to see if there is room on the schedule for the patient. If there is room, a PAES staff member will walk up the patient to schedule the appointment. However, there are often several unforeseen issues with scheduling, such as a patient's time constraints, so there are times when PAES has to tell a patient that they cannot be scheduled in Oral Surgery and they must walk back down to PAES.

While there are several aspects that are positive about the current system, there are also negative parts. For example PAES expends a lot of time walking the patients up to Oral Surgery and if the clinic cannot see the patient that day then they must walk them back down to PAES. It is impossible for the Oral Surgery Patient Services Assistants to update PAES on the schedule constantly; they are too busy to tell PAES about individual cancelled appointments and openings in the schedule that happen throughout the day. And currently PAES is not viewing the Oral Surgery schedule online and would not know how to interpret the schedule if they were seeing it.

Recommendation

To fix these communication breakdowns, there are several steps that both the Department of Oral Surgery and PAES need to take. First, there should be a meeting between a couple of staff members from PAES and the Patient Services Assistants in Oral Surgery in which the Patient Services Assistants teach the PAES staff members how the schedule works, what to look for when scheduling

an appointment, how to schedule an appointment, and all the nuances in the schedule throughout the day. This will probably not be a one time meeting since there are several factors that go into the Oral Surgery schedule, such as when doctors will certain doctors will be there, how many students they have in a day, and if one of the doctors calls in. There should be a couple of PAES staff members with this thorough training because it is best not to just rely on one person to know the Oral Surgery schedule. This also adds more responsibility on to the Patient Services Assistants when they are scheduling patients. They must block out or reserve times in the schedule that patients cannot be scheduled. They have to leave notes in the schedule saying, for example "We cannot schedule biopsy patients during this time". No-shows and cancelled appointments also need to be updated as soon as they happen in the online scheduler so that PAES could possibly fill this spot. It may make sense for this to be the doctor's responsibility since the patient services assistants are incredibly busy with scheduling and the doctors are already crossing out the cancelled appointments on their own personal schedules. This will be easier when there are individual computers in the rooms.

It will also be necessary to inform PAES that while they may be able to book an appointment for that day, there may still be a reason why Oral Surgery cannot see the patient. For example if the patient has eaten earlier and needs to receive an anesthesia I.V.. Yet this will cut down on PAES walking patients up to Oral Surgery, only to have to walk them back down to receive medications to tide them over until their appointment. Also, it may still be necessary for PAES to call up to Oral Surgery even if there is not an appointment available in the schedule to see if they can squeeze the patient in or send them over to the hospital.

With this plan PAES will still have to physically walk up patients until the school-wide digitization process is complete, because there is fear of patients leaving with their medical charts if they walk up alone. Also, after this system is in place for a month it would be best to have another meeting between PAES and Oral Surgery to make sure that the process is working and there have not been too many mistakes with the schedule. At this time they can reevaluate how well the system is working and talk about ways to improve the system. Oral Surgery can tell PAES more information about the schedule to rectify these errors and PAES can tell Oral Surgery ways to improve communication. These meeting should happen once a month until both ends feel the program is running smoothly.

Recommendation 3: Increase Department Knowledge & Involvement

Evidence

Many employees we interviewed did not realize that problems with paper work, such as fee guides, existed. Some did not seem to be aware of the implications of their actions after forms left their hands. Forms are sometimes left illegible or incomplete. Patient miscommunication also seems to be an issue in the department, especially in relation to billing. Various patients do not seem to understand the billing procedure. Weeks after the appointment, they are confused by the bill they receive in the mail because they paid at the time of service. These patients call in, confused or angry, because they do not understand how the billing procedure worked. Billing is supposed to be estimated at the time of service; it is not supposed to be the exact total that they agree to pay. Multiple situations and extra issues can lead to charging less or more for the service. In addition, it is apparently difficult for students to learn the correct guidelines for even working in the Oral Surgery department.

Recommendation

Many of these issues can be aided or solved with the same underlying solution: increase the quality of employee communication and involvement. Although the employees seem to have a positive working relationship with one another, the lack of department meetings leave employees

without common ground. They are not as aware of their actions on other employees. We recommend having mandatory department meetings with a time-based agenda that will provide value for every employee in the department. This meeting can serve as a quick, efficient place for complaints and issues to spring forth. It can be a gathering and establishing of common ground, which some students do not seem to feel. Ultimately, having mandatory department meetings that actually address these unsaid issues will allow a common understanding to take hold.

Ensuring that every employee is aware of the issues faced by the clinic as a whole will not only bring the employees together, but can also change the nature of the Oral Surgery patient relationship. This will produce a whole alternative set of positive effects. Making sure that students know the significance of the fee guide so they can fill it out correctly and emphasize it to the patient during the appointment, as well as having doctors thoroughly check the forms over for completion, will aid in the overall efficiency of the clinic. Although everyone is busy in the clinic, implementing these small policies and making everyone aware of them (again, possibly through the department meetings) will prevent back tracking and patient miscommunication. This, in turn, will result in less patient calls and complaints later, which invariably end up involving various employees and wasting precious time in a department with few employees and little time to spare.

Although digitization will help with some illegibility issues and potentially incomplete forms of the paper variety, the incomplete aspects will likely still be an issue. This might be aggravated further by the capability of the digital system to provide even swifter approval of student forms from busy doctors because swiping takes even less effort and time than physically signing on various pages. Thus, inter-departmental communication will still be a necessity, no matter how digitized the system becomes.

Recommendation 4: Clarify the Eventual Digitization Process

Evidence:
Throughout the interview process it became apparent that several members of the Oral Surgery Department did not understand what the digitization process entailed or what a digitized clinic would look like. For example, one interviewee indicated that when the department was digitized she would be able to do most patient information input on a tablet computer such as an iPAD, even though in most instances wall-mounted computers would be utilized. Additionally interviewees in the Department demonstrated confusion as to the proposed timeline for the digitization process. Interviewees indicated that they expected the digital patient information system would be implemented within approximately six months whereas interviews with those in charge of digitization indicated it may be years before the Oral Surgery Department is fully digitized.

Recommendations:
We recommend that the School of Dentistry inform the staff of the Oral Surgery Clinic of the features of the digital system, its implementation timeline, and the training that the staff will have to complete in order for the implementation to be successful. The majority of misconceptions and confusion would be cleared up with a brief presentation. As the Oral Surgery Clinic has a departmental meeting monthly, it would be beneficial for the director of digitization to present then, and then make himself available for additional questions and comments. It is also recommended that the Digitization team work very closely with the Oral Surgery Clinic staff in order to understand what the staff needs and desires in a digital system.

Conclusion

Overall, the Department of Oral Surgery is a successful facet of the School of Dentistry focused on giving patients the best care possible. However, due to the large amount of patients in the department that are being referred from several different sources, certain employees feel overwhelmed by their workload. During our observations of the clinic, we were able to isolate certain parts of patient information flow where there are breakdowns. We also discovered interdepartmental communication breakdowns about the digitization process. Through our examinations of this data, we have come up with a set of effective recommendations that can be easily implemented in the Oral Surgery Clinic. These recommendations can be set in motion all at once or applied at different times. However, each should be evaluated and the department should think about them soon to alleviate the stress involved in certain employee's daily lives.