



# DOCTOR'S ORDERS

DEA 4530 Planning and Managing Workplace  
Fall 2011 | Cerise Marcela, Emily Spitzer, Xiaolu Zeng, Yae Jin Cho

## System of Placing Orders between Physician and Nurse in Urgent Care Cayuga Medical Center

Communication between physicians and nurse in urgent care facility has been challenging; orders are given differently depending on physicians and their work culture. This paper aims to look into verbal and written orders placed by health providers and proposed solutions on achieving consistent method for sharing information.

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## Background

From the beginning of October until early December December, Cornell students from Professor Franklin Becker's class DEA 4530/6530: Planning and Managing the Workplace were involved in real Cayuga Medical Center projects. Total of twenty students were divided into five teams with four people in each team, namely: Laboratory, Ambulatory Surgery, Operating Room, Neonatal nursery, and Urgent Care. Our group worked on the Urgent Care project.

Cayuga Medical Urgent Care is located in 10 Arrowood Drive, Ithaca. It is a first-scheduled-first-treated basis medical care located outside of Cayuga Medical Center emergency department. Urgent care centers are mainly used to treat patients who need immediate care for their injuries that are not serious enough to visit emergency room. As Urgent Care is focusing on redesigning its care provider hub and reception area, our project group was involved in collecting data about current design process, efficiency and inefficiency of existing design.

## Scope

### Urgent Care Research Process



The total time committed to this study is five weeks total, which was then divided into the general observation process, design dilemma discussion, methodology formation, observation, data analysis, and data interpretations. Literature reviews were conducted throughout the process to gain better understanding on specific issues and studies related to similar situations.

## **Goals**

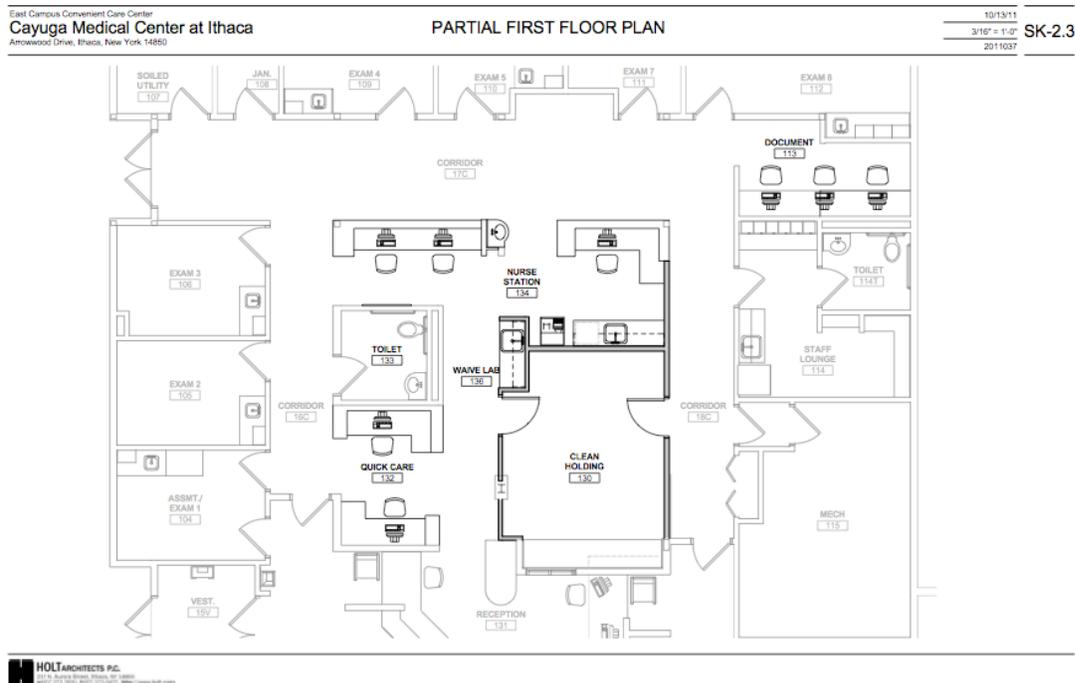
- To identify design issues and inefficiencies at Urgent Care through observation and data collection.
- To observe, record, and make sense of human-environment relationships
- To understand how design influences health care settings
- To present findings and suggestions about the design of the new Urgent Care space
- Focus on communication relating to patient order between physicians and nurses in Urgent Care

## Method (Process to identify a specific problem)

The project started at the beginning of October ran until early December. Urgent Care team had a kick-off meeting on October 5th with Amy Thomas, the director nurse of Urgent Care. Amy Thomas, Professor Franklin Becker, and us then discussed about general issues and the plan for redesigning Urgent Care Center.

In terms of interaction with Urgent Care staffs, each of us created a brief BioSketch that contains name, department and major, year at Cornell, email, contact numbers and hometown. Service leader posted the BioSketch for staff to read, and the leader introduced project in staff meeting. We introduced ourselves to staff whom we have not met as we move around the unit, to get to know the staff and health providers better.

We observed on-site for about one to two hours then were in touch with Amy via email to schedule our observation time. Amy connected us with receptionist, nurse, and doctor respectively for their first visit. To observe general issue of Urgent Care, only one student observed at a time for regular and efficient observation. What students observed was what people are doing, how people interact with each other, how the space is used, what equipment/technology, supplies or other resources were used. Observations and measurements were then recorded into field journals that were shared among team members.



## Observation Time

October 5th Wednesday	October 7th Friday	October 7th Friday	October 12th Wednesday	October 13th Thursday
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3:30 pm-5: 30 pm	1:30 pm- 3:00pm	3:00 pm- 4:00pm	3:30 pm- 4:30 pm	1:30 pm- 2:45pm
Observer: Emily Spitzer	Observer: Xiaolu Zeng	Observer: Cerise	Observer: Emily Spitzer	Observer: Yae Jin Cho

### **Patient Flow**

When patients first enter Urgent Care Center, they check-in at the glass window. They will be asked general information (e.g., insurance, photo ID, birth date, previous health history etc.) Patients fill out required forms at the registration and wait at the waiting room. They were then triaged by nurses and located in exam room to see doctors. For specific patients, staff at the reception will ask them to check in at the register beside the glass window. Only the register there and at the back has a seat, the register at glass window has no seats for patient to sit down.

Patients come to the reception area for various reasons except from the normal check-in: long wait complaint, lost & found, return the ice bag, and ask way finding (usually about the position of the lab).

### **Reception Flow**

During check in process, receptionist gathers appropriate patient forms, asks about complaint, and registers patients. Receptionist then organizes papers into chart and put the chart into filer for triage. In case of emergency (ex. chest pain), receptionist will take Computer on Wheels (COW) into examination room to register, the COW has EKG on it to measure heartbeat.

Receptionists had complaints about the amount of space at their desks, since there are lots of forms they need to take out and organize, and the desktop computers at the back two stations block the view of the patients. Staff always uses the relatively large desk beside the back register to do paper works. Reception needs adjacency to printer, computer, phones, and filing cabinets. File cabinet for the front register is positioned too low to reach. As telephone at the back register is located far away from the seat of staff, she needs to stand up to reach for the telephone.

### **Nurse Triage Flow**

Receptionist place chart in cabinet. Nurses gather charts and write patient name and assigned room on whiteboard. White board lists doctors and what rooms they are responsible to, includes patients medical issues. Nurses then come to waiting room to call patients back. For triage, nurses put chart in cabinet corresponding to room number patient in. If patient received treatment, nurse will send them back to waiting room for twenty minutes to make sure there is no bad reaction.

Nurse said she would like indication of who is currently in patient room (ex. doctor or nurse) to find their co-workers easier: doctors and nurses usually seeing multiple patients at once in different exam rooms. Nurses have hard times finding doctors and where the doctors are.

### **Hand-off**

There are two shifts for nurses and staffs: 6:30 AM – 2:30 PM and 2:00 PM – 10:00 PM. There are 30 (thirty) minutes overlap, where they hand-off patient cases. During this time, alcove area is completely packed with about 10-12 people (5-7 nurses, 2 doctors, 3 receptionists/ staff). Noise and crowding are the main problems, as there are so many people talking at one time. Their conversation is mostly about patients' data that nurses, doctors, and staff should deliver.

### **Peak Times**

According to the receptionist, the peak times vary and there are overflow cases during evening shift when they actually need to call doctors to come and help out. Whenever patients ask about waiting time, receptionist responds by saying number of patients in front of them and the number of providers on duty.

## **Main Issues**

### **Noise**

Nurses station located next to reception cause lots of noise, and the printer located in the middle of nurse station creates very loud noise. The noise from the two printers can really be problematic, and it will have a negative effect on the communication between staff and patient at the register and also between staff's talk. The use of the two printers is quite often. Noise makes it hard for receptionists to register patients especially if patients have sore throat or want to talk quietly because they are giving out personal information.

### **Privacy**

#### **Acoustic Privacy**

When patients enter the Urgent Care and queue up to check-in at front registration, they can hear the person in front of them checking in and register. Moreover, there was lack of auditory privacy at the back registration area, as two back registration stations were located right next to each other.

Acoustic quality throughout the waiting and staff area is also problematic, as there is absolutely no acoustic privacy; people in the waiting area can hear everything that is going on in alcove area. On the other hand, interestingly people inside the staff area are completely isolated and unable to hear things outside glass area. This resulting in non-responsive staff, patients had to knock the counter couple times

to call the staff. The receptionist who is inside the nurse nook area could not hear the patients until moments later. The isolation and not being able to hear outside also makes nurses, doctors, and staffs not aware that their voices can be heard from outside.

### Visual Privacy

Glass windows at the reception area allow patients in waiting room to see in. Since the windows are fixed and cannot be closed, patients can hear nurses/ receptionists talk. Furthermore, patients can see “Providers” aka doctor board from reception area. Patients sitting at first back station can see across nurses station to front registration computer screen.

### Way-Finding Problem

Because of inappropriate location and design of wayfinding signs, patients always need directions for lab and have to constantly ask staff. Although there is a signage dividing waiting area into two sections; non-respiratory patients, respiratory patients, patients do not recognize the sign and just sit in wrong waiting room.

### Patient Interaction

Patients in the respiratory waiting room were watching TV. Patients in the normal waiting room were talking with their family members at low voice or reading magazines provided in the waiting room. Some others were playing with their cell phone. Cafe area in the waiting room was seldom used by patients during the observation time. Patients seldom sit side by side, and they try to keep space from others. Patients with family members usually used seats beside the respiratory waiting room.

### Storage

Patients' data are kept for thirty days before they are sent to CMC medical records. They keep their file under middle counter in glass area. Urgent or more important case records are stored on a file bucket sitting on the counter. Staff reported that visual privacy is also lacking, that they needed to put posters to cover up the glass (at least on eye level) to prevent them to have visual access on medical records.

### Cafe

Café is used by around 50% of staff and many visitors, and opens until 2:30pm. The doors, however, are always open for vending machines. According to the observation occurred from 2:15pm-2:35pm on Friday October 7th, Café was used by 4 physicians and 2+1+2 patients. Physicians read newspaper when they have their meals or chat with each other at a low voice. Patients usually finish their food quickly or simply grab food from the vending machine. Two physicians left at 14:27pm, while the others were still reading newspapers.

### Observation of Whole Process (Case)

During one occasion, two patients entered at the same time. Both patients checked in at glass window one after another. They then went to reception desks at the back to register with another receptionist. Since only partition separates the space into two reception areas, people could hear every conversation happening around the area. Check-in process took about 8 minutes and it took another one minute for them to be called by triage nurse during non-crowded hours.

## **Possible Issues**

Students organized the observation data and found problems mentioned frequently. Then, the problems and issues were broadly divided into three parts: problems with check-in and registration process, wayfinding, and communication between staff and doctors..

## **Problems with check-in and registration process**

### Privacy issues

In terms of acoustic privacy, patients can hear each other when giving confidential information (i.e.: phone numbers, address, etc). Visual privacy problem also exists: window allows patients to see information on the computer screens.

### Other issues

Not enough space to put forms, complaints on not enough work surface. Check-in window is not visible to receptionists, visitors are sometimes neglected (aggravations of nurses and people waiting at the wrong spot)

We developed ways to measure these issues as possible issues that we would address for this project. Some measurement ideas and solutions are recorded as follow:

## **Check-in and Registration process**

### Measurements:

- How long does it take for receptionist to see patients waiting on the check-in window?
- How many people forget to check-in and go straight to the registration?
- How many times people standing and waiting too close to people checking in?
- How many times private information is heard from waiting area?

### Possible solutions:

- Changing registration process
- Increase work surface
- Have some sort of visual barrier to increase privacy
- Queuing system that reduces crowding in waiting area

## **Wayfinding**

People are confused where to wait, and having hard times finding places (i.e.: lab area, waiting, check-in, etc)

### Measurement:

- How many times people ask for directions?

- How many times people come to wrong places?

Possible solutions:

- Redesign signage

### **Communication**

- Nurses having hard times finding doctors and where the doctors are.
- What and where information is being lost between doctor and nurses? During hand-offs?

Measurement:

- What information is being shared, when and where, between who, and duration of communication
- How long does it take for nurse to find doctor? How many people do they ask?

Possible solutions:

- Sign on doors to indicate doctor is in that room

**Specific Issue (Communication between physicians and nurses)**

After a week observation from October 5th to the 13th, our group, Professor Franklin Becker, Amy Thomas, and Rob Lawlis, had another meeting to get more direction of observation and decided to set our goal on communication between physicians and nurses.

In order to observe communication relating to patient order between physicians and nurses, four students were divided into two groups and visited Urgent Center for the next three weeks. Standard observation form was finalized and used to gather information on patient’s room number, time order given, order written and order verbal- paired nurse/unpaired nurse.

**Methodology**

To collect data for formal observations a unified form was created to create consistency across observers and time. The form asked observers to follow one provider and when and how each order was given. Was the order given verbally or written, to the providers paired nurse or to an unpaired nurse? Below is the actual form used in the formal observations.

Observer:  
Date:  
Time Observing:

Provider:

-----Check boxes that apply-----

Patient Room Number (Rm 7)	Time order given (1:12pm)	Order Written (x)	Order verbal - paired nurse (x)	Order verbal - unpaired nurse (x)

**Observation Time**

November 7th	November 7th	November 14th	November 18th	November 18th
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Monday	Monday	Monday	Friday	Friday
3:15 pm-4:15 pm	1:30 pm-3:00pm	3:20 pm- 4:20pm	2:30 pm- 3:30 pm	2:50 pm- 3:50pm
Observer: Cerise Marcela Emily Spitzer	Observer: Xiaolu Zeng Yae Jin Cho	Observer: Cerise Marcela Emily Spitzer	Observer: Yae Jin Cho	Observer: Xiaolu Zeng

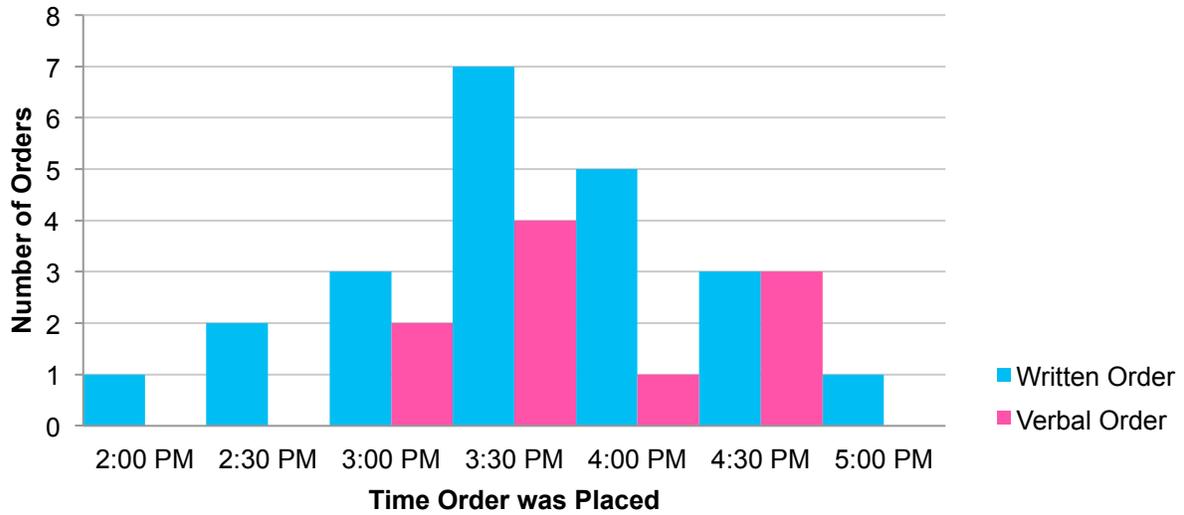
## Hypothesis

Based on observations and literature reviews on similar situations, we realized that verbal orders are generally given under certain circumstances where giving orders verbally are more convenient than written orders. According to Solet et al., communication barriers include information exchange that is only communicated through writing. Writing may be exact; however, it may leave important questions unanswered. In addition, without facial and other emotional quest from the communicator the intent of the message may be skewed. "Performing the handoff in person allows for a more effective exchange of information and a better opportunity to ask questions about the handoff" (Solet, D. J., et al, 2005). :

**If Solet view on exchanging information is applicable, then orders given verbally are more frequent during hand-off time.**

## Data Findings

## Numbers of Orders Placed During Three-Hour Period



## Numbers of Orders vs. Method



## Number of Orders Given to Paired and Unpaired Nurse

Out of 32 orders that were observed, ten of them were given verbally while the other 21 orders were written. Four out of ten verbal orders were given between 3.30-4.00 PM. There seems to be no correlation between type of orders and whether they were given to paired nurse. The system of pairing a physician and a nurse as a team to work together during specific time works pretty well and there seems to be no confusions on who to give orders to.

Based on the observation, the result of number verbal orders placed does not seem to support our initial hypothesis. Verbal orders were generally given every hour and there is not enough data to conclude that verbal orders are more frequent during hand-off times.

## Main Recommendations

Based on the observation results and the literature review, we finally came out 4 main recommendations from the Physical Design, Data Organization and Policy point of view. Our recommendations are then divided up into four main categories, namely: space and layout, color-coding organization, way of giving orders, structured oral communication, and other recommendations related to order and efficiency.

### 1. Space and Layout

Currently, each doctor is paired with one specific nurse and he is encouraged to give orders only to the assigned nurse. However, two doctors are sitting together in the doctor station while nurses, those “can do people” often walk around and do those paper work on any time with limited space.

We took a look at the future floor plan then and find that instead of separating the doctor station and the nurse station, paired doctor and nurse are going to sit together. Nurses will have their own tables for paper work as well. This is very helpful to encourage the pairing concept and foster interaction among the pairs.

The boundary between different paired groups, however, is too wide that it will become a barrier. Communication between groups will be harmed. Group members working in the room that is far away from the central “hub” will also have a sense of isolation. Thus in order to encourage communication and provide appropriate work space for nurses, we suggest that nurses should have their own working desks and sit with their paired doctor. There might be boundary between different groups to avoid interruption however this boundary should not become a barrier which will actually harm the communication process and resulting in a sense of isolation.

### 2. Color-Coded Chart

The second recommendation is the application of color-coding system in ordering process. The current situation is that all of the charts used in the urgent care are all of the same; nurses pick the charts out of the tracks to get the order. If there were an emergency, charts would be put in the track in different angles.

In order to improve the efficiency, we suggest applying color-coding chart system for each team. The idea is to have one team for doctor and his/her nurse (yellow and blue, for instance) They will then stick to their group and have their chart attached to color-coded chart pad, in this case blue team will have blue colored chart and vice versa. Yellow group might use the current charts, as all of the current charts are made of wood thus has a color of “yellow”, while blue group might use blue charts. Whenever there is an emergency, red charts will be used to help nurses pick the charts they exactly want more quickly. This color-coding idea might also be applied to staff’s name tag, so as to always remind people the “paired” idea and to help staff recognize who belongs to which group.

### 3. Way of Giving Orders

Verbal orders are easy to be incorrect or misunderstood because of its limitation. Reasons that might be misspeaking, background noise, hearing difficulties, muffled voices, accents, mispronunciations, unfamiliarity with patient’s status, confusion about patient data, failure to get understanding of all other care and the use of unapproved abbreviations or doses. (Wakefield, 2009)

Currently, in order to prevent mistakes and for re-working, only written orders should be given. Verbal order errors might occur due to incorrect communication of patient's status, making the wrong decision, failure for the nurse to seeking clarification, failure for the nurse to understanding and/ or read back verbal order and transcription error.

However, based on our observation, most verbal orders were given during those peak times. Verbal order is easier and quicker to place and could provide large amount of information. Considering this we suggest that doctors still should give written orders however they may use verbal form as a backup.

#### 4. Structured Oral Communication

Because of the advantages of verbal communication, we suggest the use of verbal order as a back-up in the 3<sup>rd</sup> recommendation. During our observation, we noticed that during the hand-off period, the station could be crowded, hundreds of information are exchanged. Thus we see a stronger need to use the verbal form as a back-up and to make the verbal communication more efficient.

Variations in communication style can cause frustration. Because of varied training approaches, nurses tend to be very descriptive and detailed in their communications, whereas physicians tend to use brief statements summarizing salient patient information, "bullet points" or headlines". We recognize that SBAR system has worked well in other parts of the hospital. Because we didn't have a chance to have a look at all of the forms doctors/nurses might use during the hand-off time, we are not sure whether they use a hand-off form following the SBAR system. If not, we strongly suggest this in order to improve the communication efficiency during the hand off time.

Fig. 1-1 Hand-off form example

## Hand-off Form

**SITUATION:**

Patient Sticker

Admit Date: \_\_\_\_\_

Dx:

CC:

**BACKGROUND:**

Med Hx

Allergies

Code Status

Interventions / Responses

**ASSESSMENT:**

Neuro

Vital Signs (include pain)

Respiratory

Cardiac

Accu Checks

GI / GU

Musculoskeletal

Abnormal Labs

Skin

XR results

Psychosocial

Lines / Fluids

**RECOMMENDATIONS:**

Goals

Consults

Test / Treatments

Discharge Needs

Admission

Reconciliation

CHF / AMI / Pneumonia Indicators

Daily

Turn q 2 hrs

Fall Protocol

Restraint Protocol

Discharge

Pneumonia Vacc

### 5. Other recommendations

Based on the literature review we conducted, several other methods which might improve the urgent care system efficiency are listed below. These methods need to be further studied before applying them in urgent care environment.

- CPOE (Computerized physician order entry) is a process of electronic entry of medical practitioner instructions for the treatment of patients. CPOE decreases delay in order completion, reduces errors related to handwriting, allows order entry at point-of-care or off-site, and provides error-checking for duplicate or incorrect doses or tests. This system can provide more structured and legible medication orders than a paper-based system. Thanks to this system, prescribing phase drug safety alerts are generated in case of overdoses and drug-drug interactions thus could contribute to a reduction in the number of medication errors identified in studies.
- Triggers: A trigger system sets specific physiologic parameters that trigger an alert to both the nurse and physician to respond to an unstable patient (e.g., marked tachycardia, hypotension, increased/decreased respiratory rate, hypoxia).
- Physician- Nurse Huddle: Someone needs to be responsible to review key elements of the patients, clarify any potential questions at regularly scheduled intervals during the shift. E.g., when the patient transited from ED to inpatient wards—use the STOP method to review: Significant issues, Therapies, Oxygen and last vital signs, and Pending issues. During the shift, there is also a need to supplement electronic/ paper information with structured times for closed-loop verbal communication.
- Discharge Timeout: someone needs to conduct the discharge process, including a review of all patient information by both the physician and nurse prior to discharge

### **Next Steps**

According to the data it seems that most of the time, 30 out 32 orders, are given to the paired nurse. However, after color coding charts it would be interesting to see if orders are then always given to the paired nurse. More data should also be collected at a wider range of times to see if the number of verbal orders increases in relation to the time of day, time of hand-offs, or peak business hours. Once more data is collected it would also be interesting to compare the number of verbal order a doctor gives with their patient turnover time and rate of errors. These issues were thought of but not fully explored because of the short nature of this study. Once more data is collected; however, these comparisons may be crucial in determining Urgent Care policy and showing why policy is in place.

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## Appendix:

### Field Notes

#### Wednesday, October 5, 2011

3:30 pm - 5:30 pm

Area: Reception

Observer: Emily Spitzer

#### PATIENT FLOW

1. patients check in at glass window
2. sit in waiting room (depends on wait time)
3. Fill out required forms, registration
4. Waiting room
5. Triage by nurse
6. Doctor

#### RECEPTION FLOW

1. check in patient\*
  2. Gather appropriate patient forms, ask about complaint, registration
  3. Organize papers into chart
  4. Put chart into filer for triage
- \*In emergency (ex. chest pain) receptionist will take computer on wheels (COW) into examination room to register, COW also has EKG on it to measure heart beat.
- Nurses had complaints about the amount of space at their desks.
- lots of forms they need to take out and organize, need space to do so
  - the desktop computers at the back two stations block the view of the patients

Nurses need adjacency to

- printer
- computer
- phones
- filing cabinets

Patient Way-Finding confusion

- Don't realize they need to check in at glass window first, will go to front registration desk
- invasion of other patients privacy if they are currently being registered
- can't be seen by receptionists if no receptionist is at that desk
- Walk in looking for Lab, need directions
- Patients with respiratory problems will sit in wrong waiting room

PRIVACY- Patients

- patients at two back registration stations can hear and see each other (lack of auditory and visual privacy)
- patient at first back station can see across nurses station to front registration computer screen
- people queue up at front registration, mistakenly, and hear person checking in

PRIVACY- Receptionists- Glass windows allow patients in waiting room to see in

- Patients can hear nurses/receptionists talk (no way to close windows)

- patients can see "Providers" aka doctor board from reception area... drug seekers will look at board, to find right doctor to get a medical perception from, will come back later if right doctor is not there. (Board will be relocated in move)

#### NOISE

- nurses next to reception cause lots of noise
- printer is necessary but also very loud
- makes it hard for receptionists to register patients especially if patients have sore throat or want to talk quietly because they are giving out personal information.

#### NURSE RECEPTIONIST INTERACTION

- If receptionist thinks patient is acting suspicious tells nurse
- nurses sometimes help answer phones
- nurses sometimes help register patients

#### PEAK TIMES

As far as peak times they seem to vary

- when I was there, 2 hours, 2 patients asked about waiting time
- receptionist responded by saying number of patients in from of them and the number of providers on duty

#### OTHER FACTS

- stationary computer in hallway near examination rooms is not used
- white board list doctors and what rooms they are currently using to see patients, includes patients medical complaint

#### CAFE

Used by around 50% of staff and many visitors, only open to 2:30pm but doors are always open/vending machines

#### QUESTIONS

- in what stage of patient flow do patients spend most time waiting?

### **Friday, October 7, 2011**

1:30 pm - 3:00 pm

Area: Reception

Observer: Xiaolu Zeng

#### PATIENT FLOW

1. patients check in at glass window\*
2. Will be asked general information e.g., insurance, Photo ID, Birthday, previous health history etc.
3. Fill out required forms, registration

4. Waiting room
5. Triaged by nurse
6. Physician

\* Sometimes, they will go directly to the register at the back.

\* For specific patient, staff at the reception will ask them to check in at the register beside the glass window. Only the register there and at the back has a seat, the register at glass window has no seats for patient to sit down. (e.g., one short breath patient has been asked to sit the register beside the glass window to complete check-in.)

RECEPTION FLOW (the same as Emily's notes\*)

\* For most of the time, staff don't sit on their chairs, instead they walk around to deal with various staff.

\*\*Register at the back is quite busy!!!

There is always at least one staff behind the glass window (at the front register desk), while only one staff is responsible for the register at the back could sometimes be problematic. The staff need to complete the patient register while answering a telephone. She needs to grab appropriate forms from the file cabinet and gives them to the patient to fill out. However the signage for various forms are at the other side of the chart. New staff needs to take a while to get to know the position for each form since there is no clear sign.

Sometimes patient comes to the back register desk found no staff there (e.g., the staff is dealing with the forms somewhere else and don't know there is a patient waiting there), they just sit there until one staff shows up. Telephone at the back register is far away from the staff sit at the seat, she needs to stand up to reach for the telephone.

Noise:

The noise from the two printers can really be problematic, it will have a negative effect on the communication between staff and patient at the register and also between staff's talk. The use of the two printers is quite often.

Patients come to the reception area for various reasons except from the normal check-in:

Long wait complaint;

Lost & Found;

Return the ice bag; (staff said this is the first time and they don't know what to do with at the beginning, they throw the ice bag away in the end);

Step in and ask way finding (usually about the position of the lab);

Staff always uses the relatively large desk beside the back register to do the paper work.

File cabinet for the front register is positioned too low to reach.

Frequency for using whiteboard is quite high- 6 times between 14:00-14:15 pm.

CAFE (14:15pm-14:35pm)

During this time, was used by 4 physicians and 2+1+2 patients. Physicians read newspaper when they have their meals or chat with each other at a low voice. Patients usually finish their food quickly or

simply grab food from the vending machine. Two physician left at 14:27pm, while the others were still reading the newspaper.

Way-Finding problem the patient has is similar to the situation Emily addressed before.

Especially patients with the respiratory problems sit in wrong waiting room. Patients without the respiratory problems sit in the respiratory waiting room.

Need directions for lab

Patient interaction (14:40pm- 15:00)

Patients in the respiratory waiting room were watching TV.

Patients in the normal waiting room were talking with their family members at low voice or reading magazines provided in the waiting room. Some others were playing with their cell phone. Cafe area in the waiting room were seldom used by patients during the observation time.

Patients seldom sit side by side, they try to keep space from others. Seats beside the respiratory waiting room is usually used by patients with family members because they have chairs together.

## PRIVACY

Situation is bad as Emily has addressed before.

There is no exact peak times, it depends. In the meantime when I was there, one patient came to complain about the unexpected waiting time, she has waited 3 hours there. Both the receptionist and Amy tries to explain the procedure of the register and the possible reasons for the wait.

**Friday, October 7, 2011**

3-4 PM

Observer: Cerise

There were surprisingly no patients checking in during this one-hour period. About 10 people were waiting in the waiting area (some of them are families)

According to the receptionist, the peak times vary and there are overflow cases during evening shift when they actually need to call doctors to come and help out.

2 shifts for nurses and staffs:

- 6.30 AM - 2.30 PM

- 2 PM - 10 PM

There are 30 (thirty) minutes overlap, where they hand-off patient cases. During this time, alcove area is completely packed with about 10-12 people (5-7 nurses, 2 doctors, 3 receptionists/staff). Noise and crowding are the main problems, as there are so many people talking at one time. (this would be problematic because this are the times when they need to talk with each other to talk about patients.)

Acoustic quality throughout the waiting and staff area is a problem, as there is absolutely no acoustic privacy; people in the waiting area can hear everything that is going on in alcove area. On the other hand,

interestingly people inside the staff area are completely isolated and unable to hear things outside glass area. This resulting in non-responsive staff, patients had to knock the counter couple times to call the staff. The receptionist who is inside the nurse nook area could not hear the patients until moments later.

The isolation and not being able to hear outside also makes nurses, doctors, and staffs not aware that their voices can be heard from outside.

### Storage

Patients' data are kept for thirty days before they are sent to CMC medical records. They keep their file under middle counter in glass area. Urgent or more important case records are stored on a file bucket sitting on the counter. Staff reported that visual privacy is also lacking, that they needed to put posters to cover up the glass (at least on eye level) to prevent them to have visual access on medical records.

### **Wednesday, October 12, 2011**

3:30 pm - 4:30 pm

Area: Nurse Station

Observer: Emily Spitzer

### NURSE TRIAGE FLOW

1. gather chart
  - if emergency reception will give chart directly to nurse instead of placing in cabinet
2. write patient name and what room they are going to on whiteboard
3. go to waiting room to call patient back
4. triage
  - if emergency call over doctor
  - if non-emergency put chart in cabinet corresponding to room number patient is in.
5. If patient received treatment nurse will send them back to waiting room for 20 min. to make sure there is no bad reaction.

Nurses need adjacency to

- hand sanitizer
- sink
- triage charts
- desk to fill out paperwork
- whiteboard- where they write down patient and what room they are in
- doctors
- phone (quiet area to give back lab results)
- patient rooms
- pin board
- forms
- medical supplies
- computer--- charge nurse goes through labs at start of day/shift to see who needs to be called back- nice if

doc is nearby to answer questions during this process.

Exam room #1

used for triage only unless very crowded.

extra door from waiting area, if door not locked other patients may walk in by mistake.

Storage Room

-must be locked at all times

-to crowded right now, have to move large equipment around to get to shelves.

Nurse said she would like indication of who is currently in patient room (ex. doctor or nurse) so it is easier to find co-worker... doctors and nurses usually seeing multiple patients at once in different exam rooms.

Friday, October 13, 2011

1:30 pm- 2:45 pm

Area: Reception, Nurse Station, Cafe' (Overall Flow)

Observer: Yae Jin Cho

RECEPTION FLOW (Same as Emily's and Xiaolu's Notes)

PATIENT FLOW (Same as Emily's and Xiaolu's Notes)

When I was There, 1:50pm was the peak time: 5 patients in waiting area

1:50 pm → 5 patients in waiting area

They were reading books, and watching TV

High volume of TV: Noise Issue

2:00 pm → 2 patients in waiting area

The patients who did not have respiratory problem were sitting in the respiratory patient area  
(Signage Confusion)

2:30 pm → 2 patients in waiting area

-At 2:26pm two patients entered at the same time.

-Patients checked in at glass window one by one

Privacy Issue as mentioned earlier (Both Visual and Audio Privacy)

-Then, they went to reception desks at the back

Since only partition separates the space into two reception areas, they could hear everything (Audio Privacy Issue) Reception takes about 8 minutes

-They went to the waiting area at 2:44 pm about at the same time

-Nurse called the patients at 2:45 pm

(Took only 1 minute processing nurse triage when urgent care was not crowded)

Garden Cafe'

2:00 pm → 3 nurses

2:30 pm → another group of nurses

(Nurses usually having late lunch)

## NURSE STATION

3 computers at 3 reception area

2 printers right behind reception area (Noise Issue)

Doctors and Nurses interact and communicate easily since design of nurse station is circular

### Privacy Issue of Nurse Station

-When nurses communicate each other, I could hear on the waiting area

As volume goes up, nurses and patients communicate less (Privacy Issue)

## **Monday, October 17, 2011**

2:30 pm - 3:30 pm

Area: Nurse Station

Observer: Xiaolu Zeng

NURSE TRIAGE FLOW (same as Emily's notes, add some findings considering this)

Charts are usually placed in cabinet, nurses and doctors will check the cabinets frequently.

The charts are put in the cabinets with orders (from up to down, number one chart is broken)

- White board is used quite often, the two cabinets for be triaged and for waiting room are right beside the whiteboard. They create the format of the whiteboard themselves, with columns and rows.

### Some other issues

- Nurses always work on the large board beside the whiteboard, there is one seat at the large board, however nurses usually standing to complete the work, especially during the peak time.
- Printers and computers at the back hallway are seldom used.
- Storage room is quite crowded.
- Nurses will not talk as frequently as the reception staff, for most of the time they are dealing with those paper work. (Answered doctors questions very quick and short)
- There is an empty cabinet in the nurse station with some labels on it. However, for most of the time the 12 cabinets there are empty.
- As to the exam rooms, there is no clear sign to indicate whether there is some one in the room. Sometimes the door hasn't been shut when there is one patient inside.
- Nurses interacts with reception staff more frequently with the doctors.

**Monday, October 17, 2011**

3:30 pm - 4:30 pm

Area: Nurse Station

Observer: Emily Spitzer

wonder how patient feels/effect on patient satisfaction being sent back to waiting room after triage  
3 patients got sent back to wait in waiting room after triage.

-white board alcove good for privacy

# conversations about patients between doctors at nurses station-6

# conversations about patients between nurses- 8

# conversations about patients between doctors-4

1 patient asked were restroom was

one nurse had trouble finding other nurse, had to ask reception

some confusion about location of charts at certain times

large complaint is lack of control over HVAC system, say it gets very cold, bad for sick patients.

**October 19, 2011**

3.15 PM – 4.30 PM

Nurse Station

Observer: Cerise

3 nurses, 1 doctor, 1 PA, 1 nurse student, and 2 receptionists.

Interactions between nurses and doctors

DR + nurse: ||||| ||||| | (10s, 5s, 3s, 2s, 12s, 10s, 25s, 10s, 2s, 7s, 20s)

DR + DR: |||

Nurse + nurse: ||||| (10s, 5s, 3s, 15s, 2 mins++)

Nurse + Receptionist: ||| (12s, 10s, 30s)

It looked like nurses have more casual interactions with PA compare to those with doctors. In general doctors and nurses only have conversations regarding their patients, medicines, and what to do next. Most of the times, doctors talked to nurses in order to delegate works to them, but no further discussions seemed to happen during this one-hour period. Although doctors seemed to be more comfortable

discussing or asking questions about medicines to senior nurse, who seemed to be in charge among the nurses.

Most communications happen in the main staff area and when doctors spend time in this area, they spent most of their time here to input data to computers, writing prescriptions, and calling.

### Space

Average steps to walk around the treatment areas (loop corridor) are 45 steps. Average steps walked by nurses and doctors to get to the exam rooms are about 20 to 25 steps. Doctors and nurses seemed to take the fastest route to exam rooms, possibly because they already know which exam rooms are closer to any doors going out from main staff area.

Wheelchairs are put in the back corridor near the treatment areas; in one circumstance, receptionist had to get wheelchair for the patients, and had to spend more than 2 minutes to go to the back to grab wheelchair, leaving the reception area empty.

### Printers

There are two small assigned printers that are specifically to be used by doctors; one printer is located adjacent to doctor's computer station and one located across from it. Nurses have to share their printers with receptionists, and this printer located in the main reception area. Thus, nurses have to walk across to reception area and collect their printed materials instead of printing on the closest printers, which are the doctors' printers. (this might explain staff crowding in the reception area) The doctors' printers seemed to be underuse as these two printers only cater to two computer stations.