An Ethnography of the ER

A Closer Look at Information Flows, Organizational Methodologies, Work Culture, and the Role of the Unit Secretary

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Part I. Introduction and Research Methodology

The research methodology underlying this observational study of the Emergency Department at University Hospital ("ER") continues the rich ethnographic tradition present with the sociology of work and organizations. All data, primarily in the qualitative form of detailed observations, was collected over a five-week period totaling more than 75 hours of observation and informal interviews. After contacting the department's nurse manager and signing confidentiality agreement forms, we were granted "observation program" privileges that gave us full-access to wander and observe freely throughout the emergency department.

In our attempt to build a systematic understanding of the people, work processes, and culture of the ER, we first set out to locate an *informant.* According to ethnography expert, James Spradley, this is an individual who speaks his or her own [work] language, provides a model for the ethnographer to imitate, and serves as a useful source of information.[1] After the first week of study, we identified our informant as the Unit Secretary ("US"). This individual, also known as the unit clerk, works at a specific area within the ER called the Charge Station or Charge Desk. It became clear, as we will demonstrate throughout the following descriptive analysis, that the Charge Desk is where most of the action takes places in the ER. As a result of this conclusion, for the remaining four weeks we took observation positions in and around this specific area. Note that due to the space constraints, we observed in groups no larger than two individuals.

Almost immediately, the unit secretary and the other professionals within the ER welcomed us as family. During slow periods of activity, they were eager to answer our questions. During more chaotic times, however, they continued about their tasks as if we were not present. The latter case provided an excellent opportunity to take objective descriptions of the nature of their tasks. Due to the unpredictable pace of the ER, we had to strategically engage the informants at appropriate times when their work levels were sufficiently low. As a consequence, the majority of our preliminary data came in observational form. As time progressed and our level of trust increased with the informants, qualitative data in the form of informal interviews increased. Occasionally, administrators, nurses, and doctors would approach us with inquiries about the purpose of our study or their own words of wisdom about the daily

[1] Spradley, "The Ethnographic Interview," p. 25

events within the ER. Consequently, other informants did emerge. At the same time, we did not limit the scope of observation solely to the activities of the unit secretary at the Charge Station. This area was situated in a location with high foot-traffic that provided us with views of the trauma bays, critical care rooms, the whiteboard, and other crucial areas of the ER. Let's now take a closer look at the physical layout of the ER.

Part II. Formal Layout of the Emergency Department

An examination of the physical layout of the emergency department is necessary to understand the flow of information, organizational methodology, and the culture within the fast-paced work environment. It became evident, as we will discuss further below, that the physical structure of the ER strongly influences how individuals think about and carry out their daily tasks. For a visual illustration please see attached diagrams #1 - #3.

There are two main entrances to the emergency department at University Hospital—one through the ambulance doors and another through the triage waiting area. To enter the latter room just outside the ER, one must walk through a security checkpoint consisting of a guard and a metal detector. This helps protect the doctors and staff from aggressive patients, especially those connected with gang-related crimes. Once inside the triage waiting room there are two triage nurse stations, several registration desks, and a waiting area with a seating capacity that exceeds 50 individuals. We will discuss further the function that each of these specific areas plays in the processing of patients in our section on information flows. After one has been processed and called in by a nurse, the patient is allowed to pass through another security door that leads directly into the front hallway of the ER.

The ER is divided into two main sections: the front hallway (FH) and the back hallway (BH). Each hallway has a different team of nurses, residents, and doctors that assist different types of patients depending on the severity of their symptoms. The front hall is the receiving area for patients brought in from ambulances, the Life Flight helicopter, and other areas of the hospital. Traumas and other very urgent cases are seen in this hallway. The back hall is used for patients with broken bones, fevers, and other less urgent symptoms.

As one walks past the registration desk and through the security door, one can either follow a strip of blue tape down to the back hall or turn right down the front hallway. It is at this crucial intersection where most of the action and coordination decisions take place. If one turns

right, there are two main Charge Desks (FH Charge Station) on the immediate left and four main ER rooms along the right-hand side. These include an overflow room, trauma rooms (#3 and #5), and the critical care room (#1). Across from room 1 at the back of the FH is the radiology room and a narrow corridor leading to the back hall. The front hallway is extremely cluttered with extra wheel chairs, gurneys, EKG machines, a portable insurance registration terminal, a portable X-ray machine, and several respiratory care machines.

If one walks straight, instead of turning to the right at the entrance, there is a third (non-designated) hallway that connects the front section of the ER with the back. This thirty-yard hall segment serves several important functions. Along the left-hand side, there exists a patient information whiteboard, an intermediate care room (#7) which also houses the nurse's station, a digital drug "ATM" [technically called MedStation System 2000 v.4.1], and an additional non-trauma patient room (#9). Along the right-hand side, just beyond the FH Charge Desk, there is a video-monitored room designated for psyche-patients, a passageway leading to the interior "labyrinths" of the ER where more medical and administrative supplies are stored, and a converted patient room (#10). This hallway is lined with linen bins, extra floor lamps, and several other pieces of surplus equipment. The head nurse manager was proud to point out how efficiently the department utilized its precious floor space. All interior and exterior hallways serve both as walking corridors and as storage depots. The general feeling of the entire ER is the lack of quality space—everything is extremely cramped. However, despite the outward appearance of disorder and clutter, the ER's physical layout as well as operating protocols appears to follow a theme of "ordered chaos."

The back hallway houses a third Charge Desk, a pediatrics care room, a gynecology exam room (#11), and a number of other non-trauma patient rooms (#13-#20). Individuals with broken bones, fevers, and mild complaints are treated in this area. The BH Charge Desk is smaller compared to the long Charge Station used by the two unit secretaries in the front hall. One observation is that the BH unit secretary uses a cordless headset instead of a fixed-line phone. This type of phone is necessary because the BH unit clerk constantly uses the copier and equipment located in the front hallway. Although the two teams are constantly interacting with each other, the BH unit secretary is not required to perform as many different tasks as the unit secretaries in the front hall. A large part of their task is also to assist the pediatrics team, regularly called in from other parts of the hospital. Over the top of room 13, the largest BH

room with three beds, there is a smaller whiteboard that underscores the team-oriented layout of the ER. It reads: Team BH [BH ATN:____; BH RES:____; Peds:____; BH RN:____; BH LVN:____]. In the next section, we will discuss in greater detail these positions, their specific functions, and how they interact with each other. It will become clear that formal positions and knowledge of who is on duty, where, and at what time are vital pieces of information that ensure the smooth operation of the ER.

Now that we have taken a tour around the periphery of the ER, it is necessary to describe the interior and more specifically, the area in and around the front hall Charge Station. The interior of the emergency department serves more administrative functions, while the periphery areas assist the patients. There are two long and extremely narrow corridors that run from the front hall Charge Desks directly to the back hall. The walls are covered from top-to-bottom with shelves stocking everything from surplus administrative forms and carbon-copy discharge sheets to 10 cc syringes, blue shoe covers, and bouffant caps. There is in fact one individual who must keep a running stock count of these supplies to ensure the department does not run low. This employee works around a computer terminal in the center artery of the ER. However, due to the space constraints of this interior corridor, we were not advised to take observation posts in the inner area. The most appropriate location for observation in terms of both scope of observable activities and space available for standing became the front hall Charge Desks, as mentioned previously.

This is clearly the information hub and social center of the emergency department. Please see diagram #2. The FH Charge Station consists of two separate Charge Desks each assigned with a unit secretary, a collection of phones, printers, computer monitors, and an elaborate system for charting patients and organizing paperwork. The Charge Desks are two-tiered by design. Consequently, there are FH room-specific folder stations (#1-#7) on the upper-level (chest high) and phones and desk space to perform paperwork tasks on the lower-level (waist high). There are a number of different types of phones on the Charge Station: one for outside calls only, two for external calls and internal paging, and one called the “the bat phone” which has a direct line to the bedding and admit office of the general hospital. The phone cords are all extremely long which enable the user, primarily the unit secretary, to move across the Charge Desk and perform multiple tasks simultaneously. This may also explain the scarcity of stools behind this narrow station. No one has time to sit down. Doctors, nurses, and the unit

clerks work alongside each other constantly shuffling left to right behind this 3' by 20' work station. The wall behind the first Charge Station consists primarily of folder racks organized either by role/position or by MH/BH room numbers (#8-#20). Behind the second Charge Station is a small room separated by a large section of Plexiglas that is littered with random announcement sheets. Not surprisingly, this room is called "the bubble."

The bubble houses a couple of chairs, two computers designated for Internet use, and a small amount of desk space for doctors and medical students to work. It serves as a break room for people to sit down, relax, and check personal email. Many doctors also use the phone while finishing up some last minute paperwork. There are two important pieces of technology just outside this room along the aforementioned interior supply passageway. First, a pneumatic tube, appropriately called "the tube," serves as an automated transport system for documents and blood and urine samples headed toward the lab. The unit secretary frequently uses this device throughout the course of the day. Second, on the entrance side of the bubble is the ambulance phone and a computer terminal. There are periodically high-pitched beeps that alert the nurses on the Charge Station that an ambulance is headed toward the ER. The nurse will either pick up the phone or listen to the ambulance over the speaker, while simultaneously filling out a paramedic report form. (See sample Paramedic Report). We will talk about this process in greater detail in part VIII that describes the work environment during 'trauma events.'

In general, the communication within the bubble and behind the Charge Station can be light-hearted or very serious depending on who is in the area and what is happening at the specific time. Surprisingly, there is no pattern to when individuals are social or serious in the ER. Even during hectic periods of activity, many unit secretaries find time to joke with their fellow work partners—possibly as a way of stress relief. We will discuss in further detail how the Charge Station serves a social function in addition to its formal requirements of providing administrative support to doctors and nurses. It also offers an insightful glimpse of the culture within the ER. Let's now take a look at the positions and specific functions of individuals who work in this fast-paced, unpredictable work environment.

Part III. Positions

Nurses

There are two kinds of nurses who work in the ER: Licensed Vocational Nurses (LVN) and Registered Nurses (RN). While the role of each varies slightly in the specifics of their duties, there is a lot of overlap in their job descriptions and there is continual communication between all of them.

The LVN and the RN really work as a team within the ER. Their day-to-day activities are practically the same give or take some specific tasks. Both nurses take samples (blood or urine), request and sign off on orders from the lab, and provide on-site training for the resident students. However, an RN has more training and schooling than an LVN, and thus a few more responsibilities in the ER. For example, an LVN can give intramuscular (IM) shots, draw blood and start an IV, but is not allowed to give IV medications. However, some LVNs have received training on the job and may administer such procedures. More generally, the LVN brings patients from the waiting room into the back (though other nurses may take on this role, as well), conducts the "secondary assessment" status of the patient, and takes assignments from the RN. The RN, on the other hand, is primarily responsible for discharging the patient and signing-off on the paperwork.

It is also an RN who is assigned to the role of charge nurse, also called the resource nurse. According to one resource nurse, their primary role is "overseeing everything, getting people out, and getting beds." A unit clerk echoes that "the charge nurse makes things happen." This means that they know all the patients in the ER, their respective symptoms, diagnoses, and designated room number. They are also responsible for making sure things run smoothly. For instance, they make sure that staff members arrange their breaks so that no more than one is off-duty at a time, that the nurses and doctors are attending to the right patients or to the right charts, and that the doctors are providing them with all the appropriate information about a given patient. One resource nurse comments that "we push the doctors to clear the ER, because we need to keep the ER open." In short, the resource nurse provides bed management by constantly interacting with doctors to make sure that they discharge old patients and free up beds for new arrivals. Once beds are freed, they oversee that they are quickly filled. An observer will hear comments like: "We just discharged half the place. Joe, if we can get some 'peeps' in there..."

The resource nurses are also major decision-makers in the ER. They decide if a patient should be admitted to the main hospital, when new supplies and beds should be ordered, and assign all the beds for incoming trauma and waiting room patients (in conjunction with the triage nurse). Moreover, they are the first to meet the paramedics who transport trauma patients. Upon arrival, they quickly examine the symptoms and the condition of the patient and decide the bed assignment on the spot. In the patient discharge process, they are responsible for "quality control": making sure the doctors, residents and RNs have signed all their paperwork appropriately (to be discussed more later). In addition to these tasks, the resource nurse picks up everyone else's slack. They complete any tasks that the others have not been able to complete yet. For example, if they are behind the Charge Desk, they will sometimes answer phones; they will order samples, bring in patients from the waiting room, and withdraw medications from the ATM machine, etc. We will further examine how another employee, the unit secretary, performs these aforementioned tasks.

It is important to underscore that the resource nurse is always in constant communication with the triage nurse (TN), also an RN, to update both the status of patients and the availability of open beds in the ER. Teamwork is fundamental to the smooth operation of the emergency department. The two nurses frequently meet in front of the patient information whiteboard to examine room availability. Since the triage nurse is the first medically-trained professional to meet new (non-major trauma) patients, she must always know the status of bed occupancy in the back (ER proper) when making her assignments up front in the waiting area. The TN works in one of the two triage stations in the waiting room and is primarily responsible for taking down the patient's name, social security number, vital signs (heart rate, blood pressure, etc.), primary complaint and primary care physician. After this brief examination, she assigns a bed according to degree of severity of the patient's symptoms.

All the nurses in the ER have very professional and personal relations with each other. We will later discuss the surprisingly high level of social interactions between these individuals in and around the Charge Station in the FH. They all essentially work as one unit and it is this cohesion that creates a feeling of camaraderie and friendship between them. Not only does this comfortable atmosphere allow for easy communication on the job and in swapping shifts, patients and/or tasks, it also plays over into their personal lives, where, we have been told, their free time is frequently spent hanging out together.

Attending Physicians

The attending physicians are the most senior staff members in the emergency department. They have the most technical expertise, but know the least about how paperwork or administrative tasks are processed and completed. They are the executive commander of the ER who confirm or reject the residents' diagnoses and see more critical care patients after the resident's preliminary visit. Although they spend most of their time with the resident's and resource nurse, they interact with all members of the ER. For instance, the unit secretary reminds them to attend to patient files, provide necessary signatures, and/or pick up transferred calls. There is always a FH attending physician on staff, in eight-hour shifts (0800-1600, 1600-2400, 2400-0800). The BH attending rotates in eight-hour shifts as well (1100-1900, 1900-0200), but no BH is assigned to the time between 0200-1100. During this particular shift, either the residents on staff or the FH attending physician will be responsible for BH patients.

Residents

There are usually two resident MDs on staff for rotating twelve-hour shifts (generally 0730-1930 and 1930-0730). These individuals see a patient after the LVN has done the secondary assessment, but before the attending physician. In some cases, for simple routine diagnoses the "attending" will never see the patient. Since this is a teaching hospital, the residents frequently exchange thoughts with the attending doctors. In many observed examples, they would congregate around the whiteboard and discuss a patient's condition, the diagnosis, and subsequent tests and procedures. The residents formally rank just below the attending, and can be considered the apprentice doctors of the ER under the guidance of the head physicians. In many serious traumas, the "attending" stood aside the resident who "did the dirty work."

Unit Secretary

The last remaining staff position that must be highlighted belongs to the unit secretary (US), or unit clerk. Although this title commands the least pay and least formal recognition within the ER's hierarchy, our observations lead to the conclusion that it is arguably the most important position with regards to the smooth functioning of the ER. The US provides vital administrative support services to the medically trained staff and in a sense helps run the "whole show" along with the resource nurse. They can be considered the "memory" of the ER since

doctors and other medical staff constantly go to them to for knowledge on-call schedules, phone numbers, and random patient information. Thus, the role of the unit secretary is multifaceted, complex and vast, requiring computer proficiency, expert social skills, and inexhaustible patience. Their crucial role in the ER and central location at the Charge Station makes these individuals attractive to us for the focus of our investigation. Let's take a closer look.

Part IV. Position Focus: The Role of the Unit Secretary

We quickly gave the unit secretary the nickname "Quarterback of the ER" because of the role the position is designed to fill. The unit secretary is the information and social hub of the entire emergency department. Almost all of the information that comes in and out of the ER passes through the unit secretary. The US must have incredible organizational, communication, and people skills to get the job done on time and in a satisfactory manner. There are constantly doctors, nurses, residents, and other ER staff at the Charge Desk where the US is stationed. Since everyone congregates around the US for information and informal discussion, social interactions are a very large part of the unit secretary's daily life. This ability to be social, although not formally recognized, is very much a required skill. The constant bombardment of requests also keeps the unit secretaries on their toes all day. There is hardly a minute when the US is not on the phone while multitasking and managing other requests.

The unit secretary has certain functions that are vital to the ER. As the information hub for the department, all—and we mean all—calls are routed through the unit secretary. For instance, they would often joke about how every night one of them would be the "lucky one." Being lucky referred to the one on duty who took the nightly call from an insomniac, psyche patient. More generally, the phones are constantly ringing with requests and inquiries from all over the hospital and surrounding community. In addition to incoming calls, outgoing calls are routed through the US as well. For example, if the attending physician needs to get hold of a specialist, he has the US page that person. When the specialist returns the phone call to the ER, the unit secretary transfers the specialist through to the attending physician. For this purpose, the doctors clip specially designed (local) cell phones to their hip wherever they go. The phones are "ER friendly" and are designed so they do not interfere with patients' pacemakers and other sensitive medical equipment. Very rarely will an attending physician or a nurse in the ER take a

phone call directly without first having it go through the US. If a doctor or a nurse in the ER wants to make an outgoing phone call they almost always need to get the number from the US. Thus, this underscores the fact that the US need to be extremely resourceful and remember a list of countless numbers.

The cell phones that the doctors and nurses carry around are a huge convenience for the unit secretary. According the unit secretaries, three years ago the hospital did not have these local cell phones. When a doctor or a nurse needed to take a call they would have to come around to the back of the Charge Desk. Needless to say, things would get really crowded, and the unit secretary would have a difficult time maneuvering through the space to accomplish his or her tasks. The cell phones, however, are expensive, get lost, run out of batteries constantly, and even break occasionally. Nevertheless, the costs of the technologies, according to the US, outweigh their benefits.

In addition to operating the phones, the unit secretary is in charge of making sure lab work is ordered and processed efficiently. When lab work is ordered, a nurse takes a bio-sample and brings it to the US. The US must enter the request into the computer and check all of the labels on the bio-samples for necessary initials and information. Once the lab work has been ordered using the computer network, the US must send the sample to the appropriate place. The previously mentioned pneumatic "tube" is used to send samples directly to the lab and other areas of the hospital (at the touch of a key code). If the tube is not working or if a particular sample is hard to take or cannot be taken twice – miscarriage discharge for instance – a "transporter" (always in red scrubs) must be ordered. Theses carriers are people who take things from one place in the hospital to another.

In order to keep answering phones and inquiries while preparing the lab requests, the unit secretary must multitask at all times. More often than not, the US takes phone calls while simultaneously entering lab requests on the computer and fielding questions from nurses and doctors about a phone number or lab result. Each unit secretary handles the position and the difficulties of the fast-paced environment differently. One unit secretary, for instance, likes to vent his frustrations constantly. He is always muttering under his breath about something that is bothering him. Two others, on the flip side of the coin, are easy going and roll with the punches from task to task. The different unit secretaries also bring different strengths to the job. One seasoned US knows how to find physical locations in the hospital better then anyone else, while

another is really good at making sure everyone knows what they need to do as far as completing paper work. A third US is said to be really good at finding "lost valuables," such as watches and rings that are stored while a patient is being assisted.

A large part of the job is teamwork between the unit secretaries and other medical staff. There are usually two unit secretaries on duty at the front hall Charge Desk. If one is busy, the other will answer the phones and answers incoming questions. It is striking how the nature of their interactions and the perceived mutual awareness between the two unit secretaries echoes the described behavior of London Underground line operators in Heath and Luff's ethnography.[2] Our observations reveal that the two FH unit secretaries are always aware of the other's presence even while performing their own tasks. This takes multitasking to a higher level.

This interaction is often more direct. For instance, there is always a ten to twenty minute overlap between shifts so that the incoming unit secretaries know about all the necessary issues pending in the ER. Using a technical or sports metaphor, this period is when two interfaces transfer "memory" or hand the ball off to the other. The unit secretaries have some autonomy in implementing small innovations to help with their day-to-day tasks. One of the most time consuming tasks is looking up phone numbers. There are large binders filled with phone numbers that the US reference when someone needs to make a call. Since looking through the binder is a very inefficient way to find numbers that are used frequently, one unit secretary compiles a daily list of the on-call doctors with their page numbers, representing an example of a "homegrown" solution within the ER. He posts the sheet behind the Charge Desk for easy reference. Let's now take a closer look at some of these aforementioned work processes in closer depth.

Part V. Ordering Process and the Use of Computer Systems

One of the unit secretary's main duties is to process lab orders for the doctors or residents. While the ordering process itself is fairly systematic, the waiting time for the lab to send the results varies from case to case; typically, they arrive in 3-15 minutes, though we witnessed waiting times as long as three hours. In general, when a patient requires lab work, the doctor or resident checks off any of the boxes on the patient's "Order Chart," which correspond

[2] Heath and Luff, "Convergent Activities: Line Control and Passenger on the London Underground"

to the particular order needed. For example, the doctor can choose from a urine sample, blood sample, CT, X-ray, etc.—and, in the case of the latter two, the doctor must also indicate which parts of the body requires lab examination. Once this "Order Chart" is filled out appropriately, the nurse or doctor attaches any corresponding bodily fluids to it—usually taken by the nurse—and the order is then placed in a metal rack (i.e. order-pending rack) on the Charge Desk. Occasionally, newer residents unknowingly place the sample on top of the patient's room rack instead, but some unit secretaries reprimand the residents or medical students when they do this and warn them that this mistake may result in failure to see and process the order. Medical students learn extremely quickly not to disturb unit secretary's "kitchen."

Because the unit secretaries are rather omniscient about the constant activities occurring in the ER, the orders are usually attended to immediately. If the order is of high importance, sometimes the RN or resident will alert the unit secretary to the presence of the lab order in the rack. At this point, the unit secretary takes the order form to one of the computers on the Charge Desk and enters the order in "Last Word"—the computer program the ER uses to virtually connect with the hospital's laboratory. Please see diagram #3. From our observations, in less than 45 seconds, the unit secretary finds and double-clicks on the patient name, clicks on the type of work to be done (i.e. "CT"), and finally specifies the area of the body to be examined (i.e. "CT—lower neck"). Even though this information is transferred to the laboratory instantaneously, the unit secretary always calls the technician at the lab to alert him to the incoming order. This highlights that a technology's originally designed feature of streamlining the ordering process may not always be implemented. At the same time, the unit secretaries seem to have established very "social" relationships with the individuals at the other end of the phones. Because these technicians are constantly bombarded with orders, the unit secretary must often call the lab several times to expedite the order, suggesting that verbal communication is valued higher than written communication in the hospital setting. In addition to communicating with the lab through phone and pager, the unit secretary must also attach a new sheet with both the patient's personal information and identification number to the lab order form print-out in order to keep the patient file up-to-date. An initial in red pen is then made on this new sheet next to the order information to indicate its been placed. As we will later discuss, auditory as well as visual symbols in the form of color codes are used extensively through this work environment.

Along with the completion of the Last Word program, the unit secretary must also ensure that the proper patient samples get to the lab safely. Upon entering the order on the computer, a special sticker printer located on the Charge Desk will print out several stickers with the patient's barcode and personal information, which is to be placed on the patient's lab sample. One unit secretary commented that technically he is supposed to use gloves to attach the sticker to the sample, but rather he uses the biohazard bag that the sample comes in as a glove "because it's faster." This is another observed example of a "homegrown" solution used within the ER. Before being resealed in the biohazard bag and sent to the lab via the pneumatic tube, the unit secretary must check that the specimen has been initialed by the appropriate people—that is, the nurse who gathered the sample must date and initial all of the labels on the specimen. The importance of time-stamping events and taking responsibility for actions by using initials are widespread in the ER. The unit secretary is always looking across the Charge Desk at the clock when completing orders and other paperwork; however, it is important to note that all time is clocked in military time to ensure precision and accuracy.

Once the sample and its corresponding order have been sent to the lab, the unit secretary is essentially done with his/her duties unless a problem occurs. Occasionally, a nurse mismatches the sample with the patient or the patient with the barcode. Also, sometimes a doctor will add-on to an order and forget to bring the clipboard to the Charge Desk for the unit secretary to process, resulting in delays. The "tube" often experiences technical difficulties as well, in which case the transporter must be called, taking upwards of fifteen minutes to transfer the necessary items to the lab, as previously discussed.

The lab results are printed directly to the printer on the Charge Desk via a networked printing connection. As the results come in, the unit secretary takes the report and places it in a metal paper holder on the side of the Charge Desk, such that the doctors and residents know a lab order has arrived. The unit secretaries sometimes tell the doctors of the result's arrival as well. However, other times the doctors have grown so incredibly impatient waiting for the results that they will use the Last Word computers to check for the report. Because the order has been completed, the unit secretary can now cross off the initial mark made on the new patient sheet, and initial and date the form again, indicating the order's completion. This marking system is essential to document the progress of a patient's lab work because, in the event that any unit secretary takes a break or a shift switch occurs, the subsequent unit secretary will understand

what needs to be done and who to contact in case of a problem. As one US comments, "this is a universal system that keeps everyone on the same page."

Computer Systems

Technology is a rather ubiquitous part of the ER, helping the unit secretaries to facilitate lab orders, look up patient information, as well as enabling the registration and discharging processes. Thus, a description of the ER is not complete without a deeper look into how the computer adds to the "ordered chaos." Essentially, there are four different computer programs used throughout the ER. Starting in the waiting room, when a patient first enters the ER, the clerks at the registration desk gather very minimal information about the patient, which they input in a database called SMC. This information is limited to the patient's name and initial symptoms, and in return, the patient receives an identification number—essential to the lab ordering process described in the previous section—as well as a green identification card (resembling a credit card) with an imprint of the patient's name and ID number. This SMS program speaks with Last Word very minimally, but interacts in such a way that Last Word uploads the patient name and number into its system.

When the patient is finally brought inside the ER, a separate registration clerk has the sole job of gathering more detailed information about the patients. Every piece of information relevant to the patient's visit—including social security number, address, insurance information, past health history, current diagnosis, the nature of the medical care given in the visit, a list of the lab orders taken, a list of the medication prescribed, and the names of the attending physicians, residents, and nurses—is gathered, and the registration clerk comments that "this typically amount to 7 pages of information." It takes her at least 10 minutes to input all of the data into one of the two "floating registration computers" that resides along the cluttered hallways of the ER. She transcribes the data from various sources—patient charts, order charts, as well as yellow padded paper (i.e. notes from the attending doctor or resident). This follow-up registration process is necessary so that the ER receives payment from the insurance company and, in some cases, the patient.

A third computer system is LogiCare, installed on a special computer located in "the bubble." This system serves two functions, each of which is carried out by two different staff members. The nurses carry the responsibility of purging all discharged patients from system.

This process begins by typing in the patient's name in the "patient name" query box, which usually brings up the name after a few letters—that is, the computers utilize the auto-text functionality. Once the name registers, a page appears with the patient's status (admitted, transferred, discharged), their attending physician, their attending specialist, diagnosis, as well as the patient's spoken language. The nurse's duty is simply to change the admitted to discharged, and this automatically purges the patient from the system. The other function of LogiCare is, as one BH US explains, "to enter information about patients," which falls under the responsibility of the unit secretary. They must continually ensure that this database is updated and accurate. Unlike the data that the registration clerks gather which is primarily meant for the patient and for billing, LogiCare is meant to "keep records for the doctors, nurses, and unit secretaries." Thus, the system serves as a means to technologically express what the doctors have mentally ingrained in their head—that is, the patient's diagnosis, the attending nurse, and what medications have been prescribed. Again, this emphasizes the theme that technology is of secondary importance within the ER; in effect, it is the "backup" memory, while the US is the primary memory.

Finally, the program used on the computer located at the Charge Desk is Last Word, the system used to process lab orders. Although, according one resource nurse, "Last Word was a last minute program to resolve year 2000 bugs," the system performs its function in a rather efficient manner. By using the day's list of patients as its homepage, a unit secretary can process a lab order, research the patient's previous ER visits, read the patient's lab results, or determine in which room the patient is being treated simply by one or two clicks of the mouse. It is the simple and user-friendly interface of Last Word that enables the unit secretary—presumably a clerk without formal training in computer skills—to learn quickly how to process orders and access information. Thus, the form serves well for its users. As such, Last Word gained popularity within the ER: "At first, no one liked the system…we were all against it…but now we have gotten used to and it works fine."

Nonetheless, some of the ER staff would prefer a computerized tracking system such that every computer within the ER conforms to one computer program that consolidates all relevant patient information in one place. In this way, a few clicks of the mouse would allow anyone in the ER to know in which room a patient is being treated, what kinds of orders have been placed, and in what stage of examination is the patient. It is "essentially what's completed and what's

not," a one nurse says. Even if this streamlined technology were integrated into the ER, our observations suggest that the universal access and database knowledge that technology affords may have a difficult time replacing the importance that the doctors and nurses place on the unit secretaries for always having this information on the top of their heads. Indeed, tacit knowledge is of the highest values within the ER. Now that we have examined the role of these technology systems in the process of ordering, it is important to articulate further on information flows and organizational methodologies present within the emergency department. In short, we will look at the course of a patient's file from entry to discharge.

Part VI. Information Flow and Organization Methodology

Waiting Room

The patient's paper trail begins when he enters the waiting room through a security gate. He either writes his name on a waiting list sheet, or is seen immediately by the triage nurse, depending on the severity of his symptoms. The triage nurse begins by filling out the preliminary information and vitals on the patient's information sheet (described above) and makes a subjective decision on which bed and hallway the patient will occupy. This bed assignment (#1-#20) is handwritten on the top right of the preliminary information sheet (carbon copies). Next this information sheet follows the patient to the Patient Registration desk in the same waiting room, where a staff member enters the information into a computer database. In some instances, there is information about the patient on file such as if he or she has been to the hospital before. If there is no record, all the new information is entered, along with the attending physician on duty who will see the patient later. Once this is complete, they print out an ID wristband for the patient, two green patient ID cards which resemble credit cards (with the patient's name, ID number and physician's name imprinted), and a set of sticker labels with the same information used for orders, lab samples and other paperwork. Patient registration attaches to the original information sheet (often called the "face sheet") a doctor's notes sheet, a nurse's notes sheet, an order form sheet and a cardboard backboard, paper clipped together with the two patient ID cards and the sticker labels. This set of paper files is placed in a black wall-mounted plastic rack located just inside the ER by the waiting room door. The folder rack is organized by

room number: BH room slots are all along the left side; in descending order on the right are slots for room 1, the overflow room (OBS), two slots for room 7, and room 8.

Inside the ER

Initially the patient's file is placed in the next available slot below the ones that are already occupied. Since patient files are supposed to be organized in descending order of importance in this rack, so that more urgent care patients are seen first, occasionally the resource nurse, RN or LVN will come by to see who is in the waiting room and "restack the deck" accordingly. Just before a room-specific nurse brings a patient back to the assigned room, she updates the patient information whiteboard. She erases the former patient's information with her hand or terry cloth, and scribbles the new patient's information: name (covered by a black plastic board for privacy), room number, time of day, age and chief complaint. After the nurse calls the patient back to the room, she conducts and records the secondary assessment (survey on other relevant symptoms, such as temperature, physical looks, and type and feel of skin – hot, cold, clammy, etc.) on the original face sheet, and splits the patient's files using an elaborate organizational system heavily reliant on color symbols.

The nurse puts the green cards in a special clip holder, and attaches the doctor's notes, nurse's notes and the accompanying cardboard backboard to a corresponding room number clipboard, and places these files in a vertical rack for a resident to take next (in order). The order form sheet is attached to a separate clipboard, and placed, along with the face sheet, in the room-specific rack. Clipboards vary in color according to the forms attached to them – for the doctor and nurse's notes, BH clipboards are blue metal, FH are silver metal, and trauma are red. However, each clipboard has a room number on the top, so they cannot be easily interchanged or confused. The brown wooden clipboards are reserved for all order forms.

There are room-specific racks for the back hall at the BH Charge Desk, and for rooms 7, 8, critical care and trauma at the FH Charge Desk. During the night shift (0200-1100) when there is limited BH staff on duty, there are BH room-specific racks behind the FH Charge Desk that are used. Otherwise, the BH and FH operate as separate entities – each has its own room-specific racks, (patient-pending) doctor's vertical rack and unit secretary's vertical rack. It cannot be overstated enough that this organizational system appears at first glance like it has not rhyme or reason. However, upon further observation, the file coordination system has evolved to

resemble a very much-established "ordered-chaos," where all team members know the exact meaning of the different colored clipboards, file racks and order.

When the resident takes the patient's file from the (patient pending) vertical rack, he skims over the information, adds his name under the H.O. designation on the whiteboard, sees the patient, and marks up the doctor's notes sheet in blue or black pen. When the resident finishes, these files are placed in the room-specific rack along with the original face sheet and order form, to designate the patient has been seen. If any orders are requested (lab work or scans) the nurse will mark up the order sheet accordingly (also in blue or black pen), and collect the appropriate samples, as described above.

Discharge

Before discharging a patient, the RN assigned to the room must process the patient through the LogiCare system (described above), and collect the necessary insurance information. There are a number of portable insurance machines located in the front, back and side (near room #9) hallways of the ER, where name, address, and insurance information of the patient is collected. This process always concludes the visit, because the ER does not discriminate among patients based on insurance qualifications, to ensure that each patient gets equal access to emergency care. When this stage is complete, *all* the patient's paperwork is clipped together, and the assigned resident or nurse will pass the files onto the unit secretary for discharge. Upon handoff, the nurse may often be overheard saying, "Drop this in the hole for me." The "hole" is the temporary storage place behind the Charge Desk where the patient files remain until the resource nurse and unit secretary have time to finish their part of the discharge process.

Both the US and the resource nurse must verify and double check the patient's files before discharge, but there is no specified order to this process – another good example of an ordered-chaos system in the ER. For instance, there are designated boxes behind the Charge Desk for tracking the stages of the discharge process. Theoretically, the papers will move from the yellow resource nurse box to the red attending physician box to the blue US box, and before transfer to the next stage, the relevant papers will be checked and signed by the specified staff member. In reality, the unit secretary and resource nurse track down the doctors and nurses for signatures, and complete their respective responsibilities whenever they have some free time, in no particular order. The US is primarily responsible for making sure all the papers are present

(none are missing), and the resource nurse is responsible for making sure all the nurses and doctors have signed appropriately. The US will typically – but not always – perform these "checks" during slower periods of activity. Together the US and resource nurse assure the papers are compete, signed, stamped and ready for discharge, at which point the stack is placed in a cardboard box beneath the Charge Desk for pick up by medical records, and the green cards are deposited in a plastic box near the computer for up to 24 hours, in case another imprint is necessary.

Admissions

If the case merits overnight stay (i.e. pneumonia), the patient is admitted to the main hospital. The resource nurse is initially responsible for making this decision, and fills out a yellow admission sheet which the US faxes over to the main hospital. Interestingly, the US must also call the hospital to notify them of the incoming fax, otherwise the hospital might overlook the request. The "bat phone" – a direct line to bedding at the main hospital – is reserved for this purpose, though sometimes the US will use a regular phone and enter the main hospital's internal number code. Before the patient is sent over, the unit secretary must process the patient through LogiCare, prepare the paperwork and call a transporter for the physical transfer "to the floor." Similar to the discharge process described above, the US and resource nurse must ensure all appropriate forms are present, signed, stamped, etc., and then all the forms must be photocopied. The previous green patient "credit cards" are changed to a silver-platinum color for all admitted patients. The photocopied forms are placed in a large white envelope (to designate a transfer file), and placed in the vertical US rack for the transporter. The original paperwork is then put in the discharge box below the Charge Desk, for collection my medical records.

Medical Records

A member from the medical records staff visits two times a day, at 6am and 6pm (during a personnel shift), to collect the discharged paper files (from regularly discharged and admitted patients) and to return files from the previous collection to the ER. When the files are initially collected, medical records copies and transfers them to a permanent hospital database. The original forms (the yellow and pink sheets from the carbon copies) are returned to the ER after this process is complete, and compose the aptly named "Oh Shit file." This resides on a shelf in a storage hall for up to one month, at which point they are shredded and destroyed. If a patient's

file needs to be referenced (i.e. because a patient was requesting a lab result), the most recent files are available directly to the ER staff for quick and easy access. Any older patient files are in permanent storage in medical records, and may be accessed at any time simply with the patient's medical record number. However, this "Oh Shit file" may not serve much of a practical purpose. The papers are haphazardly forced into tiny boxes or accordion folders supposedly in alphabetical order, but in actuality, with *no* methodological organization whatsoever. In addition, many unit secretaries have never heard of this file before, and those who have do not know where it is located. One US knew where and what this file was, but noticed that it only went back two weeks. The theoretical order of this system is again replaced by chaos – the disorganization and lack of knowledge about the files renders this system relatively useless, or at least overwhelming to handle.

Part VII. Trauma: The Importance of Protocol

By its very nature, the emergency department is an extremely unpredictable place to work. At one moment, two medical students and a third-year resident are joking about their girlfriends and weekend plans, and at the next they are clamping down on the femoral artery of a major trauma patient slipping in and out of consciousness. One never knows what will be coming through the ambulance bay doors. What is clear is that every team member from the unit clerks to the head attending physician immediately follow a different set of protocols ("scripts") at the first indication of an incoming trauma patient. Language, organizational methodologies, and the nature of interactions between coworkers dramatically change during major trauma events. Administrative support as well as medical staff know what they have to do *a priori* and understand what is expected of them by their fellow teammates. For many individuals within the ER, it is this very moment of uncertainty and excitement that makes them love what they do. There are three individual yet often interrelated "trauma events" that deserve a more detailed examination. These include: (1) a typical ambulance call, (2) a major trauma event such as a code 99, and (3) a Code Red situation when the ER closes to all incoming traffic except trauma.

Ambulance Call

The use of symbols – whether they are visual abbreviations on the patient whiteboard or an elaborate color-based organizational system for patient files – is extremely prevalent

throughout the emergency department, especially at the front hall Charge Station. These symbols, however, are not always visual in nature. The ER relies heavily on auditory symbols as a means to alerting different individuals into taking a number of (prepared) actions. This is the case with the typical ambulance call. At any random moment in the charge area, an observer will hear the incessant clamor of sticky keyboards, the churn of the communal printer, a sudden release of compressed air from the pneumatic tube, the electronic hum from the card imprint machine, and the constant ringing of various different types of phones. To signal the nurses that an ambulance is en route to the ER, there is a loud, high-pitched beeping sound emitted from the ambulance call terminal behind the Charge Station.

At the moment this tone is heard, any nurse who has received the appropriate training can answer the ambulance phone. Typically the resource nurse at the Charge Desk will answer the call, but if she is not around, another RN who hears it will answer the call. The phone is always answered, "This is [University]…Go Ahead." Some nurses use the speakerphone while others are comfortable resting the headset between their ear and shoulder. From our observations the average response time from the first beep to this prompt takes approximately 16 seconds. After this response, the EMT gives the nurse any and all patient history they may have that might help the ER prepare for the incoming patient. Notes concerning the patient are taken on a form called the "Paramedic Report" that is kept by the phone reserved for such calls. (See sample Paramedic Report in appendix) The nurse who answers the phone takes notes while paying little attention to the form she is writing on. It has become a routine that seems effortless as brushing one's teeth. She scribbles abbreviated notes to the left of the designated slots without seeming to care where the information is written on the page. Some nurses, however, attempt to fill-in the appropriate spaces instead of just marking on the left-hand column. Moreover, this process of recording the symptoms of a patient requires a surprisingly sparse amount of dialogue on the ER's end. There seems to be a mutually understood standard protocol known by both the answering nurse and the EMT. At the end of the call, the nurse reconfirms the ETA (expected time of arrival) and says "[University] Copy." She hangs up the phone, gathers her scratch notes on the Paramedic Report, and initiates another string of internal protocols to prepare for the patient's arrival. The average call-time lasted about 90 seconds, but varies on a case-by-case basis.

Major Trauma Event

If the call involves a trauma patient, rather than a critical care transport, the nurse alerts the attending physician. If he or she is not in the immediate area, the nurse just makes sure whoever is around knows a patient is on the way. In some cases, she may just tell the other nurses rather than look for the attending physicians. These protocols vary depending on the severity of the trauma, as we will discuss in detail below. The unit secretary, always aware of his surroundings, follows a series of actions to prepare the ER for the incoming patient. For example, here is one illustrative observation:

> I over hear that a "Major Trauma" is on the way. The nurse finishes taking the call and calmly stands up. She tells Dave "it's a nine." Dave walks over to the phone on his desk and makes a phone call. He then goes into the Trauma room and tapes a bunch of papers to the end of the bed. He then enters some stuff in the computer on his desk. In two minutes time a full trauma team is assembled in the trauma room. Dave announces over the loud speaker, "Trauma coming. Car accident. ETA 9 min." Everyone is very calm and composed. I can tell by the mood that receiving a trauma is not something new to the people in the ER.

During major trauma events, all work processes in the ER accelerate in pace. The unit secretary or the resource nurse notifies everyone in the ER by announcing the ETA over the department's loudspeaker. This specific task is achieved by pressing *47 on one of two wall mounted intercom/paging units located behind the FH Charge Desks. The nurse or unit secretary will proceed to say: "All available nurses to trauma room. ETA 3 minutes." There will be a short delay and this statement will reverberate through the loudspeaker. At this same time, the unit clerks are in charge of contacting the specialists from other departments of the hospital. The doctors will ask who "is the Orthopod du Jour?" The unit secretary will look this up and call him. In a matter of two minutes, various plain clothed doctors rush into the ER through the ambulance bay doors and get prepared for the incoming patient.

In more severe trauma cases, the US will perform this task by contacting the hospital dispatch service. He tells them the trauma number (rating) which is either a code 95, code 97, or a code 99: the higher the number, the worse the patient. As an aside note, individuals in the ER will often abbreviate a code 99 by just calling it a "9." The prevalence of this constant abbreviation is one of many manifestations of the fast-paced culture within the ER, as we will discuss below. A typical call between the US and the dispatch operator will go as follows: "Trauma is coming, car accident, ETA 12 minutes, a nine." The dispatch immediately pages everyone that needs to be assembled on the team to care for the patient. The chief trauma

resident is called to care for the patient, a radiologist is called to take X-rays, and a social worker is called to notify the family of the status of the patient. In addition to these people, several ER nurses get ready as well. Within two minutes of taking the ambulance call the team is ready in scrubs and full-body lead vests in the trauma room. They wear the lead vests so the x-rays can be taken without leaving the room. The attending physician tucks his tie into his shirt but does not put on scrubs. His role is more of a supervisory one. The trauma resident does the dirty work.

Now, when the patient enters from trauma, he is essentially being passed on from the paramedics. The paramedic's job is to take down all information and history from the patient at the scene (the job of the Triage and patient registration at the ER) and transfer this information using two methods when they arrive at the hospital. First, the paramedics add a paper form (with the patient info) to the patient-specific silver clipboard. Second, before leaving, they use a modified-laptop to "beam" the same information directly to the ER's printer. In most cities, the paramedics are required to fill out only a yellow paper form detailing everything they did to the patient, the vitals, symptoms, etc. However, in the town around University Hospital, paramedics have a system whereby they document everything on a laptop. This data, as mentioned above, is "beamed" directly to the ER's printer, where the unit clerk picks it up and files it away accordingly. As a result, all the information is in the appropriate slots of the paper version, only typed. However, yellow-carbon sheets were also used in some cases by paramedics and firemen. During this hand-off of the patient, there is an ordered chaos process of sharing information. The EMT's tell the doctors and residents in the trauma room about the patient's vital signs. By this time, the unit secretary's work with the trauma is nearly complete. Surprisingly, for the most part it is finished before the patient even arrives.

The paper work is expedited exponentially with trauma cases. There are pre-arranged sealed packets ready to go anytime if a trauma comes into the ER. For example, in the case of a code 97 trauma, there is a prepared packet officially labeled, "Trauma Packet 97." Each differs depending on the degree of trauma. Theses packets contain a patient green card, and all of the paper work necessary to get the patient through the system, as previously discussed in the information flow section. The patient needs an ID number to have lab work ordered/processed, to be transferred or admitted, and really just to have any care given. This number is usually assigned upon registration. Since traumas come into the ER via ambulance not via Triage, they

are pre-registered by the US. The patient card has a fake name, Twenty-Two Alpha, for example. The unit secretary tapes the patient's paperwork that the doctors and nurses will later need to fill out to the bed. This is taped to the bed in the case that the ER receives many trauma patients simultaneously and prevents them from becoming lost or confused. Since they are using fake names for the patients, lost or missing paper work could potentially cause serious harm to the quality of care received by the patient.

This information is used for a variety of different tasks. For example in one observed trauma case, the unit secretary used the patient number and fake name to order x-ray readings. This order was made before the patient arrived. The unit clerk also entered an "open" CT request that leaves the order unfinished until the doctor can give more specific instructions. It was not clear whether the patient would need only a head scan or one for both the head and neck. Once the patient arrived and had been assessed, the doctor told the US to order a head and neck CT scan. This line of communication is not always so linear and direct. In this case, the unit secretary yelled across the Charge Desk into the trauma room to ask what kind of scan the doctor needs for the trauma. The doctor replies to the nurse who in turn yells back to the unit secretary with the order. Immediately, he relays the response of the phone to the CT people and then enters the order in the computer using Last Word. Note that even though the US had not finished entering the CT order, he had already called the CT people to let them know what was coming. Consequently, the CT people made sure to have a scanner ready by the time the patient was ready. This last example is used to further illustrate the importance of teamwork, and especially how the unit "secretary" interacts with the chief attending physician. Moreover, protocol and standard procedures are vital procedures that make unpredictable events more predictable and more manageable.

Code Red

The third trauma event, a Code Red, occurs when the emergency department must close its doors to ambulance traffic. This, however, does not mean they are closed to traumas delivered by ambulance. One unit secretary stated that "we're always open to trauma." It is often the case that ambulances serve as transport vehicles for critical care patients such as the elderly rather than just trauma patients. The difference between the latter two types is in the stability of their condition. A Code Red situation results simply when the ER runs out of beds

for patients. This happens rarely and unpredictably. However, if the day is extremely busy there is always "chatter" among the unit secretary's on whether the department is going to close. The likelihood of this depends on the inflow of patients as well as how effectively the resource nurse can move people in and out of beds, as discussed earlier. Regardless, the ER does not want to close its doors. It may close twice a week, twice a month, or only once every six months. This particular trauma event is interesting and similar to a code 99 (major trauma) in that every team member automatically follows a standard set of observable protocols.

A Code Red typically unfolds in the following manner. The resource nurse at the FH Charge Station hollers: "We're closing! Go Red." The trigger was the arrival of a 26-year old male with a heart failure. The trauma room is so full that the unit secretary must find space in the hallway for a new gurney. Similar to the previous code 99 example, he tapes "63 Papa" (or any fictitious name) to the bed until the patient's real name is identified. The unit secretary or resource nurse removes a laminated piece of red cardboard out of the three-ring closure log binder. This sign reads: "CLOSED TO AMBULANCES." It is taped with white-masking tape to the center of the patient information whiteboard. A minute after the announcement, the US makes about five calls to local authorities listed in the "closure log" to divert ambulance traffic to other hospitals. During each call, he must record the time and the name of the person he spoke with over the phone. The US must also initial each line to verify that he did in fact make the important call. This information is recorded in the black closure log located on the front Charge Desk. He must repeat the same actions when the ER reopens to non-trauma traffic.

Furthermore, during a Code Red event the computer screen next to the ambulance call-in terminal changes to show University Hospital is closed. As discussed, many different types of symbols (auditory and visual) play important roles in the functioning of the ER. In this case, all closed hospitals have their names abbreviated and enclosed within red boxes. All open hospitals, on the other hand, remain green. Presumably, this same screen is present in other local hospitals and EMT stations. At the same time in a matter of two minutes, the US and the resource nurse help to manage the beds. They gather with a few residents around the patient information whiteboard and go down the list, one at a time, to understand how each patient is progressing. Their purpose here, according to one attending physician, is to quickly identify and clear out those patients who for discharge or admission, because they simply need more beds. The resource nurse frustratingly exclaims: "Gotta get people out of here."

Part VIII. Culture

There are a number of reoccurring themes that define the culture of the ER. This particular work environment values both speed and accuracy and operates under a distinctly informal hierarchy. The culture manifests itself in many different ways. Let's take a closer look.

Fast-Paced Culture: The Prevalence of Abbreviation

It is evident that the nature of the work that occurs in the ER cultivates a fast-paced, high-stress environment in which information needs to be transferred and communicated as efficiently and accurately as possible. No time can ever be wasted and no mistake is ever excusable because the consequences are severe. Since time is valuable, the ER has developed a language in the form of abbreviated language that permeates everyone's vocabulary and symbolizes the importance of speed and accuracy. For example, the ER staff does not take absences but rather "A-time." A trauma is not described on a case-by-case basis; instead they use a language of "code 95, 97, or 99" to indicate the severity of trauma. Each code suggests a set of protocols that must be enacted and the type of symptoms to be expected. Every word is precise and universally recognized.

Moreover, because of the need to treat patients as efficiently as possible, the doctors and residents have no time to write lengthy descriptions about each patient's diagnosis and progress while being treated. This task is often carried out later with the administrative and organizational support of the unit secretaries. The ER's centrally located whiteboard is filled with abbreviations that are universally understood by everyone. For example, the doctors write "SOB" for shortness of breath, ETOH (like the chemical diagram of ethanol) for an alcohol-related traffic incident, or even something as detailed as MVA vs. Pole—that is, a motor vehicle accident against a pole. This abbreviated language is also part of the verbal communication when doctors stand around the whiteboard. We witnessed many conversations along the lines of: "What happened to 5B?" "Oh, they got moved to 5C," which again exemplifies a quick, yet precise way of communicating this information. Overall, the ER is a place where neither accuracy nor time can be compromised, and thus, finding a perfect balance between the two is essential to keeping the ER a successful place that treats urgent patients with accuracy and in a timely fashion.

Social Function of the Charge Station

Although the Charge Desk has a formal designated function, it also serves many other social purposes. Individuals gather at the Charge Desk to complete their formal obligations, but they usually stay an extra couple of seconds to socially interact with one another. People tell jokes, listen to stories, and offer support when it is needed. One day, for instance, the attending doctor was unusually excited to be working at the ER. He kept standing at the Charge Desk talking to anyone. He was telling jokes, talking about sitcoms, and making light of serious situations. When the doctor started screaming, "SHOW ME THE MONEY. SHOW ME THE MONEY. SHOW MEEEEEEE THE MONEY." The ER did not so much as flinch. Everyone went on doing his or her normal tasks. The doctor then started quizzing everyone about where the expression came from until someone finally chimed in with the answer.

This is an extreme case of someone trying to lighten up the mood in the ER, but similar circumstances arise on a smaller scale very frequently. For instance, every Friday the entire ER looks forward to the "candy lady" who fills a basket on the Charge Desk with sweets. This basket accentuates the social nature of the Charge Desk. Individuals make a deliberate effort to meet their colleagues in this location to discuss issues outside of work. In another instance, we watched a cop come into the ER to take an incident report from an accident victim. The cop immediately joins in the mix and makes small talk with the people in the area. The residents and the nurses began to ask questions of their own, "So, I got this ticket and I was told… what do you think, Mr. Cop?" From these types of conversations that routinely take place between people at the Charge Desk, it is clear that everyone at the ER easily escapes their occupational role at times to be light-hearted.

In other instances, the Charge Desk provides psychological support for individuals in the ER. In one particular case, an attending physician was noticeably distraught that his wife was suffering from medical problems. The US on duty started consoling him and listened intently as the doctor told him how he and his wife had to cancel a trip they had planned to the Galapagos Islands. Rather than prying for information, the US offered a shoulder for the doctor to lean on. As a tear swelled in the doctor's eye, the US recognized that this was not an easy situation for the doctor. The doctor seemed relieved after talking about his problems. Thus, the Charge Desk and the unit secretary offered a friend and an open ear to the doctor.

In a world of chaos, small social gestures such as a bowl of candy or a doctor screaming Jerry McGuire quotes became important to the overall morale of the ER environment. Even though the people milling around the Charge Desk seem to have little order, there is certainty in knowing that there will always be someone to talk. Everyone working in the ER has a home in the Charge Desk where they find social escape from the trauma they see coming in and out of the ER.

The Coexistence of Formal and Informal Hierarchies

As we have previously discussed, the smooth functioning of the ER relies on the fact that everyone knows their specific roles during different situations. There is an established set of protocols and a formal hierarchy. However, there are a number of informal protocols and hierarchical relationships between individuals in the ER that have seemed to evolve within this social and technical system. On the one hand, on a formal level, the attending physician is the head of the ER—above the residents, the resource nurses, the unit secretary, and others. On the other hand, on the informal level, this formal chain of command flattens where roles and power relationships reverse. From our observations, the unit secretary, although the least paid and lowest rank, plays a vital role. Other higher-ranking members of this work environment recognize the importance of the unit secretary as the foundation of the ER.

There is a universal respect that the doctors have for the unit secretaries because they know how essential the US is in facilitating the smooth functioning of the ER. Because of this underlying respect, it appears that most of the unit secretaries take pride in their job. One US states that "I know my role, I know what's expected of me, and I take pride in my job." It is this esteem that the unit secretaries attach to their role that allows them to perform nearly any task without feeling used. For example, one day an attending physician asked one US for some orange or apple juice. The US promptly and courteously replied, "I'll get you some." The doctor says, "Thanks, buddy!" in a casual and appreciative manner. This particular interaction underscores both the informal hierarchy and that the atmosphere within the ER is friendly, cooperative, and non-confrontational.

Part IX. Closing Thoughts

Thus, upon initial observation, the Emergency Department at University Hospital is a work environment marked by complete disorder, a lack of social interactions, and a strict adherence to formal hierarchy and standard protocols. However, a deeper look reveals a different picture. The ER is a structured work environment where "ordered chaos" defines the information flow, organizational methodology, work culture and task interactions between individuals. The unit secretary emerges as far more than just a "secretary." He is the quarterback who ensures the smooth operation of the ER. It is his position that alters the formal hierarchy and social stratification within this setting. Just as the unit secretary is more than he appears, so is the environment in which he works.