1-1-2009

Patient Safety As An Interactional Achievement: Conversational Analysis In The Trauma Center Of An Inner City Hospital

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PATIENT SAFETY AS AN INTERACTIONAL ACHIEVEMENT: CONVERSATIONAL ANALYSIS IN THE TRAUMA CENTER OF AN INNER CITY HOSPITAL

by

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DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2010

MAJOR: ANTHROPOLOGY

Approved by:

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Advisor Date

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ACKNOWLEDGEMENTS

I am pleased to thank Allen Batteau, Ph.D., for the opportunities to explore and discover the place of conversational analysis in management and organizational studies. The gift of academic guidance and the hours spent discussing ideas and directions I might take have been greatly appreciated. From the beginning of our academic relationship, Dr.Batteau invited me in to the world of anthropological discovery in the fields of aviation safety, how it emerged and became formalized in to current constructs, and how the underlying cultural processes shaped and continue to contour this formation. Additionally, his support of my own interests in the cultural construction of patient safety not only shaped my research agenda, but provided me with the necessary critique and review of my emerging collection and analysis of data. Dr.Batteau has been instrumental in shaping my conclusions in the many hours of inquiry and intellectual exploration and challenge of ideas as I made sense of hours of recorded conversation in the emergency room.

This is an opportunity to express my deep appreciation of Dr. Frances Trix and her ability to convey her knowledge and experience in understanding the cooperative efforts individuals make to initiate and maintain human interaction. I would like to thank Dr.Trix for encouraging and supporting my efforts in investigating the communicative successes within emergency medicine, and furthermore, for her appreciation of the degree of professionalism and personal commitment of the individual participants in their day to day work life. Additionally, I recognize the dedication of Dr.Trix in her careful reading and editing of my final dissertation.

This is also an opportunity to extend my thanks to Dr.Sherry Briller for her thoughtful input and framing of clarifying questions when reviewing my work. Dr. Briller provided me an extra ‘medical anthropology’ lens through which I could review my dissertation and conclusions.

I would also like to express my deep appreciation for Dr. Suzanne White and her careful review of my dissertation in light of her experience and knowledge of emergency medicine. Dr. White has been available and has been flexible in providing timely support.

The academic support provided by Dr. Batteau, Dr. Trix, Dr. Briller and Dr. White has been vital to my research endeavors. The additional gift of personal commitment and valuable time devoted to my endeavors to complete this dissertation will not be forgotten. I hope that as I continue to develop as a researcher, they will continue to be available to me.

This is also a great opportunity for me to give thanks to the many personal friends and family who have accompanied me through this journey. Dr.Carolyn Psenka has been a great friend and intellectual cohort beginning in our early experiences in the field of anthropology and fieldwork. We have had many great discussions, shared frustrations, and finally success in pursuing and finishing our research for dissertation. Along the way, Dr. Thomas Killion has also become a good friend and critic, presenting questions I found necessary to answer before moving forward with my work.

I would also like to thank the participants, and co-workers who provided me the opportunity to audio-record the communications of their interactions as they work in emergency medicine. I have always respected their dedication and their knowledge and finally, I recognized the leap of faith they took in giving me this unedited perspective of their daily lives in the 'ER'.

And last, but not least, I give great thanks to my family and friends who have remained, as always, as genuine and caring as they have ever been. Ms. Rebecca Cook is always an inspiration and a creative force in my life. We have journeyed through many career choices and personal discoveries never ceasing to be amazed at the opportunities around us. In keeping with my great appreciation of Rebecca and many other friends, I have truly enjoyed building new friends along the way; Amy Goldmacher, Ann Katz, and many others who share my love of anthropology.

My family has always been a great constant in my life and I cannot imagine how difficult this anthropological endeavor would have been without their love and support. From the financial backing of one, Katherine Crossley, along with the deep friendship and appreciation of not only Katherine, but Teri Forman, Sonia Fields, Michael and Peter Karadjoff, I move through the next chapter of my career with them. All of my siblings are successful in their own careers, all have great intelligence and humor, but it is in the shared histories and ongoing life experiences that I continue to appreciate them in my life.

Lastly, I take this opportunity to dedicate this work to my parents, Margaret and Cyril Karadjoff, who gave me an inquiring mind and never ending interest in finding out what lies below the surface and how this inquiry leads to better understanding of self and others. I only wish they could be present at this moment, as I finish this most recent chapter in my life.

This material is based upon work supported by the National Science Foundation under Grant No. 0519440. Any opinions, findings and conclusions or recommendations expressed In this material are those of the author and do not necessarily reflect the views of the National Science Foundation (NSF).

PROLOGUE

It is June, 1981, on a warm summer night in an inner city emergency room. As a newly hired psychiatric social worker, I am thrown off balance by the sights, sounds and smells of activity in the ER (emergency room) as the staff attend to a myriad of human suffering.

An elderly man with chest pain comes to the emergency room via EMS (Emergency Medical Service), and is accompanied by his wife of 50 years. While physicians attempt to discover the source of his pain, he goes into cardiac arrest. The patient advocate takes the wife into a designated family room to prepare her for the possible death of her husband. The patient advocate comforts her while moving her toward the real possibility of the death of her husband. He paves the way for the doctor to come and speak to her, pronouncing the death of her husband. The patient advocate helps her organize in her grief, so that she can contact family to be with her.

At the same time, and due to a raging drug war, the emergency room receives two young men, shot multiple times. One of the young men dies in the trauma room. His friend, not seriously injured by the gunshot, is approached by the social worker to ease him into the process of grief. As she comforts him, his pager goes off and he tells her he has to use the phone. He is also demanding that the emergency room release the large amount of money found in his deceased friend's pocket. It becomes obvious that the call is about the traffic of drugs. His tears dry as he conducts business.

A young suburban girl drives her car into the dock of the ambulance entrance, with her windshield shattered. She is distraught, speaking in short, rapid sentences, conveying that she has been raped and held hostage by her assailant. Though she escapes from the house where she was held captive, her assailant chases her down the driveway, shattering her windshield with a bat. The emergency room staff finds it hard to believe that this "pretty white girl" from the suburbs, was an innocent victim, raped by an acquaintance, despite her obvious bruises and superficial cuts. In my role of social worker, I assist her, offering her support and comfort to ease her through the further trauma of a sexual assault exam, evidence gathering and questioning emergency room staff, and hostile police officers called to take her report.

Heroin overdoses arrive in brief periods of increased incidence. There are deaths, but thanks to the drug, Narcan, the opiate receptors in the brain can be stripped of the heroin, allowing breathing to resume. Within hours, the overdoses cease to arrive, as the word is now out on the street that the doses are too strong. The young man, who has been revived by the Narcan, awakes surrounded by physicians, agitated and swearing, "You goddam mother fuckers," conveying his feelings as his "high" has been taken from him. He is unable to absorb the news that he would have died without their intervention. The emergency room staff shrugs off this anticipated response and moves on, awaiting the possibility that there will be more overdoses arriving shortly.

The young man arrives with traumatic injuries suffered in a multiple vehicle accident (MVA). While doctors in the trauma room assess his injuries and need for treatment, the patient advocate searches his belongings for identification and, hopefully, a next of kin. The advocate has developed numerous ways to find family, often in creative ways. When the next of kin arrives, he will inform him or her of the patient's severity of injury, and provide the necessary comfort and intervention for the anticipation of loss of life, limb, or body function. This may be the third family the patient advocate has had to comfort in this work shift.

Selma, the bag lady, lives in the emergency room waiting area. She receives social security benefits, but comes to the emergency room at night, because the "lasers" in her apartment are so thick, that she cannot enter. She not only serves as the emergency room mascot, but also receives care for her basic human needs. Selma becomes acutely agitated at times, storming the radiology department of the emergency room, looking for Yen Chen. She believes that this radiology technician, who speaks little English, is responsible for the lasers that cause her (human) suffering. She is escorted out of the emergency room at these times by security officers. She returns weeks later, at about the time the emergency room staff begins to wonder, out loud, where she has gone. On Selma's 70th birthday, the emergency room staff surprises her with a cake and the emergency room director joins in the birthday celebration.

The cacophony of human distress signals and fever-pitched medical staff response and the constant overhead PA calling “Physicians to Room 1”, “We need an EKG in Room 12”, “Patient advocate to Room 1 to assist family,” all converge in a small space, an emergency room built in 1938. I am both excited and appalled by this scene. Where will I fit in and how will I become part of this strangely tired orchestra of human distress signal and response? And, how will I learn to intervene with mental patients who are delusional, suicidal, estranged from society, and in need of human contact to ease them through their acute episodes of illness? What is a nice kid like me, doing in a place like this?

As a clinician, I will either adapt and find my niche, or leave this place. I come to this position as an experienced social worker, having learned my craft and professional language from an educational institution, but this alone, is not enough. I quickly learn who my supports are going to be. Not only do I have to learn the language of interaction, but I have to learn the emergency room way of being. I have to be accepted into this circle of language and how to make sense of this place, what I see, what I do. I have to learn the emergency room way of being. This I will not accomplish on my own.

One night, I am called on the overhead to come to the triage area. There, a nurse points out, is a patient, dressed in army fatigues and wearing a trench coat on this hot summer night. He is sitting on the edge of his chair, with all muscles in his body clenched, and ready to defend himself against danger. I don’t know if the body odor of fear is his or mine. He proceeds, “Lady, if you don’t help me right now, I’m going to tear this place apart”. I respond in a confident tone of voice, “Okay, come with me.” The nurses have notified security, and as I walk with the patient through the hallway of patients on gurneys, nurses, and physicians, I count on the intervention and safety from my fellow workers. I can feel my knees shaking and a strange feeling in the pit of my stomach; but I proceed to lead the patient to Room 8, the designated “agitated psych patient” room, the only one in the ER with a door. The room is small, with green tiles running a quarter of the way up the wall. I let the patient enter the room first, placing myself between the patient and the escape doorway. His agitation is palpable. He stands nervously, with his hand in his pocket, standing as he is unable to relax enough to sit down. After a minute, which seems like an hour, he gestures with his pocketed hand, and says, “I gotta get out of here”. I make a decision that as

dangerous as this patient perceives his world, others are in danger if he leaves this room. I slowly move my head out into the hallway and calmly call for “Security!” Immediately, security is at my side, having been posted just out of view of the patient, in the hallway. They skillfully manage to place the patient in restraints, while trying to assure him of his safety. After he is restrained, the security officer checks his trench coat pocket, producing an 8 inch butcher knife. At this point, I begin to follow the psychiatric evaluation and disposition protocol and the patient is medicated for his agitation and fear.

I am overwhelmed with the connection I begin to feel to this group, both co-workers and patients. I begin to talk their language and anticipate the frenetic Friday nights in the ER. There will be multiple vehicle accidents, gunshot wounds, victims of abuse, psychiatric patients threatening homicide and suicide. I feel confident that, in this sea of human suffering and apparent chaos, the emergency room staff will rise to the occasion, providing structure and meaning. This group of medical care providers will have their own personal conflicts and divisions within, including differing professional training and roles, and hierarchical positions. They will put aside their differences, or coordinate their individual skill sets and evolve into a formation necessary to meet the demands of the emergency room. Medical protocols and procedures will provide a sense of structure, as will organizational form. Medical knowledge and medical protocol is necessary to form the paradigmatic model for emergency medicine, but it is not sufficient in providing an explanation for the dynamics of coordination and accomplishment of emergency medicine in this inner city location.

I acquire the medical language and psychiatric expertise required for my new role as an emergency psychiatric social worker. I learn the procedures and protocols, and have them in written form, should I need a roadmap. More importantly, I learn to improvise with those around me. I feel part of an essential human drama of healing in Western medicine. I become immersed and enmeshed within this group. At the same time, I am significantly marked by how I have changed in becoming an emergency psychiatric social worker.

Time passes, and I grow weary of the stress and its effects on my personal life. I flee to another job, better in terms of income and in less stress. But I become restless again, and enter a graduate

program in anthropology. I return to the emergency room for a variety of reasons. I am struck anew with the strangeness of the place and wonder if I will be able to fit in again. There are new technologies, in fact, a new emergency room facility. The old staff is complimented by new personnel, new procedures and protocols, but elements of familiarity emerge. There is a saying among the staff that once part of the group; you are always part of the group. It is extremely difficult to bridge the transition in to, and out of, the emergency room. In this instance, as I re-enter the emergency room, I am re-immersed in this coterie, as once again, I am invited into this circle of language. It feels as though I had been engaged in a game, stepped out, and stepped right back in. The game was in play before I ever entered and remains when I step out.

I am thrown off balance again, as I submerge myself in the study of medical anthropology, a new game. Medicine as a culture becomes the focus of my study. I am introduced to concepts of classification, both of medicine and anthropology: anthropology conceptualizing Western medicine as a cultural form, and medicine conceptualizing the body as the focus of study and projecting onto the body, the cultural, political and moral dimensions of Western classifications of disease and disorder. For example, the social and economic origins of disease are exemplified by Nancy Scheper-Hughes (1988) in *The Madness of Hunger*, ethnography of Brazilian cane cutters who, with symptoms of hunger, are medicalized as symptoms of nerves and stress, thereby mystifying the origins of poverty in Western medical diagnoses. Or, we consider the geo-political forces behind the early epidemiological accounts of AIDS in Haiti, that expose the source of AIDS in Haiti as possibly originating as a result of poor Haitians involved in sex trade with incoming Western tourists, but which were interpreted as originating in the poverty stricken Haitians rather than imported by tourists, in Farmer's ethnography, *Aids and Accusation* (1991).

The cultural construction of disease and treatment, is explored in *Learning Medicine* by Good and Good (1993) through critique of the education of Harvard medical students and how they change through processes of medical education culminating, in the way medicine acts upon reality which is often in opposition to the experience and perception of the patient's point of view.

I am influenced by the post-modern archaeology of the medical clinic, and the body as historically constructed in space and time: I am informed by the body as situated historically and socially within the medical institution, the physician imbued with power in knowing the body and the classification of disease and treatment, all without revealing the underlying historical structures and processes of power (Foucault's *The Birth of the Clinic,* 1994*)*.

Yet, human suffering and misery remain ubiquitous features of human life yielding to cultural systems of belief of causation, and with specific forms of remedy intended to restore balance to the body within a network of social relations. Victor Turner focused on representation in Ndembu rituals for amelioration of infertility, embedded within a symbolic world in which the principal medicine is in performance of *Isoma* (Turner:1969:27). Rituals of healing provide a frame to begin to understand the activity I am involved in, while I work. Like Turner's study of Ndembu rituals, the emergency room and emergency medicine are situated in time and space, within an industrial complex in which the body can be symbolically represented in light of biomedicine, diagnosed and treated by selected healers toward the goal of restoration of order.

The political uses of danger, implied in pollution, and the assignment of blame is explored in *Risk and Blame* (Douglas 1966) and evident in primitive and modern cultures. Where there is pollution, purification rituals are required to allocate blame, and restore order by means of ritual healing. In modern cultures, classification of pollution is symbolically located in the individual body as "disease" and selected healing through biomedicine is performed to restore order. Risk and blame become processes of ameliorating 'disorder' and 'disease' within the specific classificatory systems of culture. Corresponding concepts of risk and blame are evident, as well, in modern socio-technical systems where large scale disaster requires political assignment of risk and blame in order to restore order of the endeavor, be it medical error, or catastrophic airline accidents.

. Ritual healing, in *The Ritual Process* (Turner 1996) provides a frame to begin to understand the activity I am involved in, while the conceptualization of pollution and purification and risk and blame

begin to inform my point of view. I begin to view my involvement in the emergency room with the perspective of an anthropologist. Separating the two realms is not an easy task.

In *Asylums*, Irving Goffman (1961) frames the sufferings of the mentally ill as they are situated in the institutional arrangement of the mental hospital, having to prove they are better by accepting the institutional definition of their illness. As I become familiar with the medical anthropology literature, and focus on doctor-patient interaction, I critically look at the healer as complicit in the human suffering they seek to alleviate. I am struck by my inability to separate myself and emergency medicine from this morass of misfortune and critique.

I move from medical anthropology to the world of aviation and industrial safety, invited in by Allen Batteau and Frances Trix. I see parallels to medicine inscribed in the Western cultural conception of aviation as engineering, organization and aviation safety, in the assumption that rational models of engineering and management will increase aviation safety. The assignment of blame to the human factor/operator can also be captured and controlled by an equation; a linear process and a political solution that is incorporated in to the study of risk.

Linear models do not suffice in explaining the interconnectedness and complexity of human enterprise and its incorporation in organizational forms, be it aviation, aerospace or medicine. I attend aviation safety conferences focusing on human factors as separate from the hard-wired engineering product culminating in the manufacture of a jet; the equipment is seen as linear and logical while human factors are seen as any error as a deviation from procedure. The messy human interactive stuff is left to be behaviorally engineered via individual cognitive strategies and models that will enhance safety and dampen the effects of the human factor (Helmreich and Foushee, 1993). The separation of human and machine from organizational structure, seems artificial and misguided. In *Cognition in the Wild*, the concept of distributed cognition (Hutchins 1995) provides an increasingly encompassing view of human and machine interaction. Technology, be it a compass, a Global Positioning System, an aircraft, an EKG machine or blood pressure cuff, is an accumulation of past human cognition solidified in an artifact; it is

an accumulation of past human activity, be it individual or group. Human cognition can only become shared and distributed through language, both verbal and non-verbal, in the form of words or symbols.

Again, I attempt to draw parallels and apply this newly accumulated knowledge to gain an understanding of the dynamics inherent in this emergency room. I formulate my interest and study and begin to focus on the accomplishment of this emergency medicine work group as they provide high tech, highly complex medical care to patients. My intuitive stance is that this human endeavor is accomplished with an unusual level of safety despite the complexity and pressure from external and internal environmental factors affecting medicine today.

I approach this study using the Institute on Medicine (IOM) report of 1999 as a catalyst and as a point of reference in time to begin my inquiry. The unit of study I choose to elucidate in this cultural analysis is that of the human interaction of this work group. I will attempt to articulate the cultural process of human interaction and coordination by means of a conversational analysis of the day to day, face- to- face interaction of this work group in real time. I select to highlight how work groups in this environment maintain, adapt, or change medical safety practices by means of their daily formal and informal communication while they provide medical care to patients presenting to the emergency room. I choose, as my unit of analysis, the "mundane action in the work place (as it) constitutes a most important locus for the integrated study of language, culture, social organization, and the historically constituted material world within which these phenomena are embedded" (Goodwin 1996:42).

I gain access to this group as I am one of the group. The trust I have of this work group, is reciprocated. I have recorded their work and informal communication, observed and taken field notes, reviewed documents, interviewed and analyzed. This trust, gained through my interaction with the work group over time, has permitted me to record the interaction of their everyday work world. I was given informed consent to tape their interaction and did so by placing wireless microphones on their person for the duration of forty-four working shifts in Category 1, a designated area of treatment for life threatening illness. I speculate that this trust would not be granted to an "outsider", but was given to me, based on the unstated cultural assumption that I would try to do no harm and that I will pursue my study with

professional and ethnical regard. At the same time, this emergency medicine work group will not prohibit me from pursuing a legitimate analysis its linguistic interaction as it illuminates the dynamic construction of safe medical practice through interaction.

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Chapter 1: OVERVIEW

I. CRISIS IN PATIENT SAFETY

In this study I will an innovative anthropological method to explore the practical problem of patient safety. I make use of High Reliability Organizations (HRO) in organizational and management studies as a point of departure and as a source of comparison for theory and method to that of an anthropological approach. Additionally, I provide a Conversational Analysis of front line medical workers in the Department of Emergency Medicine (DEM) at Rivera Hospital as they provide medical care to traumatized patients in an inner city emergency room, designated as a Trauma Center. With the form of audio-recordings I will analyze the 'in vivo' face-to-face interaction of participants, focusing on the investigation of the use of mitigated speech in a HRO form of medical organization.

High Reliability Organizations present an alternative approach to the study of organizations that perform with a consistent and safe record though the technologies are highly complex with uncertainty that does not increase with complexity and increased workload demands (LaPorte 1991). The potential exists in HRO for catastrophic outcome should the system of organization fail. Examples of HRO include aircraft carriers, aviation air traffic control, and nuclear facilities.

Rochlin, LaPorte, Consolini and others formed a multidisciplinary group that sought to discover the organizational practices and culture contributing to HRO, made up of Rochlin, LaPorte, Consolini, and others, is known as the Berkeley Group. It conducted ethnographic study of aircraft carriers, air traffic controllers and nuclear facilities, all of which emphasized "unexpected degree of structural complexity and highly contingent layered authority patterns that were hazard related. Peak demands or high-tempo activities became a solvent of bureaucratic forms and processes." (LaPorte 1991:31) The similarity to patterns observed in this ethnography of the Department of Emergency Medicine Rivera Hospital, provides a point of departure for empirical observation and analysis of the communication patterns.

Currently, methods adapted from management and organizational theory and studies of HRO are employed to reduce the risk of patient error; while survey methods and questionnaires have become a

means by which to measure cultures of safety (Ciavarelli 2005; Fin 2000;Gaba 1996) implementation of error reporting systems in medicine as in aviation via Aviation Safety Reporting Systems (Barach 2000). As a point of departure, I draw upon the theory of High Reliability Organizations (HRO) formulated by the Berkeley group[1] which puts forth ethnography as a method to elucidate the qualities of high risk, and highly complex technical organizations to extrapolate organizational qualities that contribute to a reliable and safe record of operation.

I propose that patient safety is constructed on the ground while medical workers participate in both shared cognition and relational patterns that promote optimal care in a high risk and highly complex Trauma Center. Furthermore, I put forward the method of Conversational Analysis as a means by which to grasp the relational elements that contribute to a level of patient safety that parallels that of HRO. The purpose of this analysis is to discover the relational elements of HRO work groups that may contribute to or diminish safe medical care. The episode of care analyzed is selected for the 'high tempo' activities similar to those studied by the Berkeley Group.

A.PATIENT SAFETY BECOMES A FOCUS OF NATIONAL ATTENTION

The impetus for this study comes from the initiatives to improve patient safety, a focus of concern arising from Institute of Medicine Report of 1999 (Kohn, et.al. 1999). Patient Safety emerges as a crisis in healthcare for administrators and medical providers as well as the recipients of medical care, many of whom became acutely aware of the estimate that medical error kills 98,000 patients per year Kohn 1999). The responses to the crisis in patient safety and institutional response present an opportunity to explore alternative methods to reach beyond traditional management strategies currently employed to address the problem and to gain insight by means of anthropological methods that provide an understanding of and relational elements of human interaction that contribute or detract from the safe medical care of patients.

[1] The Berkeley group of UC Berkeley is a multidisciplinary group who focus on the study of the organizational and cultural aspects of safety-critical systems. As an emerging theory, the group (Rochlin, Roberts, Consolini, Schulman) incorporates multidisciplinary methods, such as ethnographic observation and surveys of organizations in an attempt to discover what organizational and cultural elements promote ultra safe systems. The original research project 'the High Reliability Organization" project, initially studied air traffic control centers, nuclear power plants and US Navy ships, including the seminal ethnographic study of a naval aircraft carrier.

The 1999 IOM report was not the first to examine adverse events arising from medical management of hospitalized patients[2], though the methods employed by the Harvard Medical Practice Study (1990) and the IOM, became the empirical benchmark method for identifying adverse events through systematic review of hospital records.[3] The conclusion, of the 1999 IOM report is that medical error had reached crisis proportion despite the oversight and adherence to standards of medical practice established by the Joint Commission on Hospital Accreditation (JCAHO) and despite mandatory compliance standards of oversight agencies established by state and federal government. Additionally, the litigation of medical errors failed to impact medical practice and outcome[4] in this area.

B.ORGANIZATINIONAL RESPONSES TO THE CRISIS IN PATIENT SAFETY

1. THE TRANSFER OF RATIONAL STRAGEGIES FROM ORGANIZATIONAL THEORY TO IMPROVE PATIENT SAFETY

a. High Reliability Organizations as Theory and Method

High Reliability Organization (HRO) theory emerges in the discussion of safety related attributes and experiences of individuals in high-risk and highly complex socio-technological systems, and has been transferred as strategy to medicine (Gaba 1996, 2001). HRO as a theory of organization provides a classificatory scheme to capture the features of organizations in high-hazard industries that operate at an ultra-safe level, although the intent of the Berkeley Group is that of ongoing study of High Reliability Organizations. The focus of inquiry is in understanding organizational processes of high risk industries with a nearly failure free operational record. The authors distinguish 'error free' from low rate of error in HRO, though the major failures are avoided. An example of this level of safety is demonstrated on an aircraft carrier where a crew of 3,000 supports another 2,800 men in the U.S. Navy nuclear carrier group

[2] The initial reporting, of the high incidence of adverse medical events, arose from a study of litigation of malpractice suits by the California Medical Association in 1977. Findings were that plaintiffs were insufficiently compensated for injuries, and, that such suits did little to deter the performance of poor quality of care (California Medical Association 1977).

[3] An adverse event as defined by the Harvard Medical Practice Study (1999) was defined as an injury caused by medical management rather than underlying medical disease that prolonged hospitalization or produced a disability at the time of discharge, often requiring additional medical intervention after discharge.

[4] California Medical Association 1977.

with up to ten ships. In a given day of high readiness, there are 300 cycles of "aircraft preparation, positioning, launching, and arrested landings (at 50- to 60- second intervals). In a period of six months there will be 10,000 arrested landings with no deck accidents." (LaPorte 1991:21)

The emergency room at Rivera Department of Emergency Medicine meets the criteria as described in the literature of HRO (Rochlin 1987). That is, 1) Elements of self-design and self-replication are realized in the educational and research agenda as residents are socialized according to departmental protocols for training. Implicit in the training agenda is the role-modeling of senior staff physicians as well as the whole ensemble of emergency room practitioners, be they technicians, nurses, or support staff. And, (2) with a paradox of high turnover evident in the explicit temporal order of residency terminating after three years in certification as Emergency Medicine Physicians. Additional staff turnover occurs as it does in any organization. The Department of Emergency Medicine exhibits (3) authority and overlay, and despite the hierarchical order inherent in the institution of medicine, informal oversight takes the form of supervising staff intervening to capture procedural and diagnostic error, while reinforcing the development of physician skill and knowledge. Senior staff, as well as non-physician medical staff monitor for deviations and react immediately to correct procedure deviating from safe operation. And, (4) redundancy with overlap of function of individual roles and technology is evidenced in multiple emergency room personnel who grasp the whole of the intended protocols and procedures, often serving as informal educators and consultants, to emergency medicine residents. Organizational strategies are made explicit in the "almost constant loop of conversation and verification taking place over several different channels at once" [5]and senior and experienced personnel monitor for deviations and react immediately to correct procedure as it deviates from safe operation. The level of adaptability to the unexpected is inherent and implicit in the organization that operates "closest to the edge of the envelope" of safety in extreme and unstable conditions, as in this inner city Trauma Center.

In an ethnographic exploration of flight operations on a naval aircraft carrier (Rochlin, LaPorte & Roberts 1987), the authors begin to construct an organizational theory based upon longitudinal

[5] Rochlin 1987:

observations of a complex, inherently hazardous and technologically complex system with an ultra-safe record of operation on an aircraft carrier. The point of interest for analysis is that, there is no formal protocol for communicative interaction and yet, that naval personnel on the carrier implicitly know and participate in this informal communication. While the communication is observed and reported by the authors, there is no data in the form of naturally occurring conversation, and yet the observations are rich and comprehensive.

However, individual performance and communication is abstracted from observations made by the authors who chronicle the referential use of language to convey propositional content about flight deck operations. In this manner, the cognitive processes of the individual are privileged over the relational elements of team coordination and cooperation. The implicit communicative processes, though not observed, have yielded to typification and categorization of HRO characteristics in the literature, moving away from the thick description of the original HRO formulation, with accentuation and emphasis on categories of safety culture. Safety culture then emerges as a thing to be measured by means of data acquired through of surveys and questionnaires, concluding that survey and questionnaire data reflect individual attitudes and perceptions gathered in retrospect. And furthermore, that individual attitudes and perceptions measure the culture of safety (Ciavarelli 2005: Fin 2000; Weick 1987, 1993).

b. HRO as abstracted characteristics

The transformation from HRO as theory in to fixed categories arising from survey and questionnaire, and categorization of type of organization with attributes of “cultures of safety” translated in to management strategies, is intended to intervene and correct errors on the level of the individual operator on the front line (Helmreich 1998; Weinger 1990: Xiao 1996). Identification of features of cultures of safety intended to capture or avert human error undermines the insights of Rochlin, LaPorte and Roberts. The implicit understandings of personnel on aircraft carriers and within the organizational structure and operation on aircraft carriers, occurs and is observable within the interactive verbal, and non-verbal conversation during operations. The application of HRO theory as applied to management strategy with emphasis on roles, rules and oversight, has reinforced the efforts of Human Factors

initiatives in increasing safety in high risk organizations while ignoring the implicit and informal communications of operators as they interact with each other.

c. The assessment of HRO and 'Cultures of Safety' in improving outcome

To date, there has been insignificant empirical study to support or contradict the effectiveness of organizational and management strategies to identify and measure the culture of safety or the impact on realized improvement in operational safety (Guldenmund 2000).[6] Guldenmund finds that attitudes and perceptions of employees toward the identified safety features of operations, that is, equipment, detection and reporting of error, influence of operational financial goals on safety, are indicators of safety culture, although the effectiveness and translation in to actual measures of safety remains to be discovered.

d. Human Factors and individual performance in HRO

The application of cognitive psychological theory seeks to understand and explicate the shared schemas and sense-making processes, and direct the individual in his job performance in high-hazard industries by capturing the process of error production and providing means by which the individual operator can be trained and controlled, thereby making operations safer. Civil aviation becomes the model of safety, given a nearly safe record of operations since the early 1980's, and the incorporation of Human Factors, a system to improve individual operators safety performance. Human error is defined as deviation from procedure, though the relationship of individual error to that of accident causation is not clearly measured (Rasmussen 1990; Woods 1994; Dekker 2001). Error resistant systems design and reporting systems are implicated in the operation of ultra-safe systems, and have been implemented not only in aviation, nuclear facilities and other high risk industries, but have also been instituted in medical institutions (Hammon 2004; Tamuz 2004; Thomas 2004). Improvements in technological systems design and accumulated data on errors in aviation, while contributing to operator improvement, do little to affect the systems management of high risk industries as evidenced in the human catastrophe of Bhopal, and the destruction of the NASA venture, Challenger (Vaughn 1996).

[6] Guldenmund provides a good review of organizational studies, indicating the employment of theoretical frames of social and cognitive psychology. . He concludes that "there is an overall lack of models specifying either the relationship of both concepts with safety and risk management or with safety performance." (2000:215)

In accordance with the focus on individual cognitive process in error production, Weick adds to the literature by retrospectively seeking the causation of the deaths in the incident of Mann Gulch, concluding that 13 smokejumpers perished as a result of collapse of sense-making. Implicated in the collapse, Weick assigns causation to disintegration of role structure and sense-making in the temporary crew. Sense-making, a cognitive process of eliminating equivocality, or multiple possible messages, among group participants, produces greater possibility of collective action toward safety. He concludes with recommendations to reinforce resilience through improvisation and bricolage, a creative strategy of finding solutions with the resources at hand, a virtual role system in which individuals grasp the role and can fill in the gaps when the role is left vacant, the attitude of wisdom and respectful interaction. In this retrospective examination, Weick relates the significance of team interaction and communication in temporary crews, with little or no prior history of interaction as in need of cognitive strategies to improve safety performance, but limits issues of safety to the level of individual cognition and decision making leading to cumulated group collapse, or conversely, sense-making.

e. Measuring 'Cultures of Safety'

Individual assessments of safety culture become the methodology to measure organizations against the characteristics of HROs (Ciavarelli 2001; Gaba 2003) developing protocols and questionnaires such as PSYCHO, the Patient Safety Cultures in Healthcare Organizations instrument employed in studies (Ciavarelli 2001; Gaba 2003;Helmreich & Schaefer, 1994) as well as CSAS employed by Gaba, et. al. in application to health care and safety perceptions. Evolving prescriptions for organizations to improve safety culture in hopes of reaching the safety levels of HRO operations has been translated in to literature on 'cultures of safety'**.**

The classificatory systems developed from HRO and Human Factors are translated in to typifications of 'cultures of safety'(Weick 1987). The supposition of 'cultures of safety' depends on a shared management strategy providing high uniformity that translates into effective work practices at the level of operators on the ground. In the application of Human Factors and HRO to management strategies, the effectiveness and outcomes have been difficult to assess, though focus on causation by individual

operators in accidents prevails, and the need for further investigation of organizational preconditions is highlighted (Amalberti 2001: Pidgeon 1997) while the disembodiment of data derived from human factors strategies in the form of reporting systems, and quality management strategies are emphasized (Dekker 2001). The methodological strategies exemplified in current literature on cultures of safety, employing questionnaire and survey (Gaba 2003) to assess culture based upon individual cognition and perception provide little insight into the "almost constant loop of conversation and verification" as cited by Rochlin, LaPorte and Roberts in the ethnographic description of ultra-safe operations on a naval aircraft carrier. Others (Cox and Flin, 1998) heighten concern about the widespread acceptance of safety culture as an independent concept rather than an indication of cultural climate, based on the results of survey and questionnaire.

Cultures of safety provide a descriptive and static view of culture in which the status of safety culture is something to be achieved through management strategies and Human Factors initiatives intended to increase the safety performance of individuals (Weick 1987; Helmreich and Schaefer 1994). The memetic transfer of the concept of culture from that of thick description (Geertz 1973) and the understanding from that of the "native's" perspective derived from immersion in a culture to that of organizations, as a static model to measure and as a 'thing' to achieve, fails to grasp rich cultural understandings based on immersion in, and methods of, anthropological fieldwork.

C. PATIENT SAFETY MANAGEMENT STRATEGIES AS IMITATION AND LEGITIMATION

The publication and dissemination of information by the IOM 1999 report on medical error has prompted an organizational response, on the part of the institution of medicine, that seeks to replicate homogeneity with the ultra-safe systems of aviation and HRO's. While imitation may confer legitimacy (Meyers and Rowan 1991), political pressures and regulatory scrutiny of medical error may have motivated the recent adaptation of HRO and Patient Safety language as a means of coping with the inevitable. A managerial and institutional strategy evolves:

> "As pressures from the outside grow, organizations are led to find ways to either diffuse or eliminate this pressure by changing their practices. One of the uncomplicated ways to change is to adopt those routines and structures that are defined by law or

> government agencies as legitimate…Rather than simply emerging as the product of the natural interaction of organizations, fields are constructed for a purpose. They are the ultimate product of coercive, mimetic, and normative isomorphism, and they reflect the slow homogenization and convergence of organizational forms". (Frumkin and Galaskiewicz 2004:285).

While conveying legitimacy of effort in reducing medical error, this method of improving patient safety, though rational, risks eliminating the opportunity to begin to understand how actors on the front line produce safety in their daily lives of providing medical care by means of implicit understandings acquired through interaction over time.

The point is not that increasing organizational reliability and safety are of no consequence. Rather, that current adaptation of patient safety strategies from other high risk industries and organizations can be better understood and enhanced for domain specificity from inquiry into reliable and fairly safe systems already existing in the organization of medical practice. A shift back to ethnographic exploration can illuminate the social and communicative practices of already reliable and fairly safe medical care, a step toward developing further recommendations for patient safety. In this vein, an exploration into ethnographies of the workplace highlighting the inherently 'social' practices of participants in high risk organizations offers a means by which to move beyond typification and classification of HRO to that of interaction within HRO. The initial intent of HRO and the Berkeley group was not that of prescribing or measuring safety measures, but that of discovering the how and why of organizations that perform with a proven record of high reliability and successful performance (Gaba 1996:56).

II. ETHNOGRAPHIES OF WORKPLACE INTERACTION AND SAFETY IN HIGH RISK ORGANIZATIONAL FIELDS

A.WORKPLACE ETHNOGRAPHIES

Workplace ethnographies have emerged in the fields' sociology, anthropology, discourse analysis and organizational studies. While management studies focus on organizational administrative control, organizational learning (Drucker 1992,Nonaka 1991; Bierly and Spencer1995) and individual enculturation (Ouchi:1980) as a means of internal organizational control; sociological ethnographies

provide a perspective on social practices, identities, social participation and learning (Wenger 1998), and conceptualizing organizations as consisting of communities of practice.

Taking an ethnographic approach, in the study of human/machine interaction, Suchman (1987) highlights the particular situated and inevitably socially embedded aspects of any highly technical endeavor. Suchman emphasizes the communicative resources and face-to-face interaction as the locus of "the everyday business of making sense of each other's actions" (Suchman 1987:69) toward the production of highly technical and complex endeavors such as human/computer interaction.

Anthropological ethnographies of workplace are as diverse as those within organizational studies and sociological ethnographies. Focusing on safety science, Perin (1995) considers context theory, that is, multiple contexts within an organization overlapping, intersecting and interacting in her ethnographic account of a high-risk, and highly complex nuclear plant incident.

Combining anthropological perspective with that of cognitive science, Hutchins (1995) provides a detailed account of naval ship navigation, giving primacy to the cognitive properties of cultural systems and distributed cognition, while the social is not fully comprehended.

Atkinson, alternatively, takes as his focus, medical talk in the processes of medical work and medical discourse, reiterating the social construction of medicine, and its objects. In an ethnography of a surgical service, Bosk (1979) develops the construction of surgical error and its management in the education of residents, the social control taught and practiced within the service, and the management of medical error in an uncertain environment.

The compelling ethnographies across theoretical perspectives, inform practical concerns about the situated realities of workgroup practices both as interactive and cognitive, as well as concerns about safety in highly technical and complex organizations. The interactive features of workgroup interaction are given primacy (Suchman 1987) and focus on identity formation and management of uncertainty (Bosk 1979), yet further analysis of face-to-face interaction in the workplace remains within the purview of Conversational Analysis (Goodwin 2000; Tannen 1994; Drew and Heritage 1992; Schegloff 1992).

B.ETHNOGRAPHIES IN HIGH RELIABILITY ORGANIZATIONS

Ethnographies in high risk and highly complex systems offer analyses of teamwork as distributed cognition underscoring individual and distributed cognitive processes (Hutchins 1995). Rochlin (1989) describes processes involved in complex task completion and operating in conditions of uncertainty, yielding description of cognitive networking. While acknowledging the importance of individual and distributed cognitive and networking, the authors overlook many of the interactive, thus, relational aspects of individuals operating in High Reliability Organizations.

An ethnography of nuclear submarines (Bierly and Spender 1995) moves in the direction of HRO as a social system, reflecting "the dialectical tension between these positions is the dynamic behind the stucturation of human and organizational society as a social systems express and are expressed in the routines of daily life (Giddens, 1984:36)" (Bierly and Spender 1995:648); This is the tension between collective knowledge and learning with shared context, and that of an individual within the collective having the ability to individually and critically assess the situation. The authors focus on submarine learning and communication as embedded in a closely designed system attributed to Rickover who created the nuclear submarine service over the course of many years. The "Rickover culture" created a context of commitment, trust and performance under pressure, with continual commitment to training of individual operators, while reinforcing the importance of communication and individual responsibility above traditional naval hierarchical command structures.

The tradition of ethnography in HRO's is relatively new. As the concept evolves and ethnography will become a means by which to gain insight into the production of safe operations in highly complex and high risk human endeavors. Currently, the tradition of ethnography has been adapted to organizational study, while the need for an anthropologically oriented approach to HRO's might provide a fine-grained analysis of "the social systems expressed in the very daily life" (Bierly and Spender 1995: 642). Ultimately, the authors expand upon the insights of High Reliability Organizational theory (Weich, Rochlin, Roberts, etc.), highlighting extremely efficient communications as a means which the nuclear submarine culture maintains a centralized structure while developing a "culturally intensive system which

coped with this amazing conjunction of threats" (Bierly and Spender 1995:654). While the authors (Bierly and Spender 1995) question the ability of non-military organizations to achieve this level of high reliability without the hierarchical structure of the military, further development of communication beyond the individual's ability to assess immediate situations and managerial strategies to improve individual operators on the front line has yet to be explored in the literature of HRO.

C.HOSPITAL ETHNOGRAPHIES

Moving away from the literature of HRO and the emphasis on individual and distributed cognition and toward an understanding of culture as individuals deriving meanings through interacting with each other and with medical technologies and objects, hospital ethnographies shed light on an anthropological agenda for studying patient safety.

The medical practices of interaction of medical personnel and patients with technologies and medical protocols geared toward standardizing 'best practices' and heightening specialization in the fields of Cardiology with Cardiac Pulmonary Recsusitation (CPR) and emergency medicine with Advanced Cardiac Life Support (ACLS) is illuminated in ethnographies by Timmermans and Berg (2003), Timmermans (1998). Based upon ethnographic techniques of observation and interview, the authors in each instance of ethnographic description, provide a view of modern medical technologies as having history with elements of power invisibly intertwined with the development of the described best practices. Additionally, the protocols as evolved in CPR and ACLS help shape a changing meaning of death for relatives, often postponing the inevitable until after the protocols have been applied to a dying patient. The authors reveal the underlying truths of postponement of death until it is observed and recorded within the hospital setting, and the relatively low rate of success in carrying out such protocols.

In keeping with the theme of how hospital settings and medical settings shape death in western cultures, Kaufman (2005) provides a 'bedside' ethnography of patients in intensive care units, revealing the 'invisible' hospital bureaucratic organization and its impact on the protocols and technologies used in 'best practices'. Not only the patient and patient's family are unaware of the invisible in hospitals, but the practitioners themselves are unaware of the invisible processes of power inherent in shaping their

interactions with family and patients during the processes of dying. An alternative to the 'hospital induced meaning of death' noted by Kaufman is the emergence of palliative care in which death is not postponed or defeated, but is a process full of opportunity for medical practitioners to ease the pain and discomfort for the patient who must face the inevitable, while maintaining a support for the natural process of death with dignity and care.

The consequences of protocols and best practices and how it shapes interaction between health care professional and patient is described in an ethnography based upon observation and interview, of psychiatric managed care (Donald 2001). The imposition of bureaucratic structure and change in managing psychiatric costs of treatment has consequence for the interaction inherent in psychiatric care. The powerful structures of insurance, government, and hospital bureaucracy shape the limits of treatment as well as the role of psychiatric professionals who must shape their interactions to meet the cost constraints of managed care, often producing a crisis in identity for the practitioner as quality in interaction with the patient

The topic of how medical technologies and protocols shape meaning for individuals is highlighted by Lock (2007) who conducts an ethnography of organ transplant. Meanings of self are often intermingled with histories of the organ donors, shaping current identities, though in at least 50% of organ recipients, as time passes, the recipient views the organ as separate from the donor. Based upon interviews with recipients of organs, Lock also emphasizes the role of the professional and their perceptions of donated organs as tools and technologies that extend life without full comprehension of personal meanings and identities for recipients.

Related to the topic of organ transplant, Scheper-Hughes (2004) extends the domain of organ transplant beyond the hospital and into the realm of globalization and profits gleaned in an underground trade of organs. Serving as an 'underground' anthropologist, Scheper-Hughes informs the topic of organ transplant as a business with repercussions for individuals who either lose or benefit from this globally scaled organ transplant business.

In an ethnography incorporating not only observation and interview, Saunders (2008) incorporates the analysis of text collected through recordings of interactions in computer tomographic (CT) suite of a hospital. Saunders enlightens not only how CT technologies as a modern medical tool in diagnosis affects and shapes relations of patients and professionals, but also reaches back to 19th century agendas of biomedicine, reproducing the gaze of modern sciences into the body, and creating images paralleling the emergence of modern photography. Imaging of the human body is linked to earlier periods of medicine and visual arts, yielding a modern techinique and tool employed in the rituals of diagnostics and perceptions of the body in modern medicine.

In summary, hospital ethnographies emerge with focus on relational elements of culture and how modern technologies and medical protocols affect individual patients and practitioners, creating and transforming meanings of self and healing while reinforcing the significance of ritual healing in cultures' capacity to provide order and meaning the disordered body. The significance of meaning for the practitioner has been emphasized in review of recent hospital ethnographies.

III. THE RELATIONAL ELEMENTS OF COMMUNICATION IN HIGH RISK ORGANIZATIONS: HUMAN INTERACTION AS A LOCUS OF THE PRODUCTION OF SAFETY

A.FROM COGNITION TO AN INTERACTIVE MODEL

The supporting ethnographic evidence as indicated by LaPorte, Roberts and Rochlin, highlights the "almost constant loop of conversation and verification taking place over several different channels at once" in an environment in which high turnover of shift, and of training cycles (Rochlin: 1987:44)[7], indexing the significance of communicative interaction, as observed and recorded by the investigators. However, the implicit communicative practices of flight deck crews, observed as individual acts of participants, has yielded categorizations of systems features contributing to safety, while ignoring the coordination and collaborative processes inherent in the actors' co-construction of safe operational action.

[7] Rochlin, 1987:44.

The interpretation of characteristics, based upon the investigators' reasoning from observation, has contributed to the literature on "cultures of safety", while avoiding the very understandings that participants derive from interactive processes and communicative resources employed in daily interaction.

While the classification of safety culture and its attributes, along with understanding cognition of individuals and shared cognition within groups and attempts to manage organizational risk are necessary to begin to increase patient safety, the requisite human interaction required to enact safe practices provides an opportunity to build upon current efforts in pursuit of increased patient safety.

Cognitive models of human interaction, while informing us about individual thought process, shared schemas, and ordering of the world, provide an individualistic approach and explanation of the social world. Yet they diminish the capacity to grasp the socially situated and relational prerequisites necessary to accomplish human interaction in the pursuit of a common goal, be it survival, or the accomplishment of a technological project, or medical care.

B.ANTHROPOLOGICAL INSIGHTS IN TO INTERACTION

The paradigm of practice theory offers an alternative means of explanation of human interaction immersing the individual within fields of interaction unfolding in time and space. "The role of time which is an essential component in the unfolding succession of "here-and-now" reconstitutions of the actors' circumstances is ignored. Instead time is treated to use Garfinkel's expression, as a 'fat moment'. The failure to see action as necessarily situated and unfolding in time has major consequences for the shape of social theory. Not only did it obscure a crucial and constitutive feature of action, it also led to the construction of abstract, trans-situational, perduring, cognitive 'models' which were understood to "explain human action" (Sidnell 2005:12).

Ortner (2006) illuminates the concepts of "actors with agency", or the ability to act upon their environment within a structural system with flexibility, and noting the significance of time and space and adhering to cultural systems. Bourdieu conceptualizes actors as encompassing 'routines of the body' in which the corporeal, embodied, and contingent stands in opposition to 'objectivized models and structures' (Sidnell 2005:11). Bourdieu has illuminated the actor, embodying routines, based upon prior

cultural knowledge, with a final cultural model within the actor's head, although based on prior interaction, again privileging the structural and transposable nature of individual action within fields of power, yet leaving unfinished the temporal unfolding based upon the individual interacting with others and forming an emerging context in that environment.

C .ON LANGUAGE USE AND CONTEXT OF HUMAN INTERACTION

An explanation of interaction based upon human agency, and action as situated and unfolding in time, supports a need to consider how human interaction unfolds within context, both being shaped by and shaping an unfolding action. Furthermore, language as a form of social action (Duranti and Goodwin 1992) is embedded in human interaction. Duranti and Goodwin (1992) provide an account of how the earlier Wittgensteinian "emphasis on the development of a logically coherent, self-contained formal system had to be replaced by an approach focused on language as a form of action (or form of life, as he later wrote) and thus used context as a point of departure for uncovering the multifaceted variety of thought and action made available by the different language games that human beings engage in" (Duranti and Goodwin 1992:16).

The recognition of human interaction as the locus of cultural form, and the use of language necessary for that interaction, directs us to consider the elements of human interaction in everyday speech. As Hoijer summarizes, the Sapir-Whorf hypothesis reflects upon the proposition "that (language not) only refers to experience largely acquired without its help but actually defines experience for us by reason of its formal completeness and because of our unconscious projection of its implicit language functions not only as a device for reporting experience, in the ethnographic sense, but "but expectations into the field of experience…meanings are not so much discovered in experience as imposed upon it, because of the tyranny linguistic form has upon our orientation in the world." (Sapir 1931:578 in Hoijer1995). Again, the concept of agency and the interrelated effects of agents on structure as well as the unconscious structures of language and its effects on interaction lend themselves to further study of human interaction in everyday speech.

Human interaction is sustained by the structures of specific language rules enabling the communication of referential content, while the relational elements are of significance in the specificity of location. Contextualization confers situated meaning and interpretation (Gumperz 1982)[8] based upon shared past experience, and gives nuance to locally produced ways of speaking and interacting. Shared experience, with socialization implied, of interacting provides for the predictability and orderliness of human interaction toward a specific end, be it in the ceremonial rituals of wedding, family gatherings, corporate meetings, doctor/patient interaction, or workplace interaction.

Language use in interaction affords a perspective to be developed when analyzing human interaction in high risk HRO organizations. Contextualization, conferring meaning and interpretation for participants, also reveals motivation of actors who chose to interact and participate in high risk endeavors, whether it be in aviation, on flight decks, or in providing medical care in a Trauma Center.

The prospect of analyzing face-to-face interaction within a medical context similar to that of HRO presents an opportunity to discover the relational elements of participants' interaction, moving beyond the cognitive individual operating at the front line, and toward a model of HRO as an accomplishment of participants interacting and achieving a mutually meaningful action that is empirically observable and analyzable.

D.MITIGATED SPEECH AS AN INDICATOR OF RELATIONAL ELEMENTS OF INTERACTION

1 .Mitigated Speech

In keeping with the background of safety in high risk organizations, I draw from the literature of commercial aviation and the consequence of the use of mitigated speech in aviation safety as an example of the significance of face-to-face interaction and the consequences that language has as action with outcome. Linde (1983) draws upon verbal interaction of an aviation cockpit crew obtained from black box recordings following an aviation accident.

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[8] Gumperz (1982) elucidates the Gricean principles of cooperation employing maxims relating to "quantity – make your contribution as informative as necessary: quality – be truthful: relation – be relevant with reference to what is being talked about: manner – avoid obscurity and ambiguity and obey proper form. Noted also that when maxims are violated there is need for repair.

Mitigated, or indirect request, is a universal form of politeness reflecting one of many relational elements of interaction. Mitigated speech can be sensitive to social rank (Linde 1988), reflecting relational elements of interaction, and must be understood in the context of its use (Tannen 1994). In local context, the specificity of interpretation of mitigated speech by participants and the motivation for use can illustrate the structural hierarchical positions of speakers, or its use can demonstrate the interactive moves of participants toward a cooperative and collaborative effort in pursuing a mutual course of action. In each instance the relational processes embedded in locally specific usage can be revealed through recurrent interaction of participants. Mitigated speech is but one conversational strategy shared by participants that facilitates and permits synchrony of action toward a specific end, or it can contribute to miscommunication with catastrophic consequences as has occurred in commercial aviation.

Mitigation has been defined by Linde (1988) as "the use of linguistic forms that convey propositional content without giving offense", or indirect speech. In the investigation of aviation accidents, mitigated speech has been insinuated and investigated and interpreted as a failure, or as degradation of coordination of flight crews and is potentially implicated in catastrophic aviation accidents. As an analytic category derived from speech act theory, it includes requests, reports, declarations and acknowledgements, and presupposes that social action takes place at the level of discourse.

2. .Mitigated Speech as Miscommunication with Catastrophic Consequences

In the event of analysis of National Transportation and Safety Board (NTSB) transcripts of a United Airlines accident in Portland in 1978, Goguen and Linde's analysis (1983) demonstrated that First Officers' speech acts are more mitigated, often belittling potential or real problems, more than speech acts by Captains and that mitigated speech acts that do not lead to their intended effect are more often mitigated than speech acts that do. In the event of the United Airlines accident, the first officer's mitigated speech regarding the impending critical fuel situation, failed to have an intended effect as the message was degraded in transmission of vital information to the Captain (e.g. regarding fuel, "I don't think it's there" and "not very much more fuel"). In this situation, excessive mitigation by the

"subordinate" of a correct gathering of flight data is ignored by the Captain. Conversely, Captains are less likely to fully attend to mitigated speech by first officers, often resulting in catastrophic outcomes.

In another instance of failed communication, Linde investigated the black box recordings of an Allegheny Airline flight to Rochester in which the aircraft overran the runway by 728 feet. In this illustration, the conclusion was that the aircraft traveled beyond the recommended speed for landing. The copilot reported that he tried to warn the captain in subtle ways, (e.g. copilot mentioned the possibility of a tailwind and the slowness of the flap extension: Copilot "Yeah moves awfully slow" Captain, "We'll make it, gonna have to add power."; Copilot, "I know". Linde concludes that mitigation is sensitive to social rank, with utterances going up the chain of command being more mitigated, and stemming from asymmetric social situations in the cockpit. In the instance of the Allegheny Airline cockpit interaction, mitigated speech of the copilot served as a miscommunication and failed attempt to give the Pilot crucial information for landing the aircraft.

The data source for Linde's analysis is taken from flight recorders as well as simulations of cockpit interaction under a variety of possible flight scenarios. The implications of her findings and recommendations for aviation cockpit training take into account the context of aviation and its hierarchical structure. In the examples studied, Linde concludes that mitigated speech in those instances constitute a class of miscommunication. And yet including the study of successful flight crews, Linde concluded that crews classified as high in safety performance have a higher rate of mitigated speech over that of poor crews, and that communicative failure accounts for those instances of use of mitigated speech resulting in aviation accidents.

The conclusions based on Linde's studies imply that mitigated speech can either facilitate or obstruct social organization and coordination of flight crews. The methods employed by Linde incorporated quantitative analysis of frequency of instances of mitigated speech with further reach in looking at utterances beyond this unit: that is, follow up interactions in utterance units of speech. Linde highlights two types of communication: "statements of some proposition about the world and statements of the relationship among participants in the speech situation. The referential component is that which

makes some direct predication about the world. The relational component expresses the relation among the interlocutors, their group membership, the speaker's feelings about the speech situation, and so forth." (Linde: 1988:396). Linde highlights the significance of relational elements over referential in coordination of crew interactions. In this endeavor, mitigated speech is considered as the linguistic variable reflecting either the success or failure of individual communication, and furthermore, mitigated speech is the "most powerful tool for encoding relational information" (Linde: 1988:396).

In recommendations for flight crew communication training in aviation, Linde suggests that to view directness, emphasizing the referential function of communication is not sufficient. She recommends that the relational functions of speech be a focus of training efforts in order that in the hierarchical structure of flight crews, subordinates receive training in the use of speech to superiors. The stress is on the maintenance of hierarchical order while respectfully and successfully challenging superiors' interpretation of flight information or misinformation. An additional feature of training recommended for flight crews is the use of more directness and the reduction of the use of mitigated speech as its mis-communicative potential can have disastrous results. Linde's identification of the potential of mitigated speech to facilitate or impede coordination and cooperation in flight crew interaction has been a matter discussed in the literature of aviation accidents (Weick 1990). The purpose of her work is to reduce the incidence of aviation accidents caused by problems in crew communication.

The implication of asymmetry in social relations, and its source for miscommunication and failed coordination in face- to- face interaction in flight crews, articulates its' significance for the construction of safe practices in high risk and complex environments. The unpredictable and novel conditions inherent in this form of environment of human activity can result in failed and disastrous outcomes emerging from failed human interactions. The potential for failure can be diminished if we begin to understand the potential for resilience and improvisation in work groups where high levels of safety are attained through face-to-face interaction. And that mitigated speech as a variable can be examined in the light of fairly safe complex and high risk environments.

As a result of discourse analysis in aviation, Crew Resource Management (CRM)[9] has evolved in applied psychology as a method to improve communicative success in cockpits, while mediating the effects of the hierarchical structural features of aviation. CRM as a method of improving team performance has extended its application to other high risk, high workload activities, as a focal point of Human Factors initiatives intended to increase safety. The application of methods of analysis and CRM in addition to other Human Factors initiatives have been extended to the field of medicine; They highlight the complexity of context specific understandings reached in local face- to- face interaction.

The Investigation of Social Interaction in the Cockpit

Krifka, Martens and Schwarz follow in the tradition of Linde and Goguen in studying cockpit interaction in simulated events by emphasizing discourse analysis and employing speech act theory. Though data employed for analysis was acquired from simulation of flight and cockpit interaction, they included contextual features of workload indicators using quantitative measures of medium task load, high task load or potential danger. The goal was to use analysis of utterance types informed by speech act theory in an effort to find differences in workloads and speech acts used with the goal of incorporating speech act types in training programs for pilots (Krifka 2001:22). The conclusion of this effort was that speech act theory and use of utterance types provided a limited understanding of interactional organization and meaning of talk in interaction as a process of creation and stabilization of social order. Rather than prescribing practical utterance types, as in CRM , they recommend conversational analytic tools in conjunction with speech act theory to illuminate and reconstruct the "practical methods that crews apply in solving interactional problems" (Krifka 2001:22). Furthermore, the authors conclude that the methods of CA, as opposed to speech act theory, have always been a strictly empirical approach. Their main purpose is the investigation of social interaction as a process of creation and stabilization of social order (Bergmann 2005:525), or the investigation of "interactional organization of social activities (Hutchby & Wooffitt 2001:14). These authors (in Krifka, Martens & Schwarz) positioned the key role of

[9] Crew Resource Management (CRM) , developed by Helmreich, Merritt & Wilhelm (1999) with the goal of improving crew performance in aviation and other professional groups who interact in situations of high task load and risk potential. (Helmreich 1999)

talk in broader institutional processes and “take the essential CA starting point that talk-in-interaction is to be seen as its own social process, governed by its own regularities” (Hutchby & Wooffitt 2001:21). The authors suggest that rather than speech act “types”, the methodological conventions of CA allow for the investigation of repair, face and politeness as reflected in the relational elements of the hierarchical setting of aviation cockpit crews, and have significance for the local construction of safety. Moreover, the data that was gathered in flight simulated events may or may not reflect the social processes inherent in actual practices.

An Anthropological Approach to Cockpit Interaction

Interactive Discourse Analysis (IDA), a method employed by Trix and Psenka (2006) was applied to cockpit transcripts of black box recordings retrieved from the crash of Singapore 006. The purpose of the transcription and report was to illuminate “the use of anthropologic research techniques in aviation safety research” (Psenka, Batteau, Trix 2006:2). That is, linguistic discourse transcriptions of flight recordings were used to focus on the interactive patterns of the Singapore 006 flight crew prior to the disastrous loss of vehicle and life. The Cockpit Voice Recorder transcripts used in the accident investigation were able to preserve the synchrony and patterns of interaction, and its referential content. IDA as employed by the authors, focused on the relational elements of discourse. The emphasis of this IDA sought to analyze ongoing patterns of interaction specific to team performance (e.g. exercise of authority, correction and confirmation, and miscommunication). This technique highlighted how utterances are spoken and how utterances relate to each other. The interest was that of illuminating multiple meaningful segments of ongoing interaction in the cockpit and ongoing relationships of the participants.

The subject of analysis, that of the flight and ultimate runway crash during typhoon conditions, revealed essential patterns of interaction of this flight crew. Features relating to intonation units, latching (ongoing segments indicating close attunement of purpose and understanding), overlap, silences, and false starts, topic initiation and correction or repair, were analyzed in order that relational elements and missed cues are highlighted. The findings included the fact that the flight crew did not appear to display

miscommunication, though they were confused about the location of their assigned runway for takeoff. Additionally, the relationship between the Captain and the First Officer, as exhibited in their interaction, was comfortable as indicated in the lack of use of mitigated speech, and the frequency of direct interaction with less formality as opposed to that with the Relief Pilot. The unspoken was that the flight crew misunderstood and believed that the tower could actually see their aircraft. The recommendations derived from this analysis included that there must be more strategies regarding confirmation of runways for takeoff.

Of interest for the purposes of this analysis of emergency room workers, is the use of mitigated speech in the instance of Singapore 006. The lack of mitigated speech between the Captain and First Officer of this flight indicates a level of personal comfort despite the hierarchical structure of aviation cockpit crews. The Relief Pilot who did not have the same level of relational comfort as that of the Captain and First Officer, exclusively used mitigated speech in his interactions with the crew. This observation is in keeping with the findings of Goguen and Linde (19 (Goguen 1983) that subordinates tend to use more mitigated speech in approach to superiors. Psenka, Trix and Batteau highlight the contextual features of mitigated speech and incorporate distinctive features of the relational elements in the Singapore Six flight crew, providing an analysis that extends beyond the speech act theoretical categorizations of type to include the whole of the interactive process and its context.

3. Mitigated Speech as an Action to Seek Cooperation

Mitigated speech as a form of indirect request, a form of politeness or as a course of action to seek cooperation, is taken as a subject for analysis by Deborah Tannen (1994). Tannen challenges the assumption that indirect speech expresses powerlessness, lack of confidence or is indicative of any disposition of the speaker. Rather, “Indirectness is a fundamental element in human communication. It is also one of the elements that varies most from one culture to another, and one that can cause confusion and misunderstanding when speakers have different habits with regard to using it.” Tannen also addresses the use of mitigated speech by superiors in military contexts and observes that a mitigated statement by a superior was, in actuality, perceived by the subordinate, as a command. Using the

common indirect statement, “It’s cold in here”, as an example of American indirectness, and has the intent of getting someone to do something, referencing the command to close a window, fetch a sweater or blanket.

Tannen reviews the problems that arise when mitigated speech proves to be a built in liability, increasing risk, as in aviation cockpit crews. She reiterates Linde’s analyses of aviation disasters in which mitigated speech by the co-pilot, ignored by the Captain, resulted in airline disasters. For example, in the instance of Air Florida, departing from Washington D.C. during icy and severe weather, the co-pilot repetitively and indirectly made statements to the Captain indicating that ice on the aircraft wings had redeveloped as the scheduled departure was delayed. In this instance, the aircraft plunged into the Potomac River, killing all but 5 of the 79 people aboard. The Captain, less experienced than the co-pilot in icy weather conditions, repeatedly ignored or challenged the observations and mitigated verbal communications of the co-pilot. In a summary statement, Tannen directs our attention to the paradox found by Linde in that crews who used mitigated speech more frequently, were, in fact, often judged to be the best crews. Tannen concludes, “In other words, the crashes resulted not only because the co-pilots tried to alert the captains to danger indirectly but also because the captains were not attuned to the co-pilots’ hints.” (Tannen 1994:4). The ability to interpret hints , or to understand another’s meaning though not explicit, is associated with maturity and empathy or insightful interpretation, as Tannen suggests.

4. The Significance of Mitigated Speech in Context

Mitigated speech, as a form of indirect comment, or request, can be indicative of a means of politeness in seeking cooperation and coordination, or it can be an indirect form of request to comply with an order. It can serve to facilitate or obstruct coordination and cooperation as reviewed in the literature. The specificity of context and history of interpersonal interaction and relationship stands in relief when analyzing and interpreting conversational interaction. In cases of CA of blackbox recordings of aviation disasters implemented in the works of Linde (1988), Goguen and Linde (1983), Krifka, et.al.(2004) and Psenka, *et.al (2001*), mitigated speech is implicated in the most dire failure of interactional achievement of coordination and cooperation. Though disastrous results from communicative failure and the

misinterpretation of indirect utterances, is evidenced in the above analyses, it is recognized that mitigated speech also provides a means by which interactions in the workplace can be facilitated. The significance of local context and hierarchy as represented in these analyses suggests that interpretations of mitigated speech can only be achieved in discovery of socially situated features of the speech community studied. A review of mitigated speech as investigated in aviation accidents and simulations of flight crews, based upon speech act theory, neglects to take in to account the situated context of utterances within a larger frame of speaker adjustments and social orientation (Hanks 1996):

> "Even so, the type leaves unexplained most of the features of practice we are trying to get at, since these involve adjustments made on the spot, like feasibility, timing, improvisation, and features of reception not predictable by the type of the initiating utterance. At this point one wonders why the type-level regularities, whatever they are, need to be tied strictly to the unit "utterance" at all. Why utterance types instead of indexical types, stylistic types, or types of social orientation." (Hanks 1996:233)

Tannen puts forth the insight that the process of attunement is at play; that is, participants, in the specificity of local cultural context, understand and employ mitigated speech, comprehending its meaning and use, a facility only realized through participation in ongoing local face- to -face interaction.

5. Mitigated Speech as a Variable

Mitigated speech as a variable is of consequence as an action and as an indicator of relational elements (Linde 1983) with significance for operational outcomes in high risk and highly complex organizations. The context of its can be observed in face-to-face interaction in commercial aviation cockpits, and made available for analysis by the use of black box recordings either in context analysis or in a more finely tuned conversational analysis of verbal interaction of participants.

The significance of the "almost constant loop of communication" in HRO performance can be viewed as an element characteristic of a category. Or, communication in face-to-face interaction can lend itself to empirical study of relational elements of participants in HRO, illuminating the interactive and emergent processes of participants engaged in HRO endeavors.

IV. SUMMARY STATEMENT

The IOM report of 1999 emphasizes the extent of the problem of medical error despite numerous oversight agencies and legal requirements. The transfer of management strategies from the literature of HRO has provided for legitimacy of effort as medical organizations seek to improve the level of safety of medical care today. The challenge of reducing medical error has resulted in the transfer of characteristics of HRO to medical settings, and adopting Human Factors strategies focused on improving the cognitive process and performance of individual operators, but it has also contributed to the management strategies of measuring 'cultures of safety'.

'Cultures of safety' are measured by survey and questionnaire, and as in imitating characteristics of categories of HRO. They provide a static view of safe operation, while giving primacy to individual cognition and performance over the interactive processes of participants. Additionally, data in HRO literature has been obtained by the 'objective observer' who highlights the significance of communication observed while losing the opportunity to gain understandings and meaning derived from participants in high risk and highly complex organizations themselves.

Mitigated speech as a variable provides a foundation to begin to understand the interactive and emergent elements of face-to-face interaction that contribute to the safe production of medical care. Whether mitigated speech serves as an indicator of the effects of hierarchy on miscommunication (Linde 1983;1988), or, as an indicator of politeness as a fundamental element of communication to gain cooperation (Tannen 1994), the interactive context of its use may be of consequence to safe outcomes in HRO.

Mitigated speech and the development of CRM, specific to the context of aviation cockpit crews becomes problematic when transferred across contextual borders of high-hazard endeavors. The specificity of local context reveals the motivations and outcome of mitigated speech for participants. Social order, in view of context, is created and sustained locally by participants who employ mitigated speech to meet specific ends. Furthermore, the specificity of use of mitigated speech in context also creates and sustains

context. The focus of this Conversational Analysis is the significance of relational elements in the production of action of emergency room workers.

Anthropological perspectives and methods of data gathering and analysis can further the understandings of the safe production of medical care, complimenting the understandings of individual cognitions of participants by reaching beyond the individual toward a comprehensive understanding of the interactive and relational elements of face-to-face interaction required for the mutually constructed action of safe medical care. Rather than 'culture of safety' as a static category, I will develop a method to elucidate the significance of emergent local contexts comprised of the interactive and relational elements of interaction that reveal the implicit, thus cultural, understandings of participants who provide medical care in a Trauma Center meeting the criteria of HRO. The variable of mitigated speech is of significance in that as a relational element of interaction it reflects local context and is employed with implicit understandings of participants toward producing an action; of safe patient care.

Chapter 2: LEARNING TO LISTEN

I.PURPOSE STATEMENT

A.ANALYZING INFORMAL COMMUNICATION IN HIGH RISK SITUATIONS

1. Introduction

In this study I present a Conversational Analysis (CA) elucidating the elements of informal communication of an emergency room work group, highlighting the elements of face-to-face interaction that contribute to the process of providing medical care in an inherently high risk environment in an inner city Trauma Center. This Trauma Center has a record of reliability and safety approaching that of high-risk and highly complex organizations as described in the literature of HRO.

I choose mitigated speech as an indicator of relational elements of interaction because it is meaningful for participants. Through their use of mitigated speech, they perform the action of coordination and cooperation illustrating the essential relational, thus social, elements of providing medical care in this emergency room.

2. Informal Communication

In this instance, informal communication refers to that which is not sanctioned, nor rewarded. Ethnographically, informal communication is ambiguously in, but not of the organization. That is, participants' face-to-face interaction does not enter the medical record though the significance of informal communication unfolds within the medical and social context of emergency medicine as participants shape and are shaped by this communication.

3. Data Collection

The data for this analysis was captured by means of digital audio-recordings of medical personnel in-vivo during the course of responding to a medical trauma in Room 1 and Room 2[10] of this inner-city

[10] Room 1 and Room 2 are designated rooms for immediate treatment of potentially and immediate life threatening injuries or illness. The rooms are separated from Cat 1, the intensive area of treatment, as well as from Cat 2, designated for possible admission of patients, and Cat 3, for the treatment of minor illness and injury. The purpose of Room 1 and Room 2 is to stabilize the patient immediately. Examples of illness or injury treated in Room 1 and Room 2 include gunshot wounds, stabbing to torso, multiple vehicle accidents,

emergency room. The episode selected for transcription and analysis occurred within the 6 months of recordings of events taking place in 2002-2003 during the final month of training for two senior residents.

Additional note taking, review of archival records, and interviews of participants occurred during the time frame of the recordings, as well as after its conclusion and during analysis of the data. In an effort to validate the interpretations of data analysis, findings were reviewed with participants in an effort to seek alternative interpretations of events and informal communication recorded during the study. In reviewing findings with individuals recorded, I sought to validate my interpretations as did Tannen (1994) in interpreting mitigation of speakers.

4. Mitigated Speech as a Variable

Building upon the work of Linde (1983), I will make use of the concept of mitigated speech or indirect request as an indicator of relational elements of interaction of the workgroup in the emergency room of Rivera Hospital. Additionally, I will provide an analysis of participants' understanding and use of the lexical choice of 'Let's' and 'We', employed to elicit cooperation and coordination and toward a collaborative effort, with a shared motivation of producing safe medical care of a patient.

In contrast to the conclusion of Linde (1988), in her analysis of blackbox recordings of flight crews, that mitigated speech is a source of miscommunication and implicated in catastrophic outcomes, I argue that mitigated speech is a variable, and, can only be interpreted in its location of use (Tannen 1994) as it is interpreted and understood by participants in interaction. In the local context of this emergency room group, mitigated speech not only increases coordination and cooperation, but also diminishes the difference of status among participants during episodes of patient care. Mutual identity and mutual purpose becomes privileged over the structural status quo of medical institutions with implications for the production of safe patient care.

5. *Mitigated Speech as a form of Attunement*

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immediately life-threatening overdoses, stroke, cardiac arrest, and severe accidents. The rooms are the site of the most intense and time-sensitive treatment of patients in the emergency room.

This study is concerned with local adaptations as revealed in the conversational analysis of face-to- face interaction of medical workers responding to a Trauma Code in the Department of Emergency Medicine at Rivera Hospital, an inner city Level 1 Trauma Center.[11]I examine the use of mitigated speech as an essential feature of talk- in- interaction, employed by participants, to achieve coordination and cooperation in an episode of care of two patients with potentially life threatening injuries sustained in a roll over motor vehicle accident.

I examine the use of "we" and "let's", employed to align participants in mutually intelligible courses of action as they provide care in this highly stressful environment in which quick assessment and treatment are essential elements of their practice. Furthermore, through the use of mitigated speech and alignment, a process of attunement occurs in which participants achieve a diminishing of difference of status required for mutual engagement in this endeavor of pursuing a course of action.

Attunement, or increased coordination, is employed as a means of illustrating the 'interactants' ability and proclivity to use experiences of past attunement as grounds for present attunement and improvisation. As highlighted by Trix, "With recurrent interaction, attunement becomes a recursive process, ever expanding in reference and subtlety, leading to the creation of a shared language" (Trix 1993:19). Trix makes use of this concept in referencing the shared language achieved through recurrent interaction and coming together toward a common language, and affective experience as she describes the *murshid-talib* (master/student) relationship in a mystic order.

Trix extends the concepts of structural coupling in humans, as a reciprocal coordination highlighting communication as "coordinated behavior mutually triggered among the members of a social unity") (Maturana and Verala 1987:193) and language as a mode of social coupling. Referencing Wittgenstein, Trix' concept of attunement is a process or a specific set of personally shared games where the sharing and the context have significance, theologically, in the event of the *murshid-talib* relationship.

[11] Level 1 Trauma Center is a designation signifying the verification of expertise and specialized care available to handle the most critically injured patients requiring trauma care, education and research. The process of verification from the American College of Surgeons is the highest recognition a trauma center can receive in the United States.

Attunement has been represented in the literature of psychology and psychotherapy as a process in the normal development of infant and mother, whereby infants learn structures and patterns of speech interaction, modeled by mother, who in turn, redirects the infant's speech toward the development of culturally specific patterns of interaction (Adamson 1996:194-196) and the symbolic order of that shared world. The infant's development of sense of self, and a symbolic world in which she participates, creates an intersubjective understanding of events and interaction.

> Affective attunement is a form of intersubjectivity yet distinct as articulated by, intersubjectivity, as articulated by Trevarthan (1977, 1978, 1979, 1980) approaches the essence of the problem, although from a different direction as he employs the following: "It concerns the mutual sharing of psychic states, but it refers mainly to intentions and motives rather than to qualities of feeling or affects. Its major concern is interintentionality, not interaffectivity. Intersubjectivity is an entirely adequate term and concept, but it is too inclusive for our purposes. Affect attunement is a particular form of intersubjectivity that requires some processes that are unique to it. (Stern 1985:144)

In this CA, attunement refers to the affective, motivational and, derived meaning and intersubjective understandings, resulting from mutual experiences and relational features of interactions of this work group occurring over time. Attunement as the diminishing of difference of status is a reflection of structural social relations as described by Schegloff (1992) in referencing occupations and their power and status implications in institutional settings while emphasizing participants' orientation to each other as features of context that have consequence for courses of action pursued.

6. The Specificity of Context

A CA perspective looks at the particular, providing an empirically based means by which to identify local contextual features of talk-in-interaction, as social action which may support or contest the traditional views of hierarchy and social structure, regarded as fixed categories. Furthermore, when juxtaposed with current interest in patient safety, the possibility exists to discover interactive relational elements in face-to-face interaction that support safe delivery of medical care.

This conversational analysis reveals the processes of attunement, or the diminishing of difference of status (Trix 1993), as local adaptations achieved in interaction through of recurrent use of mitigated speech. Mitigated speech, or indirect request, functions as a means by which participants coordinate and

collaborate to deliver care in an environment in which immediate decisions must be made within minutes, to stabilize a traumatically injured patient. In the recurrent use of the pronominal "we" and the deictic "let's", participants align with each other to coordinate their efforts to achieve mutually intelligible courses of enactment of medical protocol realized in locally situated face- to- face interaction. This analysis highlights the significance of context and the specificity of locally achieved interactive patterns that maintain stability, and safe medical practices in this highly complex, stressful environment.

II.CONVERSATIONAL ANALYSIS

Conversational analysis proffers a method for studying naturally occurring interaction to elucidate the socially situated features of this speech community with emphasis on the sequential organization and means by which participants achieve understanding of, and accomplishment of a common course of action (Gumperz 1982). This approach is ethnomethodological in that it is through language practices that people produce the everyday understandings of social life (Garfinkel 1967). CA, evolving in the 1960's, comprehended that through the analysis of verbal interaction of participants, the fundamental elements of social life can be elucidated through talk in interaction (Sacks 1977; Schegloff 2001).

Two themes emerge from analysis of actual practices of people in interaction: categorization of interactions by participants, the ways in which people produce utterances in relation to utterances of other speakers (Ten Have 1999). The concept of adjacency pairs provides a framework for "reciprocal conduct, action and interpretation…Each participant must analyze the developing course of others' actions in order to produce appropriate reciprocal action." (Schegloff 1995:187). This implies that participants have a prior understanding and are capable of projecting subsequent actions, and that face- to-face interaction is a collaborative effort.

The extension of CA as a method of analysis for workplace and institutional interaction provided a framework for application to organizational study (Drew and Heritage 1992: Goodwin and Heritage 1990). Interaction in medical settings focused on doctor-patient interaction and medical reasoning in medical anthropology (Cicourel 1986). The focus on collaborative efforts in socio-technical settings

included CA studies in archaeology (Goodwin 1994), and computer control centers (Suchman 1987), with emphasis on the conversational moves participants employ to coordinate their efforts revealing the distributed cognitive characteristic of interaction (Hutchins 1995).

III. SUMMARY

In this study I provide a Conversational Analysis of face-to-face interaction of Room 1 and Room 2 in an inner city Trauma Center, as participants provide medical care to victims of a motor vehicle accident. The purpose of the analysis is to discover the relational elements and social order produced by informal communication as highlighted in participants' use of mitigated speech. Rather than mitigated speech serving as miscommunication, in the context emerging from participants' interaction over time, it becomes a form of attunement, diminishing the difference of status and moving toward increasing coordination and collaboration, an action and a process necessary for the safe production of medical care.

The relational elements of sustained social order in this emergency room provide for a comparative analysis, and alternative interpretation of communication in an HRO. Rather than categorical elements and cognitions of individuals in HRO, this Conversational Analysis reveals the social elements of communication in the use of mitigated speech in the form of 'Let's' and 'We', necessary to form the action of safe operations in highly complex and high-risk human endeavors.

By employing the methods of CA, I will provide a context specific interpretation of the use of recurrent patterns of use of mitigated, or indirect, speech and alignment as represented the utterances "Let's" and "we" as communicative resources employed by participants as they collaborate to deliver medical care in this highly complex, high stress environment.

The significance of context as it is created and sustained in face-to-face interaction, highlights the specificity of local culture, not as a category, but as a process in which safety is achieved. Furthermore, intersubjective understandings of participants can reveal patterns that sustain, or interfere with safe operations, revealing the relational elements of organizations that operate at a safety level comparable to thatofHRO.

Chapter 3: RESEARCH SETTING AND METHODOLOGY

I. RESEARCH SETTING

In this chapter I describe the site of research, situating it within the socio-economic context of the institution as well the Department of Emergency Medicine as it is located within the organization of Rivera Hospital. I further develop the local context comprised of participants, and their roles within the Department.

I present the selection of the episode for analysis along with the means and explanation by which indicators were chosen for that selection. Episode selection was based upon high acuity of patient illness or injury, and patient volume along with stress levels of participants. I also describe and explain the methodology of Conversational Analysis and the means by which data collection occurred. The intent is to provide a frame for analysis by the reader.

A.RIVERA HOSPITAL OVERVIEW

The hospital setting is a non-profit teaching and research facility founded in 1915 with an endowment from an industrial leader in the community. As such, physicians are salaried employees with the primary emphasis on research and teaching. The structure and organizational plan of delivery of medical care is based on this history. The current configuration of the hospital is such that it has 903 inpatient beds and admits nearly 70,000 patients per year. Staffing figures obtained from the hospital include employment of 2,800 physicians, 14,900 full-time employees including 3,000 nurses and 4,000 allied health professionals providing 2.5 million patient contacts per year. Outpatient clinics in every specialty of care are present on the “main campus” as well as distributed throughout the metropolitan area in the form of satellite facilities

B.SOCIO-ECONOMIC CONTEXT

The site for this study is that of an inner city Level I[12] trauma center situated in a declining industrial center. The socio-economic decline of this city and surrounding county is reflected in current statistics gathered by the Health Care Stabilization Workgroup (2003).[13] The economic constraints affecting the health status of this largely poor population is demonstrated by statistics indicating that 59% of the population has an income below the poverty level, compared to 26% of the rest of the state. Male life expectancy in Detroit is 64.5 years, compared to a life expectancy of 73.5 years in the rest of the state of Michigan. The income level is inversely related to health status: the lower one's income, the higher the incidence of severity of illness, injury and death. This population is likely to be unemployed and self-employed and with no health insurance. Consequently, patients presenting to the emergency room are frequently patients who have complex chronic medical conditions requiring emergency room evaluation and resulting in more hospital admissions, in addition to significant social and psychological problems (Tokarski 2005).

Along with this staggering view of the socio-economic context of this emergency room, since 1998, the city has experienced the closing of four major hospitals and care providers, with a net loss of 1,220 inpatient beds and 4,400 health care providers (*Urgent Matters* 2004)[14]. At the same time, emergency room visits have increased by 20% nationally since 1992, while the number of emergency rooms have decreased by 15%. *EMTALA* (1986) regulations mandate that a medical screening exam be performed on every patient presenting to the emergency room. Frequent users of this emergency room commonly have complex and chronic medical conditions requiring evaluation and treatment. The highest

[12] Level 1 trauma center is a designation specified by the American College of surgeons for a period of three years. This designation indicates that the trauma center provides the highest level of surgical care for trauma patients. It requires a certain number of surgeons and anesthesiologists on duty, 24 hours a day. On site converge by general surgeons, and prompt availability of specialty care in orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology, internal medicine and critical care are prerequisites for this designation.

[13] The Detroit Health Care Stabilization Workgroup formed in response to the perceived crisis in health care in the Detroit and Wayne County region. The major medical providers sought and received support from the State Governor to conduct this report out of concerns about the shrinking community and the significant economic constraints and poor health status of the population.

[14] Urgent Matters is a national program of the Robert Wood Johnson Foundation and addresses the state of health care in the United States. An ongoing concern is the failing safety net of emergency rooms. The failing safety net has been a subject of study and review since the first alarms were sounded in the 1980's.

percentage of frequent users are that of the psychiatric population (34%)[15]. Other chronically ill patients representing the most frequent patients include alcohol related illness (24%), respiratory (COPD, asthma) (8%), diabetes mellitus (14%), neurological (seizures and headaches) (12%), sickle cell anemia (10%) and cardiovascular (CHF and hypertension) (8%).

The socio-economic challenges of the community within which this emergency room is situated are reflections of the larger crisis in health care in the United States as indicated in the literature of the medical profession. The concept of emergency rooms as "safety nets" for an increasingly stressed medical care delivery system has emerged in the literature since the 1980's (Adams and Biros 2001; Lewin and Altman 2000; Weinick and Burstin 2001;Robin M. Weinick 2001; Lewin 2000). Between 1992 and 2001, emergency department visits in the United States increased by 20% to 108 million visits, while the number of emergency departments decreased by 15% to 3,934 (Tokarski 2005). It is in this socio-economic circumstance that data of health care providers' informal conversation is collected.

The contextual constraints of this DEM as situated in time and space contribute to mutual intersubjective understandings of this work group as they experience, and anticipate the medical outcomes of the socio-economic context of this inner city location.

C.THE DEPARTMENT OF EMERGENCY MEDICINE

1. Research and Education

In keeping with the larger institutional agenda as a non-profit hospital with a stated mission of pursuing research and education, the Department of Emergency Medicine (DEM) serves as a site for Emergency Room Physician education, during a 3 year residency program. The senior staff physicians of the department are faculty members who also pursue research interests in their specialty, conducting research and publishing their results. Research outcomes have been incorporated in the knowledge base of emergency medicine, and the Residency Program is highly ranked in comparison to similar programs.

[15] That frequent users often referred to as "frequent fliers", are psychiatric patients may result from the fact that the deinstitutionalization of chronic and severe mentally ill patients has resulted in a form of institutionalization in deteriorating neighborhoods. In the instance of this emergency room, there are several Adult Foster Care homes within walking distance of the hospital. Additionally, though not a focus of this study, the funding of services for the mentally ill in the state of Michigan, has declined steadily since the 1990's.

The temporal order of the residency program provides a structure and yearly cycle of events, rituals, and interaction with the permanent staff of the emergency room.

2. Level One Trauma Center

The DEM provides services annually, to an estimated 92,000 patients with 170 patients per 24 hour period. The configuration of employees is that of 24 senior medical doctors certified in Emergency Medicine, 25 residents of emergency medicine and combined emergency and internal medicine, 150 nurses, 50 medical technicians, 6 full time pharmacists, 4 psychiatric and medical social workers, 8 patient advocates, a minimum of 12 clerical and registration personnel and a contingency of security officers on site as well as a minimum of 15 X-ray technicians, and senior Radiology medical staff. As required of Level I trauma centers, all specialties of medicine are on call to the DEM. The emergency room is linked to local police, fire and Emergency Medical Service (EMS) accessible to residents of the city via a 911 service call center.

The DEM holds 70 medical beds and is designated in order that the level of severity of illness is reflected in specific areas. The triage of patients results in their category of severity and assignment to a Resuscitation or Trauma code, or Room 1 and Room2, indicating immediate life threatening events; Category1 (CAT 1) for potentially life threatening medical conditions; Category 2 (CAT 2) for patients who may be admitted to the hospital; Category 3 (CAT 3) for minor illness; and Pediatrics for those under the age of 18.

3. The Trauma Code

The sequence selected for analysis, Room 1, begins with an episode of medical care designated as a trauma code.[16] The external bracketing of this episode of care in emergency medicine entails a protocol

[16] Trauma code indicates a specific spatial and temporal bracketing of medical care for patients who have sustained injury, be they motor vehicle accidents, gunshot or stab wounds or injuries sustained that potentially threaten life or loss of limb or bodily function and caused by external events. The American College of Surgeons have developed and updated codes and definitions of trauma and have formulated levels of trauma, requirements for emergency rooms designated as trauma centers, and have established standards for care, required staff composition, and “on call” specialties that are mandatory. Meeting requirements for the designation of an emergency room as a “trauma center” involves application and review by the American College of Surgeons; adherence to national standards and protocols; and submission of data to the National Trauma Data Bank on an annual basis. Standards of care are also established in national nursing format as well as standards set for EMS in cooperation with local designated Trauma Centers.

evolving from a history of practice, standardized and updated, by the specialty of Emergency Medicine and sanctioned by the American College of Surgeons.[17]

The episodes of patient care occurring in Room 1 are most often initiated in CAT 1, where calls from EMS are taken by staff. EMS, at this point, is en route with a patient, calling ahead to provide information necessary to determine level of care needed for the patient. In the event of potentially life threatening injury or illness, CAT 1 staff initiates the overhead announcement of patient arrival by announcing, "Physicians to Room 1 (or Room 2). Trauma e.t.a. three minutes" or Room 1 Medical, three minutes". The overhead announcement frames the events that are to unfold and alerts all designated staff to proceed to Room 1. Clerical staff arrives to register the patient for the medical record. The Patient Advocate is needed to either assist accompanying family of the patient, or to gather information necessary to contact a family member. The designated nursing and medical staff proceed to Room 1, and at the same time, have notified Trauma Surgeons in the event that the patient's need results from traumatic injury, be it an accident or the result of violence. Security Officers will be on hand to interface with Police Officers and will assist with medical-legal requirements. X-ray technicians will be available, and as all of the emergency room has heard the overhead announcement, the level of awareness for this medical event is palpable throughout the department.

At this point, a subgroup of designated CAT 1 personnel proceed to Room 1 or 2 to await arrival of the patient. The number of personnel in Room 1, at the time of patient arrival, can range from four to twelve and more, as the patient arrives. Additional personnel, having been alerted by the overhead announcement of patient arrival, are ready to respond as needed. Room 1 and Room 2 are each the 22 ft. X 22 ft. The total size of the Department of Emergency Medicine occupies 35,000 square feet.

[17] A *Bakhtinian* approach of dialogism articulates the reach back to the texts of emergency medicine, thus Western medicine, emphasizing the past construction of knowledge to current action (practice). The bracketing of Room 1 in its ritual form, attunes the local participants in this medical event, diminishing the distance between current frames of participation and past knowledge and practice. Thus speakers' utterances articulated within this participation framework of medical protocol and language reflect back to the authors of medical texts connecting to accumulated knowledge and practice of emergency medicine, and thus, to that of western medicine, reaching back to centuries of evolving texts.

4. Participants

The research and education focus of this Level 1 Trauma Center necessitates an overview of personnel involved in this study as it has implications for hierarchical positioning of staff members as well as providing indications of staff turnover, thus continuous training, a feature of High Reliability Organizations (HRO). The composition of permanent staff members, that of Nursing, Senior Staff, Patient Advocates, Clerical, and Security Officers, is augmented by Emergency Residents and Surgery Residents as well as Residents of adjunct specialties. In order that the reader has an understanding of differentiation in levels of experience, I provide the following individual description of participants recorded for this study.

a. Senior Staff

The permanent teaching staff of the DEM are board certified Emergency Room Physicians who have completed medical degrees and Emergency Medicine residency training programs. The greater majority of this teaching staff, graduated from the residency program at this site, including three Physicians who initiated the Residency Program at this medical institution in the late 1970's and were involved with the earliest hospital- based research programs in the specialty of Emergency Medicine. As a group, they are represented in the literature of Emergency Medicine and have contributed to the development of field research underlying current practices.

Typically, senior staff physicians rotate their assignments, covering three shifts of 8 hours in the emergency room, twenty-four hours per day. On any given shift, there will be one senior physician in each of Cat 1, Cat 2, Cat 3 and Pediatrics. As senior staff physicians, they are medically and legally responsible for all medical care occurring during their shift. Thus, teaching and supervision of medical care provided by senior and junior residents becomes a normative feature as it is conducted in the public sphere of the designated "doctor's office", an open forum situated in each category of the emergency room and populated by all emergency room personnel. Teaching by senior staff also occurs in a weekly format of "rounds", a day reserved for lectures on topics specific to Emergency Medicine. Although one

senior physician is designated to oversee the Residency program, all staff contribute to this didactic element of training.

The recorded shift for this study, was supervised by a physician, Staff.Doc (m), who had finished his residency two years prior to this episode. He joined the senior medical staff upon completion of his training program and board certification in Emergency Medicine. Staff.Doc (m) is on a first name basis with most of the personnel in the emergency room. His nickname, coined during residency, is often used by emergency room personnel during the course of the day. His style of interaction with nurses, techs and support staff is informal and gives evidence of his past history of interaction on both a professional and personal basis. As with other senior staff physicians, there is mutual respect evidenced in informal conversation during the course of providing medical care to patients. He is easily approachable and accessible to emergency room personnel, a style typical of most senior staff in Emergency Medicine.

b. Senior Residents

The third and final year of Emergency Medicine Residency is marked by the acquisition of skills required to "run a code"; that is, to coordinate the events in Cat 1, Room 1 and Room 2. "Running the code" implies that the senior resident coordinates resuscitation and stabilization of patients in life threatening medical conditions. As in each progressive year in residency, acquisition of new skills and responsibilities at a heightened level of criticality for patients is accompanied by equally heightened anxiety about new responsibilities. This is a recurring feature as residents pass from one level of expertise to the next in each year of training. Though not formally acknowledged, informally the permanent staff of the emergency room anticipates this response each July, the time of transition in training.

First year residents are those physicians who have completed medical school and have an M.D. degree and license to practice. In the first year of Emergency Medicine Residency, the majority of the year is spent in other specialties of medicine required of their training. For example, a first year resident may only spend three out of twelve months in the DEM. In the second year of Emergency Medicine Residency, the majority of time is spent in the DEM though rotational months are spent in elective and

mandatory specialties. In the third and final year of Emergency Medicine training, the resident spends most of the year in the DEM, with some elective service options in different departments, and in some instances, different institutions.

The event of this recorded episode for analysis occurred in June, the final month of the academic year, when the senior residents were approaching their final shifts of residency. Both Res.Doc (m) and Res.Doc(f) have secured positions upon completion of their training and have scheduled Emergency Medicine Board certification exams.

Res.Doc (f) is also in the final preparation of wedding plans and will be married in early July. The emergency room staff has been privileged audience to the anticipation and preparations for the wedding and elaborate honeymoon plans. Many have met the husband-to-be informally, at social gatherings and through knowledge gained in interaction with Res.Doc (f) over the course of three years. She is focused in work and affable in interaction with staff, and easily engages in typical banter and joking with emergency room staff.

Res.Doc (m) is planning to take a temporary position in Hawaii in the public health sector. He has dated an emergency room nurse during the course of residency. This is a common social pattern, often resulting in marriage between residents and nurses, though not in this instance. His interactive style is sometimes marked by grouchiness as pressures mount and his anxiety level rises in response to the events during the course of the day. Through his residency, he has acquired an ability to self-reflect and correct, publicly making light of his style through joking as a means of recovery. In this final month of training, his wry sense of humor is more prominent in interaction.

c. Nursing Staff

The nursing staff is often credited with being the backbone of this department. All are registered nurses as the emergency room does not allow for nurses in training below the level of a fully credentialed R.N. The experience level varies, though most have several years of seniority. Additionally, there is a pattern of professional development, in which nurses are constantly in school for the next level of professional degree.

The organizational role of nursing is that of direct patient care, and also of carrying out orders issued by the physicians (i.e. administering medicines, breathing treatments, obtaining labs, etc.). Though the official roles are designated by the institutional order, it is frequently the case in this Department that nurses often initiate orders for blood work or treatments, as well as alert physicians of changes in patient status. Nursing is often an informally endorsed adjunct to medical faculty as they are often instrumental in instruction of new residents regarding medical procedures, operational procedures and medication needs of patients. Though not formally recognized, nursing provides an additional source of oversight for residents, and in general, the safe care of patients.

During the episode of analysis, there are senior nursing personnel, one of whom has recently completed her M.B.A. and has taken a coordinating role in the emergency room. Her professional sights are set on management while she is beginning to raise a family. Her style of interaction is one of reassurance and calm no matter the event at hand and she often intervenes as a stabilizing force when tensions rise. In contrast, a more recently hired nurse appears to be awkward in interaction as will be noted in the analysis section of this study. As events unfolded, beyond the period of study, this female nurse sought and obtained a position in a different department of the hospital.

d. Nurse Technicians

Nurse technicians in this episode have years of experience in the emergency room. Typically, nurse assistants, or techs, come to the emergency department with a history of work experience and credentials as emergency medicine technicians, and have often worked for Emergency Medicine Services, the municipal ambulance service. Currently, nurse technicians are hired with specific experience as emergency medicine technicians, or they are recently graduated nursing students who have not yet taken nursing board examinations. As with nursing staff, ongoing schooling for the next level of expertise in nursing is in process.

The role of the nurse assistant is to quite literally assist the nurses in care of the patients, though the level of care does not allow for the administration of medications and most procedures. As an

example, the nurse assistant cleans the patient, makes the beds, empties bedpans, and carries out nursing orders regarding drawing blood work or collecting urine samples.

In the course of recording for this study, the voice of nurse technicians is not prominent though they are actively involved in patient care to a lesser degree in the events of Room 1. Significantly, they were the least likely to consent to participate in this study.

e. Support Staff

In addition to medical personnel, support services include registration clerks, patient advocates, and psychiatric and medical social workers hired by the DEM with the role of providing non-medical needs of patients. They are employees of the department and integral to the range of services offered to patients and their families.

The *Patient Advocate* program evolved out of necessity in the 1970's in response to the need for an interface between family and physicians, and hospital and community in newsworthy events. The Patient Advocate interfaces with family and physician, apprising family members of patient conditions, and providing medical staff with necessary information. In the episodes of care originating in Room 1, Patient Advocates locate and notify family members, and often serve in the role of grief counselors in events of impending loss. When need arises for information about the community and resources, the Patient Advocates respond to the needs of the whole of the DEM. Typically, the background of Patient Advocates varies. While some are hired from within the DEM pool of clerical and technician support, others are hired with experience in human services.

Clerical staff members initiate and complete the necessary documentation of demographics for the medical record and medical billing, as well as coordinating the paperwork necessary to transfer patients in and out of the DEM. They often move to positions within the DEM as well as within the hospital. In recent years, Information Technology has become more prominent within the department and their presence in the DEM is now essential as they upgrade and maintain internal computer programming for an electronic medical record system.

Psychiatric Social Workers and Psychiatric Nurses provide psychiatric assessment, make recommendations to physicians, and carry out disposition regarding necessary follow-up care of patients referred for consultation. Psychiatry provides a liaison service to social workers and nurses and is available for consultation of medications and diagnoses, as required. This role serves as a support service to the emergency department, and as a result, education and support of residents is provided informally.

The *Radiology* department of the hospital maintains permanent facilities in the DEM, equipped to obtain portable X-rays and CAT scans as needed. Room 1 and Room 2 occupy a specific area of the DEM. The rooms are separated by a small corridor housing warming and cooling units for IV solutions and blankets. This corridor also houses an X-ray viewing room, and as X-rays are immediately available for viewing, X-ray technicians are integral to medical services provided. The Radiology department also provides training on site.

The voice of the X-ray technicians, and their wealth of experience in viewing results, is evidenced in the recordings for this study. Though not selected for analysis, recordings reveal the consultative role that X-ray technicians play with DEM staff who recognizes their expertise. The force of their voice is required so as to be heard above the multiple voices of persons attending to patients, warning of impending exposures and need for clearance to x-ray the patient. They are part of the emergency room and participate in the informal network of relationships and social events of the DEM.

f. Medical Consultants

The Department of Surgery provides a Trauma team on call, for traumatic injuries including Motor Vehicle Accidents (MVA), gunshot wounds (GSW), and other injury. As required by the American College of Surgeons, Level 1 Trauma Centers, Rivera must have on twenty-four hour call, a full range of specialty medical care physicians, on site, in the hospital.

During the course of residency training for any of the services, relationships evolve with the DEM. The relationships with consulting services exist along boundaries between departments and the DEM interacts with each of the departments on a daily basis. Though not a central focus for this analysis, boundaries between departments often become the site of dispute over resources, responsibilities, and

identity. As the episode of analysis unfolds, the lines of demarcation between departments become apparent in shifting of alignment of medical staff who are present in Room 1 and Room 2.

g. Community Interface

Emergency Medical Service (EMS) is the municipal ambulance service for the city. EMS is the most frequent first responder to a medical emergency. The training of EMS technicians occurs in the local community college, with practicum experience occurring in this DEM as well as other emergency rooms in the city. The technicians interact with the DEM on a daily basis. Informal social networking occurs and invitations to departmental parties are reciprocal. Often, EMS technicians (EMT) become employees of the DEM as they choose to advance their training, often entering schools of nursing. The DEM has experienced the upward move of EMT's from the field, in to Emergency Nursing Technicians, Nursing and Medical Residency. While working in the capacity of EMT's they present patients to the DEM, giving medical information gathered on the scene of accidents, shootings, and in homes. The initial exchange of information with DEM nursing and physicians, proves to be crucial in initiating evaluation and treatment of patients. Additionally, EMS circulates current information gathered from their rounds on the streets of the city. This may include information on trends of heroin overdoses in the advent of deadly doses sold on the streets, past episodes of care with the patient, and status of activity around the city.

The police department of the city responds to the DEM to take reports of accidents and crimes, and on occasion, police prisoners are presented for medical treatment. Overall, the frequency of interaction with individual DEM staff members is minimal and the boundary less permeable than that of EMS. The police department of this city has a more formal relationship with an alternatively designated Trauma Center within the city.

The frequency of face-to-face interaction among DEM staff who share a rich background of interacting under stressful circumstances, lends itself to be seen as a complex system, sustained not only by a shared medical perspective of multiple disciplines, but also by recurring and long-standing relationships among members of this DEM. The ongoing features of this academic DEM program of

training allows for a continual turnover of personnel in the form of residents and other trainees while the core Physician and Nursing staff remains fairly constant.

CAT 1 and Rooms 1 and 2 are an extension of the whole of the emergency room. The interaction between categories of severity of ill patients is fluid as any patient may deteriorate and require the care of CAT 1. This movement is reversed in the event that a patient's condition is downgraded to less than life threatening. The interactions around the transfer of patients are also captured in the recordings. The boundaries between the DEM and EMS, as well as that of consulting medical services, are also demonstrated in the collection of recordings. All patients come from the community in which the hospital is physically located and the DEM serves as a major point of entry.

II.MEASURING PATIENT SAFETY

The problem of measuring patient safety became a logical step to validating my contention that the DEM operates at a fairly safe level of operation. In an attempt to find such measures existing within the organization, I reviewed systems that would reveal major medical error occurring during the recorded shifts of this study.

Attempts to discover shifts in which significant adverse events occurred included review of Quality Assurance and Risk Management records for the dates recorded. Of interest is that there were no incidents reported on the recorded shifts. Reports of incidents (Red Forms) by employees within the department were also deplete of incidents for the shifts recorded. Red forms are narrative reports made anonymously by any employee witnessing an error, incident or accident. In the case of this hospital's narrative report, the system of reporting is in an "online" format. It is not well understood by employees, and from personal experience, it is most difficult to use.

A.FINDING MEDICAL ERROR

1. Expert Chart Reviews

The Institute of Medicine report of 1999, *To Err is Human* (Kohn, Corrigan Donaldson eds. 1999) concluded that between 44,000 to 98,000 patients die as a result of medical error each year, making this the 8th leading cause of death in the United States. Deaths attributable to adverse events rather than

underlying medical conditions were extrapolated from data collected during expert chart reviews. The measure of adverse events used as one standard of estimating medical error, was established in the *Harvard Medical Practice Study (HMPS)* (Brennan, Leape, Laird 1991; Thomas Studdert, Burstin 2000).

The HMPS method of identifying adverse events and their incidents were based on a two stage medical chart review; first by nurses to screen for adverse events and then by physicians who determined the extent to which these events indicated sub-standard care. Medical error was defined by either error of execution, meaning an incorrect action, or failure to act (Reason 1990). In keeping with this standard, expert chart reviews were performed for those patients who granted consent.

2. The Limit of Chart Reviews

I submitted charts for review. The reviews conducted by two DEM nurses, one an administrative nurse, and the other, a staff nurse. Errors were formulated as either errors of omission (not executing a plan) or commission (an incorrect action). The findings were inconclusive in that the capture of error type was not severe enough to result in an adverse event for the patient. A more significant finding from this exercise in determining medical error is consistent with the literature of critique of this method. Namely, documentation in the record is incomplete for some adverse events escape notice, and inter-rater reliability is poor. In this study, inter-rater reliability was tested by presenting the same group of charts to two reviewers with a result of different outcomes. Additionally, one reviewer incorrectly picked up a duplicate package of charts that she had already reviewed. In comparing the two results, intra-reliability produced different outcomes. Given the degree of disparity between medical chart reviewers, as well as within one reviewer, the conclusion is that the medical chart reviews were not indicative of significant medical error occurring during recordings of shifts. This critique is also offered in the literature of medical error. Furthermore, the construction of the electronic record frequently occurs some time after care episodes have been completed, and, often, it does not accurately reflect the amount or time of care, the competing tasks that physicians and nurses are attending to simultaneously, task interruption, and chronology of actual care.

More significantly, the role of error in adverse outcomes is tentative in the literature of cognitive psychologists (Amalberti 2000) and human factors specialists (Dekker 2001). Of equal significance in measuring error is that the frequency of error becomes meaningless until we can determine the number of non-errors. To date, this figure has not been captured in the literature on measuring medical error.

2. Rivera Reporting Systems

In addition to having medical charts reviewed with focus on capturing medical error I also had Quality Assurance and Risk Management documentation searched for incidents. Revealing no major incidents, DEM Morbidity and Mortality reports were made available for review, and proved to capture events compromising patient safety. The reports were reviewed within the DEM, and remained in the department. Notes concealing identity of participants were kept within the data set and analyzed in light of all data collected per shift.

3. Morbidity and Mortality Studies

Morbidity and Mortality (M & M) studies date back to the late 1800's and refer to case reviews occurring within the confines of the department of practice, by physicians, and are exempt from legal liability and publication outside the medical group (Wachter 2004:273-279). As a form of self-governance, cases of error, or morbidity, are reviewed and individuals responsible often sanctioned either in the public format of the group, often resulting in a corrective action by the responsible parties. This format provides an opportunity for medical practitioners to openly discuss medical mistakes with opportunity for feedback from peers. It is one of several formats for presenting medical cases with implicit purpose of learning from error in practice. In the case of this DEM, M & M studies are presented in the format of Grand Rounds; that is, weekly educational sessions for all DEM residents and staff.

M & M studies are critiqued as a means by which physicians "manage error and mask guilt" (Millman 1976:97), yet the function of this format is to promote and sustain collegial control and regulation within the group of practitioners. The limits of M & M conferences are in the lack of dissemination of information from "lessons learned" beyond the boundary of the department in which the error occurred. This critique does not diminish the potential of M & M to inform practitioners and reduce

error, but the information assembled by means of this format could further patient safety if it were captured in reporting systems as in the Aviation Safety Reporting Systems (ASRS)[18]

The greater measure of adverse event was found in the DEM Morbidity and Mortality (M & M) studies. This data is exclusively for review within the department and for the sole purpose of self-monitoring and teaching (lessons learned). Adverse events as recorded in the M & M during the course of this study yielded six events on different shifts. Of the 6 shifts, the recordings were reviewed but not transcribed. In the initial period of recording, the first shift was lost due to technical error in recording and reflected the learning curve of the recorder. A major adverse event occurred later in the study, and though most of the recording of the shift is intact, failure of equipment occurred in Room 1 where the incident took place. In this event, I realized that the recorder was inoperable and took detailed notes. Of the four remaining candidates for focus of analysis, the choice was made based upon the level of stress subjectively measured in the End of Shift (EOS) reports of personnel in CAT 1, the occurrence of an adverse event resulting in injury of a resident during the course of the shift, and high acuity of patients in CAT 1 at this time.

4. External Regulations

The DEM, as all hospital departments, is subject to multiple oversight agencies. Most notably in the daily functioning of the hospital is the oversight of JCACOH, the Joint Commission on Accreditation of Health Care Organizations, assuring compliance to levels of performance regarding medical care. JCACOH compliance and accreditation assures that hospitals are reimbursed by insurance companies for services rendered. Additional oversight in the form of Medicare requirements are moving toward a system in which medical errors, and their consequences, will no longer be reimbursed. Local state, and government oversight comes into play, and with the multiple levels of external regulatory requirements,

[18] ASRS is the narrative reporting system of mishap and errors, initiated in 1975 by the Federal Aviation Administration who disseminates the information in a monthly newsletter, *Callback,* alerting operators. The success of ASRS is in the dissemination of information, as well as upgrades in equipment and procedure as identified by pilots (Wachter 2004:286)

the hospital employs ‘Compliance Specialists’ to oversee the compliance with oversight agencies, insurances, medical licensing bureaus.

Professional regulations requiring adherence to licensing standards apply to multiple care providers, including nurses, medical doctors, social workers, and radiology technicians. Internal to each profession, ethics and standards of care are established, and non-adherence can lead to sanction in the form of fines, loss of license, or re-education. Within the DEM, professional standards and departmental standards are reinforced by DEM administrators in each of the sub-groups of profession. This list does not include the tacit understandings between the DEM personnel, about the proper appearance and conduct which is both obligatory and expected in interpersonal communication while in the DEM.

III. METHODOLOGY

The methodology of Conversational Analysis provides a framework for data in the captured record of interaction and a form of analysis of actual face-to-face interaction that allows for the identification of recurrent patterns of interaction. Indicators of participants’ stress, patient acuity and volume were captured in ‘end of shift’ surveys. Indicators of medical error were studied during peak stress and workload as indicated by end of shift surveys. The surveys demonstrate the contextual constraints of volume and stress while safety outcomes were not clearly linked to the indicators.

In this section, I also present the methods of data collection, and the selection of a variable that represents the recurrent relational elements of a sustained social order that is proposed to maintain patient safety.

A.DATA COLLECTION

1. Digital Recordings

As part of the data collection, the digital recorder, placed on a movable cart, was moved to Room 1 and Room 2 to record this episode of care. The greater part of recordings for this study, a total of 44 recorded shifts of six to eight hours, took place in Cat 1, a category indicating that the patient was in a possible life threatening condition. On each shift, three participants were selected to wear wireless microphones, based upon their role as staff physician, resident, and /or nurse. The choice of data to be

analyzed is based upon the ability to capture face-to-face interaction as it unfolded during the course of a shift.

Conversational analysis emerged in the 1960's within the field of sociology and became more empirical with the advent of recordings of speech (Sacks, Schegloff and Jefferson 1977). The sociological analysis of interpersonal interaction and analysis had been obtained through observation, note taking and coding for analysis, (Goffman 1961). The technology of audio recording allowed for innovative analysis of natural data collection of the actual practices of people in interaction.

Digital recordings were obtained with the use of a Marantz Professional PMD690 Portable PC Card Recorder. Three Shur wireless microphones and a sound mixer were employed to allow for an excellent recording of all sounds in the immediate area. Wireless microphones were worn by three medical staff in CAT 1: the senior staff physician responsible for all medical and legal aspects of medical care, and either/or a resident, and nurse or technician. Recordings were from 6 to 8 hours in length over a period of 7 months (October 2002 to June 2003) with a total of 44 shifts included. The recordings were then transferred to a PC via a Belkin card reader and made ready for transcription. The level of technical difficulty encountered in this process resulted in the total loss of 4 shifts of recorded data. Most difficulty was encountered in the initial phase of work. The loss of one Room 1 episode was significant in that a major medical error occurred, although it was captured in extensive note taking of the incident, in addition to review of the Morbidity and Mortality study that ensued[19].

Additional difficulty resulted from the use of Shur wireless microphones due to the fact that both receiver and transmitter devices required 9 volt batteries with a life expectancy of 2 to 3 hours. This maneuver resulted in total exchange of batteries up to 12 times per shift. This procedure was costly in terms of financial consideration and time distracted from the task of note taking, observation and coordinating tasks. Often the batteries would signal low power during a medical procedure which was

[19] Morbidity and Mortality (M&M) studies are investigations of incidents of occurrences of medical error captured internal to the department or by external organizational monitors. This has been a traditional method of internal audit by the physician group and results in the DEM are often used for teaching purposes.

difficult to disrupt, thus delaying exchange of batteries. However, the use of 2 additional microphones allowed for the recording of the event from the vantage point of a further receiver of sound.

The disruptions of time had consequence in the amount of observation of non-verbal behaviors and note taking. Video recordings would have both precluded the loss of this data, as well as presenting additional barriers to maintaining confidentiality and increasing disinclination to participate in the study. Prior to the study, the DEM had, in fact, mounted brackets for the use of video cameras in Room 1 and Room 2 with the purpose of monitoring procedures and quality. The cameras were never installed due to issues of confidentiality and possible use in litigation.

In summary, the difficulties encountered in the use of complicated recording technology were offset by the richness of the audio record over a period of 8 months. The recordings allow for a preserved database for this study. This preserved talk- in -interaction provides an opportunity for analysis of actual occasions of natural interaction in emergency medicine and further illuminates the locally constructed practices contributing to or detracting from safe medical practice.

2. Informed Consent

Informed consents of recorded subjects were required by Wayne State University Human Investigation Committee (HIC) as well as the hospital's internal IRB department. The study, its purpose and methodology, was presented to the staff in individual sessions arranged around a 24 hour cycle. Those not available for the presentation were give individual sessions of form and content and all were given the option to participate or decline. The consent form met the criteria for the HIC of Wayne State University and the IRB policies of hospital. In addition to the DEM staff, consent was sought from any hospital or community personnel present in the vicinity of recordings.

A significant outcome is that the staff consent reached approximately 98% compliance for the study. One staff physician initially declined, but later consented. Two medical technicians declined to participate as well as nurses who were not familiar with the ethnographer. The high rate of participation by DEM personnel may be due to familiarity and working knowledge of the ethnographer and elements of

trust inherent in the relational history of the her work as a psychiatric social worker for the DEM.[20] Additionally, given the research and education focus of this medical institution, personnel are continually exposed to research projects requiring being observed by not only medical researchers, but also policy and management studies conducted by business interns, independent researchers and management personnel. The novel circumstance of this study was in the recording of people as they worked, though anonymity of identity was required for consent to participate in the study.

Informed consent was required of patients, or their legal representatives, to grant permission for the sole purpose of review of the medical record of their visit and treatment in the DEM. The goal was to obtain and analyze a 20% sample of the patient care episodes recorded in the DEM record. The consents for patients did not include permission to record, as the focus of data collection in the form of digital recordings was on that of interaction of staff during medical care episodes. This dimension of the study was discussed and reviewed with both Wayne State University HIC as well as the hospital IRB department. The overwhelming reasoning was that the focus of study was the DEM personnel and their interactions above patient-doctor interaction. Additionally, there was no potentially harmful or invasive procedure involved for patients. An expedited review was granted as the research protocol did not include invasive medical procedures, nor was there a possibility of injury to the patient.

Gaining patient consent proved to be difficult for a number of reasons. Primarily, obtaining consent was compromised by the condition of patients who were either confused, unconscious and lacked the presence of legal representatives. Of interest, although the scope of this study does not permit further inquiry, middle aged black and elderly Caucasian patients were least likely to consent. Therefore, the projected goal of obtaining consent for a 20% sample of patient charts was not met.

Additional obstacles were encountered during the course of data collection in that in order to conform to new guidelines of the *Health Insurance Portability and Accountability Act* (*HIPPA*)[21] new consent forms were required. During the study, consent forms were revised to comply with HIPPA

[20] The relationship of ethnographer to setting is of significance in that it is an experimental approach to ethnography. Given the focus of study, constraints prohibited a full analysis of this phenomena, although it will be of interest for future writing.
[21] HIPPA (Health Insurance Portability and Accountability Act) mandates compliance with federal regulations intended to protect the privacy rights of patients given the proliferation of information technologies employed in handling medical information.

regulations and necessitated additional review by both university and hospital. The revision of informed consent and requirements of HIPPA resulted in the use of difficult and confusing language for both patient and staff. There is no evidence that this elongated and complicated explanation resulted in change of rate of agreement to participate in the study, though it was a time consuming process that could not have been anticipated. All hospital personnel were required to submit to the revised informed consent process and sign additional permission.

During the course of recordings, and due to individual concerns that they were unaware of personnel wearing wireless microphones recording their interactions, signage in the area of recordings as well as badges on those carrying the wireless equipment were instituted. The signage indicated that live recordings were occurring in the area. The addition of this precaution to protect subjects was not anticipated as the presence of a significant cart and recording equipment was visible throughout the study. The signage appeared on badges worn by those recorded, as illustrated below.

I am being recorded as part of a research protocol.

Please inform me if you object.

In instances in which DEM personnel or patients had refused to participate in the study, every effort was made to protect the rights of those individuals. As a result, there were times when the effort to record was abandoned for the remainder of the shift. Additionally, there were segments of recorded personal conversation in which participants requested that those portions not be used for analysis. The instance of this type of occurrence was rare and limited to brief segments of the recordings with insignificant overall interference in process and meaning.

3. Confidentiality

The transcription of emergency room work group interaction takes into account the ethical need to exclude the identity of those who consented to participate in this study. Therefore, all names are concealed through use of pseudonyms in transcription. Additionally, the location and name of the hospital have been concealed through the use of fictive identity. The city in which this study takes place has been disclosed as the significant socio-economic conditions are of consequence to the population this

emergency room serves. As a result, and by extension to this arena of medical care, the external socio-economic conditions generate constraints and increase environmental stressors for this work group.

4. Workload Indicators

Work load indicators were captured in the daily records of JCACOH logs[22], a database that is archived by the hospital to meet JCACOH requirements. The method of providing formal indicators of organizational states and operational events is captured in the review of JCACOH logs and data was reviewed in an effort to locate and compare high volume workload shifts to that of lighter volume. Staff ratios were fairly constant throughout the study and did not vary with increased workload. JCACOH logs were reviewed and analyzed specifically for indicators of workload as captured in number of patients and procedures in Cat 1. Additionally, the statistics reflective of workload (operational states) were compared with subjective indicators of stress, to be discussed below. Expert chart reviews were also conducted with the use of JCACOH logs to identify patients' charts and DEM medical documentation in the form of electronic departmental records.

5. Indicators of Stress – End of Shift reports

End of Shift (EOS) reports were collected per shift recorded, with the goal of reaching a number of 10 stress surveys. The surveys were constructed to ensure that the probability of completion would occur, thus a Likert scale[23] was presented to ten Cat 1 employees as they completed their shift. The Likert scale asked the respondent to rate the per hour level of stress throughout their shift with choice of categories as follows; quiet, active but under control, getting intense, barely coping and out of control. Subjective responses of internal states of stress were recorded and correlated to volume indicators of number of patients and number of procedures. A significant correlation occurred between the number of

[22] JCACOH, or Joint Commission on Accreditation of Health Care Organizations, sets standards and procedures and conducts on site surveys in order that hospitals comply with requirements of levels of performance regarding the administering of medical care. JCAHOH compliance is a condition of insurance reimbursement from Medicare and other health insurance providers. It is one of many oversight agencies intended to insure patient safety. The JCACOH log is a computer base capturing the names of patients, time in department, and procedures, tests and interactions with patients. JCACOH log databases. JCAHOH compliance is a condition of insurance reimbursement from Medicare and other health insurance providers. It is one of many oversight agencies intended to insure patient safety. The JCACOH log is a computer base capturing the names of patients, time in department, and procedures, tests and interactions with patients. JCACOH log databases

[23] Likert scaling, introduced by Rensis Likert (1932) is the most widely used method of measuring personality, social and psychological attitudes. In this instance, the scale was used to measure subjective reports of stress per hour of work.

procedures per hour, though the number of patients in Cat 1 did not bear this correlation. The number of procedures can be viewed as reflective of criticality levels of patients and is used in data review in the DEM for management purposes (i.e. the more severely ill the patient, the greater number of procedures, tests).

Below is an illustration of the End of Shift (EOS) Report:

HOW WAS YOUR DAY? Additional Comments:

(Please check one box from each column)

	AM 01	02	03	04	05	06	07	08	09	10	11	12		
Quiet														
Active,UnderControl														
Getting Tense														
Barely Coping														
Out of Control														
	PM 13	14	15	16	17	18	19	20	21	22	23			
Quiet														
Active,UnderControl														
Getting Tense														
Barely Coping														
Out of Control														

B.TRANSCRIPTION

Transcription, initially developed by Jefferson (1972) in conjunction with Sacks and Schegloff, provided a systematic means of visually representing the data for analysis with transcription conventions. This method of formatting utterances for sequential analysis (Ten Have 1999) became the foundation for investigation of recorded face- to- face interaction. This study of interaction in emergency medicine proceeds with the data collection, transcription conventions and analytic methods initiated by Sacks, Schegloff and Jefferson.

Transcription conventions attempt to put in written form the conversational management of speakers and listeners' use of verbal and non-verbal signs used to convey or understand information and maintain conversational involvement. The transcript provides access to the interactive aspects of conversational management, allowing for the study of language use in its natural setting (Gumperz, Berenz, 1993).

The selection of a recorded episode of Room 1 and Room 2 foregrounds the interactive work of emergency room medical providers within the wider context of

> "native speech recorded by native agents and concealed machines, (and) is the product of a moment in an organized encounter among categorized actors. Any verbal event of ethnographic notice – a kinship term, dialect shift, price agreement, insult, etc, exists as the living creature of social interaction. Unless we know how occasions of speech are socially organized, we can neither fully understand nor properly evaluate our data. We collect cultural artifacts that come mounted in a context that gives them their momentarily enlivened meaning. We preserve their interactional matrix, not pretend to scoop nuggets from a swamp." (Moerman 1988:9).

The transcription of the recorded interactions in Room 1 and Room 2 provides a "frozen frame" in time and space (context), "transformed into description and analysis.(Moerman:1988:9). The methods employed for this description of interaction are based upon conventions derived from the work of Trix (1993) and as developed through the works of Sacks, Schegloff and Jefferson (1974). Decisions were made for the visual organization and display of verbal data; what categories to include and exclude; and practical consideration for the readability of the text.

I.FORMATTING

Transcription categories were determined based upon dimensions of interest and include practical decisions about spatial and temporal display. The orientation for the reader is from left to right, as is standard for our culture while the temporal orientation is vertical (what comes next). An example of transcription below, will serve as a reference for interpreting the transcribed speech.

1.Nurse(f) She's got an ABRASION?

To her right knee/

2.Res.Doc(f) Did you see the car?

3.Nurse(m) NO/

Nurse (f)	She's got an ABRASION/

4.Staff.Doc(m) Tell me where it hurts/ *to patient*

Open your eyes/

Okay dear?

The transcript is based upon intonation units, that is, the phrasal expression of approximating one breath in length. Each speaker's turn is demarked from the next speaker by the use of double space as indicated in the example above. Line numbers indicate speaker turns rather than intonation units (utterance), with the purpose of graphic chronological order representation.

The temporal framing of events in vertical order provides a visual reference and orders the data in a clear and readable approach and prepares the transcribed recordings for analysis. The unit of analysis, the utterance and contextual comments, provide the frame for representing and foregrounding the informal conversation of this work group, which is the focus of this study.

Standardized English spelling and pronunciation is used as it provides for ease of reading though it does not reflect the use of local pronunciations as in "D"ja know" (Did you know), as used in American English. There are some features of local context and language, and when meaningful for analysis, these features will be incorporated (e.g. "Is that her real **sat**" meaning oxygenation saturation of blood vessels). Local features of abbreviations of medical terms and procedures are contextually specific and reflective of this group as a specific language community, and not necessarily standardized along multiple sites of medical care.

2. Contextual Features

Contextual features and explanations are provided for in the form of *Italics* as in "*Multiple speakers positioned around the patient and beginning of the medical exam and care"*. This convention allows for explanation and description of context and for those items not readily available from reading of the transcript of verbal interaction alone. *Italics* display also includes brief synopsis of parallel conversations not clearly available for transcription, but important for the understanding of multiple speakers and multiple conversations occurring in the care of a single patient (e.g. "*Res.Doc(f) is asking questions of EMS about the condition of the car on the scene (of the accident).* Although there are

multiple and frequent overlapping conversations, conventions for representation of this category of event is beyond the scope of this analysis but significant for further exploration.

Events of non-verbal language are also captured in the use of *italics (e.g. (patient) moans as multiple speakers are heard. Or "cries loudly").* The inclusion of contextual comments, gestures, and prosody in *italicized form* allows the reader to capture the features of gaze and non-verbal behaviors which are indexical, that is, providing implication for speakers as they interpret local meanings. The placement of contextual comments is interwoven with utterances as described by Jane Edwards as "Running Text" (RT) (Edwards 1993). It offers clarification information as well as non-verbal gestures, gaze, and body positioning. Contextual comments providing clarification of events, are placed on the same line, and attached to the utterance (Utterance Plus Clarification UPC) (e.g." Where's my form? ", *referring to documentation sheet.)* Indexicals are traditionally defined as signs of referential and pragmatic aspects of interaction (deixis)[24] and are located in everyday language and traditionally refer to characterizing features of referential and non-referential functions of speech. Reference to space as well as person (e.g. "Yeah the other one is coming over here\") is well understood within context, indicating that the "other one" is a second patient arriving in the second room, Room 2. Temporal references understood within the local context and understood by all, occur as in "I talked to him after he got there". "After" references the chronological order of events on the scene of an accident as told by a male nurse who witnessed the accident on his way to work.

Simultaneous talk by two or more speakers is bracketed by the use of ([ ) indicating the temporal order of utterances preserved in a vertical dimension. Although the transcription of this episode may only display two speakers talking at once, in the context of Room 1, there are frequent occurrences of multiple speakers simultaneously speaking in the background. Multiple simultaneous speakers is a prosodic feature of this work group interaction and such events are frequently accompanied by high pitch, and rapid

[24] Deixis provides for the relationship between language and context (and) is reflected in the structures of languages themselves (in Rethinking Context (Duranti and Goodwin 1992:46). (Hanks 1992: 46).

speech marking intense activity of care of the patient. The following example displays this transcription convention.

a. Simultaneous Speech

Res.Doc(m) {What kind of operation did you have? *Question to patient.*

Res.Doc(f) {ALLRIGHT/ *Signaling recording nurse.*
Heart Sounds/ *Speaking rapidly as findings are given to nurse.*
Heart sounds are regular/

b. Latching

Latching occurs when one speaker picks up on the previous speaker's utterance without a change in timing and is often indicative of close coordination and attunement, or, the diminishing of difference. The following excerpt of transcribed interaction provides an example of latching marked by [b] diminishing of difference. The following excerpt of transcribed interaction provides an example of latching marked by ([b]):

Staff.Doc(m) I mean as long as he's-
Nurse(f) [Probably put him ahead no (??)
Staff.Doc(m) [in four points and Posey

c. Pauses

Res.Doc(m) You've gotta- *Response to patient complaining of pain.*
I know you are hurting and we're giving you pain medications\
- The more you carry on the more it hurts/
So just ta-
Take slow deep breaths/

In this event, the physician is frustrated and trying to form a response that conceals his frustration while gaining cooperation from the patient who has been crying in pain while she is being examined for injuries.

In the above transcription, the interrupted intonation (just ta-) may be additional information that the doctor has reached a level of frustration and must pause to collect his thoughts in forming a response to this patient in distress. It may also be attributed to the speaker's style as this resident displays many instances of interruption.

The interruption of speech may be internal to the individual (as above) or it may indicate that a speaker's turn has been usurped by the listener. For example:

d. *Interruption*

Res.Doc(f)	Right-
Staff.Doc(m)	[Left knee/

The example presented above is indicative of the senior medical staff correcting the resident in her report of injury to the right knee, which is actually injury to the left knee, a form of repair of procedure.

Prominence of word pronunciation within an utterance may occur with emphasis on one word or may be a feature of the entire utterance, as indicated below:

e. *Prominence*

Nurse(f)	She's got an ABRASION/
	To her right knee/

In this instance, prominence represents volume, tone, and pitch and for the purposes of this event, the nurse is speaking to the recording nurse, and needs to be heard above the general volume and pitch of multiple speakers around her. Prominence may also be used for accentuation (e.g. SEIzure) and clarification.

"Systems requirements" refer to "requirements than an interaction system must have given that participants have certain anatomical, physiological and information-processing capacities" such as the need to hear or see.. "Ritual requirements involve *rules that govern interaction,* given that the participants are moral beings who are governed by reciprocally held norms of good and proper conduct"

(Kendon 1988:31). Participants, both speakers and hearers, are simultaneously engaged in talk (Gumperz, Berenz 1993) and cooperate in an ongoing basis.

Prosodic and paralinguistic features of speech provide contextual cues to interpret not only lexical, but verbal and non-verbal signs. Conversational analysts have employed these cues to display and interpret the ongoing cooperative interaction of speakers and hearers. In this analysis, the transcription conventions used and borrowed from prior works make available the descriptive and interpretive methods necessary for a conversational analysis of this work group. Additionally, use of methods for transcription allows the reader of this text to make sense of transcribed recorded speech. See Appendix II for a full transcription of the selected medical care event, the data for this analysis, of Room 1 and Room 2 interaction.

An added note is required regarding speech/utterances in this corpus which were unclear or inaudible for transcription. When encountered during transcription, the use of [??] indicates that the recording cannot be heard clearly and that interpretation might alter speakers' content and meaning.

C.CONVERSATIONAL ANALYSIS

1. The Orderliness of Interaction

Conversational analysis (CA) presents a method to elucidate the patterns of interaction or sequential structures evidenced in the transcription of recordings of this work group (Ten Have 1999). In this investigation, the processes of attunement, or diminishing of difference of status, can be located in one of several patterns of interaction that lead to increasing coordination, meaning, and safe medical care in emergency medicine as accomplished by this work group. The inquiry focuses on how an utterance is spoken, and how utterances relate to each other), forming patterns of interaction over time.

The display of transcribed speech turns must be viewed as a whole to follow the orderliness of turn taking, or in this case, the tacit agreement to speak simultaneously as need requires. Given the frequency of simultaneous speakers turns, the orderliness unfolds as the process of care continues, resulting in assessment of injuries requiring coordination of all participants, the call for needed

diagnostics, treatment of injuries, and final disposition (i.e. will the patient be taken to surgery, Cat 1 or Cat 2).

The adherence to tacit understandings of conversational moves, necessary to accomplish the stabilization of the patients, are evidenced in the recurrent features of interaction.

2. Socially Organized Practices and Reasoning in Room 1

As an analytic practice, CA affords a framework for the study of talk- in- interaction and the orientation of medical care providers to each other, to the patient and to the paradigm of modern medicine. This analysis seeks to illuminate the necessary interactive accomplishments achieved through face-to-face interaction "in situ", and as preserved in the written record of transcribed recordings in Room 1 and Room 2 of this emergency room.

The focus of analysis entails choosing of sequences of talk that reflect a recurring pattern, throughout the transcriptions, notable for inquiry, with patterns of pre-sequential circumstance and that through the sequence, speakers display a set of action, and understanding, using selected forms and words to convey and achieve an action. A pattern of turn taking, sequential ordering and repair in events of failure of action are observed (Sacks, Schegloff, Jefferson 1977).

3. Recurring Patterns of Interaction

a. Processes of Attunement

The recurring element of attunement or the diminishing of difference in status is patterned in an inverse order to that of structural hierarchy in medicine; that is, the primacy of the authority of the medical doctor. Medical personnel of this department share a stance that each individual is essential in the care of patients, and that their contribution to this endeavor is recognized and an implicit element of coordination in this high stress and high risk environment. Though there is differential status and compensation within the hierarchical structure of the hospital and department, in the event of medical care episodes, each person is essential in the construction and delivery of safe medical care. Furthermore, the resident in emergency medicine will experience the diminishing of difference in status required of this

ensemble of medical specialists, technicians and support staff who coordinate their interactions to accomplish the goal of delivery of safe and competent medical care.

The investigation of a particular event occurring in Room 1 and Room 2, provides a model of ritual process and the category of attunement or, the diminishing of difference of status, necessary for the accomplishment of meaning and safe medical practice in this emergency room. This sample is representative of the recurring patterns of diminishing of difference observed throughout the recordings of 44 shifts of recorded medical care episodes. Attunement is most notable in the sequences of talk- in-interaction entailing mitigated speech; that is, indirect communication.

b. Mitigated Speech

Mitigated speech has meaning only as it is consequential in a specific local context and its implication emerges over time of repeated interaction. An illustration of mitigated speech in the context of this specific emergency department is provided below:

Staff.Doc(m)	Let her arm rest up here/
	A little bit/

In this instance, the indirect request is made by the supervising staff doctor toward the resident and the intent of this action is to seek the cooperation of the resident in changing the position of the patient's arm to alleviate her pain. Mitigated speech can be facilitative or obstructive, and as a recurring event in this context, the action of the speaker is that of facilitating cooperation and increasing coordination of patient care.

The speaker of the utterance is structurally superior in hierarchical status, serving as a teacher and role model for the proper conduct of a physician in practice. The recipient, a third year resident, about to graduate, acquires the intent and meaning of this form of speech over time of repeated interaction with supervising staff and progressively incorporates this way of interacting in relation to other staff, and patients. The world of emergency medicine is one that exists prior to the entry of the medical student into

the transitional phase of residency, and upon completion of residency, this world continues to exist with its shared history, shared reference system of the language and protocols of medical care.

4. Making the Implicit, Explicit

In this analysis, the events of mitigated speech are made explicit and examined in relation to their interactive context and shared meaning in this work group. Instances of mitigated speech in this selected event will be analyzed for the actions it produces, with the intent of illuminating the process of attunement, or diminishing of difference of status necessary for the interactive accomplishment of providing care to patients in emergency medicine.

The theoretical framework of CA provides an elucidation of the structural features implicit in this local context as realized in the language of emergency room interaction. Mitigated speech, or indirectness, is observed to facilitate patient care by seeking cooperation and coordination among medical staff, regardless of classificatory position in medical institutional hierarchy.

The contextual features and interpersonal interactions of this emergency room staff differ significantly from those presented in the works of linguistic analysts who study interaction in aviation cockpits (Goguen & Linde 1983, Linde 1988, Psenka and Trix 2006, and Krifka, Martens & Schwarz 2004). The asymmetric social situation of the cockpit, as represented in aviation, is highlighted, in the aforementioned studies by the use of mitigated speech by first officers who are in a hierarchically inferior position to that of the captain. The implications of the use of mitigated speech by first officers is such that this indirect approach has often resulted in catastrophic accidents as the potential of trouble expressed in indirect speech, is often ignored by the captain. This discourse marker can, again, serve to facilitate or obstruct the intention of work activity.

In the event of emergency room work interaction, mitigated speech is indicative of attunement, or the diminishing of difference as observed, and functions to facilitate coordination, meaning, and safe medical practices. The difference in meaning, intent and action of mitigated speech in this emergency room group, can be explicated within the framework of CA as an interactive accomplishment, a contrast to the categorical use of mitigated speech in cockpit crews resulting in catastrophic outcomes.

The object of this analysis is to illuminate the significant distinction in the function of mitigated speech as it applies to aviation and to emergency medicine, and to further the understanding of mutually constructed and understood action as a contrastive element to the literature on aviation safety.

Through recurrent patterns of use of mitigated speech, identified by means of Conversational Analysis, the implicit becomes explicit as analysis identifies the interactive moves of participants who diminish the difference in status, achieving attunement. The implicit, thus local, interpretation of mitigated speech becomes a process of attunement, bringing participants together in mutual action. This Conversational Analysis will reveal the specific meaning, for participants, of the use of mitigated speech, as a recurrent pattern of interaction which furthers collaboration and cooperation, a finding that stands in contrast to that of mitigated speech and the potential for miscommunication as viewed in aviation cockpits.

D. CONVERSATIONAL ANALYSIS IN ROOM 1 AND ROOM 2

1. *Selection of Episode of Care*

The recordings of informal communication were situated in CAT 1, and Room 1 and Room 2. The criteria for this selection, is based upon the fact that critical episodes of care are most likely to occur in this area. More significantly, it is a bounded area in which a specific contingent of nurses, doctors and medical technicians are assigned throughout a shift. This position also affords a cross section of medical providers employed in the DEM as assignments are designated daily and all staff is represented in this rotation. CAT 1 staff is also the designated responder to Room 1 and Room 2, and recordings were obtained from this location as well.

The episode chose for transcription was based upon high workload, high stress of staff, and typicality of interaction in Room 1 and Room 2. The workload of this Trauma Code was increased by the fact that there were two trauma patients, thus further extending the stress of participants, who continued to deliver a high quality of care.

2. Frames of Interaction in a Trauma Code

Frame references the signals that clarify message and meaning by means of labeling of type of interaction, such as a joke, the onset of a ceremony, a task, or play (Bateson 1972). Framing provides the necessary information for participants to understand the interaction in which they are about to engage. In the instance of Room 1 and 2, the frame structure is announces by the overhead message "Physicians to Room 1. Trauma Level 2. ETA 3 minutes. Thus the ritual is about to begin and the designated personnel respond to the overhead message by proceeding to Room 1. The care of the patient, if she is conscious, is cued by "Hello, I am Dr. Smith. We are going to take care of you." As the progression of the treatment episode unfolds, internal shifts of frame are noted. For example, in the case of utterances made for the medical record, the physician will announce, "Allright. Okay", a message understood by participants that the utterance will take the form of medical record requirements and must be heard by the nurse recording the episode.

a. Medical Protocol

The sequential framing of a trauma code follows a predictable pattern for participants, a sequence that is standardized medical practice and meets criteria established by the American College of Surgeons. The epistemic foundations in the natural sciences and the knowledge required to engage in Trauma care, are prerequisites, formally established before participants in care, begin to practice in emergency medicine. It is common knowledge to participants that the 'golden hour', that is, the initial 60 minutes after a trauma, are the most important in terms of intervention and stabilization of a patient. Following medical protocol provides a means of making sense of what is before them, and applying acquired medical knowledge to intervene on behalf of the patient. In the transcription and analysis that follows, the orderly progression of care is notable.

The framing of the trauma code unfolds in a logical progression, providing predictability for participants and facilitates their understanding of the medical protocols and what the expectations are for care. The standardized progression of medical care can be attributed to external bracketing, that is order imposed from outside the immediate context, and reflecting not only the organization of Rivera Hospital,

but also, the epistemic and formalized foundations of modern emergency medicinal care. Medical protocol reflects the formal organization of the care episode about to unfold.

The transcript was analyzed for recurrence of medical order of exam, revealing the same cue for the onset of a Room 1 episode in the overhead announcement "Physicians to Room 1. Trauma, Level 1, ETA 3 minutes." The routine of examination was repeated in the transcribed episodes, as well as in review of 20 additional samples of recordings of Room 1 Episodes. The final cue, though not heard in this episode, is "Housekeeping to Room 1", indicating that the patient was no longer receiving care in that location, and the "code" was terminated.

b. Informal Communication

Informal communication, as defined in this analysis, is characterized by the fact that it is not sanctioned; there can be no reward or penalty for its messages or silences, for its presence or absence. Informal communication, as recorded for this study, does not enter the medical record. Yet it is the essential requirement for relational elements of face-to-face interaction in this care episode, and elemental in the translation of formal medical protocol in to action.

The formal frames announced to satisfy medical protocol, are frequently noted to shift to informal and interpersonal frames for jokes, the onset of narrative, the telling of personal information between participants, the style of interaction, etc. Informal communication, in this analysis, reveals the relational work necessary to sustain and complete the formal protocol of a Trauma Code. Informal communication reveals the essential locally produced patterns of interaction emerging from this work group.

Transcripts were reviewed and categories of informal conversation emerged and were coded for genre; for example, joking, narratives of past episodes resembling the current events, interpersonal information sharing about events outside of the emergency room, side discussions about medical evaluation and treatment options, and utterances directed toward cooperation. Repair was noted if an utterance failed to be conveyed, or was mis-communicated.

3. Locally Produced Patterns of Interaction

Patterns of interaction were discovered in recurrent readings of the transcript, while simultaneously listening to actual digital recordings. The initial reviews of recordings and transcripts revealed cohesive and repetitive order of running the code. As noted, two episodes of care occurred in overlapping sequence of Room 1 and Room2, both victims of the same auto accident. Repetition of patterns and sustained order was observed in each of the recordings.

Additionally, comparison of this transcript and recording with a sampling of 20 recordings of different shifts, revealed very similar sequencing of order, depending on the nature of the trauma, or medical condition. Significant findings started to emerge in the opening sequence in each of the Room 1 episodes. That is, each episode of care began with the utterance analogous to "Hello, 'I'm Dr. Smith', and 'we' are going to take care of you.

Reference to hierarchical status within the institution of medicine, primarily that of Dr. and nurse were tabulated, revealing that the use of Dr. was a rare occurrence and was most often used when the physician introduced herself, and the team, to the patient.

a. 'Let's' and 'We' as Informal Cooperation and Collaboration

For purposes of this Conversational Analysis, attunement is noted in patterns of interaction in which participants seek cooperation in the use of "Lets" and "We", thereby diminishing the difference of status, toward shared identity and meaning of the events unfolding in this episode of care of trauma patients. "Lets" and "We" signal common status of participants in this enterprise of care for the patient and acts as a signal for collaboration required to effect the formal Trauma protocols. As noted in the transcription, "Lets" and "We", culminates in the final production of action; that is care of the patient. Mutual understandings of this lexical choice are locally produced and interpreted by participants who have shared in past episodes of medical care under the normal constraints of inner city emergency room conditions.

The formal hierarchy of medicine denotes physicians by the honorific "doctor", yet this usage is rarely found in this analysis. Most notable is the lack of use of title "doctor" in this transcript. The

exception is at the outset of the episode, when the physician announces “I’m Dr. Smith”, but immediately follows with “we are going to take care of you”.

b. The Variable of Mitigated Speech

Mitigated speech, a form of politeness, is noted in the transcriptions of the Trauma Code to follow, and takes the form of indirect request as in “Lets” and “We”. In its use, this form of mitigated speech results in a diminishing of difference of status, or a flattening of the hierarchy, and is noted in use by most participants. Rather than signaling hierarchical order, as in Cockpit crews, mitigated speech is used almost universally, by participants, in seeking cooperation and collaboration. When noted in the transcription, the reader will see the unfolding of cooperation to accomplish an action, be it turning the patient, or selecting a pain medication for the patient, regardless of status of the speaker.

One of the first obstacles I encountered when I entered the emergency room as a psychiatric social worker, was the need to enter in to the “ER” way of speaking not only in the understanding and use of medical language, but also, the need to drop the use of honorifics with medical staff. The exception is in the faculty/student relationship, in which residents address staff with deference toward a teacher, “Doctor Smith”

Mitigated speech is highlighted in the transcription, and selected for episodes of discussion. The recurrence of its use becomes apparent as the episode progresses. The occurrence of mitigated speech was noted and tabulations of frequency of use were made. The incidents of its use were then categorized according to staff position (i.e. nurse, physician, consultant, technician) and gender. Due to the fact that gender did not appear to reflect the frequency of use, staff position was used to tabulate frequency and percentage of mitigated utterance for each position type. A table displaying the outcome was compiled as evidenced in Table 1.

d. The Relational Elements of Accomplishing Medical Protocol

The analysis of transcription included a separation of utterances in to categories of referential content and relational content. Medical protocol and medical language was selected to contrast with relational content of utterances. Thus, “Hey Joe, can you get me…” is an example of relational and

personal interaction. When speaking for the medical record, cued by “Allright, Okay”, the utterances take on the formal language of medicine and are descriptive of medical observation of symptoms, medical findings, vital signs, medications ordered, and medical intervention taking place. The delivery of utterances, for the medical record, is interrupted but continue after interruption, devoid of personal and relational content.

By virtue of the form and function of medical protocol, the utterances reflecting medical care and recording, take on the appearance of routines in repetitiveness, and predictability and in keeping with the epistemic foundations of medical knowledge. Though a limitation of this study, the rituals of medical care are observed in action as the disordered bodies of the accident victims are presented. Through rituals of medicine, the disordered body is stabilized through the protocols followed in Room 1 and Room 2.

As in rituals, the order is a repetition of past episodes of healing, though each episode of care is accented by the participants involved. It is in the face-to-face interaction, that the relational elements of interaction are noted as utterances conveying relationship of participants, and the means by which informal communication facilitates the enactment of protocol are noted. In analysis of the transcription the selection of the use of “Lets” and “We” as examples of mitigation.

E.SUMMARY STATEMENT

This Conversational Analysis is based upon face-to-face interaction during a trauma code, captured by digital recordings and submitted to analysis of the relational elements of interaction necessary to enact medical protocol at a fairly safe level. This accomplishment occurs within the context of an inner city Department of Emergency Medicine that is confronted with high acuity and volume of patients who have health status compromises related to socio-economic restraints, as noted in the demographics of the patient population.

The methods of CA yield to an analysis of the interactive achievement of medical personnel who achieve coordination and cooperation by means of employing language resources in a system of exchange, thereby producing action and meaning for participants. The medical assumptions of “do no harm” are challenged as participants work in an environment with high potential for medical error. The

construction of safe medical practice becomes visible in the face-to-face interaction of this work group. Conversational Analysis provides a means by which to make the implicit, explicit through this analysis of face-to-face interaction.

The theoretical and methodological contribution of Conversational Analysis provides a means by which to gather empirical observation, a contrastive view of patient safety and "cultures of safety" emerging from the organizational theories of HRO. Rather than employing the methods of evaluation of safety by means of gathering individual perceptions and cognitive processing of safety culture, this study seeks to discover the interactive processes and mutually produced courses of action occurring in real time, in a high-hazard and complex medical environment situated within the organizational configuration of modern medical care.

The relational elements of interaction are documented in the use of mitigated speech, and specifically in the recurrent pattern of use of 'Let's' and 'we'. As a form of attunement, the use of mitigated speech in the context of this Trauma Center, enables participants to cooperate and collaborate, producing a mutually constructed action of enacting medical protocol.

Chapter 4: CONVERSATIONAL ANALYSIS OF A TRAUMA CODE

I.PRIOR CONTEXT OF ROOM 1

A. INTERACTION OVER TIME

Episodes of care in the DEM occur within a temporal order in which the flow of personnel, in and out of the shift, is continual. While the spatial frame remains the same, the context of each shift is formed by series of events and participant interactions and shared experiences of the day. Events from a prior shift and informal interactions have consequence for following, and, future shifts of work. The overlap of personnel between shifts serves as an opportunity for communication about prior events and contributes to the context of the current shift.

In addition to the continual interaction during the formal workings of this shift, the informal content of communication can be heard during episodes of care, at the nursing station where physicians, nurses and technicians continue interaction during brief times of workload relief. The content collected in shift notes, and from observations, ranges from the personal of participants' everyday life outside of the emergency room, to current events of staff members, such as announcements of pregnancies, engagements, weddings and picture viewing, dealing with family issues, new jobs, and news that flows within the community of emergency rooms, conveyed by EMS personnel. In this environment, where "downtime" is encouraged when the workload lightens, there is an opportunity to form relationships and have intimate knowledge of co-workers' everyday lives outside of the emergency room.

The informal events of social life of the emergency room are numerous and relationships between the staff continue to evolve. Though there is a specific hierarchical structure to some events, as in the physician staff Christmas party, the opportunities for social interaction are open and all are invited. Traditional events form out of this flow of interaction, with annual events, such as the "tag football game" on Thanksgiving morning, July 4th spectacular parties, and numerous annual parties evolving around the beginning and ending of the ritual cycle of residents' training, all of which can be anticipated according to the education and holiday calendar.

Weddings, showers, and sentinel life events are celebrated or grieved, and observed by the whole of the department. Sometimes the occasions are informally emerging and conducted during the shift, in addition to the planned parties outside of the emergency room.

Often activities are organized around a charitable event meaningful to emergency room participants and patient care. There is an annual "Men Who Cook" event that extends beyond the emergency room, to the whole of the hospital, an effort to raise funds for indigent patients' needs for medications they cannot afford. When funds run out, another event emerges in an attempt to meet this need. An upcoming event and social gathering is that of a party to be held at a Martini Bar. The emergency room pharmacists will serve as bartenders, with tips going to the emergency medication fund. Fundraisers, both benefiting patients in the emergency room, and people who are in need, are a constant feature and focus of interaction for this workgroup.

The context of this shift for analysis is placed within the ritual cycle of resident training, as it occurs at the end of the academic year. A significant ritual event is held for the resident's graduation. The graduation dinner begins with cocktails, and unfolds in to dinner, and speakers acknowledging residents' achievements, granting of diplomas, the annual "Tequila Toast' by Dr. Alexandro Santos. The most anticipated aspect of this event culminates in a comical production of skits. The skits are performed by the residents, and, in turn, the physicians who have served as faculty for three years. Each group presents parodies of the other, with an element of mocking and acknowledgement of the human qualities in each. This event serves as a rite of passage, and analogous to the concepts presented by Turner (1969).[25] The 'threshold people', emergency room residents of the past three years, have been separated from normal life routines to enter this ritual cycle culminating in graduation and integration in to the group of emergency room physicians.

[25] Turner (1969) builds upon the "liminal stage" as conceptualized by Van Gennep (1909), in which 'threshold people', the initiants are "as liminal beings they have no status, property, insignia secular clothing indicating rank or role, position in a kinship system, - in short, nothing that man distinguish them from their fellow neophytes or initiands. In this final ritual of residency, the residents, who have formed a 'communitas', reverse roles with their structural superiors, the final act of liminality in which all social roles and rules are off.

As this shift of analysis unfolds, the residents and physicians are in the process of developing skits for graduation, and planning moves to their new positions. The skit development is a highly guarded secret at this time of the year. After the event of graduation, the content of the skits becomes a daily topic for those who witnessed the event, and those who could not make it to graduation.

B.CONTEXT OF A SHIFT

As background knowledge to the episode of analysis, the DEM staff have responded to four, Room 1 events; a male who died of cardio-pulmonary arrest; a motorcycle accident victim with multiple injuries; and a male with an accidental overdose of heroin. An additional male had been treated for heroin overdose, and is in CAT 1. There is one young male with a gunshot wound to the leg. The remaining patients in CAT 1 have chest pain, difficulty in breathing, and one patient found unconscious.

At the start of the shift, there are 9 patients in CAT 1, while in the whole of the DEM there are 12 people waiting to be seen; 6 anticipated transferred patients; 31 patients in CAT 2; 8 patients in CAT 3; and 4 patients in a 23 hour bed unit set apart from the DEM but included in the overall number of 60 patients in the department. Res. Doc (f) is anticipating the gathering of family that she will have to confront with news of the death of their loved one from cardio-pulmonary arrest and in the period prior to this Room 1 episode, she states “this is the hardest part of all.” The interaction, prior to the episode of analysis, is centered on patient care, though a narrative can be heard and regarding the stabbing of a resident by a visitor at the beginning of the shift. The shift begins with an active patient care load, and in CAT 1, the acuity of illness overall, is high.

The resident, who was stabbed in the eye, with a pen, was at the beginning of the last shift of his residency. As he examined a patient in the hallway of CAT 1, a visitor in the emergency room stabbed the resident in the eye with a pen he had borrowed from an employee in CAT 2. The injury sustained by the resident involved a laceration requiring stitches, but the eye was intact. The narrative, as a frame break (Goffman 1981:152), or a shifting in and out of the business at hand, serves as commentary about the

anxieties and potential risk of practicing in emergency medicine .[26] The narrative is ongoing throughout the shift and beyond. The order of events is discussed among multiple staff members with concern for the resident, the potential for the loss of his eye, and the institutional response to this event. In the following weeks, when a patient or visitor asked to borrow a pen, the event is recalled again, and caution ensues in evaluating the mental state of the potential recipient of a pen. [27]

It is with this brief background to the events of this Room 1 and subsequent Room 2, in which the analysis unfolds: another typical day in the emergency room at Rivera Hospital.

II.THE ORDERLINESS OF ROOM 1 AND ROOM 2

The presentation of the episode of care in Room 1 and Room 2 follows the chronology and flow of the formal medical protocols utilized for the emergent treatment of two trauma patients. The institutional ordering of events of treatment develop with regularity, providing structure not only for the diagnoses and management of patient illness, but also for the organization of individual medical personnel and their interactions. I refer to the institutional protocol as that of external bracketing of the event. The interactive achievement of participants is noted in the internal bracketing of this episode of care.

A.THE FORMAL PROTOCOLS OF A TRAUMA CODE

Protocols serve as tools, algorithms or practice policies intended to improve the capacity for physicians to make better decisions in accordance with standards of care emerging from biomedical research. The knowledge of protocols employed in the emergency room of Rivera Hospital, is distributed among all participants, though expert knowledge is more finely attuned to a person's occupational and educational training (e.g. emergency physician, nursing, X-ray technicians, clerical and support

[26] Frame breaks or change in footing is described by Goffman (1981:125-126): "This small talk will probably invoke matters felt to bear on the "overall" relation of the participants and on what each participant can take to be the perduring concerns of the other (health, family, etc.) It is the "shifting in and out of the business at hand, a change of tone is involved, and an alteration in the social capacities in which the persons present claim to be active."

[27] While writing this section, and as I am in continued employment of the DEM, this episode again triggered the response of evaluating a visitor who approached me to borrow a pen. I hesitated, observed the person, made a cursory evaluation of his trustworthiness, and proceeded, with caution, to give him a pen.

personnel) and experience in this context. Through language and knowledge acquisition gained in practice, the ensemble of medical workers become "competent" participants.[28]

External bracketing, in the circumstance of Room 1, reflects the formal institutional order of emergency medicine; that is, it conveys, to participants, the expectation of a series of actions to be pursued and with a mutual goal of stabilizing the patient and ascribes roles and identities that pre-exist the present day to day interaction. By inference, local participants attune to past medical text and protocols, structuring procedures and creating medical records of events, thereby reproducing the institutional order. The formal framework of this medical protocol, that is Room 1, provides for structuring of procedural routines, role expectations and professional identity.

The progression of Room 1 interaction, while focusing on the medical exam, adheres to protocols reaching back to the overarching framework of western medicine and specifically, emergency medicine and encoded in the standards of practice established by the American College of Surgeons and Emergency Medicine. This overarching bracketing of emergency medicine serves as a resource that is either maintained or adapted to local circumstances.

It is in this local practice arena that the interpersonal interactions as presented in this conversational analysis, revealing the co-construction of meaning and coordination and enactment of medical protocols involved in stabilizing a trauma patient. Attunement of local practice to a larger medical model of caring for trauma patients is observed in the bracketing of interaction of Room 1, as well as the adherence to the progression of the physical exam and medical interventions. Thus, the bracketing of Room 1 as a trauma code unfolds and attunes the practitioners to a larger institutional order, as well as to the overarching ritual means of addressing misfortune in our modern Western form. However, the focus of this analysis seeks to capture the processes of attunement of this work group, with emphasis on the diminishing of difference in status required for this human endeavor.

[28] Ochs and Schieffelin (2001 in Duranti) speak of the process of acquiring language iterating that "The process of becoming a competent member of society is realized to a large extent though language, by acquiring knowledge of its function, social distribution and interpretations in and across socially defined situations, i.e., through exchanges of language in particular social situations." (Ochs 2001)

1. The Golden Hour and Institutional Attunement

The care of traumatized patients unfolds within a temporal order, or the "golden hour", and subsumes that the medical team coordination and care of patients occurs under severe time pressure; that is, that there is a brief window of opportunity for medical providers to significantly improve a patient's chance of survival. Upon arrival of the patient, the medical status of the patient is partially known and full evaluation of this status will only become known through medical exam and interventions in Room 1. In keeping with observations made of trauma codes in trauma centers across the country, "the room is hectic and noisy, (and) the trauma codes flow with the precision, minimal confrontations, and few directives delivered." Within minutes, the patients' life-threatening injuries are identified, treatment initiatives are rendered, and the patients are whisked away to the operating rooms.[29]

2. Department of Emergency Medicine Protocol

The progression of the exam and treatment of the patient frame this episode of care, though the division of internal units of the exam can be bracketed as follows:

i. LIFE THREATENING INJURIES ARE IDENTIFIED: Examining the patient for significant physical findings; subsuming that an unobstructed airway is present in the patient.

ii. *TREATMENT INITIATIVES ARE RENDERED*: Providing medical intervention as required, while continuing to examine and order necessary diagnostics (e.g. X-rays, blood work, scans).

iii. *THE PATIENT IS WHISKED OFF AND DISPOSITIONS ARE MADE*

Stabilization of the patient and decision making about further medical intervention (surgery, continued diagnostics) and disposition are ongoing topics of discussion. Disposition can refer to the next site for ongoing care or discharge from the DEM.

In the instance of this analysis, external bracketing will be employed to define the formal progression and organization of events for the reader.

[29] Weldon, et. al., describe the Advanced Trauma Life Support (ATLS) course required and administered by the American College of Surgeons" Committee on Trauma, with its development in 1978. It is modeled on the Advanced Cardiac Life Support (ACLS) program and implemented to maximize the "golden hour" of resuscitation in the evaluation of trauma patients. The training described in this article, is based upon procedures at Charity Hospital, a victim of Hurricane Katrina, and a facility that is now inoperative as the structure has been condemned.

B.THE SIGNIFICANCE OF RELATIONAL ELEMENTS WHEN RUNNING THE TRAUMA CODE

However, the accomplishment of patient stabilization occurs only within the discursive, face to face interaction of participants as they adjust formal frames to the local circumstances. As such, "Room 1" is a ritual performance in that it is a particular cultural form of action incorporating technical practices and use of language in interaction toward transforming the disordered body of the traumatized patient to a state of life sustaining stabilization.[30] Room 1 becomes the participation framework for the events that unfold.[31]

The participants in this instance of Room 1 have a diverse amount of experience within the Department of Emergency Medicine. It is assumed that all participants have been instructed in advanced medical training required for this episode. They share a history of interacting over time, and under extreme pressure both internal to the context of their work as well as to external constraints inherent in practicing medicine in this inner city environment. They have acquired "ways of being" and ways of interacting that are mutually intelligible and mutually predictable, providing a stable structure in which to practice.

1. Formal Protocols and Informal Interactional Order

The informal interaction of this ensemble reflects the subtle personal adjustments they have made in order to sustain their roles and their identity in this endeavor. While the external bracketing provides evidence of shared knowledge of protocol and procedure, informal communication reveals the relational elements acquired by means of collective witnessing and medical treatment of the frailties of the human body and the tragic results of violence and unexpected traumatic injury and loss.

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[30] Tambiah, (in Hall 1997:51) speaks of analogous modes of thought and action in rituals of magic and scientific routine. As such, he speaks of "particular ways in which symbolic forms of expressions simultaneously make assumptions about the way things really are, create the sense of reality, and act upon the real world as it is culturally experienced."

[31] Participation frames, as put forth by Wenger, encompasses collaboration and involves cooperation and provides meaning and identification through social participation. Participation exists in duality with reification in the form of forms and documents, instruments and points of focus (Wenger 1998). In emergency medicine, the protocols, and medical record reproduce institutional order, while face- to- face interaction in the events of Room 1 reflect the participation framework giving meaning to participants.

The internal bracketing of this episode of patient care explicates the local, formal, and informal features of interactional order that sustain this ritual performance through discursive practices and conventions of local interaction. It is in the local interaction that adjustments are made by participants who "attempt to carry out courses of action in concert with each other through talk, while attending to both the larger activities that their current actions are embedded within, and relevant phenomena in their surround." The specific focus of this analysis is on the local relational adjustments made by emergency room personnel to accomplish their goals

C.THE TRAUMA CODE IS INITIATED

The trauma code is initiated in the field; that is, the arrival of Emergency Medical Services (EMS) upon the scene of a trauma incident. EMS is in contact with the trauma center/emergency room, by phone and conveys information about the patient, the traumatic injury, and the status of the patient and provides an estimated time of arrival (ETA). EMS contact, via radio communication, is captured by a physician located in CAT 1. The emergency room physician or physicians, make the determination of the status of a patient as a trauma patient, thereby situating her authority in the events that will unfold. At this point, an overhead announcement in the emergency room keys the onset of the trauma code, and in the instance of this study, the overhead announcement is "Trauma times two ETA five minutes." This announcement brackets the onset of interaction referred to as Room 1. Thus begins the interaction of medical personnel, both internal to the Department of Emergency Medicine (DEM), and externally with EMS and "on call" Trauma surgeons, who are required to respond immediately by locating themselves in the DEM, Room 1. In this event, a Trauma resident is in CAT 1 as they are caring for a patient who had been a trauma code, resulting from a motorcycle accident, the second Room 1 of the shift.

1. Keying the Start of a Trauma Code

The keying of "Physicians to Room 1. Trauma times two, ETA five minutes" marks the beginning of the episode of care in Room 1. The overhead page prepares those designated care providers (nurses, residents, senior staff, X-ray techs, Trauma residents, patient advocate and clerks) that their focus for medical care is now on the patient who is about to arrive. Though not captured in this recording, as the

team assembles in Room 1, there is preparation of necessary equipment, already in place, and the interaction is informal. As the patient arrives, the ensemble, of care providers, is situated around a gurney, and they assist EMS in physically transferring the patient to the care of the DEM in Room 1.

2. Life Threatening Injuries are Identified

The noise level is high and activity is hectic, and participants are in formation to enact the ATLS protocol. In this episode, the patient, a female with injuries from a roll-over accident, is addressed by Staff.Doc (m), and announces to all that the care episode has been initiated.

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
1. Res. Doc(f)	Hold on/ Hold on\ I'll get it for you\		
2. All	*Multiple speakers positioned around the patient and beginning the medical exam and care*		
3. Staff Doc (m)	We'll be doing a few things/ Okay? -To make sure you're okay\ Where are you hurting the worst right now? Your arms?/		*Res. Doc(f) is asking questions of EMS about conditions of car at the scene*

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
4. Patient(f-1)	*Answers query*		*There are multiple speakers over-lapping* *The patient is on a gurney surrounded by the senior staff, two residents, and two to three nurses*
5. Staff Doc(m)	Anywhere else? Your hands hurt?		*The patient is being examined by multiple doctors and nurses*

6. Patient(f-1)	*Responds that hand hurts*	*While the exam continues, there are multiple conversations occurring*
7. Staff Doc(m)	Your whole left side hah?	*When physical findings are called out, the recording nurse is writing the findings for the medical record*
8. All	*Multiple speakers (30 seconds)*	
9. Nurse(f)	She's got an ABRASION/ to her right knee/	
10. Res Doc(f)	Did you see the car?	
11. Nurse(m)	NO/	
12. Staff Doc(m)	Tell me where it hurts/ Open your eyes/ Okay dear?	

As the exam is initiated by Staff Doc(m), bracketing the episode of medical care, the internal structure of the episode displays multiple speakers overlapping as in line 4. The decisions made by the physician, who determines the status of the patient as a "Room 1 Trauma," prior to the patient's arrival, reflects the institutional order of decision making and framing of events that unfold. Staff Doc(m) in turn 3, initiates the order of exam and defines the role of the patient, the recipient of the exam, and situates the interaction within the overarching medical order; that is, the primacy of the physician in "running the code."

3. Alignment in 'We'

Of interest in the first utterance of Staff Doc(m), is his alignment with the ensemble of medical workers in the use of "*We'll be doing a few things*" in turn 3. The establishment of frame for Room 1 by Staff Doc(m) in initiating the exam of the patient, occurs simultaneously with that of alignment of his identity with that of the ensemble of medical personnel. Though the frame for the interaction to take

place is established by the physician, he projects that his identity is also subsumed within the work group of emergency room personnel.

The concept of footing as developed by Goffman, extends the possibility that alignment of status and identity emerges from interaction, and that though the frame of this interaction follows an institutional order, as established by Staff Doc(m), his footing, or alignment, can modify the frame already established. That is, that "A change in footing implies a change in the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance. A change in our footing is another way of talking about a change in our frame of events." (Goffman 1981:128). The utterance "*we'll be doing a few things*" has significance in the action it produces, establishing the collaborative environment that is to unfold in the interaction between emergency room workers as they provide care to this patient.

The shifting of alignment is realized in the use of "we" and "you", also establishing the boundaries of identity between medical staff and patient in Room 1. As a form of diexis, "we" serves as a referent to the whole of the medical group assembled in Room 1, while also indicating symmetrical relational elements inherent in this practice, and designating the asymmetry of the medical "we" with that of the patient, "you."[32]

4. Multiple Speakers Overlapping

Subsequent utterances will reveal this alignment in action as in turn 9, when Nurse(f) calls out "*She's got an ABRASION/ To her right knee/*". Nurse(f) assumes that she is a participant in the exam, included in the "we" calling out her physical findings to all participants, and with the ultimate purpose of having this observation recorded in the medical record as well as providing information to all medical Participants. The affirmation of her status is such that the Staff Doc(m) reinforces her position as noted in subsequent turns, but takes this in to account and proceeds with the examination.

[32] It can be argued that the lexical use of "we" serves to anchor the interaction in identification with the institutional framing of interaction. Drew and Heritage (1992:29-30) suggest that "we" serves to invoke institutional above personal identity. In this CA, the invoked "we" serves a function in diminishing the difference in status, thereby allowing for alignment of staff in a collective form of "we".

Rather than two parallel interactions with speaker/hearer dyads, the speaker is, in fact, addressing multiple hearers, all of whom need to know the information as the care will be delivered in the formation of a medical team. The significance of multiple speakers interacting, in this context, is a prosodic feature reflecting local work group interaction and reflects local social structure embedded within a larger institutional order of the hospital. The structural feature of overlapping interactions intimates an ensemble of medical personnel as opposed to an individual accomplishing the treatment of patients in this DEM. The alignment of speakers and their orientation to each other, in this setting, is relevant in that a simple speaker/hearer dyad is extended to encompass all participants within Room 1.

The focused activity, that of examining the patient for injury, ordering needed diagnostic tests, and providing medical interventions, is the subject of utterances, though relational elements of this emergency room ensemble are found in the turn by turn interaction, and serve to coordinate care. The exam is documented by a recording nurse who sits at a table with forms required for internal medical records for the hospital as well as filling out forms required for the NTDB; an audience not present in the room, but implicated in the current flow of participation.

The progression of the exam, beyond the initial turns represented above, involves multiple overlapping speakers, engaged in coordination of action, and illuminating features of attunement as they progress:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
10. Res. Doc(f)	Did you see the car?		
11. Nurse(m)	NO/		
12. Staff Doc(m)	Tell me where it hurts/ Open your eyes/ OKAY DEAR?		
Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
13. Res. Doc(f)	You SAW it?		
14. Nurse(m)	Yes?		

	I was coming to work\	
	They hit the grass/	
	They flipped/	
	.. .. (??)	
15. Res. Doc(m)	DEEP breath/	
	Deep breath\	
16. Staff Doc(m)	Open your eyes/	
17. Nurse(f)	Her hand was (??)	
18. Staff Doc(m)	Pupils three and reactive\	
19. Nurse(m)	They picked the car up and (??)	
20. Res. Doc(m)	DEEP breath/	
	Come on/	
21. Nurse(m)	She was the one that was complaining\	*Nurse(m) continues to describe*
	The other girl was walking around\	*accident scene to Res. Doc(f)*
22. Res. Doc(m)	Okay\	
	Good/	
23. All	*Multiple speakers (30 seconds)*	
24. Res. Doc(m)	How old are you?	*Nurse (m) continues to give his*
	.. .. ..	*account to Res. Doc(f)*
	How old are you?	
25. Patient(f-1)	*Responds 44 years old*	
26. Res. Doc(m)	Forty-four?	
	Do you any other medical problems at all?	
27. Patient(f-1)	I got a plate in my neck\	
28. Res. Doc(m)	YOU got a PLATE in your NECK\	
29. Nurse(m)	And high blood pressure\	
30. Res. Doc(m)	High blood pressure\	*Ongoing conversation in*
	You take any medicines?	*background*

	Do you got any allergies to any medications?	
31. Patient(f-1)	Penicillin\	
32. Res. Doc(m)	SHE'S ALLERGIC TO PENICILLIN\	
	.. .. ..	
	When was your last meal?	
	.. ..	
	When was your last meal?	
33. Patient(f-1)	*Responds softly*	
34. Res. Doc(m)	All right\	*Res. Doc(m) prods Directing gaze toward recording*
	Her lungs are clear/	*patient Nurse*
	Her heart is regular/	
	Does this hurt at all?	

The medical protocol for examination structures this episode and is dominated by the both the Staff Doc(m) and Res. Doc(m) during this initial phase. Res. Doc(m) is "running the code"; that is, he has been designated by assignment to cover Room 1 for the duration of this shift. Res. Doc(f) is an additional resident assigned to CAT 1 today and is on hand as a second victim of the accident is anticipated to arrive shortly. The occurrence of multiple verbal interactions are in the background, but not available for transcription. A noted exception is the initiation of inquiry of a male nurse who had witnessed the accident on his way to work.

5. Narrative Emerges

Res. Doc(f) initiates the inquiry in turn 10, to which Nurse(m) responds with the start of a narrative that will continue, be repeated and serve as a note for running commentary about the patients and the circumstances of the accident. Initially, the facts are presented and serve to provide additional information to the staff about the possible serious of injury sustained by the patients. The mode of mechanical injury to the body of the patient is significant for anticipation of possible location and severity of

injury. At this point in the episode, reference is also made to the speed of the car, the role-over of the vehicle, and the fact that a second vehicle was not involved.

The narrative will serve as a resource for attunement in that participants in the ongoing narrative each take a position, aligning with each other, and commenting, through insinuation, about the moral implications of the behavior of the victims.

6. Turn-Taking and the Mutual Construction of Medical Findings

In returning to the progression of the medical exam, the coordination and cooperation of the participants assembled in Room 1 is representative of the process of attunement; that is, that the diminishing of difference of status is demonstrated in the verbal interaction of the participants who coordinate with each other, producing order out of the sequencing of utterances

and referring back to prior episodes of care in Room 1 in recollecting earlier interactions by means of repetition in style, pattern, and participation status. Again, the Res. Doc(m) continues to direct the exam of the patient, but as the sequence progresses, the construction of the exam incorporates a shift of footing in that nurses, doctors and the consulting Trauma resident assume the role of examining the patient and calling out findings. Note the mirroring by Res. Doc(m) of the patient's report of medical history "*I got a plate in my neck*," immediately followed by Nurse(f)'s contribution, "*and high blood pressure* " in turn 30.

Res.Doc(m) displays a shift in footing with both the patient and the nurse, and in the convention of mirroring, reflects the mutually constituted construction of medical findings. More significantly, the rhythm of mirroring is initiated following an utterance by the patient, and continued with response to the utterance of the nurse, establishes the normative sequence of interaction that will follow in the progression of examining the patient. Implicit in this segment, is the prosodic flow of mirroring, incorporating both the patient and the nurse in the action of performing the exam, and contributing to the construction of the medical record.

The turn taking organization of this example, and in the progression of this episode, establishes the participation framework that includes multiple speakers, often overlapping. The initiation of topic, following medical protocol, is dominated by the physician "running the code." In the opening sequence,

Res. Doc(m) dominates in the frequency and length of turn taking, though in this local situation, turn taking organization reflects the participation of nurses, and later, technicians, in the progression of actions taking place. Speaker selection tends to be either self-selected, as in Nurse(f) selecting to add her findings to the exam, or by eliciting a response as Res. Doc(f) initiates a response from Nurse(m) to tell of his first- hand account of the accident as he witnessed it. This "recipient design" as addressed by Sacks, Schegloff and Jefferson, is locally constructed and managed, displaying the orientation and sensitivity of participants to each other. (Sacks 1978:42-43).

As the exam progresses, Res. Doc(m) aligns herself with Res. Doc(m) in the action of exam, and further expansion of the participation framework includes the observations and findings of Trauma(f):

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
44. Res. Doc(m)	WHAT HURTS?		
45. Nurse(f)	Her pelvis hurts (??)		
	And her arm\		

This progression displays a form of attunement in that additional participants join in the exam and verbal interaction, as if jumping in to an ongoing game. Nursing staff will be represented in this progression, but as Nurse(f) aligns herself to examine the patient and call out her findings, there is a notable negative response by Res. Doc(m) as he aligns against the nurse after a hesitation (e.g. "*Ah*" in turn 41 breaking his footing, and directing a negative commentary toward her:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
41. Res. Doc(m)	Did your pelvis hurt?	*Pointing to patient's*	
	When I'm pushing down here?	*pelvis*	*Directed toward Res. Doc(f)*
	.. ..She's (??) here\		
	Ah/		

	We can't tell because you're pulling her arm\
42. Nurse(f)	Does that hurt?
	Okay/
	DOES it hurt?
	What hurts (??)
43. Patient(f-1)	*Patient groans louder*
44. Res. Doc(m)	WHAT HURTS?
45. Nurse(f)	Her pelvis hurts (??)
	And her arm\

7. The Need for Repair

The attempted and failed alignment of Nurse(f) with the examination interaction is notable in that the negative reaction Res. Doc(m) in his comment

> "We can't tell because you're pulling her arm," indicating that she is interfering with the exam . Breaking of frame, change in footing and new alignments are an ongoing feature of this work group interaction and expectations are such that initiation of turns adheres to local rules of participation. Nurse(f) initiates a turn which is perceived by the group to be "out of step ."

In this instance, Nurse(f) is known to be a new nurse to the emergency room. She is "out of" attunement with the ensemble, both in action and comment. This verbal interaction is an incident of communicative trouble and reflective of a change in "footing" indexing a lack of attunement. It can be argued that this episode of verbal interaction reinforces the authority of the physician in medical hierarchies, but the lack of a general pattern of negative response to change in footing by physicians, nurses and technicians in the whole of the text suggests a lack of attunement on her part. It may be reflective of lack of history of relationship and knowledge, on Nurse(f)'s part, of her role and her responsibility to maintain the "sacredness" of face as described by Goffman and extended in discussions in the literature of conversational analysis. Nurse(f) has interfered with the action of exam, revealing her position as a novice who has transgressed the boundary of her role in the coordinated effort in progress.

Similarly, Res. Doc(m) displays not only a break of frame, but a direct and negative comment in response to Nurse(f)'s turn taking initiative, another instance of lack of face saving, or repair.[33] The alignment of Res. Doc(m) with the "we" of the medical team precludes the possibility of alignment for Nurse(f) with Res. Doc(m) and the medical ensemble, and marks her identity as "other", though ambivalence of this position is evident in that Res. Doc(m) subsequently ends the sequence of misalignment, shifting his footing again, to proceed with the exam; in turn 47, "*All right, Okay,"* a delayed repair of procedure. More likely, Res. Doc(m) re-establishes the normative routine of exam, bracketing this return to care with "*All right, Okay*."

The normative features of adjacency pairs in this episode imply that the exam of the patient continues and participants again adhere to expectations that utterances initiated by speaker "A" will be followed by the second pair part in which speaker "B", and "C" will follow, producing patterns of action as the exam continues. The subtle local interactive adjustments understood by all (e.g. initiating an utterance, calling out of findings for the medical record) are competencies required by means of socialization in to the world of emergency medicine, a process occurring over time, reflecting mutuality of interaction, and acting through competencies achieved through experience within this group.

8. Speaking for the Medical Record

The subsequent sequences of interaction generated by the participants further the progression of exam of the patient and as this occurs, multiple participants are aligned in this process. Additionally, relational features of this work group become more apparent as well as the utterances formed and called out for the medical record:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
41. Res. Doc(m)	Did your pelvis hurt?		
	When I'm pushing down here?	*Pointing to patient's pelvis*	

[33] Repair is an organized way of dealing with misunderstandings arising in interaction. It can refer to repair of utterance or repair of procedure. In the illustration provided, a problem of alignment, or footing is indicated by Nurse(f)'s interference in the progression of the exam. There is no evidence of self-repair or understanding for the need of repair. Res. Doc(m) responds in a negative remark, and both fail to adhere to an implicit moral code to maintain the face of the other; as in Goffman, the face is a sacred thing and a moral obligation to uphold.

	.. .. She's (??) here\		*Directed toward Res. Doc(f)*
	Ah/		
	We can't tell because you're pulling her arm\		
42. Nurse(f)	Does that hurt?		
	Okay/		
	DOES it hurt?		
	What hurts (??)		
43. Patient(f-1)	*Patient groans louder*		
44. Res. Doc(m)	WHAT HURTS?		
45. Nurse(f)	Her pelvis hurts (??)		
	And her arm\		
46. Patient(f-1)	*Patient continues to groan*		
47. Res. Doc(m)	All right\		
	Okay\		
48. Nurse(f)	.. .. THIS ARM is broke\		
49. Trauma Doc	Call in x-ray\		
	Right ah\		
	Right\		
	(??)		
	Put your arm down there/	*Gaze toward patient*	
	Just let your arm rest (??)		
50. Res. Doc(m)	She has good pulses distally/		*Multiple interactions in background Very*
	Wiggle these toes\		*direct medical talk*
	Wiggle THESE toes\		
	.. .. Wiggle these toes/		
	WIGGLE THESE TOES/		
	COME ON/		
Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
51. Patient(f-1)	*Patient groans*		

52. Res Doc(m)	There we go\		*Informal talk resumes while the ER and*
	.. .. .. Lift this leg up/		*Trauma staff continue to examine*
	.. .. Lift up this leg/	*Points to leg*	*Patient(f-1)*
	Wiggle these toes/		
	.. .. It hurts her like that\		

In this episode, the form and content of the exam is extended in to the discursive practices of speaking for the medical record. A shift of footing as evident in a change of tone in turn 53., as the Staff Doc(m) projects his utterance and shifts his intended hearer to that of the nurse recording and documenting the events of this episode for the medical record. The shift in alignment is away from interaction with the patient and the interaction established with medical participants around the patient. Res. Doc(m) displays this shift in footing as in turn 47., with emphasis in intonation and keying the shift with "*All right"*:

9. ALL RIGHT/OKAY

The keying of a shift of footing as in "*All right/ Okay/*" occurs throughout the episode, announcing either a shift to utterances performed for the medical record, or shift in procedure. In the episode of care of the second victim of the accident, and with Res. Doc(f) "running the code", the pattern of keying to announce medical findings for the record, reoccurs in turn 316.

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
316. Res. Doc(f)	.. .. /ALL RIGHT/	*Signaling recording*	*Speaking rapidly as findings are*
	Heart sounds/	*nurse*	*routinely given to recording nurse*
	Heart sounds are regular/		*Background conversation in Room 1*
	Lung sounds are (??)		
	Positive bowel sounds/		
	Pelvis is stable/		
	Patient can move all four extremities/		
	Patient has good distal pulses/		

	Patient has poor dentition/		
	.. ..		

And again in turn 327:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
327. Res. Doc(f)	No?		*Patient(f-2)in C-collar to protect neck*
	No C spine tenderness/		
	Let me put this back on you okay/		
	Open your eyes Ma'am/		*Res. Doc continues to examine patient's head region(6 seconds)*
	.. .. Now open this eye/		
	ALL RIGHT/		
	PUPILS reactive bilaterally/		
327. *Continued*	Four millimeters/		*Speaking for the Medical Record*
	Trach is midline/		
328. Nurse(f)	Put your legs down.		
	You need to put your legs down or you're going to fall off/		

A shift in footing, keying of change in procedure is illustrated in turn 422.:

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
420. Res. Doc(f)	Oh this is a mess/		*Speaking to all as she is tangled in tubing and medical equipment*
	{(??) I'm all tangled up		
421. Trauma(m)	(??)		
422. Res. Doc(f)	All right/	*Addressed to all to gain assistance*	
	You guys ready to roll?		

The action is initiated in turn 430 and completed in turn 431.:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
430. Staff Doc(m)	We're just going to roll you on your side/		

	We'll do all of the work for you dear\	
431. Nurse(f)	Hold YOUR ELBOWS/	*All gently roll patient to her side*
	ONE/	
	TWO/	
	THREE/	

In keying the episode of turning of the patient, and the subsequent action taken, we see the collaborative effort take place as Res. Doc(f), Staff Doc(m) and Nurse(f) coordinate their utterances and actions to turn the patient over for further exam of her spine.

The sequencing of verbal interaction and action found throughout this episode is in the routine occurrence of shift in footing as the medical staff calls out utterances thereby creating the medical record. This shift in footing is in contrast to the episodes of care in CAT 1, in that the care of the patient occurs in segments spatially separated from the work desk, where entry into the medical record occurs via telephoned dictation to an offsite location. Thus, the medical record is constructed after the episode of care at bedside. As noted in Room 1, the entry is manual, as recorded by a nurse, and is co-constructed simultaneously while the exam of the patient continues.

9. Ongoing Repair as Relational Elements of Interaction

An incident of repair also occurs in this segment of exam in turn 53., indicating a repair of procedure which is mitigated by Res. Doc(m) and directed toward Staff Doc(m):

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
53. Staff Doc(m)	Got a radial\		*Directed toward recording nurse and docs*
	Good ulnar pulse/		
	In the right hand\		
54. Res. Doc(m)	Well you can see a little bit of aah\	*Pointing to patient's hand*	
	Tendon in there		

55. Staff Doc(m)	Tendon's in (??)
56. Res. Doc(m)	There's A LOT of skin stuff in here\
57. Staff Doc(m)	(??) aah medial aspect there\
58. Res. Doc(f)	Hey Sam/
	.. ..
	He said they were FLYING/
59. Res. Doc(m)	Wiggle these fingers/
	.. sweetie\
	.. ..
	This ONE/

Res. Doc(m) initiates a repair of findings and mitigates his finding to Staff Doc(m) in prefacing his correction with "*Well you can see a little bit of aah*." The "*Well*" in this utterance by Res. Doc(m) also serves as a mark of disagreement with the observations of the staff, who stands corrected and moves on. Staff Doc(m) responds in a receptive mode, aligning with Res. Doc(m), who in turn, continues to pursue this line of medical exam with the patient. Later, in turn 72., Staff Doc(m) continues to pursue the same action, in attunement with Res. Doc(f):

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
72. Staff Doc(m)	Now that one\		
	Can you move that		
	-One?		
	Move your right finger dear/		
	On your right/		
	Can you move your ring finger?		
73. Nurse(f)	.. .. (??)		
	She said she can't/		
74. Res. Doc(f)	Was the other young lady picked up by EMS as well?		

Staff Doc(m) acts upon the repair of procedure and returns to examining the right hand, further assessing for tendon damage. This turn is embedded in ongoing examination by Res. Doc(m) and highlights the cooperative efforts in Room 1. An additional significant utterance by Nurse(f), "*She said she can't*" is ignored in that there is no response to her observation. Again, and in keeping with the misalignment of Nurse(f) of previous turns, she is also ignored by Res. Doc(f) who is initiating a sequence with Nurse(m) who witnessed the accident. This is a pattern of misalignment and is significant in that she is not perceived to be a cooperative participant in coordination with the work group present in Room 1. As a novice in emergency medicine, she serves as a contrastive participant in not knowing the rules of timing of her utterances and in her failure to adhere to implicit participation framework constraints. Nurse(f) poses a contrast in that she has yet to achieve the interactive competencies of the group yet initiates turns out of time and sequence with no evidence of self-repair or appreciation of the fine art of face saving strategies, of herself or of others. This example reinforces the patterns of cooperation and coordination presented above and as will be elaborated in following sequencing of turns of talk, and highlights the matter of competence, or lack thereof, gained by means of socialization.

10. Shifts in Footing and Locally Produced Order

The exam of the patient continues, and as the episode falls within the initial bracket of exam and findings, the progression of Room 1 now incorporates an elaboration of alignments, shifts in footing and an ongoing narrative in development; that is, the relational elements of discourse promoting coordination and cooperation as well referencing the processes of attunement occurring throughout the episode of Room 1.

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
79. Nurse(m)	She wa-	numbering???	
	She was walking all over the place\		
80. Res. Doc(m)	You got her uuh/		
81. Res. Doc(f)	I heard some beer cans were rolling around in the back\		

82. Trauma Doc(m)	Yeah I'm sure\		
83. Res. Doc(f)	One of the nurses witnessed it first hand/	*Chuckles softly*	
84. Trauma Doc(m)	Yeah I heard\		*There are multiple conversations concurrently* *Trauma has arrived*
85. Res. Doc(m)	She says she's allergic to Penicillin/		
86. Res. Doc(f)	He said they PASSED him\ And he said they were FLYING/		
87. Staff Doc(m)	Ma'am? (??) is rare/	*Directed to patient(f-1)*	
88. Nurse(m)	They gave her a breathalyzer/ I think she failed\		
89. Res. Doc(f)	Oh I bet she did\		
90. Staff Doc(m)	Says she went into respiratory distress\ .. Ma'am what did the penicillin do to you? .. .. .. Did it give you a rash? Di- Di- .. did you get broke out or short of breath or any-thing like that?		*Directed with gaze to Res. Doc(m)* *Directed to patient*
91. Res. Doc(f)	How old is she?		
92. Res. Doc(m)	Forty-		
93. Trauma Doc (f)	She said she's like forty-four		
94. Res. Doc(m)	(??) a forty-four year old female (??)		*Overlap and parallel with surrounding conversation*
95. Res. Doc(m)	Some kind of plate in her neck and hypertension/		*Response to Trauma inquiry*
96. Staff Doc(m)	She just got a rash from the aah\		
97. Res. Doc(m)	A RASH only?		

98. Staff Doc(m)	Yeah\		
	(//)		
99. Res. Doc(m)	All right lets give her a gram of Ancef/	*Directed to RN and Pharmacist*	
	A tetanus shot/		
	And aah/		
	Did we get a pressure on her yet?	*To Nurses*	
100. Staff Doc(m)	Looking for morphine Sam?		
101. Res. Doc(m)	Yeah/		
	Two of morphine\		
102. Nurse(f)	Come on/	*Nurse slaps site for injection*	*To patient to gain attention*
103. Patient(f-1)	*Patient moans*		
104. Trauma(m)	She was 208 over 140/		
	So lets (??)/		
105. Res. Doc(m)	/Okay\		
106. Patient(f-1)	*Patient continues to moan in pain*		*Multiple conversations also*

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
107. Res. Doc(f)	This is a rollover MVA/	*To Trauma Doc(m)*	*Speaking for the Medical Record*
	We're about to get the other victim here/	*Points to Room 2.*	
	This is THE/		
	THIS is THE aah/		
	Passenger/	*Pointing to Room 1.*	
	The driver's going over there\		
	HIGH SPEED down the Herman\	*Pointing to Room 2.*	
	THEY hit a gra-		
	The grass embankment/ It FLIpped\		

The sequential organization of talk continues throughout the Room 1 episode, with elaboration of relational elements that increase coordination and cooperation. The overarching institutional order of medical protocol is reproduced while local interactional strategies contribute to enactment of this order while reinforcing shared communicative routines of the participants in Room 1 and the emergency room.

11. Narrative Alignment as Attunement

In this ongoing interaction, Res. Doc(f) continues to elaborate the narrative of the conditions leading to the accident of the two female patients. Though initiated by Nurse(m), in this sequence, Res. Doc(f) becomes the animator of Nurse(m)'s witnessing account of the accident. In turn 77, Nurse(m) responds to an earlier inquiry by Res. Doc(f) about the conditions on the scene of the accident (e.g. in turn 74., Res. Doc(f) "Was the other young lady picked up by EMS as well?). Nurse(m) responds that the second patient was also transported by EMS and was walking around at the scene. Res. Doc(f) picks up the narrative already in progress and repeats the initial account, reiterating in turn 81., "*I heard some beer cans were rolling around in the back*\."

Nurse(m), having been the witness and giving the initial account, is not the intended recipient of the utterance, rather, she directs this fact to the Trauma(m), as well as to all participants in the room. His response in turns 82. and 84., indicate that he has received the message, but does not align himself with the narrative, as does Nurse(m) and Res. Doc(f). In turn 86., Res. Doc(f) continues to elaborate the narrative, again repeating the account; "*He said they PASSED him*\ *And he said they were FLYING/"*). Trauma(m) declines this invitation to collaborate in the narrative, terminating the sequence with Res. Doc(f). This lack of response is contrasted with that of Nurse(m) who continues the sequence initiated by Res. Doc(f) by elaborating further in turn 88.; "*They gave her a breathalyzer/ I think she failed**"*). Res. Doc(f) finishes this round of narrative by commenting "*Oh I bet she did*\."

The contrast in response by Trauma(m) to that of Res. Doc(f) and Nurse(m) is significant when consideration of alignment and its function in establishing mutual collaboration is taken into account. The collaborative effort of Nurse(m) and Res. Doc(f) in constructing the narrative may be indicative of alignment of a shared identity versus that of Res. Doc(f) and Trauma(m). This sequence illuminates the

function of narrative in problematizing the patients' pre-accident behaviors.[34] The patients as protagonists serve as a topic for comment, running throughout this narrative. In selecting the patient as protagonist of the narrative, the animator/introducer, also comments on the asymmetrical relationship between Room 1 staff and the patient, reserving moral comment about the patient. The alignment of Res. Doc(f) with Nurse(m) in retelling the narrative as both animator and recipient, is evident when contrasted with the response of Trauma(m), who chooses to respond in either a neutral manner, or chooses to not respond at all, identifying himself as non-emergency medicine staff.

As an illustration of attunement, this narrative develops after the CAT 1 staff has experienced two heroin overdoses only hours before this episode. Trauma(m) would not have been involved in treating the heroin overdose incidents, nor is he present for the majority of ongoing medical care in the emergency room. Though trauma doctors are present throughout this Room 1 episode, the narrative is reserved for emergency room participants as a distinct group with a shared history of responding to the events resulting from illicit drug use.

Though Trauma(m) does not choose to become a participant in the narrative, his involvement and alignment with Res. Doc(m) runs in parallel structure to the ongoing narrative. As the exam progresses, Trauma(m) aligns with emergency staff when discussion of medication treatment appears in turn 90., and initiated by Staff Doc(m) and Res. Doc(m) as they search for information about the patient's past history of allergies to medication. Trauma(m) aligns in this effort after choices of medication are made by Staff Doc(m) and Res. Doc(m) in turn 100. He is initiating his participation in the events to unfold.

12. Processes of Attunement at Play

Attunement, as a diminishing of difference, becomes evident in the progression of the exam as Staff Doc(m) and Res. Doc(m) pursue a line of inquiry with the patient about her history of allergic reactions to medication. In turn 85., Res. Doc(m) announces "*She says she's allergic to Penicillin.*" Staff

[34] Ochs & Taylor(2001) discuss the "Father Knows Best" narratives introduced in dinner conversation in family settings, wherein gender asymmetries are revealed in the choice of protagonist as subject to evaluative commentary through the telling of the narrative. Certainly, the protagonists of this narrative are the patients, who were drinking and using illicit drugs prior to the accident. For the purposes of this analysis, the significance of "introducer" of the narrative and the recipient, reflect alignments between emergency room personnel versus that of emergency medicine and trauma. I am suggesting that in the instance of Room 1, the alignment of introducer and recipient reveals asymmetries between trauma and emergency medicine, though it reinforces the attunement of emergency room participants to each other by means of participation as both introducer, recipient, and elaborator.

Doc(m) continues the thought in turn 90. in adding, "*Says she went into respiratory distress.*" The sequence of turns in turn 90., which includes Res. Doc(f), through turn 101., reveals a sequential order of further evaluation of the patient for the purposes of taking the action of giving medication for infection for her open wound in turn 99., in addition to pain medication in turn 101. In this instance, while Res. Doc(m) is assessing the blood pressure status of the patient, Staff Doc(m) completes his line of thought in turn 100., in asking "*Looking for morphine Sam?*", a feature reflecting attunement between the doctors.

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
79. Nurse(m)	She wa-	numbering???	
	She was walking all over the place\		
80. Res. Doc(m)	You got her uuh/		
81. Res. Doc(f)	I heard some beer cans were rolling around in the back\		
82. Trauma Doc(m)	Yeah I'm sure\		
83. Res. Doc(f)	One of the nurses witnessed it first hand/	*Chuckles softly*	
84. Trauma Doc(m)	Yeah I heard\		*There are multiple conversations concurrently*
			Trauma has arrived
85. Res. Doc(m)	She says she's allergic to Penicillin/		
86. Res. Doc(f)	He said they PASSED him\		
	And he said they were FLYING/		
87. Staff Doc(m)	Ma'am?	*Directed to patient(f-1)*	
	(??) is rare/		
88. Nurse(m)	They gave her a breathalyzer/		
	I think she failed\		
89. Res. Doc(f)	Oh I bet she did\		
90. Staff Doc(m)	Says she went into respiratory distress\		*Directed with gaze to Res. Doc(m)*
	.. Ma'am what did the penicillin do to you?		*Directed to patient*
	.. .. .. Did it give you a rash?		

	Di-	
	Di-	
	.. did you get broke out or short of breath or any-	
	thing like that?	
91. Res. Doc(f)	How old is she?	
92. Res. Doc(m)	Forty-	
93. Trauma Doc (f)	She said she's like forty-four	
94. Res. Doc(m)	(??) a forty-four year old female	*Overlap and parallel with*
	(??)	*surrounding conversation*
95. Res. Doc(m)	Some kind of plate in her neck and hypertension/	*Response to Trauma inquiry*
96. Staff Doc(m)	She just got a rash from the aah\	
97. Res. Doc(m)	A RASH only?	
98. Staff Doc(m)	Yeah\	
	(//)	
99. Res. Doc(m)	All right lets give her a gram of Ancef/	*Directed to RN and Pharmacist*
	A tetanus shot/	
	And aah/	
	Did we get a pressure on her yet?	*To Nurses*
100. Staff Doc(m)	Looking for morphine Sam?	
101. Res. Doc(m)	Yeah/	
	Two of morphine\	
102. Nurse(f)	Come on/	*Nurse slaps site for injection* *To patient to gain attention*
103. Patient(f-1)	*Patient moans*	
104. Trauma(m)	She was 208 over 140/	
	So lets (??)/	
105. Res. Doc(m)	/Okay\	
106. Patient(f-1)	*Patient continues to moan in pain*	*Multiple conversations also*

Both Res. Doc(m) and Staff Doc(f) refer back to the knowledge base of medicine in assessing the use of pain medication given the medical status of the patient, thus reaching back to prior texts of emergency medicine. While referring back to prior knowledge, local adjustments are made, reflecting relational elements of attunement and the ability of participants to follow each other's reasoning.

The choice of pain relief medication is determined partially by the blood pressure status of the patient, including knowledge of the patient's ingestion of heroin as it does cause a drop in blood pressure. Nurse(m), in turn 29, has already contributed to the unfolding process of history by adding information about the patient's history of high blood pressure. Trauma(m), in turn 104., reiterates the patient's blood pressure status, already known in prior evaluation by Res. Doc(m) and Staff Doc(m), with evidence that the patient's blood pressure is high, a known pre-existing condition and that morphine will not drop her pressure to a dangerous level, despite the ingestion of heroin. In following this sequential organization, the action of the utterances is achieved in turn 97, and turn 99, giving the patient medication for possible infection and addressing her need for pain relief.

Ongoing narrative begins to re-emerge in turns adjacency pairs 79-89, with Res.Doc(f) and Nurse(m) collaborating in a continuation of moral and social comment on the events leading up to the accident. In this instance, I take this interaction as evidence of diminishing of status, as physician and nurse mutually collaborate in pursuing this line of narrative.

It can be argued, that as residents, and initiates to emergency medicine, that their status stands in opposition to senior staff/teaching physicians and more in keeping with the hierarchical order of medicine. And yet, in turns 519 to 522, Nurse Sue initiates an often told narrative and in collaboration with Staff.Doc(m).

13. Contextualization of Context as Multiple Speakers Interacting

Multiple overlapping interactions, not transcribed, occur throughout the initial and current phases of Room 1 interaction (See prosodic features indicated in turns 2., 4., 23., 30., 50., 82., 90., 102., and 105. This pattern of interaction is ongoing throughout the episode and the entirety of the transcript. It is a prosodic feature providing contextual cues about the overall structural organization of both work activities and

special turn taking organization necessary to achieve the objectives of this work group. In its' local production, participants reveal mutual engagement in the activity, based upon a shared history of interacting and follow an interactional order sustained by current face to face interaction.

To an observer, stepping in to Room 1 at the height of activity, it may appear to be chaotic, given the level of noise, activity and overlapping speech of multiple participants. Upon analysis of the verbal interaction taking place, patterns emerge in which each speaker has a participation status and role, positioned within the overall frame of the care episode of Room1. Each participant shares a normative orientation toward the taking of turns, displaying a "special turn taking organization"[35]. In following the sequence organization, the transcription reveals the utterances captured during the course of direct care of the patient. The sequential organization demonstrates the patterns of interaction in which speakers, regardless of their position within the hierarchical structure of medicine, take positions and assume medical authority in the course of the exam.[36] In initiating a turn, and with subsequent response, they reveal the collaborative and co-constructed course of action that unfolds. The constraints of interaction in Room 1 reveal the order, illuminated when they are breached, as in the failed communication of the new Nurse(f). The initial failure to repair, either by self or other, reveals the potential trouble that can arise, when the unanticipated interrupts the normative sequence of interactional order.

In this course of action, participants in the "multiple overlapping speech", come to the fore, and assert their role and participation in the care of the patient. Though asymmetries exist within the overarching institutional order, in the process of Room 1, participants are expected to interact, diminishing their difference in status, to accomplish the task at hand.

[35] (Heritage 1997) articulates the contextual features of talk in institutions. He describes the specialized norms and turn-taking organizations as "creating a unique fingerprint for each kind of institutional interaction, the "specific tasks, identities, constraints on conduct and relevant inferential procedures" that are used by participants. Through the overall structural organization, "parties orient to it in organizing their talk." 1997:163-168, in Ten Have (1999:168-169).

[36] The question of medical authority and the construction of diagnosis has been discussed in medical anthropology, giving attention to the participation of the patient in co-constructing diagnosis. In the event of this emergency medical group, including all personnel, participation in diagnosis and treatment course decisions, includes the observations of nurses, and technicians, and in some instances, their knowledge is sought out by the physician, to be revealed as the process of Room 1 unfolds. However, the institutional order requires that the emergency room physician is both the ultimate authority and accountable for this process (Perakyla 1998:301-320) and is reflected in both the medical record and in legal liability. (Perakyla 1998)

D.TREATMENT INITIATIVES ARE RENDERED - Part 1

1. The Sequence of Care Unfold: Patterns Emerge

The opening of the episode of Room 1 is initiated by the CAT 1 Staff Doc(m) and the roles of participants have been defined as well as the context for care; that is, Staff Doc(m) opens the episode with initiation of alignment of staff who will care for the patient. He is medically and legally responsible for the content and conclusion of the patient's care. Res. Doc(m) is in the assigned position of "running the code," with the responsibility of leading the coordination of exam and care. He is aligned with Staff Doc(m), Res. Doc(f), and nurse(f) and the recording nurse. In addition to the compliment of nurses in Room 1, Nurse(m) is just arriving to start his shift of work. He is not assigned to Room 1, but as he witnessed the accident, he enters the code in progress, adding a first -hand account of the severity of the accident. Procedural routines and role expectations unfold in a sequence of multiple speakers overlapping and indicating that an emerging course of action is taking place within a collaborative frame.

Patterns of subsequent sequence organization and action take the formatting previously established in the opening episode of the physical exam with elaboration of an evolving narrative relating to the possible causes of the event of the roll over motor vehicle accident, and subsequent moral evaluation by the medical staff caring for the patient. The pre-sequence to the evolving narrative can be located in turn 58 initiated by Res. Doc(f); *"Hey Sam……He said they were FLYING/."* The prominence of "FLYING" as articulated in this pre-sequence, announces the development of the narrative as an ongoing moral comment about the patients involved in the accident. The sequencing of the ongoing exam is punctuated by shifts of topic initiated by Res. Doc(f) who simultaneously participates in the exam:

54.Res.Doc(m) There's A LOT of skin stuff in here\

55.StaffDoc(m) (??) aah medial aspect there\

56.Res.Doc(f) Hey SAM/

.. ..

He said they were FLYING/

57.Res.Doc(m) Wiggle these fingers/

The shift to narrative becomes an emergent pattern as the exam progresses, as will be noted below.

2. Mitigated Speech, or: How 'We' Get Things Done

In the progression of Room 1, mitigated speech is noted to be a constant feature, most notably as an effort to increase coordination as it is accomplished through the action of mitigating speech. The utterances incorporating "let's", or let us, implies a form of indirect request and incorporates a mutual alignment of speaker with his hearers:

97. Res.Doc(m) All right *lets* give her a gram of Ancef/

117.Res.doc(m) *We're* going to roll you on your side and get this
Board out\

122.Res.Doc(m) *Lets* roll THAT way/

In turns 109 through 145, Res.Doc(m) mitigates his request to seek cooperation and coordination necessary to role the patient on her side. The response of participants results in the smooth transition of the patient from her back to her side, necessary for further evaluation of injury.

3. The Relational Elements of Enacting Medical Protocol

The presentation of the episode of care in Room 1 and Room 2 follows the chronology and flow of the formal medical protocols utilized for the emergent treatment of two trauma patients. The institutional ordering of events of treatment develop with regularity, providing structure not only for the diagnoses and management of patient illness, but also for the organization of individual medical personnel and their interactions. I refer to the institutional protocol as that of external bracketing of the event. The interactive achievement of participants is noted in the internal bracketing of this episode of care.

Within the external bracketing format of emergency medicine protocols, the recurrent interactive patterns of interaction significant for analysis are presented as they naturally occur in the progression of events in Room 1 and Room 2, signifying internal bracketing of interaction by participants.

The progression of Room 1 interaction, while focusing on the medical exam, adheres to protocols reaching back to the overarching framework of western medicine and specifically, emergency medicine

and encoded in the standards of practice established by the American College of Surgeons and Emergency Medicine. This overarching bracketing of emergency medicine serves as a resource that is either maintained or adapted to local circumstances. It is in this local practice arena that the interpersonal interactions as presented in this conversational analysis, revealing the co-construction of meaning and coordination and enactment of medical protocols involved in stabilizing a trauma patient.

Attunement of local practice to a larger medical model of caring for trauma patients is observed in the bracketing of interaction of Room one, as well as the adherence to the progression of the physical exam and medical interventions. Thus, the bracketing of Room 1 as a trauma code unfolds and attunes the practitioners to a larger institutional order, as well as to the overarching ritual means of addressing misfortune in our modern Western form. However, the focus of this analysis seeks to capture the processes of attunement of this work group, with emphasis on the diminishing of difference in status required for this human endeavor:

57.Res.Doc(m) Wiggle these fingers/
..sweetie\
58.Nurse(f) She can/
59.Res.Doc(m) .. .. All right\
60.Nurse(f) Good girl\
61.Res.Doc(m) .. ..You feel me touch you down here?
How about this?
62.Nurse(f) Yes\

While the institutional order if medicine provides a protocol, it is in the face-to-face interaction that medical care is accomplished, not by an individual, but by the coordination of multiple participants.

Protocols serve as tools, algorithms or practice policies intended to improve the capacity for physicians to make better decisions in accordance with standards of care emerging from biomedical research. The knowledge of protocols employed in the emergency room of Rivera Hospital, is distributed among all participants, though expert knowledge is more finely attuned to a person’s occupational and educational training (e.g. emergency physician, nursing, X-ray technicians, clerical and support personnel) and experience in this context.

Through language and knowledge acquisition gained in practice, the ensemble of medical workers become "competent" participants.[37]

External bracketing, in the circumstance of Room 1, reflects the formal institutional order of emergency medicine; that is, it conveys, to participants, the expectation of a series of actions to be pursued and with a mutual goal of stabilizing the patient and ascribes roles and identities that pre-exist the present day to day interaction. By inference, local participants attune to past medical text and protocols, structuring procedures and creating medical records of events, thereby reproducing the institutional order. The formal framework of this medical protocol, that is Room 1, provides for structuring of procedural routines, role expectations and professional identity.

The care of traumatized patients unfolds within a temporal order, or the "golden hour", and subsumes that the medical team coordination and care of patients occurs under severe time pressure; that is, that there is a brief window of opportunity for medical providers to significantly improve a patient's chance of survival. Upon arrival of the patient, the medical status of the patient is partially known and full evaluation of this status will only become known through medical exam and interventions in Room 1. In keeping with observations made of trauma codes in trauma centers across the country, "the room is hectic and noisy, (and) the trauma codes flow with the precision, minimal confrontations, and few directives delivered." Within minutes, the patients' life-threatening injuries are identified, treatment initiatives are rendered, and the patients are whisked away to the operating rooms.[38]

However, the accomplishment of patient stabilization occurs only within the discursive, face to face interaction of participants as they adjust formal frames to the local circumstances. As such, "Room 1" is a ritual performance in that it is a particular cultural form of action incorporating technical practices

[37] Ochs and Schieffelin (2001 in Duranti) speak of the process of acquiring language iterating that "The process of becoming a competent member of society is realized to a large extent though language, by acquiring knowledge of its function, social distribution and interpretations in and across socially defined situations, i.e., through exchanges of language in particular social situations." (E. a. Ochs 2001)

[38] Weldon, et. al., describe the Advanced Trauma Life Support (ATLS) course required and administered by the American College of Surgeons" Committee on Trauma, with its development in 1978. It is modeled on the Advanced Cardiac Life Support (ACLS) program and implemented to maximize the "golden hour" of resuscitation in the evaluation of trauma patients. The training described in this article, is based upon procedures at Charity Hospital, a victim of Hurricane Katrina, and a facility that is now inoperative as the structure has been condemned.

and use of language in interaction toward transforming the disordered body of the traumatized patient to a state of life sustaining stabilization.[39] Room 1 becomes the participation framework for the events that unfold:[40]

26.Res.Doc(m) Fourty-four?

.. .. ..

Do you have any other medical problems at all?

27.Patient(f) I got a plate in my neck\

28.Res.Doc(m) YOU got a Plate in your Neck\

29.Nurse(f) And high blood pressure\

30.Res.Doc(m) High blood pressure\

The participants in this instance of Room 1 have a diverse amount of experience within the Department of Emergency Medicine. It is assumed that all participants have been instructed in advanced medical training required for this episode. They share a history of interacting over time, and under extreme pressure both internal to the context of their work as well as to external constraints inherent in practicing medicine in this inner city environment. They have acquired "ways of being" and ways of interacting that are mutually intelligible and mutually predictable, providing a stable structure in which to practice. The informal interaction of this ensemble reflects the subtle personal adjustments they have made in order to sustain their roles and their identity in this endeavor. While the external bracketing provides evidence of shared knowledge of protocol and procedure, informal communication reveals the relational elements acquired by means of collective witnessing and medical treatment of the frailties of the human body and the tragic results of violence and unexpected traumatic injury and loss.

The internal bracketing of this episode of patient care explicates the local, formal, and informal features of interactional order that sustain this ritual performance through discursive practices and conventions of local interaction. It is in the local interaction that adjustments are made by participants

[39] Tambiah, (in Hall 1997:51) speaks of analogous modes of thought and action in rituals of magic and scientific routine. As such, he speaks of "particular ways in which symbolic forms of expressions simultaneously make assumptions about the way things really are, create the sense of reality, and act upon the real world as it is culturally experienced."

[40] Participation frames, as put forth by Wenger, encompasses collaboration and involves cooperation and provides meaning and identification through social participation. Participation exists in duality with reification in the form of forms and documents, instruments and points of focus. (Wenger 1998). In emergency medicine, the protocols, and medical record reproduce institutional order, while face- to- face interaction in the events of Room 1 reflect the participation framework giving meaning to participants.

who “attempt to carry out courses of action in concert with each other through talk, while attending to both the larger activities that their current actions are embedded within, and relevant phenomena in their surround.” The specific focus of this analysis is on the local relational adjustments made by emergency room personnel to accomplish their goals

The informal interaction of this ensemble reflects the subtle personal adjustments they have made in order to sustain their roles and their identity in this endeavor. While the external bracketing provides evidence of shared knowledge of protocol and procedure, informal communication reveals the relational elements acquired by means of collective witnessing and medical treatment of the frailties of the human body and the tragic results of violence and unexpected traumatic injury and loss.

The internal bracketing of this episode of patient care explicates the local, formal, and informal features of interactional order that sustain this ritual performance through discursive practices and conventions of local interaction. It is in the local interaction that adjustments are made by participants who “attempt to carry out courses of action in concert with each other through talk, while attending to both the larger activities that their current actions are embedded within, and relevant phenomena in their surround.” The specific focus of this analysis is on the local relational adjustments made by emergency room personnel to accomplish their goals.

The medical protocol for examination structures this episode and is dominated by the both the Staff Doc(m) and Res. Doc(m) during this initial phase. Res. Doc(m) is “running the code”; that is, he has been designated by assignment to cover Room 1 for the duration of this shift. Res. Doc(f) is an additional resident assigned to CAT 1 today and is on hand as a second victim of the accident is anticipated to arrive shortly. The occurrence of multiple verbal interactions are in the background, but not available for transcription. A noted exception is the initiation of inquiry of a male nurse who had witnessed the accident on his way to work:

10.Res.Doc(f) Did you see the car?

11.Nurse(m) NO/

12.StaffDoc(m) Tell me where it hurts/

Open your eyes/

	Okay dear?
13.Res.Doc(f)	You SAW it?
14.Nurse(m)	Yes/
	I was coming to work
	They hit the grass/
	They flipped/

Res. Doc(f) initiates the inquiry in turn 10, to which Nurse(m) responds with the start of a narrative that will continue, be repeated and serve as a note for running commentary about the patients and the circumstances of the accident. Initially, the facts are presented and serve to provide additional information to the staff about the possible serious of injury sustained by the patients. The mode of mechanical injury to the body of the patient is significant for anticipation of possible location and severity of injury. At this point in the episode, reference is also made to the speed of the car, the role-over of the vehicle, and the fact that a second vehicle was not involved.

4.Attunement in Narrative as the Exam is Co-constructed

The narrative will serve as a resource for attunement in that participants in the ongoing narrative each take a position, aligning with each other, and commenting, through insinuation, about the moral implications of the behavior of the victims.

In returning to the progression of the medical exam, the coordination and cooperation of the participants assembled in Room 1 is representative of the process of attunement; that is, that the diminishing of difference of status is demonstrated in the verbal interaction of the participants who coordinate with each other, producing order out of the sequencing of utterances and referring back to prior episodes of care in Room 1 in recollecting earlier interactions by means of repetition in style, pattern, and participation status. Again, the Res. Doc(m) continues to direct the exam of the patient, but as the sequence progresses, the construction of the exam incorporates a shift of footing in that nurses, doctors and the consulting Trauma resident assume the role of examining the patient and calling out findings. Note the mirroring by Res. Doc(m) of the patient's report of medical history "*I got a plate in my neck*," immediately followed by Nurse(f)'s contribution, "*and high blood pressure* " in turn 30.

Res.Doc(m) displays a shift in footing with both the patient and the nurse, and in the convention of mirroring, reflects the mutually constituted construction of medical findings. More significantly, the rhythm of mirroring is initiated following an utterance by the patient, and continued with response to the utterance of the nurse, establishes the normative sequence of interaction that will follow in the progression of examining the patient. Implicit in this segment, is the prosodic flow of mirroring, incorporating both the patient and the nurse in the action of performing the exam, and contributing to the construction of the medical record.

The turn taking organization of this example, and in the progression of this episode, establishes the participation framework that includes multiple speakers, often overlapping. The initiation of topic, following medical protocol, is dominated by the physician "running the code." In the opening sequence, Res. Doc(m) dominates in the frequency and length of turn taking, though in this local situation, turn taking organization reflects the participation of nurses, and later, technicians, in the progression of actions taking place. Speaker selection tends to be either self-selected, as in Nurse(f) selecting to add her findings to the exam, or by eliciting a response as Res. Doc(f) initiates a response from Nurse(m) to tell of his first- hand account of the accident as he witnessed it. This "recipient design" as addressed by Sacks, Schegloff and Jefferson, is locally constructed and managed, displaying the orientation and sensitivity of participants to each other. (Sacks 1978:42-43).

As the exam progresses, Res. Doc(m) aligns herself with Res. Doc(m) in the action of exam, and further expansion of the participation framework includes the observations and findings of Trauma(f):

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
44. Res. Doc(m)	WHAT HURTS?		
45. Nurse(f)	Her pelvis hurts (??) And her arm\		

This progression displays a form of attunement in that additional participants join in the exam and verbal interaction, as if jumping in to an ongoing game. Nursing staff will be represented in this progression, but as Nurse(f) aligns herself to examine the patient and call out her findings, there is a notable negative response by Res. Doc(m) as he aligns against the nurse after a hesitation (e.g. "*Ah*" in turn 41 breaking his footing, and directing a negative commentary toward her:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
41. Res. Doc(m)	Did your pelvis hurt?	*Pointing to patient's pelvis*	
	When I'm pushing down here?		*Directed toward Res. Doc(f)*
	.. ..She's (??) here\		
	Ah/		
	We can't tell because you're pulling her arm\		
42. Nurse(f)	Does that hurt?		
	Okay/		
	DOES it hurt?		
	What hurts (??)		
43. Patient(f-1)	*Patient groans louder*		
44. Res. Doc(m)	WHAT HURTS?		
45. Nurse(f)	Her pelvis hurts (??)		
	And her arm\		

5. Repair of Relationship

The attempted and failed alignment of Nurse(f) with the examination interaction is notable in that the negative reaction Res. Doc(m) in his comment "We can't tell because you're pulling her arm", indicating that she is interfering with the exam . Breaking of frame, change in footing and new alignments are an ongoing feature of this work group interaction and expectations are such that initiation of turns

adheres to local rules of participation. Nurse(f) initiates a turn which is perceived by the group to be "out of step ." In this instance, Nurse(f) is known to be a new nurse to the emergency room. She is "out of" attunement with the ensemble, both in action and comment. This verbal interaction is an incident of communicative trouble and reflective of a change in "footing" indexing a lack of attunement. It can be argued that this episode of verbal interaction reinforces the authority of the physician in medical hierarchies, but the lack of a general pattern of negative response to change in footing by physicians, nurses and technicians in the whole of the text suggests a lack of attunement on her part. It may be reflective of lack of history of relationship and knowledge, on Nurse(f)'s part, of her role and her responsibility to maintain the "sacredness" of face as described by Goffman and extended in discussions in the literature of conversational analysis. Nurse(f) has interfered with the action of exam, revealing her position as a novice who has transgressed the boundary of her role in the coordinated effort in progress.

6. When Repair of Relationship Fails: The Need to Re-establish the Participation Framework

Similarly, Res. Doc(m) displays not only a break of frame, but a direct and negative comment in response to Nurse(f)'s turn taking initiative, another instance of lack of face saving, or repair.[41] The alignment of Res. Doc(m) with the "we" of the medical team precludes the possibility of alignment for Nurse(f) with Res. Doc(m) and the medical ensemble, and marks her identity as "other", though ambivalence of this position is evident in that Res. Doc(m) subsequently ends the sequence of misalignment, shifting his footing again, to proceed with the exam; in turn 47, "*All right, Okay,"* a delayed repair of procedure. More likely, Res. Doc(m) re-establishes the normative routine of exam, bracketing this return to care with "*All right, Okay*." The normative features of adjacency pairs in this episode imply that the exam of the patient continues and participants again adhere to expectations that utterances initiated by speaker "A" will be followed by the second pair part in which speaker "B", and "C" will follow, producing patterns of action as the exam continues. The subtle local interactive

[41] Repair is an organized way of dealing with misunderstandings arising in interaction. It can refer to repair of utterance or repair of procedure. In the illustration provided, a problem of alignment, or footing is indicated by Nurse(f)'s interference in the progression of the exam. There is no evidence of self-repair or understanding for the need of repair. Res. Doc(m) responds in a negative remark, and both fail to adhere to an implicit moral code to maintain the face of the other; as in Goffman, the face is a sacred thing and a moral obligation to uphold.

adjustments understood by all (e.g. initiating an utterance, calling out of findings for the medical record) are competencies required by means of socialization in to the world of emergency medicine, a process occurring over time, reflecting mutuality of interaction, and acting through competencies achieved through experience within this group.

The subsequent sequences of interaction generated by the participants further the progression of exam of the patient and as this occurs, multiple participants are aligned in this process. Additionally, relational features of this work group become more apparent as well as the utterances formed and called out for the medical record:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
41. Res. Doc(m)	Did your pelvis hurt?		
	When I'm pushing down here?	*Pointing to patient's pelvis*	
	.. .. She's (??) here\		*Directed toward Res. Doc(f)*
	Ah/		
	We can't tell because you're pulling her arm\		
42. Nurse(f)	Does that hurt?		
	Okay/		
	DOES it hurt?		
	What hurts (??)		
43. Patient(f-1)	*Patient groans louder*		
44. Res. Doc(m)	WHAT HURTS?		
45. Nurse(f)	Her pelvis hurts (??)		
	And her arm\		
46. Patient(f-1)	*Patient continues to groan*		
47. Res. Doc(m)	All right\		
	Okay\		
48. Nurse(f)	.. .. THIS ARM is broke\		
49. Trauma Doc	Call in x-ray\		

	Right ah\		
	Right\		
	(??)		
	Put your arm down there/	*Gaze toward patient*	
	Just let your arm rest (??)		
50. Res. Doc(m)	She has good pulses distally/		*Multiple interactions in background Very*
	Wiggle these toes\		*direct medical talk*
	Wiggle THESE toes\		
	.. .. Wiggle these toes/		
	WIGGLE THESE TOES/		
	COME ON/		
Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
51. Patient(f-1)	*Patient groans*		
52. Res Doc(m)	There we go\		*Informal talk resumes while the ER and*
	.. .. .. Lift this leg up/		*Trauma staff continue to examine*
	.. .. Lift up this leg/	*Points to leg*	*Patient(f-1)*
	Wiggle these toes/		
	.. .. It hurts her like that\		

In this episode, the form and content of the exam is extended in to the discursive practices of speaking for the medical record. A shift of footing as evident in a change of tone in turn 53., as the Staff Doc(m) projects his utterance and shifts his intended hearer to that of the nurse recording and documenting the events of this episode for the medical record. The shift in alignment is away from interaction with the patient and the interaction established with medical participants around the patient. Res. Doc(m) displays this shift in footing as in turn 47., with emphasis in intonation and keying the shift with "*All right"*:

The keying of a shift of footing as in "*All right/ Okay/*" occurs throughout the episode, announcing either a shift to utterances performed for the medical record, or shift in procedure. In the

episode of care of the second victim of the accident, and with Res. Doc(f) “running the code”, the pattern of keying to announce medical findings for the record, reoccurs in turn 316.

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
316. Res. Doc(f)	.. .. /ALL RIGHT/	*Signaling recording nurse*	*Speaking rapidly as findings are routinely given to recording nurse*
	Heart sounds/		*Background conversation in Room 1*
	Heart sounds are regular/		
	Lung sounds are (??)		
	Positive bowel sounds/		
	Pelvis is stable/		
	Patient can move all four extremities/		
	Patient has good distal pulses/		
	Patient has poor dentition/		
	.. ..		

And again in turn 327:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
327. Res. Doc(f)	No?		*Patient(f-2)in C-collar to protect neck*
	No C spine tenderness/		
	Let me put this back on you okay/		
	Open your eyes Ma’am/		*Res. Doc continues to examine patient’s head region(6 seconds)*
	.. .. Now open this eye/		
	ALL RIGHT/		
	PUPILS reactive bilaterally/		
327. *Continued*	Four millimeters/		*Speaking for the Medical Record*
	Trach is midline/		
328. Nurse(f)	Put your legs down.		

	You need to put your legs down or you're going to fall off/		

A shift in footing, keying of change in procedure is illustrated in turn 422.:

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
420. Res. Doc(f)	Oh this is a mess/		*Speaking to all as she is tangled in*
	{(??) I'm all tangled up		*tubing and medical equipment*
421. Trauma(m)	(??)		
422. Res. Doc(f)	All right/	*Addressed to all to gain assistance*	
	You guys ready to roll?		

The action is initiated in turn 430 and completed in turn 431.:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
430. Staff Doc(m)	We're just going to roll you on your side/		
	We'll do all of the work for you dear\		
431. Nurse(f)	Hold YOUR ELBOWS/		*All gently roll patient to her side*
	ONE/		
	TWO/		
	THREE/		

In keying the episode of turning of the patient, and the subsequent action taken, we see the collaborative effort take place as Res. Doc(f), Staff Doc(m) and Nurse(f) coordinate their utterances and actions to turn the patient over for further exam of her spine.

The sequencing of verbal interaction and action found throughout this episode is in the routine occurrence of shift in footing as the medical staff calls out utterances thereby creating the medical record. This shift in footing is in contrast to the episodes of care in CAT 1, in that the care of the patient occurs in segments spatially separated from the work desk, where entry into the medical record occurs via telephoned dictation to an offsite location. Thus, the medical record is constructed after the episode of

care at bedside. As noted in Room 1, the entry is manual, as recorded by a nurse, and is co-constructed simultaneously while the exam of the patient continues.

An incident of repair also occurs in this segment of exam in turn 53., indicating a repair of procedure which is mitigated by Res. Doc(m) and directed toward Staff Doc(m):

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
53. Staff Doc(m)	Got a radial\ Good ulnar pulse/ In the right hand\		*Directed toward recording nurse and docs*
54. Res. Doc(m)	Well you can see a little bit of aah\ Tendon in there	*Pointing to patient's hand*	
55. Staff Doc(m)	Tendon's in (??)		
56. Res. Doc(m)	There's A LOT of skin stuff in here\		
57. Staff Doc(m)	(??) aah medial aspect there\		
58. Res. Doc(f)	Hey Sam/ .. .. He said they were FLYING/		
59. Res. Doc(m)	Wiggle these fingers/ .. sweetie\ .. .. This ONE/		

Res. Doc(m) initiates a repair of findings and mitigates his finding to Staff Doc(m) in prefacing his correction with "*Well you can see a little bit of aah*." The "*Well*" in this utterance by Res. Doc(m) also serves as a mark of disagreement with the observations of the staff, who stands corrected and moves on. Staff Doc(m) responds in a receptive mode, aligning with Res. Doc(m), who in turn, continues to pursue this line of medical exam with the patient. Later, in turn 72., Staff Doc(m) continues to pursue the same action, in attunement with Res. Doc(f):

Turn/Speaker	Transcription	Non-Verbal	Explanation
72. Staff Doc(m)	Now that one\		
	Can you move that		
	-One?		
	Move your right finger dear/		
	On your right/		
	Can you move your ring finger?		
73. Nurse(f)	.. .. (??)		
	She said she can't/		
74. Res. Doc(f)	Was the other young lady picked up by EMS as well?		

Staff Doc(m) acts upon the repair of procedure and returns to examining the right hand, further assessing for tendon damage. This turn is embedded in ongoing examination by Res. Doc(m) and highlights the cooperative efforts in Room 1. An additional significant utterance by Nurse(f), "*She said she can't*" is ignored in that there is no response to her observation. Again, and in keeping with the misalignment of Nurse(f) of previous turns, she is also ignored by Res. Doc(f) who is initiating a sequence with Nurse(m) who witnessed the accident. This is a pattern of misalignment and is significant in that she is not perceived to be a cooperative participant in coordination with the work group present in Room 1. As a novice in emergency medicine, she serves as a contrastive participant in not knowing the rules of timing of her utterances and in her failure to adhere to implicit participation framework constraints. Nurse(f) poses a contrast in that she has yet to achieve the interactive competencies of the group yet initiates turns out of time and sequence with no evidence of self-repair or appreciation of the fine art of face saving strategies, of herself or of others. This example reinforces the patterns of cooperation and coordination presented above and as will be elaborated in following sequencing of turns of talk, and highlights the matter of competence, or lack thereof, gained by means of socialization.

The exam of the patient continues, and as the episode falls within the initial bracket of exam and findings, the progression of Room 1 now incorporates an elaboration of alignments, shifts in footing and

an ongoing narrative in development; that is, the relational elements of discourse promoting coordination and cooperation as well referencing the processes of attunement occurring throughout the episode of Room 1.

TREATMENT INITIATIVES ARE RENDERED - Part 1

The opening of the episode of Room 1 is initiated by the CAT 1 Staff Doc(m) and the roles of participants have been defined as well as the context for care; that is, Staff Doc(m) opens the episode with initiation of alignment of staff who will care for the patient. He is medically and legally responsible for the content and conclusion of the patient's care. Res. Doc(m) is in the assigned position of "running the code," with the responsibility of leading the coordination of exam and care. He is aligned with Staff Doc(m), Res. Doc(f), and nurse(f) and the recording nurse. In addition to the compliment of nurses in Room 1, Nurse(m) is just arriving to start his shift of work. He is not assigned to Room 1, but as he witnessed the accident, he enters the code in progress, adding a first hand account of the severity of the accident. Procedural routines and role expectations unfold in a sequence of multiple speakers overlapping and indicating that an emerging course of action is taking place within a collaborative frame.

Patterns of subsequent sequence organization and action take the formatting previously established in the opening episode of the physical exam with elaboration of an evolving narrative relating to the possible causes of the event of the roll over motor vehicle accident, and subsequent moral evaluation by the medical staff caring for the patient. The pre-sequence to the evolving narrative can be located in turn 58 initiated by Res. Doc(f); "*Hey Sam……He said they were FLYING/.*" The prominence of "FLYING" as articulated in this pre-sequence, announces the development of the narrative as an ongoing moral comment about the patients involved in the accident. The sequencing of the ongoing exam is punctuated by shifts of topic initiated by Res. Doc(f) who simultaneously participates in the exam:

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
79. Nurse(m)	She wa-	numbering???	
	She was walking all over the place\		

80. Res. Doc(m)	You got her uuh/		
81. Res. Doc(f)	I heard some beer cans were rolling around in the back\		
82. Trauma Doc(m)	Yeah I'm sure\		
83. Res. Doc(f)	One of the nurses witnessed it first hand/	*Chuckles softly*	
84. Trauma Doc(m)	Yeah I heard\		*There are multiple conversations concurrently* *Trauma has arrived*
85. Res. Doc(m)	She says she's allergic to Penicillin/		
86. Res. Doc(f)	He said they PASSED him\ And he said they were FLYING/		
87. Staff Doc(m)	Ma'am? (??) is rare/	*Directed to patient(f-1)*	
88. Nurse(m)	They gave her a breathalyzer/ I think she failed\		
89. Res. Doc(f)	Oh I bet she did\		
90. Staff Doc(m)	Says she went into respiratory distress\ .. Ma'am what did the penicillin do to you? .. .. .. Did it give you a rash? Di- Di- .. did you get broke out or short of breath or any-thing like that?		*Directed with gaze to Res. Doc(m)* *Directed to patient*
91. Res. Doc(f)	How old is she?		
92. Res. Doc(m)	Forty-		
93. Trauma Doc (f)	She said she's like forty-four		
94. Res. Doc(m)	(??) a forty-four year old female (??)		*Overlap and parallel with surrounding conversation*
95. Res. Doc(m)	Some kind of plate in her neck and hypertension/		*Response to Trauma inquiry*

96. Staff Doc(m)	She just got a rash from the aah\		
97. Res. Doc(m)	A RASH only?		
98. Staff Doc(m)	Yeah\		
	(//)		
99. Res. Doc(m)	All right lets give her a gram of Ancef/	*Directed to RN and Pharmacist*	
	A tetanus shot/		
	And aah/		
	Did we get a pressure on her yet?	*To Nurses*	
100. Staff Doc(m)	Looking for morphine Sam?		
101. Res. Doc(m)	Yeah/		
	Two of morphine\		
102. Nurse(f)	Come on/	*Nurse slaps site for injection*	*To patient to gain attention*
103. Patient(f-1)	*Patient moans*		
104. Trauma(m)	She was 208 over 140/		
	So lets (??)/		
105. Res. Doc(m)	/Okay\		
106. Patient(f-1)	*Patient continues to moan in pain*		*Multiple conversations also*
Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
107. Res. Doc(f)	This is a rollover MVA/	*To Trauma Doc(m)*	*Speaking for the Medical Record*
	We're about to get the other victim here/	*Points to Room 2.*	
	This is THE/		
	THIS is THE aah/		
	Passenger/	*Pointing to Room 1.*	
	The driver's going over there\		
	HIGH SPEED down the Herman\	*Pointing to Room 2.*	
	THEY hit a gra-		
	The grass embankment/ It FLIpped\		

The sequential organization of talk continues throughout the Room 1 episode, with elaboration of relational elements that increase coordination and cooperation. The overarching institutional order of medical protocol is reproduced while local interactional strategies contribute to enactment of this order while reinforcing shared communicative routines of the participants in Room 1 and the emergency room.

2.NARRATIVE ALIGNMENT

In this ongoing interaction, Res. Doc(f) continues to elaborate the narrative of the conditions leading to the accident of the two female patients. Though initiated by Nurse(m), in this sequence, Res. Doc(f) becomes the animator of Nurse(m)'s witnessing account of the accident. In turn 77, Nurse(m) responds to an earlier inquiry by Res. Doc(f) about the conditions on the scene of the accident (e.g. in turn 74., Res. Doc(f) "Was the other young lady picked up by EMS as well?). Nurse(m) responds that the second patient was also transported by EMS and was walking around at the scene. Res. Doc(f) picks up the narrative already in progress and repeats the initial account, reiterating in turn 81., "*I heard some beer cans were rolling around in the back*\." Nurse(m), having been the witness and giving the initial account, is not the intended recipient of the utterance, rather, she directs this fact to the Trauma(m), as well as to all participants in the room. His response in turns 82. and 84., indicate that he has received the message, but does not align himself with the narrative, as does Nurse(m) and Res. Doc(f). In turn 86., Res. Doc(f) continues to elaborate the narrative, again repeating the account; "*He said they PASSED him*\ *And he said they were FLYING/"*). Trauma(m) declines this invitation to collaborate in the narrative, terminating the sequence with Res. Doc(f). This lack of response is contrasted with that of Nurse(m) who continues the sequence initiated by Res. Doc(f) by elaborating further in turn 88.; "*They gave her a breathalyzer/ I think she failed**"*). Res. Doc(f) finishes this round of narrative by commenting "*Oh I bet she did*\."

The contrast in response by Trauma(m) to that of Res. Doc(f) and Nurse(m) is significant when consideration of alignment and its function in establishing mutual collaboration is taken into account. The collaborative effort of Nurse(m) and Res. Doc(f) in constructing the narrative may be indicative of alignment of a shared identity versus that of Res. Doc(f) and Trauma(m). This sequence illuminates the

function of narrative in problematizing the patients' pre-accident behaviors.[42] The patients as protagonists serve as a topic for comment, running throughout this narrative. In selecting the patient as protagonist of the narrative, the animator/introducer, also comments on the asymmetrical relationship between Room 1 staff and the patient, reserving moral comment about the patient. The alignment of Res. Doc(f) with Nurse(m) in retelling the narrative as both animator and recipient, is evident when contrasted with the response of Trauma(m), who chooses to respond in either a neutral manner, or chooses to not respond at all, identifying himself as non-emergency medicine staff. As an illustration of attunement, this narrative develops after the CAT 1 staff has experienced two heroin overdoses only hours before this episode. Trauma(m) would not have been involved in treating the heroin overdose incidents, nor is he present for the majority of ongoing medical care in the emergency room. Though trauma doctors are present throughout this Room 1 episode, the narrative is reserved for emergency room participants as a distinct group with a shared history of responding to the events resulting from illicit drug use.

Though Trauma(m) does not choose to become a participant in the narrative, his involvement and alignment with Res. Doc(m) runs in parallel structure to the ongoing narrative. As the exam progresses, Trauma(m) aligns with emergency staff when discussion of medication treatment appears in turn 90., and initiated by Staff Doc(m) and Res. Doc(m) as they search for information about the patient's past history of allergies to medication. Trauma(m) aligns in this effort after choices of medication are made by Staff Doc(m) and Res. Doc(m) in turn 100. He is initiating his participation in the events to unfold.

3.ATTUNEMENT

Attunement, as a diminishing of difference, becomes evident in the progression of the exam as Staff Doc(m) and Res. Doc(m) pursue a line of inquiry with the patient about her history of allergic reactions to medication. In turn 85., Res. Doc(m) announces "*She says she's allergic to Penicillin.*" Staff Doc(m) continues the thought in turn 90. in adding, "*Says she went into respiratory distress.*" The sequence

[42] Ochs & Taylor(2001) discuss the "Father Knows Best" narratives introduced in dinner conversation in family settings, wherein gender asymmetries are revealed in the choice of protagonist as subject to evaluative commentary through the telling of the narrative. Certainly, the protagonists of this narrative are the patients, who were drinking and using illicit drugs prior to the accident. For the purposes of this analysis, the significance of "introducer" of the narrative and the recipient, reflect alignments between emergency room personnel versus that of emergency medicine and trauma. I am suggesting that in the instance of Room 1, the alignment of introducer and recipient reveals asymmetries between trauma and emergency medicine, though it reinforces the attunement of emergency room participants to each other by means of participation as both introducer, recipient and elaborator.

of turns in turn 90., which includes Res. Doc(f), through turn 101., reveals a sequential order of further evaluation of the patient for the purposes of taking the action of giving medication for infection for her open wound in turn 99., in addition to pain medication in turn 101. In this instance, while Res. Doc(m) is assessing the blood pressure status of the patient, Staff Doc(m) completes his line of thought in turn 100., in asking "*Looking for morphine Sam?*", a feature reflecting attunement between the doctors.

Both Res. Doc(m) and Staff Doc(f) refer back to the knowledge base of medicine in assessing the use of pain medication given the medical status of the patient, thus reaching back to prior texts of emergency medicine. While referring back to prior knowledge, local adjustments are made, reflecting relational elements of attunement and the ability of participants to follow each other's reasoning. The choice of pain relief medication is determined partially by the blood pressure status of the patient, including knowledge of the patient's ingestion of heroin as it does cause a drop in blood pressure. Nurse(m), in turn 29, has already contributed to the unfolding process of history by adding information about the patient's history of high blood pressure. Trauma(m), in turn 104., reiterates the patient's blood pressure status, already known in prior evaluation by Res. Doc(m) and Staff Doc(m), with evidence that the patient's blood pressure is high, a known pre-existing condition and that morphine will not drop her pressure to a dangerous level, despite the ingestion of heroin. In following this sequential organization, the action of the utterances is achieved in turn 97, and turn 99, giving the patient medication for possible infection and addressing her need for pain relief.

MULTIPLE SPEAKERS INTERACTING

Multiple overlapping interactions, not transcribed, occur throughout the initial and current phases of Room 1 interaction (See prosodic features indicated in turns 2., 4., 23., 30., 50., 82., 90., 102., and 105. This pattern of interaction is ongoing throughout the episode and the entirety of the transcript. It is a prosodic feature providing contextual cues about the overall structural organization of both work activities and special turn taking organization necessary to achieve the objectives of this work group. In its local production, participants reveal mutual engagement in the activity, based upon a shared history of interacting and follow an interactional order sustained by current face to face interaction.

To an observer, stepping in to Room 1 at the height of activity, it may appear to be chaotic, given the level of noise, activity and overlapping speech of multiple participants. Upon analysis of the verbal interaction taking place, patterns emerge in which each speaker has a participation status and role, positioned within the overall frame of the care episode of Room1. Each participant shares a normative orientation toward the taking of turns, displaying a "special turn taking organization"[43]. In following the sequence organization, the transcription reveals the utterances captured during the course of direct care of the patient. The sequential organization demonstrates the patterns of interaction in which speakers, regardless of their position within the hierarchical structure of medicine, take positions and assume medical authority in the course of the exam.[44] In initiating a turn, and with subsequent response, they reveal the collaborative and co-constructed course of action that unfolds. The constraints of interaction in Room 1 reveal the order, illuminated when they are breached, as in the failed communication of the new Nurse(f). The initial failure to repair, either by self or other, reveals the potential trouble that can arise, when the unanticipated interrupts the normative sequence of interactional order.

In this course of action, participants in the "multiple overlapping speech", come to the fore, and assert their role and participation in the care of the patient. Though asymmetries exist within the overarching institutional order, in the process of Room 1, participants are expected to interact, diminishing their difference in status, to accomplish the task at hand.

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
79. Nurse(m)	She wa-	numbering???	
	She was walking all over the place\		
80. Res. Doc(m)	You got her uuh/		

[43] (Heritage 1997) articulates the contextual features of talk in institutions. He describes the specialized norms and turn-taking organizations as "creating a unique fingerprint for each kind of institutional interaction, the "specific tasks, identities, constraints on conduct and relevant inferential procedures" that are used by participants. Through the overall structural organization, "parties orient to it in organizing their talk." 1997:163-168, in Ten Have (1999:168-169).

[44] The question of medical authority and the construction of diagnosis has been discussed in medical anthropology, giving attention to the participation of the patient in co-constructing diagnosis. In the event of this emergency medical group, including all personnel, participation in diagnosis and treatment course decisions, includes the observations of nurses, and technicians, and in some instances, their knowledge is sought out by the physician, to be revealed as the process of Room 1 unfolds. However, the institutional order requires that the emergency room physician is both the ultimate authority and accountable for this process (Perakyla 1998:301-320) and is reflected in both the medical record and in legal liability. (Perakyla 1998)

81. Res. Doc(f)	I heard some beer cans were rolling around in the back\		
82. Trauma Doc(m)	Yeah I'm sure\		
83. Res. Doc(f)	One of the nurses witnessed it first hand/	*Chuckles softly*	
84. Trauma Doc(m)	Yeah I heard\		*There are multiple conversations concurrently* *Trauma has arrived*
85. Res. Doc(m)	She says she's allergic to Penicillin/		
86. Res. Doc(f)	He said they PASSED him\ And he said they were FLYING/		
87. Staff Doc(m)	Ma'am? (??) is rare/	*Directed to patient(f-1)*	
88. Nurse(m)	They gave her a breathalyzer/ I think she failed\		
89. Res. Doc(f)	Oh I bet she did\		
90. Staff Doc(m)	Says she went into respiratory distress\ .. Ma'am what did the penicillin do to you? .. .. .. Did it give you a rash? Di- Di- .. did you get broke out or short of breath or any-thing like that?		*Directed with gaze to Res. Doc(m)* *Directed to patient*
91. Res. Doc(f)	How old is she?		
92. Res. Doc(m)	Forty-		
93. Trauma Doc (f)	She said she's like forty-four		
94. Res. Doc(m)	(??) a forty-four year old female (??)		*Overlap and parallel with surrounding conversation*
95. Res. Doc(m)	Some kind of plate in her neck and hypertension/		*Response to Trauma inquiry*
96. Staff Doc(m)	She just got a rash from the aah\		

97. Res. Doc(m)	A RASH only?		
98. Staff Doc(m)	Yeah\		
	(//)		
99. Res. Doc(m)	All right lets give her a gram of Ancef/	*Directed to RN and Pharmacist*	
	A tetanus shot/		
	And aah/		
	Did we get a pressure on her yet?	*To Nurses*	
100. Staff Doc(m)	Looking for morphine Sam?		
101. Res. Doc(m)	Yeah/		
	Two of morphine\		
102. Nurse(f)	Come on/	*Nurse slaps site for injection*	*To patient to gain attention*
103. Patient(f-1)	*Patient moans*		
104. Trauma(m)	She was 208 over 140/		
	So lets (??)/		
105. Res. Doc(m)	/Okay\		
106. Patient(f-1)	*Patient continues to moan in pain*		*Multiple conversations also*
107. Res. Doc(f)	This is a rollover MVA/	*To Trauma Doc(m)*	*Speaking for the Medical Record*
	We're about to get the other victim here/	*Points to Room 2.*	
	This is THE/		
	THIS is THE aah/		
	Passenger/	*Pointing to Room 1.*	
	The driver's going over there\		
	HIGH SPEED down the Herman\	*Pointing to Room 2.*	
	THEY hit a gra-		
	The grass embankment/ It FLIpped\		

The sequential organization of talk continues throughout the Room 1 episode, with elaboration of relational elements that increase coordination and cooperation. The overarching institutional order of medical protocol is reproduced while local interactional strategies contribute to enactment of this order while reinforcing shared communicative routines of the participants in Room 1 and the emergency room.

NARRATIVE ALIGNMENT

In this ongoing interaction, Res. Doc(f) continues to elaborate the narrative of the conditions leading to the accident of the two female patients. Though initiated by Nurse(m), in this sequence, Res. Doc(f) becomes the animator of Nurse(m)'s witnessing account of the accident. In turn 77, Nurse(m) responds to an earlier inquiry by Res. Doc(f) about the conditions on the scene of the accident (e.g. in turn 74., Res. Doc(f) "Was the other young lady picked up by EMS as well?). Nurse(m) responds that the second patient was also transported by EMS and was walking around at the scene. Res. Doc(f) picks up the narrative already in progress and repeats the initial account, reiterating in turn 81., "*I heard some beer cans were rolling around in the back*\." Nurse(m), having been the witness and giving the initial account, is not the intended recipient of the utterance, rather, she directs this fact to the Trauma(m), as well as to all participants in the room. His response in turns 82. and 84., indicate that he has received the message, but does not align himself with the narrative, as does Nurse(m) and Res. Doc(f). In turn 86., Res. Doc(f) continues to elaborate the narrative, again repeating the account; "*He said they PASSED him*\ *And he said they were FLYING/"*). Trauma(m) declines this invitation to collaborate in the narrative, terminating the sequence with Res. Doc(f). This lack of response is contrasted with that of Nurse(m) who continues the sequence initiated by Res. Doc(f) by elaborating further in turn 88.; "*They gave her a breathalyzer/ I think she failed**"*). Res. Doc(f) finishes this round of narrative by commenting "*Oh I bet she did*\."

The contrast in response by Trauma(m) to that of Res. Doc(f) and Nurse(m) is significant when consideration of alignment and its function in establishing mutual collaboration is taken into account. The collaborative effort of Nurse(m) and Res. Doc(f) in constructing the narrative may be indicative of alignment of a shared identity versus that of Res. Doc(f) and Trauma(m). This sequence illuminates the

function of narrative in problematizing the patients' pre-accident behaviors.[45] The patients as protagonists serve as a topic for comment, running throughout this narrative. In selecting the patient as protagonist of the narrative, the animator/introducer, also comments on the asymmetrical relationship between Room 1 staff and the patient, reserving moral comment about the patient. The alignment of Res. Doc(f) with Nurse(m) in retelling the narrative as both animator and recipient, is evident when contrasted with the response of Trauma(m), who chooses to respond in either a neutral manner, or chooses to not respond at all, identifying himself as non-emergency medicine staff. As an illustration of attunement, this narrative develops after the CAT 1 staff has experienced two heroin overdoses only hours before this episode. Trauma(m) would not have been involved in treating the heroin overdose incidents, nor is he present for the majority of ongoing medical care in the emergency room. Though trauma doctors are present throughout this Room 1 episode, the narrative is reserved for emergency room participants as a distinct group with a shared history of responding to the events resulting from illicit drug use.

Though Trauma(m) does not choose to become a participant in the narrative, his involvement and alignment with Res. Doc(m) runs in parallel structure to the ongoing narrative. As the exam progresses, Trauma(m) aligns with emergency staff when discussion of medication treatment appears in turn 90., and initiated by Staff Doc(m) and Res. Doc(m) as they search for information about the patient's past history of allergies to medication. Trauma(m) aligns in this effort after choices of medication are made by Staff Doc(m) and Res. Doc(m) in turn 100. He is initiating his participation in the events to unfold.

ATTUNEMENT

Attunement, as a diminishing of difference, becomes evident in the progression of the exam as Staff Doc(m) and Res. Doc(m) pursue a line of inquiry with the patient about her history of allergic reactions to medication. In turn 85., Res. Doc(m) announces "*She says she's allergic to Penicillin*." Staff Doc(m) continues the thought in turn 90. in adding, "*Says she went into respiratory distress.*" The sequence of turns

[45] Ochs & Taylor(2001) discuss the "Father Knows Best" narratives introduced in dinner conversation in family settings, wherein gender asymmetries are revealed in the choice of protagonist as subject to evaluative commentary through the telling of the narrative. Certainly, the protagonists of this narrative are the patients, who were drinking and using illicit drugs prior to the accident. For the purposes of this analysis, the significance of "introducer" of the narrative and the recipient, reflect alignments between emergency room personnel versus that of emergency medicine and trauma. I am suggesting that in the instance of Room 1, the alignment of introducer and recipient reveals asymmetries between trauma and emergency medicine, though it reinforces the attunement of emergency room participants to each other by means of participation as both introducer, recipient and elaborator.

in turn 90., which includes Res. Doc(f), through turn 101., reveals a sequential order of further evaluation of the patient for the purposes of taking the action of giving medication for infection for her open wound in turn 99., in addition to pain medication in turn 101. In this instance, while Res. Doc(m) is assessing the blood pressure status of the patient, Staff Doc(m) completes his line of thought in turn 100., in asking "*Looking for morphine Sam?*", a feature reflecting attunement between the doctors.

Both Res. Doc(m) and Staff Doc(f) refer back to the knowledge base of medicine in assessing the use of pain medication given the medical status of the patient, thus reaching back to prior texts of emergency medicine. While referring back to prior knowledge, local adjustments are made, reflecting relational elements of attunement and the ability of participants to follow each other's reasoning. The choice of pain relief medication is determined partially by the blood pressure status of the patient, including knowledge of the patient's ingestion of heroin as it does cause a drop in blood pressure. Nurse(m), in turn 29, has already contributed to the unfolding process of history by adding information about the patient's history of high blood pressure. Trauma(m), in turn 104., reiterates the patient's blood pressure status, already known in prior evaluation by Res. Doc(m) and Staff Doc(m), with evidence that the patient's blood pressure is high, a known pre-existing condition and that morphine will not drop her pressure to a dangerous level, despite the ingestion of heroin. In following this sequential organization, the action of the utterances is achieved in turn 97, and turn 99, giving the patient medication for possible infection and addressing her need for pain relief.

MULTIPLE SPEAKERS INTERACTING IN ONGOING PROCESSES OF ATTUNEMENT

Multiple overlapping interactions, not transcribed, occur throughout the initial and current phases of Room 1 interaction (See prosodic features indicated in turns 2., 4., 23., 30., 50., 82., 90., 102., and 105. This pattern of interaction is ongoing throughout the episode and the entirety of the transcript. It is a prosodic feature providing contextual cues about the overall structural organization of both work activities and special turn taking organization necessary to achieve the objectives of this work group. In its local production, participants reveal mutual engagement in the activity, based upon a shared history of interacting and follow an interactional order sustained by current face to face interaction.

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
99. Res. Doc(m)	All right lets give her a gram of Ancef/	*Directed to RN and Pharmacist*	
	A tetanus shot/		
	And aah/		
	Did we get a pressure on her yet?	*To Nurses*	
100. Staff Doc(m)	Looking for morphine Sam?		
101. Res. Doc(m)	Yeah/		
	Two of morphine\		

In turn 99., Res. Doc(m) seeks cooperation from the pharmacist and nurses in his indirect utterance, "All right let's give her a gram of Ancef." More significantly, he encodes relational elements in "*Did we get a pressure on her yet?"* His utterance is directed to all participants and incorporates group solidarity as a feature of interaction that runs throughout the transcribed interactions. His alignment with the ensemble of participants is evident in the employment of "we" and reflects the collaborative achievement of obtaining a blood pressure, information needed to determine the appropriate course of action in selecting a medication for pain relief. The selection of Ancef and Tetanus addresses the prophylactics needed to prevent further infection, and is administered in turn 179. "*All right honey/ I got medicine for you?*" Pain relief in the form of morphine, can only be accomplished after the patient's blood pressure is reassessed, a process co-occurring with further exam of the patient.

The efforts to examine the patient continue and the coordination of effort of multiple participants is required to roll the patient off of her back and remove the backboard that is stabilizing her spine. Prior to completing the removal of the backboard, the patient's spine and sphincter function is assessed by Trauma(m). The collaborative efforts encoded in the relational element of the use of "we" and "lets" (Let us) run throughout. The episode begins in turn 114:

Turn/Speaker	**Transcription**	**Non-Verbal**	***Explanation***
114. Res. Doc(m)	/Larry man/		

	You ready to roll the patient?		
115. Staff Doc(m)	Bring her towards you because of the bad hand\		
116. Nurse(f)	A little bit\	*Patient(f-1) moaning*	
	This side?		
117.Trauma Doc(m)	All right\		
	Who's going to (??)		
118. Res. Doc(f)	Here/		
119. X-ray Tech(f)	HEY/		
	CANCEL it\		
120. Res. Doc(f)	Cancel what?		
121. X-ray Tech(f)	It's SMITH		*Clarifying identity of patient for*
	Its Mary Smith/		*x-ray*
122. Res. Doc(m)	We're going to roll you on your side and get this		
	board out\		
	From under your back\		*Conversation in background*
	Okay?		*increases*
123. X-ray(f)	I just had a shoot from an ER Female\		
	Just to (??) name\		
124. Res. Doc(m)	All right/		
	Lets ROLL/		
125. Res. Doc(f)	Hi there/		*To newly arrived person in room*
126. Staff Doc(m)	All right\		
	Lets roll\		
127. Res. Doc(m)	Lets roll THAT way/	*Points in direction of patient*	*Continued muted talk with Staff Doc*
128. Res. Doc(f)	All right ma'am/		
	Let us do all the work/		

	We're going to roll you on your side and get this
	BOARD out of you\
	Okay?
129. All	*Multiple persons speaking and difficult to decipher*
	(10 seconds)
130. Res. Doc(m)	Okay/
	ONE/
131. Staff Doc(m)	Do you got the (??)
132. Res. Doc(f)	No he's got it now/
133. Staff Doc(m)	Okay\
134. Res. Doc(f)	This is for the next patient\
135. Res. Doc(m)	ONE/
	TWO/
	Three/

The significance of "we" stands in relief when contrasted in an instance of self correction by Res. Doc(m)in turn 162.; "*Do you got a-, Do we have her pressure?.*" The repair of relationship is signified as Res. Doc(m) corrects his assertion that the nurse is "you" rather than in alignment with the "we" of the team. In turn 167.,Doc(m) has re-aligned with the order of "we":

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
167. Res. Doc(m)	Maybe we should put an IV in her foot\		
	Or something\		
	We're going to-		
	Get blood pressures\		
	We're going to give her fluids and stuff\		

The use of "we", as a deictic expression, is dependent upon the circumstance of its use. For the speaker and hearer of this expression, the participants in care, it is an utterance that re-establishes

alignment of speaker and hearer in the action that unfolds. Rather than a direct request, as in "Take her blood pressure, the indirect request is embedded in the use of the indexical and references the collaborative identity assumed by the participants. "We" serves as a form of attunement in diminishing the difference in status of participants and reflects the incorporation of all in the purposeful actions taking place in the care of the patient. "We" reflects group membership and provides meaning for participants who derive identity from mutual engagement in providing care to the patient.

The utterances incorporating "let's (let us)" also serves as a deictic expression and reveals the collaborative moves of speakers to engage hearers in a cooperative effort. As a form of attunement referencing a diminishing of difference of status, "let us", serves as a referent to past experience of inter-dependent action and past relationship between participants, currently reproducing that structural ordering of interaction and relationship. Similar to the findings of *Trix* in the form of attunement of "playful recollecting dialogue with another,"(Trix 1993:19). The recollecting of prior relational elements, and experience of interaction, functions to reproduce the diminishing of difference of status intrinsic to the accomplishments of this group.

The use of mitigated speech as a feature employed by staff in seeking cooperation from the patient, who being conscious, can collaborate in the exam by cooperating, answering medical history questions and following directions of the staff. The following example is that of examination of the new patient, now in Room 2, and Res. Doc(f) is the designated physician "running the code":

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
348. Res. Doc(f)	It's okay/		*Multiple speakers loudly continue*
	We're going to take care of you\		
	We're (??)		
349. Nurse(f)	{You might have bleeding in there/		*Nurse trying to seek compliance from patient who continues to moan*
350. Res. Doc(f)	{Do you guys want to roll her?		*Staff Doc(m) and Res. Doc(m) speak*
351. Staff Doc(m)	(??)		

352. Res. Doc(f)	That would be nice/		*Response to Staff Doc(m)*

The exam and care of the patient in Room 2 illustrates the function of mitigated speech as it is directed toward the patient. This sequence of utterance follows a period of "trouble" in getting the patient to remain still on the backboard (see Turn 307.);

Turn/Speaker	**Transcription**	***Non-Verbal***	***Explanation***
307. Res. Doc(f)	Last period last month/		*Directed at recording nurse*
	NO NO NO MA'AM/		*Patient attempts to sit up*
	Lay FLAT/		*Concern is about possible back and*
	LAY flat okay?		*neck injuries not yet evaluated*
	We're going to get you off this back-		*Attempting to assure patient and gain cooperation for exam*

The episode of trouble, that is, a strong directive to the patient, is followed by mitigation of relationship between Res. Doc(f) and patient. Res. Doc(f) realigns with the team in "*We're going to get you off this back"*, while expressing concern for patient discomfort and offers her a blanket.

Turn/Speaker	**Transcription**	***Non-Verbal***	***Explanation***
311. Res. Doc(f)	OH NO NO NO NO/		
	DON'T MOVE your neck Ma'am/		
312. Patient(f-2)	*(??) Mumbles*		*Conversation from others in background*
313.Res.Doc(f)	We don't know if you might be paralyzed if/		
	.. .. ..(??)		
	a deep breath /		
	.. ..		
	A deep breath again\		.. .. ..*Requests sheets to cover up*

	Here Ma'am we'll cover you up/		*patient*
314. Nurse(f)	Put your legs down\		
315. Res. Doc(m)	{What kind of operation did you have?		*Question to Patient(f-2)*
316. Res. Doc(f)	{ALL RIGHT/	*Signaling recording*	*Speaking rapidly as findings are*
	Heart sounds/	*nurse*	*routinely given to recording nurse*
	Heart sounds are regular/		
	Lung sounds are (??)		
	Positive bowel sounds/		*Background conversation in Room 1*
	Pelvis is stable/		
	Patient can move all four extremities/		
	Patient has good distal pulses/		
	Patient has poor dentition/		
	.. ..		

While mitigating her direct actions toward the patient, and after realigning with the medical team, Res. Doc(f) provides further evidence of a course of action to redress what may have appeared to be impolite, by comforting the patient with an offer of a cover. This repair, mitigated by Res. Doc(f) is overlapped by Nurse(f) who, rather than shifting her footing, as did Res. Doc(f), continues to be abrupt and direct with the patient. Again, Nurse(f) is a new nurse who has had communicative trouble earlier in the interaction, and interfered with the exam, and continues to be out of alignment with the staff, revealing her marginal position within the group and highlighting the significance of interactive competence toward a mutual, intersubjectively understood end.

Res. Doc(f) again takes an action in attunement with the past relational reference of mitigated speech employed to gain cooperation in turning over the patient for further exam, when in turn 350., she indirectly requests cooperation, *"Do you guys want to roll her?"*

DIMINISHING OF DIFFERENCE OF STATUS

As the exam continues, and after initial assessment of the patient's injuries, treatment, already initiated, continues with elaboration of cooperative and collaborative strategies. Indirect requests, initiated

by Res. Doc(m) and Res. Doc(f) serve to seek cooperation from Nurse(f) , and as this series of utterances unfolds, an elaboration of the diminishing of difference of status is notable in the following turns, marked by a shift in footing by Res. Doc(m) as well as mitigated speech initiated by Nurse(f):

Turn/Speaker	**Transcription**	***Non-Verbal***	***Explanation***
544. Res. Doc(m)	All right/		*Redirecting focus of group*
	Do we have a set of vitals?		
545. Nurse(f)	SURE I do/		*Multiple background voices*
	Do you want to give her some aah/		
	Dilaudid?		
546. Res. Doc(m)	I want to give her some Ativan/		
547. Nurse(f)	You sure?		
548. Res. Doc(m)	Yeah lets give her like aah/		*Patient is moaning in pain*
	Two of Ativan and aah/		
	Another one of Dilaudid\		
549. Nurse(f)	One?		
550. Res. Doc(m)	Yeah\		
551. Res. Doc(f)	Lets get x-ray here/		
	Yeah/		
552 Res. Doc(m)	Because/		
	She's going crazy\		
553. Nurse(f)	You said another one but-		
554. Res. Doc(m)	What do you think?		
	Do you (??) one/		
	We never gave her any Dilaudid\		
555. Nurse(f)	We didn't\		
556. Res. Doc(m)	What do you think of that?		
	You think that's GOOD?		
	The two of Ativan?		

557. Nurse(f)	Yeah (??)	
558. Res. Doc(m)	I mean I –	
	Because, because part of-	
559. Nurse(f)	You want two of Dilaudid?	
	Or do you think that's too/(??)	
	I mean-	
560. Res. Doc(m)	Why don't we give one and if that doesn't do much/	
	Give another one\	
561. Nurse(f)	Okay\	
562. Res. Doc(m)	Thanks/	
563. Nurse(f)	We didn't get a temp yet\	*Temperature*
564. Nurse(f)	Her friend said she did heroin (??)	
565. Res. Doc(f)	Okay/	*Gaze toward Staff Patient continues to moan but softly*
	Dr S?	*Doc(m)*
	Do you know what his name is?	*Nodding in direction*
	Over there?	*of Trauma Doc*

In this episode, mitigated speech is employed by both Res. Doc(m) and Nurse(f), in an exchange of negotiation about pain relief for the patient. Nurse(f) responds to the shift in footing announced by Res. Doc(m) in "*All right. Do we have a set of vitals?*" a mitigated request for the nurse to take the patient's blood pressure, heart rate and respiration rate. Nurse(f) responds an indirect suggestion that pain medication is in order; i.e. "*Do you want to give her some aah/ Dilaudid/?*" While mitigating her suggestion, Nurse(f) also demonstrates that she understands the reasoning behind Res. Doc(m)'s mitigated request to take the patient's blood pressure, a prerequisite to ordering pain medication.

As the turn continues, they discuss the choice and amount of medication for both pain and anxiety. The process of latching occurs in turns 557 to 559, with each able to complete the thought and intent

of the other, also indicating attunement in mutual understandings gained by a shared history of interacting over time.

While the process of negotiation continues Res. Doc(m) is seeking the opinion of the nurse; (i.e. "*What do you think of that? You think that's GOOD/ The two of Ativan?*) Again, latching is evident in turns 554. through 557., with each participant mitigating their utterances; (i.e. *I mean I-; Or do you think that's too soon? I mean; Why don't we give one and if that doesn't do much/ Give another*\.) Latching, or completing another's line of reasoning, reproduces mutual alignment of participants (i.e. "why don't we…") as well as referring to a past history of interaction. As a normative feature, there is no comment and no need for repair, indicating that this form of interaction is expected as routine, when caring for patients.

Mitigated speech runs throughout this episode of care, and rather than reflecting obstruction of messages, as in prior work in aviation cockpit crews, it serves to initiate and increase cooperation among the staff members. Initiated most frequently by Resident and Staff physicians, the occurrences may indicate the hierarchical preference (i.e. Physician) for seeking cooperation by means of mitigated speech. The frequency of mitigated speech is analyzed for its use by participants categorized by identification, and assuming the medical hierarchical order, as follows.

MITIGATED SPEECH FREQUNCY PER HIERARCHICAL CATEGORY

Table: Mitigated Speech Frequency per Hierarchical Category

	Staff	Resident	Nurse	Technician	Patient	Consultant
Turns	53	288	108	4	41	10
Intonation Units (IU)	128	808	236	27	70	16
Mitigated Speech (MS)	16	51	9	5	0	4

MS/IU	12.5%	6.3%	3.8%	18.5%	0	25%
MS/minute of Speech	.58	1.9	0.3	0.2	0	0.14

Note: The total events of Mitigated Speech = 82 per 27.47 minutes of recorded speech. Mitigated Speech occurs at the rate of 3 per minute.

Res. Doc(f) and Res. Doc(m) display the use of mitigated speech at the rate of 1.9 units per minute, with Staff Doc(m) displaying . 58 units of MS/minute. Nurses represent the category of next highest use of mitigated speech per minute at the rate of 0.3 units of MS/minute. Technicians, who are employees of the Emergency Department, are next at the rate of 0.2 units of MS/minute. Consultants, as in Trauma residents, display the use of mitigated speech at the rate of .14 units of MS/minute. The instance of intonation units(utterances) being 27, falls well below the frequency of utterances by nurses (236), residents (808) and staff physician (128) but is closest to frequency of utterances by Consultants at the rate of 16. Rather than representing the traditional hierarchy of medicine, the underlying structure, the use of mitigated speech, as well as turns and intonation units, and its frequency of use in Room1, aligns with participation in operational events (i.e. examining patient, coordinating events and in this negotiated enterprise.)[46]

The overarching order of medicine and hierarchical ordering of professions is adjusted to the local participation framework of Room1, thus the Department of Emergency Medicine. Staff Doc(m), is ultimately responsible for the events of Room 1, both medically and legally. His role as an educator and model for participation in Room 1 is reflected in the high frequency of use of mitigated speech (i.e.12.5% of IU's are mitigated) as embodied in the use of mitigated speech by residents (i.e. 6.3% of IUs are mitigated), which is almost twice the use of mitigated speech, over nursing staff. This pattern suggests

[46] Negotiated enterprise as part of community of practice (see note 24, below).

that the modeling of the use of mitigated speech by Staff Doc(m) reflects the locally situated need for physicians in Room 1 to direct the matter of patient care by seeking cooperation and coordination by means of mitigated speech. As noted in the progression of patient care in Room 1, the Staff Doc, Res. Doc and Nurses, the intended goal of indirect requests is met as coordination and cooperation unfolds and the patient is examined and treated for their injuries, thus achieving stabilization of their physical status. The extension of the use of mitigated speech by Nursing staff also reflects the use of mitigated speech with a mutual goal of cooperation and coordination. Mitigated speech is part of a shared repertoire of patterns of interaction in this Department of Emergency Medicine, and its use is reflective of a diminishing of difference in status necessary for the common enterprise of its participants. Wenger suggests that one source of community coherence is evident in the shared repertoire of actions of its members, and in the event of Room 1, mitigated speech is a resource used by all, with varying degrees of use, and toward the coordination of events.

Mitigated speech in Room 1, as in the DEM, also serves as a recurring process, and as it is understood in the local context of its use, it serves to increase coordination and cooperation.

In response to the problematic of mitigated speech in the aviation cockpit, the differences noted, reflect locally produced patterns of interaction, acquired over time and through a history of interaction, and serve as a resource to the participants as well as benefiting the medical care of the patient. The contextual features of each domain, of medicine and aviation, cannot be minimized in any effort to increase safety. And, in order that medical safety be improved, the contextual disparities of safety strategies evolving from aviation, as in CRM training, and applied to medicine, must be analyzed further.

In contrast, the frequency of use of mitigated speech by Trauma consultants (i.e. 25% of MS/IU) is second highest only to its use by technicians (i.e. 18.5% of MS/IU), a phenomena reflecting his position within the community of practitioners. As indicated in the progression of exam, Trauma(m) and Trauma(f) interact with the ensemble of emergency personnel, employing shared communicative resources, though the frequency of mitigated speech demonstrates ambiguity in relation to styles of interaction differentiated in Room 1. Trauma residents are located primarily within the Department of

Surgery, and are "on call" to the DEM. In the event of Room 1, Trauma codes, their participation in exam, diagnoses and treatment, is essential in this joint enterprise. The referential language used in interaction with DEM participants is a shared resource.

However, the relational elements, as reflected in the use of mitigated speech, reveal the realities that exist at the boundary of DEM identity and community. The shared history of interaction in the situation of Room 1, trauma codes, as well as throughout the DEM, is focused on the specific need for evaluation and possible schedule of surgery for patients. The differentiation at the boundary of the DEM and Department of Surgery is clear, though participation can produce ambivalent identities and participation in local events. Periodically, the differences between departments becomes focused in the form of disputes, as when tribes and clans conflict. In the event of dispute leading to interference in patient care, inter-departmental meetings ensue to resolve the dispute.

During the course of this study, such a point of tension evolved. Traditionally, Trauma surgeons "run the trauma code"; that is, they are in the position of coordinating the staff in
Room 1. At Rivera Hospital, DEM residents "run the code." A specific incident occurred in which Trauma Staff attempted to usurp this role from the DEM resident running the code, and was met with resistance as the resident continued to run the code. As a result, the tension embedded in the division of power to run the code, culminated in a "retreat" with participation of both departments, referred to by one senior staff member as a "*Kumbaya*" meeting (i.e. "I'm not going to sit around a table and sing *Kumbaya* with them").[47] Ultimately, the dispute over boundaries and roles was resolved and a normal pattern of interaction between departments ensued.

X-ray technicians also belong to the Department of Radiology, separate from the DEM, though if assigned to the DEM, they are active participants producing coherence in Room 1. Of the specialties involved in care of patients, their directives are often of higher volume and pitch, perhaps to gain needed attention over the high volume and high pitch of activity and talk in Room 1. In the event of correcting a

[47] *Kumbaya*,in this instance, is not the ritual communal coming together through song, but a satirical comment making light of any attempt by upper management to deflect from the business at hand. This comment can be glossed as "let's get down to the real business at hand and forget this foolishness".

patient identity, "*HEY/ CANCEL it. It's SMITH. It's MARY SMITH*", the directive deliverance of the utterance gives evidence of criticality of the name correction as heard over the interaction of other participants. X-ray technicians routinely use higher pitch and volume to provide clear and important directives to participants. A common directive issued prior to taking an x-ray, is a loud announcement of "CLEAR" signaling that radiation exposure is about to occur.

During the course of the study, the x-ray techs staged a form of "blue flu" in that they called in sick, with 100% compliance for this action. The action was taken as there were pay discrepancies between DEM X-ray technicians and those of other departments. As a result, their significance was highlighted in that the senior DEM medical staff and trauma staff concurred in notifying the Chief of EMS, to divert emergencies to one of the two remaining Trauma Centers in the city. The inclusion of x-ray technicians within the community of practice, and as necessary for mutual engagement of care of trauma patients, is signaled by their identity and essential role in the DEM, both internally and external to the department in which they practice.

MITIGATED SPEECH, COOPERATION AND COORDINATION

In summary, mitigated speech, as "powerful tool for encoding relational information" (Linde 1988) is reflected in the preference of style as modeled by the senior Staff Doc(m) and enacted by Res. Doc(m) and Res. Doc(f), and employed as a resource to coordinate and gain cooperation in care of patients in Room 1. It is a resource employed by nurses, technicians and trauma consultants as well, though with less frequency.

An additional resource observed throughout this episode is that of the use of "We" and "Let's", as both a form of mitigation and alignment of participants in mutual engagement. Rather than producing a directive utterance, the employment of mitigation in seeking cooperation and coordination produced its intent as observed in the progression of care of the patient in Room 1.

The diminishing of difference of status, reflected in the negotiation of medication use, as noted in the exchange of Nurse(f) and Res. Doc(m), indicates not only a process of attunement, but also evokes the necessity of reliance of participants upon each other. Trust gained through mutual engagement over time, results in allocation of responsibility of patient care among the participants, and each move toward patient

care, regardless of hierarchical status, is considered to be the responsibility assumed by individuals and regarded as essential to accomplishing medical care in Room 1.[48]

At Rivera Hospital, the DEM physicians are acutely aware of the unique local collaboration with nursing staff, as well as with x-ray technicians. In an attempt to find validity in my observations that there is a diminishing of difference of status in the local practice of medical care, I posed this hypothesis to two senior staff physicians. The elicited response reinforces the inherent structural features of emergency medicine, in that physicians are educated and trained, and legally and medically responsible to make treatment decisions. However, in referencing the accomplishment of caring for patients, both identify the collaborative effort inherent in this endeavor. The observations of the physicians are such that the nursing staff, as well as technicians, do what is necessary without being directed. They are "amazed" at the level of their clinical knowledge and that they don't wait to act, if they see a need. They act "autonomously", and in the event of Room 1, where there is need for quick decisions, physicians unconsciously rely on experienced personnel. There is a high regard, and high level of trust, based upon a history of interacting in this high stress and complex medical endeavor.

Two themes emerged from the elicited responses of senior physicians: first, that there is a high level of trust and interdependence based upon a history of interaction; and two, that the day to day medical care of this ensemble is like that of a team. One physician made the analogy that he views the DEM staff as a "jazz ensemble" in which there is an underlying structure, and security within the structure, which then allows different players to improvise. The second physician compares the history of interacting and mutual trust and interdependency as a product of "It's like being in a war, in the trenches together. You have to trust and help each other. We are connected to each other." Although this limited sample may not represent the whole of the medical group, both physicians make strong statements about the difference of this group as contrasted with other emergency rooms and site the report of experiences of physicians who left the DEM, worked in other hospitals, and then returned to St. Elsewhere.

[48] Wenger (1998) identifies "communities of practice" as a sustained mutual engagement, with a shared repertoire of resources (actions, discourses, styles, stories, tools) employed in a joint enterprise and providing local coherence for its participants.

Unanimously, the differences are noted in the quality of the nursing staff as experienced in other facilities. Most notably, DEM physicians are struck by the level of competence of this nursing staff and their ability to initiate action without direction from physicians.

Nurses report diverse opinions of the DEM physicians, noting that the hierarchical reality of medicine exists, though they feel that they perform their jobs with a high degree of autonomy and receive an unusual degree of regard for their work. The most frequent description, given by nurses, of their position within the medical hierarchy, is that they feel that they can function autonomously within the DEM. One nurse comments on the whole of the emergency room ensemble and reporting, “They are cowboys. They are excellent at what they do. They know what will happen down the road.” Throughout the episodes of care recorded over this 6 month period of time, I observed nurses teaching residents, as well as residents receiving medical education in the form of weekly educational “rounds” and supervision by senior staff. Concurrently, nurses participate in mandatory and ongoing medical education provided by their management team.

The transcripts and analysis reflect the interdependence of this work group, a phenomenon noted in elicited responses of nurses and physicians. Yet the processes of attunement, accomplished in face to face interaction, are less articulated. In the event of Room 1 and Room 2, as transcribed, the analysis reveals patterns occurring throughout, of positions and strategies employed by speakers to coordinate and collaborate in their effort to stabilize the traumatized patient. Mitigated speech, as a means of seeking cooperation and effecting coordination of care, can be viewed as an interactive resource employed by participants to enact the protocols of medical care for patients. Rather than being part of an explicit educational instruction, the acquisition and use of this resource occurs through repeated face- to- face interaction, understood and employed with implicit understanding of its use. Mitigated speech becomes the normative means of seeking cooperation and coordination. It is but one resource of many, modeled by experienced staff members and its use is acquired through repeated interactions over time. The significance of the frequency of its use among staff in Room 1 and Room 2, is such that when this resource is absent, problems in communication ensue and require repair.

E.TREATMENT INITIATIVES ARE RENDERED - Part II

The flow of events continues, though a notable shift in alignment and footing as the exam has resulted in initial diagnoses of injuries and treatment options have begun. The intensity of the initial exam, with multiple participants coordinating efforts and in alignment with the "we" and "lets", now moves to individual participants invoking first person.

Turn/Speaker	**Transcription**	***Non-Verbal***	***Explanation***
575. Nurse(f)	I need you to get a temp/		*Speaking to fellow nurse*
	Real quick/		
	And put this on her\		*??*
576. Res. Doc(f)	Yeah\		*Responding to inquiry (??)*
	You don't know (??)		
577. Res. Doc(m)	Did you get any of the x-rays Sir?	*To Staff Doc as gaze shifts to him*	
578. Res. Doc(f)	And I don't know if they are going to want-	*Gaze toward patient and speaking*	
	And ooh/		
	Yeah I don't know what they are going to want/		*Referring to Trauma consultants*
	They didn't order anything on HER?		
579. All	*Multiple voices not clear (4 seconds)*		
580. Res. Doc(f)	{I don't think they were too impressed with her exam\		
581. Res. Doc(m)	{I need a lateral c-spine a chest and a flat pelvis/	*Gaze directed to x-ray tech*	
582. Staff Doc(m)	Do you want to send her back for a C-spine?		*Referring to Room 1 patient who has had a series of x-rays completed*

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
583. Res. Doc(m)	Act-		
	Actually if you can get-		
584. Res. Doc(f)	Yeah/		*Referring to CAT 1 area of ER*
	That's what I was thinking\		
	She can get everything back in the department\		

585. Res. Doc(m)	Well I ordered a bunch of aah/	*Both residents are speaking to Staff Doc about what is still needed*
586. Res. Doc(f)	{And I'll get a chest PMI back there too/	*Residents are overlapping in speech*
587. Res. Doc(m)	{We need a lateral C-spine because we need to do a CT of her head\	*Gaze toward Room 1*
	{ . .. This one I don't know yet\	*Gaze toward Patient in Room 2*
588. Staff Doc(m)	{That looks fine here\	*Gaze toward Patient in Room 1*
	{It's All right\	
589. Res. Doc(f)	{Okay\	*Acknowledging Staff Doc*
590. Staff Doc(m)	{Elbow WISE/	
	I'm not too impressed\	
	Knee wise-/	
591. Res. Doc(f)	I'm not too impressed there either\	*Patient in Room 1 moaning loudly*
	Elbow wise either/	
	Because I squeezed both of her elbows\	
592. Staff Doc(m)	So chest (??)/	
593. Res. Doc(f)	Pelvis/	
594. Staff Doc(m)	(??)	
595. Res. Doc(m)	(??)	
596. Nurse(f)	Who wants to have a Foley?	*Directed to all as is gaze*

1.THE TRANSITION FROM 'WE' TO 'I'

In the flow of events, the shift of footing and alignment signals a series of utterances in which the residents display their medical expertise and consult with the supervising staff physician. The employment of "I" in this series of turns represents the resident assuming responsibility for his actions in diagnosis, treatment and performing to display his skills. Though the residents are in the final month of their Emergency Medicine residency, they continue to maintain their status differential with Staff Doc(m). In turn 577. Res. Doc(m) addresses his "senior staff" as Sir, reaffirming his position as structurally inferior,

re-establishing the deference accorded to one's teacher, and revealing the underlying structural order of hierarchy. This emerging pattern signals a shift in focus from intense and immediate action of the ensemble, interacting in alignment as "we", to that of "I", as the progression of the exam and treatment moves toward completion.

The repetition of the utterance "I" in the remainder of the event in Room 1 and Room 2, reveals a pattern in which the alignment of participants, still collaborative and cooperative, shifts to a less intense series of interactions indicative of the fact that the stabilization of the trauma patient has been accomplished. The focused actions of multiple participants required for immediate stabilization of the patient, now progresses in a less structured manner, though the structural hierarchical order is more explicit. Collaboration in the form of "we" and "lets" is intermingled and reflects ongoing processes of attunement of participants.

2.NARRATIVE PERFORMANCE

As this transition is realized, the flow of utterances includes the employment of narrative and performance, and the content reflective of personal concerns. Bruner, hypothesizes that narrative "emphasizes the structuring of events in terms of a human calculus of actions, thoughts and feelings.[49]" Narrative, as a genre, reflects "concerns about past events in order to understand and cope with their current concerns.[50]" Performance in the event of Room 1, also reflects concerns about past, present and future concerns. In the event of the following performance, the content reflects the current concerns and past events, with an element of humor, emphasizing his distress in response to the events of the day:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
625. Res. Doc(m)	TESTING?		*Playfully addressing microphone*
626. Res. Doc(f)	Okay Sammy/		
	/Do it again/		

[49] Bruner in Ochs & Capps (1996:26) extends the human predisposition to organize their experience in terms of plots. He hypothesizes that narrative is one of two modes of cognitive functioning; that of paradigmatic thinking, emphasizing categorization and, that of structuring events in the form of human assessment of actions, thoughts and feelings.

[50] Ochs & Capps (1996:25).

627. Res. Doc(m)	/ECHO HARRY/	
628. All	*Multiple overlapping speakers (.. .. ..)*	
629. Res. Doc(m)	ECHO/ HOTEL/ LARRY/ .. .. Echo Romeo Sierra/	*Res. Doc(f) in background continues with performance while multiple speakers continue*
630. All	Multiple overlapping speakers (3 seconds)	
631. Nurse(f)	They said it was a fourth car (??)	*Speaking to all*
632. Res. Doc(m)	CONFIRMA- CONFIRMATION PLEASE/	
Turn/Speaker	**Transcription**	**Non-Verbal** **Explanation**
633. Res. Doc(f)	NO NO/ They didn't –	*Patient moaning as all speak*
634. Nurse(m)	This car came across the (??) the scout car (??)-	
635. Res. Doc(f)	They didn't hit-	
636. Res. Doc(m)	I HAVE THE ENEMY IN MY SITES/ I want ALL the ARTILLARY IN OUR PERIMETER/ .. .. I repeat/ ALL THE ARTILLARY IN OUR PERIMETER/	*Continuing to play and perform* *Multiple speakers talk about accident* *He is speaking over the volume of all speakers in the room*
637. All	*Multiple speakers and patient crying loudly in the background in Room 2* *(3 seconds)*	
638. Res. Doc(m)	We're being OVERRUN/	
639. All	*Multiple overlapping speakers and patient continues to cry in background* *(3 seconds)*	

This performance by Res. Doc(m) is encouraged by Res. Doc(f), in turn 626., who realizes that the room of participants has not clearly heard the keying of this event, as play. As a commentary on

current stressors in CAT 1 and Room 1 and 2, Res. Doc(f) aligns with Res. Doc(m) to announce the performance as it relates to the concerns and stressors of all participants, and reinforces the shift in footing of Res. Doc(m) with the intent of "rounding up" the audience. As a form of attunement, or diminishing of difference of status, Res. Doc(f) includes all participants despite hierarchical status, as they have collectively experienced the events of the day and continue to be participants in interaction with patient's suffering, as noted in the cries of the patient, in the background.[51] Given the high stress level and acuity of patients treated thus far in the shift, the individual participants share the experience of caring for the patient according to the paradigm of emergency medicine, and at the same time, respond on an affective level, to the condition of suffering and pain of the patient. More significantly, and not available for explicit expression, they respond to the external socio-political and economic forces that have created the situation of the accident; that is, the availability of illicit drugs in the inner city, the unemployment and frustration level of individuals who have been unable to escape this environment, and the frequency of this ensemble's confrontation with its results. It is a collective response that also serves as a source for attunement; that is, a diminishing of difference toward a new coherence of shared experience and emotional response.

Ochs and Capp expand the function of narrative as a means of resolving the "discrepancy between what is expected and what has transpired."[52] The narrator frames the event as problematic by eliciting a response reflecting their commonsense knowledge of what is to be expected, or by detailing the distressed responses to the commonly shared experience. As the progression of care continues, and the immediacy of need of the patient is perceived as less critical, the participants shift footing and introduce narratives evoking their frustrations with the continual events of accidents, poor health, and illicit drug use, by delivery of shared moral response to the events of the day. The implicit action is that of dealing with the reality of the environment and attempting to synthesize the discrepancy of what is expected and the reality of the current socio-economic conditions of the external environment.

[51] At this point in the flow of medical events, a nurse is attending to the patient in Room 2 while the group is either situated in
Room 1 or in the hallway between Room 1 and Room 2.

[52] Ochs & Capps (1996:27)

3. RUNNING COMMENTARY

Running commentary about the stress presented by the patient and experienced by the staff in numerous events of the day, is intertwined with direct care of the patient:

Turn/Speaker	Transcription	Non-Verbal	Explanation
659. Res. Doc(m)	It's just the tendon's open\		
	.. .. It just needs to be washed out/		
	And\		
	You know\		
	Debreded properly\		*A procedure to remove dead tissue*
	And\		
	.. .. .. I mean she's gone CRAZy/		
	We need to-		
660. Res. Doc(f)	I HEAR she's gone crazy\		
661. Res. Doc(m)	What a NIGHTmare DUDE/		
662. Res. Doc(f)	I know\		
663. Res. Doc(m)	Well/		
664. Res. Doc(f)	It's a hell of a last shift/	*Chuckling softly*	
665. Res. Doc(m)	It's not MY last shift/		
666. Res. Doc(f)	I know/	*Continuing to chuckle softly*	

This interaction occurs between two residents in their final month of residency. As cohorts in a class of residents, categorized by year, and thus experience, they share the anticipation of the end of residency, but are only within reach of the finish line; and, anticipating more stressful shifts before they exit.

As the progression of care continues, a shift in and out of commentary and coordination of care is evidenced in the employment of "I" as contrasted to "we." This contrast illuminates the difference in the deictic use of pronouns as reflective of individual position and the coordination and cooperation necessary to complete the care of the patient:

Turn/Speaker	Transcription	Non-Verbal	Explanation

688. Res. Doc(m)	Do-		*Addressing and gazing toward nurse*
	Do you want me to do something here?		
689. Nurse(f)	(??) A name tag/		*Addressed to (??)*
	I have to put a foley in you/		*Now addressing patient*
	To get some urine\		
690. All	*Multiple speakers overlapping with one inquiry made of Res. Doc(m)*		
691. Res. Doc(m)	No I'll just kind of hang out with her\		*Referring to patient*
692. Res. Doc(f)	Well that's not going to happen\		*Someone suggests that the patient wants to have a cigarette*
693. Res. Doc(m)	Is there any way to get an order for that?		*Joking to all*
694. Res. Doc(f)	NO WAY/\		
	It'll blow our ER up/		
695. Res. Doc(m)	Don't move around/	*Gaze toward patient*	
	{Stop moving/		
696. Res. Doc(f)	{She wants a cigarette/		*Fewer overlapping speakers at this point as activity slows down*
697. X-ray Tech(f)	{Take your time NOW/	*Gazing at patient*	
698. Res. Doc(m)	{We have got to get an x-ray here/		
	All right?		
	DON'T MOVE/	*Directing patient*	
	.. .. ..Try to keep your arm down/		
699. X-ray Tech(f)	Keep this one down/		*Multiple speakers in background*
	Come on/		
	REACH for me here\		
700. Patient(f-2)	*She softly moans and attempts to comply with request of x-ray tech*		
701. X-ray Tech(f)	REACH/		

	.. .. REACH with this arm/ COME on\		
702. Res. Doc(f)	Ma'am we'll COVER you back up/ She says she's cold/ .. .. All right\	*Gaze shifts to all staff in area*	

In the continued flow of events, utterances reflect ongoing care while running moral commentary is replicated and a running narrative about the resident, who was stabbed, re-emerges:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
733. Res. Doc(f)	Heroin\ .. .. Heroin alcohol\		*Res. Doc(m) continues to comment on Room 1 patient's reluctance to comply*
734. Trauma(m)	/ (??) because we don't know if we'll just discharge her\ (??) care enough about her (??)	*Res. Doc(f) chuckles softly*	*He is anticipating his Attending's impression of patient case findings*
735. Res. Doc(f)	Dude\ I hear you\		*Empathizing with Trauma resident's anticipated response from Attending*
736. Trauma Doc(m)	I could be wrong\ (??)		
737. Res. Doc(f)	It's tough\ .. .. A lot of people verbally- abuse you\ Patient wise that is/		
738. Trauma(m)	THAT'S / That's no different\ (??)	*Res. Doc(f) chuckles*	
739. Res. Doc(f)	Yeah one of our residents just got stabbed/		
740. Nurse(f)	Really?		*Newly arrived nurse(f)*

741. Res. Doc(f) With a pen\

.. .. Yeah/

742. Trauma Doc(m) Was it deep?

743. Res. Doc(f) Was it DEEP?

It just missed his eye/

The running narrative, originally created by a nurse who witnessed the accident, has been transferred and animated by Res. Doc(f) as told to Trauma(m) and Nurse(f), who has recently arrived and joined in the interaction. In this process, the narrative of a real event is carried and transferred to future participants, none of whom witnessed the event. It becomes incorporated into the background knowledge of participants in the DEM, and verbally anchoring the narrative to other discourses that will evolve in future events.[53] The narrative is accompanied by affective contour in its retelling providing a context for its use as a resource for participants. In this instance, the unanticipated behavioral responses of patients and visitors in the DEM are contextualized and signal the potential for verbal and physical abuse of participants in the course of providing medical care. In turns 733. through 743., the contextualization cues cover verbal abuse, physical abuse of DEM employees, and moral evaluation of patients' behavior.[54] This narrative evolves throughout the remainder of this recorded shift, and emerges in the following weeks, when an event occurs evoking the sentiment and affective response embedded in this event.

The narrative becomes a resource for expression of human response to events generating contextualization of past experience in to current events and producing a means by which to resolve the discrepancies between what is expected, and what actually occurs. The narrative of this event exemplifies the reaching back to prior text, thus experiences, providing a resource for attunement, or diminishing of difference of individuals who form the DEM medical staff. The shared understandings, of the narrative

[53] Bauman proffers a review of folklore and its function in forming context. He departs from traditional views of folklore by looking from within the context emphasizing the "agency" of the narrator "…using the text itself as appoint of departure, and allowing it to index dimensions of context as the narrator himself forges links of contextualization to give shape and meaning to his expression"…moving us closer to a balanced understanding of the most fundamental of all anthropologic problems, the dynamic interplay of the social and the individual, the ready-made and the emergent, in human life." (in Duranti & Goodwin 1992:141-142).

[54] This narrative continues through turn 746. (Bauman 1992)

and the occasion for its use, serve as resources that are employed by participants in their reach toward mutual engagement and understanding.

F.THE PATIENT IS WHISKED OFF TO THE O.R. - DISPOSITIONS ARE REACHED

The flow of events in Room 1 and Room 2 moves toward closing of this event, in turn 880, referencing the disposition of the patient; that is, moving the patient to either CAT 1. or the operation room, and subsequent disposition from the DEM:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
880. Res. Doc(f)	She'll- I I presume she'll probably be going home\		

While medical care of the patient's wounds are addressed, and with preparation for further x-rays, in this turn, the utterance keys, simultaneously, a shift from current activity in Room 1 and Room 2 to that of CAT 1. A change in footing is anticipated in references made to interacting with yet another consultant, Neurology, and through a shared history of experience. Additionally, attention is also shifted to the care of a patient, in progress, in CAT 1:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
899. Nurse(m)	Is she going to be admitted or ((?))?		
900. Res. Doc(m)	Neuro is going to tell us ((?))\		
901. Res. Doc(f)	That's rubbing salt in the wound\		*Referring to ongoing conflict about admissions of ER patients*
902. Res. Doc(m)	You know that guy in 114? .. .. He's a psych patient/		*Referring to room in Cat1*
903. Nurse(m)	Right/		*Overlap and multiple speakers*
904. Res. Doc(m)	We were trying to tap him but we didn't have time/		*Res. Doc(f) talking to nurse in back ground*

1.CONCLUDING THE FRAME OF ROOM 1 AND ROOM 2

In this transitional phase out of Room 1 and Room 2 and in to CAT 1, and as medical care continues, there continues to be an atmosphere of levity:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
909. Res. Doc(m)	You're going to do it?		
	.. oh-		
910. Nurse(m)	((?))		
911. Res. Doc(m)	Okay/		
	Good/		
912. Nurse(m)	((?))		
913. Res. Doc(m)	Right ON?		*Ongoing multiple speakers in*
	.. I like it/		*background speaking of next steps*
914. Res. Doc(f)	She is-		
915. Nurse(m)	((?))		
916. Trauma(m)	((?))		
917. Res. Doc(f)	No\		*Finishing prior unit of speech*
	.. I think it's-		
918. Trauma(m)	What do you thing?		
919. Res. Doc(f)	A lot bigger\		
920. Res. Doc(m)	Hey/		*Complimenting Trauma Doc (m)*
	Good job there/		
921. Trauma Doc(f)	YEP/	*Compliment accepted*	
922. Nurse(f)	((?))		*Directed to Trauma Dococ*
923. Trauma Doc(m)	I know I know I know/		*Responding to nurse remark*
	I KNOW/		
924. Res. Doc(m)	You know it might be time for the aah/	*Clears throat*	*Multiple overlapping speakers in*
	X rays and stuff with this too/		*background (ie joking)*

	.. .. I mean I have done exactly the right thing\		*False arrogance & joking*
925. All	*Ongoing multiple overlapping speakers with a shift to more informal talking joking commenting on the care of patients in both Room 1 & 2 and CAT 1 (8 seconds)*		
Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
926. Res. Doc(m)	We're almost done here/ I ((?)) two glasses/ This is glass number two/		*Speaking of contrast dye that patient has to drink for CT scan*
927. Trauma(m)	She has to drink it ((?))\		
928. Res. Doc(f)	And how about- /Can her chest be brought up on that machine?		*Referring to immediate x-ray images available in Room 1 & 2*
929 .X-ray Tech(m)	/Her x-ray's right here/		*Pointing to light box and x-ray*
930.Res. Doc(m)	/Hey Harry? /This is two ((?)) right?		*To male x ray tech*
931. X-ray Tech(m)	/Correct yeah\		
932. Res. Doc(m)	/So we ((?)) another one here\		
933. X-ray Tech(m)	/Yeah/		
934. Res. Doc(f)	/Can we bring up Smith on that one?		*Also addressing x ray tech(m)*
935. X-ray Tech(m)	Yeah/		
936. Res. Doc(m)	Sounds good\ .. .. This is glass number two right right here\		
937. Tech(m)	((?))		
938. Res. Doc(m)	Well we ge- We had to give it while she was- Actually- .. I kind of put- When we sort of doing this-	*Chuckling*	

	The C-spine I was kind of-		
	We were talking about putting our hands on her/		
	And we gave her the Ativan and Dilaudid/		
	I think like a little touch kind of calmed her down		
	just enough/		
	Until she relaxed and now she's-		
	Just out\		
	.. .. But she's she's breathing fine/		
939. Trauma(m)	You just got to make sure we don't have to give her	*Chuckling softly*	
	Narcan to straighten her out/		
	.. .. .. She had ((??))		
940. Res. Doc(m)	She's she's actually moving-		
941. Trauma Doc(f)	{She's been smoking ((?)) crack\		
942. Trauma Doc(m)	Yeah\		
943. Trauma Doc(f)	/((?))		
944. Res. Doc(m)	She's going to be volatile/		
945. Trauma Doc(m)	We should get some good scans though\		
	No motion artifact ((?))\		

and:

In turn 953, Res. Doc(f) shifts her footing as she prepares to leave this frame of events and return to CAT 1, and while her patient in Room 2 is being prepared for further X-ray and CAT Scan studies in the X-ray department of the DEM:

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
953 Res. Doc(f)	Excuse me|		*As she steps out of x-ray booth*
	.. .. .. OKAY/		
	Chest looks good/		
	Let's roll her/		

	I'm off/		
	Thanks guys/	*Moving Patient to CT scanner in x-ray Dept*	
	Meet me there/		
	Anything else?		
	.. .. Jimmy?		
	.. .. .. Hey Jimmy?		
	(??) Anything else?		
	All right/		
	See you in Room-		
	See you in CAT 1 rather\		

As Res. Doc(f) reaches to close her participation in this portion of care, she prepares her departure with verbal signs of gratitude while maintaining the participation frame of the medical team, extending her expectation that this mode of interaction will continue as everyone returns to CAT 1.

Res. Doc(m) also prepares for the transition back to CAT 1 while he continues to interact with Trauma consultants, negotiating further care for the patient as well as re-establishing boundaries that have become unclear during the care of the patient

Turn/Speaker	**Transcription**	**Non-Verbal**	**Explanation**
983.Res. Doc(m)	So what are you guys thinking/		
	If we don't find anything on her except for this-		
	Hand deal/		
984 Trauma Doc(f)	She still gets the blunt trauma/		*Referring to more x-ray series*
985.Res. Doc(m	I know/	*Docs at patient's side*	
986.Trauma(m)	Well as far as?		
987.Res. Doc(m)	What if nothing else comes out?		
	{Then what do you think we'll do?		
988.Trauma(m)	{I have to talk to Plastics and see/		
	I mean I don't think-		

	They might/
989.Res. Doc(m)	{Well she's-
990.Trauma(m)	They might say she's going home with-
991.Res. Doc(m)	It's not a going home kind of person/[
992.Trauma(m)	With- With aah Silvadene and all kinds of stuff but I had a- I think she's going to need she's going to need some(??)
993.Res. Doc(m)	I see some nice tendon and stuff there/

2.THE RE-EMERGENCE OF THE BOUNDARY OF "ER" IDENTITIY

The negotiation unfolding between Res. Doc(m) and Trauma(m) is ultimately about treatment and the tensions that exist around disposition decisions and will also include Plastic Surgery, yet another bounded unit of Surgery. Each participant shares common background knowledge about the play of departments when deciding the disposition of a patient. Often, the difference in opinion about location of follow up treatment is made by the consultant regarding the specific need for their specialty of care. The DEM holds ultimate responsibility for the patient until the point of patient departure from CAT 1. If DEM physicians perceive a need for further treatment from a specialty service, and that is not going to be forthcoming, the DEM staff continues to care for the patient without this resource. Res. Doc(m) negotiates for the staff in CAT 1 as he knows that the care of the patient will fall on the collective of participants.

The transition from Room 1 to CAT 1 is an event that is ambiguous regarding who will care for the patient, and despite this state, activity moves toward closure of Room 1. It is certain that the patient needs a CT scan, and the negotiation is further complicated when the "Ct scanner" in the DEM is not functioning, a fact that has potential to increase the frustration of DEM staff, but also offers the possibility of promise:

Turn/Speaker	Transcription	Non-Verbal	Explanation
1000. Overhead Page	*The scanner is down at this time/*		
1001. Res. Doc(m)	OOH Shit/		
1002. All	*Multiple overlapping speakers. (4 seconds)*		
1003. Nurse(f)	OOH Boy/		
1004. Res. Doc(m)	OH/		*Nurse suggests going to different*
	This just makes aah/		*scanner outside of ER*
	My life a little more difficult\		
	.. .. Well we'll go to CAT 1 I guess.		
	.. .. .. Yeah can we uhm/		
	We could go upstairs/		
	As long as she's on the monitor/		

And possibilities for relief of work load stress are contemplated:

Turn/Speaker	Transcription	Non-Verbal	Explanation
1010. Res. Doc(m)	The one upstairs/		
	Is sometimes open but/		
	It may not-		
	Actually it probably isn't open now\		
	That may be our only CT/		*Referring to CT in ER.*
1011. MK	So are (we) closed to codes then?		*Referring to EMS runs to ER*
1012. Res. Doc(m	The we're going to have to close down the ER/		
	I think/		
	If our CT is down/		
	We may have to close our ER to trauma\		
1013. Trauma Doc(m)	That's good/	*Chuckling softly*	
	.. .. .. Chuckles softly.		
	I think you should push for that man\		

1014. Res Doc(m) Well actually I'm going to/

If we really-

If our CT's down/

As this episode of care in CAT 1 moves toward conclusion, Res. Doc(m) realigns with all medical the pronominal use of "we" as he references the potential for stress relief for all participants. The intersubjective understandings of ways to alleviate stress, as an ongoing feature of this environment re represented in the shared play of participants, with the possibility that the Emergency Room would close to EMS runs, a remote possibility runs; a remote possibility. [55]

The close of this episode is not sharply defined by the participants in a defined utterance, but rather by a shift from more formal medical talk and protocol to that of informal conversation and interaction reflective of mutual understandings about what has transpired in Room 1 and Room 2. The language of coordination and cooperation revealed in the lexical choice of "Lets" and "We" gives way to that of "I" associated with the embodiment of sentiment of individual participants who share and form this collective.

III. SUMMARY

In analysis of interaction in Room 1 and Room 2, two themes emerge for discussion; that of the locally specific interactive moves displayed in the use of mitigated speech as a means of producing coordination and collaboration; and, the function of narrative as it serves to relieve stress, and solidify group solidarity through the embedding of semantic interpretation of past and current events. As recurrent patterns of the lexical use of "Lets" and "We" appear through the progression of medical exam and treatment of a patient, an ongoing process of attunement is realized in the diminishing of difference of status inherent in the alignment of Staff Doc and Res. Doc, with that of all medical personnel. Additionally, the co-constructed means by which narrative is initiated and sustained by participants, in the

[55] The use of "closed to EMS", references the stoppage of EMS transport of patients to this facility. In the event that this occurs, the stress and workload would dramatically be reduced, as would the acuity of patient needs. The stress of the DEM staff is not calculated in such decisions, but rather, the unavailability of required diagnostic technologies would, as in the "call in" by x-ray technicians cited in the prior text. One condition of accreditation for "level a" trauma centers, is that they remain open to EMS runs at all times and with the exceptions noted above.

role of animator, or audience, is indicative of the interactive means by which participants develop and sustain shared understandings of current events and achieve mutual understandings that diminish the difference of status, in a hierarchical schema prescribed by the institutional order of medicine.

Mitigated speech is a universal feature of interactive politeness, and its use can either facilitate or obstruct social organization and coordination of work group action. The function of mitigated speech, as a communicative resource, can only be understood within the context of its use, and as produced in the specificity of locally produced human interaction. Similarly, the function of narrative, a universal means of attaining semantic interpretation, reveals its significance to local participants responding to concrete events and in its production, provides a resource for attunement, or the diminishing of difference or status. By means of shared meaning production, narratives become a requisite element in the locally produced, diminishing of difference of status, inherent in the delivery of medical care in this Department of Emergency Medicine

Mitigated speech, as a form of indirect request, is a form of politeness or a course of action taken to seek cooperation. It can either facilitate or obstruct coordination and cooperation and is thereby implicated in the success or failure of interactional achievement and operational goals. Linde concludes that it is " a most powerful tool for encoding relational information." (Linde: 1988:396). Often an indicator of asymmetry in the hierarchical order of the aviation cockpit, it is an interactive process in this emergency medical group, which can only be interpreted in the socially situated features of local interaction. Tannen puts forth the observation that mitigated speech, comprehended in its local cultural context, can serve as a form of attunement, or a diminishing of difference (of status) and an increasing coordination of participants.

Narrative emerges as yet another instance of processes of attunement, revealing a diminishing of difference of status, as participants reach back to prior histories of mutual interaction and shared meanings of prior experiences. Status differential is notably absent in the right of a speaker to initiate, or sustain narrative formation, or in the recall of prior narratives at appropriate times, acquired knowledge occurring through recurrent interaction over time. The personally shared narratives of past episodes of medical care, as well as the

evolving narrative sustained by participants of disparate organizational hierarchical status, reflects the locally produced patterns of recurrent interaction and means by which relationships are sustained.

Chapter 5: DISCUSSION

A.CONVERSATIONAL ANALYSIS OF ROOM 1 AND ROOM 2

1. The Relational Elements of HRO at Rivera Hospital

The purpose of this dissertation was to apply the methodology of Conversation Analysis to highlight the informal communication of the emergency room workgroup at Rivera Hospital, with the objective of discovering recurrent interactive patterns and the inherent relational work necessary to accomplish a Trauma Code, at a level of safety comparative to that of ultra-safe systems, as described in the literature of High Reliability Organizations.

The organizational context of this trauma center provides a comparative example of High Reliability Organizations, achieving a high degree of reliability, ands safety, under conditions of high risk in which decision making occurs within the constraints of time pressure, and immediate decisions are made with the potential of catastrophic outcomes for the patient. Yet it is in the locally situated, temporal, unfolding of human interaction and shared implicit rules of interaction, and the forming of an emerging context that safety is realized, meeting the requirements of HRO (Sindell 2005; Ortner 19 ; Duranti and Goodwin 1992).

2. The Significance of Relational Elements of Interaction on Emerging Social Order

This Conversational Analysis makes use of the concept of attunement, or the diminishing difference of status, as a recurrent conversational feature move by which participants seek cooperation and coordination and collaboration in face-to-face interaction, in the mutually constructed action of providing safe medical care in a highly complex and high risk environment. Implicit and reciprocal relational expectations of participants make possible the effects of agents (participants) on structure, and medical protocol, and the unconscious structuring of language and its effects on interaction (Sapir 1931;Hoijer 1995) . Thus, processes of attunement toward diminishing the difference of status, not only shape interaction, but structure an emerging field of interaction in which coordination and cooperation are achieved with the prospect of effecting an unfolding of safe medical care.

The formal structural order of medical protocol, requires the social processes and relational work of participants in face-to-face interaction in order to achieve its' goals, that is the stabilization of the trauma

patient. Interactional organization discovered in informal communication, reveals the process of creating and stabilizing the social order (Krifka, et.al 2001), a social process governed by its own regalities (Hutchby and Wooffitt 2001). Furthermore, that the regularities are recurrent patterns of interaction specific to local context, and local relational elements of this workgroup.

3. Flattening of the Hierarchy

Processes of attunement, in the diminishing of difference of formal organizational status, are located in the recurrent use of mitigated speech, in the form of "Lets" and "We", aligning participants in a cooperative and collaborative effort to sustain the action of providing medical care . The significance of the recurrent t use of "lets" and "we" in this local context, is marked by the need of repair of relationship, as when displayed in the repair made by Res.Doc(m) when he corrected his use of "I", immediately employing the use of "we", to realign himself within the relational frames of cooperative and collaborative interaction. In presenting a model of interaction to be imitated, and incorporated in ongoing face-to-face interaction, the senior staff reveals the significance of relational elements in accomplishing the goals of emergency medicine.

Reflecting upon Linde's (1988) assessment that mitigated speech is a powerful tool to encode relational elements of interaction, the recurrent use of mitigated speech in the instance of the emergency room of Rivera Hospital, reflects the diminishing of difference of status necessary for workgroup cooperation and coordination, rather than as a potential for miscommunication resulting in catastrophe.

4. The Boundary of 'ER' Identity: Flattening of Hierarchy to Achieve Locally Produced Medical and Social Order

Primarily significant is the finding that the distribution of the use of mitigated speech is most often produced by senior staff physicians, who serve as faculty, modeling the interactive, thus communicative elements necessary to produce cooperation and coordination in this stressful and highly complex environment. The least likely to use mitigated speech are those in more peripheral roles as technicians.

Significantly, trauma consultants, who are also physicians, are least likely to use mitigated speech when in a Trauma Code . The differential occurrence of use of mitigated speech between emergency room personnel, and consultants, marks the boundary of "ER" identity and the speech community, and reinforces

the locally produced patterns of emergency room interaction that diminish the difference in status in a process of attunement.

The boundary of the emergency room work group is illuminated when there is dispute between trauma consultants and the emergency room staff and residents. Dispute is followed by inter-departmental meetings, resulting in a clarification of boundaries and reinforcement of the social order within the emergency room, with the recurrent display of flattening of the hierarchy in order that the goals of stabilizing the patient can be achieved.

5 .Local Adaptations of a Trauma Code

The diminishing of difference of status through the processes of attunement, or coming together to create order , reflects a local adaptation located in the relational elements of this emergency room face-to-face interaction. Trauma surgeons, while in emergency medicine Trauma Codes, serve as a contrastive instance in the low use of mitigated speech during their interactions with emergency room personnel.

B. NARRATIVE AS A PROCESS OF ATTUNEMENT

An unanticipated finding during the course of this Conversational Analysis is in the use of narrative as means of diminishing the difference of status and as a means of expressing the concerns and subjective evaluations of participants . The status differential is not evidenced in the emerging production of narrative, initiated by Nurse(m) who witnessed the accident preceding this Trauma Code, and elaborated upon and distributed by Res.Doc(f). The ongoing narrative is appropriated by physicians who become the animator of the narrative constructed by Nurse(m).

1 .Narrative as Moral Comment

Narrative form emerges in the course of the progression of care in Room 1 and Room 2, reflecting the attitudes and feelings of participants toward the incongruence of what is expected and what has occurred. Additionally, moral comment about the patients is, in addition to the function it serves for relief of tension, an evaluative process as participants comment on the behaviors of the victims leading to the accident, observable in the form of narrative.

In the context of the use of narrative in the emergency room, it is documented as it is created, evolves and becomes an object of exchange among participants in patient care. As the narrative takes form, we learn about the stressors of this shift, as it is mutually perceived and interpreted by all participants regardless of status. For the purposes of analysis, narrative becomes yet another form of attunement and subsequent observation of diminishing of difference of status is documented in the data.

Furthermore, the retelling of past narrative is not marked by institutional status, as Nurse(f) initiates the retelling of a senior staff's description of "5 point restraints", and engaging the listener, who is the ratified audience. The laughter of additional members of the audience, co-workers, signals the synchrony of response reflecting the common knowledge and attunement to past events, and repetition of interactive patterns of a shared reference system with shared meaning.

The content of recurrent and emerging narratives in this episode of care, reflect the concerns, attitudes and assessment of participants as they provide medical care. Moral assessment and commentary is reproduced by several participants in this Trauma Code, indicating the victims of this motor vehicle accident were complicit in their demise due to drug use in combination with driving. Additionally, this narrative reaches back to prior episodes of care in this shift, as the Cat.1 medical staff has already cared for 2 heroin overdoses. The experiences of heroin overdoses on this shift, along with assessed contributing factors to this accident, also reach back and elicit memory of prior episodes of attunement in the care of patients who use illicit drugs , as well as the affective response of participants to prior episodes of care.

2 .Narrative Expressions as Safety Alarm

A recurrent retelling of the event of a resident who was stabbed while caring for a patient, highlights the common experience and concerns about work group safety in this potentially chaotic and unpredictable environment. Additionally, commentary about institutional response to this incident is expressed when Res.Doc(m) insinuates that the resident/stab victim, on his last day of residency contract, may well be without insurance for follow –up medical care. Though improbable, this comment indicates the attitude of medical workers toward the potential lack of regard by organizational hierarchy when one of the participants is injured while providing medical care.

The potential to utilize workgroup narratives as a source of assessing the concerns of workers on the front line of high risk endeavors and to assess perceptions of "safety culture" becomes apparent in the process of a Conversational Analysis. Furthermore, emerging concerns about safety can be captured in recording and transcription of workgroup interaction. This method, as a potential means of assessing "cultures of safety," stands in contrast to the static results of survey and questionnaire methods now utilized as a management strategy in response to safety risk.

The potential to recognize safety concerns of participants arising from narrative as it emerges, provides yet another example of the richness of narrative reporting systems to enhance safety, but with the added element of capturing the concerns of participants as compromises are observed in real time.

Narrative, is conceptualized in this study, as another instance of the processes of attunement. In analysis of the transcription of this episode of care, an ongoing narrative emerges, and passed around by participants, regardless of the organizational and institutional hierarchical organization. Narrative can serve to diminish the difference of status, as participants construct and recall the same lived experience, and reaction to that experience, coming together in a commonality of history

II.THE RATIONALITY OF HRO

A.HRO CLASSIFICATIONS AND TYPIFICATIONS

High Reliability Theory, as it has emerged since the late 1980's, is based upon extrapolation and abstractions of recurrent qualities of ultra-safe systems. The initial data acquired by multiple observers over multiple episodes of operation on a flight deck carrier, provided a rich description of the communicative, and cognitive resources of participants in that high-risk endeavor (Rochlin, LaPorte and Roberts;1987). Crisis resistant patterns ,of communication in High Reliability Organizations (Bierly and Spender 1995) , are extrapolated from ethnographic materials gathered by submersion in the culture, and attributed to Rickover the patterns of communication necessary for safe operation in this context, though the face-to-face interaction of workgroups is not available for analysis.

Yielding to classification and typification of characteristics of HRO, the abstractions derived from the initial studies have been appropriated by management strategists who seek to measure the safety climate of an

operation against the abstracted qualities of HRO (Ciavarelli 2005; Fin 2000; Weick 1993). The rational methods of observation and classification of type provides for ready-made transfer of methods to other domains, while discounting the specificities of context and the context forming effects of local human interaction as a social system interacting with organizational form (Bierly and Spender 1995). Furthermore , classification of safe attributes and typifications in the form safety strategies while providing ligitimation, disregards the ability to locate current and emerging interactive strategies in face-to-face interaction as a source of safety practice.

2. Challenging Current 'Cultures of Safety'

The rational methods of HRO and "cultures of safety" management strategies must be reviewed in light of the objectification of safety, posing a larger research agenda; that is; is patient safety an object rather than a process? The imminent need to improve patient safety as indicated by the IOM report of 1999, has resulted in numerous attempts to reduce medical error and develop more error-resistant systems, often imitating the safety strategies arising from HRO. However, in legitimating attempts to increase patient safety by means of imitation, the contextual differences of medical care necessitates a comprehension of the appropriateness of transfer, and a possible loss of already present patterns of interaction, that not only increase coordination and cooperation, but also result in increased patient safety.

C.HRO AS IMITATION AND LEGITIMATION

1 .Institutional Isomorphism

Institutional isomorphism as employed by DiMaggio and Powell (1983) references Weber's concept of bureaucracy as the 'iron cage' that encompasses rational core of organizations. In response, the authors offer hypothesis that incorporate the need to revisit the spread of bureaucratization in light of current organizational fields, differentiating bureaucratic structures emerging from economic competition, to that of professional organizations, as in medicine. Isomorphism references the adoption, or homogenization of organizational fields, based on the need for new organizations to legitimize through imitation.

Thus patient safety strategies emerging from HRO and cultures of safety in highly technical and highly complex enterprises becomes a legitimate process to reduce the occurrences of medical error. Based on an

institutional response to the perceived crisis in patient safety, the rationality of HRO lends medical organizations legitimacy in their attempts to increase patient safety. Arising from crisis , modeling is a response to uncertainty (DiMaggio and Powell 1983), while conferring and reinforcing legitimacy, structures and programs for the organizational field (i.e. medicine and error) and limits the possibility for innovation emerging from within the field of medicine, and medical specialties.

2. The Problem of Transfer of Safety Strategies: The Significance of Context

Professional isomorphism, legitimates the credentials, and knowledge base of medicine, conferring legitimacy through adherence to an accepted standard of practice and employing an identical vocabulary and method of diagnosis and treatment. The question that arises from the Conversational Analysis of the workgroup at Rivera Hospital's trauma center, is not one of legitimacy of the standards of the organizational field of medicine, but of the imposition through organizational isomorphism as it transfers strategies from the field of military, aviation, and naval contexts to that of medicine, safety models that may not only mask current safety strategies of people on the front line, but also impede innovation s in increasing patient safety.

The isomorphic transfer of safety strategies may legitimate management of medical organizations while obscuring the very elemental practices of safety now employed in the specificity of local contexts of interaction.

C.THE SIGNIFICANCE OF RELATIONAL ELEMENTS OF INTERACTION

1. Reciprocal Conduct

The participants in this Trauma Code follow not only medical protocol, but in the enactment, display rules of conduct that define a course of action " directly, as obligations, establishing how he (participant) is morally constrained to conduct himself; indirectly, as expectations , establishing how others are morally bound to act in regard to him" (Goffman 1967:49).

The patterns of use of "we" and "lets" signals the moral order of diminishing of difference of status, sustained through the use of mitigated speech and narrative. The significance of maintaining this social order is highlighted by the need for repair, should the speaker, in the course of the Trauma Code, employ the first person , in error. Thus, "we" and "lets" specifies that the action to unfold requires flattening of the hierarchy in order that the action of patient care be accomplished. Of significance is the fact that the

participants are unaware of this pattern, yet have tacit and mutual understandings of the social and relational requirements necessary to produce the action of a Trauma Code.

2. Implicit Understandings in Local Context

The diminishing of difference in status, as noted in this Conversational Analysis, articulates normative relational patterns that are both expected and anticipated by participants as they enact medical protocol. By responding to cues, tacitly understood by participants, the use of "lets" and "we" signals a polite request to engage in a collaborative and cooperative endeavor in enacting the protocols of a trauma code. The physician of primary responsibility in 'running the code' initially aligns herself with all participants in Room 1 by signaling "we are going to take care of you". Participants, in turn, derive meaning and participate in structuring of the episode of care, through mutual engagement and mutual alignment with each other, responding to and eliciting tacitly understood usage of "we" and "lets" as an initiation of cooperative and collaborative action. The accomplishment is achieved only by the collective actions of participants, who through recurrent interaction, derive shared meanings through experiences in not only Trauma Codes, but also in the day to day care of patients in the whole of the emergency room.

3. The Interactive Emergence of Safe Medical Performance

I take Room 1 and Room 2 work group performance as socially organized practices developed in the course of human interaction in which "participants produce, recognize and coordinate their activities in the workplace" (Garfinkel 2000:19). Through recurrent interaction, processes of attunement in the pattern of mitigated speech, increase coordination and cooperation (Gumperz 1982), creating and sustaining social order in an unfolding context and produced through reciprocal action (Schegloff 1995).

Cognitive models of individual thought processes and schemas, provide a necessary but insufficient understanding of the individual immersed in fields of interaction. Medical knowledge of individual participants and Trauma Code protocol provide an epistemological foundation that only becomes realized in the enactment of medical care. Protocols serve as resources, and guides that individuals employ (Suchman 1987) toward the mutual production of Room 1 and Room 2 medical care achieved through interactive processes, requiring relational elements acquired over time. Mutual

engagement and shared understandings of appropriate action, not only of medical procedure, but also, of shared relational patterns of interaction, are necessary to produce medical care in an environment that is both high risk, and subject to contingencies that are often unanticipated. Participants not only synchronize the flow of face-to-face interaction (Goffman 1995) toward a mutually sustained action, but also maintain shared rules of engagement in producing the collaborative and coordinated moves required to achieve and actualize Trauma Code protocol, while improvising when protocol fails to sustain that action.

The enactment of medical protocol in Room 1 and Room 2 unfolds in an interactive field in which participants with individual agency, engage in an ever emergent social performance of providing care. Shared meanings and understandings acquired by means of ongoing interaction, in multiple episodes of patient care, provide for the "ever expanding reference and subtlety leading to the creation of a shared language" (Trix 1993:19), and only acquired in the specificity of local practice. Mitigated speech and narrative emerge in practice, as local processes of attunement, having meaning to local participants who engage in flattening of the hierarchy to diminish the difference, allowing the emergence of a local social order enabling the enactment of medical care in a Trauma Code.

D. IMPLICATIONS FOR MEDICAL ANTHROPOLOGY AND ORGANIZATIONAL STUDIES

The underlying assumption in this Conversational Analysis is that in order to grasp an understanding of the production of safe medical care, it is essential that the context of medicine be understood in its organizational form. Furthermore, given the organizational form of medical institutions today, it remains that the production of medical care occurs in the face-to-face interactions of patients with medical personnel within the constraints of bureaucratic structure. The implications for the fields of medical anthropology and organizational studies are given consideration in the following sections.

1. Medical Anthropology and Practical Understandings

The field of medical anthropology has outlined an agenda to understand the production of Western medicine and as the site of understanding of the interaction of the patient with the medical system. The focus of medical anthropology on doctor-patient interaction has provided a means by which we gain understandings of meanings of power, the creation and meaning of illness and disease, and the

production of medical science. Yet little has been done to illuminate the significance of participation of providers who also turn to the same medical system to address their own illness and misfortunes. Rather than the "other" as typified in the literature of medical anthropology, medical care providers derive meaning and identity in their daily practices. The enactment of medical protocol requires an understanding of the interactive and social relationships of multiple levels of medical providers. The locus of medical care may appear to occur within the doctor-patient relationship, yet multiple participants are required to provide that care.

This Conversational Analysis offers an opportunity to understand medical providers within the constraints of bureaucratic structures, with the possibility of articulating how constraints impede or enhance safe and respectful medical care. Additionally, this study offers a means by which medical anthropology can address emergent practical problems, informing organizational fields from the perspective of an anthropologist who brings to the table, qualitative methods to illuminate the relational elements of social life, not as static categories, but as emergent processes.

2. Organizational Studies and Anthropological Method

In a move away from categorization and typification, this Conversational Analysis shifts focus to processes of interactive accomplishment within the organizational field of medicine, highlighting the emergent quality of safe medical care and as it is located in the face-to-face interaction of providers on the front line of care.

While HRO provides for an emerging theory, the pre-emptive categorization of safe system characteristics, offering measures of safety as management strategy, excludes an understanding of the emergent categories and relational work of participants on the ground. Rather than managerial strategies imposing order to produce safety in practice, organizational studies would benefit in the effort to increase patient safety by choosing to understand safe operations as they emerge in practice, with an agenda to illuminate the requisite relational elements of participants in safe systems. Furthermore, the results of questionnaire and surveys used as tools to determine 'cultures of safety' may not yield the specificity of

participant concerns as they emerge in practice in the form of emerging and ongoing narrative as captured in the informal communication of participants.

3. The Specificity of Cultural Context

Finally, the significance of context stands in relief when attempting to transfer safety strategies from the domains of aviation, and other high risk and high hazard industries to the organizational field of medicine. While providing legitimacy to the efforts of management to reduce patient safety, this effort may impede the current safety practices evolving from ongoing interaction of medical providers operating at a high level of safety. In the effort to increase patient safety, the application of Conversational Analysis may illuminate those relational elements that impede the production of safe medical care.

The specificity of locality and temporal unfolding of events of this Conversational Analysis reveals how local interactional adjustments must be made to achieve the requisite cooperation and collaboration necessary for any human endeavor. Rather than responding to the question of 'what' elements are present in safe systems, the inquiry in to 'how' safe operations are achieved.

E.SUMMARY

This Conversational Analysis was undertaken to elucidate the elements of informal communication of an emergency room work group which contribute the production of safe medical care, in a location that meets the characteristics of a High Reliability Organization. The enactment of medical protocol as situated in the face-to-face interaction of medical workers providing care in a Trauma Code at Rivera Hospital, reveals recurrent patterns of processes of attunement in the diminishing of difference of status necessary to collaboratively and cooperatively produce safe care. In the recurrent employment of 'lets' and 'we' in addition to emergent narratives within this episode of care, reveal the concerns and attitudes of participants, and again reveal the diminishing of difference of status in the participation of narrative performance.

The rationality of HRO as both a measure of safe characteristics and as a management strategy may convey legitimacy through imitation, thereby addressing the crisis in patient safety, but in doing so, it may also conceal the relational elements which enhance or diminish the mutual production of safe care

by medical providers. The interactive emergence of safe medical care requires recognition of not only cognitive resources, but interactive and communicative resources required for any human endeavor.

The implication of this study for Medical Anthropology is in the potential to apply anthropological methods to practical problems arising in a highly complex, and high risk endeavor of providing medical care. Additionally, the location of modern medicine as it is situated within organizational fields, must be articulated to gain a comprehensive understanding of our modern healing system. At the same time, recognition of medical care as a product of multiple interactions of medical participants from a range of hierarchical positions, working in collaboration, reveals the significance of cooperation and coordination as necessary relational elements in the production of safe medical care.

The organizational context of modern medicine shapes practice, though the significance of the emergent face-to-face informal communication in shaping context is less understood. The concept of context as emerging in interaction provides for a dynamic understanding of organizations as comprised of multiple levels of interaction, and patient safety as emerging from multiple and overlapping contexts situated within modern medical organizations (Perin 1995). Anthropological methods addressing the dynamic and emerging "interplay of the social and the individual, the ready-made and the emergent in human life" (Bauman 1992:142), provides for an understanding that reaches beyond categorization and typification in understanding the production of safe medical care.

APPENDIX A: Transcription Conventions

TRANSCRIPTION CONVENTIONS	**EXAMPLE**
Signifying Speaker's Speech:	**Staff Doc(m)**
A pause of one second:	**..**
Indicating fall intonation at end of word:	**geldi**
Rising intonation at end of word:	**geldi/**
Question with rising intonation:	**?**
Signifying a false start or speech interruption:	**- can-**
Indicating empathic stress – word in capital letters: or syllable in capital letters:	**HEY** **SYLlable**
Reflecting phrase intonation of prior talk:	\ \
Dash at the start of a line is a continuation of the previous line without a change in intonation or pause:	**-medical**
Brackets placed before or after words indicate overlap of talk from person to person:	**indicates[** **[overlap**
In the flow of utterance, below the previous line of speech signifies no perceptible pause between turns:	
Simultaneous talk is indicated by:	**{**
Double question marks indicate speech not clearly audible for transcription:	**(??)**
Italics are used to refer to non-verbals and noted explanations of speech:	***She gazes towards patient***

Appendix B: Transcription of a Trauma Code

ROOM 1 AND 2 RECORDED JUNE 1, 2003

Turn	Speaker	Transcription	Non-Verbal	Explanation
1.	Res. Doc(f)	Hold on/ Hold on\ I'll get it for you\		
2.	All	*Multiple speakers positioned around the patient and beginning the medical exam and care*		
3.	Staff Doc(m)	We'll be doing a few things / Okay? To make sure you're okay\ Where are you hurting the worst right now? Your arms?		*Res. Doc(f) is asking questions of EMS about conditions of car at the scene*
4.	Patient(f-1)	*Answers query*		*There are multiple speakers over- lapping. The patient is on a gurney surrounded by the senior staff, two residents, and two to three nurses*
5.	Staff Doc(m)	Anywhere else? Your hands hurt?		*The patient is being examined by multiple doctors and nurses.*
6.	Patient(f-1)	*Responds that hand hurts*		*While the exam continues, there are multiple conversations occurring.*
7.	Staff Doc(m)	Your whole left side hah?		*When physical findings are called out, the recording nurse is writing the findings for the medical record.*
8.	All	*Multiple speakers (30 seconds)*		
9.	Nurse Sue(f)	She's got an ABRASION/ to her right knee/		
10.	Res. Doc(f)	Did you see the car?		
11.	Nurse(m)	NO/		
12.	Staff Doc(m)	Tell me where it hurts/ Open your eyes/ OKAY DEAR?		
13.	Res. Doc(f)	You SAW it?		
14.	Nurse(m)	Yes? I was coming to work\ They hit the grass/ They flipped/ .. .. (??)		

Turn	Speaker	Transcription	Non-Verbal	Explanation
15.	Res. Doc(m)	DEEP breath/ Deep breath\		
16.	Staff Doc(m)	Open your eyes/		
17.	Nurse Sue(f)	Her hand was (??)		
18.	Staff Doc(m)	Pupils three and reactive\		
19.	Nurse(m)	They picked the car up and (??)		
20.	Res. Doc(m)	DEEP breath/ Come on/		
21.	Nurse(m)	She was the one that was complaining\ The other girl was walking around\		*Nurse(m) continues to describe accident scene to Res. Doc(f)*
22.	Res. Doc(m)	Okay\ Good/		
23.	All	*Multiple speakers (30 seconds)*		
24.	Res. Doc(m)	How old are you? .. .. .. How old are you?		*Nurse (m) continues to give his account to Res. Doc(f)*
25.	Patient(f-1)	*Responds 44 years old*		
26.	Res. Doc(m)	Forty-four? .. .. .. Do you any other medical problems at all?		
27.	Patient(f-1)	I got a plate in my neck\		
28.	Res. Doc(m)	YOU got a PLATE in your NECK\		
29.	Nurse(m)	And high blood pressure\		
30.	Res. Doc(m)	High blood pressure\ .. .. .. You take any medicines? .. .. Do you got any allergies to any medications?		*Ongoing conversation in background*
31.	Patient(f-1)	Penicillin\		
32.	Res. Doc(m)	SHE'S ALLERGIC TO PENICILLIN\ .. .. .. When was your last meal? .. .. When was your last meal?		

Turn	Speaker	Transcription	Non-Verbal	Explanation
33.	Patient(f-1)	*Responds softly*		
34.	Res. Doc(m)	All right\ Her lungs are clear/ Her heart is regular/ Does this hurt at all?	*Res. Doc(m) prods patient*	*Directing gaze toward recording Nurse*
35.	Patient(f-1)	*Mumbles a response*		
36.	Res. Doc(m)	Does it hurt?		
37.	Patient(f-1)	*Responds with a negative*		
38.	Res. Doc(m)	NO/ .. .. .. How about this?		
39.	Patient(f-1)	*Patient groans*		
40.	Res. Doc(f)	Yes? It hurts you?		
41.	Res. Doc(m)	When I'm pushing down here? .. .. She's (??) here\ Ah/ We can't tell because you're pulling her arm\	*Pointing to patient's pelvis*	*Directing toward Res. Doc(f)*
42.	Nurse Eve(f)	Does that hurt? Okay/ DOES it hurt? What hurts (??)		
43.	Patient(f-1)	*Patient groans louder*		
44.	Res. Doc(m)	WHAT HURTS?		
45.	Nurse Eve(f)	Her pelvis hurts (??) And her arm\		
46.	Patient(f-1)	*Patient continues to groan*		
47.	Res. Dpc(m)	All Right\ Okay\		
48.	Nurse Eve(f)	.. .. THIS ARM is broke\		

Turn	Speaker	Transcription	Non-Verbal	Explanation
49.	Trauma Doc(f)	Call in x-ray\ Right ah\ Right\ (??) Put your arm down there/ Just let your arm rest (??)	*Gaze toward patient*	
50.	Res. Doc(m)	She has good pulses distally/ Wiggle these toes\ Wiggle THESE toes\ .. .. Wiggle these toes/ WIGGLE THESE TOES/ COME ON/		*Multiple interactions in background.* *Very direct medical talk.*
51.	Patient(f-1)	*Patient groans*		
52.	Res. Doc(m)	There we go\ .. .. .. Lift this leg up/ .. .. Lift up this leg/ Wiggle these toes/ .. .. It hurts her like that\	*Pointing to leg*	*Informal talk resumes while the ER and Trauma staff continue to examine patient*
53.	Staff Doc(m)	Got a radial\ Good ulnar pulse/ In the right hand\		*Directed toward recording nurse and docs*
54.	Res. Doc(m)	Well you can see a little bit of aah\ Tendon in there	*Pointing to patient's hand*	
55.	Staff Doc(m)	Tendon's in (??)		
56.	Res. Doc(m)	There's A LOT of skin stuff in here\		
57.	Staff Doc(m)	(??) aah medial aspect there\		
58.	Res. Doc(f)	Hey Sam/ .. .. He said they were FLYING/		
59.	Res. Doc(m)	Wiggle these fingers/ .. sweetie\ .. .. This ONE[		
60.	Nurse Eve(f)	[She can/		
61.	Res. Doc(m)	.. ..All right\		
62.	Nurse Eve(f)	Good girl\		

Turn	Speaker	Transcription	Non-Verbal	Explanation
63.	Res. Doc(m)	.. ..You feel me touch down here? How about this?	*Eye gaze toward feet, hands*	
64.	Nurse Eve(f)	Yes\		
65.	Res. Doc(m)	How about this? You feel this?		
66.	Nurse Eve(f)	.. .. You feel that honey?		
67.	Res. Doc(m)	Feel that? Yes\ This?		
68.	Nurse Eve(f)	That? Feel it?		
69.	Staff Doc(m)	Is (??) working?		
70.	Patient(f-1)	*A mumbled response*		
71.	Res. Doc(m)	Mo- Move this/		
72.	Staff Doc(m)	Now that one\ Can you move that -One? Move your right finger dear/ On your right/ Can you move your ring finger?		
73.	Nurse Eve(f)	.. .. (??) She said she can't/		
74.	Res. Doc(f)	Was the other young lady picked up by EMS as well?		
75.	Nurse(m)	Yeah they were there\		
76.	Res. Doc(f)	Okay/		
77.	Nurse(m)	They were- They pulled up when we got there\ She was ambulatory\		
78.	Res. Doc(f)	Okay/		
79.	Nurse(m)	She wa- She was walking all over the place\	numbering???	
80.	Res. Doc(m)	You got her uuh/		

Turn	Speaker	Transcription	Non-Verbal	Explanation
81.	Res. Doc(f)	I heard some beer cans were rolling around in the back\		
82.	Trauma Doc(m)	Yeah I'm sure\		
83.	Res. Doc(f)	One of the nurses witnessed it first hand/	*Chuckles softly*	
84.	Trauma Doc(m)	Yeah I heard\		*There are multiple conversations concurrently. Trauma has arrived*
85.	Res. Doc(m)	She says she's allergic to Penicillin/		
86.	Res. Doc(f)	He said they PASSED him\ And he said they were FLYING/		
87.	Staff Doc(m)	Ma'am? (??) is rare/	*Directed to patient(f-1)*	
88.	Nurse(m)	They gave her a breathalyzer/ I think she failed\		
89.	Res. Doc(f)	Oh I bet she did\		
90.	Staff Doc(m)	Says she went into respiratory distress\ .. Ma'am what did the penicillin do to you? .. .. .. Did it give you a rash? Di- Di- .. did you get broke out or short of breath or any thing like that?	*Directed with gaze to Res. Doc(m)* *Directed to patient*	
91.	Res. Doc(f)	How old is she?		
92.	Trauma Doc (f)	Forty-		
93.	Res Doc(m)	She said she's like forty-four		
94.	Trauma Doc(f)	(??) a forty-four year old female (??)		*Overlap and parallel with surrounding conversation*
95.	Res. Doc(m)	Some kind of plate in her neck and hypertension/		*Response to Trauma Doc(f)'s inquiry*
96.	Staff Doc(m)	She just got a rash from the aah\		
97.	Res. Doc(m)	A RASH only?		
98.	Staff Doc(m)	Yeah\ (??)		
99.	Res. Doc(m)	All right lets give her a gram of Ancef/ A tetanus shot/ And aah/ Did we get a pressure on her yet?	*Directed to RN and Pharmacist*	 *To Nurses*

Turn / Speaker		Transcription	Non-Verbal	Explanation
100.	Staff Doc(m)	Looking for Morphine Sam?		
101.	Res. Doc(m)	Yeah/ Two of morphine\		
102.	Nurse Sue(f)	Come on/	*Nurse slaps site for injection*	*To patient to gain attention*
103.	Patient(f-1)	*Patient moans*		
104.	Trauma Doc(m)	She was 208 over 140/ So lets (??)[		
105.	Res. Doc(m)	[Okay\		
106.	Patient(f-1)	*Patient continues to moan in pain*		*Multiple conversations in background*
107.	Res. Doc(f)	This is a rollover MVA/ We're about to get the other victim here/ This is THE/ THIS is THE aah/ Passenger/ The driver's going over there\ HIGH SPEED down the Herman\ THEY hit a gra- The grass embankment/ It FLIpped\	*To Trauma Doc* *Points to Room 2.* *Pointing to Room 1.* *Pointing to Room 1.* *Pointing to Room 2.*	*Speaking for the Medical Record*
108.	Trauma Doc(m)	Okay\		
109.	Res. Doc(f)	NO other cars were involved\ They WERE restrained/ Th- th- SHE over here/ Is ga- Was ambulatory at the scene\ She was not/	 *Pointing to Room 2* *Pointing to first patient*	*Multiple persons talking in the background* *Patient telling Doc/Nurse of accident*
110.	Res. Doc(m)	No long extraction time\		
111.	Res. Doc(f)	The car's totaled\ Beer bottles rolled out of the back of the car/ Our Nurse- Was driving here and witnessed the WHOLE accident		
112.	Res. Doc(m)	You got her IV in? Okay let's roll the patient	*Directed to Nurse Sue*	*Multiple staff move around the patient positioning themselves to coordinate rolling the patient over*
113.	Trauma Doc(m)	Yeah well (??)		

Turn	Speaker	Transcription	Non-Verbal	Explanation
114.	Res. Doc(m)	Larry man/ You ready to roll the patient?		
115.	Staff Doc(m)	Bring her towards you because of the bad hand\		
116.	Nurse Sue(f)	A little bit\ This side?		*Patient moaning*
117.	Trauma Doc(m)	All right\ Who's going to (??)		
118.	Res. Doc(f)	Here/		
119.	X-ray Tech(f)	HEY/ CANCEL it\		
120.	Res. Doc(f)	Cancel what?		
121.	X-ray Tech(f)	It's SMITH Its Mary Smith/		*Clarifying identity of patient for x-ray and the Medical Record*
122.	Res. Doc(m)	We're going to roll you on your side and get this board out\ From under your back\ Okay?		*Conversation in background increases*
123.	X-ray Tech(f)	I just had a shoot from an ER Female\ Just to (??) name\		
124.	Res. Doc(m)	All right/ Lets ROLL/		
125.	Res. Doc(f)	Hi there/		*To newly arrived person in room*
126.	Staff Doc(m)	All right\ Lets roll\		
127.	Res. Doc(m)	Lets roll THAT way/	*Points in the direction to turn patient(f-1)*	*Continued muted talk with Staff Doc*
128.	Res. Doc(f)	All right ma'am/ Let us do all the work/ We're going to roll you on your side and get this BOARD out of you\ Okay?		
129.	All	*Multiple persons speaking and difficult to decipher (10 seconds)*		
130.	Res. Doc(m)	Okay/ ONE/		
131.	Staff Doc(m)	Do you got the (??)		
132.	Res. Doc(f)	No he's got it now/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
133.	Staff Doc(m)	Okay[		
134.	Res. Doc(f)	[This is for the next patient\		
135.	Res. Doc(m)	ONE/ TWO/ Three/		
136.	Res. Doc(f)	But thanks anyway/		*Continued response to Staff Doc(m)*
137.	Res. Doc(m)	Okay/		*Continues to direct roll of Patient*
138.	Trauma Doc(m)	All right\ Does anything hurt back here?		*As he examines Patient's spine*
139.	Patient(f-1)	NOOO/		
140.	Trauma Doc(m)	Does this hurt at all along your back?		*Continues to examine Patient's spine*
141.	Res. Doc(m)	Let me push up against her I think she's falling off\	*Directed to Trauma Doc(m)*	*Trauma Doc(m) continues the exam*
142.	Patient(f-1)	*Moans that she hurt and mumbles in ongoing pain*		
143.	Trauma Doc(m)	All right\ I can't tell what she's saying\	*Directed to all*	
144.	Patient(f-1)	*Continues to moan louder and in ongoing paing*		
145.	Trauma Doc(m)	You're going to feel a finger here/	*Directed toPatient informing her of exam*	
146.	Patient(f-1)	*Moans loud and long*		
147.	Nurse Sue(f)	CAREFUL Careful/ You're going to fall off/ You're going to fall off/	*Directed to Patient*	*Patient continues to moan*
148.	Trauma Doc(m)	/Good tone/		*Staff mumbles*
149.	Res. Doc(f)	/SAM/ On your count/		*Patient hasn't been rolled yet*
150.	Res. Doc(m)	ONE/ Two/ Three/		*Patient continues to moan*
151.	Trauma Doc(m)	I don't know\ (??)	*Directed to all*	
152.	Staff Doc(m)	Right\	Directed to Trauma Doc(m)	*Patient continues to cry*
153.	Res. Doc(m)	I don't know\ I haven't got there yet/		*Answering inquiry of (unidentified) Doc*

Turn	Speaker	Transcription	Non-Verbal	Explanation
154.	Staff Doc(m)	(??)		
155.	Res. Doc(f)	Her hand probably GOT pinned/ .. .. Under the car/ They had to pick the car up to get her hand out\		
156.	Patient(f-1)	*Continues to moan and cry*		
157.	All	*Multiple speakers as they continue to examine and care for the patient (ie giving pain meds) There is some talk about what is happening in other parts of the Emergency Room (30 seconds)*		
158.	Staff Doc(m)	Sam why don't we (??)		
159.	Res. Doc(m)	All right\		
160.	Patient(f-1)	I can't lay my head down\	*Moaning and crying*	
161.	Res. Doc(f)	I'm waiting for the other one to get her I don't know where she is/		*Referring to second victim of MVA Multiple voices heard*
162.	Res. Doc(m)	Do you got a- Do we have her pres[		
163.	Nurse Sue(f)	[What's her pressure?		
164.	Nurse Eve(f)	I'm going to get a pressure\ But she has got to keep her arm still\		
165.	Nurse Sue(f)	Okay/		
166.	Patient(f-1)	*Continues to cry loudly (3 seconds)*		
167.	Res. Doc(m)	Maybe we should put an IV in her foot\ Or something\ We're going to- Get blood pressures\ We're going to give her fluids and stuff\		
168.	Patient(f-1)	*Patient continues to cry (9 seconds)*		
169.	Res. Doc(m)	Did you have your seat belt on?	*Directed toward the Patient*	
170.	Patient(f-1)	YEES[		
171.	Res. Doc(m)	[When this happened?[		
172.	Patient(f-1)	[YES/		
173.	Res. Doc(f)	Yes please/ We're going to give you some pain medicine okay?[		*Responding to nurse with meds in hand*
174.	Patient(f-1)	[YEEES PLEASE/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
175.	Res. Doc(f)	Hello Security/		*Security officer arrives in Room 1. Security(f) asks if this is driver Security officers take official reports on accidents shootings and assaults*
176.	Nurse Sue(f)	She's the passenger		*Responding to Security officer's inquiry*
177.	Res. Doc(f)	She's the passenger/ The driver's coming/	*Turn gaze toward patient*	*Security takes down information*
178.	Patient(f-1)	*Moaning and crying continues as staff talk to patient*		*The staff continues in multiple overlapping speech as they work around patient and consult with each other (7 seconds)*
179.	Nurse Sue(f)	Alright honey/ /I got medicine for you/		
180.	Nurse Eve(f)	Yeah/ We're just trying to get a pressure\ (??)		
181.	Nurse Sue(f)	I haven't either\ She's refusing to (??)		*Nurses are trying to get a blood pressure and patient cannot cooperate*
182.	Res. Doc(m)	All right/ OPEN UP/ OPEN up/ All right/ Good\		*As patient continues to moan*
183.	Patient(f-1)	It HURTS/		
184.	Nurse Sue(f)	Stay still for one SECond\ And we can give you some pain medicine\ We just want to check your blood pressure\ We're having a hard time doing that while you're moving around\		*Blood pressure is vital prior to giving pain meds as meds can lower blood pressure to greater degree*
185.	Patient(f-1)	OKAAAY/		
186.	Nurse Eve(f)	We just need you to stay still\		
187.	Patient(f-1)	*Continues to moan in pain*		
188.	Res. Doc(m)	It's been like this ALL DAY? You know\ I should just take some .. some MOTRINS now\	General non-directed comment	
189.	Staff Doc (m)	Well I told you (??)		

Turn / Speaker		Transcription	Non-Verbal	Explanation
190.	Trauma Doc(f)	We have a rollover MVA\		
191.	Res. Doc(f)	Yeah/ .. .. the other one\		
192.	All	*Multiple speakers overlapping (4 seconds)*		*Multiple tasks are being done as well(attempting to get blood pressure talking to security about the MVA)*
193.	Res. Doc(m)	All right\ Things are going to go wild be-		*Overlap to Staff Doc*
194.	Res. Doc(f)	All right\ .. Thank you\ I appreciate it/		*Responding to another overlap*
195.	Nurse Pat(f)	(??)		*Multiple speakers in background*
196.	Res. Doc(f)	Yep/		
197.	Nurse Pat(f)	You have a visitor/ With the man who speaks Spanish up there/		*Nurse arrives to deliver information from CAT. 1 down the hall*
198.	Staff Doc(m)	Hips and belly okay?	*Eye gaze toward Res. Doc(m)*	
199.	Res. Doc(m)	She complained of right HIP pain\		
200.	Staff Doc(m)	All right\		
201.	Res. Doc(f)	All right[	*Simultaneous with 177 to this point*	
202.	Nurse Pat(f)	[To find out what's going on\[		
203.	Res. Doc(f)	[Okay\[		
204.	Nurse Pat(f)	[I'll tell him you're here\		
205.	All	*Multiple overlapping speakers addressing different parts of medical care and exam (5 seconds)*		
206.	Res. Doc(m)	Do we still have that crazy guy up in CAT1/ Because we didn't tap him yet and- .. the nurses really want him to leave\	*Gaze directed to nurse*	*Res. Doc(f) informing nurses Announce Room 2 as next patient is about to arrive*

Turn	Speaker	Transcription	Non-Verbal	Explanation
207.	Res. Doc(f)	Yeah/ Her hand got trapped/ It was a ROLLover\ And her her- Car was- Her hand was trapped/ Under the car\ You gonna be/ On this side over here/	*Gaze directed to nurse*	*Responding to nurse in Room 2*
208.	Nurse Eve(f)	NO/		
209.	Res. Doc(f)	No? .. .. Who's going to be my nurse over here?		Referring to Room 2
210.	Res. Doc(m)	Yeah\ .. ..Tetanus shot and two of morphine\		*Speaking to (??)*
211.	Nurse(m)	You cool?	*Directed eye gaze toward Res Doc(f)*	
212.	Res. Doc(f)	Yep/ I'm cool/ Thanks for the help though\		
213.	All	*Multiple talk overlapping (4 seconds)*		
214.	Staff Doc(m)	(??) we do a pelvis\ A C-spine\ Chest/ Right- …arm/ Pretty much/		*Responding to x-ray tech*
215.	Res. Doc(m)	Yeah\		
216.	Staff Doc(m)	And we'll probably (??)[		
217.	Res. Doc(m)/	[I think we should probably should just do the whole nine yards/		
218.	Staff Doc(m)	Think head too?		
219.	Res. Doc(m)	I don't know/ About the head\		
220.	Staff Doc(m)	*(??)*		
221.	All	*Multiple overlapping speech interactions (7 seconds)*		
222.	Res. Doc(f)	Hey how's CAT 2 doing Boo?	*Eye gaze directed toward Charge Nurse Bev*	*Charge nurse who is responsible for coordinating the nursing staff to meet needs of each medical area*

Turn / Speaker		Transcription	Non-Verbal	Explanation
223.	Nurse Bev(f)	(??)		
224.	Res. Doc(f)	Good/ Strong work/		
225.	Nurse Bev(f)	The second (??)		
226.	Res. Doc(f)	The second one YEAAH/ They just announced it overhead/ So they must be here now\ .. .. My GOD/ How many room 1's have we had already?		*Registration clerk announces on overhead arrival of Patient(f-2)* *She chuckles*
227.	MK	(??) *Inquiry of Res. Doc(f) unclear but speaker engages attention of resident*		
228.	Res. Doc(f)	Well/ I could/ Sort of yeah/		
229.	MK	(??)		
230.	Res. Doc(f)	Well/ We're not staff Because we haven't graduated from residency\ So I won't- Theoretically be staff until June 30th\ .. .. But- For all practical purposes\ I mean the Attendings are like/ Don't even present to me/ Just let me sign your charts\ You know/		*Referring to self and Res. Doc(m)* *Room 1 patient continues to moan as other speakers are barely audible*
231.	MK	(??)		
232.	Res. Doc(f)	Yeah Smith/ I mean he- He left and let Sam and I run CAT 1 for eight hours\ We didn't even SEE him\		
233.	MK	How did that work out?		
234.	Res. Doc(f)	FINE/		
235.	MK	(??)		
236.	Res. Doc(f)	Just fine\		*Multiple background speakers*

Turn	Speaker	Transcription	Non-Verbal	Explanation
237.	Staff Doc(m)	Sam?		
238.	Res. Doc(m)	Yeah?		
239.	Staff Doc(m)	(??)		
240.	Res. Doc(m)	What?		
241.	Staff Doc(m)	(??)		
242.	Res. Doc(m)	Just do the whole nine yards/ I hear you\		
243.	All	*Multiple speakers (12 seconds)*		
244.	Res. Doc(f)	Ha Ha/ Ha Ha/		*She chuckles*
245.	Res. Doc(m)	NO/ Because she hasn't finished hollering yet\ Once she- Once she stops hollering/ Then I'll check her C-spine\		*Answering (??) about patient's spine exam for injuries*
246.	Nurse Sue(f)	(??)		
247.	Res. Doc(f)	NO/ We're not expecting any phone calls\	*Responding to nurse*	*There has been an overhead page and staff is trying to determine who is being paged. This is a common occurrence in the Emergency Room.*
248.	All	*Multiple speakers; multiple pairs speaking (5 seconds)*		
249.	Res. Doc(f)	Red surgery? Is that you?	*Gaze directed toward Trauma Dococ*	*Trying to discern who is being paged to pick up a phone call*
250.	Trauma Doc(m)	Yes/ I think we're covering the MVA\		*Two teams of surgery residents are on call at one time. They are distinguished by color(ie red and blue teams respond to different calls) Trauma indicates that red team is in CAT1*
251.	Res. Doc(f)	Red Surgery you have a phone call in CAT1 Ooh/ They paged their staff\		*Res. Doc(f) pages Red Surgery* *Speaking to nurses in Room 2*
252.	All	*Multiple speakers and conversation between Room 1 and Room 2 As staff (all) rearrange their positions as the Room 2 patient is about to arrive via EMS At the same time care in Room 1 continues (6 seconds)*		

Turn	Speaker	Transcription	Non-Verbal	Explanation
253.	Nurse Sue(f)	Ma'am? Did you have a period in May? Do you still have them? When was the last time you had one?		*Patient(f-1) responds but inaudible*
254.	All	*Multiple conversations in Room 1 and Room 2 as the second patient is being rolled in to Room 2* *(5 seconds)*		
255.	Trauma Doc(m)	(??)		
256.	Res. Doc(f)	Yeah the other one is coming over here\ There's two victims total\	*Points to Room 2*	*Speaking to staff in Room 2*
257.	Nurse (f)	Oh okay/		
258.	Trauma Doc(m)	The other one's right here\ Coming in here\		*Indicating arrival of 2nd patient*
259.	Res. Doc(f)	Good\ .. .. .. HI THEEEERE I'm Dr Fine/	*Directing gaze to 2nd Patient*	
260.	EMS(m)	We've got a 44 year old female/ Restrained driver motor vehicle collision\ (??) roll over\		*EMS report to staff in Room 2*
261.	Res. Doc(f)	Hi Ma'am/ I'm Dr Fine\ Yeah we got the other victim over there\	*Points to Room 1*	*Directed to EMS driver*
262.	EMS(m)	Complaining of chest pain/		
263.	Nurse Sue(f)	Okay\		
264.	EMS(m)	No loss of consciousness/ Ambulating on scene/ She seems like she's aah/		*Giving report to recording nurse and continues report as Res. Doc(f) starts exam of patient*
265.	Res. Doc(m)/	(??) Some HAWiian\		*Comment on response needed for stress level in Room 1 and 2*
266.	EMS(m)	History of diabetes and IVDA Insulin/ Last meal was about an hour ago/ Last tetanus unknown/		*Repeats info for record while EMS continues to report findings to Nurse* *Room 2 patient moans in pain*

Turn	Speaker	Transcription	Non-Verbal	Explanation
267.	Res. Doc(f)	/Insulin/ Diabetes and – IVDA\ .. .. ..I Ma'am/ I'm Dr Fine/ We're going to fix you up/ Can you talk to me?	*Gaze toward Patient(f-2)*	
268.	Patient(f-2)	*Responds but not audible*		
269.	Res. Doc(f)	Yeah\ Are you hurting anywhere?		
270.	Patient(f-2)	*Mumbles a "yes" response as EMS continues to give report to staff*		
271.	Res. Doc(f)	Where? Tell me where\		
272.	Patient(f-2)	*Responds to Res. Doc's inquiry about location of pain*		
273.	Res. Doc(f)	Your elbows? .. .. Your elbows and your KNEES? And your ankles/ Okay/		
274.	Res. Doc(m)	Lets give her a couple of morphine here\ I think at least another couple\		*Referencing Patient(f-1) in Room 1*
275.	Nurse Sue(f)	*Inaudible but referring to medication to be given to patient*		
276.	Res. Doc(m)	Yeah\ Yeah you can\ .. Because- .. ..I think we need a foley too/		
277.	Res. Doc(f)	Okay\ You have me- .. ..You have diabetes\ Right you said? Okay/ HISTORY/ IVDA/ DIABETES/ You take any medicines on a regular basis? .. ..Ma'am/ Any medicines you take on a regular basis?	*Gaze at patient*	*Speaking for medical record* *Multiple speakers in background*
278.	Patient(f-2)	*Inaudible response*		

Turn / Speaker		Transcription	Non-Verbal	Explanation
279.	Res. Doc(f)	She takes INSULIN/ Anything else?	*Gaze toward Patient(f-2)*	*Directed to recording nurse*
280.	Patient(f-2)	*Inaudible response*		
281.	Res. Doc(f)	That's IT?		
282.	Patient(f-2)	*Moans and gives a weak verbal response yes*		
283.	Res. Doc(f)	Do you have high blood pressure?		
284.	Patient(f-2)	No\		
285.	Res. Doc(f)	No? Do you have any allergies to medicines that you know of?		
286.	Patient(f-2)	No\		
287.	Res. Doc(f)	No allergies/ Tetanus unknown/ The last meal ONE hour ago/ She's complaining of CHEST pain\ When was your last period?	*Gaze toward recording Nurse* *Gaze back to patient*	*Speaking for the medical record*
288.	Patient(f-2)	(??) *Mumbles that she had her last period at the first of last month*		
289.	Res. Doc(f)	WHAT?		
290.	Nurse(m)	She knows where she is/ She knows (??)		*Understands Res. Doc's concern about patient's mental status*
291.	Res. Doc(f)	Can you tell me where you are right now?		*Assessing level of consciousness*
292.	Patient(f-2	This is the Elsewhere Hospital?		
293.	Res. Doc(f)	It is/ What year is it?		
294.	Patient(f-2)	Uhm/ Two thousand three?		
295.	Res. Doc(f)	What's your name?		
296.	Patient(f-2)	Susie Reed/		
297.	Res. Doc(f)	Have you been drinking alcohol?		
298.	Patient(f-2)	I (??) a beer/		*Multiple speakers in Room 1 heard*
299.	Res. Doc(f)	How about any heroin?		
300.	Patient(f-2)	This Morning\		

Turn	Speaker	Transcription	Non-Verbal	Explanation
301.	Res. Doc(f)	This morning/ How about cocaine?		
302.	Patient(f-2)	Yeah\		
303.	Res. Doc(f)	Heroin and alcohol?		
304.	Patient(f-2)	Yeah\		
305.	Res. Doc(f)	When was your last period?		
306.	Patient(f-2)	Last month\ I just (??)		
307.	Res. Doc(f)	Last period last month/ NO NO NO MA'AM/ Lay FLAT/ LAY flat okay? We're going to get you off this back-		*Directed at recording nurse* *Patient attempts to sit up* *Concern is about possible back and neck injuries not yet evaluated* *Res. Doc (m)Attempts to assure patient and gain cooperation for exam*
308.	Patient(f-2)	(??) *Mumbles that she is hurting*		
309.	Res. Doc(f)	Take a breath/ Take a deep breath/		
310.	Nurse (f)	Its just an abrasion honey/ Put your legs down\		
311.	Res. Doc(f)	OH NO NO NO NO/ DON'T MOVE your neck Ma'am/		
312.	Patient(f-2)	(??) *Mumbles*		*Conversation in background*
313.	Res. Doc(f)	We don't know if you might be paralyzed if/ .. .. ..(??) A DEEP BREATH / .. .. A deep breath again\ Here Ma'am we'll cover you up/		.. .. ..*Requests sheets to cover up patient*
314.	Nurse Eve(f)	Put your legs down\		
315.	Res. Doc(m)	{What kind of operation did you have?[		*Question to patient*

Turn	Speaker	Transcription	Non-Verbal	Explanation
316.	Res. Doc(f)	[ALL RIGHT/	*Signaling recording nurse*	
		Heart sounds/		
		Heart sounds are regular/		
		Lung sounds are (??)/		
		Positive bowel sounds/		*Speaking rapidly as findings are routinely given to recording nurse*
		Pelvis is stable/		
		Patient can move all four extremities/		*Background conversation in Room 1*
		Patient has good distal pulses/		
		Patient has poor dentition/		
		.. ..		
317.	Res. Doc(m)	Oh my goodness/		
		Look at that/		
318.	Res. Doc(f)	Do you want-		
		Did you loose any (??) teeth?		
319.	Patient(f-2)	*(??) Mumbles a response*		
320.	Res. Doc(f)	No/		*Repeating patient response*
		.. .. .. All right now\		*Parallel conversations heard*
		Don't move your neck/		
		Okay?		
321.	Patient(f-2)	(??) *Mumbles that she is in pain*		
322.	Res. Doc(f)	You tell me/		*As she examines for injury*
		Does this hurt?		
		Yes or no?		
323.	Patient(f-2)	My arm hurts/		
324.	Staff Doc(m)	We're just taking your blood pressure\		*Attempting to calm patient*
325.	Res. Doc(f)	Ma'am/		
		Does this hurt when I push on your neck?		
326.	Patient(f-2)	*Responds no*		
327.	Res. Doc(f)	No?		*Patient(f-2) in C-collar to protect neck*
		No C spine tenderness/		
		Let me put this back on you okay/		*Res. Doc continues to examine patient's head region(6 seconds)*
		Open your eyes Ma'am/		
		.. .. Now open this eye/		
		All right/		
		PUPILS reactive bilaterally/		*Speaking for the Medical Recor*
		Four millimeters/		
		Trach is midline/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
328.	Nurse Sue(f)	Put your legs down. You need to put your legs down or you're going to fall off/		
329.	Patient(f-2)	*Complains of being cold*		
330.	Res. Doc(f)	Okay here/ We'll get you a blanket\ It's a bit chilly in here\		
331.	Patient(f-2)	*Mumbles that she is in pain*		
332.	Res. Doc(f)	You're just going to have A LOT OF people standing around you all at once here\ Okay?		
333.	Patient(f-2)	*Inquires about her friend and passenger in Room 1*		
334.	Res. Doc(f)	Yeah/ She's over there/ She's got a pretty bad injury to her hand\	*Points in direction of Room 1*	
335.	Patient(f-2)	*Mumbles that she is worried about her friend*		
336.	Staff Doc(M)	It's all right though\ She'll be / fine/[		*Comforting patient*
337.	Res. Doc(f)	[It's okay/ Yep/ She's doing better than that though/ Okay?		
338.	Res. Doc(m)	(??)		*Comments on condition of patient(f-1) in Room 1*
339.	Res. Doc(f)	Thank goodness\ Here Ma'am/ Let me cover you (??) It'll keep you a little warmer than this\ Thank you so much/		*Responds to news from Res. Doc(m)* *Switching back to patient*
340.	Patient(f-2)	*Mumbles about her discomfort*		*To nurse who brings blanket*
341.	Res. Doc(f)	Oh/ I'm sorry\		
342.	All	*Multiple speakers engaged in examining the patient in Room 2 (10 seconds)*		
343.	Patient(f-2)	*Continues to complain of discomfort while moaning*		
344.	Res. Doc(m)	Is x-ray here yet?		*Speaks while patient moans*

Turn	Speaker	Transcription	Non-Verbal	Explanation
345.	Staff Doc(m)	(??) bowel obstruction\		
346.	Res. Doc(f)	(??) BOWEL obstruction?		*Respond to Staff Doc(m)'s comment*
347.	All	*Multiple speakers (6 seconds) while patient continues to complain of discomfort*		
348.	Res. Doc(f)	It's okay/ We're going to take care of you\ We're (??)		*Multiple speakers loudly continue*
349.	Nurse Sue(f)	{You might have bleeding in there/		*Nurse trying to seek compliance from patient who continues to moan*
350.	Res. Doc(f)	{Do you guys want to roll her?		*Staff Doc(m) and Res. Doc(m) speak*
351.	Staff Doc(m)	(??)		
352.	Res. Doc(f)	That would be nice/		*Response to Staff Doc(m)*
353.	Res. Doc(m)	It's FUCKING/ Crazy\		
354.	All	*Multiple speakers and trauma consultant asks who the staff doctor is (3 seconds)*		
355.	Res. Doc(m)	Sampson\		*In response to trauma consultant*
356.	Trauma Doc(m)	(??)		*Doesn't hear response to question about who is staff*
357.	Res. Doc(m)	SAMPSON/		*With impatience in his voice*
358.	All	*Multiple speakers but also can hear nurse reiterating concern about internal bleeding of patient in attempt to gain her cooperation Patient is moaning throughout (9 seconds)*		
359.	Res. Doc(m)	Oh man\		
360.	Patient(f-2)	*Unclear words but continuing to moan*		
361.	Staff Doc(m)	147 over 88 (??)		
362.	Patient(f-2)	*Mumbling continues and is uncomfortable*		
363.	Res. Doc(f)	Is that her real *sat* there?		*She questions the reading of monitor. She seeks response but gets none. Sat refers to oxygen saturation*
364.	All	*Multiple speakers (5 seconds)*		
365.	Res. Doc(f)	Where's her *sat*?		

Turn	Speaker	Transcription	Non-Verbal	Explanation
366.	All	*Multiple speakers subdued (7 seconds)*		
367.	Patient	*Complains while moving around on the stretcher*		
368.	Res. Doc(f)	Wait be still/ BE STILL for a minute\ Don't shake\		
369.	All	*Patient moans as multiple speakers are heard (4 seconds)*		
370.	Res. Doc(f)	Its just not a good wave form/ Its all over the place\ .. .. Oh there it goes\ There's a good wave form/		*Questioning the accuracy of monitors* *Monitors are continually calibrated in attempt to get accuracy*
371.	All	*Multiple speakers while nurse (f) tries to gain cooperation from patient who is in pain (4 seconds)*		
372.	Patient(f-2)	I CAN'T/		*Indicating difficulty of compliance*
373.	Nurse Sue(f)	I know honey\		
374.	Patient(f-2)	*Continues to say she cannot comply*		
375.	Res. Doc(f)	All right lay real still for a minute here\		*While she continues exam for injury*
376.	Patient(f-2)	*Moaning in pain continues*		
377.	Res. Doc(m)	It's all right/		*Attempting to calm patient*
378.	Patient(f-2)	*Cries loudly*		
379.	Res. Doc(f)	THAT'S it/ That's it\		
380.	Patient(f-2)	*Continues to moan and cry loudly*		
381.	Res. Doc(f)	She had no loss of consciousness\ She was ambulatory on the scene\	*Pointing to Room 2 Patient then Room 1 Patient*	*Speaking to Trauma consultant*
382.	Trauma Doc(m)	Right\		
383.	Res. Doc(f)	She's 95% on room air		*Oxygenation level*
384.	Res. Doc(m)	Do we have any- {Do we have any saline here?		*Directed to all*
385.	Res. Doc(f)	{We're giving you a little bit of oxygen/ Okay?	*Gaze toward patient on stretcher*	
386.	Res. Doc(m)	There it is/ (??)		

Turn	Speaker	Transcription	Non-Verbal	Explanation
387.	Res. Doc(f)	We're going to lay you on your side/ We're going to get you off this backboard/ Okay?	*Speaking and gaze toward patient(f-2)*	
388.	Patient(f-2)	*Stating that it is cold in Room 2*		
389.	Res. Doc(f)	It IS cold in here\ I agree\		
390.	Res. Doc(m)	I'm going to wrap that hand up in some saline\	*Gaze toward trauma consultant about Room 1 Patient(f-1)*	
391.	Res. Doc(f)	{Patient has an abrasion\		
392.	Res. Doc(m)	{Hey Patrick?	*Gaze toward trauma consultant*	
393.	Trauma Doc(m)	Yeah?		*Both residents speaking to trauma consultant about both patients*
394.	Res. Doc(m)	I just- Just ordered the whole nine yards on her\ /CT of her head/		
395.	Res. Doc(f)	Yeah/ She had a seat belt on\		*Responding to inquiry from trauma consultant*
396.	Trauma Doc(m)	*Not clear but asks about conditions of patients of both residents*		
397.	Res. Doc(m)	Blunt trauma\		
398.	Trauma Doc(m)	*(??)*		*Not clear but makes further inquiry*
399.	Res. Doc(m)	She's got a-		*Trauma consultant continues inquiring questions*
400.	Trauma Doc(m)	(??)		
401.	Res. Doc(m)	{Yeah cuz she says she has a PLATE in her C-spine anyway\		*Both residents responding to questions from trauma consult*
402.	Res. Doc(f)	There was no air bags/		
403.	Res. Doc(m)	And then the blunt trauma protocol\ ..She's really not/		*Q & A responses*
404.	Res. Doc(f)	Am I hurting you at all?	*Looking at Patient (f-2)*	
405.	Nurse Sue (f)	Yeah a little bit/		*Interprets and answers for patient*
406.	Res. Doc(m)	You know\She's kind of\		*Addressing Trauma consultant*
407.	All	*Multiple speakers but incomprehensible for transcription (4 seconds)*		

Turn / Speaker		Transcription	Non-Verbal	Explanation
408.	Res. Doc(f)	Does it hurt?	*Directed toward patient(f02)*	
409.	Patient(f-2)	*Patient responds that it does hurt*		
410.	Res. Doc(m)	There we go/ I'm going to put this on your hand/ Okay?	*Gaze toward patient(f-1) in Room 1*	
411.	Patient(f-1)	Yes/		*Patient cries response*
412.	Res. Doc(f)	No she did NOT/		*Answering trauma consultant*
413.	Patient(f-1)	*Continues to cry with pain*		
414.	Res. Doc(f)	OOH/ {MAN[		
415.	Res. Doc(m)	[You've got to calm down Okay? You have got to calm down\ You've gotta-		
416.	Patient(f-1)	*Complains of pain*		
417.	Res. Doc(m)	I know you are hurting and we're giving you pain medicine\ .. .. The more you carry on the more it hurts/		
418.	Res. Doc(f)	So just ta-		
419.	Res. Doc(m)	Take slow deep breaths/ {All right?		
420.	Res. Doc(f)	OH this is a mess/ {(??) I'm all tangled up		*Speaking to all as she is tangled in tubing and medical equipment*
421.	Trauma Doc(m)	(??)		
422.	Res. Doc(f)	All right/ You guys ready to roll?	*Addressed to all to gain assistance*	
423.	Res. Doc(m)	Ma'am? You've got a pretty bad injury/ So its going to take awhile/ Before you get better\ You injured yourself pretty badly\ Okay?	*Gaze at patient in Room 1*	*Nurse asks Res. Doc(f) how fast they were going and she responds*
424.	Nurse Sue(f)	How fast were they going?		

Turn / Speaker		Transcription	Non-Verbal	Explanation
425.	Res. Doc(m)	OOH FAAST? She FLEW on the highway\		
426.	Patient(f-1)	*Continues to inquire about her status*		
427.	Res. Doc(m)	Your hand is pretty messed up/		*Both residents answering patient questions and concerns and attempting to calm patients*
428.	Res. Doc(f)	All right/ Let's get you off this board/ Okay?		
429.	Nurse Sue (f)	Watch your arms/ Watch your arms/ Hold your elbows\ HOLD your elbows/	*Looking at and talking to Patient (f-2)*	*Instructing Patient (f-2)t so that all can roll and move her offof backboard which is hard and uncomfortable but necessary*
430.	Staff Doc(m)	We're just going to roll you on your side/ We'll do all of the work for you dear\		
431.	Nurse Sue(f)	Hold YOUR ELBOWS/ ONE/ TWO/ THREE/		*All gently roll patient to her side*
432.	Patient(f-2)	*Moans gently*		
433.	Staff Doc(m)	Okay we're going to take this uncomfortable board out/ You're going to feel a finger in your bottom\ We're just going to make sure your nerves are okay/ All right?		*Rectal exam necessary to rule out neurological impairment and injury or bleeding*
434.	Res. Doc(f)	All right/ Tell me/ Does this hurt? Yes or no?		*As she proceeds with exam*
435.	Res. Doc(m)	Keep your hand up a little for me\ Okay?		*Res. Doc(m) cleaning wound of Patient(f-1) in Room 1*
436.	Res. Doc(f)	Yes or no?		*Continuing exam*
437.	Res. Doc(m)	There we go\		*Gentle reassurance*
438.	Res. Doc(f)	NO tenderness midline/ .. .. .. All right Ma'am/ Finger in your behind/		*Examining patient's spin* *Speaking for the Medical Record*
439.	Nurse(m)	Hold STILL/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
440.	Res. Doc(f)	Okay/ Good sphincter TONE/ HEEM negative/		*No blood found in rectum*
441.	Patient(f-2)	*Patient moans*		
442.	Res. Doc(m)	Last time- When was the last time you smoked – .. ..Smoked aah crack?		
443.	Res. Doc(f)	I keep getting tangled in this cord/		*It could be a number of cords*
444.	Res. Doc(m)	Did you smoke today?	*Gaze toward Patient in Room 2*	
445.	Patient(f-2)	*Answers affirmatively*		
446.	Res. Doc(m)	All right All right\ Keep that arm up okay/		*Res. Doc(f) not audible*
447.	Res. Doc(f)	Yeah she has diabetes/ IVDA\. .. Unknown tetanus\ Ate last hour prior to presentation		*Speaking to trauma consultant and giving patient's medical history* *Intravenous drug addiction (IVDA)*
448.	Nurse Sue (f)	Are you allergic to any medications?		
449.	Res. Doc(f)	No allergies/		
450.	Trauma(f)	No medication allergies?		
451.	Res. Doc(f)	She used heroin this morning/ And had a couple beers\		*Responding to Trauma Doc (f)*
452.	Trauma(f)	When was her last meal?		
453.	Res. Doc(f)	An hour before/ Before she came in\		
454.	Res. Doc(m)	Here let me put my aah/		
455.	Res. Doc(f)	Let me grab a T system sheet out of here\		*She reaches into a stack of forms grabbing a single sheet to record her medical findings for the record*
456.	Nurse Sue(f)	We need two more of Morphine there aah/	*Gazing in direction of Room 1 where the patient with a hand injury lies*	
457.	Res. Doc(m)	Thank you\		*To nurse who has anticipated what Res. Doc(m) would order*

Turn / Speaker		Transcription	Non-Verbal	Explanation
458.	Res. Doc(f)	No/		*(??)who she responds to*
459.	Nurse Sue(f)	She took a total of six? *(??)*		*Milligrams of morphine for patient in Room 1*
460.	Res. Doc(m)	What's that? I know but\		*Addressing Trauma consultant* *Patient is moaning in background*
461.	Nurse Sue(f)	Lift up this arm so you can get your pain medicine\	*To patient*	
462.	Res. Doc(f)	All righty?		*Shifting to a light tone*
463.	Nurse Sue (f)	Straighten up your arm (??)		
464.	Patient(f-2)	*Patient moans anew*		
465.	Res. Doc(f)	Some stickers\ OOOH/ Ah\ {Whew\		*Talking to self*
466.	456. Res. Doc(m)	{This this is just- I mean I don't want to get- |Any more distracted than I am\	*Sounding impatient*	
467.	457. Res. Doc(f)	/I go into a panic when I run out of stickers/		*She chuckles and refers to patient ID stickers (ie Name, med. record, birth date))*
468.	458. Res. Doc(m)	I want to watch all this stuff and\ But- I want to get my films and\ There we go/	 *Signaling patient to calm her*	*He cleans patient wound as he talks Speakers in background*
469.	Nurse Sue(f)	You're going to feel a big poke/		*With needle in hand*
470.	Patient(f-2)	*Moans loudly in pain*		
471.	All	*Multiple background speakers but rate of talk is reduced as people either record or finish what they have started in tending to patients in Room 1 and 2 Patient continues to moan loudly (22 seconds)*		
472.	Nurse Sue(f)	I need this arm straightened/ Okay? There you go/		*Patient continues to moan but is compliant with nurse's request*
473.	Staff Doc(m)	What hurts you? Your left knee right?		*Examines Patient(f-2)*
474.	Patient(f-2)	My left knee/ My elbow/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
475.	Staff Doc(m)	Your left knee/ Right?		
476.	All	*Multiple speakers with subdued speech at this point Patient continues to moan in pain (6 seconds)*		
477.	Nurse Sue(f)	You are feeling that Morphine/ It's pretty good/		
478.	Res. Doc(f)	How old is she?		
479.	Res. Doc(m)	All right/ Let me go (??)	*Patien(f-2)t continues to moan in pain*	
480.	Staff Doc(m)	Let's get a chest x-ray in here\		*The pace is winding down and multiple conversations co-occur*
481.	Nurse(m)	Forty?		*Tech is in room preparing to shoot x-ray*
482.	Res. Doc(f)	Yeah\ .. .. She's forty-four\		
483.	Staff Doc(m)	Un- Uncross your legs dear\		
484.	Res. Doc(f)	Forty-four year old female\		*Res. Doc(F) is filling out T sheet a standard form for documentation*
485.	Res. Doc(m)	I knew it was coming/ I mean\ It's its-		
486.	X-ray Tech(f)	It hurts when you take a deep breath? PRESS ON/		
487.	Res. Doc(f)	Here you go Sammie? If you want to fill this "T" thing out\		*To staff doctor*
488.	All	*Multiple speakers heard but things are winding down and individuals are finishing tasks (15 seconds)*		
489.	Nurse Sue(f)	Where's the other one (??)		
490.	Res. Doc(m)	Hmmh?		
491.	Nurse Sue(f)	Where's the other Trauma folks?		Inquiry regarding "other" Trauma Staff
492.	Staff Doc(m)	The one that was aah/[		
493.	Nurse Sue(f)	[(??)		

Turn / Speaker		Transcription	Non-Verbal	Explanation
494.	Staff Doc(m)	In the hospital\ Aah Corcic's the last name\ Czechoslovakian\ In the hospital\[		
495.	Nurse (f)	[What's his name? .. .. Merrick?		
496.	Staff Doc(m)	Yeah Merrick\		
497.	Nurse Sue(f)	C O R Ooh/ K I B ooh/ Something\		
498.	Staff Doc(m)	There's not enough vowels/ It's it's- Different\		
499.	Nurse Sue(f)	C O (??) I know that ain't right\		
500.	Staff Doc(m)	A right ankle abrasion\ Left knee abrasion\		*Directed to Res. Doc(f) as she documents physical findings*
501.	Res. Doc(f)	So it's the/ Both knees and both elbows/		*Collaborating for the documentation*
502.	Staff Doc(m)	Yeah\		
503.	Res. Doc(f)	Right[-		
504.	Staff Doc(m)	[Left knee/ Both elbows/ Right ankle\		
505.	Res. Doc(f)	Right ankle\		*As she fills out form talking to self*
506.	Nurse Sue(f)	Is this where she's having her pain?[		
507.	Res. Doc(f)	[Yeah\ .. and right knee/ And left- .. .. elbow (??) This is a single car accident too/		*Softly spoken as she fills out T sheet* *T sheet is a form for documentation of medical findings for the record*
508.	Staff Doc(m)	Rollover\		*Continuing collaboration for medical record documentation*
509.	Res. Doc(f)	High speed\[		

Turn	Speaker	Transcription	Non-Verbal	Explanation
510.	Staff Doc(m)	[No extraction time\		
511.	Res. Doc(f)	Rollover\		
512.	Nurse Sue(f)	(??)	*Gaze to Staff Doc(m)*	
513.	Staff Doc(m)	Okay\		
514.	All	*Multiple speakers and recording is disjointed Speech is soft and of normal speed (14 seconds)*		
515.	Nurse Pam(f)	Is that why they called security to 105?		*Discussion of events in CAT 1*
516.	Nurse Sue(f)	I don't know/ .. .. .. he wasn't in five or six\ He's still in the Ortho room\ (??) the MHT as soon as (??)		*Speaking of a psychiatric patient who is in Cat 1 with medical problems He also needs a psychiatric evaluation from MHT (Mental Health Team)*
517.	Res. Doc(f)	You don't want him in the hallway either/ No\		
518.	Staff Doc(m)	{As long as he's-		
519.	Nurse Sue(f)	Not with THAT attitude\		
520.	Staff Doc(m)	I mean as long as he's-[		
521.	Nurse Sue(f)	[Probably put him ahead no (??)[		
522.	Staff Doc(m)	[In four points and posey\ Right? .. .. Wouldn't Emmanual say si- Six points? Four arms/ (??) And his BAAALLS?		*Narrative of 6 point restraints begins and Staff Doc(m) seeks mutual recognition of narrative* *Delivered as Emmanuel's (staff) voice*
523.	All		*Participation in chuckling and the final point to patient "there you are buddy"*	*This narrative is evoked as possible relief when dealing with an agitated and unpredictable psychiatric patient May be a form of relief in this highly stressful environment*
524.	MK	Let me change the battery on that/		*Wireless mic batteries run out of juice about every 3-4 hours*
525.	Res. Doc(f)	I got the batteries back in/		*All chuckle and relief noted*
526.	Patient(f-1)	HELP me\		
527.	Res. Doc(m)	Where's my form?		*Referring to documentation sheet*

Turn / Speaker		Transcription	Non-Verbal	Explanation
528.	Patient(f-2)	PLEASE/		
529.	Res. Doc(f)	She's getting loud\	*Spoken softly*	
530.	Nurse Sue(f)	She has two that I already- Got\ (??) the charge box\		*Patient continues to ask for help* *Again cries "Please" while staff discusses amount of pain meds already given*
531.	Nurse Sue(f)	All right/		
532.	Res. Doc(f)	(??)		
533.	Patient(f-2)	HELP ME/		
534.	Res. Doc(f)	All right\ Let me clip it on here\		*As patient continues to moan* *Referring to microphone*
535.	Res. Doc(m)	You know\		
536.	All	*Multiple overlap but tone is light and chuckling of nurse heard in response to joking about Foley kit*		*The patient's discomfort can be heard in ongoing moans and complaints of discomfort (4 seconds)*
537.	Nurse Sue(f)	{That's/ {That's from the Foley kit/		*Foley catheter is a thin, sterile tube inserted to drain urine*
538.	Res. Doc(f)	(??) that poor guy in 108\		*Referring to a patient in Cat 1*
539.	All	*Laughter heard among staff who are joking about a Foley kit used to catheterize the patient*		*The kit includes lubrication ointment to ease the insertion of the Foley in to the patient's urethra(3 seconds)*
540.	Nurse Sue(f)	She might need it/	*Hearty laugh*	
541.	MK	What is it?		
542.	Nurse Sue(f)	The lube THING/		
543.	All	*Multiple voices as joke dissolves into activity (5 seconds)*		
544.	Res. Doc(m)	All right/ Do we have a set of vitals?		*Redirecting focus of group*
545.	Nurse Sue(f)	SURE I do/ Do you want to give her some aah/ Dilaudid?		*Multiple background voices*
546.	Res. Doc(m)	I want to give her some Ativan/		
547.	Nurse Sue(f)	You sure?		

Turn / Speaker		Transcription	Non-Verbal	Explanation
548.	Res. Doc(m)	Yeah lets give her like aah/ Two of Ativan and aah/ Another one of Dilaudid\		*Patient is moaning in pain*
549.	Nurse Sue(f)	One?		
550.	Res. Doc(m)	Yeah\		
551.	Res. Doc(f)	Lets get x-ray here/ Yeah/		
552.	Res. Doc(m)	Because/ She's going crazy\		
553.	Nurse Sue(f)	You said another one but-[		
554.	Res. Doc(m)	[What do you think? Do you (??) one/ We never gave her any Dilaudid\		
555.	Nurse Sue(f)	We didn't\		
556.	Res. Doc(m)	What do you think of that? You think that's GOOD? The two of Ativan?		
557.	Nurse Sue(f)	Yeah (??)[		
558.	Res. Doc(m)	[I mean I – Because, because part of-[		
559.	Nurse Sue(f)	[You want two of Dilaudid? Or do you think that's too/(??) I mean-[		
560.	Res. Doc(m)	[Why don't we give one and if that doesn't do much/ Give another one\		
561.	Nurse Sue(f)	Okay\		
562.	Res. Doc(m)	Thanks/		
563.	Nurse Sue(f)	We didn't get a temp yet\		*Temperature*
564.	Nurse Pam(f)	Her friend said she did heroin (??)		
565.	Res. Doc(f)	Okay/ Dr S? Do you know what his name is? Over there?	*Gaze toward Staff Doc(m)* *Nodding in direction of Trauma Doc*	*Patient continues to moan but softly*

Turn	Speaker	Transcription	Non-Verbal	Explanation
566.	Res. Doc(m)	Whatever\ You know/	*To All*	*Multiple background voices heard*
567.	Res. Doc(f)	(??)		
568.	Trauma Doc(m)	I'm sure they were- They were both- Partying up hard/ They both had *ETOH*/		*Alcohol*
569.	Res. Doc(m)	Christ\ All right/ Sampson/		*Trauma Doc asking who staff is*
570.	Nurse Sue(f)	We don't know what your pain tolerance level is/	*Gaze toward patient*	
571.	Res. Doc(f)	Something stinks/		
572.	Res. Doc(m)	Are they ready for her over in the-[		
573.	Nurse Sue(f)	[No/		
574.	Res. Doc(m)	CT?		
575.	Nurse Sue(f)	I need you to get a temp/ Real quick/ And put this on her\		*Speaking to fellow nurse*
576.	Res. Doc(f)	Yeah\ You don't know (??)		*Responding to inquiry (??)*
577.	Res. Doc(m)	Did you get any of the x-rays Sir?	*To Staff Doc as gaze shifts to him*	
578.	Res. Doc(f)	And I don't know I don't know if they are going to want- And ooh/ Yeah I don't know what they are going to want/ They didn't order anything on HER?	*Shifts gaze to Staff Doc* *Shifts gaze to Staff Doc*	 *Referring to Trauma consultants*
579.	All	*Multiple voices not clear (4 seconds)*		
580.	Res. Doc(f)	{I don't think they were too impressed with her exam\		
581.	Res. Doc(m)	{I need a lateral c-spine a chest and a flat pelvis/	*Gaze directed to x-ray tech*	
582.	Staff Doc(m)	Do you want to send her back for a C-spine?		*Referring to Room 1 patient who has completed a series of x-rays*
583.	Res. Doc(m)	Act- Actually if you can get-[		

Turn / Speaker		Transcription	Non-Verbal	Explanation
584.	Res. Doc(f)	[Yeah/ That's what I was thinking\ She can get everything back in the department\		*Referring to Cat 1 area of ER*
585.	Res. Doc(m)	Well I ordered a bunch of aah/		*Both residents are speaking to Staff Doc about what is still needed*
586.	Res. Doc(f)	{And I'll get a chest PMI back there too/		*Residents are overlapping in speech*
587.	Res. Doc(m)	{/We need a lateral C-spine because we need to do a CT of her head\ { . .. This one I don't know yet\	*Gaze toward Room 1* *Gaze toward patient in Room 2*	
588.	Staff Doc(m)	{That looks fine here\ {It's All right\	*Gaze toward patient*	
589.	Res. Doc(f)	{Okay\		*Acknowledging Staff Doc(m)*
590.	Staff Doc(m)	{Elbow WISE/ I'm not too impressed\ Knee wise-/		
591.	Res. Doc(f)	I'm not too impressed there either\ Elbow wise either/ Because I squeezed both of her elbows\		*Patient in Room 1 moaning loudly*
592.	Staff Doc(m)	So chest (??)[		
593.	Res. Doc(f)	[Pelvis/		
594.	Staff Doc(m)	(??)		
595.	Res. Doc(m)	(??)		
596.	Nurse Sue(f)	Who wants to have a Foley?	*Gaze directed to all*	
597.	Res. Doc(m)	{This is significant (??)	*Directed to Staff Do(m)c*	
598.	Res. Doc(f)	{Yeah/[[Yeah with that kind of (??)[		
599.	Res. Doc(m)	[Of course that hand has got to hurt/	*To Staff Doc*	
600.	Res. Doc(f)	With that kind of (??)		
601.	Patient(f-1)	*Patient's moans and cries become louder at this point*		
602.	Res. Doc(m)	What's the MATTER?		
603.	Patient(f-1)	*Moans are yet louder*		*Speakers heard in background (6 seconds)*
604.	Res. Doc(m)	Why are you wail- Why are you wailing? What's the matter?		

Turn / Speaker		Transcription	Non-Verbal	Explanation
605.	Patient(f-2)	*Patient's crying becomes louder yet*		
606.	Res. Doc(m)	All right/		*To (??)*
607.	Res. Doc(f)	.. .. Is it raining outside?	*Loud and heavily sighs are directed to all*	
608.	Nurse Pam(f)	*{Mumbles no (mmh hmm)*		
609.	Res. Doc(f)	{We've just got so many *MVA's*	*Commenting to all*	*Multiple Victim Accident*
610.	Staff Doc(m)	(??)		
611.	Res. Doc(m)	I guess she's just\ Letting it all out/		
612.	Trauma Doc(m)	(??) are everywhere/		
613.	Res. Doc(f)	That's what I heard/ One of our nurses witnessed this accident/		
614.	Trauma Doc(m)	I talked to him after he got there/		*Referring to the nurse who witnessed the accident*
615.	Res. Doc(f)	OOH oh ho ho\		*Multiple speakers in background*
616.	Nurse Sue(f)	I've got it going in right now\	*Gaze toward patient receiving medication*	
617.	All	*Multiple speakers (3 seconds)*		
618.	Pharmacists(m)	I'm taking it out of the Pixis/		*Pharmacist refers to box of controlled substances*
619.	Trauma Doc(m)	(??)		
620.	Res. Doc(m)	We're giving her some Ativan so\		
621.	Trauma Doc(m)	(??)		
622.	Nurse Sue(f)	(??) Jim?		*Referring to the nurse who witnessed the accident*
623.	Res. Doc(f)	Jim/		
624.	Nurse Pam(f)	They were both in the car/ And she had the car up on her ARM/ It took like six guys/ Push the car off (??) To get her arm out/		*Recollecting Jim's account of the accident scene Nurse points to patient in Room 2*
625.	Res. Doc(m)	TESTING?		*Playfully addressing microphone*
626.	Res. Doc(f)	Okay Sammy/ {Do it again/		

Turn	Speaker	Transcription	Non-Verbal	Explanation
627.	Res. Doc(m)	{ECHO HARRY/		
628.	All	*Multiple overlapping speakers (.. .. ..)*		
629.	Res. Doc(m)	ECHO/ HOTEL/ LARRY/ .. .. Echo Romeo Sierra/		*Res. Doc(f) in background continues with performance while multiple speakers continue*
630.	All	*Multiple overlapping speakers (3 seconds)*		
631.	Nurse Pam(f)	They said it was a fourth car (??)		*Speaking to all*
632.	Res. Doc(m)	CONFIRMA- CONFIRMATION PLEASE/		
633.	Res. Doc(f)	NO NO/ They didn't –[		*Patient moaning as all speak*
634.	Nurse(m)	[This car came across the (??) the scout car (??)-[		
635.	Res. Doc(f)	[They didn't hit-		
636.	Res. Doc(m)	I HAVE THE ENEMY IN MY SITES/ I want ALL the ARTILLARY IN OUR PERIMETER/ .. .. I repeat/ ALL THE ARTILLARY IN OUR PERIMETER/		*Continuing to play and perform* *Multiple speakers talk about accident* *He is speaking over the volume of all speakers in the room*
637.	All	*Multiple speakers and patient crying loudly in the background in Room 2 (3 seconds)*		
638.	Res. Doc(m)	We're being OVERRUN/		
639.	All	*Multiple overlapping speakers and patient continues to cry in background (3 seconds)*		
640.	Staff Doc(m)	I was going home/ From work/ The other day/ I was driving/ It was raining/ That day it was pouring/ This was yesterday/ (??) lights in front of me/	*He imitates the sound of tires spinning while driver attempts to take off from the green light*	
641.	Trauma Doc(m)	Yeah\		

Turn / Speaker		Transcription	Non-Verbal	Explanation
642.	Staff Doc(m)	Right in the ditch/ Didn't flip over/ I wa- I was just going OOH/ And like I'm going/ He's okay/ I'm late\ Everything's All right/	*He chuckles to audience*	*Multiple speakers overlap in back ground*
643.	Res. Doc(f)	Ooh\		*Acknowledging that she listens*
644.	Staff Doc(m) \	Yeah He was/ He looked like he was going 85/ {I still (??)		
645.	Res. Doc(m)	{Shannon MAN/ You got- You got the better deal on this pair/ Shannon\		*Speaking to female resident*
646.	Res. Doc(f)	(??) What?		*Speaking with Staff doc\ To Res. Doc(m)*
647.	Res. Doc(m)	You got the better deal on this pair\		
648.	Res. Doc(f)	(??)		
649.	Res. Doc(m)	This lady's gone hysterical/	*Gazing toward patient*	*Referring to patient in Room 1*
650.	Res. Doc(f)	Oh I can TELL she's gone hysterical/[		
651.	Res. Doc(m)	[I mean she's just-[[Fucking/[		
652.	Res. Doc(f)	[She going to the OR		*Referencing operating room*
653.	Res. Doc(m)	I doubt it/ She's probably going to sit down in Cat 1 for like eight hours\ .. .. .. Because THAT ARM? That ARM is not emergent/[		
654.	Res. Doc(f)	[She has still got to go/[		
655.	Res. Doc(m)	[It's not an emergency\[		
656.	Res. Doc(f)	[Noo/[		
657.	Res. Doc(m)	[t's just-		

Turn / Speaker		Transcription	Non-Verbal	Explanation
658.	Res. Doc(f)	But she's still got to go/[		
659.	Res. Doc(m)	[It's just the tendon's open\ .. .. It just needs to be washed out/ And\ You know\ Debreded properly\ And\ .. .. .. I mean she's gone CRAZy/ We need to-[		*Debreded is a procedure to remove dead tissue*
660.	Res. Doc(f)	[I HEAR she's gone crazy\		
661.	Res. Doc(m)	What a NIGHTmare DUDE/		
662.	Res. Doc(f)	I know\		
663.	Res. Doc(m)	Well/[		
664.	Res. Doc(f)	It's a hell of a last shift/[	*Chuckling softly*	
665.	Res. Doc(m)	[It's not MY last shift/[		
666.	Res. Doc(f)	[I know/	*Continuing to chuckle softly*	
667.	Res. Doc(m)	I have eight/ Eighteen more shifts to go/		
668.	Res. Doc(f)	Oh/ Eighteen next month huh/ . . . I have ten/		
669.	Staff Doc(m)	Cat 1/		*He answers ringing phone*
670.	Patient(f-2)	*Patient cries loudly*		
671.	Res. Doc(m)	Ativan will help/[		*Addressing all and explaining that he intends to calm patient with medicine*
672.	Res. Doc(f)	[Is surgery over there?		*Referring to Room 1 and crying patient*
673.	Res. Doc(m)	It's not pain/ I think it's just aah/ She's scared\[		
674.	Res. Doc(f)	[Where'd surgery go? Did they leave?		*Addressing all*
675.	Res. Doc(m)	She's pretty scared\ And you know\		

Turn / Speaker		Transcription	Non-Verbal	Explanation
676.	Patient(f-2)	*Continues to cry and is comforted by the x-ray tech*		
677.	Tech(f)	I KNOW/ Just try and relax\ Okay?		*Empathizing with Patient*
678.	Res. Doc(m)	What? Okay\		*Responding to Staff Doc*
679.	Staff Doc(m)	*(??)*		*Asking about the medicine given to the crying Patient*
680.	Res. Doc(m)	The jungle juice\		
681.	All	*Multiple overlapping speakers (8 seconds)*		
682.	Staff Doc(m)	Let her arm rest up here/ A little bit/ Okay?		*Trying to find more comfort for the Patient*
683.	Res. Doc(m)	Yeah/ That's what I'm saying/ No that's n- That's not really why- NO/ It's right here/	*Pointing to object*	*Interrupted by Staff Doc* *Interrupted by request of (??)*
684.	All	*Overlapping speakers heard (4 seconds)*		
685.	Nurse Char(f)	HELLO/		*Newly arrived nurse addresses all*
686.	Res. Doc(m)	There ya go/		*Putting patient's arm in elevated position for comfort*
687.	All	*Multiple overlapping speakers some chuckling*	*The x-ray tech comforts the patient (16 seconds)*	*The recently arrived nurse jokes as she positions self in the group of medical personnel*
688.	Res. Doc(m)	Do- Do you want me to do something here?		*Addressing and gazing toward nurse*
689.	Nurse Pam(f)	(??) A name tag/ I have to put a foley in you/ To get some urine\		*Now addressing Patient(f-2)*
690.	All	*Multiple speakers overlapping with one inquiry made of Res. Doc(m)*		
691.	Res. Doc(m)	No I'll just kind of hang out with her\		*Referring to patient*

Turn	Speaker	Transcription	Non-Verbal	Explanation
692.	Res. Doc(f)	Well that's not going to happen\		*Someone suggests that the patient wants to have a cigarette*
693.	Res. Doc(m)	Is there any way to get an order for that?		*Joking to all*
694.	Res. Doc(f)	NO WAY/\ It'll blow our ER up/		
695.	Res. Doc(m)	Don't move around/ {Stop moving/	*Gaze toward Patient (f-2)*	
696.	Res. Doc(f)	{She wants a cigarette/		*Fewer overlapping speakers at this point as activity slows down*
697.	X-ray Tech(f)	{Take your time NOW/	*Gazing at Patient(f-2)*	
698.	Res. Doc(m)	{We have got to get an x-ray here/ All right? DON'T MOVE/ .. .. ..Try to keep your arm down/[	 *Directing patien (f-2)t*	
699.	X-ray Tech(f)	[Keep this one down/[Come on/ REACH for me here\		*Multiple speakers in background*
700.	Patient(f-2)	*She softly moans and attempts to comply with request of x-ray tech*		
701.	X-ray Tech(f)	REACH/ .. .. REACH with this arm/ COME on\		
702.	Res. Doc(f)	Ma'am we'll COVER you back up/ She says she's cold/ .. .. All right\	 *Gaze shifts to all staff in area*	
703.	Nurse Pam(f)	Okay one second honey/ I've got to put the Foley in\ Then I'll cover you RIGHT back up\		*Background speakers continue*
704.	Res. Doc(f)	Is x-ray? Oh they're here? {Okay\	 *Gaze to Res. Doc(m)*	
705.	X-ray Tech(f)	{There you go/ There you go hon/ Okay we'll SHOOT/		*X-ray tech is positioning patient on stretcher This serves as a warning to other staff to move from x-ray field*
706.	Res Doc(m)	(??) supposed to be working/		

Turn	Speaker	Transcription	Non-Verbal	Explanation
707.	X-ray Tech(f)	SHOOT UP/ SHOOT IT UP/		*Directed at tech behind shield panel*
708.	Nurse Char(f)	SHOOT IT UP/		
709.	X-ray Tech(f)	All right\		*Multiple overlapping speakers in background ongoing*
710.	All	*Multiple speakers as x-rays are being completed (6 seconds)*		
711.	Res. Doc(m)	All right\ .. .. You're doing okay\ .. .. You're doing okay\	*Spoken softly* *Gaze at patient and reassuring*	
712.	Nurse Char(f)	Which one's Simmons? (room one Patient)		*Newly arrived nurse is sorting out which patient is in Room 1 & 2*
713.	All	*Multiple speakers overlapping Staff is updating the newly arrived nurse about the patients and accident (7 seconds)*		
714.	Res. Doc(f)	That's right\ .. .. On the Henry\		*Continuing to update the nurse on the course of events*
715.	Med. Tech(m)	That's the right person in there?		*Checking identity of patient*
716.	Nurse Pam(f)	Yeah/		
717.	Res. Doc(m)	Hey I'm going to give you some stuff to drink okay? .. .. I want you to drink it All right? .. Okay? Okay? Can you talk to me? You going to drink something for me? .. Okay good\	 *Gaze at patient and seeking compliance for procedure*	*Preparing patient for contrast dye for x-ray to be completed*
718.	All	*Multiple overlapping speakers but volume is low and soft (6 seconds)*		
719.	Res. Doc(m)	How much of this is she supposed to DRINK? Jesus CHRIST/		
720.	Trauma Doc(m)	(??)		
721.	Res. Doc(m)	I think it was/	*Gaze and response to Trauma Doc(m)*	
722.	Trauma Doc(m)	I have some real concerns (??) I think (??)		*Multiple speakers in background*
723.	Res. Doc(m)	I think we should too/	*Gaze toward Trauma Doc(m)*	
724.	Res. Doc(f)	Do you guys want any CT's on her?	*Gaze toward Trauma Doctors*	

Turn / Speaker		Transcription	Non-Verbal	Explanation
725.	Trauma (m)	The driver? Yeah\ It's a high speed rollover/ She should get the blunt trauma/[		*Referring to x-ray protocol for this Blunt Trauma Patient*
726.	Res. Doc(f)	[Blunt? Okay\ I'll order one\		
727.	Trauma Doc(m)	She didn't lose consciousness?		
728.	Res. Doc(f)	Nope/		
729.	Res. Doc(m)	I don't think she can drink this for us\ I don't think she (??)		*Referring to contrast dye*
730.	Trauma Doc(m)	*(??) Asks a question of Res. Doc(f) about patient condition in order to assess further needs*		
731.	Res. Doc(m)	What?	*Gaze at Trauma Doc*	
732.	Trauma Doc(m)	*Reiterates question*		
733.	Res. Doc(f)	{Heroin\ .. .. Heroin alcohol\		*Res. Doc(m) continues to comment on Room 1 patient's reluctance to comply*
734.	Trauma Doc(m)	(??) because we don't know if we'll just discharge her\ (??) care enough about her (??)	*Res. Doc(f) chuckles softly*	*He is anticipating his Senior Staff's impression of patient case findings*
735.	Res. Doc(f)	Dude\ I hear you\		*Empathizing with Trauma resident's anticipated response from Senior Staff*
736.	Trauma Doc(m)	I could be wrong\ (??)		
737.	Res. Doc(f)	It's tough\ .. .. A lot of people verbally- ABUSE YOU\ Patient wise that is/		
738.	Trauma Doc(m)	THAT's / That's no different\ (??)	*Res. Doc(f) chuckles*	
739.	Res. Doc(f)	Yeah one of our residents just got stabbed/		
740.	Nurse Char(f)	Really?		*Newly arrived nurse(f)*
741.	Res. Doc(f)	With a pen\ .. .. Yeah/[		
742.	Trauma Doc(m)	[Was it deep?		

Turn / Speaker		Transcription	Non-Verbal	Explanation
743.	Res. Doc(f)	Was it DEEP? It just missed his eye/		
744.	Trauma Doc(m)	(??)		*Continues line of event*
745.	Res. Doc(f)	A psych patient came up and got him\ {It wasn't even one of his patients/		
746.	Res. Doc(m)	{Hey Miss? Drink THIS STUFF/ COME ON/ DRINK it/ Drink it/ Come on/ Suck it down/ Come on drink/ .. .. .. All right/ I guess we need an NG/ .. Okay/		*In background Trauma Doc(m) capitulates with a tale from the OR* *Patient can either drink contrast dye or have a tube inserted in nose to GI track for administering dye*
747.	Trauma Doc(m)	(??) and talk to the family\ I' m going to start her on (??) She's just got back from Cat Scan\		*Speaking to both residents about their respective patients and planning course of action*
748.	Res. Doc(m)	Okay go for it/		
749.	Res. Doc(f)	And they (??)		
750.	Trauma Doc(m)	(??) and talk to the family and (??[		
751.	Res. Doc(m)	[All right let's just aah/[		
752.	Trauma Doc(m)	[She didn't mention that/[		
753.	Tech(m)	[She got five- Maybe six but- She's got a PLATE in her neck\		
754.	Trauma Doc(m)	Sam what do you? Your first- Your first response was you want to punch her out/[		
755.	Res. Doc(f)	[I know EXACTLY/	*She chuckles*	
756.	Res. Doc(m)	Who's- Who's the guy (??)[		
757.	Trauma Doc(m)	[(??)		
758.	Res. Doc(f)	That's funny/	*Chuckling loudly*	*As joking continues in background*

Turn / Speaker		Transcription	Non-Verbal	Explanation
759.	Tech(f)	What do you want over here? C spine?		
760.	Res. Doc(m)	That's the best we're going to do/		*Inquiring of the Docs*
761.	Res. Doc(f)	Yeah let's just get a chest here/ We'll get everything else back in the department\		*Referring to Cat 1*
762.	Trauma Doc(m)	(??)	*Gaze to Res. Doc(m)*	
763.	Res. Doc(m)	Yeah I am/ Let's get a neck too/ I already put in the order actually because she told me about the plate/ Well if we get a lateral one then they will do it/		*Trauma Doc(m) continues to interact and reference need for more x-rays*
764.	Trauma Doc(m)	(??)	*Gaze at Res. Doc(f)*	
765.	Res. Doc(f)	I forget her name again\		
766.	Res. Doc(m)	Can we get a chest and a pelvis?		
767.	Res. Doc(f)	Smithson/ Simmons/		*Remembering patient name*
768.	Trauma(f)	She got a lateral?[		
769.	Res. Doc(m)	[She got a lateral/ Just so she-		
770.	Trauma(f)	Did you get a pelvis on her?		
771.	Res. Doc(m)	It's in progress\		
772.	Trauma(f)	Okay/ And then we get a head blunt-		
773.	Res. Doc(m)	Then we're going to get a head blunt C spine/ Blunt trauma/ And then this whole right arm/		
774.	Res. Doc(f)	AND/ .. .. YES?		*Responding to question*
775.	Res. Doc(m)	And then aah/ A hip too/ Because she's had trouble picking this hip up/		
776.	Trauma(f)	Which hip is it?		
777.	Res. Doc(m)	Right hip/		
778.	Res. Doc(f)	Yeaah/ I'm all for that/		*Responding to nurse's inquiry*

Turn	Speaker	Transcription	Non-Verbal	Explanation
779.	Nurse Pam(f)	Do you want to do that now?		
780.	Res. Doc(f)	Sure/		
781.	Nurse Pam(f)	(??) let them in?		*Police want to come in and talk to patient*
782.	Res. Doc(f)	Yeah (??) as soon as we get a chest x-ray/		
783.	Nurse Pam(f)	(??) a chest x-ray?		
784.	Res. Doc(f)	Yeah sure then she can come on in and give her a ticket/ I'm all for that\		
785.	Res. Doc(m)	Keep- Keep swallowing/ SWALLOW/ Swallow it/ Swallow it/	*Gaze toward patient who is drinking contrast dye slowly*	
786.	Patient(f-2)	*Patient gags on liquid*		
787.	Nurse Pam(f)	It's down its down honey/ It's down\ Tell me your name/ Tell me your name\	*Gaze toward patient*	
788.	Res. Doc(m)	Come on/		
789.	Res. Doc(f)	What? (??) Room 1? .. .. Doctor SMITH isn't even here/	*Wearily stated*	*Commenting on overhead for Smith* *He left after being treated for stab wound to his eye*
790.	All	*Multiple overlapping speakers (4 seconds)*		
791.	Res. Doc(m)	There you go/ Smart man\		
792.	Res. Doc(f)	CT head/ CT blunt\	*Writes the order*	
793.	Nurse Pam(f)	We're going to put some medicine down it/ To take some x-rays\		*Referring to dye for x-ray*
794.	All	*Multiple overlapping speakers (4 seconds)*		
795.	Res. Doc(f)	Her clothes are cut-	*To nurse*	*Room 1 patients often have clothes cut off for expediency of care*

Turn	Speaker	Transcription	Non-Verbal	Explanation
796.	Res. Doc(m)	Try to put- If you're going to use any pressure down here because she has a big *avulsion* (??)\ Cut it down here\ She has- The dorsal of her hand is all the skin is missing\ She's missing a big piece there/ So you kind of go like this\ .. .. ..You can actually see it soaking through\	*Demonstrating the technique*	*Avulsion is tearing away. A nerve can be avulsed by an injury, as can part of a bone* *He is directing x-ray tech so as to prevent more injury to Patient(f-1)* *Focus is directed to open wound on Patient (f-1)'s hand*
797.	Res. Doc(f)	Man I'm getting hungry/ Whoa I don't see dinner\	*Moaning* *Yawns*	
798.	All	*Multiple overlapping speakers(6 seconds)*		
799.	Res. Doc(m)	Do you want to use the *Toumi*? I'll check it?	*Gaze toward Res. Doc(f)*	*Toumi is a medical instrument*
800.	Tech(f)	(??) a young fellow in here/		
801.	Res. Doc(f)	*Laughs in reference to incompletely heard joking (see above)*		
802.	Res. Doc(m)	Let's just give it a shot with the *Toumi* (??) It looks good but\		
803.	Tech(f)	It's going to be cold/	*Laughing at side joke ongoing*	
804.	Res. Doc(m)	Can we just shoot shoot it with the *Toumi*/ I'll just aah\ .. .. I mean I know it's in but\ .. .. ..We always- We always do it so you know\		*Directing this to Trauma consultant*
805.	Res. Doc(f)	Well her bra's unhooked now\[	*Gaze directed to x-ray tech*	*Regarding Patient (f-2)*
806.	Trauma(f)	[WE DO SAFETY FIRST/		
807.	Res. Doc(m)	That's correct\ .. .. Yep I'm ready/ .. .. PERFECT/ .. .. Thank you\ Thank you for indulging me\	*Joking continues in background*	*To tech that he has been directing*

Turn	Speaker	Transcription	Non-Verbal	Explanation
808.	Res. Doc(f)	Yeah\	*Chuckles softly*	
809.		I was trying to hook it with my foot for you/	*Laughs heartily*	*Joking to (??) about getting patient's bra off of the floor*
810.	Res. Doc(m)	We can use that Toumi to put it in anyway/ Right?	*Gaze toward Trauma Doc*	
811.	All	*Multiple speakers overlapping and joking is ongoing in the background* *Patient is also crying in pain(3 seconds)*		
812.	Res. Doc(m)	How do you use it?		*Referring to (??)*
813.	All	*Multiple overlapping speakers but joking predominates (4 seconds)* *X-ray techs telling patient to breathe*		
814.	Trauma(f)	Amusing\		
815.	Res. Doc(f)	I don't know why she's FREAKING out like that\		
816.	Res. Doc(m)	Oh yes/ Yes of course we do/		*Directed to (??) question*
817.	All	*Multiple overlapping speakers (3 seconds)*		
818.	Res. Doc(f)	They're going to come in and give her a ticket now\		
819.	X-ray Tech(f)	Who?		
820.	Res. Doc)	The police/		
821.	X-ray Tech(f)	DEEP BREATH MA'AM/		*Instructing patient for x-ray*
822.	Res. Doc(f)	OH my goodness/		
823.	X-ray Tech(f)	Wait wait wait wait/ That's not good/		
824.	Res. Doc(f)	.. .. .. That hurt my ear/	*Chuckling softly*	
825.	Nurse(m)	Just wondering\		*Recently arrived nurse*
826.	Res. Doc(f)	I took a- I TOOK a deep breath/		*Laughing continues*
827.	Res. Doc(m)	There we go/		
828.	Res. Doc(f)	I'm breathing/		
829.	Res. Doc(m)	Ooohk/	*Res. Doc(m) sighs loudly*	
830.	X-ray Tech(f)	Okay deep breath in/		

Turn	Speaker	Transcription	Non-Verbal	Explanation
831.	Trauma Doc(m)	Maybe the second thing that's of any value/ I've done the entire day\		
832.	X-ray Tech(f)	Okay hold it/		
833.	X-ray Tech(m)	Breathe/		
834.	X-ray Tech(f)	Breathe/		
835.	All	*Multiple overlapping speakers Multiple conversations occurring (8 seconds)*		
836.	Res. Doc(m)	Do you have that little white piece?	*Gaze toward Trauma Doc(f)*	
837.	Res. Doc(f)	All right/ She can get everything else in the department\ All right\		*Again, referring to Cat 1*
838.	Overhead Page	Dr. Smith/ Dr. Smith/ You're needed at the ambulance entrance/		*Security officer is paging Dr. Smith because police have arrived to take report on the stabbing incident*
839.	Trauma Doc(m)/	{We we've got the benefit of some good pain reliever\	*Gaze toward Res. Doc(m)*	
840.	Res. Doc(f)	{Dr Smith? .. .. .. Dr Smith isn't – .. .. .. Hey Dr Smith went home/		*Responding to overhead page*
841.	Res. Doc(m)	I think he did go home/		
842.	Res. Doc(f)	{Didn't he?	*Addressed to all*	
843.	X-ray Tech(f)	{Some lady in 210/		*Responding to unknown hearer*
844.	Res. Doc(m)	{I think he did go home\		
845.	Res. Doc(f)	Okay\		
846.	Nurse Pam(f)	Yeah\ (??)		*In background*
847.	Res. Doc(f)	OOOH/		
848.	All	*Multiple speakers unclear (5 seconds)*		
849.	Res. Doc(m)	What is this?		
850.	X-ray Tech(m)	We'll do a pelvis aaand a chest\		
851.	X-ray Tech(f)	Oh you- UUh-		

Turn / Speaker		Transcription	Non-Verbal	Explanation
852.	Res. Doc(m)	Actually I'll just put the thingy back on/ And I'll just- Hold on to this one/ Thank you\ .. .. Don't let her aah- {Actually\	*To nurse?*	
853.	Res. Doc(f)	{YEP/		*Responding to unknown person*
854.	Trauma Doc(m)	I'm not worried about her (??)		
855.	Res. Doc(m)	Don't don't let her grab her NG tube with her other hand\		
856.	Trauma Doc(m)	She didn't lose consciousness\ Blunt trauma/ She already got a chest/ {(??)		*Now shifting to Res. Doc(f) about patient in Room 2*
857.	Res. Doc(f)	{She did yeah/ We just shot a chest\		
858.	Trauma Doc(m)	(??)		
859.	Res. Doc(f)	I'll do the C spine and pelvis back in the department\		
860.	Trauma Doc(m)	Uhm tell me what her room air *SATS* are like\[		*SATS are Room Air Saturation levels*
861.	Res. Doc(f)	[95\ 95%		
862.	Res. Doc(m)	Here let me just get her some\	*To nurse about ?*	
863.	Nurse Pam(f)	Did we give her a tetanus or anything?		
864.	Res. Doc(f)	Yeah\	*Gaze toward Trauma Doc(m)*	
865.	Trauma Doc(m)	She she should probably get some tetanus (??) She should have it/		*Regarding Room 2 Patient*
866.	Res. Doc(f)	She just has- Yeah I'll give it to her/ This is really her only injury\		
867.	Trauma Doc(m)	Yeah/		
868.	Nurse Pam(f)	No she said- That knee hurt/		
869.	Trauma Doc(m)	She said th- The elbow is the thing she's complaining of-[		

Turn	Speaker	Transcription	Non-Verbal	Explanation
870.	Res. Doc(f)	[Both though/ You know I touched both of her elbows/ There was really nothing-[		
871.	Trauma Doc(m)	[General body pain\		
872.	All	*Multiple overlapping talk (4 seconds)*		
873.	Nurse Pam(f)	This thing is going to fall down\ You got it?	*To Trauma Doc*	
874.	Trauma Doc(m)	Uh huh/		
875.	Res. Doc(f)	Oh\		*Responding to unknown speaker*
876.	Nurse Pam(f)	It's *puwting*/		*(?)*
877.	Trauma Doc(m)	I don't know what *puwting* is/ I don't think she ((?))		
878.	Res. Doc(f)	Oh I wouldn't know/		
879.	Trauma Doc(m)		*Chuckling softly to unheard joke*	
880.	Res. Doc(f)	She'll- I I presume she'll probably go home\		
881.	All	*Multiple overlapping speakers (3 seconds)*		
882.	Res. Doc(f)	Hi Guys/		*Acknowledging police upon arrival*
883.	Police	Hello/ How are you?		
884.	Res. Doc(f)	Hello Iowa State Police/ .. .. How are you doing?		
885.	Police(m)	This is our business ((?)) to get an accident report\ .. .. .. Do you have any insurance on that car right now? .. .. On the back of the card do you ((?)) .. .. Do you have your keys?	*Gaze toward patient while standing at side of patient's stretcher*	
886.	All	*Multiple overlapping speakers while police officer continues to talk to patient (7 seconds)*		
887.	Res. Doc(m)	I'll tell you what/ I'll just stand here/		
888.	Res. Doc(f)	What do you want me to do?		

Turn	Speaker	Transcription	Non-Verbal	Explanation
889.	Res. Doc(m)	You can just go/ Cuz I want to see the x ray\ .. .. .. XRAY/ (??) Come back after/	 *Directed to Res. Doc(f)*	*X-rays are developed in few minutes* *Yelling in direction of x-ray techs*
890.	All	*Multiple overlapping speakers Patient is also speaking but cannot be deciphered due to multiple background speakers (20 seconds)*		
891.	Ivan	Not so fast/ Okay?		*Unknown addressee*
892.	All	*Multiple speakers (3 seconds)*		
893.	Res. Doc(f)	All right/ Off to CT\		*Directed to all She will accompany patient to CT scanner*
894.	Res. Doc(m)	All right/		
895.	Nurse Pam(f)	So we just did a chest on her and that's it?		
896.	Res. Doc(f)	That's all yep/		
897.	Nurse(m)	(??)		
898.	Res. Doc(m)	Uh huh/		
899.	Nurse(m)	Is she going to be admitted or (??)		
900.	Res. Doc(m)	Neuro is going to tell us (??)\		
901.	Res. Doc(f)	That's rubbing salt in the wound\		*Referring to ongoing conflict about admissions of ER patients*
902.	Res. Doc(m)	You know that guy in 114? .. .. He's a psych patient/		*Referring to room in Cat1*
903.	Nurse(m)	Right/		*Overlap and multiple speakers*
904.	Res. Doc(m)	We were trying to tap him but we didn't have time/		*Res. Doc(f) talking to nurse in back ground*
905.	Nurse(m)	(??) coming at bedside/ (??))		*Multiple speakers and addressees on multiple patient care topics*
906.	Trauma Doc(m)	It's hard to tell/		
907.	Res. Doc(m)	I know	*Referring to decision to admit*	
908.	Nurse(m)	(??)		
909.	Res. Doc(m)	You're going to do it? .. oh-		

Turn	Speaker	Transcription	Non-Verbal	Explanation
910.	Nurse(m)	(??)		*Difficult to hear*
911.	Res. Doc(m)	Okay/ Good/		
912.	Nurse(m)	(??)		
913.	Res. Doc(m)	Right ON? .. I like it/		*Ongoing multiple speakers in background speaking of next steps*
914.	Res. Doc(f)	She is-		
915.	Nurse(m)	(??)		
916.	Trauma Doc(m)	(??)		
917.	Res. Doc(f)	No\ .. I think it's-		
918.	Trauma Doc(m)	What do you think?		
919.	Res. Doc(f)	A lot bigger\		
920.	Res. Doc(m)	Hey/ Good job there/		*Complimenting Trauma Doc (m)*
921.	Trauma Doc(f)	YEP/	*Compliment accepted*	
922.	Nurse Pam(f)	(??)		*Directed to Trauma Doc*
923.	Trauma Doc(m)	I know I know I know/ I KNOW/		*Responding to nurse remark*
924.	Res. Doc(m)	You know it might be time for the aah/ X rays and stuff with this too/ .. .. I mean I have done exactly the right thing\	*Clears throat*	*Multiple overlapping speakers in background (ie joking)* *False arrogance & joking*
925.	All	*Ongoing multiple overlapping speakers with a shift to more informal talking joking commenting on the care of patients in both Room 1 & 2 and Cat 1 (8 seconds)*		
926.	Res. Doc(m)	We're almost done here/ I (??) two glasses/ This is glass number two/		*Speaking of contrast dye that patient has to drink for CT scan*
927.	Trauma Doc(m)	She has to drink it(??)\		
928.	Res. Doc(f)	And how about- {Can her chest be brought up on that machine?		*Referring to immediate x-ray images available in Room 1 & 2*
929.	X-ray Tech(m)	{Her x-ray's right here/	*Pointing to light box and x-ray*	

Turn	Speaker	Transcription	Non-Verbal	Explanation
930.	Res. Doc(m)	{Hey Harry? {This is two ((?)) right?	*To male x ray tech*	
931.	X-ray Tech(m)	{Correct yeah\		
932.	Res. Doc(m)	{So we (??)another one here\		
933.	X-ray Tech(m)	Yeah/		
934.	Res. Doc(f)	Can we bring up Simmons on that one?	*Also addressing x ray tech(m)*	*Referring to Patient (f-1) in Room 1*
935.	X-ray Tech(m)	Yeah/		
936.	Res. Doc(m)	Sounds good\ .. .. This is glass number two right right here\		
937.	X-ray Tech(m)	(??)		
938.	Res. Doc(m)	Well we ge- We had to give it while she was- Actually- .. I kind of put- When we sort of doing this- The C-spine I was kind of- We were talking about putting our hands on her/ And we gave her the Ativan and Dilaudid/ I think like a little touch kind of calmed her down just enough/ Until she relaxed and now she's- Just out\ .. .. But she's she's breathing fine/	*Chuckling*	
939.	Trauma Doc(m)	You just got to make sure we don't have to give her Narcan to straighten her out/ .. .. .. She had ((??))	*Chuckling softly*	
940.	Res. Doc(m)	She's she's actually moving-		
941.	Trauma Doc(f)	{She's been smoking ((?)) crack\		
942.	Trauma Doc(m)	{Yeah\		
943.	Trauma Doc(f)	{(??)		
944.	Res. Doc(m)	She's going to be volatile/		
945.	Trauma Doc(m)	We should get some good scans though\ No motion artifact ((?))\		
946.	Res. Doc(m)	EXACTly\ Where's that little white puppy?		
947.	Trauma Doc(f)	What white puppy?		*Not responded to*

Turn	Speaker	Transcription	Non-Verbal	Explanation
948.	X-ray Tech(m)	{X-ray prefers their patients silent\		
949.	Res. Doc(f)	{The chest x-ray looks good/ .. .. .. Thank you/		*Commenting to x-ray tech*
950.	Res. Doc(m)	We're STRONG/		*Commenting on group effort*
951.	X-ray Tech(m)	(??) Even if it's ((?)) in there\	*He chuckles in joking manner*	
952.	Trauma Doc(m)	Right right right\		
953.	Res. Doc(f)	Excuse me\ .. .. .. OKAY/ Chest looks good/ Let's roll her/ I'm off/ Thanks guys/ Meet me there/ Anything else? .. .. Jimmy? .. .. .. Hey Jimmy? (??) Anything else? All right/ See you in Room- See you in Cat 1 rather\		*As she steps out of x-ray booth* *Patient to CT scanner in x-ray dept.* *Referring to Trauma Doc(m)* *Multiple speakers in background*
954.	X-ray Tech(m)	While I do that I'm looking at all sides\ All sides in there\ All three sides\ Now/ Makes you (??) Okay?		*Instructing Trauma Doc on reading of x-rays on light box*
955.	Res. Doc(m)	OKAY/ We're about ready to get our scan/ Nice/		
956.	Trauma Doc(m)	(??)	*Directed to X-ray Tech(m)*	
957.	X-ray Tech(m)	That too/ ((?))		*Continuing to instruct Trauma Doc*
958.	X-ray Tech (f)	X-RAY/ Okay\		*Announcing to all to get out of room while x-ray of patient is shot*
959.	Trauma Doc(m)	/(??)		

Turn / Speaker		Transcription	Non-Verbal	Explanation
960.	Res. Doc(m)	Here let me aah/		
961.	Trauma Doc(m)	I'll let you get out of there/		
962.	Res. Doc(m)	Come on out of there young man\		*Directed to Trauma Doc(m)*
963.	Patient (f-1)	*Moans slightly*		
964.	X-ray Tech(m)	ALL clear\ Good\		*All are silent as x-ray of patient is being shot* *They are huddled outside of the room* *(5 seconds)*
965.	Res. Doc(m)	COOL/		
966.	Nurse Pam(f)	Tim, am I going to need the baby monitor In CT?		*Directed to nurse (m)*
967.	All	*Multiple overlap of informal conversation (4 seconds)*		
968.	Res. Doc(m)	Okay lets go to CT while we've got the opportunity\		
969.	X-ray Tech(m)	Now/ Hang on to it like that/ And walk that way\	*Pointing in direction of CT scanner*	*Instructing others on moving patient*
970.	Res. Doc(m)	We don't need the rest of this UA/ Do we?		*Referring to urine sample of patient*
971.	X-ray Tech(m)	You've got the wrong lock/ Ah hah/ See what you're doing? You're pulling that (??)		*Referring to stretcher and speaking to nurse who helps direct stretcher*
972.	All	*Multiple overlapping speakers (informal talk) (12 seconds)*		
973.	Res. Doc(m)	All right/ Let's go/ .. .. .. CT/		
974.	Nurse Pam(f)	(??) would you grab a monitor real quick?		
975.	Res. Doc(m)	Okay\		
976.	Nurse Pam(f)	(??)		
977.	All	*Multiple speakers both informal and directives about moving patient to CT scan in X-ray department of ER (5 seconds)*		
978.	Res. Doc(m)	All right/		*Responding to nurse's request*
979.	Nurse Pam(f)	The wife was going to do all of that ?		*Picking up on an ongoing story*
980.	Nurse Char(f)	YEAAH/		

Turn / Speaker		Transcription	Non-Verbal	Explanation
981.	Trauma Doc(f)	I know that's what they're thinking/		*In discussion with Trauma Doc(m)*
982.	Trauma Doc(m)	Right right\		
983.	Res. Doc(m)	So what are you guys thinking/ If we don't find anything on her except for this-Hand deal/		
984.	Trauma Doc(f)	She still gets the blunt trauma/		*Referring to more x-ray series*
985.	Res. Doc(m)	I know/	*Docs at patient's side*	
986.	Trauma Doc (m)	Well as far as?		
987.	Res. Doc(m)	What if nothing else comes out? {Then what do you think we'll do?		
988.	Trauma Doc(m)	{I have to talk to Plastics and see/ I mean I don't think- They might/		
989.	Res. Doc(m)	Well she's-[		
990.	Trauma Doc(m)	[They might say she's going home with-[		
991.	Res. Doc(m)	[It's not a home going home kind of person/[		
992.	Trauma Doc(m)	[With- With aah Silvadene and all kinds of stuff but I had a- I think she's going to need she's going to need some (??)[		
993.	Res. Doc(m)	[I see some nice tendon and stuff there/[		
994.	Trauma D(m)	[Yeaah\ .. .. Doesn't seem like there's any deep black there\ ((?)) It seemed like it was raw/ Like she just had (??)[		
995.	Res. Doc(m)	[Yeaah/ See I mean the thing is- She's kind of out of it too/ {She wasn't moving this finger/		
996.	Trauma Doc(m)	{Yeah\		
997.	Res. Doc(m)	And I could see a tendon up here but\		
998.	Trauma Doc(m)	Okay\		
999.	Res. Doc(m)	I didn't probe around too much\		
1000.	Overhead Page	The scanner is down at this time/		
1001.	Res. Doc(M)	OOH SHIT/		

Turn	Speaker	Transcription	Non-Verbal	Explanation
1002.	All	*Multiple overlapping speakers (4 seconds)*		
1003.	Nurse Pam(f)	OOH Boy/		
1004.	Res. Doc(m)	OH/ This just makes ahh/ My life a little more difficult\ .. .. Well we'll go to Cat 1 I guess\ .. .. Yeah can we uhm/ We could go upstairs/ As long as she's on the monitor/		*Nurse suggests going to different scanner outside of ER* *Referring to x-ray department in general hospital*
1005.	Nurse Pam(f)	Yeah/ We can send a nurse with her\ .. ..When we go up/		
1006.	Res. Doc(m)	Call upstairs and see if they will take her?		
1007.	Nurse Pam (f)	Yeah/ .. .. I guess I'll save this Dilaudid then\		
1008.	All	*There is silence as each participant finishes tasks of Room 1 (10 seconds)*		
1009.	MK	If the CT scanner breaks, is that the only one they have?		*Referring to CT in ER*
1010.	Res. Doc(m)	The one upstairs/ Is sometimes open but/ It may not- Actually it probably isn't open now\ That may be our only CT/		
1011.	MK	So are we closed to codes then?		*Referring to EMS runs to ER*
1012.	Res. Doc(m)	Then we're going to have to close down the ER/ I think/ If our CT is down/ We may have to close our ER to trauma\		*Again referring only to EMS runs*
1013.	Trauma Doc(m)	That's good/ .. .. .. I think you should push for that man\	*Chuckling softly*	
1014.	Res. Doc(m)	Well actually I'm going to/ If we really- If our CT's down/		
1015.	Trauma Doc(m)	Yeah\		

Turn	Speaker	Transcription	Non-Verbal	Explanation
1016.	Res. Doc(m)	I don't want to get any more uhm/ (??) requiring CT/ .. .. So\		
1017.	All	*Recording becomes disjointed at this point (16 seconds)*		
1018.	Nurse Sue(f)	All right I'm going to Cat 1/		
1019.	Res. Doc(m)	Is the CT upstairs going on?		
1020.	Nurse Sue(f)	I mean I'm sure there's another one upstairs too		
1021.	Res. Doc(m)	Unless it's not working/ I mean if it's not up or anything\		
1022.	Nurse Sue(f)	(??)		
1023.	Nurse Pam(f)	Try the one down here\		*CT scanner in ER*
1024.	All	*Multiple overlapping talk (11 seconds)*		
1025.	Nurse Sue(f)	Pam/ What's their number?		*Referring to CT dept in hospital*
1026.	Res. Doc(m)	Ask her what happened/		
1027.	Nurse Sue(f)	Okay what do we do ((?))		
1028.	Res. Doc(m)	What happened to her-		
1029.	Nurse Sue(f)	Aren't you here/		*Directed to ??*
1030.	Nurse(m)	*Laughing and teasing female nurse*		
1031.	Nurse Pam(f)	You're playing/ I'm going to page her anyway/		
1032.	Nurse(m)	*Laughs and jokes with nurse*		*Calls CT department in hospital and then relates the conversation to staff in Room 1*
1033.	Nurse Sue(f)	She's got a patient on the table-		*Recording becomes sketchy at this point*
1034.	Res. Doc(m)	Okay/ So let's-		
1035.	Nurse Sue(f)	(??) If she has to but-		*Recording again disrupted (4 seconds)*

This marks the end of session in Room 1 and 2. The remaining staff will take the Patient(f-2) to CAT 1. to continue her care. The staff will wait for a space to open up in the CT scanner in the hospital and then move the Patient(f-1) out of the department for her x-ray.

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ABSTRACT

PATIENT SAFETY AS AN INTERACTIONAL ACHIEVEMENT: CONVERSATIONAL ANALYSIS IN THE TRAUMA CENTER OF AN INNER CITY HOSPITAL

by

MARGARET KARADJOFF

May 2010

Advisor: Dr. Allen Batteau

Major: Anthropology

Degree: Doctor of Philosophy

In this dissertation, I apply the methodology of Conversational Analysis to highlight the informal communication of an emergency room work group, with the objective of discovering recurrent interactive patterns and the inherent relational work necessary to accomplish the safe medical care of patients in a Trauma Code, on a level of safety comparative to that of ultra-safe systems as described in the literature of High Reliability Organizations.

The significance of relational elements of interaction on emerging social order, is highlighted in processes of attunement, or the diminishing of difference of status, in the use of mitigated speech and the co-construction of narrative. The use of mitigated speech and narrative serve as conversational moves, of consequence, by which participants seek cooperation and coordination, and collaborate in face-to-face interaction, in a mutually constructed course of action of providing safe medical care in a highly complex and high risk environment.

AUTOBIOGRAPHICAL STATEMENT

MARGARET KARADJOFF, M.S.W.

I received my B.A. from the University of Michigan, Dearborn, Michigan, in 1971, with a major in Sociology and a minor in Psychology. Upon completion, I attended Wayne State University, Detroit, and earned a professional degree as a Master of Social Work in 1974. Currently, I am in the final stages of completing the requirements for a Ph.D. in Anthropology at Wayne State University, Detroit, Michigan.

I have been employed as a Social Worker since graduating with my M.S.W. I have had a rich and rewarding career practicing in School Social Work, as a Psychotherapist and most recently as a Psychiatric Social Worker in an Inner City Trauma Center. My interests in the processes and history of the delivery of psychiatric care motivated further study of the cultures of medicine and the role of not only the patient, but the practitioner in forming and changing medical practices. In this process, I chose to focus on the interactive and social processes of healing in our Western culture with emphasis on the face-to-face interaction of practitioners as they delivered care in an inner city Trauma Center.

While I have maintained my first career in Social Work, I have pursued my Ph.D. in Anthropology, with emphasis on Medical Anthropology and Organizational Culture. During the course of my educational career, I have been a graduate assistant and co-investigator, with Dr. Allen Batteau on my research dissertation, PATIENT SAFETY AS AN INTERACTIONAL ACHIEVEMENT (2002-2009), funded by an NSF grant. Additionally, I served as a graduate research assistant on CLOSE CALL DATA SOURCES REVIEW AND ANALYSIS, at Kennedy Space Center (March 1999-May 2000) and have been a research participant in MULTIPLE AGENCY JURISDICTION ORGANIZED RESPONSE (MAJOR) while participating in the Institute for Information Technology and Culture, Wayne State University (2003-present).

I have been involved in Society for Applied Anthropology as well as the American Anthropological Association and have presented papers to both associations relating to my research, which was funded by an NSF grant. My research was conducted from 2002 to 2003. I have presented my results and methods of analysis at annual meetings of the American Anthropological Association as well as the Society for Applied Anthropology. Additionally, I have been involved in the European Group of Organizational Studies, presenting both to the group at large as well as taking part in a post doc seminar on publication. I have listed below a chronology of presentations:

- 2006 Paper presented, THE EMERGENCE OF ADAPTIVE STRATEGIES IN RESPONSE TO ENVIRONMENTAL STRESS IN EMERGENCY MEDICINE, 66Th SFAA meeting, Vancouver, BC
- 2005 Paper presented, LEARNING TO LISTEN, EGOS Colloquium, Berlin, Germany.
- 2005 Paper presented, LEARNING TO LISTEN, 64th SFAA MEETING, Santa Fe, NM.
- 2004 Paper presented, APPLICATION OF COMPLEX ADAPTIVE SYSTEMS, 64TH SFAA,Dallas, Texas.
- 2003 Paper presented, LEARNING TO LISTEN, AAA meeting, Chicago, Illinois.