

Teamwork Among ICU Physicians and Nurses in Phnom Penh: A Mixed Methods Investigation

Rachael Noce

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James LoGerfo

Eoin West

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Rachael Noce

University of Washington

Abstract

Investigating Teamwork Among ICU Physicians and Nurses in Phnom Penh: A Mixed Methods

Rachael Noce

Chair of the Supervisory Committee:

James LoGerfo

Department of Global Health

A better understanding of the inter-professional relationships that shape high quality care delivery in the ICU is fundamental to improve communication and optimization of a healthcare team^{1,3,7,12}. The purpose of this investigation was to explore the attitudes, beliefs, and perceptions of nurses and physicians regarding teamwork and communication in the ICU setting of two hospitals in Phnom Penh, Cambodia. Utilizing a descriptive qualitative design, semi-structured interviews were conducted and a quantitative questionnaire was given to twenty-eight staff. Emerging categories: the current perspective of communication and teamwork, characteristics of and factors that enhance or impede communication, and teamwork goals/integration of effective training modalities. Inductive and deductive coding and constant comparative analysis resulted in seven major themes. Key findings include: perception of the current state of teamwork and communication is poor, age is a major factor influencing norms of communication, and desire to develop stronger communication and teamwork skills was high. This study will be a foundation to tailor a skills-based training targeted at improving communication and teamwork among physicians and nurses.

Background and Significance

Quality improvement research in the United States and other countries has suggested that refining healthcare teamwork in hospital settings is vitally important for improving a number of patient and provider related outcomes^{1,2,7}. These elements include error reduction in coordinated patient care and reduction of duplicated efforts, patient and provider safety and satisfaction, and patient morbidity at time of discharge^{1,3,6,7}. This is especially important in high intensity care settings such as the intensive care unit (ICU) where care to critically ill patients is provided by doctors, nurses, and other allied health professionals^{2,3,5,7}. The role of the nurse and doctor in the healthcare team are inherently different yet interdependent to provide optimal care¹⁰. A better understanding of the inter-professional relationships that shape care delivery in the ICU is fundamental to improving communication and teamwork¹².

A literature review revealed that several models have been proposed for the training of healthcare workers to optimize inter-professional teamwork, especially communication^{3,5,6,7}. However, while these training tools have been standardized for adaptation across different healthcare settings, training interventions may be most effective when they take into account context-specific best practices – addressing the delineation of professional roles between different care providers that are specific to the country of origin^{4,5,7}. A systematic review of qualitative literature on the fundamentals of interdisciplinary care¹⁴ helped guide the formulation of this project's specific aims and resulting thematic elements.

Cambodia currently has a healthcare environment resulting from a systematic reign of terror that ended in 1979. The government was dominated by unpredictable leadership and erratic government policies; in 1975, the Khmer Rouge overthrew the government and 20% to 40% of the total Cambodian population was killed or died from genocide-related causes⁸. The

first people to be executed during the Khmer Rouge reign were those with Western education, namely doctors and other healthcare workers. In 1979, Vietnam ousted the Khmer Rouge, but for many years there was major internal conflict that limited the re-development of the health system well into the 1990s. Over the last 20 years there has been significant progress made in both training of health professionals and facilities; but, care models carried forth a tradition of both an age based and role based hierarchy. However, much of this historical context has resulted in palpable undertones of hierarchy and fear in communication between healthcare workers today⁸.

This study was conducted as an outgrowth of academic partnership that has existed for over ten years between the University of Washington and the University of Health Sciences (UHS) Phnom Penh. The partnership has included work directed toward improving the clinical settings in which health professional trainees from the UHS complete their clinical training. Encompassed within this goal has been the development of an International Nursing Program (INP), established by nurses at the University of Washington Medical Center (UWMC) in coordination with medical school faculty to support in-service training for nurses at two of the major teaching sites used by UHS trainees: Calmette and Khmer Soviet Friendship Hospitals (KSFH). Informal on-site observations and discussions with both physicians and nurses identified significant interest in the creation of stronger integrated team care. Practitioners were aware of this based on experiences they had in other countries or heard about from health professional visitors and consultants. Leadership at both hospital sites recognized the need for stronger collaborative care within their staff and therefore welcomed an analysis of barriers and facilitators as well as recommendations and strategies to enhance teamwork and communication. This study was viewed as a critical step to develop targeted training for ICU staff. Conducting these interviews revealed a fundamental insight which explains that inter-professional

interactions do not happen in a historical, cultural, or resource driven vacuum. An awareness of the current context surrounding inter-professional interactions was vital prior to developing a more targeted training session for the greater ICU staff from which the participants were chosen.

Research Question

The purpose of this proposed research project was to explore the attitudes, beliefs, and perceptions of nurses and physicians regarding inter-professional teamwork and communication in the ICU setting. The research question and aims proposed in the study were exploratory in nature and sought to account for, rather than just document, the degree to which individuals used teamwork-based strategies to provide patient care. Findings would provide a foundation for tailoring future skills-based teamwork trainings targeted at improving communication among physicians and nurses working in the ICUs of two teaching hospitals associated with University of Health Sciences (UHS) in Phnom Penh. The study goal was motivated by a conceptual framework which concludes that collaborative interactions between healthcare workers is critical to providing patients the best outcome possible through purposeful and efficient communication and problem-solving skills^{6,10,14}.

Specific Aims

Study aim one was to determine what physicians and nurses in the ICUs define as teamwork, multidisciplinary care, and effective versus poor communication. The second aim was to identify factors that enhance or impede inter-professional care. The third aim was to elicit participant views of teamwork goals and subsequent integration of effective training modalities to accomplish them.

IRB Approval

This study was identified by UW Human Subjects Division as exempt from further IRB review. National Ethics Committee for Health Research (NECHR, i.e. Cambodian IRB) approval was not needed and written approval from the director of each hospital was obtained to conduct interviews with employees. Hospital leadership viewed the project as an organizational quality improvement initiative rather than human subjects research.

Methods

Study Design

As part of shaping the goals for this partnership, a formal needs assessment was conducted at Calmette Hospital and KSFH ICUs which allowed a close-up view of the daily workflow and resource availability¹⁷. From the observations conducted over the past years by UWMC health professionals, results showed there appeared to be minimal collaborative inter-professional interactions guiding patient care. Yet, there was expressed interest among staff regarding collaborative care models that some doctors and nurses had seen or heard about in a western setting¹⁷.

A mixed method study with a heavy qualitative descriptive focus was designed to better understand the basis for the lack of a multidisciplinary care model. Critical to this endeavor was the recruitment of a local, Cambodian medical counterpart and co-investigator to continue strengthening the academic partnership between both centers, assist with selection of study subjects, and provide key insider insight into the contextual factors and cultural considerations relevant to studying this population of healthcare workers. The co-investigator role was determined to best be filled by a Khmer doctor instead of a nurse. This is due to the medical hierarchy of both hospital systems resulting in doctors holding more influence and capability to support the project given the context and setting, as well as familiarity with the research process.

The co-investigator was a young doctor at Calmette Hospital. He was very familiar with qualitative research, and essential in gaining both local support and ensuring success in navigating approval from the Calmette Hospital healthcare system. Efforts to secure a co-investigator from KSFH to assist with approval and participant selection were not successful.

The use of an interpreter was also vital to the success of the interviews as the principal investigator did not speak Khmer. The principal investigator was a nurse, woman, under thirty years old, had a western education and pursuing a higher degree, identified as Hispanic White and from a different culture than that of the participants. These characteristics likely influenced the research as participants may have felt a range of emotions from not feeling comfortable to share information to feeling even more comfortable to share information based on these attributes.

Sampling Strategy

The sampling frame for this study included all physicians and nurses between the ages of 18-60 years working in any of the six ICUs at either Calmette Hospital or KSFH. This was approximately a source population of two hundred eligible individuals; one individual was the unit of analysis. Recruitment of participants was obtained via purposive and convenience sampling methods that employed several distinct facets. The nursing and medical head of each department controlled which employees were selected for an interview. However, the recommendation for various defining characteristics to obtain maximum variation in demographic variables such as age, gender, occupation, and general degree of collaborative work was stressed by the principal investigator to each head of the departments. Some interviews were obtained via convenience sampling due to participant refusal. This sampling strategy attempted to provide the fullest range of perceptions, attitudes, and beliefs about teamwork in the

workplace. The criteria for determining when no further sampling was necessary included both time limitations on the study and the repetition of similar comments from multiple participants.

Data Collection Methods

The study employed mixed methods. A quantitative questionnaire with a Likert scale response was given to interview participants to obtain demographic data and determine the degree of teamwork-based care an individual perceived was already present in their workplace. Qualitative in-depth, semi-structured physician and nurse interviews explored further the narrative surrounding communication and teamwork in the workplace. Several key-informant interviews were conducted prior to the data collection period to gain insight regarding the feasibility of proposed data collection methods and contextual factors related to the hospital sites. The mixed method design was used to establish a broader context than either quantitative or qualitative methods could have provided alone. While the questionnaire offered descriptive statistics, and delivered objective responses regarding communication, it did not entail the richer explanation that interviews provided. Also, the questionnaire served to stimulate introspection for further discussion. The interviews provided the explanations and stories that answered the “why” behind questions that arose from exploration of domains in the conceptual framework¹⁰.

Data Collection Instruments and Technologies

Qualitative responses were collected using an iteratively developed open-ended interview guide which utilized overtones of grounded theory analysis, although the study design was more aptly descriptive in nature versus theory generating¹⁵. The interview guide was structured around the research question and three specific aims. Interviews were conducted in a private location, usually a meeting room, reasonably noise-free from work/patient care areas. An interpreter was present for all interviews except in the cases that a participant was fluent enough in English. This

delineation was determined by the head of department. Thirty one-on-one interviews were the objective; but, due to participant refusal and limited availability of an interpreter or participant's time, a total of twenty-eight interviews were conducted with three of the interviews consisting of two participants interviewed together.

Informed consent was obtained from all participants. The informed consent and questionnaire document were both written in English and explained verbally by the interpreter, if needed, for the first ten interviews. Interview information was kept strictly confidential and identifying information will not be shared with the hospital administration when a final write-up is given to each hospital. This fact was a key point emphasized to participants; especially since individuals were hesitant to discuss issues around lack of communication between staff.

Upon interview ten, an established Khmer interpreter, who also took a role as co-investigator due to a qualitative research background, was hired and present for all remaining interviews. The interpreter had no prior affiliation with either hospital. The interpreter translated the consent form and questionnaire to Khmer for all remaining participants. Except for two interviews where note-taking was the sole form of data collection due to participant refusal to be recorded, all interviews were audio recorded and then transcribed by the principal investigator using ExpressScribe software. Only the English-speaking portions of each interview were transcribed. Both the principal investigator and the interpreter took minimal notes during the interviews consisting of observations regarding non-verbal cues. Throughout interview ten to twenty-eight, the principal investigator trained the interpreter/co-investigator on the procedure of one-on-one interviews. The interpreter took the lead role of interviewer for the last three interviews, although the principal investigator was present to help facilitate and participated with clarification questions.

Dedoose qualitative software was used to manage and secure transcribed interviews. A list of themes stemming from factors identified in the domains of the conceptual framework, and from Nancarrow & Booth's (2012) systematic review of principles for interdisciplinary teams, provided the start list of codes. The start list included themes related to healthcare teams and interaction (social architecture, networks and communication, examples of collaboration, learning climate), as well as personal characteristics of individuals (knowledge and beliefs about intervention, self-efficacy). To analyze the data, codes were attached, singly or simultaneously, to fragments of dialogue that depicted what each segment was about. The coding method used was descriptive coding, or summarizing the primary topic of the excerpt. The purpose of coding the data was to distill the "essence" of each interview; to sort and give a framework to make comparisons with other segments of data.

As each interview was completed, codes began to emerge and with that, thoughts and ideas about them were discussed by the research team, which pointed to areas for further exploration during subsequent data collection. Comparison of events and views of participants in their coded form, by making and coding numerous comparisons, allowed the analytic grasp of the data to emerge⁹. A total of fifty-two codes were used to code all interviews which included eighteen parent codes, thirty-two child codes, and two grandchild codes. Tentative analytic categories based on answering the research question and specific aims were then made, and remade, from interpretation of the data. Eventually, the categories became more theoretical and abstract which provided a conceptual handle on each studied personal experience. The principal investigator coded data along with one other member of the research team to establish inter-coder agreement⁹.

Results

Twenty-eight participants of thirty approached individuals consented to fill out a quantitative questionnaire followed by a one-on-one structured interview. Six participants did not require an interpreter due to English proficiency. Participants' age ranged from twenty-five years old to forty-eight years old, with a mean of thirty-three years old. The ICUs nurses' level of experience ranged from six months to twenty-five years. The doctors' level of experience ranged from twelve months to twenty-four years. Nursing positions of individuals interviewed included staff nurses and team head nurses. Doctor positions included staff doctors and senior doctors who were also professors or head of another department. Of the total twenty-eight interviews, seven were nurses at KSFH, six were doctors at KSFH, eight were nurses at Calmette Hospital, and seven were doctors at Calmette Hospital. Interview times ranged from twenty-eight to seventy-eight minutes long. Table 1 includes descriptive statistics of interviewees.

Table 1: Characteristics of Interviewees

N=28			
	N	%	Mean
Age (years)			
<30	8	29%	
30-40	15	54%	33.0
>40	5	18%	
Sex			
Male	18	64%	
Female	10	36%	
Hospital Location			
K	13	46%	
C	15	54%	
MD or RN			
MD	13	46%	
RN	15	54%	
Years of experience			
<5	15	54%	
5-10	7	25%	7.6

>10 6 21%

Quantitative Questionnaire

The questionnaire was administered to participants after signing consent. A 5 point Likert scale response was used. The first seven questions were the same for all participants and questions 8 through 11 were the same questions, but separated by profession of doctors or nurses. Table 2 includes the nursing version, while the doctor version switches the words “nurse” and “doctor” in questions 8 through 11.

Table 2: Nursing Questionnaire

- | |
|--|
| <ol style="list-style-type: none">1. At my job, teamwork and communication between doctors and nurses is very important for patient care2. At my job, teamwork and communication between doctors and nurses is adequate3. I feel empowered to improve teamwork and communication between doctors and nurses4. I have seen poor teamwork and communication between doctors and nurses lead to patients not getting better, becoming sicker, or dying5. I am already familiar with techniques to improve teamwork and communication at work6. I have already received training in teamwork and communication skills to do my job7. Having training to improve teamwork and communication skills between doctors and nurses would help me do my job better8. At my job, my role as a nurse is valued and respected by doctors9. At my job, my nursing knowledge is valued and respected by doctors10. I feel confident communicating my opinions and concerns about patient care with the other nurses I work with11. I feel confident communicating my opinions and concerns about patient care with the doctors I work with |
|--|

In summary of questionnaire results, there were a few notable differences between doctors and nurses. Sixty-six percent of nurses at both hospitals strongly agreed that they had seen inadequate teamwork and communication between doctors and nurses lead to poor patient outcomes whereas only forty-six percent of doctors felt as strongly. However, when nurses were

questioned about this finding it was difficult for them to give an example of a situation. Twenty percent of the time, nurses strongly agreed that their role as a nurse is valued and respected by doctors compared to thirty-eight percent of doctors who strongly agreed that their medical knowledge is valued and respected by nurses. Forty-six percent of doctors, versus twenty-five percent of nurses strongly agreed that they felt empowered to improve communication and teamwork between doctors and nurses. Results from both KSFH and Calmette Hospital doctors and nurses were similar with no notable differences.

Research Question

Main findings regarding the research question identified participants' perceptions of the current status of teamwork and communication in their workplace. Except for a few, most participants' perception was that the current state of teamwork and effective communication was not enough. Embracing a culture of respect and understanding for their professional differences did not seem to be a dominant theme embraced by the doctors and nurses interviewed. Instead, confusion of each other's role delineation and job responsibilities was a common theme. Many participants discussed the idea of their workplace having a number of disengaged individuals which diminished positive inter-professional interactions and teamwork. While some effective team processes were identified by individuals, generally participants acknowledged an inadequate level of teamwork and good communication between coworkers, and staff to patients, at their job:

“So it's like not really good, there's not really good teamwork here because the people they don't understand, not forgive, and don't talk to solve the problem openly.” (KSFH RN)

“It is important to have a good communication in working place because they have to communicate between nurse and nurse and communicate with doctor and with the patient as well. And good communication is mean like the way that they talk to...for example with the patient, give detail

information about medicine, about diagnosis, and yeah. Also have proper gesture, good gestures to each other and good relationship between nurse and doctor is like they have to give respect and trust to each other. But, he feel like right now the communication between nurse and nurse and doctor to nurse is not good enough. They are lacking in good communication and teamwork.” (KSFH MD)

However, most participants who worked at their job for at least two years noted an increase in their perception of the level of collaboration and teamwork among the staff. This was attributed to different factors with three major themes being: the longer they worked at their job the more they felt they belonged on the team due to more experiences with the same people, increased collaboration with outside universities/NGOs which meant more opportunity for continuing education trainings being offered, and retirement of senior staff with an influx of new hired, younger staff.

Effective team processes were viewed as being spearheaded by specific individuals who were passionate about collaborative interactions versus something mandated by administration and accepted by the entire staff as part of team culture. Participants from some ICUs spoke highly of their head of departments’ role in creating a positive and participative team culture and structured conflict management, while participants from other ICUs said their head of medicine or head of nursing was too busy or disengaged to notice team culture. The longer a doctor or nurse worked at their current job, and the more responsibility they had, an association with increased awareness around management’s role in the workplace was found. This included the role that leadership plays in providing an atmosphere to shape positive team dynamics and in creating a culture of collaboration:

“Because chief of ward nurse helped to improve it a lot, she went to France and to apply the role model in this ICU and try to make very good communication, everyone understand about their responsibility and as for the process how to move on from one to another...At that time she was in that ward as well, ICU B, but at that time she was so young in management,

she could not do it well, but when she went to France to learn the management of leadership model, she know how to make it better here.”
(Calmette RN)

As a participants’ age increased, and subsequently job status/title, their perception of teamwork and good communication techniques currently being practiced in their workplace improved. This finding supports previous research which has shown that power differences are attributed to hierarchical structures and individuals who hold more power perceive more collaboration between staff¹¹. A 47-year-old doctor discussing communication between doctors and nurses noted:

“Yeah, good communication, he said that the communication quite good enough for the time being”. (KSFH MD)

Aim 1: Characteristics of Good Communication

Analysis with regards to the first aim described which characteristics individuals perceived to comprise good or poor communication and teamwork in the ICUs. Consensus among the participants described characteristics that foster good communication included: comprehensive transfer of patient information during shift change or decline in patient status, polite conversation with no blaming, yelling, or lying, listening, giving feedback, personal and professional camaraderie between coworkers, participative safety to speak up within a team context without fear of punitive action, and structured conflict management. Participants said:

“Good communication is like good listener, we have to listen to each other in the team, and get their idea in their mind to improve themselves. Not only the doctor some maybe feel very proud and don’t listen to the other, and it’s not really the good communication. Even doctor, he also need some feedback from nurse.” (KSFH MD)

“Uh...facilitator to communication is like they have good cooperation between each other and they should transfer clear information from one nurse to the other nurse from the night duty and the next one to know about the situation of the patient.” (KSFH RN)

“About the facilitators...better communication they have to like understand each other, don't criticize, and like try to catch anyone's mistake, and if the problem happen the others should inform about the mistake...like give feedback for improvement. And they try to simplify the problem slowly step by step.” (KSFH RN)

Barriers to Good Communication

Barriers to good communication were discussed extensively in each interview. Both doctors and nurses identified similar barrier themes, although as age and role status increased for both doctors and nurses, the barriers became dissimilar due to hierarchy. Common barriers for good communication include: inadequate resources (including both personnel, equipment, medications, and funds), individual characteristics such as carelessness, laziness, burnout, or lack of engagement, inadequate kindness or excessive anger and blaming, power hierarchy and imbalance of mutual respect and trust, lack of standardization/protocols leading to misunderstanding and misinformation, inadequate education and training of ICU specific tasks, and lack of knowledge and understanding regarding workflow of coworkers (poor role delineation). Regarding poor communication, one respondent shared:

“I think is because the doctor and nurse, first I think they are distant. Between nurse and doctor it sometime we don't work closely together, especially for the old doctor and the old nurse. I don't want to talk bad about someone, but I see that for the old doctor, they don't work closely with the nurse and because...I don't know maybe they are busy with their own business. Outside of the hospital...”

“Ok the barrier is like they don't have, the transferring of information just via verbal. So sometimes, they forget and sometime based on the individual behavior, they don't care much about the patient, they think just about themselves. And uhh...one also, like they draw all...get the money from the pharmacy not enough as prescribed by the doctor. Like they give 3 injection and because they lack of prescription when they go to the pharmacy around noon, they just open and give 2 bottle of the medicine only, not 3. Some doctor talk to him not very polite, not polite enough and it happen not about the age, but it depend on individual and time that he's in the bad mood...then they just talk to him not polite.” (KSFH RN)

Of these barriers, three main themes emerged. One: inadequate role delineation. This included respect of another team members' role and lack of an understanding of both their own role on the team, and others' role on the team, as a leading factor in miscommunication. There did not seem to be explicit and widely-used role definitions in most participants' workplaces for either nurses or doctors to use as a guideline. In some situations, an "anything goes" or heavy task-shifting mentality was present. Descriptions given by participants of the nurses' role in patient care and decision-making varied greatly. A written document standardizing the job description and role capacity of the bedside ICU nurse at Calmette Hospital is a novel concept and newly approved by administration, but not yet accepted or deemed useful by staff as an empowering tool. The role of the doctor in patient care decision-making was more agreed upon by both doctors and nurses.

Two: low inter-professional trust. This was a multifaceted issue and in part, due to a high number of inexperienced junior staff who are regarded with less trust due to minimal working experience further exacerbated by lack of standard job orientation or new hire mentoring. Also, the presence of nominal participative safety due to the hierarchical structure of the current team models has contributed to a team culture where contributions made by persons with low authority regarding patient care decision-making are not valued. Low trust was noted to also be present merely due to some staff members' lack of engagement in their job and resulting perceived carelessness, laziness, and difficulty to work with as an individual.

Three: inadequate education. The lack of proper education and minimal knowledge level of the nursing staff regarding disease processes, perceived by most doctors and even nurses, is a large barrier to collaborative interactions in patient care.

"Yes, for the doctor too. Both. If I talk about education there are 2 point: first, because education about communication...they don't have enough

training about that. Second, I think because also the capacity of the nurse sometime is low, because nurse in ICU, we need to...I don't know, maybe in your country you must learn one or two year more to become a nurse. But here, nurse is just general nurse straight from school and directly to ICU so sometime the problem is they don't know clearly about the station in ICU. So part of the problem is the report of the issue of patient to the doctor, they are really weak for the reporting.” (KSFH MD)

Aim 2: Identify Factors that Enhance or Impede Interprofessional Care

The second aim was to determine if age, gender, occupation (physician vs nurse), and institutional hierarchy played a role in an individual's perception about what it means to work in a team and their position/function in the care team. Participants brought up many factors that influenced inter-professional communication and intra-team relationships. The most prominent theme was the role that age and generational differences were perceived to influence interactions between team members for both nurses and doctors. This theme was multi-faceted in the way it was described by participants. The majority expressed that age was a major factor that negatively affected intra-team relationships, work ethic, learning climate, hierarchy, conflict resolution, and role delineation. Conversely, most participants felt older staff excelled at providing strong mentoring for new staff since they had more experience and their main role is to pass on knowledge to the junior staff. Generally, participants expressed that older staff impeded good teamwork or were generally more challenging to work with for a myriad of reasons:

“I think they not interested in the communication. They think like...uh, they just don't care about it. I think some of them, they might feel not interest to the training, they might think, 'it's not about communication, just work'. Like this....They just like don't care. That's the problem.” (Calmette MD)

“They still the same the same, however, sometimes we will show them the new thing. But it's the same, the same. And he says, 'I know this one is update, but I am so old, I cannot do anything anymore’”. (Calmette MD)

“Normally the new one can't work, the new one may not have much experience as the old one, but normally uhhh....the new coming is a bit

busier and he or she is more active, more working than the older. Because when he/she work here for a long time, they seem to be a bit lazy, the old staff.” (KSFH MD)

“...and also the older do not admit their mistake because they think that they did the right thing already. Not something wrong.”... “For the senior nurse, just open but not always. Just like 50% open, 50% closed. Sometime they give, sometimes not. Because if the thing is like a big issue they don’t allow her to talk.” (KSFH RN)

“I think sometime the role of the young nurse, they follow the patient strictly and correctly more than old nurse. Example, sometime I told to nurse, ‘follow vital sign in this patient every hour’, so they can do good. And sometimes they report and send to me the results. But for the old nurse, some nurse, they just say ‘ok’, but finally, they don’t do it. They follow every 2 or 3 or 4 hour, sometime they don’t give me result also.” (KSFH MD)

Another major factor noted to impede intra-team communication and inhibit fostering of collaborative relationships was the imbalance between doctors and nurses’ education and experience level and the subsequent power gap created. Literature has previously found that a power gap is present between doctors and nurses and that a professional hierarchy exists. The gap is fueled by the specialized body of knowledge of medicine compared to that of the nursing profession, especially in low-resource settings. In Cambodia, this fact is still currently dominated by the hierarchical structure of the healthcare system which implies that nurses’ primary role is to be “assistants” to doctors, versus holding excellence in a nursing body of knowledge that is different from medicine but equally as important. This structure has resulted in a mismatch in the amount of value and respect placed on each role of the team:

“He want to see the improvements in here and want to have a good system of working between nurse and doctor and nurse and nurse. And also want to improve the capacity of nurse but nothing work out for this one. Some of the nurse don’t want to improve their capacity themselves and when they talk to the head of the nurse for this issue, head of the nurse still waiting approval agreement from doctors on how to improve the situation here... rather than head nurse make his own decision, or his own strategy or system to make it better.”...“It’s like doctor just in general and it happen very very

long time that doctor don't give any value to nurse and it feel like nurse just doing like...ahhh, like servant job to take care: cleaning, washing, taking stool of the patient to the toilet. And it's not depend on age, gender. And one thing, if the new doctors when they graduate, then they just apply for working in the job, so for awhile they feel just ok, but when they become older and older, they just look down...ok, I will say like...do not give enough value or respect to nurse. The more they work, they less they give [respect].” (KSFH RN)

Other factors noted to influence inter-professional collaborative interactions were mostly centered around individual traits and characteristics and the level of an individual's internal motivation to be an engaged part of the team. Participants noted that other staff they work with might have a high internal motivation to be a contributing team member with a positive attitude toward collaborative care, or they may be the opposite, or anywhere along that spectrum. Gender was determined by almost all participants, male and female, nurses and doctors, and young and old, to play a minor role in inter-professional interactions and teamwork. This was stated very matter-of-factly by most participants.

Aim 3: Teamwork Goals and Integration of Effective Training Modalities

Participants were asked what changes or additions they would like to incorporate regarding their current workplace communication and teamwork practices used between doctors and nurses. Main themes that emerged around this topic included improvements to their workplace that would reduce barriers in good communication. Also, higher pay to incentivize employees to be more engaged at their stable hospital job versus focusing on their alternative clinic jobs, which although intermittent, provided them with more pay for less work. It was commonplace for many of the doctors and even the older nurses as well, to have a second job at a private clinic, usually run out of their home, to supplement their income. This was especially discussed among nursing and doctor participants from KSFH who receive less pay than their counterparts at Calmette Hospital. Furthermore, improving the nurse and doctor to patient ratio

by hiring additional staff was noted by many participants, especially at KSFH, to potentially be a useful way to increase patient safety by decreasing lack of communication due to overwhelmed, overworked staff. Participants at both hospitals noted that nurses felt powerless to advocate for more desirable staffing ratio because it would result in a reduction of their own salary. If more nursing staff were hired, it would decrease the overall salary of each nurse in the unit since there is a capped budget for nursing salaries independent of the total number of nursing staff.

Participants spoke very highly of newly incorporated training opportunities, which included teamwork-based training offered by collaborative partnerships with other institutions. But, participants felt trainings should be available to all staff versus select few who speak English or French per the current model of selection. Because older staff generally had less English proficiency, this excluded them from attending training offered by outside institutions which made younger participants perceive that older staff used this as an excuse to not change or update their practice. Most participants interviewed also discussed a desire for interpreters to be present for the class as sometimes, or even most of the time, they could not understand and follow the content so they would skip class if it became incomprehensible. Except for two previous trainings (that combined doctors and nurses) offered by the University of Washington where ICU staff from each hospital was invited, no other trainings have mixed the professions. Participants felt that a training with both doctors and nurses present would be a useful aspect for a teamwork and communication based training, versus a training about disease process or role-based patient care:

“She want to see about the better communication and she herself don’t know much about how to improve it, so she want to have like a group that have experience on that to share and then illustrate how to improve communication in the workplace.” (KSFH RN)

“Yeah, so I think it’s better if all doctor and all nurse must go training for relationship between us. For improve care of the patient, it’s better.”
(Calmette MD)

Discussion

Interviews exposed current social architecture and context of how doctors and nurses of both gender and wide age range viewed and defined good communication and the degree of teamwork in their workplace. From this information, the most common barriers to good communication were discussed as well as conflict management resulting from miscommunication. Elements that impede or enhance teamwork were examined with the most prominent features being: strong hierarchy due to gaps in age and professional status and an individuals’ negative characteristics leading to lack of team engagement at work. Surprisingly, gender did not factor into almost all participants answers as an aspect that might influence communication and teamwork. And finally, discussion of how to move forward and build stronger collaborative interactions to guide patient care revealed that participants preferred training courses vs other modalities of learning. Most young staff favored minimal but some lecture-based teaching and more simulation-based training. The need for an interpreter was a clear request from all participants, even those who spoke English well merely to reduce the amount of time they spent distracted while interpreting for their colleagues during a class.

The most common barriers to communication and impediments to teamwork were limited resources, unequal power structure and medical dominance in decision making, age/generational gap, individual characteristics resulting in lack of engagement, and lack of (or ambiguity surrounding) standardization/protocol for patient care resulting in miscommunication. A lack of sufficient staff to safely take care of patients and minimal salary was a common complaint among all participants. This was also something that was noted to be out of the control of the

participants' and mandated by hospital administration without staff input and therefore, an untouchable issue. To exercise some control over this issue, participants found outside work to supplement their income. As far as equipment, medication, and other patient care-based resources, a more thorough investigation of exactly which hospital ICU is limited by which resource would help to determine more specific and efficient solutions.

A result of the power being held by few individuals, as noted by participants, is the lack of participative safety present in the working atmosphere. This was generally described as the level of comfort when expressing opinions and giving and receiving feedback. High participative safety would indicate a safe and trusting working climate which is essential for high-functioning team performance¹⁶. Both nurses and doctors noted that for the first several years of working in the ICU, the novice role was characterized by a low level of authority. This perceived minimal level of authority impaired their ability to transparently communicate as much as they would prefer. Also, participants noted that doctors hold all the power over patient care decisions which results in a culture of medical dominance. This finding is consistent with literature as a 2014 systematic review of qualitative studies on inter-professional care delivery in the ICU found that medical dominance is a serious hindrance to teamwork in the ICU¹².

Limitations

Generalizability of the findings are limited as this study is very specific to teamwork practices of Cambodian healthcare workers in critical care settings in two hospitals, although some conceptual insights gained may be applicable in similar low-resource settings elsewhere. The questionnaire revealed uncertain results that do not correlate strongly with the qualitative interviews. Participants seemed very hesitant about how to fill out the survey, even when translated into Khmer and explained by the interpreter. The interpreter felt that participants did

not fully understand how to answer the questions as a Likert scale is not routinely used in Cambodian medical and nursing curricula and was a new concept for some doctors and nurses. Many participants asked multiple clarifying questions while taking the questionnaire and even changed their answer after thinking about the question for some time.

The highly sensitive nature of the topic of communication and teamwork between healthcare professionals was most likely a limitation in obtaining candid and comprehensive answers. It is extremely likely that errors in patient care occurs in many examples of situations involving poor communication and teamwork; this potentially rich data may have been not disclosed since it would not be brought up due to fear of punitive action. Several interviews specifically noted by both the principal investigator and interpreter seemed to be limited by disingenuous responses. In particular, one older female nurse denied whatsoever any problems in teamwork and communication and maintained that everything was perfect where she worked.

Also, interviews were sometimes logistically demanding and cut short as the chance to get away from patient care left the ICU short-staffed since participants were usually on duty during the time of the interview. This time-pressure demand could have resulted in a hurried approach to answering interview questions with surface-level versus deeply thought out responses. Even though an interpreter was present for interviews that required it, the language barrier was still a limitation in data collection and analysis. The principal investigator's positionality, along with the use of only male interpreters, may have influenced and shaped how participants of both genders responded to interview questions.

Next Steps

A full summary report (not including personal identifiers) of the qualitative and quantitative data specific to each hospital will be compiled and made available to administration

and staff. The data identified structural and systemic issues to address to improve the working atmosphere and foster more collaborative care. Thus, the summary will include key findings followed by recommendations to build stronger communication and collaboration between staff members. Research suggests that stronger collaboration between doctors and nurses occurs when the institution increasingly views teamwork as an essential part of health care management and quality improvement¹⁴. Considering this, a targeted improvement initiative supported by data includes the initial step of identifying both nursing and medical leadership to champion for multidisciplinary care. Based on the findings of this project, the first recommendation will be in support of creating a committee made of Cambodian nurses and doctors (of both genders, various ICUs within the institution, and both young and old) to help ensure equal representation in creating stronger collaboration and team culture. This committee would be tasked with determining a clearly defined job description for both doctor and nurse that includes role/task clarification and job expectation. In addition, the next task would be a clearly defined description of team expectations to create team culture and norms that exist within a safe, supportive, and contributive environment.

Based on the collective responses from participants, recommended components to be integrated in future partnership trainings with UWMC INP are as follows. Regarding logistics, despite English proficiency of the class, always have an interpreter present. Mandate attendance for older staff as well as younger staff. Build training content to include some lecture-based information to outline objectives and expectations for the course but then focus on other active learning modalities such as case studies, small group discussion, and simulation. Included as the initial part of the lecture-based information should be job descriptions. Throughout the training, this will help both doctors and nurses have less misperception regarding their scope of practice

and role on the team; thereby standardizing the capacity of the doctor or nurse role. Discuss during the training what types of tasks a job description for both doctors and nurses might include and how best it could be implemented, including why this could be helpful in reducing inefficiency and role confusion/capacity. Have trainers model simulation of a scenario using comprehensive information transfer and strong teamwork skills before expecting students to know how to perform when given a situation to role-play. Include tips on active listening and giving constructive feedback during simulation training.

To track the effectiveness of the communication and teamwork-based education received in trainings, the multidisciplinary committee should create and distribute a short survey/questionnaire to the staff every six months. The tool would help to determine the adoption and effectiveness of the newly instituted job descriptions and norms of team culture; and track perception of potential change in communication and collaborative behavior.

Conclusion

These novel data can be used to inform ongoing efforts at KSFH and Calmette Hospital to provide more patient centered care through stronger collaboration between doctors and nurses. The insight gained by this project's exploration of communication and teamwork between doctors and nurses has also contributed greatly to the overall ongoing collaboration and relationship-building between the University of Washington and KSFH and Calmette Hospital staff.

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Appendices:

Appendix 1: Interview guide

INTRO QUESTION: What is your current role on the healthcare team? Describe what you do in your role as a MD/RN on a daily basis.

RESEARCH QUESTION:

The purpose of this proposed research project will be to explore the attitudes, beliefs, and perceptions of nurses and physicians regarding interprofessional teamwork and communication in the ICU/ED setting to account for the degree to which individuals use teamwork-based strategies to provide patient care.

Do you think communication with MD/RNs and coordination of care with other medical professions is necessary to care for a patient well?

- In your opinion, what are key qualities that define a healthcare team?

AIM 1:

determine what physicians and nurses in these ICUs define as teamwork, multidisciplinary care, and effective versus poor communication

- What does communication with MD/RN look like on a regular basis at your job? Do you feel listened to/valued in your role?
- What does teamwork in your daily work life look like? OR How does communication flow in your job from person to person?
- Tell me about good communication or teamwork at your job?
- Can you think of a situation where communication could have been improved between RN's and MD's during patient care? OR Is it difficult or easy to transfer important information that you have about a patient to another doctor/nurse?
- What are some barriers/challenges in a situation that might cause poor teamwork and communication?

AIM 2:

determine the role that age, gender, occupation (physician vs nurse), and institutional hierarchy plays in an individual's perception about what it means to work in a team and their position/function in the care team

- Do you think age of team members affects team relations? Why or why not?
- Do you think gender of the team members affects team relations? Why or why not?

- Which one holds more regard or weight in terms of age or gender? OR Do you think your age or your gender is considered in terms of your value or trust when communicating with others?
- Is it easier to approach your peers versus an older coworker?
- How does it feel to approach a MD/RN versus a peer?

AIM 3:

elicit what topics/frameworks/best practices of multidisciplinary care they believe should

be incorporated into their existing teamwork practices

- What would you like to see in a good team?
- Do you think having teamwork-specific training for your work setting would be helpful?
- If not, what type of interventions (other training or resources) would be useful for supporting and strengthening teamwork practices?

Appendix 2: Qualitative Codes

Title	Definition + Description
Intra-Team Communication	<p>Examples of communication/interaction between doctor and nurse</p> <p>Example: "5FCD32: Mostly during the rounds...we don't have head nurse. Just only the nurse who work in the team. Yeah, the head nurse, if we have something more important we go to the head nurse. But, if for the patient directly, we go to bedside nurse. But if concerning with like administrative work, or paperwork, or money for the patient problem...then head nurse."</p>
Doctor-Doctor Communication	<p>Examples of communication between physicians</p> <p>Example:"24MKD29: Mmmm...exactly not enough but we did communication transferring of information after each shift. In the morning, after I got off at night I give information about each patient so that the other doctor can understand and he will know what to do later and what remains to do."</p>

**Nurse-Doctor
Communication**

Examples of MD/RN communication

Example: "7FCD33: Ah more stronger than before. Yes, because now I responsible more. So I'm the one who responsible I need to conversate more with the nurse. To show them, to tell them, to teach them to care for the patient. Ok, because sometime, since we are the doctor we have some patient with...like the wound on the leg, they need to take care more. Like we need to teach how the patient get infection, the patient get fever or not, I tell them...and sometime without ask, they tell me. They say, "oh doctor, the patient is get fever, what will you do right now?" Ok, so they get improve also, however...it's not too much."

**Nurse-Nurse
Communication**

Examples of communication between nurses

Example:"14MCD30: Not afraid to say. Example when the young nurse, they have a training with American nurse or Singapore nurse come, and they got something new. So, they come back and they train the old nurse if he don't know the new technique like this. And, I see sometime that they discuss together and when it's good for the patient, the old nurse do follow the young nurse."

AND

"19FCN48?Tr: As a senior nurse, for the new nurse she keep training and telling about the process of the work and how to run any specific procedure and told them about the regulation in her ward."

Learning

Challenges

Barriers to teaching/training/learning such as poor English language skills, lack of human resources, laziness, burnout, and lack of organizational support and inconsistent/lack of policies and procedures

Example: "ok, so because the job here is very busy and make them like, burnout job, so when they are very tired they don't want to learn anything more new. They just want to apply the things so they are done and if they try to learn, they would know how to do. And, yeah...it's the issue is that they don't want to learn. "

**Formal Teamwork
Training**

An individuals thoughts regarding the usefulness of teamwork and communication based training

Example: "Yeah, so I think it's better if all doctor and all nurse must go training for relationship between us. For improve care of the patient, it's better. "

Informal Bedside Teaching The action based learning that occurs intra and interprofessionally on the job. Mentoring.

Example:

"Like our team, we have a class with your team also. So, when the young nurse coming to work, we always share the lecture that we study from you, to our staff younger than us. "

AND

"7FCD33: Yeah. The nurses show me, they take me also, so I teach them, and they teach me back. Ok, so I'm happy to know that, because however they are the nurses but they know more, so I can learn from them also. "

Next Steps What do participants want to see training/education be focused on based on the results of the interviews?

Example: "I think maybe we must change, include the training for the communication for the nurse and doctor and for the nurse to family and patient. I know that in medical school, I see that I didn't have enough in this lecture about communication, and also about the management in work. I know that in other country, nurse must learn first about the communication and management when they have problem, when they have the problem with the family and the patient. So in Cambodia we need to do more and repeat the training again and again for them."

Role Delineation Understood tasks that are expected based on position, age/experience level, gender, and role on the team

Example: "Yeah for the new staff, normally under supervision of the old staff so the problem is with the old staff observing the new staff well, give experience something like that. So that the new staff will be confident and will be competent quickly. The important is the old staff need to teach, to give advice, to show good way, good technique, give the experience to the new one and the new one need also to learn not only to work. "

By gender The role that gender plays in delineation of tasks for males vs females

Example: "Yes, it's the same. But sometime, the girl....usually in my dept he do the count medicine, he count the paper...administration, he do the paperwork, the prepare the medicine, but the man nurse...he do the practical with the patient. " AND

"In term of communication, gender does not affect his communication but because female nurse, they may be...their body is so weak...they cannot take a lot of responsibility for patient so he more likely to give more work to male nurse. "

Junior Role The role expectation that a junior nurse or doctor has

Example: "The old just, "ah you do this, you do that" but anyway, it's limited... the work of the new staff, they cannot support, they work under pressure. So, here in my service I always explain how to do for the new staff and the old staff. So, new staff need to know everything to adapt but not too much."

Senior Role The role expectation that a senior nurse or doctor has

Example: "But, the old staff will help in case needed, and also teach them to understand, to know technical and also relationship with other service. And, also, to be patient for the new staff."

Task Shifting

When a physician, and within the hierarchy of the nursing team, roles overlap due to lack of human resources and role clarity

Example: "MKN35?Tr: Um...he mentioned that most of the doctor know about his capacity already that's why the doctor leave that job to him. Just some. But, some of the old age doctor, he fell asleep, he mean that his power is getting low, so that's why he cannot work in the nighttime shift so that's why he leave the task to him. "

AND

"MKN35?Tr: Because the doctor is not available or he is asleep at nighttime sometime."

<p>Team Building</p>	<p>Values and activities that show staff commitment to improving teamwork</p> <p>Example: "10MCD44: Here, in the hospital every service have the same management of communication, because the leader of the dept of the services give the course to all the staff that is meant to improve the communication skill, not only for the patient and family, but between the teamwork...nurse to nurse, nurse to doctor, nurse to laboratory, nurse to the transport personnel. So, all staff here had already good communication because just the last ten years here, it's much improved." AND "7FCD33: Like sometimes beside work...after, we have free time. We talk together. Sometime, I include some information...improve yourself, then you can earn more. Because here in this country, we work at a clinic also. So, if you learn more, you will get paid more. Because, at the clinic, they always need the skilled one. " AND "10MCD44: Hmmm, we all...we also, the problem with generation. Yeah, sometimes the new staff not dare to express their idea, but anyway we know about that, it's why we always...for me, I always motivate the new staff. Because, the old staff...we know already what they are. So we always motivate the new staff to show their idea, and also we always correct them to do this..."</p>
<p>Barriers to Good Communication</p>	<p>Anything that inhibits a communicative atmosphere and culture. Can include:</p> <ul style="list-style-type: none"> -Poor/lack of transfer of information due to various reasons -Misinformation -Lack of adequate human resources -Reluctance to voice opinions (fear) -Hierarchical Structure -Lack of professional commitment to patient and hospital
<p>Carelessness/Laziness/Individual</p>	<p>When a staff is "careless" or "lazy" or it's another issue with the "individual/personally" (like lack of motivation) and this becomes a barrier to good communication/teamwork/patient care</p> <p>Example: "...but it's depends on individual. Sometimes we want to help to improve for knowledge for skill, but he sometimes he careless"... "But, some of the nurse also careless or lazy to work as her role as well. And sometimes is quite difficult to communicate with them. It is just with some of them."</p>

Inadequate resources/too busy/burnout	Too many patients, not enough staff or equipment leading to poor communication and burnout.
	Example: "Yes, usually we use the word of the patient to respect...always tell the nurse, we respect the patient. But sometimes, he work a lot. He feel don't good. Sometime he speak to the patient [inaudible]."
Lack of kindness/++anger	When communication happens between team members in an angry manner without listening to the other person or providing space for questions/feedback
	Example: "Sometimes experience of the nurse or knowledge..yes, when she tell to do something but nurse cant to do it. He feeling not like he order. ...Yeah, "why why why? Can do like this? Why to do like this?" sometime."
Lack of knowledge/ understanding	When lack of knowledge or understanding of another's workflow is a barrier to good communication between teammembers
	Example: "Sometimes experience of the nurse or knowledge..yes, when she tell to do something but nurse cant to do it. He feeling not like he order. "
Lack of standardization/ protocol	When lack of a protocolized standard of care is a barrier to good communication because everyone interprets interactions/conversations/orders differently
	Example: "10MCD44: Normally for the emergency, I think we always....in different way, that mean that the same paper but not the same size, color, words, but we have the notes for the staff to do this....to make sure that the nurse can see quickly and can react quickly. "
Conflict Management	<p>Descriptions that clarify how issues in intra-team communication are managed whether it's:</p> <ul style="list-style-type: none"> -not talked about -taken to leadership (head of dept meetings) -managed internally by the people who have the conflict
	Example: "Yeah, when sometimes we have the problem with the old doctor, my head dept, we have to meet with him for improve the....how to improve the relationship and team staff. "

End result Did the management of the conflict fix the problem?

Example:"22FKN27?Tr: Yeah, like another nurse. So they talk personally and then problem solved but it still happen and then the second time it's like argument, and their relationship...like friendship even more despair, right? You understand, they not as close as before."

AND

"22FKN27?Tr: And they still have the problem and later on the head nurse just come with them together to sit in front of each other and then talk from their mind, and the head nurse help solve the problem."

AND

"27MKN27?Tr: About the conflict management, normally he start to talk to other by himself but if they cannot solve the problem at that level...like he just talk to the other by himself when they have any conflict in the team, but if the problem cannot be solve, he would talk to the head nurse for solving that problem. But...not really satisfied. He mean that even though he told the head nurse, the result not really satisfy him."

Degree of Patient Centered Care

Based on the degree of patient centered care and availability of human resources.

-Usually results in delays in patient care

Example: "5FCD32: Yeah. There is the communication piece problem. Before, the senior doctors mostly they...not like to communicate with the nurse. And, if like...I told you for writing down, so sometime the nurse cannot understand but they have to ask the doctors, so that could be problem like delay of injection, maybe delay of care. The nurse see that doctor is busy, so they doesn't want to interrupt. So they miss the timeframe. So there is the poor communication."

Outside jobs The perception about and impact that outside jobs have on doctors and nurses main job at the hospital

Example: "18MKD32: Some doctor I see like this, maybe they focus only for their business and own work in their clinic, and they don't have time or they don't want to have good communication here, they just come to work, finish, and go to home and that's that. And some nurse also like this, because some nurse they work in the home at the same time, for example in one day they work two places...morning they work in here and afternoon or night they work in other clinic. This, I think this is also the problem for the communication for the nurse and the doctor."

Poor Patient Outcomes When less than standard patient care is given and results in poor patient outcome. Impact of reduced patient care contact time.

Example: "14MCD30: In my ICU, I didn't see. But in the past, when I am the student in train, there's late communication with the nurse and the doctor. It mean, some nurse, he's don't care about the patient and sometime he don't know that the problem is with him or not. Sometime he not report to the doctor urgently, he keep this until the patient is unconscious or until the patient cardiac arrest. "

Good Communication Examples participants gave that describe what they think good communication techniques look like in practice

Example: "18MKD32?Tr: Good communication is like a good relationship or good connection between nurse and doctor, and nurse have to take respon....have high response, or have the responsibility on their work and doctor has to do the same thing. And nurse have to follow any instruction or prescription of the doctor and one more thing, good that medical staff have good relationship with patient and their family."

Facilitators Things that promote/strengthen intra-team communication, collaboration, and teamwork

- Positive attitude/personal motivation
- Training/education
- Adequate human resources, equipment, and pay
- Active listening
- Constructive feedback

Example: "Good communication is like good listener, we have to listen to each other in the team, and get their idea in their mind to improve themselves. Not only the doctor some maybe feel very proud and don't listen to the other, and it's not really the good communication. Even doctor, he also need some feedback from nurse. "

Hierarchy

the organization of medical and nursing staff in which people or groups are ranked one above the other according to status or authority

Example: "10MCD44: Normally, uh...here the Cambodian, we respect firstly the older, secondly the title..that mean the nurse respect well the doctor, the new doctor respect well the old doctor, so I think here we are respectful. Even if we are doctor, we work with the nurse, we use the simple, the easy word, not strain not too loudly, so we are respectful, not just nurse to doctor but also the doctor to nurse. We think of the age, we think of the experience, also we think of the title for respect. "

High authority The experiences and thoughts of/or around a person who has high authority in the medical hierarchy, high status

Example: "7FCD33: I'm not so clear, as I work here, the older doctor, seems like...not work a lot. Just the nurse always inform me, ask me to go out to help, not the old one, so sometime about that, I'm not so clear."

Low authority The experiences and thoughts of/or around a person who has low authority in the medical hierarchy, low status

Example: " For the doctor, when she found out something went wrong from the doctor about the healthcare treatment to the patient, she had no right to talk to them or order the doctor, "can you use this medicine" or to disagree with the doctor. But, the way that she ask, she just want the doctor to explain her why you did this, why you did that."

Interpersonal Team Relationships

Examples and individuals descriptions of team relationships

Goals Participants responses that indicate the improvements they wish to see regarding work relationships

Example: "19FCN48?Tr: She want to see the improvement in communication as well as in teamwork and the thing she want to see is just continue what is the routine work currently. Just continue that and do transfer of information from nurse to doctor and from doctor to nurse and then between the nurses. And how, nothing...yes, it is just what she want to see. And want everyone to respect, forgive, and understand each other about their work. "

AND

"22FKN27?Tr: The factor for better communication they have to change the bad attitude and then try to get the better one. And they have to put themselves to work as a team by listening to the other person and then give feedback. And what they say...then they have to do, mean like follow it. And they have to confess or tell anyone that something that's not good or something is bad, and they also accept their mistake...for improvement. It is about the factor for good communication."

Problems The issues that participants talk about that express a a problem in relationships: a difference of opinion/perception/not shared goals

Example: "18MKD32: Sometime I have problem, there's a problem with this. Maybe the patient, when I arrive, the patient very critical, so I ask "why didn't you do this or you don't report to me" and I'm seeing this for first time now. They just say apologize, sorry, I will correct my habit, my attitude...but finally, the same. Still the same, no change. And in my team in ICU, when have problem, I always call all of them to meet and to discuss about what happened, what they have done, to correct everyone. But, sometime they just listen to me and say yes; and after that, [laughing, puts hands up]. I don't want to report this problem to the chief of department because I think I want to give them a chance to correct themselves. But one day, I think I will have to go to chief of department or maybe admin."

Participative Safety

The degree to which any teammember feels that their contributions toward teamwork are valued. Indicative of the interprofessional atmosphere and climate.

Example: "10MCD44: ... frequently. For me, for the new and the old, I always say hello to the new one to make sure that we are friendly, very friendly. And not fear at all, so they can show every thought. "

AND

"27MKN27?Tr: For his own experience he...he seem to have very good relationship with all the doctors here and so he very comfortable and confident to talk to doctor when they give inappropriate treatment then he can give feedback. And most of them, he said like all of them, accept his feedback. Because it just for his case, and also the management here...uhh, advise to doctor and nurse like we have to listen to each other and then give feedback for improvement. "

AND

"10MCD44: ... frequently. For me, for the new and the old, I always say hello to the new one to make sure that we are friendly, very friendly. And not fear at all, so they can show every thought. "

Trust Indicative of the interpersonal and interprofessional climate

Example: "It's not really changed the attitude but because of the nurse themselves, they have the high commitment and show to the doctor that some of the doctor roles, they can do it too, that's why the doctor feel good about, that they can trust the nurse."

High Trust Examples of high amounts of trust between coworkers exhibited by validation, autonomy, respecting others roles, independence, empowerment

Example: "Example: "It's not really changed the attitude but because of the nurse themselves, they have the high commitment and show to the doctor that some of the doctor roles, they can do it too, that's why the doctor feel good about, that they can trust the nurse."

AND

"7FCD33: Yeah, the nurse cannot interfere our work, the doctor work. But sometimes they alert me, not interfere but alert. "oh doctor this one not good I think" and then I am thinking, ok maybe not good, so I think that I change my perception sometime. They help me, sometime I need to listen to them also. "

Low Trust Examples of low amounts of trust between co-workers exhibited by lack of validation, respect, autonomy, low value for contributions by teammembers

Example: "Because the doctor attitude is still the same for the new

nurse."

AND

"Surgeon say, "the doctor don't order furosemide?" I say, "we give already". But the surgeon still don't think we to do it. Yeah. Sometime we try to follow the doctor, but the surgeon, they don't trust us to do everything that we do."

AND

"27MKN27àTr: Like they don't trust or don't give enough respect to nurse. And even nurse to nurse they don't' trust or give enough respect to each other."

Perception

An individual's thought process/opinion around others role, their own role, teamwork

Perception of age

The thoughts and attitudes that all staff have regarding age and generational gap

Example:"18MKD32: For me, the relationship is the same for every nurse. But I think the younger nurse work better than the old nurse.

"..."18MKD32: I think sometime the role of the young nurse, they follow the patient strictly and correctly more than old nurse. Example, sometime I told to nurse, "follow vital sign in this patient every hour", so they can do good. And sometimes they report and send to me the results. But for the old nurse, some nurse, they just say "ok", but finally, they don't do it. They follow every 2 or 3 or 4 hour, sometime they don't give me result also."

Perception of gender

Both RN and MD's perception and thoughts on how gender plays a role in communication and teamwork

Example: "when we need to help the patient, the man..he's stronger than the woman. And, the woman is not...sometime my staff today, girl only 2...so she prepare medicine, paperwork, go to pharmacy, take medicine for dept, and count...but sometime the man...he's not like good at count medicine. "

AND

"23MKN25?Tr: It doesn't matter about the gender whether they are nurse or doctor. "

Perception of others role	<p>An individuals opinion about the capacity/boundary of anothers role</p> <p>Example: "5FCD32: I think more talk is better. In my dept, some nurse not really responsible for their, because they have to divide each task, then some nurse just ignore their task, so there is a part of communication where doctor have to talk and say "you have to be responsible for this, please don't do through another, you just stay on this"...something like this. "</p>
Perception of own role Perception of patient (toward staff)	<p>An individuals opinion about the capacity/boundary of their own role</p> <p>The patient's perception of communication/teamwork</p> <p>Example: "Why careless? the patient...sometime, the patient need to tomorrow must do bloodwork for operation, but tomorrow...the doctor come...and change of staff, he lost information with the handover. So the patient come, it's the next day, "why you don't transfer to operate?" so the patient be very angry with doctor or the staff. "</p>
Perception of teamwork	<p>An individuals perception/opinion about teamwork in their workplace</p> <p>Example: "5FCD32: Ah...for me if the nurse is more responsible, we are the doctor, we feel also more responsible. So we feel there is very effective wave in teamwork, but in the meantime, we should communicate with each other. Yeah, even they really skillful, they really responsible, but we still need to talk. "</p> <p>AND</p>
Personal Confidence	<p>A staff member's internal self assurance about their own opinion being heard and their certainty about their work ethic</p> <p>Example: "But for the doctor, she also feel confident to talk to the doctor because she is the one who directly care for the patient."</p>
Personal Qualities and Characteristics	<p>An individual's qualities and positive and negative characteristics that contribute to the work climate/atmosphere</p>

Negative Examples Negative examples of a person's characteristics that contribute to their work climate

- Blaming
- Lying
- Lack of respect
- Yelling

Example: "9MCD31: Yes. Sometime he tell what to do, but sometimes he feeling not good he say....strong words, speak strongly."

AND

"Yeah sometimes the surgeon don't trust us. They say, "they have good surgery. Why the patient will be like this and have a problem like this?!" and then say, "it's because you don't give good care" or "its because of you don't have good treatment". So sometimes we have like this, a problem. "

AND

" And they are too proud with their position and their responsibility, their role as doctor. Like they are very too proud with their position and they not open, just try to criticize and catch him in a mistake."

Positive Examples Positive examples of a person's characteristics that contribute to their work climate

- Supportive to coworkers, values others input
- Positive attitude
- Committed to team

Example:"So some of them want...willing to change themselves. That internal teamwork within themselves. "

AND

"9MCD31: [hesitating] Yeah I want to improve. "

Professionalism The degree to which an individual shows commitment to their job regarding their attitude toward core role expectations/competency

Example: "7FCD33: Yeah but it's there. Maybe, something about their work, attitude, or their face that make them feel afraid to ask. And sometime, it difficult to get out, like we ask him many time but sometime he don't come out. The young one like me, we come out immediately when they say, "doctor, the patient is getting worse, you need to help"... I go out immediately. But, the old doctor...maybe no. Sometimes they so slow, so they go out, but very slow."

<p>Role of Nurse</p>	<p>Nurses and doctors thoughts of the nurses role in decision-making and patient care</p> <p>Example: "7FCD33: Because the ICU nurse is important, they know machine and their knowledge is similar to the doctor sometime. Because if the doctor know, the nurse almost know like the doctor. They just know, but they don't know exactly how to do it. "</p> <p>AND</p> <p>"27MKN27?Tr: So, on the duty the responsible nurse have to be at the place to do their job. And to follow the prescription of the doctors and then monitor situation of the patient. "</p>
<p>Role of Physician</p>	<p>Nurses and doctors thoughts of the doctors role in decision-making and patient care</p> <p>Example:"7FCD33: It depends on the [inaudible] or not, if they aren't busy, I will ask them to help. Sometime, they not available, so I will do it myself. Yeah, because if the patient get worse, I can't wait for anyone to help. I need to do by myself, so all the nurses work, I must know how to do it. Like put foley catheter, the IV lock, nebulizer, anything...I need to know I can do it too. "</p> <p>AND</p> <p>"MKN35?Tr: Yes. That is correct but they need to come also to check. To make sure that everything is under flow."</p>