

# Interdisciplinary Communication in the Intensive Care Unit at the University Hospital of the West Indies

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## ABSTRACT

**Objective:** To assess the perceptions of physicians and nurses working full-time in the Intensive Care Unit (ICU) at the University Hospital of the West Indies (UHWI) regarding interdisciplinary communication.

**Method:** A cross-sectional survey of all medical personnel working full-time in the ICU was conducted in January 2008 using a self-administered, validated questionnaire. Data on perceived communication, teamwork and leadership, comprehension of patient care goals, perceived effectiveness and satisfaction were collected and analysed using the SPSS Version 14. Internal reliability was tested using Cronbach's alpha score and differences and correlations were assessed using Pearson's Chi-square and correlation analysis.

**Results:** Ninety-five per cent (105/111) of questionnaires were completed. More doctors than nurses experienced open communication with other staff members (73% vs 32%;  $p < 0.01$ ), with less openness occurring with increasing seniority. More doctors (53%) than nurses (32%) reported receiving inaccurate information from doctors ( $p < 0.05$ ), with 67% and 51% respectively receiving incorrect information from nurses ( $p < 0.05$ ). Communication across shifts was felt to be better amongst doctors than nurses (73% vs 63%). Only 50% of doctors compared to 88% of nurses felt they received relevant information quickly ( $p < 0.05$ ). More nurses than doctors (86% vs 63%;  $p < 0.01$ ) felt that they had a good understanding of patient care goals. Negative perceptions of the leadership characteristics of consultants (62% amongst doctors and 74% of nurses) and sisters (79% and 73%, respectively) were high.

**Conclusions:** Communication within the ICU, UHWI, is unsatisfactory with an overall poor perception of senior leadership. Improvement in staff morale and leadership training may create a working environment where team members can communicate openly without fear of chastisement.

**Keywords:** ICU communication openness, job satisfaction, leadership qualities, teamwork

# Comunicación Interdisciplinaria en la Unidad de Cuidados Intensivos del Hospital Universitario de West Indies

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## RESUMEN

**Objetivo:** Evaluar las percepciones de médicos y enfermeras que trabajan a tiempo completo en la Unidad de Cuidados Intensivos (UCI) del Hospital Universitario de West Indies (HUWI), con respecto a la comunicación interdisciplinaria.

**Método:** Se llevó a cabo un estudio transversal de todo el personal médico que trabaja a tiempo completo en la UCI en enero de 2008, usando una encuesta auto-administrada, validada. Se recopilaron datos en relación con la percepción de la comunicación, el trabajo en equipo y la dirigencia, la comprensión de las metas del cuidado del paciente, así como la satisfacción y la efectividad percibida, usando la versión 14 del SPSS. La fiabilidad interna se comprobó usando la puntuación y las

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diferencias del Alfa de Cronbach, y las correlaciones fueron evaluadas usando Chi-cuadrado de Pearson y análisis de correlación.

**Resultados:** Se completó el noventa y cinco por ciento (105/111) de las encuestas. Más doctores que enfermeras experimentaron comunicación abierta con otros miembros del personal (73% vs 32%;  $p < 0.01$ ), con menor apertura a mayor rango y antigüedad. Más doctores (53%) que enfermeras (32%) reportaron haber recibido información inexacta de parte de los doctores ( $p < 0.05$ ), recibiendo el 67% y el 51% respectivamente información incorrecta de las enfermeras ( $p < 0.05$ ). La comunicación a través de los cambios de turnos era considerada mejor entre los doctores que entre las enfermeras (73% vs 63%). Sólo el 50% de los doctores comparados con un 88% de enfermeras consideraron haber recibido información pertinente rápidamente ( $p < 0.05$ ). Más enfermeras que doctores (86% vs 63%;  $p < 0.01$ ) consideraban que tenían un buen entendimiento de los objetivos de los cuidados del paciente. Las percepciones negativas de las características dirigentes de los consultantes (62% entre los doctores y el 74% de las enfermeras) y las enfermeras jefes (79% y 73%, respectivamente) fueron altas.

**Conclusiones:** La comunicación en la UCI, HUWI, es insatisfactoria, y se caracteriza por una percepción general pobre de la dirigencia de alto rango. El mejoramiento de la moral del personal y el entrenamiento de la dirigencia puede crear un ambiente de trabajo en el que los miembros del equipo puedan comunicarse abiertamente sin miedo a un castigo.

**Palabras claves:** UCI, apertura de la comunicación, satisfacción en el trabajo, cualidades de la dirigencia, trabajo en equipo

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## INTRODUCTION

Inadequate communication of treatment goals and lack of collaboration among intensive care unit (ICU) staff have been shown to have a significant negative impact on administrative, social, clinical and educational outcomes (1–5). Fifteen per cent (15%) of medical error has been attributable to communication problems (6) with error rates as high as 1.7 per patient per day in the ICU having been recorded (7). Units with poor leadership and poor collaborative communication between nurses and physicians have as much as 1.8 fold increase of risk adjusted mortality (8) and significant increases in the length of ICU stay (9, 10).

Faulty communication is not only defined by poor transmission or exchange of information but also involves hierarchical differences, concerns with upward influence, role ambiguity and interpersonal power conflicts (11). Communication failures may also occur when junior team members are fearful of appearing incompetent, being embarrassed or reprimanded (11). It has been shown that physicians and nurses in critical care have discrepant attitudes about the teamwork they experience with each other (12, 13). Physicians were found to be more satisfied with physician-nurse collaboration than were the nurses (12). Junior doctors also reported less communication openness than their seniors which may impact on how well patient care duties are understood and implemented (13).

Medical care providers often face reductions in resources especially in developing countries, while being expected to maintain high safety standards. This requires effective teamwork to provide quality care at the same time addressing staff shortages and cost containment in the face of increasing patient expectations. Thus far, no published reports have been found that examines interdisciplinary

communication in Caribbean ICUs. The data from this study will identify areas of weakness in interdisciplinary communication and thus enable establishment of potential solutions. This can only help to minimize adverse patient outcome due to medical error, as well as to improve the ICU working environment.

## SUBJECTS AND METHODS

A cross-sectional questionnaire study was conducted in January 2008. All medical staff of the ICU at the UHWI were targeted; a total of 81 nurses and 30 doctors. The study was approved by the UHWI/UWI, Faculty of Medical Sciences Ethics Committee. The survey tool was a validated self-administered questionnaire adapted and modified with permission from TW Reader, Scotland (13). There were two separate questionnaires, one for doctors and another for nurses. Data collected included demographic information, questions regarding relationships and communication within the ICU, teamwork and leadership, understanding patient care goals, perceived effectiveness in carrying out goals and job satisfaction.

Responses used a 5-point Likert scale. The data were coded and analysed using SPSS version 14. Frequency tables were obtained for each of the questions asked. Responses were then recoded with values greater than 3 signifying a positive response and those 3 and less, a negative response. Cross-tabulations for all the questions and calculations of statistical significance were performed using Pearson Chi-square test. Several questions were combined after testing for internal reliability using the Cronbach's alpha score. These questions assessed three areas: communication openness among doctors and nurses, leadership characteristics of the consultant and nurse-sister and understanding of patient care

goals. A Cronbach’s alpha score above 0.7 ( $\alpha \geq 0.7$ ) was taken as acceptable consistency of the questions that were combined.

An overall leadership scale was created from a combination of the six questions regarding leadership characteristics of both the senior physicians and nurses. An overall communication openness scale was formed by combining all six communication openness scores. These scales were used to simplify correlation analysis. Pearson correlation analysis was done for all questions.

**RESULTS**

The response rate was 95% (105/111 questionnaires). Thirty questionnaires were returned by physicians (100%; 10 consultants, 9 senior residents and 11 junior residents) and 75 by nurses (93%; 8 sisters, 51 critical care registered nurses [CCRN] and 16 registered nurses [RNs]).

Overall communication openness was thought to be significantly better by the doctors (73%) than the nurses (32%,  $p < 0.01$ ) and tended to decrease with increasing seniority (Table 1). Most physicians thought doctor-to-doctor

Table 1: Communication openness frequency scores

Group	% Physicians Agree	% Nurses Agree	p value
Physicians			
Consultant	70	35	< 0.01
Senior resident	93	67	< 0.01
Junior resident	93	61	< 0.01
Nurses			
ICU sister	73	48	< 0.05
CCRN	73	76	0.78
RN	70	76	0.53
Overall communication openness	73	32	< 0.01

communication (70–93%) and doctor-to-nurse communication (70–73%) was good (Table 1). However, the nurses felt that there was less communication with physicians (35–67%), especially consultants and other nurses (48–76%), especially sisters.

Just over half of the physicians (53%) stated that they had received incorrect information from other physicians compared to only 32% of the nurses ( $p < 0.05$ ). However, the majority of both physicians and nurses thought that they had received incorrect information from nurses (67% and 51%, respectively). Despite this, only 20% of the physicians and 39% of the nurses agreed that it was necessary to recheck information received from the nurses. As seniority increased, the perception regarding receipt of incorrect information from other medical personnel increased.

Most physicians found it enjoyable to talk with each other (70–87%) and to all categories of nurses at work (77–87%). Most nurses however, did not enjoy talking to physicians, especially consultants (71%), nor other nurses (43–72%), especially the sisters (72%).

Physicians found it easy to take advice from fellow physicians (90–100%). While 85% of nurses found it easy to take advice from senior residents, only 63% felt this was the case with consultants and junior residents, respectively. Surprisingly, a higher percentage of physicians than nurses found it easy to take advice from senior nurses (83% vs 63%,  $p < 0.05$ ).

More nurses (61%) believed that there was effective communication between doctors and nurses across shifts in comparison to only 50% of doctors. Only 53% of the physicians thought that nurses call the doctors in a timely manner regarding patient care, while the majority of the nurses (88%) believed this to be true (Table 2).

Table 2: Perceptions of passage of information across shifts

Question	% Doctors Agree	% Nurses Agree	p value
Effective communication between doctors across shifts	73	N/A	–
Doctors are well informed regarding information occurring on other shifts	63	61	0.85
Effective communication between nurses across shifts	N/A	63	–
Nurses are well informed regarding information occurring on other shifts	53	59	0.62
Effective communication between doctors and nurses across shifts	50	61	0.29

Seventy-nine per cent of the physicians and 73% of the nurses had a negative opinion of the leadership characteristics of the sisters in charge, while 62% of the physicians and 74% of the nurses had a negative opinion of the leadership characteristics of the consultants (Table 3). Junior physicians were not discouraged from taking their own initiative by either the senior nurse or physician (Table 3). Ninety per

Table 3: Judgment of leadership characteristics of the consultant and sister

Question	% Doctors Agree	% Nurses Agree	p value
Overall judgment of leadership characteristics of the sister in charge	21	27	0.53
Sister discourage doctors from taking the initiative	3	7	0.53
Overall judgment of leadership characteristics of the consultant	38	25	0.20
Consultant discourage doctors from taking the initiative	3	7	0.53
Overall judgment of combined leadership characteristics	10	17	0.38

cent of physicians compared to only 50% of nurses ( $p < 0.01$ ) felt that consultants were readily available.

More nurses (87%) than physicians (63%) felt that they had a good overall understanding of patient care goals ( $p < 0.01$ ). The majority of the nurses (65%) felt that the ICU

almost always meets its patient care treatment goals compared to only 28% of the physicians ( $p < 0.01$ ). More nurses (73%) than physicians (48%) also believed that treatment outcomes were good, despite the severity of illnesses of the patients seen ( $p < 0.05$ ). When asked whether the most up-to-date technology is applied to patient care, 53% of the nurses responded positively compared to only 3% of the physicians ( $p < 0.01$ ) [Table 4].

Table 4: Perceptions of understanding patient care goals and perceived effectiveness of the Intensive Care Unit

Question	% Doctors Agree	% Nurses Agree	<i>p</i> value
Overall perception of understanding patient care goals	63	87	< 0.01
Unit almost always meets its patient care treatment goals	28	65	< 0.01
Given the severity of patients being treated in the unit, they experience very good outcomes	48	73	< 0.05
Unit does a good job of meeting family members' needs	55	55	0.96
Unit does a good job of applying the most recently available technology to patient care needs	3	53	< 0.01
Unit functions very well as a team	72	69	0.76
Unit is very good at responding to emergency situations	83	87	0.61

Physicians and nurses had similar positive perceptions with regards to whether the ICU team did a good job of meeting family members' needs (55% each), were good at responding to emergency situations (83% and 87%) and functioned well together as a team (72% and 69%).

Physicians in general were not as satisfied with their job as were the nurses (48% vs 67%) [Table 5]. Of all the

Table 5: Overall satisfaction with communication and job

Question	% Doctors Satisfied	% Nurses Satisfied	<i>p</i> value
Satisfaction with nurse-to-nurse communication	47	35	0.25
Satisfaction with doctor-to-doctor communication	23	37	0.17
Satisfaction with doctor-to-nurse communication	40	36	0.70
Overall job satisfaction	48	67	0.08

categories of staff, the senior residents were the least satisfied (22%). Significant positive correlations were seen between leadership characteristics and communication openness, communication across shifts, as well as level of job satisfaction.

## DISCUSSION

This survey indicates that nurses and physicians in the ICU at UHWI have different perceptions of interdisciplinary communication. Overall, the physicians reported a higher level of communication openness than did the nurses, similar to results obtained by Reader *et al* (13). This difference may be partly related to the different perceived roles. Physicians and nurses are trained differently with respect to professional functions, knowledge and clinical focus.

Traditionally, physicians view themselves as team leaders, the decision-makers and feel that their role is fundamentally superior to that of the nurses. Although the roles and responsibilities of both professions have evolved, nurses continue to report feelings of being belittled and intimidated by physicians, particularly by the more senior physicians (14). This may account for the lower communication openness by nurses with physicians, especially consultants.

Among physicians, there is greater communication openness between the senior and junior residents than with the consultants. The senior resident is seen as the immediate supervisor for the junior and is often regarded as a peer. The hierarchical chain of responsibility encourages communication first through the senior resident and then the consultant, resulting in fewer opportunities for interaction by the more junior staff with the consultants. They may also feel intimidated by the consultants, who try to maintain an authoritarian figure and thus are less likely to approach them with problems in case they appear incompetent. A similar situation exists amongst nurses, especially between the CCRNs and sisters. The CCRN's may also perceive the sister as being more involved in administrative affairs rather than patient care.

Physicians' and nurses' perceptions of accuracy of information received from other staff members also differed, with more physicians reporting that they had received inaccurate information. The effect on patient outcome was not evaluated. Consultants and senior residents were more likely to think that they received inaccurate information from other doctors. Possibly, senior physicians have more knowledge and experience and hence are more likely to recognize the inaccuracies in information received. Systematic rechecking of information received from ICU staff by other team members may be one of the measures in which the ICU can minimize human errors and improve patient care. Potential drawbacks include a significant addition to the already heavy workload of the ICU staff, fostering of mistrust amongst staff, increased costs and possible creation of new errors and confusion.

Most physicians said that they enjoyed talking to all other staff members (70–86%), however, less than 60% of nurses felt the same. This became more evident with increasing seniority of the physician (29%) and the nurse (38%) and may have resulted from feelings of belittlement, disrespect and intimidation by authority figures.



Most physicians found it easy to take advice from all levels of doctors and this may reflect this expectation as part of their training. The nurses were less open to taking advice from physicians, except for the senior residents. This was not surprising as the latter interacted most closely with the nurses in the unit on a daily basis. Nurses also found it easier to take advice from other CCRNs and RNs than from the sisters. Problems with authority figures appeared to pose a greater challenge with the nurses than with the doctors and needs to be evaluated.

There is a need for improvement in communication between shifts. Like Reader *et al*, physicians reported less communication accuracy than nurses. Nurses and physicians may have different interpretations of the importance of some information regarding patient care which may impact on how quickly the information is transmitted. Perceived unavailability of senior doctors by the nurses may also be a factor in how quickly information is relayed.

The overall assessment of the leadership characteristics by both the nurses and physicians of authority figures was low. This is an area which needs urgent attention. Interestingly, consultants and sisters were rated highly for encouraging junior physicians to use their initiatives in patients' care. This suggests that the senior staff have a high level of trust in the junior physicians and encourage rational decision-making without the fear of repudiation.

The fact that more nurses than doctors thought that they had a better understanding of patient care goals was probably due to the nurses being responsible for only one or two patients in the ICU, while the physicians were responsible for up to twenty patients at a time and were often called away from the unit to assist with emergencies in other areas of the hospital. The discrepancy between nurses and physicians with regards to believing that the ICU almost always met patient care goals, generally had good patient outcomes and applied the most recently available technology to patient care may be related to different exposures and expectations of good outcome. Generally, physicians would like to practice evidenced based medicine and apply international standards of patient care in the ICU setting. However many feel hampered by limited technical and pharmaceutical resources whereas the nurses tend to rely on their personal skills and clinical competencies in performing their responsibilities which are internationally comparable. Both physicians and nurses agreed that overall, the ICU staff functioned very well together as a team, responded well to emergency situations and met family members' needs. This suggests that, despite differences in some perceptions and the lack of resources, the ICU staff collectively takes pride in the services they provide and are willing to overcome difficulties to provide quality patient care.

More nurses than physicians expressed satisfaction with their jobs. This study did not attempt to identify the underlying issues but the greater dissatisfaction of the doctors may be related to the limited resources producing a

sense of helplessness, the burdensome responsibility and the high stress environment in which they work.

There were statistically significant positive correlations of unit leadership characteristics with overall communication openness. Enhancing unit leadership characteristics is an important determinant of improved communication (15).

There were a number of limitations in this study. These included the small population size and unequal sample sizes within the groups which may have skewed some of the results. The method used to assess responses were all self-report measures which could result in both method and social desirability biases.

## CONCLUSIONS AND RECOMMENDATIONS

In summary, nurses of the ICU at the UHWI reported lower levels of communication openness than physicians. However, higher levels of communication openness reported by the physicians did not translate to better understanding of patient care goals. There was also differing perceptions of accuracy of information received from the staff across shifts, with physicians having more negative responses. There was an overall poor perception of the leadership characteristics of both senior physicians and nurses and this had a positive correlation with level of open communication. Overall, the nurses had greater job satisfaction than the physicians.

Recommendations arising from this study include improving communication through emphasizing a team approach with joint staff meetings and ward rounds (16). Staff morale and interpersonal relationships can be improved through common social events and continuous open acknowledgement of efforts. Leadership training and workshops are needed. A daily goal form could be designed and implemented to improve the effectiveness of communication across shifts and understanding of goals of care for each patient (17, 18). During the ward rounds, the senior physician and nurse should clearly identify the patient care plans and responsibilities of the individual members of the team (19).

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