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Rates of ICU Transfers After a Scheduled Night-Shift Interprofessional Huddle

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OBJECTIVES: To evaluate a scheduled interprofessional huddle among pediatric residents, nursing staff, and cardiologists on the number of high-risk transfers to the ICU.

METHODS: A daily, night-shift huddle intervention was initiated between the in-house pediatric residents and nursing staff covering the cardiology ward patients with the at-home attending cardiologist. Retrospective cohort chart review identified high-risk transfers from the inpatient floor to the ICU over a 24-month period (eg, inotropic support, intubation, and/or respiratory support within 1 hour of ICU transfer). Satisfaction with the intervention and the impact of the intervention on team-based communication and resident education was collected using a retrospective pre-post survey.

RESULTS: Ninety-three patients were identified as unscheduled transfers from the ward team to the ICU. Overall, 21 preintervention transfers were considered high risk, whereas only 8 patients were considered high risk after the intervention ($P = .004$). During the night shift, high risk transfers decreased from 8 of 17 (47%) to 3 of 21 patients (14%) ($P = .03$). Interprofessional communication improved with 12 of 14 nurses and 24 of 25 residents reporting effective communication after the intervention ($P < .0001$) compared with only 1 nurse and 15 residents reporting a positive experience before the intervention. Overall, all 3 provider groups stated an improved experience covering a high-risk cardiology patient population.

CONCLUSIONS: Implementation of an interprofessional huddle may contribute to decreasing high-risk transfers to the ICU. Initiating a daily huddle was well received and allowed for open lines of communication across all provider groups.

ABSTRACT

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Effective communication and teamwork are both necessary to achieve safe patient care.¹ This is especially true as nurses and physicians frequently hand off care to those covering on the next shift. Adverse events after patient transitions have been associated with poor physician communication.² The complexity of the problem is increased during overnight shifts when physician staffing is routinely provided by resident physicians without in-house supervision from an attending physician. Nursing staff members play a critical role in patient safety because they typically have more frequent bedside evaluations and spend more direct time with the patient than physician team members. Miscommunication at nursing handoff in patient transitions is also a factor in adverse events.²

Successful strategies to improve communication include huddle techniques that create an environment to discuss patient issues and concerns.³ These techniques have been successfully implemented through multiple fields of medicine and across different work environments.^{4,5}

The purpose of this retrospective cohort study is to evaluate the effect of a daily, scheduled interprofessional huddle among pediatric residents, nursing staff, and cardiologists caring for the cardiology ward patients on the night shift.

METHODS

Setting

The study occurred in a 354-bed children's hospital with an active cardiovascular surgical program that performs >350 open heart surgeries per year. The cardiology patients on the inpatient unit include an average 2014 census of 11.9 patients (range 7.9–14.6) per day and have physician coverage from a day and night team, typically working 6:30 AM–6:00 PM and 6:00 PM–6:30 AM, respectively. Residents are assigned to cover the cardiology service once during their intern year and again during their third year. In addition, some residents cover the cardiology service on a month of night shifts. The typical day team is a traditional teaching service led by an

attending cardiologist supervising 2 senior residents and 3 interns. The night team includes 1 senior resident and 1 intern assigned to cover both the cardiology service in addition to a general pediatric ward team. Attending cardiology coverage at night is by at-home pager call from a cross covering cardiologist. Cardiology fellows cover first call by at-home pager on average every third night. Nursing staff covering the same patients work 7:00 AM–7:00 PM and 7:00 PM–7:00 AM shifts.

Intervention

Recommendations after the analysis of a cardiology patient code event included goals for increased supervision and communication across all care providers on the overnight shift. Therefore, a huddle communication intervention was initiated in August 2013 to prompt communication among the bedside nurse, charge nurse, resident team on call, and attending physician. The huddle starts with a rounding process between the overnight residents and bedside nurses at ~9:00 PM, followed by a conference call among the residents, charge nurse, and at-home cardiologist to review all patients on the team and discuss any needed immediate patient care needs as well as contingency plans. On nights with fellow coverage, the attending cardiologist also participates via conference call. Senior (third-year) fellows take the call independently, with backup from the on-call cardiologist. During the rounding process, the residents accompany each nurse to the bedside to discuss patient status, concerns, or plan-of-care clarifications; patients are examined and/or families are included in the process on as needed basis. Total rounding time varies based on patient census and acuity but typically lasted <10 minutes. During the conference call, the residents were instructed to “run the list,” simply meaning to mention each patient and discuss any potential concerns with the charge nurse, adding any comments or concerns as necessary.

Methods of Evaluation

Primary outcome measures included the number of high-risk transfers to the ICU with secondary measures including resident, nursing, and cardiologist

satisfaction with team communication as well as resident education on management of acute cardiology issues.

The operational definition of a high-risk transfer to the ICU was based on modification of the definition by Brady et al,⁶ including patients who require intubation, inotropes, or ≥ 3 fluid boluses within the first hour of arrival in the ICU. With this cardiac population, any fluid bolus volume given for resuscitation in the first hour was considered a marker of physiologic instability and therefore included as a high-risk transfer. Additionally, patients who had bilevel positive airway pressure initiation on transfer to the ICU were also considered high risk. Patients were excluded if they were transferred from the inpatient unit to the ICU as part of a scheduled surgery or cardiac catheterization laboratory procedure.

Patient outcome data were collected retrospectively via chart review for a 24-month period to identify all patients transferred from the inpatient floor to the ICU. Charts were reviewed by 1 investigator (R.E.N.) to identify high-risk transfers as defined earlier. Demographic data included using a complexity stratification tool named the STS-EACTS Congenital Heart Surgery Mortality Categories (STAT Mortality Categories) that have been developed to facilitate analysis of outcomes across the wide spectrum of distinct congenital heart surgery operations including infrequently performed procedures.⁷

Transfers during the period of July 2012 to July 2013 were considered preintervention, and transfers from September 2013 to September 2014 were considered postintervention. A 1-month run-in period after implementation was excluded to allow for transition to the intervention process.

Satisfaction with the intervention and education provided to the residents was collected with a retrospective pre-post survey provided electronically to 3 separate groups: pediatric residents, nurses from the cardiac inpatient unit, and cardiologists and cardiology fellows (Appendix 1). The retrospective pre-post design allowed for a survey at 1 point in time to capture both pre and postintervention results, in

contrast to a traditional pre then post design in which results are collected at 2 points in time, before and then after an intervention. Survey questions were specific for each surveyed group but focused on the same themes: (1) communication among residents, nursing staff, and cardiologists; (2) education provided to the residents by the at-home cardiologist; and (3) overall satisfaction caring for the cardiology patients at night. Responses were collected in a 5-point Likert-type scale including strongly agree, agree, neutral, disagree, and strongly disagree. Content validity of the survey was obtained by review and critique from a national educational expert. It was piloted to 6 current and future pediatric chief residents, 3 attending cardiologist and 3 nursing managers to establish face validity. Pediatric residents involved in the intervention that had both pre- and postintervention experience received the survey in June 2014 before graduation. Nongraduating residents involved in the intervention that had both pre- and postintervention experience in addition to nursing and cardiologists received the survey in the last 3 months of the post data collection period.

Institutional review board approval was obtained from our institution.

Statistical Analysis

We compared the prevalence of high risk transfers between the pre and post time periods using Fisher's exact test. Survey responses were analyzed by using a non-parametric approach, with the Wilcoxon Rank-Sum test used to determine statistical significance. Reliability assessment for the survey response included a Cronbach α for internal consistency. We used $P < .05$ as our threshold for statistical significance. All analyses were completed by using Stata software (StataCorp. 2013. *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP).

RESULTS

One hundred fifty-six patients (81 preintervention and 75 postintervention) were transferred from the ward team to the ICU during the study period. Sixty-three patients (41%) were excluded because their

transfer was secondary to a scheduled surgery or cardiac catheterization laboratory procedure and not associated with a change in clinical status. The remaining 93 patients were categorized as unscheduled transfers. Table 1 outlines demographic data and STAT mortality categories for congenital heart surgery candidates for all unscheduled transfer patients. Overall, of the total number of unscheduled transfers from both the day and night shifts, 21 preintervention transfers (46%) were categorized high risk, whereas only 8 patients (17%) were considered high-risk transfers after the intervention ($P = .004$). However, among patients transferred at night, before the intervention, 8 of 17 patients transferred at night were high risk, compared with 3 of 21 after the intervention ($P = .03$).

Figure 1 outlines the intervention patients received during transfer to the ICU and within the first hour of stabilization. Five preintervention and 2 postintervention patients received multiple interventions. Initiation of milrinone was the most common intervention (20% preintervention vs 11% postintervention, $P = .26$) followed by intubation (17% vs 6%, $P = .12$). Overall, 24% of preintervention transfers required airway support, including intubation and/or bilevel positive airway pressure, compared with only 6% post ($P = .02$).

Response rate from the surveys included 64% for residents (25/39) and 78% (14/18) for cardiologists. Nursing response rate is variable because the cardiac unit has ~60 nurses, but only nurses that had leadership positions and experience in the

huddle both before and after were asked to complete the survey. Overall, across all 3 groups, some participants choose only to complete part of the survey. All answers were included in the final analysis (Table 2). The Cronbach's α statistic for the preintervention survey was 0.65 for residents, 0.80 for cardiologists, and 0.84 for nursing, and the α for the postintervention survey was 0.60 for residents, 0.85 for cardiologists, and 0.92 for nursing.

Nurse-to-resident communication was perceived as improved. Only 1 of 15 nurses agreed or strongly agreed with the notion that interprofessional communication was effective before the intervention, whereas 12 of 14 agreed or strongly agreed that the residents and nursing had effective and clear communication ($P < .0001$) after the huddle intervention. Residents also reported improvement with nursing communication with 24 of 25 residents agreeing or strongly agreeing with the communication after the intervention ($P < .0001$) compared with 15 of 26 agreeing or strongly agreeing preintervention.

Education among residents showed improvement; 4 of 26 residents perceived that education before the intervention provided a positive experience, whereas 16 of 25 agree or strongly agreed that cardiologist education was a positive experience after the intervention ($P < .0001$). The cardiologists group did not perceive a difference between the quality of education they provided the residents ($P = .09$) before or after the intervention.

TABLE 1 Demographic Comparison of the 93 Total Unscheduled Transfers. IQR, interquartile range

	Preintervention (n = 46)	Postintervention (n = 47)	P
Age, mo, median (IQR)	8.02 (3.1–24.5)	8.40 (3.0–42.9)	.93
Male, n (%)	25 (54)	30 (64)	.49
STAT Mortality Score			
1	1 (2)	0 (0)	.25
2	6 (13)	10 (21)	
3	6 (13)	8 (17)	
4	11 (24)	5 (11)	
5	2 (4)	4 (9)	
Medical patient	20 (44)	20 (43)	.99

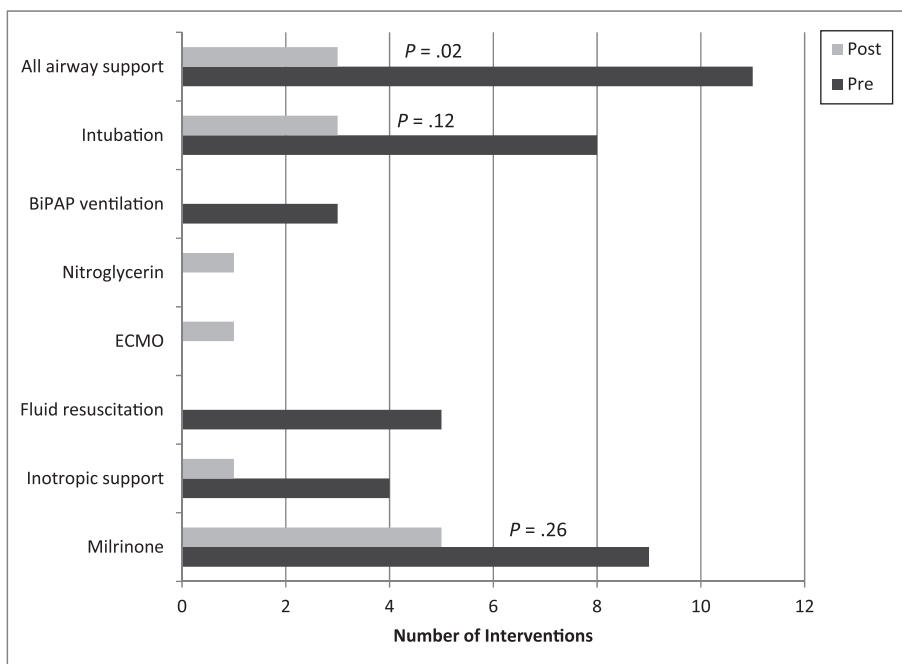


FIGURE 1 Interventions given during transfer to the ICU and within the first hour of stabilization for all included patients. All airway support includes bilevel positive airway pressure (BiPAP) plus intubation. ECMO, extracorporeal membrane oxygenation.

Improved satisfaction with patient care was recorded across all 3 provider groups. No resident strongly agreed that his or her overall experience covering the night wards before the huddle was positive; 6 residents were neutral or disagreed with the statement. However, all 25 of the responding residents agreed or strongly agreed that the rotation was positive ($P = .0001$) after the intervention with 9 residents strongly agreeing with the statement. Only 8 cardiologist perceived the experience of home call positively before the intervention, whereas 16 of 17 agreed or strongly agreed the experience was positive after the intervention ($P = .005$). Similarly, only 3 of 15 nurses agreed that they had an overall positive experience before the intervention, whereas 13 of 14 agreed or strongly agreed that they had an overall positive experience postintervention ($P < .001$).

DISCUSSION

Quality patient care demands clear and effective communication among interprofessional teams. With trainee physicians typically responsible for providing primary in-house coverage of patients at night, the importance of

communication and education increases. This study identifies that implementing a targeted communication framework can contribute to improved outcomes and that improved communication, education, and satisfaction may be associated with a scheduled interprofessional huddle.

Transitions of patient care are described throughout the literature as sources of error with resident physicians identifying handoff communication errors and lack of overall supervision as contributing factors in adverse events.^{8,9} Multiple studies have focused on handoff tools as a method to improve patient care from shift to shift¹⁰; a recent paper identified that structured handoffs among pediatric residents can directly improve patient outcomes.¹¹ Our intervention did not alter the resident, nursing, or cardiologist handoff process when switching to the overnight coverage. Instead, the intervention augmented the process by requiring a medical team huddle after handoffs, early in the night shift, after both the residents and nurses had time to familiarize themselves with their patients. We advocate that clear and effective handoffs are an integral part of the current shift work culture of medical care. However,

reinforcing that information and getting medical disciplines together in an interprofessional evening huddle can contribute to improved patient outcomes. The communication framework promoted the sharing of knowledge about patient status and may have improved the ability of the team to accurately perceive problems, comprehend their meaning, and project their status during the near future. In short, we believe that risk of deterioration was potentially mitigated through a huddle that helped improve situational awareness. The primary goal of the study was to evaluate the effect of the intervention on the rate of high-risk transfers during the overnight shift, as nights in the hospital setting are an important time to consider miscommunication and errors because there are fewer available resources for the medical team. Although our focus was on night communication, we found that our institution's rate of high-risk transfers to the ICU improved at all hours. During our study period, our institution continued to promote a culture of safety by incorporating day-shift interventions including a dedicated nurse practitioner for the cardiology service (April 2012), daily transfer rounds with the ICU

TABLE 2 Retrospective Pre-Post Survey Results Comparing Resident (*n* = 26 Pre and 25 Post), Cardiologist (*n* = 14 pre and 17 post) and Nursing (*n* = 14 pre and 15 post) Responses on a 5-Point Likert-Like Scale

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	<i>P</i>
The residents and nursing had effective and clear communication						
Residents Pre	0	15	10	1	0	
Residents Post	9	15	1	0	0	<.0001
Cardiologists Pre	0	7	6	1	0	
Cardiologists Post	4	11	2	0	0	<.0001
Nursing Staff Pre	0	1	3	9	2	
Nursing Staff Post	2	10	2	0	0	<.0001
The residents and cardiologists had effective and clear communication						
Residents Pre	0	13	8	5	0	
Residents Post	12	12	0	1	0	<.0001
Cardiologists Pre	0	7	4	3	0	
Cardiologists Post	3	12	2	0	0	.007
Nursing Staff Pre	0	1	6	6	1	
Nursing Staff Post	3	9	1	0	0	<.0001
The overnight cardiologist provided education on the acute management of cardiology issues						
Residents Pre	0	4	11	6	5	
Residents Post	7	9	6	1	2	<.0001
Cardiologists Pre	0	9	4	1	0	
Cardiologists Post	3	11	3	0	0	.08
Nursing Staff Pre	0	1	7	2	3	
Nursing Staff Post	3	7	3	0	2	<.0001
Overall experience covering the cardiology patients was positive						
Residents Pre	0	20	5	1	0	
Residents Post	9	16	0	0	0	.0001
Cardiologists Pre						
Cardiologists Post	0	8	6	0	0	
Nursing Staff Pre	4	12	1	0	0	.005
Nursing Staff Post	0	3	5	7	0	
Residents Pre	3	10	1	0	0	<.0001

(May 2012) and implementation of a cardiac specific pediatric early warning system (December 2014).¹² However, no specific changes during this time focused on the team members working the overnight shift outside of our intervention. We theorize that the combination of multiple interventions during the day contributed to the overall decrease in high-risk transfers. It is still likely, however, that the night huddles had an impact on the transfers at night with none of the other interventions specifically altering the care paradigm after hours. Huddling techniques have been directly linked to improving teamwork, trust, and

respect^{3,13,14} as well as improved situational awareness for unrecognized clinical deterioration.^{6,15} The focus on communication and interprofessional teamwork likely improved the relationship and trust between residents and nursing staff providing direct in-house care. This huddle intervention, bundled together with other safety initiatives in the hospital can be considered as 1 simple step to decrease the risk of medical errors and unsafe events. Our secondary outcome evaluated satisfaction with team communication across the provider groups utilizing the

huddle. We were initially concerned that implementation of a scheduled process would not be well received. Although we do not have data supporting the reliability of the intervention occurring nightly, anecdotal reports suggest it occurred 6 to 7 nights per week in the first month and then nightly thereafter. Survey results showed improved satisfaction among residents, cardiologists, and nurses caring for cardiac patients at night after implementation of the intervention, suggesting that all involved were satisfied with the process and likely a contribution toward the reports of reliability of the intervention occurring

nightly. Overall, our process was quite simple and only included a check-in–type meeting between the resident and bedside nurse before the conference call and “run the list” conversation with the resident, charge nurse, and cardiologist. The simplicity of the process was likely 1 of the factors that made it successful. We suspect that creating standard expectations about communication made patient care easier to provide, allowing for the physician to understand and incorporate nursing concerns and the nurses to have a clear understanding of the plan of care as well as direct voice to influence that plan.

A traditional overnight coverage system where the in-house resident uses his or her judgment to call the at-home attending for assistance allows for subjectivity in making that call. Discrepancies have been identified between resident and attending perception of adequate overnight supervision. Failures are seen in both the resident perception of need for direct communication to discuss patient issues and the availability of the attending to have that discussion.¹⁶ Residents who call their attending frequently may worry about being perceived as weak or lacking appropriate knowledge, whereas residents who rarely call are seen as strong as long as patient outcomes remain positive. Implementing a process that makes calling the attending at a scheduled time to discuss all patients an expectation eliminates the ambiguity of calling thresholds. Although initial concern that this scheduled process would remove resident autonomy and independent critical thinking and create a dissatisfying educational experience for the overnight residents, the survey responses show the opposite, improved satisfaction and a perception of improved communication between residents and cardiologists.

Failure to recognize and treat clinical deterioration is associated with poor patient outcomes, but a hospital-wide and structured communication intervention has been shown to decrease high-risk transfers to the ICU.⁶ Integration of resident and nursing communication strategies have been shown to improve teamwork.¹⁷ Hospital cultures that allow empowerment

of all members of the medical team, specifically nursing, are felt to lead toward models of reduced failures and patient harm.³ Our survey results show that giving nursing staff a direct voice to the attending cardiologist may contribute to significant improvement in satisfaction for caring for these patients. We suspect that this open and scheduled line of communication was associated with better relationships between nursing and the residents and allowed for patient care ideas to be exchanged and supported to lead toward improved care outcomes seen after the intervention. Furthermore, the structure of the huddle intervention may add a significant amount of context to patient information that is handed off within resident and nursing teams, decreasing the chance for communication failures at night. In a study by Hanson et al, the electronic medical record and bedside nurse were critical in providing additional information to help residents make decisions about patient care at night where the handoff reference may have been inadequate.¹⁸

Improving education for residents providing overnight care to a high-risk population was an important consideration for implementing the huddle. In our preintervention culture, residents would call for assistance only with acute medical concerns. Education provided by the cross-covering, at-home cardiologist was dependent on the patient scenario and given at the discretion of the cardiologist. However, after the intervention, the residents reported a favorable shift toward improved education. This increased education of acute cardiology management was also noted by the nurses in their survey responses. Interestingly, the cardiologists did not perceive a change in the quality of education after the intervention, feeling that they provided positive education to the residents during the entire period of study, whereas both the residents and nursing staff perceived significant improvement in the education provided. At-home attending physicians may have more educational impact in a structured process than they realize. With the goal of improving education, implementation of our intervention allowed an at-home physician a

forum for clinical teaching without being present in the hospital.

Limitations to this study include being a single institution study with limited generalizability. The length of the study period, including a 24-month data collection period, can lead to recall bias. Maturation of resident judgment can influence outcome and safe transfers as well as survey responses. To evaluate our secondary outcomes, we used a retrospective pre-post survey design. This strategy has been shown to be a valid survey methodology and eliminates response shift bias in which respondents underestimate their preintervention knowledge and subsequently overestimate their skills postintervention.^{19,20} The retrospective pre-post design allows respondents to have a better understanding of the intervention by experiencing it before evaluating the process, essentially allowing bias toward knowledge of the intervention.¹⁹ However, the length of the study period and the potential for recall bias limits the survey interpretation. Additionally, although the benefits of a retrospective survey design may be appropriate for asking opinions of a novel process, desire of the respondent to demonstrate positive attributes like learning and enthusiasm may influence responses in a way that is not calibrated to actual improvements. That said, it is clear from the responses that the intervention was well received by residents, nurses, and cardiologists on multiple levels and was viewed as being associated with a clear improvement in the domains of communication and education. These perceptions led to satisfaction and likely promoted sustainability. Finally, historical effects could influence results including changing resident education, nursing experience, and institution-level quality improvement and safety efforts.

CONCLUSIONS

Implementation of an interprofessional huddle early the overnight shift was likely a factor in decreasing high risk transfers to the ICU. Satisfaction with the process was seen across all provider groups with improved job satisfaction caring for a high risk patient population suggested from

opening lines of communication. Pediatric resident education was increased and the overall process was highly favored.

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APPENDIX 1

CMH Night Phone Call Survey: Pediatric Resident

Using the 5-point Likert scale:

- Strongly Agree
- Agree
- Neutral/No Opinion
- Disagree
- Strongly Disagree

Questions 1 through 4: Think back to your experience as the resident covering the **overnight** inpatient blue team **before** the implementation of the scheduled 9 PM night huddle phone call between the in-house residents, charge nurse, and at-home cardiologist or cardiology fellow (before August 2013).

Question 1: The residents and nursing staff had effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 2: The residents and cardiologist had effective and clear communication regarding patient care needs on the overnight shift.

Question 3: The overnight cardiologist/fellow provided education on the acute management of cardiology issues on the overnight shift.

Question 4: My overall experience covering the resident inpatient blue team overnight was positive.

Questions 5 through 8: Consider your current experience as the resident covering the **overnight** inpatient blue team **after** the implementation of the scheduled 9 PM night huddle phone call between the in-house residents, charge nurse and at-home cardiologist or cardiology fellow (September 2013–present).

Question 5: The residents and nursing staff have effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 6: The residents and cardiologist have effective and clear communication regarding patient care needs on the overnight shift.

Question 7: The overnight cardiologist/fellow provided education on the acute management of cardiology issues on the overnight shift.

Question 8: My overall experience covering the resident inpatient blue team overnight is positive.

CMH Night Phone Call Survey: Nursing

Using the 5-point Likert Scale:

- Strongly Agree
- Agree
- Neutral/No Opinion
- Disagree
- Strongly Disagree

Consider your answers on questions 1 through 4 based on your experience as the **overnight** 4 Sutherland charge nurse **before** (before August 2013) to the implementation of the scheduled 9 PM phone call among the in-house residents, charge nurse, and at-home cardiologist.

Question 1: The residents and nursing staff had effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 2: On the basis of your observation, the residents and cardiologists had effective and clear communication regarding patient care needs on the overnight shift.

Question 3: On the basis of your observation, the overnight cardiologist/fellow provided education to the residents on the acute management of cardiology issues on the overnight shift.

Question 4: My overall experience caring for the cardiology patients with the resident inpatient blue team overnight was positive.

Consider your answers on questions 5 through 8 based on your experience as the **overnight** 4 Sutherland charge nurse **after** (September 2013–present) the implementation of the scheduled 9 PM phone call among the in-house residents, charge nurse, and at-home cardiologist.

Question 5: The residents and nursing staff had effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 6: On the basis of your observation, the residents and cardiologists had effective and clear communication regarding patient care needs on the overnight shift.

Question 7: On the basis of your observation, the overnight cardiologist/fellow provided education to the residents on the acute management of cardiology issues on the overnight shift.

Question 8: My overall experience caring for the cardiology patients with the resident inpatient blue team overnight was positive.

CMH Night Phone Call Survey: Cardiology

Using the 5-point Likert Scale:

- Strongly Agree
- Agree
- Neutral/No Opinion
- Disagree
- Strongly Disagree

Questions 1 through 4: Think back to your experience as the attending cardiologist covering the **overnight** resident inpatient blue team **before** the implementation of the scheduled 9 PM night huddle phone call among the in-house residents, charge nurse, and at-home cardiologist or cardiology fellow (before August 2013).

Question 1: On the basis of your observations, the residents and nursing staff had effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 2: The residents and myself had effective and clear communication regarding patient care needs on the overnight shift.

Question 3: I had opportunities to provide the residents education on the acute management of cardiologist issues on the overnight shift.

Question 4: My overall experience covering the resident inpatient blue team overnight was positive.

Questions 5 through 8

Consider your current experience as the attending cardiologist covering the overnight resident inpatient blue team after the implementation of the scheduled 9 PM night huddle phone call among the in-house residents, charge nurse, and at-home cardiologist or cardiology fellow (September 2013–present).

Question 5: On the basis of your observations, the residents and nursing staff have effective and clear communication with each other regarding patient care needs on the overnight shift.

Question 6: The residents and myself have effective and clear communication regarding patient care needs on the overnight shift.

Question 7: I have opportunities to provide the residents education on the acute management of cardiologist issues on the overnight shift.

Question 8: My overall experience covering the resident inpatient blue team overnight is positive.