Implementing AACN's Healthy Work Environment Framework in an Intensive Care Unit

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Background Bedside nurse turnover in the United States is 15.9%, representing a national challenge that has been attributed to poor work environments. Healthy work environments are associated with improved nurse satisfaction and retention as well as positive patient outcomes; unhealthy work environments have the opposite effects.
Objectives To implement the American Association of Critical-Care Nurses (AACN) healthy work environment (HWE) framework in an intensive care unit and to evaluate staff satisfaction, turnover, and tenure 2 years later.
Methods A pre-post study design was used to evaluate implementation of the HWE framework in an intensive care unit in a large academic medical facility. Interventions for each of the 6 HWE standards were performed. The AACN HWE assessment survey was used to measure skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership in 2017 and in 2019.
Results Nurse cohorts (n = 165 in 2017; n = 176 in 2019) had a mean age of 31 (median, 27; range, 23-63) years, were predominantly female (76%), and had a mean of 5 (median, 3) years of intensive care unit nursing experience. Statistically significant improvements were found in all standards except the skilled communication and overall measures. Registered nurse turnover remained stable and tenure increased by 79 days in this 2-year period.
Conclusions Findings from this study suggest that interventions addressing the HWE standards are associated with improved staff satisfaction, turnover, and average tenure, further demonstrating the value of the HWE framework in improving retention. (*American Journal of Critical Care.* 2021;30:426-433)

CE 1.0 Hour

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In the United States, turnover among bedside registered nurses is 15.9%, and 62.5% of hospitals report having a vacancy rate of more than 7.5%.[1] Critical care nurse turnover is higher, at 18.1%.[1] Many newly licensed nurses leave their first job within the first year of hire, leading to instability and risk to patient safety.[2] The US Bureau of Labor Statistics projects the need for registered nurses in the workforce to increase by 12%, adding an additional 371 500 jobs, by 2028.[3] The strain caused by general workplace turbulence leads to burnout.[2] Creating and sustaining healthy work environments (HWEs) is associated with stability of local teams and lower rates of stress and burnout.[2]

The importance of prioritizing nurses' work environments came to light with the Institute of Medicine's 2004 publication of *Keeping Patients Safe: Transforming the Work Environment of Nurses*.[4] This landmark study showed that many work environments fail to facilitate safe care because of poor management practices, unsafe staffing, and punitive cultures. Multiple studies have indicated that work environments are associated with nurse retention and patient outcomes, including mortality.[5,6] Bedside nurses become dissatisfied, and thus disengaged, when managers fail to provide professional growth opportunities, safe staffing, and partnership.[7] Disengagement of bedside nurses is a major factor in turnover early in practice and is a challenge that must be addressed by nurse leaders. Healthy work environments optimize nurse and patient outcomes while mitigating nurse burnout and increasing compassion satisfaction.[2]

The American Association of Critical-Care Nurses (AACN) developed a framework that outlines an evidence-based approach to improving local work environments.[8] The framework consists of 6 standards: skilled communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership. The purpose of this study was to implement interventions that align with the AACN HWE framework and evaluate the effect on overall satisfaction and retention of registered nurses in a 2-year period.

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Methods

Design, Sample, and Setting

This study used a pre-post design in which 2 independent cohorts were compared to assess the impact of the interventions on our work environment. We collected baseline data in July 2017 and postintervention data in April 2019. The study took place in a 32-bed cardiothoracic intensive care unit (CTICU) at a large quaternary academic medical center in the southeastern United States. Our unit had 165 full-time equivalents, and our primary nurse to patient ratio was 1:1 or 1:2. Our nursing care assistant model included 3 full-time equivalents.

Critical care nurse turnover is currently at 18.1%.

The patient population consisted of those who had undergone coronary artery bypass grafts, valve repairs or replacements, aortic surgeries, and heart and lung transplants, as well as patients requiring mechanical circulatory support, including ventricular assist devices, intra-aortic balloon pumps, and extracorporeal membrane oxygenation. This project was deemed exempt as a quality improvement project by the university's institutional review board. Because the design of the evaluation of the HWE initiative used cross-sectional sampling and compared 2 independent cohorts, one in 2017 and one in 2019, we followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines in presenting the results.[9]

Measures

In 2017, our team began using the publicly available AACN HWE assessment survey.[10] The survey consisted of 18 questions, 3 for each of the 6 HWE standards (Table 1).[10] Responses indicated level of agreement using a 5-point Likert scale (1 = "strongly disagree"; 5 = "strongly agree"). Mean scores were calculated for each standard, and an

Table 1
Questions from the AACN healthy work environment assessment survey

Number	Question
1	Administrators, nurse managers, physicians, nurses, and other staff maintain frequent communication to prevent each other from being surprised or caught off guard by decisions.
2	Administrators, nurse managers, and physicians involve nurses and other staff to an appropriate degree when making important decisions.
3	Administrators and nurse managers work with nurses and other staff to make sure there are enough staff to maintain patient safety.
4	The formal reward and recognition systems work to make nurses and other staff feel valued.
5	Most nurses and other staff here have a positive relationship with their nurse leaders (managers, directors, advanced practice nurses, etc).
6	Administrators, nurse managers, physicians, nurses, and other staff make sure their actions match their words—they "walk their talk."
7	Administrators, nurse managers, physicians, nurses, and other staff are consistent in their use of data-driven, logical decision-making processes to make sure their decisions are the highest quality.
8	Administrators and nurse managers make sure there is the right mix of nurses and other staff to ensure optimal outcomes.
9	Administrators, nurse managers, physicians, nurses, and other staff members speak up and let people know when they've done a good job.
10	Nurses and other staff feel able to influence the policies, procedures, and bureaucracy around them.
11	The right departments, professions, and groups are involved in important decisions.
12	Support services are provided at a level that allows nurses and other staff to spend their time on the priorities and requirements of patient and family care.
13	Nurse leaders (managers, directors, advanced practice nurses, etc) demonstrate an understanding of the requirements and dynamics at the point of care, and use this knowledge to work for a healthy work environment.
14	Administrators, nurse managers, physicians, nurses, and other staff have zero-tolerance for disrespect and abuse. If they see or hear someone being disrespectful, they hold them accountable regardless of the person's role or position.
15	When administrators, nurse managers, and physicians speak with nurses and other staff, it's not one-way communication or order giving. Instead, they seek input and use it to shape decisions.
16	Administrators, nurse managers, physicians, nurses, and other staff are careful to consider the patient's and family's perspectives whenever they are making important decisions.
17	There are motivating opportunities for personal growth, development, and advancement.
18	Nurse leaders (managers, directors, advanced practice nurses, etc) are given the access and authority required to play a role in making key decisions.

overall score was obtained. The overall score was interpreted as follows: 1.00 to 2.99, "needs improvement"; 3.00 to 3.99, "good"; 4.00 to 5.00, "excellent." In 2018, the AACN HWE assessment survey was shown to be valid and reliable across each of the 6 domains (Cronbach α of 0.77 or better).[10,11] Thus, we used the HWE assessment survey to provide an objective measure of our local work environment for each independent domain in addition to using the overall summary score.

Procedures

Local leaders sent the assessment survey to all CTICU nursing staff (n = 165) via the AACN website in July 2017. The survey was open for responses for 31 days. Seventy-two nurses (42.1%) responded to the preimplementation survey. Responses were anonymous. At the conclusion of the survey window, results were collated and returned by AACN. After the interventions, an anonymous e-survey consisting of the HWE questions as well as an area for write-in comments was disseminated to all 176 registered nurses working in the CTICU. The interventions used to address each HWE standard are outlined next.

Skilled Communication. The Joint Commission identified failed communication as a leading contributor to sentinel events,[12] medication errors, poor quality of care, staff burnout, and staff turnover.[13,14] AACN advocates for staff to be as competent in communication as they are in clinical skills.[15] The skilled communication scores were measured by question numbers 1, 6, and 14 on the HWE assessment.

To enhance the communication skills of our nurses, all unit preceptors and charge nurses took a basic communication class facilitated by the hospital-based clinical education department. To enhance communication across the department, unit leaders hosted 30-minute staff meetings at least 12 times per month, accommodating night and weekend shifts. In addition, the staff-led HWE committee created a monthly newsletter featuring events, clinical information, and staff celebrations. Finally, the unit held daily interprofessional huddles to review various patient outcomes, such as hospital-acquired infections, and address safety concerns of staff members.

True Collaboration. Collaboration is critical to patient safety; without it, HWEs cannot be achieved.[5] True collaboration is measured by assessment question numbers 2, 10, and 15 on the HWE survey. To promote collaboration, nurse-to-nurse handoff and daily interprofessional rounds were endorsed. Bedside report was a unit standard reviewed during orientation and further supported by daily leadership rounding. Standard work surrounding interprofessional rounds supported a consistent daily process. These strategies lead to enhanced communication, patient safety, and staff overall satisfaction.[16] To promote relationships among the team, our HWE committee coordinated events, such as social activities. Further, the unit organized an annual softball tournament, including teams from several hospital departments, to promote teamwork and socialization and raise money for the American Heart Association and HWE committee activities.

Effective Decision-making. Effective decision-making occurs when nurses participate in policy creation and organizational operations while directing and evaluating clinical care.[15] Ineffective decision-making leads to decreased staff and patient satisfaction and compromises safety.[15] Effective decision-making was measured by question numbers 7, 11, and 16. As previously mentioned, interprofessional rounds promoted collaboration and enhanced effective decision-making. Further, all practice was evidence based and evaluated regularly by leadership and staff members. Our unit had multiple committees focused on performance improvement and research that promoted and facilitated the use of evidence-based practice. Members of these groups identified improvement opportunities and partnered with the appropriate teams to evaluate new and best evidence. The leadership team was transparent with staff regarding changes to unit protocols and policies and provided the evidence to support these changes, many of which were brought forward by staff members.

Appropriate Staffing. Appropriate staffing occurs when patient needs and nurse competencies are effectively matched and is associated with enhanced staff satisfaction and patient outcomes.[17,18] In fact, AACN states that appropriate staffing affects all aspects of a department.[19] Appropriate staffing was measured by question numbers 3, 8, and 12. Because staffing is a complex issue that is affected by patient workload, nurse competencies, interdisciplinary skill mix, and workforce trends, collaboration between leaders and nurses at the bedside was necessary.[19] Our local leaders practiced prospective staffing, which prevented periods of short staffing related to unexpected turnover or low hiring pools.[20] Additionally, a unit-based scheduling committee engaged bedside nurses in staffing and scheduling, ensuring that patient and nursing needs were consistently met. The charge nurses use a competency tool to ensure that patient needs are paired with a competent nurse. Moreover, the unit orientation coordinator provided the charge nurses with a weekly orientation needs document that listed the types of assignments needed for nurses to gain competence. The charge nurses use both of these tools to ensure appropriate assignments.

> To ensure success of an HWE initiative, all 6 standards must be addressed in any intervention.

Meaningful Recognition. Meaningful recognition occurs when staff members are recognized and provide recognition themselves to others for the value of the work they perform and enhances morale, productivity, and patient outcomes.[15] Meaningful recognition was measured by question numbers 4, 9, and 17. Our lowest-scoring category was meaningful recognition, resulting in a substantial focus for the HWE committee. The monthly newsletter focused on recognition and included pictures from staff events and profiles of new nurses, and space was devoted to celebrations of staff birthdays, new professional certifications, and personal achievements. This work promoted socialization among the team. The HWE committee also established an annual "Years of Service" breakfast for staff members who had worked on the unit for 5 years or more. Recognized staff members received a personalized gift. Additionally, the HWE committee coordinated activities for staff during National Nurses' Week such as hand massages, Reiki, pet therapy, ice cream socials, and music lessons.

Individual recognition is a large part of meaningful recognition, and our HWE team developed many strategies to promote this. On a biannual basis, the

Figure 1 Meaningful recognition: "Gratitude Tree."

Figure 2 Meaningful recognition: Beacon gold award.

committee gave each of our preceptors and charge nurses recognition gifts, purchased with funds raised by the annual softball tournament. These gifts consisted of goody bags with pens and markers, coffee shop gift cards, and badge pins and were always accompanied by a handwritten note. Furthermore, nurses nominated a preceptor as "Preceptor of the Month," and that person was recognized in the monthly newsletter. In addition, the leadership teams strived to provide kudos in every staff meeting to individual team members. These included letters of thanks from patients, peers, or the leadership team itself. Last, in collaboration with our Support Methods and Resiliency Techniques (SMART) committee, which focused on self-care and resiliency, the team created a "Gratitude Tree" (Figure 1). The leadership team, SMART committee, and HWE committee members wrote a thank-you note for each staff member on the unit and placed it on the tree, which was located in a public space. This project allowed team members to be publicly recognized by staff, patients, and family members.

To recognize the team as a whole, HWE committee members and unit leaders partnered to nominate the CTICU for an AACN Beacon of Excellence Award, which reflects a high standard for patient care, positive work environments, and continuous improvement.[21] As a result, the CTICU earned a gold-level award, which was celebrated for several days with unit staff and hospital leaders (Figure 2).

Authentic Leadership. Authentic leadership promotes staff satisfaction, ensures active staff engagement, and affects staff members' intent to stay.[6] As AACN notes, authentic leadership is achieved when nurse leaders fully embrace the concept of an HWE, lead by example, and encourage others to engage in an HWE.[22] Authentic leadership was measured by question numbers 5, 13, and 18 on the HWE survey. Our department had 1 nurse manager and 7 clinical leads, which is a role that is budgeted for 50% direct patient care and 50% administrative work. The clinical lead position is critical to authentic leadership in our department, and those who fill it genuinely understand the concerns and barriers that frontline staff face day to day. The local nurse leaders spearheaded this evidence-based work in collaboration with bedside nurses interested in formalizing HWE interventions. The partnership between local leaders and staff provided the leverage needed to generate buy-in from others.

To promote authentic leadership, the nurse manager and clinical leads participated in continuing education, performance improvement efforts, and simulation exercises. Participation in staff-led committees and initiatives allowed leaders to coach others while learning staff perspectives. Translating staff members' ideas into the practice setting built excitement and trust among the team. This engagement fostered strong relationships, active daily mentorship, and bedside nurses' interest in nursing leadership.

Statistical Analysis

We report the nurses' demographic characteristics in year 1 (2017) and year 2 (2019) by using mean and SD and median and interquartile ranges for continuous measures, and count frequencies and percentages for categorical variables. For each HWE standard and the overall HWE assessment score, tests of group differences between 2017 and 2019 were analyzed using a 2-tailed *t* test. To control for increases in type I error rate caused by multiple comparisons, we used the Benjamini-Hochberg false discovery rate. In this case, each subsequent comparison of the individual standards is compared in sequence. This method filters the tests of hypotheses that have errors (the null

is accepted, signaling no difference) from the hypotheses that are judged important (the null is rejected, signaling a significant difference).[23] Using this approach, it is possible for individual standards of the HWE to be statistically significant even though the probability for the overall test comparison is *P* greater than .05. Analyses were performed using SPSS, version 26 (IBM Corp).

Results

Before the intervention, the CTICU nurses (n = 165) had a mean (SD) age of 31 (0.81) years, had a mean of 5 years of nursing experience (median, 3; range, <1-30), were predominantly female (76.4%), and had a BSN or an MSN (86.0%; Table 2). After the intervention, the CTICU nurses (n = 176) had a mean (SD) age of 31 (1.4) years, had a mean of 6 years of nursing experience (median, 3; range, <1-30), were predominantly female (72.7%), and had a BSN or an MSN (82.4%). There were no statistically significant differences in demographic characteristics between the 2 cohorts (Table 2).

Seventy-two (43.6%) nurses responded to the survey in 2017 and 64 (36.4%) responded in 2019. Improvements in the overall HWE summary score were not statistically significant (*P* = .06). Comparing the standards independently and using the Benjamini-Hochberg approach to adjust for multiple comparisons, the scores for effective decision-making (mean, 4.01 vs 4.17; *P* = .001), true collaboration (mean, 3.43 vs 3.63; *P* = .008), meaningful recognition (mean, 3.37 vs 3.51; *P* = .01), authentic leadership (mean, 3.92 vs 4.04; *P* = .02), and appropriate staffing (mean, 3.61 vs 3.73; *P* = .03) improved significantly from 2017 to 2019 (Table 3).

Table 2
Demographic differences by nurse cohort before and after the interventions

Characteristic	Before, 2017 (n = 165)	After, 2019 (n = 176)
Age, y		
Mean (SD)	31 (0.81)	31 (1.4)
Median	27	28
Sex, No. (%)		
Male	39 (23.6)	48 (27.3)
Female	126 (76.4)	128 (72.7)
Level of education, No. (%)		
BSN or MSN	142 (86.0)	145 (82.4)
ADN or diploma	23 (14.0)	31 (17.6)
Years of experience		
Mean (SD)	5 (0.6)	6 (2.5)
Median	3	3
Within first year of hire, No. (%)	57 (34.5)	53 (30.1)

Abbreviations: ADN, associate's degree in nursing; BSN, bachelor of science in nursing; MSN, master of science in nursing.

The median tenure for the nurses, including those in the orientation period, increased by 79 days, meaning that nurses stayed in their jobs 94 days longer in 2019 than they did in 2017. Excluding nurses in the orientation period at the time of the survey, the median tenure in 2019 was 219 days more than that in 2017 and nurse turnover remained stable (Table 4). In 2017 nurse turnover was 23.49%, and in 2019 it was 23.70%. In 2017, the self-reported top reason for leaving was to pursue a nurse practitioner or certified registered nurse anesthetist credential (n = 14, 32%). The second most popular reason for leaving in 2017 was relocation (n = 10, 23%). In 2019, nurses left for internal transfer opportunities, such as positions in the cardiac catheterization laboratory or

Table 3
Healthy work environment survey results from before and after interventions

Survey subscales (standards)	Score, mean (SD)		% Change	B-H critical value[a]	*P*[b]
	Before, 2017 (n = 72)	After, 2019 (n = 64)			
Effective decision-making	4.01 (0.17)	4.17 (0.36)	3.99	0.007	.001
True collaboration	3.43 (0.43)	3.63 (0.44)	5.83	0.014	.008
Meaningful recognition	3.37 (0.14)	3.51 (0.43)	4.15	0.021	.01
Authentic leadership	3.92 (0.24)	4.04 (0.37)	3.06	0.029	.02
Appropriate staffing	3.61 (0.39)	3.73 (0.18)	3.32	0.036	.03
Skilled communication	3.75 (0.45)	3.85 (0.20)	2.67	0.050	.10
Overall score	3.68 (0.24)	3.82 (0.57)	3.80	0.043	.06

[a] Benjamini-Hochberg test for adjustment of type I error rate in repeated comparisons.
[b] Mean (SD) score 2017 versus 2019.

Table 4
Length of tenure, in days

Nurses' tenure, d	2017 (n = 165)	2019 (n = 176)	Difference, d
Overall			
Mean (SD)	1230.2 (3.26)	1207.4 (2.32)	−22.8
Median (IQR)	663 (1583)	742 (1519)	79.0
No orientees			
Mean (SD)	1237.7 (3.27)	1331.9 (2.63)	94.2
Median (IQR)	691 (1493)	910 (1512)	219

operating room (n = 16, 30%), certified registered nurse anesthetist programs (n = 11, 20%), and relocation (n = 11, 20%). Other reasons for leaving the CTICU included travel nurse assignment, personal, military, and probationary failure.

Discussion

Findings of this study suggest that using the AACN HWE framework to structure a unit-based effort contributes to an improved work environment. Using the AACN HWE assessment survey provides a consistent approach to evaluating progress. Facilitating an HWE for nurses accomplished several things during this study. First, it improved nurse engagement, initially by simply providing opportunities to be involved in activities. Second, this work may lead to decreased burnout and improved joy in the workplace, as reflected in other published studies.[18] Also, enhancing the work environment contributed to improved nurse tenure. Partitioning outcomes for each of the HWE standards helped identify which areas required focus.

Our finding that nurse engagement improved with the intervention supports the results of other published studies suggesting that providing opportunities to be involved in activities draws staff into the cultural context of the unit. Facilitating nurse-led committees focused on continuous improvement, policy creation, and education supports bedside nurses' sense of ownership of practice. Promoting nurse engagement through the HWE framework generates motivation toward fulfilling each standard.

Our study indicated that meaningful recognition, which is a driver of decreased burnout and improved joy in the workplace, is the most challenging standard to achieve consistently. First, meaningful recognition is different for every person. Generational or personal characteristics may affect how individuals prefer to be recognized. Given the large size of our team, honoring individual preferences for recognition was challenging for the HWE committee and leadership. The Gratitude Tree provided multiple avenues for staff recognition, helping to address this challenge. Moving forward, one goal is to identify practical methods to recognize nurses consistently and in a way that is individually meaningful. These methods must be realistic and not overwhelming for the leadership team to put into place.

The results of this work aligned with other findings noted in the literature showing that nurses who work in healthy environments stay in their jobs longer; moreover, they experience less moral distress and deliver higher-quality care.[5] Current literature supports our work in that appropriate staffing, which includes ensuring nurse competence, is associated with improved patient safety and outcomes.[18] Increasing tenure is a positive finding of this work and can be expected to continue if an HWE is sustained.

An HWE is a workplace that fosters joy and positive relationships while promoting excellent patient-focused care.[24] Using an evidence-based approach to assess and improve the work environment allows teams to identify current gaps and focus interventions accordingly. In addition, the framework provides a platform for measuring and benchmarking changes over time, making improvements more visible and therefore more rewarding for the team. Sustaining an HWE requires continuous dedication from staff and leadership, and using the AACN framework facilitates ongoing measurement and provision of feedback to staff and nursing leadership.

Limitations

This study has several limitations. First, AACN distribution of the survey allowed for anonymity of participants but created challenges in ascertaining the response bias. We were unable to capture nonresponders' perspectives and determine differences in demographic characteristics between responders and nonresponders. Second, the response rate was less than 50% for each administration of the survey. Last, the HWE assessment survey using the AACN website does not allow for open-ended responses, which would aid in gathering more targeted feedback and specific interventions.

Conclusion

This study reinforces the value of using an evidence-based approach, such as the AACN HWE framework, to implement strategies and evaluate the health of the work environment. It also emphasizes the need for further development of practical and sustainable interventions that contribute to promoting an HWE. Creating and sustaining an HWE is a journey that requires planning, dedicated staff and leaders, and follow-through. As outlined in the literature, focused attention is needed to improve nursing

work environments, and knowledge of practical and impactful strategies to implement HWEs is critical for nurse leaders.

FINANCIAL DISCLOSURES
None reported.

SEE ALSO

For more about healthy work environments, visit the *AACN Advanced Critical Care* website, **www.aacnacconline.org**, and read the article by Ulit et al, "Role of the Clinical Nurse Specialist in Supporting a Healthy Work Environment" (Spring 2020).

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CE 1.0 Hour Category C

Notice to CE enrollees:

This article has been designated for CE contact hour(s). The evaluation demonstrates your knowledge of the following objectives:

1. List each component of the American Association of Critical-Care Nurses' (AACN's) Healthy Work Environment (HWE) standards.
2. Outline the relationship between AACN's HWE standards and patient and nurse outcomes.
3. Identify an implementation strategy for each AACN HWE standard.

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