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Nursing Workforce Challenges in the Postpandemic World

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The United States and the rest of the world continue to grapple with the COVID-19 pandemic. Considering that nurses make up the largest segment of the U.S. healthcare workforce, they are essential to the country's collective pandemic response. Nurses are the primary source of direct care to persons infected by COVID-19, including historically marginalized populations, and the ongoing demands placed on nurses are leading to unprecedented stress, burnout, and uncertainty about their profession. Even before the pandemic, healthcare settings were chronically understaffed and nurses were burnt out. According to a prepandemic analysis, a shortfall of more than 150,000 registered nurses was anticipated by 2020 (Zhang et al., 2018). The pandemic has exacerbated the labor shortage well beyond prior forecasts, stressing an already fragile U.S. healthcare system and potentially contributing to worse patient outcomes and wider health inequities.

A 2021 integrative review examining the pre- and post-COVID-19 pandemic literature on nursing turnover found that since the pandemic's onset, there has been a significant increase in nurse turnover intention (Falatah, 2021). A 16-study synthesis of nurse burnout literature during the pandemic found high levels of emotional exhaustion and depersonalization, as well as reduced feelings of personal accomplishment (Galanis et al., 2021). The same study also identified risk factors for burnout, including decreased social support, working in hospitals with inadequate and insufficient material and human resources, and increased workload (Galanis et al., 2021).

The staggeringly high turnover across America's working population due to the COVID-19 pandemic has been referred to as the "Great Resignation" (Gahdhi & Robison, 2021). In addition to record-high resignations and unfilled positions, an analysis by Gallup found employee engagement—rather than an industry, role, or pay issue—to be the major risk factor for resignation (Gahdhi & Robison, 2021). From September 2019 to March 2021, the proportion of U.S. employees "actively disengaged" (looking for a job or watching for opportunities) increased from 69% to 74% (Gahdhi & Robison, 2021).

Studies suggest that nursing is particularly susceptible to the Great Resignation. An American Nurses Foundation (2022) survey of nearly 12,000 nurses conducted in January 2022 found that 60% of respondents younger than 35 years reported experiencing an extremely stressful, violent, or traumatic event resulting from COVID-19, and 89% reported that their organization was experiencing a staffing shortage. More than one-half of respondents felt undervalued, and nearly one quarter reported that they intended to leave their positions in the next 6 months.

Concerned about these trends, the AcademyHealth Interdisciplinary Research Group on Nursing Issues (IRGNI) has devoted its energy to supporting the development of health services research that examines the nursing workforce, shapes our understanding of the practice environment, and evaluates the workforce needs of the postpandemic world in both hospital and community settings. The collection of abstracts presented at this year's IRGNI conference reflects this commitment. Many of these abstracts address the adverse effects of the pandemic on nurses. Stimpfel, for example, describes the impact of the first 6 months of the pandemic on nurses' psychological health and reports high rates of depression, anxiety, and insomnia. In the study by Montgomery and Patrician, the researchers show that stress during the pandemic contributed to high rates of burnout. Similarly, Pogue et al. found that during COVID-19, registered nurses, compared to physicians and advanced practice providers, reported the highest levels of burnout, job dissatisfaction, stress, and intent to leave.

These abstracts reinforce the importance of a supportive work environment for achieving nurses' well-being, improving patient outcomes, and reducing health inequities. Townley et al., for example, found that poorly rated primary care nurse practitioner work environments contributed to high rates of hospitalization for dually-eligible adults with chronic conditions. In a systematic review of 12 research articles, Rosenbaum and Lake reported a strong association between hospital nursing resources, such as Magnet designation, nurse staffing, and the nurse work environment, and patient satisfaction based on the Hospital Consumer Assessment of Healthcare Providers and Systems survey.

Taken together, these works call for “rebooting” the practice environment to offset the adverse effects of the pandemic on nurses and their patients, and the nursing workforce must be prepared for the postpandemic world. Investments in the practice environment may help to offset the adverse effects of the pandemic on nurses and their patients. We believe that this will require innovative models of nurse-led care; reimagined nursing-sensitive performance measures; new and sustained efforts for promoting diversity, equity, and inclusion; payment policies that reflect nurses’ value; as well as innovative organizational and institutional approaches that enable flexibility and recognize nurses’ contributions. The IRGNI looks to its members and other nursing health services researchers to open lines of inquiry that inform these new directions and improve healthcare delivery for all Americans.

We thank the contributors for their trailblazing work, and we look forward to witnessing and contributing to the innovations in practice environments to come.

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A Mixed Methods Study of Individual and Work Factors Associated With Psychosocial Health of Registered Nurses During the COVID-19 Pandemic

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Research Objective: To describe the initial influence of the COVID-19 pandemic on U.S. nurses’ psychosocial health, and to identify factors associated with poor psychosocial health outcomes.

Study Design: We conducted an exploratory, descriptive study with a convergent mixed methods design (QUAN+qual) in which the quantitative data were prioritized and qualitative data were used to explain and augment findings. The quantitative data were captured in a survey of nurses’ work environments, COVID-19–related experiences, and psychosocial health outcomes using REDCap, a secure cloud-based platform. We developed separate multivariable logistic regression models for 3 psychosocial health outcomes using the Patient Health Questionnaire (PHQ-9), which is a 9-item survey measuring depressive symptom severity; the Generalized Anxiety Disorder (GAD-7) tool, which measures anxiety using 7 items; and the Insomnia Severity Index (ISI), which measures insomnia symptoms with 7 items. Qualitative data were captured in individual semi-structured interviews conducted through audio-only Zoom meetings. An interview guide based on the conceptual framework that guided this study (Work, Stress, and Health) consisted of a series of theoretically derived open-ended questions and probes. We used content analysis to process and analyze qualitative data. To integrate the quantitative and qualitative data, we used joint analysis displays.

Population Studied: Participants were recruited from June to August 2020, which was an early period of the pandemic in the United States. To capture a range of geographic locations and pandemic intensity, we used multiple sources, including regional professional nursing organization membership list serves, NIOSH (National Institute for Occupational Safety and Health) Education and Research Centers, and social media platforms. Eligibility criteria included (a) being a registered nurse, (b) currently working in the United States, and (c) having at least 6 months of work experience since initial nursing licensure. We administered surveys ($N = 629$) and conducted semi-structured interviews ($N = 34$) among a subset of nurses working across healthcare settings in 18 states.

Principal Findings: Nurses reported high rates of depressive symptoms (22%), anxiety (52%), and insomnia (55%). The only work or COVID-19–related variable that predicted poor outcomes across all three multivariable logistic regression models was shorter total sleep time before work, i.e., 5 hours of sleep or less. The integrated analysis found that disturbances to sleep were both a contributing factor to, and an outcome of, poor psychosocial health status. Throughout the individual interviews, participants described sleep as “the biggest issue I’ve had” with a mix of anxiety and insomnia co-occurring. For example, one participant said, “I had the anxiety and the constant racing of thoughts and that kind of kept me up and that didn’t let me fall asleep as well.” Anxiety and rumination

about their working conditions—extreme stress, understaffing, redeployment into a COVID-19 unit, rationing/lack of personal protective equipment, high mortality—lead to difficulty initiating or maintaining sleep.

Conclusions: Nurses working during the onset of the COVID-19 pandemic faced severe work stressors affecting their psychosocial health status. Immediate attention as well as long-term follow-up are warranted for this priority workforce.

Implications for Policy or Practice: Healthcare leaders are responsible for ensuring that evidence-based interventions are being implemented within their organizations to promote and restore the psychosocial health and well-being of the nursing workforce.

Nursing Data in Large, Federal Government-Sponsored, Health-Related Surveys and Datasets: A Mapping Review

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Research Objective: Nursing faculty conducting research and scholarship face competing priorities, time constraints, and limited resources. Secondary big data from national databases offer new opportunities to address important issues that influence the nation's health. However, navigating these sources can be challenging. Furthermore, the extent to which these data sources include information related to nursing practice is not known. We aimed to review and summarize a comprehensive list of federally-sponsored sources of healthcare data and determine the inclusion of nursing-sensitive data.

Study Design: We conducted a systematic mapping review of federal sources of healthcare data available for researchers. An iterative process of data collection, coding, and review was undertaken. The primary measure of interest was the availability of nursing-inclusive data. Additional key measures included the overview and purpose of the data, population of interest and sampling design, methodology of data collection, type and description of data, and cost to obtain data. Convergent synthesis analysis was used to aggregate findings.

Population Studied: We included federal government entities that collected health-related data on populations, patients, individuals, healthcare providers, or systems. We searched their websites for publicly available datasets. Data sources with active data collection within the previous 10 years, and those that collected health-related data on populations, individuals, healthcare providers, or systems were included. Among 91 data sources identified, 58 met final inclusion criteria.

Principal Findings: The 58 data sources belonged to nine government entities, with the majority (28%) managed by the Centers for Disease Control and Prevention. The primary population of interest for most sources (71%) was individuals or patients; fewer sources focused on providers (26%) and health systems (24%). More than half ($n = 34$, 59%) included some data elements on healthcare providers, which included nurses. However, few ($n = 13$, 22%) distinguished nurses from other healthcare providers. Data related to

nurses were generally buried within measures that were nonspecific for type of provider, which prevents the calculation of metrics that directly reflect nursing practice.

Conclusions: National data sources represent a valuable resource of big data that provide insight into the nation's health, health-care system, and workforce. These secondary data are a feasible, cost-efficient means by which to investigate important health issues relevant to nurses. However, despite the diverse collection of nationally representative datasets available to researchers, we found that the inclusion of nursing-specific data is uncommon. More than half of the data sources we reviewed contained information on providers, yet few collected data that would permit nursing-specific analyses.

Implications for Policy or Practice: Nurses and advanced practice nurses deliver a large proportion of care in the United States, but federal data sources do not adequately measure the role of nurses in healthcare delivery. The current drive toward value-based care requires the attribution of providers' care to patient outcomes. However, without more granular data on providers, we are unable to produce measures that accurately reflect nursing contributions in healthcare. Our findings highlight the importance of building the capacity of big data sources to incorporate nursing-specific data, which are needed to inform policies that guide provider practice.

Better NP Practice Environments Reduce Disparities in Hospitalizations Among Dually Eligible Patients With Chronic Ambulatory Care Sensitive Conditions

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Research Objective: Adults eligible for both Medicare and Medicaid, known as dually eligible patients, experience significant health disparities, including twice as many hospitalizations, significant unmet health-related social needs, and higher rates of chronic ambulatory care sensitive conditions (ACSCs), such as coronary artery disease (CAD) and diabetes, compared to Medicare-only patients. Nurse practitioners (NPs) are well-positioned to address the care needs of dually eligible patients, as NPs are increasingly providing primary care management of ACSCs and are more likely than physicians to accept Medicaid. However, NPs often work in unsupportive clinical practice environments marked by strained relationships with administrators, a lack of independent practice and support, and limited professional visibility, limiting their ability to optimally meet patients' needs. The purpose of this study was to examine the association between the NP primary care practice environment and disparities in all-cause hospitalizations between dually eligible and Medicare-only patients with ACSCs.

Study Design: Secondary cross-sectional survey methodology was employed to collect data from primary care NPs across 460 practices in four states (Pennsylvania, New Jersey, California,

and Florida) in 2015. The Nurse Practitioner Primary Care Organizational Climate Questionnaire (NP-PCOCQ), which contains 4 subscales with high internal consistency reliability, was used to measure NP practice environment. Practice environments with all 4 mean subscale scores above the median were classified as “good.” Those with 2–3 subscales above the median were classified as “mixed” practice environments, and those with 0–1 subscales above the median were classified as “poor.” Survey data were linked to Medicare claims files through a practice identifier available in the SK&A OneKey database. Multilevel regression models accounting for patient and practice characteristics were employed, followed by pairwise comparisons to compare disparities in all-cause hospitalizations between dually eligible patients and Medicare-only patients within good, mixed, and poor NP practice environments.

Population Studied: A total of 165,200 patients (14.9% dually eligible patients and 85.1% Medicare-only beneficiaries) were included across 460 practices. Patients had an International Classifications of Diseases, 10th edition, Clinical Modification, code for CAD or diabetes as one of their top five diagnoses.

Principal Findings: The majority of patients (58.1% dually eligible, 60.1% Medicare only) received care in poor practice environments ($\chi^2 = 157.8, p < .001$). After adjusting for patient and practice characteristics, dually eligible patients had 50% higher odds overall of being hospitalized compared to Medicare-only patients (OR 1.51, 95% CI: 1.41–1.62). Dually eligible patients in poor practice environments had the highest adjusted odds of being hospitalized compared to their Medicare-only counterparts (OR 1.51, 95% CI: 1.41–1.62). In mixed practice environments, dually eligible patients had approximately 44% higher odds of a hospitalization (OR 1.44, 95% CI: 1.23–1.67), whereas in the best practice environments, dually eligible patients had approximately 29% higher odds (OR 1.29, 95% CI: 1.14–1.45, $p < .001$).

Conclusions: Improving NPs’ clinical practice environment in primary care may sizably reduce disparities in hospitalizations for dually eligible patients. However, even in the best practice environments, critical disparities in hospitalizations remain.

Implications for Policy or Practice: As policymakers look to improve outcomes and reduce costs among dually eligible patients, addressing a modifiable aspect of care delivery in NPs’ clinical practice environment is a key opportunity to reduce hospitalization disparities. Further efforts are needed to address remaining disparities by understanding and meeting patients’ health-related social needs.

Understanding Relationships Between Health Access Literacy, Health Self-Efficacy, Emotional Well-being, and Meaningful Engagement With the Children’s Mental Health System During the COVID-19 Pandemic.

Authors: Suzanne Courtwright, PhD, MSN, NP, NEA-BC, and Jacqueline Jones, PhD, RN, FAAN

Research Objective: Access to adolescent mental health services is limited, leading the Children’s Hospital Association to advocate

on behalf of children and teens with a written letter to leaders of the United States Senate and House of Representatives on January 27, 2022, to invest in the pediatric mental health workforce. The COVID-19 pandemic is exacerbating the growing mental health crisis in the country’s pediatric and adolescent population. In October 2021, the Children’s Hospital Association joined the American Academy of Pediatrics and the American Academy of Child and Adolescent Psychiatry and declared a national emergency in children’s mental health, as rates of anxiety, depression, and hospitalizations for suicide attempts and self-harm have risen more than 50% from pre-pandemic levels. Teens with chronic conditions have 4.3 greater odds of suicidal ideation and completion than their peers, and nearly 1 in 4 teens has a chronic condition. Understanding how adolescents with chronic conditions access, utilize, and engage with the children’s mental health system is necessary to better inform allocation of investments in mental healthcare delivery models for this vulnerable but growing population. The purpose of this study is to understand how health access literacy, health self-efficacy, and emotional well-being influence meaningful engagement with the children’s mental health system during the COVID-19 pandemic.

Study Design: A convergent mixed methods design utilizing path analysis of factor variables integrated with analysis of qualitative data using interpretive phenomenology was used.

Population Studied: Adolescents aged 10–21 years with chronic conditions, defined as requiring ongoing treatment for more than 1 year, were included.

Principal Findings: Preliminary findings indicate that adolescents with chronic conditions do not access healthcare for mental help until “it gets really bad.” Establishing trust over time is an important factor for this population. For those who tried to access services, non-White participants reported more challenges to access mental health services than their White peers.

Conclusion: The preliminary results of this study highlight opportunities to improve health equity by investing in mental health resources across both micro- and macro-level systems of care.

Implications for Policy or Practice: Improving health equity for teen mental health services may begin with placing interdisciplinary providers in micro-level proximity to teens, such as in schools and community-based programs, to optimize opportunities for trusting relationships to develop. Psychiatric mental health nurse practitioners, pediatric nurse practitioners, nurse coaches, community health nurses, school nurses, and public health nurses are well poised to provide easier access to school- and community-level preventive mental health education, and services. Removing policy barriers to advanced practice in densely populated states such as New Jersey and the northeast will only advance efforts to optimize access to care.

Complementing ICD Codes With Nurses' EHR Documentation Can Improve the Identification of Patients With Predisposing Factors of Iatrogenic Conditions

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Research Objective: Accurate identification of patients with predisposing factors of iatrogenic conditions is a prerequisite for implementation of targeted prevention interventions. The International Classification of Diseases (ICD) codes are frequently used as proxies for a patient's health status. However, ICD codes are unlikely to reflect a patient's complete hospital experience. This results in an underutilization of potentially significant clinical information, including nursing assessment data, which could be used to develop valid outcome measures as well as accurate prognostic models for point-of-care decision support. Nursing assessment data may complement ICD codes in the overall characterization of a patient's hospital experience. This study explored complementing ICD codes with electronic health record (EHR) nursing assessment data to operationalize dysuria, a factor associated with several iatrogenic conditions.

Study Design: We conducted a descriptive observational analysis of data from an ongoing retrospective study on predictors of iatrogenic conditions. Data were extracted from the University of Florida (UF)'s Integrated Data Repository. We developed an operational definition of dysuria using ICD codes from the 9th (ICD-9) and 10th (ICD-10) editions and EHR nursing assessment data. We compared the number of patients with dysuria based on ICD codes to those captured by our operational definition.

Population Studied: Observations included 135,739 patients admitted to one of 21 medical and/or surgical nursing units of an academic medical center hospital between 2012 and 2018.

Principal Findings: Based on ICD codes and EHR nursing assessment data, we created the following operational definition of dysuria: ICD-9 Code: 788.1 (or) ICD-10 Code: R30.0 (or) ICD-10 Code: R30.9 (or) nurses' documentation of "burning" under "genitourinary symptoms" in at least one of the simple or complex Assessment flowsheets. A total of 3,637 patients with dysuria were identified by our new operational definition, and 198 were identified with both ICD codes and nursing assessment data. Four and one-half times as many patients experienced dysuria based on the combination of ICD codes with nursing assessment data compared to only ICD codes.

Conclusions: We demonstrated that complementing ICD codes with nurses' documentation of dysuria captured patients who would not have been identified using only ICD codes. These findings could have practical and methodological implications for understanding dysuria during hospitalization; our analysis indicates that use of nursing assessment and other nursing data should be further explored. We highlighted only one of the many possibilities for identifying patients with risk factors of iatrogenic conditions using nurse-generated data. In addition to the simple and

complex assessment flowsheets, there are other flowsheets in which nurses document patients' data, which can be used to complement ICD codes and other coded data. Additionally, although we used only structured data to formulate our operational definition of dysuria, nurses' narrative notes can contain rich contextual information, which is not typically documented in structured fields of EHRs but may be necessary for accurate outcomes measurement and case identification.

Implications for Policy or Practice: Relying exclusively on ICD codes to identify patients with certain conditions can introduce coding bias. Nursing assessments and other sources of clinical EHR documentation data may provide a source of direct clinical information to address the bias found when using ICD codes.

Understanding Crisis Needs Among Family Caregivers of Patients in Critical Care: A Qualitative Analysis

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Research Objective: To understand met or unmet needs of family caregivers in crisis during a critical care hospitalization and examine differences by anxiety level to help inform family-centered intervention design.

Study Design: We conducted a qualitative content analysis of 40 semi-structured interviews of family caregivers of mechanically ventilated patients to understand their experiences with critical care. We specifically identified needs of family caregivers in crisis—informational and emotional processing, social support, and self-care—and factors that may influence these needs using nursing theoretical models for family management of conditions. Next, we used the Hospital Anxiety and Depression Scale (HADS) administered at the time of interview to measure anxiety and divided the sample into three groups by HADS: anxiety ($n = 15$), borderline anxiety ($n = 11$), and low anxiety ($n = 14$). We examined similarities and differences in family member experiences and needs among the three groups.

Population Studied: Family caregivers of patients hospitalized in critical care.

Principal Findings: Most family caregivers were adult children (32%), followed by spouses (22%), parents (15%), siblings (15%), and other family (15%). Crisis needs were present in all anxiety groups, but there were differences in the extent and specifics of their needs by anxiety level. For informational processing, family caregivers with anxiety described challenges understanding medical decisions made by the clinical team, often waiting for healthcare providers to initiate conversations, while family caregivers with low anxiety valued detailed information from staff and tried to prepare other family members to prevent distress. For emotional processing, family caregivers with anxiety reported fear, a sense of responsibility to protect other family members from fear, and a preoccupation with day-to-day events that inhibited processing their emotions, whereas those with borderline and low anxiety

ety noted that other family members and prior experiences helped them deal with their emotions. For social support, more than half of caregivers with anxiety expressed strained relationships in their social support network or felt alone, whereas those with borderline and low anxiety did not describe experiencing relationship strain. Faith communities were identified as a source of support by all anxiety groups, although the added emotional and financial support from these communities appeared more prominent among those with borderline and low anxiety. For self-care, family caregivers with anxiety reported that worry impinged on their sleep and self-care, whereas family caregivers with low anxiety prioritized sleep and self-care. Caregivers with low and borderline anxiety were better able to care for themselves due to tangible support from other family members.

Conclusions: Family caregivers of critical care patients experience crisis needs during the hospitalization, although the specific needs appear to differ by family caregiver anxiety level. Our detailed understanding of caregiver experiences can inform intervention components that address these crisis needs during a patient's critical care hospitalization.

Implications for Policy or Practice: Critical care nurses spend the most time at the bedside with family caregivers of critical care patients. Developing interventions that address the crisis needs of family caregivers may help family caregivers to engage with nurses and further enhance the care delivery process.

COVID-Related Stressors, Burnout, Turnover Intention, and Resilience Among Nurse Leaders During the Pandemic

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Research Objective: Even before the COVID-19 outbreak, at least one of every 10 nurses worldwide was suffering from high burnout, which contributed to high turnover rates. With the COVID-19 pandemic, anecdotal reports of overwork, burnout, and even suicide of healthcare professionals is being shared in the news and on social media. The pandemic introduced new stressors to nurse leaders, such as managing the complex staffing situation (staff shortages, reassigning nurses to cover COVID-19 units, limited bed capacity, high patient acuities, shortage of personal protective equipment), while supporting their staff nurses. Since COVID-19 began, there has been research concerning COVID-related stressors, burnout, turnover intention, and resilience among nursing staff but not among nurse leaders. Therefore, this study aimed to examine the COVID-related stressors that are most significantly related to burnout and turnover intention, investigate how resilience impacts burnout and turnover intention, and explore strategies that nurse leaders are using during this pandemic to maintain resiliency.

Study Design: This descriptive, cross-sectional study employed an electronic survey of several instruments to measure COVID-related stressors (COVID-related Stress Scales [CSS]), burnout (Copenhagen Burnout Inventory [CBI]), turnover intention (a

single item), and resilience (Connor-Davidson Resilience Scale [CD-RISC-25]) among nurse leaders. The survey also included open-ended questions that were analyzed qualitatively.

Population Studied: In September 2021, 57 nurse leaders who worked in Birmingham, Alabama, hospitals, including nurse managers, directors of nursing, and other nurses who are in administrative roles, responded to the survey.

Principal Findings: The average respondent had 10.7 years of nurse leader experience, had a graduate degree (67%), and worked as nurse managers (42%) or nursing directors (37%). The CSS was positively related to all three burnout subscales (Personal, Work-Related, Client-Related Burnout) ($r = .27$ to $.40$, $p < .05$) but not significantly related to intent to leave ($r = 0.17$, $p = .20$). Resiliency was negatively related to all subscales of burnout ($r = -.53$ to $-.59$), $p < .01$) and intent to leave ($r = -.32$, $p < .05$) but not significantly related to COVID-19 stress ($r = -.07$ to $-.20$, $p > .05$). The top three resiliency strategies that nurse leaders used were (a) prayer and faith, (b) social support, and (c) self-care (e.g., taking a break, exercising, promoting good nutrition). The top three recommendations that nurse leaders had for other nurse leaders were (a) disconnect/take time off, (b) positive and creative thinking, (c) self-care (e.g., exercising, resting, and stress relief).

Conclusions: Among nurse leaders, COVID-19 stress impacts burnout but does not affect resiliency and intent to leave. Nurse leaders who had higher resiliency seemed to have lower burnout and were less likely to leave their positions.

Implications for Policy or Practice: The findings of this study provide baseline data to inform the development of actionable interventions to prevent or at least reduce burnout and turnover intention. Furthermore, the resiliency strategies and recommendations from these nurse leaders should be disseminated to other nurse leaders to help them reduce burnout and turnover intention.

The Association Between Hospital Nursing Resources and Patient Satisfaction Using the HCAHPS Survey: A Systematic Review

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Research Objective: Identifying factors that influence patient satisfaction has become a priority for healthcare system managers. The Centers for Medicare and Medicaid Services implemented Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys to evaluate hospitals and incentivize them to improve patient satisfaction. Survey results are linked to hospital Medicare reimbursements, making high scores of particular interest to hospital managers and to healthcare consumers. The purpose of this systematic review was to synthesize the literature reporting the association between nursing resources (nurse education, nurse staffing, the nurse work environment, and Magnet designation) and HCAHPS scores. Our goals were to provide managers with evidence to inform their decisions and identify gaps for researchers to address.

Study Design: A systematic review was conducted searching the CINAHL and MEDLINE databases. Key terms were searched using headings and text phrases related to educational preparation, nurse work environment and nurse staffing, and Magnet designation. Chain searching was applied, and the Johns Hopkins Nursing Evidence-Based Practice: Evidence Level and Quality Guide was used to grade the evidence. Effect sizes were measured by regression coefficients when available.

Population Studied: Our inclusion criteria were (a) a nursing resource as an independent variable, (b) HCAHPS scores as a dependent variable, (c) a cross-sectional study design, and (d) U.S. empirical data published in a scientific journal. Studies meeting these criteria and published between 2006 and 2021 were examined.

Principal Findings: Twelve articles met inclusion criteria. Among these articles, 7 focused on magnet designation, 3 on nurse staffing, 2 on the nurse work environment, and 0 on nurses' education. All but 2 studies included global HCAHPS measures. In addition, 8 studies included HCAHPS composite measures. The samples of hospitals ranged from 110 to 3,026. The years represented in the data encompassed 2005 to 2018. In 11 of the 12 studies, nursing resources were significantly associated with HCAHPS scores. Magnet designation exhibited the largest effect size of 6.33. Nurse staffing showed the most variation across studies with the largest effect size related to an additional hour of nursing care per patient day or an additional patient per nurse. Coefficients ranged between -0.24 and -1.44. Nurse staffing results showed that for every one additional patient a nurse cared for, there was a 1.44% decrease in the percentage of patients giving high ratings for willingness to recommend. The nurse work environment had a positive association with patient satisfaction; effect sizes ranged from 3.15 to 6.08, with patients much more likely to give high ratings to hospitals classified as having favorable nurse work environments.

Conclusions: For hospital managers eager to improve patient satisfaction, understanding which organizational factors are associated with patient satisfaction is of interest. Nursing resources were shown to be a lever toward high HCAHPS scores. Additional research is needed to identify the association between nurse education and HCAHPS scores.

Implications for Policy or Practice: It would behoove managers to invest in nursing resources to improve patient satisfaction and achieve high-value care. Administration should support managers' endeavors to improve nurse staffing, foster a positive nurse work environment, and develop Magnet-like qualities.

The Association Between Nursing Home IT Maturity and UTI Among Long-Term Residents

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Research Objective: Urinary tract infections (UTIs) are the most common infections among nursing home (NH) residents.

Improving UTI prevention and management in NHs is included in key antibiotic stewardship and infection control and prevention initiatives. NH information technology (IT) maturity (i.e., technological capability, extent to which systems are used, and degree to which different systems are integrated) could impact NHs' ability to prevent and manage UTIs through improved integration and communication of data from multiple sources. This study aimed to explore the relationship between specific aspects of IT maturity and odds of UTI among long-stay NH residents.

Study Design: We conducted a repeated cross-sectional study combining three nationally representative data sources: (a) four annual surveys measuring IT maturity, (b) Minimum Data Set (MDS) 3.0 assessments measuring resident characteristics, and (c) Certification and Survey Provider Enhanced Reporting data identifying facility characteristics. Nonadmission MDS assessments completed within 90 days of IT survey completion were matched to survey data, including nine scales of IT maturity including three healthcare domains (resident care, clinical support, and administrative activities) and three dimensions (IT capabilities, extent of IT use, and degree of IT integration with internal/external stakeholders). The outcome was a binary indicator of UTI, which is recorded according to evidence-based criteria that includes clinical symptoms. Descriptive statistics were examined. Bivariate and multivariate regressions using NH fixed effects were conducted controlling for resident and NH characteristics. We varied assumptions to test robustness of our results.

Population Studied: Assessments of long-term residents aged 65+ years from a random sample of Medicare-certified U.S. NHs over 4 consecutive years (2013–2017) were included.

Principal Findings: Our sample included 816 NHs. These NHs had 219,730 regular NH resident assessments within 90 days of a survey, representing 80,322 unique long-term NH residents. Of these assessments, 4.1% recorded a UTI. In the multivariate analyses, maturity of administrative IT capabilities was associated with lower odds of UTI (adjusted OR 0.906, 95% CI: 0.843, 0.973). No components of this domain/dimension were individually associated with UTI, nor were any other IT maturity dimension/domain scores. These results were robust in all sensitivity analyses.

Conclusion: To our knowledge, this study was the first to determine a link between NHs' IT maturity and health outcomes at the resident-assessment level. The finding that administrative IT capabilities are associated with decreased odds of UTI was additionally robust given healthcare facilities with better documentation systems may experience measurement bias as they are more likely to record health outcomes, such as UTI.

Implications for Policy and/or Practice: This work is timely and relevant to policy decisions at facility and public health levels, as it could shape utilization of IT in NHs. This work supports the need to include use of health IT in publicly reported national datasets. Consistent reporting of IT maturity in NHs could clarify ongoing impacts of important legislative actions such as the 21st Century

Cures Act, which was enacted to accelerate the effective use of IT to support better access to healthcare information.

Nurses Insight and Psychological Reaction Toward a COVID-19 Outbreak in Bangladesh

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Research Objective: To explore nurses' insights and psychological reactions toward a COVID-19 outbreak in Bangladesh.

Study Design and Setting: Both the qualitative and quantitative aspects of this study were conducted at 54 settings from primary level to tertiary level hospitals.

Population Studied: A total of 800 nurses participated in the quantitative portion of the study, which used the Z-score formula, and 28 nurses participated in the qualitative portion, which used focus group discussion.

Principal Findings: The mean age of nurses was around 34 years. The mean (SD) knowledge score was 15.33 (2.60); perception, 7.41 (1.62); and Depression, Anxiety, and Stress Scale, 43.73 (30.95). Regression analysis showed that knowledge, perception, length of service, working experience at a COVID-19 ward, information from media, personal protective equipment supply, hand hygiene supply, and feeling of confidence in taking care of COVID-19 patients together explained 25% of the variance in the psychological reaction toward the COVID-19 outbreak. Five themes emerged from the focus group discussion, including “challenges for nurses of working [at] COVID-19 hospital,” “fear of becoming infected and infecting the family members,” “stress due to new context and heavy workloads,” “inappropriate knowledge of wearing personal protective equipment, and lack of adequate training for nurses regarding COVID-19.

Conclusions: Further study is needed to identify the factors influencing nurses' psychological reactions toward the COVID-19 outbreak. In addition, an intervention study will help nurses to increase their knowledge and perception of the pandemic and will help to decrease nurses' psychological problems and increase coping related to the pandemic.

Implications for Policy or Practice: The findings of this study provide baseline information to policymakers to develop a strategy on nursing management for COVID-19 patients. This also contributes to design training programs for nurses during the outbreak.

Clarifying Nurse Practitioner Integration

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Research Objectives: Globally, healthcare systems are facing care provider shortages. These shortages are due to growing populations with increasingly complex healthcare needs, and physician supply alone cannot meet demands. These workforce needs across the world require innovative solutions. Many nations have introduced the nurse practitioner (NP) role to diminish workforce shortages.

NPs bring a holistic scope of practice, which has been found to be well suited to address complex care needs. Research has shown that NPs provide safe and effective care. However, the ability to produce these results relies on successfully integrating NPs into all levels of the healthcare system. Despite the rich literature, to our knowledge, the “NP integration” concept has never been synthesized and defined. “NP integration” is described inconsistently and lacks elucidation. Without a definition of the concept, NP integration cannot be researched consistently. High-level evidence requires synthesis of findings researching the same concept. Research, therefore, cannot be synthesized to create a theory or a model to guide NP integration, which is critical for policymakers and stakeholders. This concept analysis aims to define and operationalize the concept of NP integration for research and to provide a basis for which theory on NP integration can be deduced and policy can be easily understood from the literature.

Study Design: The Walker and Avant (2019) concept analysis method was used.

Study Population: We included full-text articles, government reports, conference presentations, and abstracts, yielding 200 publications. After removing duplicates and abstract screening, 78 publications remained.

Principal Findings: Defining attributes of NP integration include process, achievable goal, introduction of the role, incorporation into organizational care models, challenging traditional ideologies, ability to function, provide high care quality, and improve outcomes, sustainability, and health system transformation. We identified facilitators and barriers affecting NP integration and multiple healthcare system levels at which NP integration occurs—macro, meso, and micro. We identified antecedents and consequences of NP integration. We synthesized findings to create an NP integration conceptual model. The analysis resulted in an operational definition of NP integration: A multilevel process of incorporating NPs into the healthcare system so that they can function to the full extent of their scope and contribute to patient, health system, and population needs.

Conclusions: This is the first research to synthesize NP integration literature to provide an operational definition and conceptual model. Moreover, most literature refers to macro (system-wide) or meso (organizational) level integration. We identified a new dimension—micro—which refers to individual interactions of NPs with other NPs, patients, physicians, nurses, and staff. NP integration is a complex process acting on multiple levels in the healthcare system. Policy intervention at all three levels is likely critical for NP integration.

Implications for Policy or Practice: These findings provide an operational definition so that research on NP integration can be conducted consistently. This research can be a basis for developing research tools assessing NP integration progress that stakeholders and policymakers can use to understand where policy intervention is necessary to improve NP integration.

Nurse Work Patterns in Long-Term Care: A Time-Motion Analysis

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Research Objective: It is well known that nurses working in the long-term care sector are short staffed and under a tremendous amount of pressure to complete nursing care in a timely manner. Multitasking is expected of these nurses, such as performing nursing tasks while communicating, but extensive multitasking should be minimized to avoid potential adverse events. Little is known about how these nurses might multitask in an effort to complete essential nursing care. The purpose of this study was to examine the workflow of licensed nurses in a skilled nursing facility and to determine how they might multitask to complete nursing care.

Study Design: An observational time-motion study was conducted at a 250-bed skilled nursing facility located in the southeastern United States. A web-based time capture application, TimeCaT, was used to collect data from September 2019 to March 2020. TimeCaT was customized to include 57 validated nursing activities based on the Omaha System. This method allowed for the collection of time-stamped workflow data that included communication and tasks—data that were not mutually exclusive. Observed nurse workflow was analyzed using χ^2 statistics and visualized with a heatmap.

Population Studied: Registered nurses (RNs, $n = 4$) and licensed practical nurses (LPNs, $n = 7$) who worked on short-term care (STC) and long-term care (LTC) units or provided wound care were included in the study. All participating nurses were full-time clinicians except one nurse who was supplied by a supplemental staffing agency. On average, one nurse was responsible for the care of 12 residents.

Principal Findings: There were 5,306 observations of multitasking episodes—an average of 35 multitasking episodes per hour. The majority of multitasking episodes occurred during care supervision (81%) and medication regimen (33%). Forty-eight percent of the episodes were related to the medication regimen among STC and LTC nurses, where communication with residents and other care team members and documentation occurred while nurses prepared medications (17%) and where communication with residents, including medication instruction, occurred while nurses administered medications (11%). A larger percentage of LTC nurses multitasked medication regimen activities when compared to STC nurses (55% vs 39%, $p < 0.001$) and in the morning when compared to afternoon and evening (57% vs 39% vs 48%, $p < 0.001$). Overall, a larger percentage of LPNs multitasked medication regimen activities when compared to RNs (51% vs 46%, $p < 0.001$).

Conclusions: Nurses frequently multitask during the preparation and administration of medications in a skilled nursing facility. Research is warranted to better understand the complexity of medication regimens and the factors that contribute to multitasking practice patterns. Furthermore, it is imperative that we

determine whether multitasking practice patterns increase the cognitive workload of nurses and the likelihood of medication errors in skilled nursing facilities.

Implications for Policy or Practice: Healthcare administrators and policymakers should be mindful of the fact that nurses often multitask in skilled nursing facilities. This calls for policies that monitor nurse practice patterns in the long-term care sector and provide suggestions for improvement when necessary. If not, we risk the possibility of short- and long-term sequela associated with these questionable workflow patterns.

Linking Patient Safety Climate With Missed Nursing Care in Labor and Birth Units: Findings From the LaborRNs Survey

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Research Objective: Inpatient labor and birth settings are specialty care units with limited evidence regarding nursing care quality. Missed nursing care has been used to indicate nursing care quality in medical-surgical, intensive, and pediatric care settings. An emerging body of evidence suggests that features inherent in a better culture of safety, such as aligned organizational priorities, attention to workload, and team communication, are associated with less missed nursing care in general. The aim of this study was to explore patient safety climate and its association with the outcome of missed nursing care in labor and birth units.

Study Design and Population Studied: We recruited nurse respondents for this cross-sectional study in the United States via email distribution of an electronic survey between February 2018 and July 2019. Hospitals with labor and birth units were recruited from states with projected availability of 2018 State Inpatient Data. All registered nurses working in labor and birth units in the targeted hospitals were eligible. Measures included the Safety Climate Subscale from the Safety Attitudes Questionnaire, the Perinatal MISSCARE Survey, and nurse characteristics. The mean of individual nurse Safety Climate Subscale questions was used to measure nurses' perception of the unit safety climate on a scale of 1–5, with a higher score indicating a better climate. The Perinatal MISSCARE Survey uses 25 items to assess the frequency at which required aspects of nursing care are delayed, unfinished, or completely missed on the respondent's unit. The sum of missed aspects of care ranged from 0–25, with a higher score indicating more missed care. We used Kruskal-Wallis tests for bivariate analysis followed by mixed-effects linear regression models to estimate the relationships between patient safety climate and missed nursing care while accounting for clustering of nurses within hospitals.

Principal Findings: The response rate was 35%, resulting in a sample of 3,429 labor and birth registered nurses from 255 hospitals. A majority of respondents (65.7%) reported a perception of good safety climate in their units, with a mean (SD) score of 4.12 (0.73). The mean (SD) number of aspects of care occasionally, frequently,

or always missed on their units was 11.04 (6.99). The adjusted mixed-effects model identified a significant association between better nurse-perceived safety climate and less missed care (-2.65; 95% CI: -2.97 to -2.34) after controlling for age and years of experience as a labor nurse. The estimates indicated each one unit increase of the mean score of nurse-perceived safety climate was associated with 2.65 fewer missed essential aspects of perinatal nursing care.

Conclusion and Implications for Policy or Practice: Our findings suggest that improving safety climate may promote nursing care quality during labor and birth through decreasing missed nursing care. Conversely, it is also possible that strategies to reduce missed care, such as staffing improvements, may improve safety climate. Safety strategies such as promoting open communication, ensuring nonpunitive response to error, incorporating perinatal safety nurses, and ongoing learning from safety events may decrease missed care in daily nursing activities.

Emergency Nursing Workforce Burnout and Job Turnover in the United States: A National Sample Survey Analysis

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Research Objective: Burnout, especially in registered nurses working in emergency departments, has substantially jeopardized the nursing workforce supply and the ability to meet demands for care. Past research documenting the prevalence of burnout among emergency nurses have been limited by small sample sizes and local sampling approaches as they have been unable to capture the diversity of clinical, geographic, and demographic characteristics at a national level. Few studies have examined turnover in nurses who have left their job or are not currently working, resulting in the potential for healthy worker or survivor bias. The aims of our study were to (a) test differences in reasons for turnover or not currently working between emergency nurses and other registered nurses and (b) ascertain factors associated with burnout as a reason for turnover or not currently working among emergency nurses.

Study Design: We conducted a secondary analysis of the National Sample Survey for Registered Nurses publicly available from Health Resources and Services Administration. We excluded advanced practice nurses and respondents who were not working due to retirement. Demographic and work characteristics (e.g., sex, age, race and ethnicity, marital status, highest degree, years of experience, hours worked per week, household income, and degree enrollment) were extracted. Next, we extracted responses to 6 survey items permitting the identification of nurses who were not currently working or who recently left their position (within 2 years) and their reasons for turnover (22 response options, including “burnout”). Design weights were applied using the jackknife estimation procedure. Data were analyzed using descriptive statistics, χ^2 test, *t* test, unadjusted and adjusted logistic regression

applying design sampling weights, and controlling for potential individual and work characteristic confounders.

Population Studied: Nationally representative sample of registered nurses (weighted *N* = 3,001,283) from the 50 United States and the District of Columbia. Analysis included 1,266 emergency nurses (weighted *N* = 217,706) and 18,589 nurses (weighted *N* = 2,786,879) in other settings.

Principal Findings: Seven job turnover reasons were endorsed by emergency nurses and significantly higher than reasons provided by other nurses: Insufficient staffing (11.1%, *p* = .011); physical demands (5.1%, *p* = 0.44); patient population (4.3%, *p* < .001); better pay elsewhere (11.5%, *p* = .001); career advancement/promotion (9.6%, *p* = .007); length of commute (5.1%, *p* = .012); and relocation (5%, *p* = .006). Increasing age and years of experience were significantly associated with decreased odds of burnout in adjusted models. Being female was associated with decreased odds of burnout when controlling for insufficient staffing, scheduling, and stressful work environment.

Conclusions: Several modifiable factors, such as insufficient staffing and better pay elsewhere, appear to be associated with job turnover. Further research should account for gender and age to better understand and mitigate burnout. Ongoing research is essential to identify priorities for risk detection and for future national-level nursing workforce policies and interventions.

Implications for Policy or Practice: Given the critical need of the emergency nursing workforce, this study provides evidence for preventive intervention and policy at the national level. Interventions to reduce burnout and job turnover may include enhancing work environments (e.g., sufficient staffing), increasing pay, and investing in the physical and psychological health of nurses. Practice and policy efforts aimed at precursors of nursing burnout as modifiable targets to reduce turnover may improve career longevity, well-being, and workforce retention.

The Impact of Pre-COVID-19 Nursing Home Infection Prevention and Control Policies on COVID-19 Deaths

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Research Objective: Nursing home (NH) residents have been disproportionately suffering from the COVID-19 pandemic. Therefore, it is essential to have a comprehensive NH Infection Prevention and Control (IPC) program to prevent potential infectious disease outbreaks. However, it is not known how NH IPC programs have impacted COVID-19 deaths. Therefore, the goal of this study was to examine the relationship between pre-COVID-19 NH IPC programs/policies and COVID-19 resident deaths.

Study Design: This retrospective study used publicly available data from the Centers for Disease Control and Prevention’s Long-Term Care Facility COVID-19 Module and USA Facts county-level COVID-19 data linked to a national survey of NHs in 2018. The survey included questions about NH IPC programs such as having infection preventionists certified in infection control (CIC) and

outbreak preparedness policies. We used 10-week periods to separately assess the impact of NH IPC programs on the weekly resident COVID-19 deaths per 1,000 residents between May 24, 2020 and May 30, 2021. We then estimated multivariable regression models to examine the association between NH IPC programs and COVID-19 deaths controlling for facility-level characteristics and county-level COVID-19 death intensity.

Population Studied: A total of 857 NHs located in 489 counties were identified and included in this analysis. Approximately 7.5% of NHs had the infection preventionist certified in infection control. Among the outbreak preparedness policies, instructing infected staff to stay home was most common in NHs (92.4%), and use of rapid diagnostic methods for case detection was least common (49.9%).

Principal Findings: In the multivariable models, during the December 2020 peak period, NHs with CIC infection preventionists had 4.9 fewer weekly COVID-19 deaths per 1,000 residents compared to the NHs without CIC infection preventionists ($\beta = -4.9$, $SE = 1.1$, $p < .0001$). Use of rapid diagnostic methods for case detection was also associated with lower weekly COVID-19 deaths during the peak period ($\beta = -1.25$, $SE = 0.43$, $p = .004$). Cohorting infected residents together was negatively associated with weekly COVID-19 deaths during the off-peak periods ($\beta = -2.7$, $SE = 0.5$, $p < .0001$). On the other hand, instructing infected staff to stay home and closing to new admits were associated with higher weekly COVID-19 deaths, particularly during the peak periods ($\beta = 1.03$, $SE = 0.52$, $p = .047$; and $\beta = 3.16$, $SE = 0.94$, $p = .001$ respectively).

Conclusions: Most of the IPC programs had different impacts on COVID-19 deaths depending on the stage of COVID-19. The lower rate of COVID-19 deaths in NHs with CIC infection preventionists persisted throughout the pandemic periods. We also found that the use of rapid diagnostic methods for case detection was protective against COVID-19 deaths during the peak period, as was cohorting infected residents together during the off-peak period.

Implications for Policy or Practice: This study provides evidence-based policy recommendations to clinicians and policymakers to prevent future infectious disease crises in NHs. Aligning with the Centers for Disease Control and Prevention's recommendation regarding infection preventionists, assigning one or more full-time infection preventionist with training in infection control in NHs is recommended.

U.S. Clinician Well-being Study: A Descriptive Analysis of the Work Environment and Clinician Well-being

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Research Objective: To determine factors associated with interdisciplinary clinician mental health and well-being in hospitals during COVID-19.

Study Design: This cross-sectional study utilized primary data collected through an electronic survey sent via hospital emails to identified clinicians between February 2021 and July 2021. Clinicians provided detailed information regarding clinician well-being (i.e., mental health, burnout, and job satisfaction) and quality of work environment (e.g., workload, autonomy, work-life balance, and interdisciplinary teamwork). Data were aggregated at the hospital level.

Population Studied: An interdisciplinary group of registered nurses (RNs) ($n = 15,738$), advanced practice registered nurses and physician assistants (advanced practice providers [APPs]) ($n = 2,662$), and physicians ($n = 5,336$) were surveyed. Surveyed clinicians had to be working in an inpatient or ED setting. Data were collected from 60 different Magnet hospitals across the United States.

Principal Findings: Overall, findings of high clinician burnout (30%–44%), job dissatisfaction (12%–22%), and likelihood of leaving the job (23%–41%) were consistent across clinician groups and highest among nurses. A quarter of nurses experienced clinical levels of anxiety. Overall burnout levels varied widely across Magnet hospitals (25%–65%). Clinicians reported having high levels of stress at work (40%–53%) and having very little joy (7%–14%) with nurses reporting the highest levels of stress and the least joy. One-third of nurses rated their work environment as poor/fair. The quality of the work environment varied considerably across all Magnet hospitals, with as few as 5% and up to as many as 65% of hospital clinicians reporting that their work environment was poor/fair. More than half of all nurses (54%) felt there were not enough nurses to care for patients. There was less concern regarding nurse staffing among physicians and APPs, with 71% of physicians and 63% of APPs feeling that there were enough nurses to care for patients. Physicians reported high frustration with electronic health records (61%) and poor work-life balance (32%). APPs experience of well-being and perceptions of their work environment overlapped with both physicians and nurses. All clinicians stated the importance of being heard and supported by the administration and having a shared vision and values with the administration. Nearly 95% of clinicians reported good interdisciplinary working relationships and high levels of teamwork. Clinicians also rated the effectiveness of interventions to improve well-being. Across all clinicians, the most effective interventions were those that allow them time and resources to provide clinical care (e.g., improve nurse staffing levels, have breaks without interruption, reduce time spent on documentation, increase control over scheduling). There was clear agreement across clinicians on interventions they felt would not be as effective in improving well-being (e.g., resilience training, meditation rooms, wellness champion/committee).

Conclusions: Clinician burnout was high, and the quality of the work environment varied considerably across Magnet hospitals.

Implications for Policy or Practice: Opportunities to improve the work environment through empirically informed interventions are necessary to improve clinician well-being. Data suggest variation

in the effectiveness of well-being interventions by clinician group, which should be taken into consideration during the development and implementation of such interventions.

The Association Between Primary Care Work Environments and Missed Opportunities for Emotional Healthcare

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Research Objective: Nurse practitioners (NPs) are key to improving primary care delivery as they represent the fastest growing segment of the primary care workforce. Yet, poor nursing working conditions (i.e., hostile working relations, low autonomy, lack of support, and inadequate professional visibility) often challenge NP care delivery and have been linked with lower quality of care and adverse patient outcomes. These poor conditions also lead NPs to prioritize acute care needs of patients and ignore other needs such as addressing patients' emotional well-being, which is an important and often overlooked area of health. We investigated the relationship between NP work environment and missed care around patients' emotional health.

Study Design: This was a secondary analysis of cross-sectional survey data from 2017. The survey asked primary care NPs to complete the Errors of Care Omission Survey (EoCOS) to determine whether NPs missed opportunities for care and the NP Primary Care Organizational Climate Questionnaire (NP-PCOCQ) to assess the NP work environment. We examined the association between the NP-PCOCQ subscales (i.e., independent practice and support [IPS], NP-administrative relations [NP-AR], professional visibility [PV], and NP-physician relations [NP-PR]) and an aggregate measure of the EoCOS describing NP ability to address patients' emotional health (EH-EoCOS; 3 items related to addressing emotional concerns of patients, discussing patients' emotional well-being, and providing emotional support when making treatment decisions) using multilevel mixed-effects linear regression models. Higher scores on the NP-PCOCQ and the EH-EoCOS indicate a favorable work environment and that patients' emotional health is addressed, respectively. We controlled for NP demographics and practice features.

Population Studied: A total of 397 primary care NPs in New York State across 377 primary care practices were included.

Principal Findings: In the bivariate model, higher IPS scores were positively associated with a higher EH-EoCOS score that neared statistical significance; for every 1 unit increase in IPS score, EH-EoCOS increased by 0.30 ($p = 0.059$). After adjusting for NP demographics and practice features, there was a positive association between IPS score and EH-EoCOS, again that neared statistical significance ($\beta = 0.29, p = 0.077$). NP-AR ($\beta = 0.11, p = 0.285$), PV ($\beta = 0.10, p = 0.370$), and NP-PR ($\beta = 0.22, p = 0.106$) subscales were not significantly associated with EH-EoCOS.

Conclusions: Our findings suggest that NP ability to address patients' emotional health needs is, in part, driven by the level of support for NP independent practice.

Implications for Policy or Practice: Lack of support for NP independent practice may prevent NPs from addressing patients' emotional health, which could lead to future mental health complications among patients. NPs are uniquely prepared to deliver emotional healthcare because of their nursing education, which is grounded in holistic, person-centered care. Practices employing NPs should ensure that NPs have access to ancillary staff and support for care management to deliver care to patients. Practices should also allow NPs to manage patients independently, practicing to the full scope of their education and licensure.