



June 2024

Hospital Staffing Plans in Washington State

The 2023 Washington State Legislature directed the Washington State Institute for Public Policy (WSIPP) to conduct a study on staffing standards for hospital nursing staff in the state. WSIPP was tasked with reviewing current and historical staffing plans submitted to the Department of Health (DOH) by hospital staffing committees at each hospital in the state. WSIPP was also required to review hospital staffing policies in other jurisdictions and to summarize staffing guidance from professional medical associations.

In this report, we analyze all staffing plans submitted to DOH between January 2019 and July 2023 for timeliness and completeness. We analyze these plans and document trends such as patient-to-nursing staff ratios by hospital unit type over time. We also highlight guidance from professional nursing organizations and hospital associations on staffing and characterize hospital staffing laws in other states.

[Section I](#) details Washington’s hospital staffing committee policy and describes the state’s hospital system. [Section II](#) surveys guidance from professional organizations on hospital staffing. [Section III](#) presents our analysis of the hospital staffing plans. [Section IV](#) overviews staffing policies in other states. [Section V](#) highlights conclusions and limitations.

Summary

This report describes the staffing patterns of Washington State’s acute care hospitals reported to the Department of Health in annual staffing plans. Hospitals have been required to create staffing plans since the law was originally passed in 2008. We overview laws regulating these staffing plans and the location, types, and services provided by hospitals in Washington. We also highlight both nurse- and hospital-led national professional organization guidance on staffing in hospitals.

We describe the 423 hospital staffing plans submitted between January 2019 and July 2023 in terms of timeliness, completeness, and format. We then detail the average and range of maximum patient-to-nursing staff ratios in Washington hospitals by hospital unit type. Ratios tend to be lower where the most hands-on, life-saving care is administered, such as in critical care units or during labor or birth. Some types of units have a wide range of staffing ratios across hospitals, while others are more consistent.

Finally, we summarize hospital staffing policies in other states. Washington is among 15 states that require annual staffing plans. Seven states require fixed patient-to-staff ratios in at least some types of units; Washington does not.

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I. Background

In this section, we describe the legislative assignment and detail Washington’s current hospital staffing law and its various changes since 2008. We also describe the state hospital system and Washington’s nursing staff workforce.

[Hospital Staffing Plans and Committees in Washington](#)

Adequate staffing of patient care units is a chief concern of hospitals in the US. Past research has indicated that patient-to-nursing staff ratios are associated with patient health outcomes, including the likelihood of readmission and in-hospital mortality.¹ Hospital staffing decisions also impact the staff themselves. Assigning nursing staff to too many patients is associated with increased burnout, lower job satisfaction, and higher turnover.²

Research also indicates that there is a shortage of nurses nationwide, including in Washington State. The federal Health Resources and Services Administration estimates that as of 2024, Washington State is experiencing a shortfall of more than 13,000 registered nurses.

They forecast that this number will grow to more than 22,000 by 2036.³ The nurse shortage, exacerbated by the COVID-19 pandemic, has made adequately staffing nursing staff a challenge in hospitals across the country. These issues have brought hospital staffing to the forefront of public policy discussions at the national and state levels.⁴

In Washington, hospitals are required to form staffing committees and submit annual staffing plans to DOH.⁵ Each staffing plan must specify the number of nursing staff assigned to work in each unit and shift. Included in the definition of nursing staff are the following:

- **Registered nurses (RNs)** – Coordinate patient care and inform patients of health information, conduct physical exams, administer medication, and supervise other nursing staff.⁶
- **Licensed practical nurses (LPNs)** – Provide routine care such as checking vital signs, changing bandages and dressings, and tending to patients’ comfort and well-being under the direction of RNs or medical doctors.⁷

¹ Lasater, K.B., Aiken, L.H., Sloane, D.M., French, R., Anusiewicz, C.V., Martin, B., . . . McHugh, M.D. (2021). [Is hospital nurse staffing legislation in the public’s interest? An observational study in New York State.](#) *Med Care*, 59(5), 444-450.

² Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J., & Silber, J.H. (2002). [Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction.](#) *JAMA*, 288(16), 1987–1993 and Bae, S.H. (2024). [Assessing the impacts of nurse staffing and work schedules on nurse turnover: A systematic review.](#) *International Nursing Review*, 71(1), 168-179.

³ National Center for Health Workforce Analysis. (2024). [Nurse Workforce Projections.](#) *Health Resources and Services Administration.*

⁴ American Association of Colleges of Nursing. (October 2022). [Nursing Shortage Fact Sheet; Bae \(2023\).](#)

⁵ [RCW 70.41.420.](#)

⁶ US Bureau of Labor Statistics. (April 17, 2024). [Occupational Outlook Handbook: Registered Nurses;](#) American Nursing Association. (n.d.) [What is Nursing?](#)

⁷ LPNs are referred to as Licensed Vocational Nurses (LVNs) in California and Texas. [American Nursing Association \(n.d.\); American Nursing Association. \(April 28, 2023\). ANA Nursing Resources Hub: How to Become a Licensed Practical Nurse.](#)

- [Certified nursing assistants \(CNAs\)](#) – Provide basic care such as taking vital signs and assisting patients with daily living activities under the direction of RNs or medical doctors.⁸

Unlicensed assistive nursing personnel who provide direct care to patients are also considered nursing staff. State law requires most hospitals in Washington to form hospital staffing committees to draft staffing plans.⁹ DOH does not require staffing plan submissions from military hospitals and Veterans Administration facilities. Further, the law does not require staffing plan submissions from psychiatric hospitals.

In developing staffing plans, committees are required to consider the number of patients and the severity of their condition, the skill and experience of nursing staff, special equipment needs, the physical layout of each unit, guidance from professional nursing and hospital organizations, availability of other staff to support nursing staff, collective bargaining agreements, and any applicable state or federal laws. Hospital finances must also be considered.

Each hospital staffing committee is required to be made up of at least 50% nursing staff in non-supervisory, non-managerial positions. These members are chosen either by the collective bargaining representatives (if a collective bargaining agreement is in place) or by their peers.

The remaining share of the committee members are appointed by each hospital's administration and must include the chief financial officer, the chief nursing officer, and directors of hospital units that administer care to patients.¹⁰

After being approved by a simple majority of the committee, the plan is sent to the hospital's chief executive officer (CEO) for review. The CEO then has the opportunity to provide written feedback, including proposed changes and a report on the implementation of the plan. The committee must consider this feedback before approving a revised plan. If the hospital does not approve the revised plan, the last plan to have been approved remains in effect.

All plans are required to be submitted to DOH on an annual basis or more frequently if updates are made. The committee must review the plans semiannually against patient needs and evidence-based staffing information.

Staffing committees are also required to review, assess, and respond to complaints relating to deviations from the staffing plan presented by nursing staff.

While most hospitals have submitted staffing plans to DOH since 2019, the plans have never been systematically analyzed. Little is known about how hospitals assign staff to meet patient demands. The Washington State Legislature directed WSIPP to describe these staffing plans in terms of timeliness and completion of each submission, format, and maximum patient-to-nursing staff ratios. The legislative assignment for this study is given in [Exhibit 1](#).

⁸ US Bureau of Labor Statistics. (April 17, 2024). [Occupational Outlook Handbook: Nursing Assistants and Orderlies](#); Washington State Department of Health. (n.d.). [Nursing Assistant and Medication Assistant Licensing Information](#).

⁹ RCW 70.41.420.

¹⁰ RCW 71.41.420.

Analyzing staffing ratios in these staffing plans could be useful for estimating the standard of care received by hospital patients in Washington. For instance, neither the average patient-to-nursing staff ratio nor the range of such ratios in different types of hospital units have been reviewed in Washington. Likewise, details on the timeliness, completeness, and format of submitted plans could be used to ensure that staffing information is submitted to DOH on time and in a readily analyzable way. However, it is important to emphasize that the plans only represent *planned* staffing patterns, not actual ones.

Legislative History

Staffing committees were first established in Washington hospitals following the passage of legislation in 2008. This law only required that RNs be appointed to what was previously called the *nurse* staffing committee. It also allowed hospital CEOs to reject a plan without a chance for revision, provided they submitted a written explanation of why.¹¹ Plans were not required to be submitted to DOH.

The staffing committee law was updated in 2017.¹² This new law required approved staffing plans to be submitted to DOH annually or any time the plan changed. If the hospital did not adopt the committee's plan, the new law required CEOs to provide a written explanation of what was being changed prior to adoption or submit an entirely new plan. It also required plans to include strategies to allow RNs to take meal and rest breaks required by law and collective bargaining agreements.

Further, the law clarified the committees' responsibilities with respect to complaints submitted by RNs when staffing was not in accordance with the plan.

Exhibit 1 Legislative Assignment

The Washington state institute for public policy shall conduct a study on hospital staffing standards for direct care registered nurses and direct care nursing assistants.

- (1) *The institute must review current and historical staffing plans filed with the department of health under chapter 70.41 RCW and describe:*
 - (a) *Timeliness and completeness of filed forms;*
 - (b) *Format of filed forms;*
 - (c) *Patient care unit nursing staff assignments related to the maximum number of patients to which a direct care nursing or nursing assistant may be assigned.*
 - (d) *Descriptive statistics on submissions by hospital unit type;*
 - (e) *Trends over time, if any;*
 - (f) *Legal minimum staffing standards for registered nurses and nursing assistants in other jurisdictions; and*
 - (g) *Relevant professional association guidance, recommendations or best practices.*
- (2) *The institute must provide a report on its findings to the department and relevant committees of the legislature by June 30, 2024.*

Engrossed Second Substitute Senate Bill 5236,
Chapter 114, Laws of 2023

¹¹ Engrossed Second Substitute House Bill 3123, Chapter 47, Laws of 2008.

¹² Engrossed Substitute House Bill 1714, Chapter 249, Laws of 2017.

Other new provisions gave DOH the power to investigate complaints regarding a failure by a hospital to form a committee, submit a staffing plan, conduct a semi-annual plan review, or consistently follow the plan. DOH was also required to keep records of penalties imposed on hospitals as a result of noncompliance. The new 2017 provisions went into effect January 1, 2019, and were set to expire June 1, 2023.¹³

The most recent iteration of the staffing law was passed in 2023, which included the assignment for this study.¹⁴ Under this law, LPNs and CNAs were added to staffing committees, and the name was changed to *hospital* staffing committees. The new law established the CEO feedback process and gave staffing committees the chance to resubmit revised staffing plans. Most hospitals are also now required to document when patient care units are out of compliance with the adopted hospital staffing plan and report twice a year to DOH.¹⁵

Additional reporting on staffing committee processes, such as scheduling and the handling of complaints, is required.

The new law also establishes a statewide advisory committee on hospital staffing to review “innovative hospital staffing” models and advise DOH on developing a uniform staffing plan form for hospitals to use. Other new provisions dictate how DOH and the Department of Labor & Industries (L&I) must work together to address complaints, limit mandatory overtime, and specify how meal and rest breaks should be treated. The most recent law went into effect on July 1, 2023. Since then, the required submission of staffing plans by Washington hospitals has been paused to give hospitals time to adjust to the new regulations. Hospitals will again be required to submit annual staffing plans starting in January 2025.¹⁶

The various legislative changes since 2008 are summarized in [Exhibit 2](#).

Exhibit 2

Staffing Committee and Staffing Plan Legislation in Washington

Legislation	Year	Description
E2SHB 3123	2008	Established staffing committees and plans
ESHB 1714	2017	Required submission of plans to DOH, CEOs to submit explanation if rejecting staffing plan, added meal and rest-break strategies, clarified committee responsibilities regarding staffing complaints, and gave DOH record-keeping and investigative powers for non-compliance
E2SSB 5236	2023	Added LPNs and CNAs to committees, established iterative CEO feedback process, required documentation of deviation from staffing plan for most hospitals, established statewide Hospital Staffing Advisory Committee, clarified roles of DOH and L&I, placed limits on mandatory on-call overtime, and specified treatment of meal and rest breaks

¹³ [ESHB 1714](#).

¹⁴ [Engrossed Second Substitute Senate Bill 5236, Chapter 114, Laws of 2023; RCW 70.41.420](#).

¹⁵ Federally designated critical access hospitals, hospitals with less than 25 acute care licensed beds, hospitals certified

as sole community hospitals that are not owned or operated by a health system that owns or operates multiple hospitals, and hospitals in a public hospital district on an island in Skagit County are exempt from this requirement.

¹⁶ [E2SSB 5236. RCW 70.41.420](#).

Hospitals in Washington

As of 2023, there are 92 hospitals in Washington State.¹⁷ These hospitals vary widely in size, communities served, and services provided.

Of these hospitals, 39 are designated Critical Access Hospitals (CAHs). CAHs are rural hospitals with less than 25 beds that serve as hubs for health services in relatively isolated communities. Given their remote locations, they frequently provide both primary and emergency care as well as therapy and rehabilitation care in areas with low healthcare access.¹⁸ All Washington State-designated CAHs are also federally designated Medicare CAHs, meeting some additional qualifications.¹⁹

An additional four hospitals are federally designated Sole Community Hospitals (SCHs). SCHs are non-profit hospitals under contract with state or local governments to provide healthcare to low-income individuals not eligible for Medicare or Medicaid, granted governmental powers by state or local governments, or owned and operated by state or local governments. SCHs deliver healthcare to individuals and communities that might not otherwise be able to afford it.²⁰

[Exhibit 3](#) maps the locations of all 92 Washington hospitals by designation as CAHs, SCHs, or neither.

The shading of each county represents population density. Most CAHs are located in counties with relatively low population density and few other hospitals. SCHs are also located in low-density areas. Generally, there are more hospitals in densely populated areas such as King, Snohomish, and Pierce counties. These hospitals are less likely to be specially designated.

Washington's hospitals differ in the services that they provide. Some, such as laboratory services or medical imaging, are provided by nearly every hospital in the state. Other services, such as organ transplantation, long-term care, or alcohol and chemical dependency services, are only provided in a few select locations. See [Exhibit A2 in Appendix II](#) for a summary of the services provided by Washington's hospitals.

Nursing Staff in Washington

In 2023, more than 64,000 RNs were employed in Washington, with thousands more working as CNAs, LPNs, and unlicensed nursing staff. [Exhibit 4](#) presents employment levels for some of these occupations. Many occupations are included in the category of unlicensed nursing staff. Medical assistants (MAs) and surgical technologists were the most common examples in staffing plans and are included in [Exhibit 4](#) for reference.

¹⁷ DOH considers a hospital to be covered by the hospital staffing law if it has a Hospital Acute Care license. Military hospitals and hospitals operated by the state of Washington or Veterans Affairs are not covered by the law and are not included in this number.

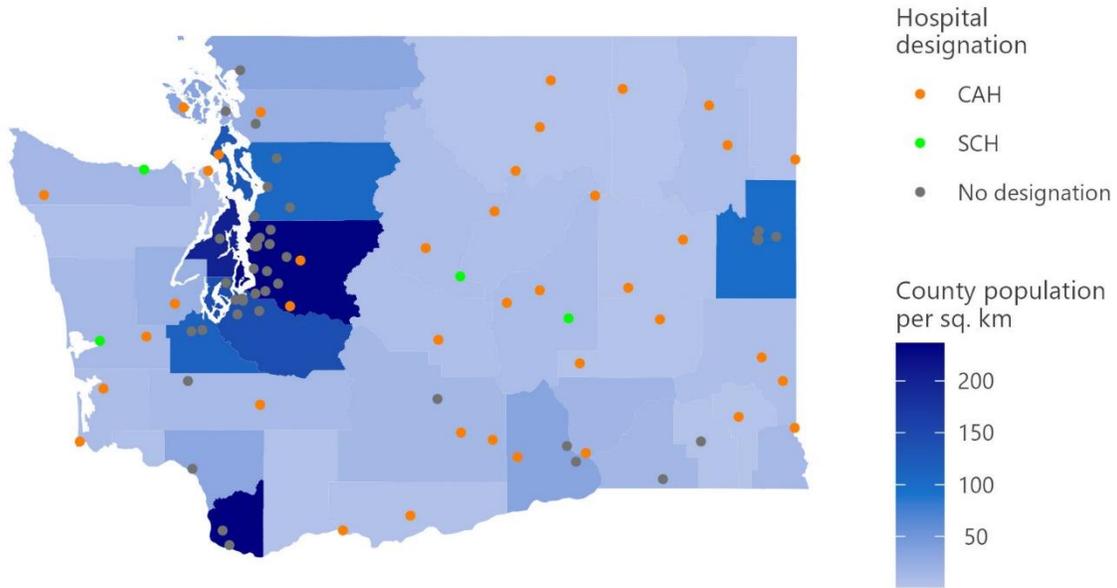
¹⁸ Washington State Department of Health. (n.d.) [About Acute Care Hospitals](#).

¹⁹ These include being 35 miles or more from the nearest hospitals (15 miles in mountainous terrain), having an average length of stay of 96 hours or less for inpatient care, providing 24/7 emergency care, and compliance with [42 CFR Part 485 subpart F](#). Centers for Medicare and Medicaid Services. (September 9, 2023). [Critical Access Hospitals](#).

²⁰ Health Resources and Services Administration. (June, 2022). [Sole Community Hospitals](#).

Exhibit 3

Hospitals in Washington by Federal Designation

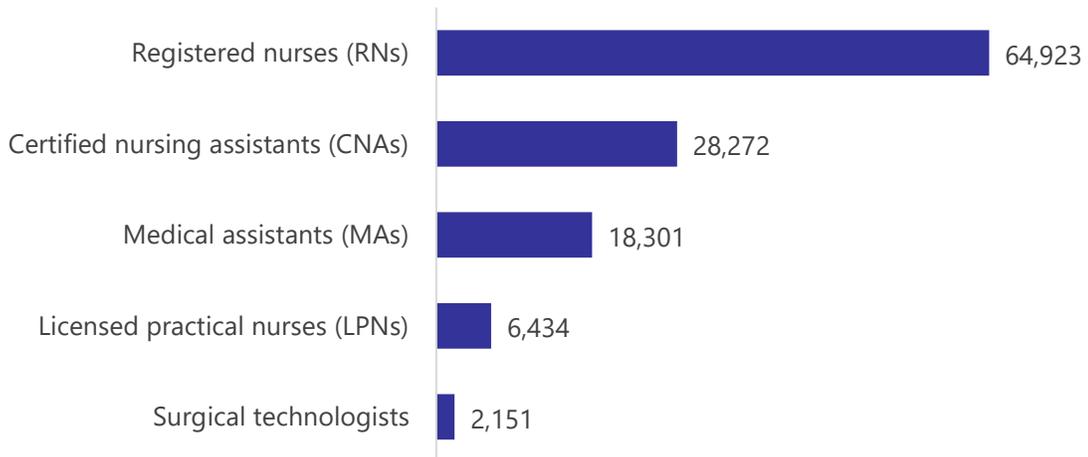


Notes:

County population density calculated using US Census Bureau data from 2022, the most recent year available.
Source: Washington State Department of Health. (June, 2020). [Critical Access Hospital \(CAH\) Program](#). [609-012]; Cambon, J., Hernangómez, D., Belanger, C., & Possenriede, D. (2021). [Tidygeocoder: An R package for geocoding](#). *Journal of Open Source Software*, 6(65), 3544, (R package version 1.0.5); Walker, K., & Herman, M. (2024). [Tidycensus: Load US Census Boundary and Attribute Data as 'tidyverse' and 'sf'-Ready Data Frames](#). (R package version 1.6.3).

Exhibit 4

Nursing Staff Employment in Washington State (2023)



Notes:

This data includes non-hospital nursing staff (e.g., RNs that work at medical clinics or urgent care centers).
Source: US Department of Labor, Bureau of Labor Statistics. (May 2023). [Occupational Employment and Wage Estimates](#).

II. Professional Guidance for Hospital Staffing

Adequately staffing a hospital is a complex task. At a given time, hospital units face uncertainty over patient census, the procedures they will need to perform, and the availability and skill mix of their staff. Hospital and nurse groups agree that adequate staffing is needed to ensure quality patient outcomes and a healthy work environment, but recommendations on how to achieve these goals vary.

Many organizations publish guidance on hospital staffing. These include industry groups like the American Hospital Association (AHA) and the Washington State Hospital Association (WSHA), as well as nurse advocacy groups like the American Nurses Association (ANA) and other organizations representing various nursing specialties.

Guidance can focus on the short-term or the long-term. Short-term guidance focuses on how to adequately staff a unit given available staff, technology, and existing care delivery models. Long-term guidance focuses on structural issues affecting hospital staffing. This report focuses primarily on short-term guidance, as it is most relevant to the staffing plans

submitted under Washington State law. However, we briefly discuss some long-term guidance.

Long-Term Guidance

Hospital and nurse organizations offer similar recommendations on some long-term staffing issues.

Both hospital and nurse organizations recommend simplifying and standardizing state-level nurse licensing regulations. For example, both support expanding the Nurse Licensure Compact, an interstate agreement that allows nurses to practice in multiple states on a single license.²¹

Both hospital and nurse organizations support developing new care delivery models to reduce burdens on nursing staff. For example, both recommend delegating tasks not requiring clinical licensure to unlicensed nursing staff, allowing licensed nurses to focus on more complex tasks that take advantage of their skills and training.²²

Both hospital and nurse organizations also recommend expanding student loan repayment programs and other policies that would reduce barriers for future nurses.²³

²¹ Nurse Staffing Task Force. (2023). *Nurse Staffing Task Force Imperatives, Recommendations, and Actions*. American Association of Critical-Care Nurses and American Nurses Association; Washington State Hospital Association. (February 3, 2022). *Staffing legislation's one-size-fits-all approach will increase costs & delay care*.

²² Nurse Staffing Task Force (2023); *AHA Statement Before the House Committee on Ways and Means*, 118th Congress (2024).

²³ Partners for Nurse Staffing Think Tank. (2022). *Nurse Staffing Think Tank: Priority Topics and Recommendations*; Hughes, S., & Porter, C.J. II. *Letter to Brooks-Lasure, C., Administrator, Centers for Medicare and Medicaid Services*. 3 April, 2023.

Exhibit 5

Registered Nurse Staffing Ratios in ANA-endorsed Legislation

Unit type	Maximum patient-to-RN ratio
Trauma emergency, operating room units	1:1
NICU, intensive care, critical care, labor & delivery, coronary care, acute respiratory care, post-anesthesia, and burn units	2:1
Emergency room, pediatrics, stepdown, telemetry, antepartum, combined labor/delivery/postpartum units	3:1
Medical-surgical, intermediate care nursery, acute care psychiatric, other specialty care units	4:1
Rehabilitation and skilled nursing units	5:1
Postpartum* and well-baby nursery units	6:1

Note:

In postpartum units, six patients refers to three mother/baby couplets.

Beyond these points of agreement, nursing groups additionally recommend maintaining hospital safety management systems to support healthy work environments and increasing the availability of nursing workforce data to help guide staffing decisions.²⁴

Short-Term Guidance

Hospital and nursing groups also publish short-term staffing recommendations ranging from broad guiding principles to detailed unit-specific ratios. We reviewed staffing publications from the ANA, specialty nursing associations, the AHA, and WSHA.

American Nurses Association Guidance

The ANA is a professional organization that represents the interests of RNs in the United States.

Its activities include publishing recommendations regarding nurse staffing. Its 2023 recommendations focused on three areas.²⁵

First, it endorsed federal legislation that would have established maximum patient-to-RN ratios for different hospital units.²⁶ Exhibit 5 details these proposed ratios. The legislation would have also limited hospitals' ability to require RNs to work mandatory overtime and would have penalized hospitals for noncompliance.

Second, the ANA recommended that specialty nursing organizations publish evidence-based staffing standards for the populations they serve. Further, the ANA recommended that hospital units consider these guidelines when creating staffing plans.

²⁴ Nurse Staffing Task Force (2023).

²⁵ Partners for Nurse Staffing Think Tank (2022); Nurse Staffing Task Force (2023).

²⁶ Nurse Staffing Standards for Hospital Patient Safety and Quality Care Act of 2023, SB 1113, 118th Congress (2023).

Third, it recommended that hospitals maintain adequate numbers of float, *pro re nata* (PRN), and *per diem* nurses to handle fluctuations in patient demand.²⁷

Some staffing laws, including Washington State's, allow hospitals to staff units at levels below those required in their staffing plans if unforeseeable emergent circumstances arise and the hospital has exhausted its reserve nurse pool.²⁸ The ANA recommended that hospitals avoid such cases by analyzing spikes in patient demand and staffing accordingly.

Specialty Nursing Organization Guidance

To collect guidance related to different nursing specialties, we contacted organizations representing nurses in the units included in [Exhibit 5](#). Organizations with publications relating to nurse staffing are detailed in [Exhibit A3 in Appendix II](#). Many of the recommendations from these groups reflect the specific demands of their patient populations, but some themes appeared across different specialties.

All eight groups recommended that staffing plans consider patient acuity, the skill mix of nursing and other staff, and the availability of technology and other hospital resources.

Two organizations recommended that nurses be involved in the staffing plan development process. Five endorsed or built on recommendations from the ANA.

Two groups offered a set of recommended ratios associated with different procedures and patient acuity levels. The Emergency Nurses Association provided a method of calculating how many nurses to staff but stopped short of recommending specific ratios. Only the Academy of Medical-Surgical Nurses opposed predetermined maximum staffing ratios.

Hospital Association Guidance

Hospital association guidance on short-term nurse staffing has focused on preserving flexibility and control at the hospital level.

In 2022, WSHA opposed legislation that would have established maximum patient-to-nursing staff ratios in Washington State, arguing that the law would increase healthcare costs and limit access to care.²⁹ As an alternative to fixed ratios, WSHA recommended continuing to develop Washington's staffing committee system.³⁰

In 2023, the AHA opposed a federal rule that established maximum patient-to-nursing staff ratios in Medicare- and Medicaid-funded nursing homes. It argued that mandatory staffing levels would worsen staffing shortages and disincentivize the development of innovative care delivery models.³¹

²⁷ Float nurses are nurses who are trained to work on multiple units and/or at multiple hospitals. *Pro re nata* (PRN) and *per diem* nurses are on-call nurses who work on an as-needed basis.

²⁸ [RCW 70.41.425\(1\)\(C\)](#).

²⁹ [Engrossed Second Substitute House Bill 1868, 2022 Regular Session](#).

³⁰ [WSHA \(2022\)](#).

³¹ [AHA \(2024\)](#).

III. Analysis of Hospital Staffing Plans in Washington

This section presents our analysis of staffing plans submitted to DOH. We first describe the types of nursing staff and hospital units that we consider in our main analysis. We then discuss the submitted forms' timeliness, completeness, and formats. Finally, we present the range of patient-to-nursing staff ratios reported in different hospital units across the state and compare them to professional guidance.

We analyze all staffing plans required to be submitted to DOH between January 2019 (when the 2017 provisions went into effect) and July 2023 (when submissions were paused as part of E2SSB 5236). During this period, 423 staffing plans were submitted.

As of 2023, there were 92 hospitals in Washington. However, staffing plans did not correspond one-to-one with these facilities. In some cases, multiple hospitals in a hospital system submitted a single staffing plan. In other cases, a single hospital system submitted multiple plans to cover different facilities. For this analysis, we define a hospital as the facilities covered by a single staffing plan. By this definition, there were 90 hospitals during the 2019-2023 period.

Definitions and Descriptions for Analysis

We briefly define the types of nursing staff, hospital units, and services described in this report.

Nursing Staff

We analyze staffing levels for the following types of nursing staff commonly staffed in Washington State hospitals, specified by the legislative assignment for this study: RNs and CNAs. Other types of nursing staff, such as LPNs or medical technicians, were also reported in some staffing plans. However, these types of staff were not reported as consistently as RNs or CNAs, so we do not discuss their staffing levels in the body of this report. Limited treatment of these other types of hospital staff can be found in [Appendix II](#).

Some hospital units reported staffing either without specifying what kind of staff are on shift (e.g., 1-2 staff members) or providing a list of different staff types that could be on shift (e.g., 1 RN or CNA). We recorded these assignments under a category we call "Nurses (any)." This is reported in [Appendix II](#).

Featured Hospital Units

It would be impractical to present the results of our analysis for each of the many unique hospital unit types in Washington's hospitals. Instead, we worked with several representatives of nurse labor organizations and hospitals to develop a list of key hospital units to feature in our main analysis (results for all units can be found in [Appendix II](#)).

Exhibit 6

Featured Units for Our Analysis

Unit	Description
Cardiac care	Includes cardiac intensive care units, cardiology, cardiovascular, and cardiopulmonary units. These are units where patients are treated for heart conditions, including heart attacks or failures, rhythmic disorders, and heart disease.
Critical care units	Nursing staff administer life-saving care to people with injuries and illnesses such as severe burns, heart attacks, organ failure, or mass trauma. Frequently, these units are referred to as intensive care units (ICUs), but they may have particular specialties such as burns or cardiovascular interventions.
Emergency departments (EDs)	Provide unscheduled care to patients who require immediate medical attention. Many EDs are open 24/7 to ensure that patient needs are met regardless of the time of day.
Intermediate care units	Includes intermediate care, progressive care, stepdown, telemetry, and observation units. Generally, these provide care for patients whose needs fall between critical care and general hospital wards or are healing from medical interventions.
Medical surgical units (Med-surg)	Serve the general patient population recovering from surgery, illness, or injury. Many different types of hospital staff coordinate care for patients in med-surg units. Hospitals may have separate medical and surgical units or combined med-surg units.
Obstetrical	Any unit dealing with pregnancy, labor and delivery, or the care of newborns, including antepartum, labor, birth, and postpartum care as well as neonatal intensive care units (NICUs). General labor and delivery units and family birth centers are included in this category.
Antepartum	Care administered any time prior to labor and delivery. Antepartum care includes sonography and monitoring of the development of the fetus or fetuses, as well as nutrition, treatment of symptoms of pregnancy, and counseling.
Labor	Care administered shortly before birth, including obstetrical triage, monitoring, induction or augmentation of labor, and pain management.
Birth	Care administered during birth. This may include fetal monitoring and telemetry and managing comfort.
Postpartum	Care administered immediately following birth, for both the newborn and parent. Monitoring of vitals, pain, and bleeding are a part of postpartum care
Neonatal intensive care units (NICUs)	Unit where newborns needing special care are sent after birth, such as those born early, with a low birthweight, or with special health conditions. Services ranging from nutrition and monitoring to open heart surgery are administered in NICUs depending on the specialization of the unit
Oncology	Units where nurses administer treatment to patients with cancers. Treatments may include immunotherapy, chemotherapy, radiation therapy, surgery, or monitoring.
Post anesthesia care units (PACUs)	Patients are temporarily admitted to PACUs following surgery to recover from anesthesia. Nurses monitor patients closely to ensure there are no complications from surgery or anesthesia.

Note:

Sources for each unit's description can be found in [Exhibit A13](#) in [Appendix III](#).

Critical care units, intermediate care units, med-surg units, and obstetrical units were recommended by all organizations we worked with.

The remainder of the featured units were recommended by a majority or were selected for being present in most hospitals. Our featured units and their descriptions are presented in [Exhibit 6](#). We also cover several subunits within obstetrical units with different standards for patient care, which appear indented beneath obstetrical units in [Exhibit 6](#).

Timeliness of Submissions

The law did not specify a required submission date for staffing plans. Instead, DOH considered plans to be submitted on time if they were submitted within 12 months of a hospital's previous plan. By this measure, 75% of plans were submitted on time.³²

Exhibit 7 presents information on the timeliness of hospital submissions over time. Each year, about two-thirds of hospitals submit their staffing plans on time. Note that, as previously discussed, there were fewer submissions in 2023 as the newly passed staffing plan law paused submissions in July.

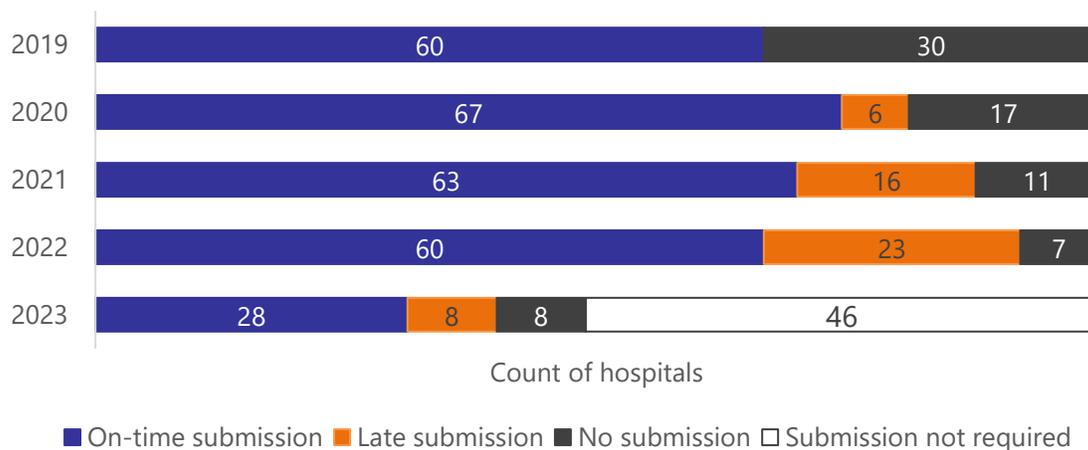
Completeness of Submissions

Between 2019 and 2023, the law specified many requirements for staffing committees but relatively few regarding the content of staffing plans. Staffing committees were required to develop an "annual patient care unit and shift-based nurse staffing plan, based on the needs of patients."³³ Beyond this description, there were no legally required components. We considered a plan incomplete if it included one or more units that did not provide any information on nursing staff counts. By this measure, 23% of plans were incomplete.

We also analyzed which units each hospital included in its submissions over time. Of the hospitals, 26% always reported the same set of units in all their submissions.

Exhibit 7

Hospital Staffing Plan Timeliness by Year



Notes:

In July 2023, changes to the hospital staffing law took effect, pausing the requirement for staffing plan submission until 2025. As a result, not all hospitals were required to submit plans in 2023.

³² Any plan submitted in 2019 was considered on-time.

³³ ESHB 1714.

The remaining 74% reported different sets of units over time. In some cases, hospitals gave a reason for these differences.

For example, hospitals were required to submit mid-year staffing plan changes to DOH. In some cases, hospitals submitted an updated plan for all units, while in other cases, they only included affected units. Plans typically did not indicate whether they were annual submissions or updates, so identifying these cases was not feasible.

In other cases, hospitals combined or split units over time. For example, a hospital might report a family birth center one year, then report separate labor & delivery and postpartum units the following year.

Sometimes, the reason for the missing units was not apparent. Some possible explanations from outreach to hospital and nurse advocacy organizations include unit openings and closures or simply a failure to include active units in the submission.

Format

We recorded several aspects of the formatting of staffing plans for each unit in each hospital. For each point of analysis in this subsection, we include all submitted plans within the study period, regardless of how many plans a hospital submitted in a single year.

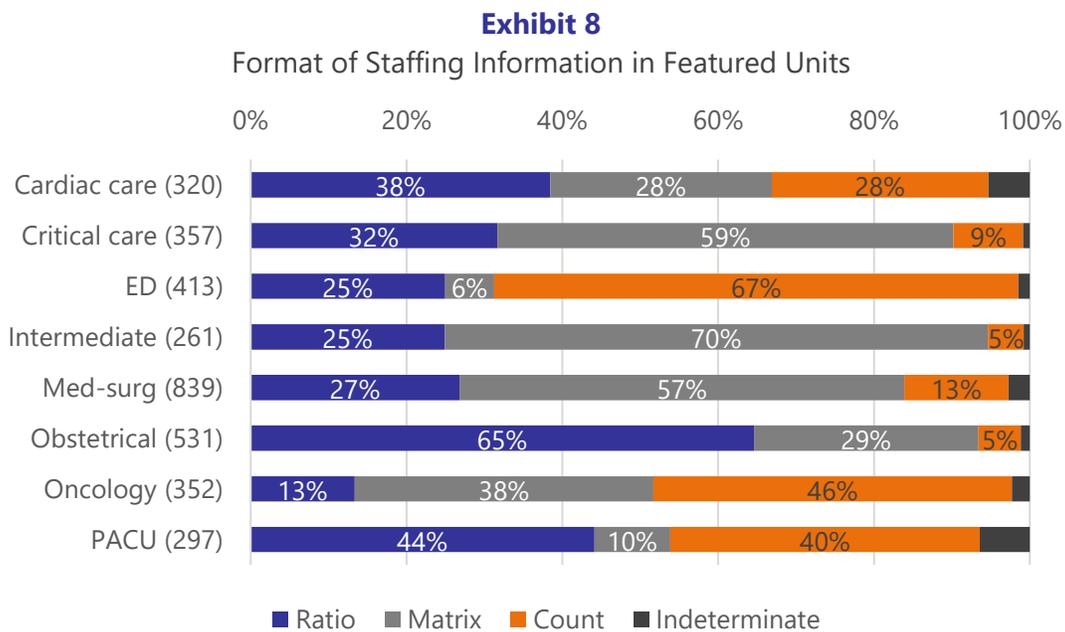
Unit-level staffing information was presented in many ways across hospitals and even across units within the same hospitals. We categorized the various kinds of staffing recording into four broad categories:

- **Count** – the number of nursing staff of each type was recorded as head counts by the day, shift, or hour.
- **Matrix** – staffing recorded as a table reporting the number of nursing staff of each type on each shift depending on the patient count for that unit.
- **Ratio** – the maximum number of patients assigned to each type of nursing staff was recorded.
- **Indeterminate** – insufficient information was provided to determine the number of nursing staff on shift at any time.

Exhibit 8 depicts the share of submitted staffing plans for each featured unit type that fell into each formatting category. Intermediate, critical care, and med-surg units were most likely to present staffing information in a matrix format, while obstetrical, cardiac care, and post-anesthesia care units (PACUs) were most likely to report in a ratio format.

The remaining units were most likely to be presented in count format. Emergency departments (EDs), in particular, were especially likely to present information as a head count of staff, likely due to the uncertain and unscheduled nature of ED visits. EDs were also more likely to staff by the hour of the day rather than in shifts or days.

Indeterminate entries comprised only a small proportion of submissions for each featured unit.³⁴



Notes:

Graph created using all submissions from all hospitals, 2019 – 2023, even if a single hospital made multiple submissions in a single year.

The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.

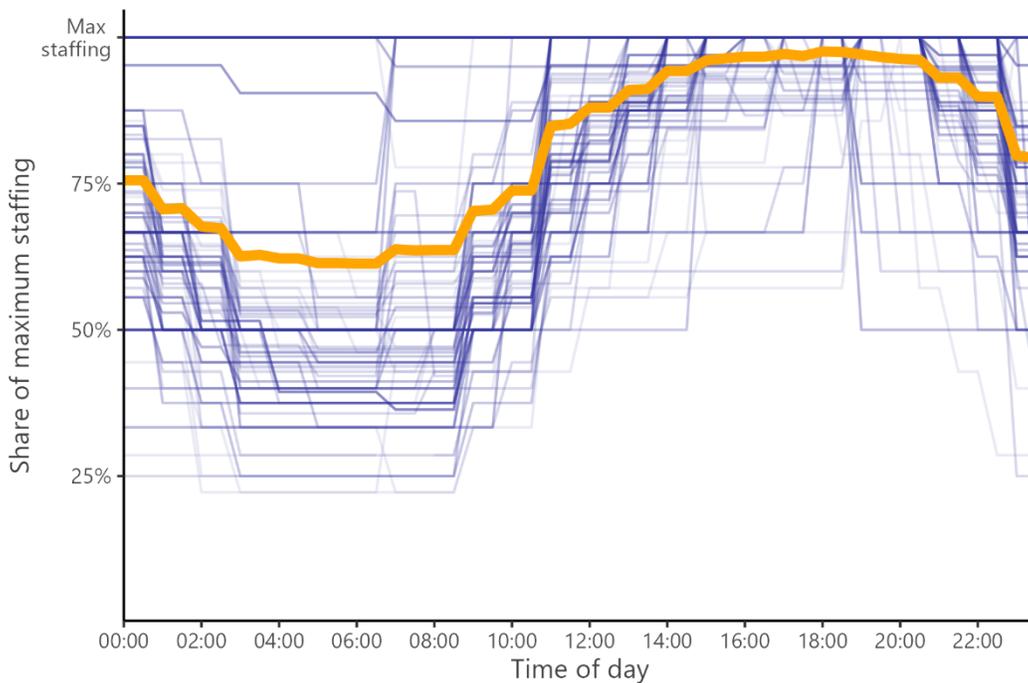
³⁴ The share of indeterminate submissions was substantially higher for some unit types not featured in the main body of this report. See Appendix II for details.

Exhibit 9 depicts the planned RN hourly staffing patterns for emergency departments across all submitted hospital plans in our sample that were reported in a count format. Each single blue line represents an individual plan's staffing level by time of day, while the orange line portrays the average staffing level across all plans.

Generally, hospitals tend to staff fewer RNs during the early hours of the morning and more during afternoons and evenings. This may reflect EDs' expected patient counts for each hour of the day. However, as shown by the strong blue line at the maximum staffing level, many hospitals have relatively constant ED staffing throughout all 24 hours of the day.

Exhibit 9

RN Staffing Patterns by Hour for Emergency Departments, 2019 – 2023



Notes:

This figure was created using all submissions in the data set, even when a single hospital submitted multiple staffing plans in a single year.

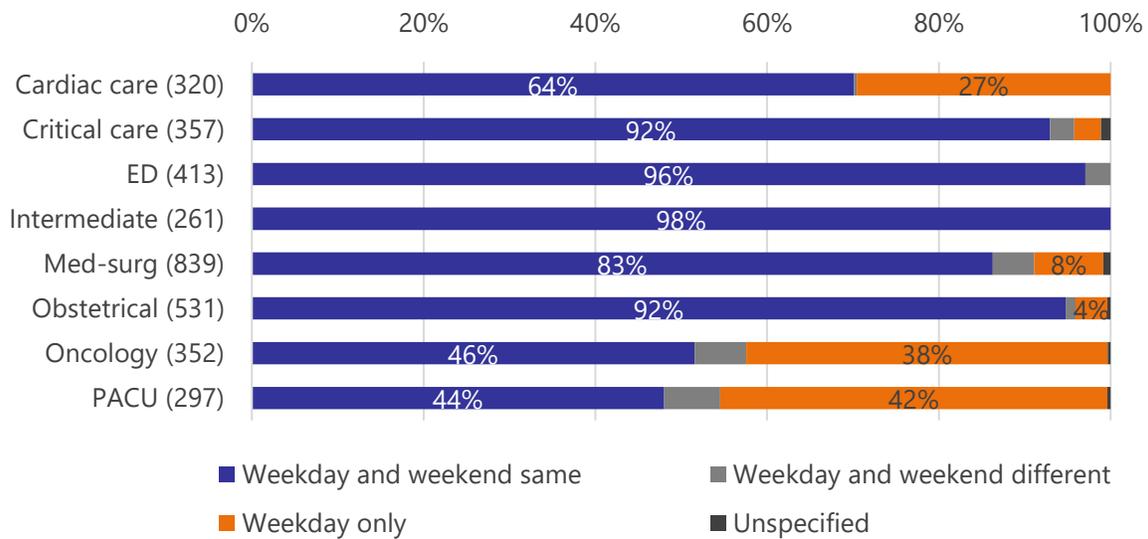
The orange line represents the average share of maximum staffing on shift for each hour of the day. Emergency departments that reported staffing in ratio, matrix, or undetermined formats are not included.

We also tracked whether each unit reported different staffing patterns between weekdays and the weekend. Exhibit 10 shows the share of each unit type reporting staffing information as the same or different between weekdays and weekends. Also shown is the share of units that only reported weekday staffing and those that did not indicate what time of the week staffing patterns applied to. Units that tend to perform unscheduled care, such as critical care, intermediate care, med-surg units, and EDs, are more likely to have the same schedule between weekdays and weekends.

By contrast, units that typically schedule patients such as PACUs, cardiac care, and oncology units are more likely to only be open on weekdays (though the largest share still has the same schedule between weekdays and weekends in all these unit types). A small share of each unit type has different schedules between weekdays and the weekend. Only a few units did not specify whether each shift takes place on weekdays, weekends, or both.

Exhibit 10

Week and Weekend Shifts in Featured Units



Notes:

Depicted is the share of each type of unit that is staffed the same on weekdays and weekends, differently on weekdays and weekends, only during the week, and for which day of the week was not reported.

This graph is created using all submissions from all hospitals, 2019 – 2023, even if a single hospital made multiple submissions in a single year.

The number of hospital units from which each bar distribution is calculated is given in parenthesis.

Patient-to-Nursing Staff Ratios

This section details our findings from the staffing plans in terms of the maximum number of patients assigned to nursing staff in hospitals. If a hospital submitted multiple staffing plans in a given calendar year, the resulting ratios were averaged across plans in the same hospital for that year. This is done to prevent a single hospital with multiple submissions from having too much weight when averages are calculated. It is important to note that we are only available to evaluate the information presented in the staffing plans, i.e., how hospitals *plan* to staff units. We are not able to comment on what staffing ratios *actually* occur in Washington's hospitals.

We could only estimate patient-to-nursing staff ratios for units reporting staffing information in matrix or ratio format. Units with a count or indeterminate format did not provide sufficient information to calculate the ratios and are not included in our analysis in this section.

The share of unit-year combinations from which we could construct staffing ratios is given for each featured unit type in [Exhibit 11](#). The share of units with calculable staffing ratios varies widely across unit types. Unit types that are more likely to present staffing information in a count format, such as EDs and oncology units, have relatively lower shares of units with calculable ratios. The exhibit also presents the share of obstetrical subunits for which ratios could be calculated as an indented list. These shares are fairly consistent for RNs. Very few obstetrical subunits reported staffing CNAs in a form.

Exhibit 11

Share of Featured Units from Which a Ratio Could be Calculated

Unit (total count)	RN	CNA
Cardiac Care (252)	65%	20%
Critical Care (260)	84%	28%
ED (329)	27%	2%
Intermediate (194)	93%	71%
Med-Surg (622)	81%	56%
Obstetrical (421)	81%	6%
Antepartum (61)	80%	0%
Birth (26)	73%	0%
Labor (62)	84%	2%
NICU (81)	88%	3%
Postpartum (155)	79%	13%
Oncology (274)	49%	23%
PACU (231)	50%	6%

Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

Counts of the total number of unit-year combinations for each unit type is given in parenthesis.

[Exhibit 12](#) reports average patient-to-RN and patient-to-CNA ratios in featured units. For each unit type, more units reported staffing RNs than CNAs. Patient-to-RN ratios are lowest in critical care units, where the most hands-on, life-saving care is typically performed. Nurses in PACUs must closely monitor patients while they transition between levels of anesthetic care, necessitating lower staffing ratios as well. Higher ratios are found in units typically involving less consistent or hands-on care, such as oncology or med-surg units.

Where they were staffed, CNAs were uniformly assigned to more patients.

This is likely due to the type of care that CNAs provide, which is less specialized and technical in nature than the care provided by RNs. CNAs were generally staffed in higher ratios in units where RNs were staffed in lower ratios and vis-versa, suggesting that CNAs are more responsible for patient care when that care is less hands-on or lifesaving.

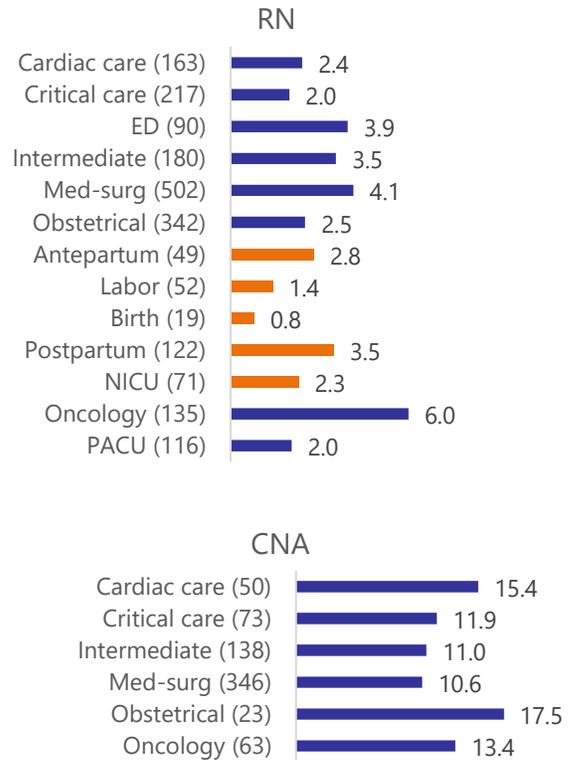
Our review of the staffing plans revealed that patient-to-RN ratios in obstetrical units vary by the specific type of care patients receive. In addition, professional guidance from both the ANA and the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN) on maximum staffing ratios differentiates between different subunits and types of care in obstetrical units. To highlight these differences, [Exhibit 12](#) includes average patient-to-nursing staff ratios across obstetrical subunits.

As with the featured units, patient-to-RN ratios are lowest where the most hands-on care is delivered, during labor and birth. In particular, many obstetrical units planned to staff two RNs for each patient during birth. RN ratios are highest in postpartum care, where mothers and newborns typically do not need close monitoring. Our data contains only 23 instances of CNAs being staffed in obstetrical units, which is too few to estimate average staffing ratios. As such, we do not report patient-to-CNA ratios for obstetrical subunits.

As noted at the beginning of this subsection, we were not able to calculate a patient-to-nursing staff ratio for every unit in our data because of insufficient information on the number of patients.

Exhibit 12

Average Patient-to-Staff Ratios in Featured Units, 2019 – 2023



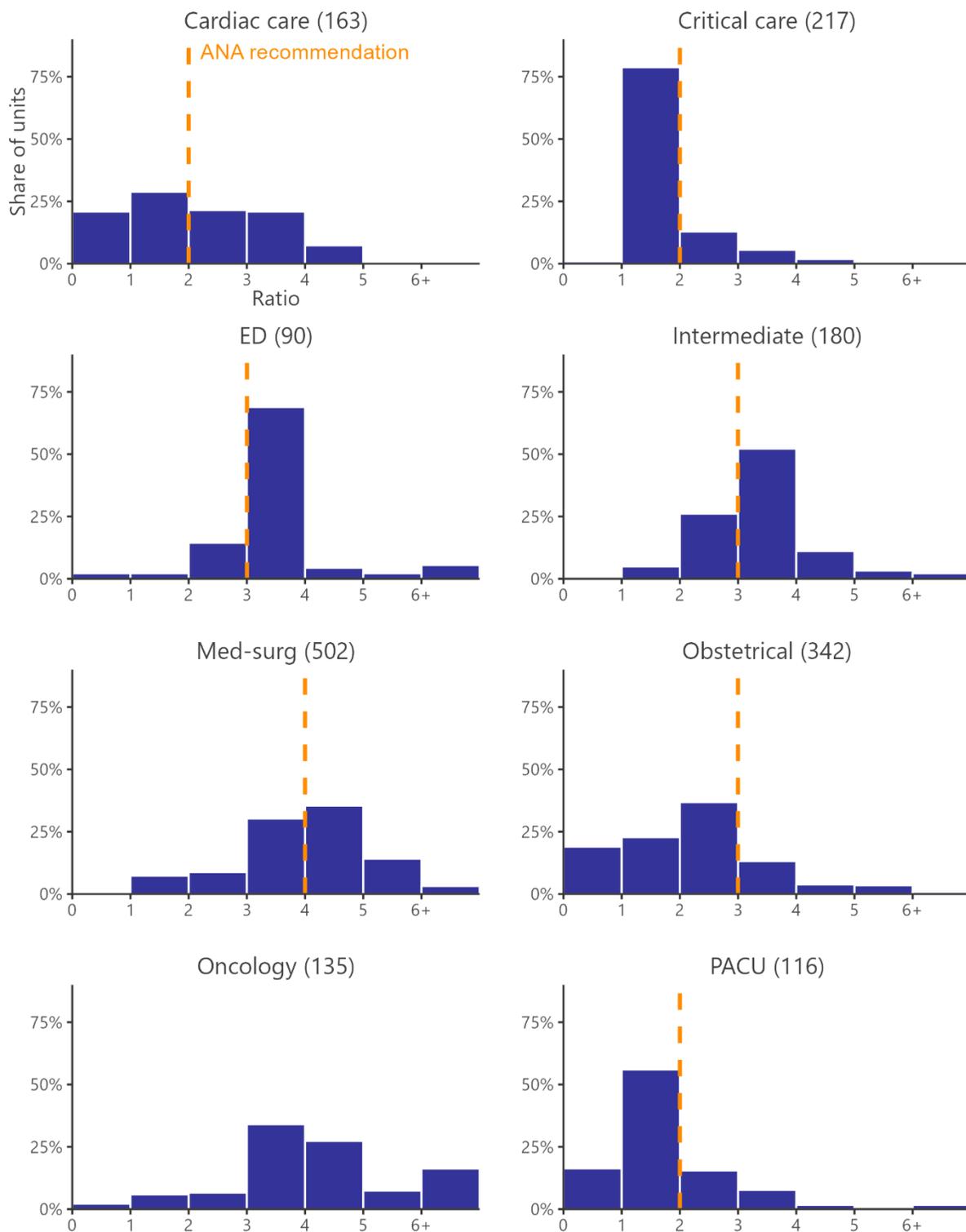
Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions. The number of distinct unit-year observations used to estimate each average ratio is given in parentheses. The orange bars in the RN chart are subunits of the obstetrical category. Units with less than 15 observations were removed for CNAs.

[Exhibits 13](#) and [14](#) provide histograms of the patient-to-RN and -CNA ratios distribution for each featured unit type across Washington hospitals from 2019-2023. In [Exhibit 13](#), ANA recommended maximum patient-to-RN ratios are shown by the orange vertical line; units with ratios to the left of the line meet ANA recommended criteria, while those to the right of the line do not.

Exhibit 13

Distribution of Patient-to-RN Ratios in Featured Units, 2019 – 2023



Notes:

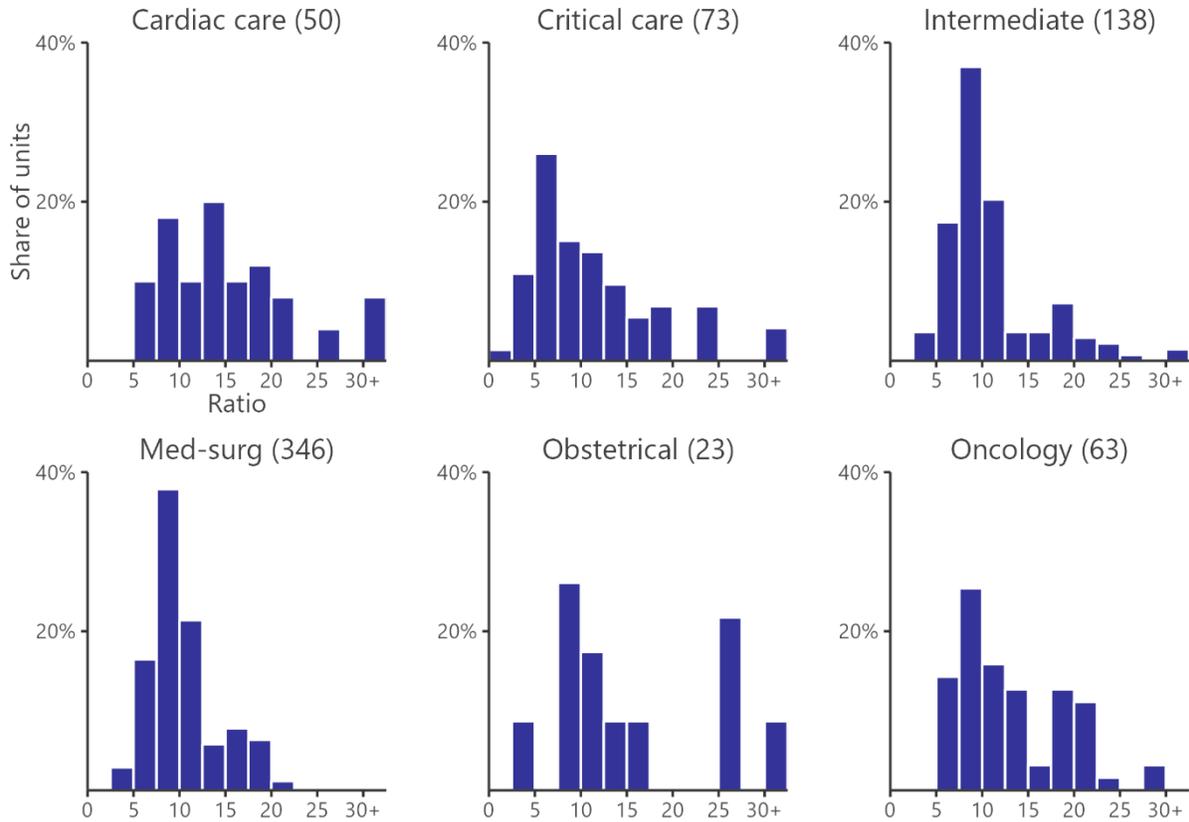
If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.

ANA recommendations are given by the orange line.

Exhibit 14

Distribution of Patient-to-CNA Ratios in Featured Units, 2019 – 2023



Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.

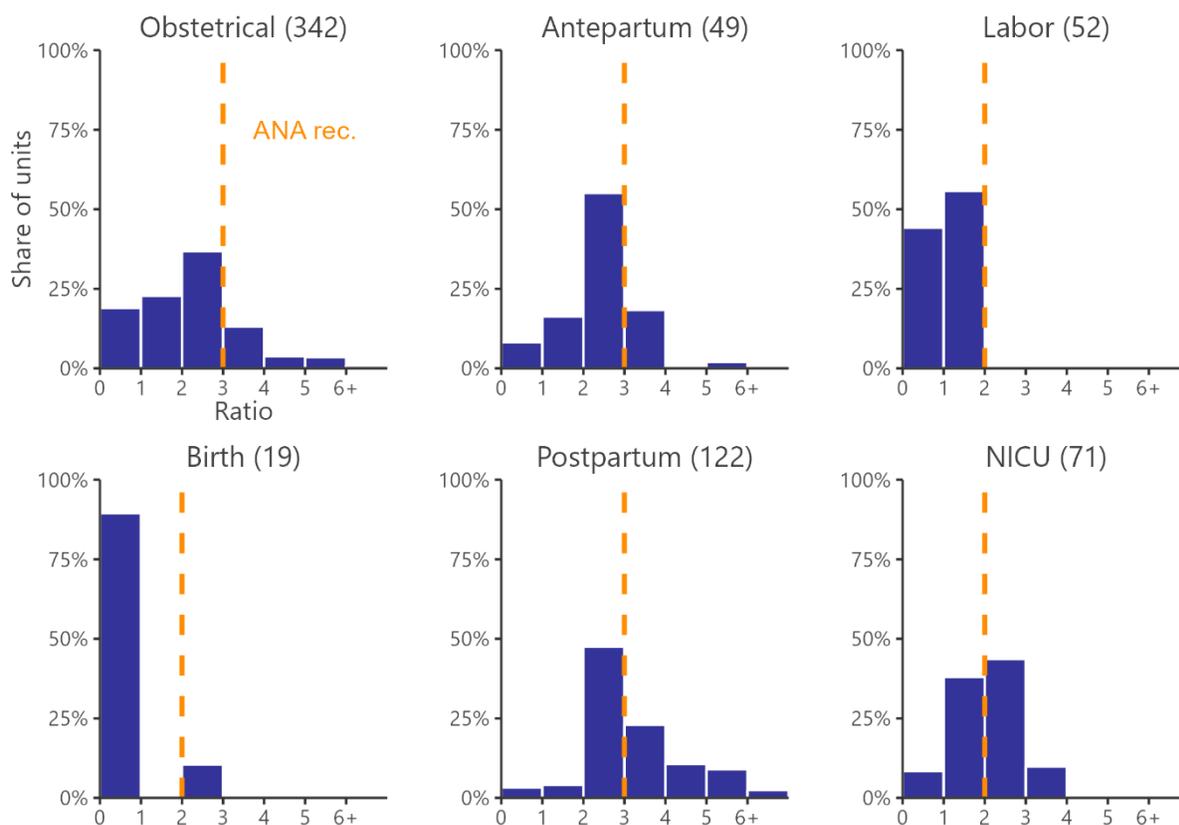
Units with less than 15 observations were removed for CNAs.

Some unit types, such as intermediate care, med-surg, cardiac, obstetrical, and oncology, featured a wide range of RN-to-patient ratios.

Others, such as critical care units and EDs, were more consistent across hospitals. CNAs are staffed in a much wider variety of ratios than RNs are across all unit types.

Exhibit 15

Distribution of Patient-to-RN Ratios in Obstetrical Units, 2019 – 2023



Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.
 The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.
 ANA recommendations are given by the orange line.
 The category "obstetrical" includes all units in each other category of obstetrical units.

Exhibit 15 provides histograms for patient-to-RN ratios in obstetrical subunits. While obstetrical units as a whole exhibit a broad range of RN ratios, labor and birth subunits are highly concentrated around just a few. This is likely due to the importance of hands-on care during these periods. Ante- and postpartum care display a wider range of patient-to-RN ratios. As with Exhibit 13, the orange line in each histogram represents ANA recommendations for maximum patient-to-RN ratios; units with ratios to the left of the line meet ANA recommended criteria, while those to the right of the line do not.

The legislative language for this assignment directed WSIPP to investigate trends in staffing plans over the study window. However, our analysis of average staffing ratios over time did not reveal any clear trends over this period. Timelines of the statewide average patient-to-RN and -CNA ratios by unit type can be found in Appendix II.

Comparing Staffing Ratios to Professional Guidance

For each unit type in [Exhibit 13](#), units with ratios to the left of the orange line meet the ANA’s recommended maximum patient-to-RN ratio for that unit type. [Exhibit 16](#) reports the shares of featured units with patient-to-RN ratios less than or equal to the ANA’s recommended maximum ratio. Among featured units, critical care units and PACUs were the most likely to meet the ANA’s guidance, whereas intermediate care units and EDs were the least likely. In addition, 97.4% of PACUs meet the American Society of Perianesthesia Nurses recommended maximum ratio for stable patients.

As with [Exhibit 13](#), units to the left of the orange line in [Exhibit 15](#) meet ANA guidance for maximum patient-to-RN ratios for obstetrical care. [Exhibit 16](#) reports the share of featured units and obstetrical subunits meeting ANA guidance on maximum patient-to-RN ratios for stable patients.³⁵ All obstetrical units in our data from which we were able to estimate ratios met ANA guidance for labor. However, only around half of postpartum subunits and NICUs did.

Exhibit 16

Share of Featured Units Meeting Professional Guidance in Washington

Unit type (count)	% meeting ANA
Cardiac care (163)	50%
Critical care (217)	80%
ED (90)	19%
Intermediate (180)	31%
Med-surg (502)	47%
Obstetrical (342)	79%
Antepartum (49)	80%
Labor (52)	100%
Birth (19)	90%
Postpartum (122)	55%
NICU (71)	47%
Oncology (135)	—
PACU (116)	72%

Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions. These percentages apply only those units for which a ratio could be computed (units with staff information in count or indeterminate format are not included).

Units with a “—” are not covered by professional guidance.

³⁵ ANA and AWHONN guidance is identical for stable patients in each featured obstetrical subunit.

Differences in Staffing Ratios by Region and Federal Designation

[Exhibit 17](#) compares average ratios in featured units between different types of hospitals. The first two numerical columns of each table compare average ratios between urban and rural hospitals.³⁶ Most patient-to-RN ratios are relatively similar between urban and rural hospitals; intermediate care and oncology units have the largest differences, though average ratios in rural areas are based on a small number of observations.

Only critical and intermediate care units, med-surg units, and EDs in rural areas reported staffing CNAs. Rural units have lower patient-to-CNA ratios in all units that report staffing any CNAs except med-surg units. This may indicate that rural hospitals are more dependent on CNAs to administer care to patients than urban hospitals. These differences are also based on small observation counts in rural areas.

The other three columns in each table in [Exhibit 17](#) compare ratios in hospitals with special designations—critical access hospitals (CAHs) or sole community hospitals (SCHs)—to those without designations. For RNs, the largest differences are between oncology units, where ratios in non-designated hospitals are nearly twice that in SCHs.

CNAs are not reported for many of the featured units in any specially designated hospitals. Generally, patient-to-CNA ratios are lower in CAHs and SCHs than in non-designated hospitals. Since CAHs and SCHs tend to be in more rural areas, this may also indicate greater dependence on CNAs for patient care in rural areas. Some literature suggests this to be the case.³⁷ Once again, for both RNs and CNAs, there are relatively few observations in both CAHs and SCHs compared to hospitals with no designation.

In general, it should be noted that the comparisons made in [Exhibit 17](#) are based in many cases on small observation counts for rural and specially designated hospitals. In particular, there are only four SCHs in Washington, meaning that average ratios estimated for units in these hospitals will be sensitive to outliers. In addition, some units are not nearly as common in rural areas. For instance, our data does not contain any cardiac care units in rural areas, CAHs, or SCHs from which we were able to estimate ratios.³⁸ While our data does constitute the population of all hospital staffing plans ever submitted to DOH, the small observation counts are important to note in the context of these comparisons.

³⁶ We consider a hospital to be urban if it is located in a US Census Metropolitan Statistical Area.

³⁷ Smith, J.G., Plover, C.M., McChesney, M.C., & Lake, E.T. (2019). [Isolated, small, and large hospitals have fewer nursing resources than urban hospitals: Implications for rural health policy](#). *Public Health Nursing*, 36(4), 469–477.

³⁸ This does not mean that cardiac care (or other types of care) is not administered in any rural or specially designated

hospitals. For instance, there were cardiac care units in these hospitals that reported staffing plans in count or indeterminate format, meaning that we could not estimate ratios from them. It may also be that cardiac care is administered in more general hospital units that are not explicitly labeled cardiac care. See [Appendix I](#) for a description of how we determined which units in our data fell into which categories of care.

Exhibit 17

Comparisons of Patient-to-Staff Ratios in Featured Units, 2019 – 2023

RNs

Unit	Urban	Rural	CAH	SCH	No designation
Cardiac care	2.4 (163)	— (0)	— (0)	— (0)	2.4 (163)
Critical care	1.9 (190)	2.2 (27)	2.3 (31)	2.5 (13)	1.9 (173)
ED	3.7 (52)	4.2 (38)	4.4 (26)	4.0 (8)	3.7 (56)
Intermediate	3.6 (169)	2.8 (11)	3.5 (19)	2.9 (12)	3.6 (149)
Med-surg	4.1 (449)	4.1 (53)	4.7 (51)	3.9 (32)	4.1 (419)
Obstetrical	2.5 (265)	2.3 (77)	2.3 (71)	2.1 (16)	2.6 (255)
Oncology	6.0 (131)	5.5 (4)	3.8 (10)	3.3 (5)	6.3 (120)
PACU	2.1 (86)	1.9 (30)	2.3 (21)	1.5 (8)	2.0 (87)

CNAs

Unit	Urban	Rural	CAH	SCH	No designation
Cardiac care	15.4 (50)	— (0)	— (0)	— (0)	15.4 (50)
Critical care	13.3 (58)	6.3 (15)	5.3 (21)	9.8 (4)	14.9 (48)
ED	11.8 (5)	5.1 (2)	6.6 (4)	— (0)	14.3 (3)
Intermediate	10.7 (130)	16.3 (8)	4.5 (10)	7.7 (14)	12.0 (114)
Med-surg	10.8 (305)	9.3 (41)	7.3 (36)	7.5 (26)	11.4 (284)
Obstetrical	17.5 (23)	— (0)	4.8 (2)	— (0)	18.8 (21)
Oncology	13.4 (63)	— (0)	— (0)	7.4 (5)	14.0 (58)
PACU	12.9 (13)	— (0)	— (0)	— (0)	12.9 (13)

Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

The count of unit-year observations used to estimate each ratio is given in parentheses.

In each table, urban and rural are mutually exclusive categories and CAH, SCH, and no designation are mutually exclusive categories.

Limitations of Ratio Analysis

As discussed at the beginning of this subsection, units that reported staffing plans in count or indeterminate format are not included in our ratio analysis.

As such, the results of this section should not be viewed as comprehensive of all hospital units in Washington. While we extract patient-to-nursing staff ratios from every unit in which it is possible to do so for our data, units of these other format types are not included.

It is important to note that our analysis of staffing ratios in this section only pertains to staffing information reported to DOH in plans. We are not able to calculate the actual staffing ratios in Washington State hospitals. In other words, we report on how hospitals *plan* to staff nursing staff, but we cannot say how they *actually* do staffing.

Hospitals may not exactly follow staffing plans for several reasons. First, the staffing law allows hospitals to deviate from staffing plans, provided that such deviations are small and limited.

Secondly, the law also permits deviation under emergent circumstances. This second point is especially important given that the worldwide COVID-19 pandemic occurred in the middle of the study window. During this time, hospitals across the country saw a rapid increase in demand for hospital services in different units, which were hard to predict and quite possibly led to staffing ratios that exceeded what was planned. Other emergencies could also lead to larger staffing ratios than reported.

Finally, the national and statewide nursing shortage could mean hospitals cannot find enough staff to cover planned staffing patterns.³⁹

Overall, given the limitations of this assignment and the data, we are not able to comment on the impact of any of the above factors on actual staffing ratios.

It is also important to note that many hospitals mentioned staffing additional nursing staff that were not recorded in our data entry process. This could be because they were outside the scope of this study (which covers RNs and CNAs) or because insufficient information was provided to determine their number. These additional staff, where present, could mean that our estimated patient-to-nursing staff ratios overestimate actual ratios.

Additional Staffing Plan Components

Beyond the staffing information presented in this section, staffing plans sometimes included information regarding technology, inter-unit logistics, and additional staff resources. Because such information was not reported consistently or in a standard format, we cannot summarize it quantitatively. However, these features indicate the additional resources that hospital units consider relevant to their staffing plans.

First, some plans described labor-saving technology available to individual units. For example, some units have access to automatic medication dispensing machines.

³⁹ American Association of Colleges of Nursing (2022); Takahama, E. (2022, September 24). *WA is stuck with a travel nurse dilemma, pitting care against costs*. *The Seattle Times*.

Others have video conferencing systems that facilitate remote care. Others have cranes used for turning patients in their beds to reduce physical strain on nurses. These resources were typically described as increasing the productivity of nursing staff.

Next, some plans described schedule planning and inter-unit arrangements beyond patient-to-nursing staff ratios. For example, some units detailed their policies for ensuring that staff receive adequate meal and rest breaks. Others described procedures for sending overflow patients to other units or sharing staff with different units depending on patient loads.

Finally, some plans referenced additional staff resources beyond those considered in this analysis. These included physical therapists, interpreters, dieticians, social workers, lactation

consultants, pharmacists, chaplains, and many more. In some cases, plans indicated that the additional staff were dedicated to a particular unit. In others, the staff were described as serving multiple units as needed.

While patient-to-nursing staff ratios are an important measure of hospital staffing, they do not consider features like those described in this section. A unit with more technological resources, or one with access to additional staff, may be able to increase its patient-to-nurse ratio while providing the same level of care. Including these resources in staffing plans in a standardized way is challenging because of the diverse ways they are deployed in different hospitals.

[Exhibit 18](#) summarizes key takeaways from this section.

Exhibit 18

Key Takeaways from Section III

Timeliness of staffing plan submissions

- Of the 423 staffing plans submitted between 2019 and 2023, 75% were submitted within 12 months of a hospital's previous plan, which DOH considers to be an on-time submission.

Completeness of staffing plans

- 26% of hospitals report the same units in all of their submitted staffing plans.
- 23% of staffing plans did not include sufficient information to determine staffing levels in at least one unit.

Format of staffing plans

- Hospitals report their staffing information in a variety of formats, categorized as counts of staff, matrices of staffing levels given patient census, or patient-to-staff ratios.
- Most unit types featured in our analysis use a matrix format. Cardiac care units are most likely to use ratio formats, whereas oncology units and EDs are most likely to use head counts of staff.

Maximum patient-to-staff ratios

- Patient-to-RN ratios are lowest in critical care and post-anesthesia recovery units, as well as during labor and birth, when the most involved or life-saving care is administered.
- Patient-to-CNA ratios are higher than patient-to-RN ratios, reflective of the less-specialized care that CNAs provide.
- Some units, such as critical care and EDs, have fairly consistent staffing ratios statewide. Others, such as oncology, obstetrical, or cardiac units, are more varied between hospitals.
- While patient-to-RN ratios are similar between urban and rural areas, CNA ratios are significantly lower in rural areas, Critical Access Hospitals, and Sole Community Hospitals, suggesting a greater reliance on CNAs to administer care in these hospitals.
- Across the study period (2019-2023), average patient-to-RN ratios were relatively constant in most unit types. Average CNA ratios over this time period were more variable, but we could not detect any clear pattern.
- It is important to note that our analysis of ratios only pertains to how hospitals in Washington plan to staff their units, not what staffing levels actually occur.

IV. Hospital Staffing Policies in Other States

To describe the nature and breadth of hospital staffing-related policies in different jurisdictions of the US, we conducted a comprehensive review of all 50 states. We confined our search only to include policies requiring hospital staffing committees, hospital staffing plans, fixed patient-to-nursing staff ratios, or combinations thereof. For each state, we reviewed administrative codes and statutes and recent and historical legislation related to hospital staffing policy changes. We also drew from a handful of hospital staffing research articles that reviewed policies by state.⁴⁰

In all, our search found a total of 16 states (38% of all states) with laws requiring staffing committees, staffing plans, or fixed patient-to-nursing staff ratios. Of these, 15 states require hospitals to produce annual staffing plans to be submitted to each state's health or labor authorities. [Exhibit 19](#) summarizes common features of policies requiring staffing plans. Ten of these states also require staffing committees comprised of at least 50% nursing staff to create the plans (column four of [Exhibit 19](#)), while the remaining five states only require that a plan be submitted. Of those states with committees, most only require RNs to be on the staffing committee. Washington is the only state that requires RNs, LPNs, and CNAs to be represented on staffing committees.

Five states with required staffing plans also require active public reporting of actual staffing levels by unit. Vermont and Ohio require that hospitals make the staffing information available upon request. Washington requires that staffing plans be publicly available but not actual staffing levels.

The last column of [Exhibit 19](#) provides additional details on states' policies.

[Exhibit 20](#) compares the seven states that have regulations requiring fixed patient-to-nursing staff ratios in at least some hospital units. Only two states, Oregon and California, require fixed ratios in most hospital units. Oregon, California, and Ohio are the only states requiring fixed ratios and staffing plans and committees in each hospital.

The third column of [Exhibit 20](#) details which nursing staff count towards meeting each state's ratio. Four of these states have policies that only allow RNs to count towards meeting required ratios. California's policy allows certain other types of nursing staff to count towards ratios in regulated units. Virginia also allows certain other nursing staff to count towards ratios in obstetrical units and newborn nurseries, provided that at least one on-duty staff member is an RN. Ohio's policy allows any nursing staff to count toward ratios in psychiatric units.

⁴⁰ de Cordova, P.B., Pogorzelska-Maziarz, M., Eckenhoff, M.E., & McHugh, M.D. (2019). [Public Reporting of Nurse Staffing in the United States](#). *Journal of Nursing Regulation*, 10(3), 14–

20 and Bartmess, M., Myers, C.R., & Thomas, S.P. (2021). [Nurse staffing legislation: Empirical evidence and policy analysis](#). *Nursing Forum*, 56(3), 660-675.

Exhibit

State Policies Requiring Staffing Plans

State	Year first passed	Staffing committees	% nursing staff on committee	Included on committee	Mandated public reporting	Notes
Oregon	2001	Yes	50%	RN	No	All committee members must be RNs except for one.
California	2004	Yes	50%	RN	No	
New Jersey	2005	No			Yes	Must also share staffing data with Commissioner of Health to be compiled into a quarterly report.
Rhode Island	2005	No			No	Law requires staffing plan to be reported to Department of Health annually.
Vermont	2005	No			Upon request	
Illinois	2007	Yes	55%	RN	Yes	
Ohio	2008	Yes	50%	RN	Upon request	Plan required to be "evidence-based," reflect current professional guidance.
Washington	2008	Yes	50%	RN, LPN, CNA	Plan only	
Nevada	2009	Yes	50%	RN, CNA	No	Committee must have one licensed nurse and CNA from each unit.
Texas	2009	Yes	60%	RN	No	Each hospitals' governing body must give "significant consideration" to plan suggested by committee but can choose to implement another.
New York	2010	Yes	50%	Any nursing	Yes	
Minnesota	2013	No			Yes	Plan developed by Chief Nursing Officer in consultation with nursing staff.
Massachusetts	2014	No			Yes	
Connecticut	2016	Yes	50%	RN	No	As of January 2017, annual staffing plan must describe discrepancies between planned and actual staffing levels.
Colorado	2022	Yes	60%	RN, LPN	No	

Notes:

Details reported for each state are as provided by current statute, regardless of what statute was when passed.

See [Exhibit A14](#) in [Appendix III](#) for source

Exhibit 20

State Policies Requiring Fixed Patient-to-RN Ratios

State	Year first passed	Nursing included in ratio	Regulated units (maximum ratio)
California	2004	RN, LVN, Psychiatric Tech.	Critical care (2:1), operating room (one RN and one scrub), labor and delivery (2:1 labor, 4:1 antepartum), perinatal (4:1), pediatric services (4:1), PACU (2:1), ED (4:1), stepdown (3:1), telemetry (4:1), medical/surgical (5:1), specialty care (4:1), & psychiatric (6:1)
Virginia	2005	At least one RN, LPN, CNA	Obstetric services (6-8:1 if obstetrics separate from postpartum, 4:1 couplets if combined), newborn nursery (4:1 if "recently born," 8:1 if nursery separate from postpartum, 4:1 couplets if combined)
Arizona	2014	RN	Intensive care (2:1)
Massachusetts	2014	RN	Intensive care (1:1 high acuity, 2:1 low acuity)
Ohio	2017	Any	Psychiatric (4:1 during the day)
New York	2023	RN	Critical care (2:1)
Oregon	2023	RN	ED (1:1 trauma, 4:1 otherwise), intensive care (2:1), labor and delivery (2:1 not in labor, 1:1 labor), ante/postpartum (3:1 couplets), operating room (1:1), oncology (4:1), PACU (3:1), intermediate care (3:1), medical/surgical (5:1), cardiac telemetry (4:1), pediatric services (4:1)

Notes:

A licensed vocational nurse (LVN) is California's equivalent of an LPN.

Ohio allows any nursing staff to count towards ratios.

Details reported for each state are as provided by current statute, regardless of what statute was when originally passed.

See [Exhibit A16](#) in [Appendix III](#) for sources.

Other States' Required Ratios and Professional Guidance

[Exhibit 21](#) summarizes which states' maximum patient-to-nursing staff ratios meet guidance from the various professional nursing organizations presented in [Section II](#). All states that regulate critical and/or intensive care ratios meet the ANA's guidelines. California, Oregon, and Ohio are the only states that regulate other unit types.

As shown in [Exhibit 21](#), sometimes these regulations meet the ANA's guidelines, and sometimes they do not.

Only California, Oregon, and Virginia regulate hospital units that are featured in the recommendations of other professional organizations presented in [Exhibit A3](#) that are independent of ANA guidelines. None of the three states consider patient acuity in regulating ratios in anesthesia or obstetrical units, as the American Society of Perianesthesia Nurses and Association of Women's Health, Obstetric, and Neonatal Nurses do.

Oregon and California meet the American Society of Perianesthesia Nurses recommendations for operating rooms.

The AHA and WSHA do not have guidance on maximum staffing ratios by unit. Rather, they advocate for staffing policies that allow hospitals flexibility to address patient needs.

Exhibit 21

State Maximum Patient-to-Staff Ratios and Nursing Organization Guidance

Organization	CA	OR	VA	AZ	MA	NY	OH
American Nursing Association							
Critical care	✓	✓	✓	✓	✓	✓	
Obstetrical (combined)			∞				
Antepartum	✗	✓					
Postpartum		✓					
Labor & delivery	✓	✓					
Stepdown	✓	✓					
PACU	✓	✗					
Operating room	✓	✓					
Trauma emergency	✗	✓					
Non-trauma emergency	✗	✗					
Pediatrics	✗	✗					
Med-surg	✗	✗					
Telemetry	✗	✗					
Psychiatric	✗						✓
American Society of Perianesthesia Nurses							
Anesthesia – stable	✓	✓					
Anesthesia – unstable	✗	✗					
Association of Women’s Health, Obstetric and Neonatal Nurses							
Obstetrical – stable	✓	✓	∞				
Obstetrical – unstable	✗	✗	✗				
Association of Perioperative Registered Nurses							
Operating room	✓	✓					

Notes:

- ✓ = Regulates and meets recommendations.
- ∞ = Regulates and meets recommendations for some units but not all.
- ✗ = Regulates but does not meet recommendations.
- Blank = Does not regulate.

V. Conclusion

Washington State is home to 92 hospitals covered by the staffing committee law. Legislation in 2017 and 2023 has changed the requirements for committees at each hospital and the process for plan revision.

There is a wide range of guidance on hospital staffing at the level of individual hospital units. We summarize guidance from national nursing and hospital organizations. Nursing organizations generally favor maximum patient-to-nursing staff ratios, while hospital organizations oppose them in favor of more flexible staffing arrangements.

This report systematically describes, for the first time, the contents of hospital staffing plans submitted to DOH between January 2019 and July 2023. Three-quarters of these plans were submitted on time annually. Of the plans, 23% were incomplete for at least one unit. We found that 26% of hospitals reported the same units in each of their plans, while 74% reported different units in different plans. These differences may have been due to combining or disaggregating units or may represent incomplete staffing plans. Because of data limitations, it is not possible to determine whether these plans are incomplete.

Staffing information was reported in a range of formats. We describe the formats of submitted plans regarding how they physically record staffing levels. Units, such as EDs, with uncertain patient counts, are more likely to report the number of nursing staff at any time as a simple headcount.

Other units where patient counts are more predictable, such as med-surg and cardiac care, are more likely to report staffing as a ratio or as being dependent on the number of patients. We also document whether staffing is different on weekends and the number of shifts listed in each by hospital unit type.

We calculate patient-to-nursing staff ratios in all hospital units in our study window for which it is possible to do so. Unsurprisingly, these staffing ratios are lowest in units that administer complicated and/or life-saving care, such as in critical care, PACUs, or during birth or labor. Units where care involves more monitoring and less intense medical interventions, such as oncology, med-surg, or postpartum units, have higher ratios on average. Hospital units also differ in how consistently hospitals staff in certain ratios. For instance, while ratios in critical care, EDs, and birthing units are very consistent, ratios in intermediate care and med-surg units are more diverse across hospitals in the state.

Finally, we conduct a systematic review of other states' policies around hospital staffing. Sixteen states (including Washington) require hospitals to develop annual staffing plans or meet specific maximum staffing ratios in at least some units.

Limitations

Perhaps the most important limitation in this report (as discussed elsewhere) is that we cannot comment on actual staffing levels in Washington State hospitals. The analysis of the staffing plans allows us to characterize only what hospitals report to DOH as their plan to handle different patient care scenarios. We are not able to tell how closely those plans are followed in practice. This is particularly important to keep in mind, considering that the study window contains the global COVID-19 pandemic, a period of immense stress on the US hospital system. Even in more normal times, it is possible that hospitals deviate from planned staffing patterns. The shortage of nursing staff at both the national and state levels is also important to consider in our analysis, as hospitals may be unable to find enough nursing staff to meet planned staffing levels as they appear in the staffing plans.

Future work would require much more comprehensive data on day-to-day staffing levels in hospitals to assess how closely staffing plans are followed or what staffing levels are in practice.

This report also does not make any statements on the impact of particular staffing models on patient health outcomes or hospital efficiency. While we compare staffing ratios in Washington to recommendations by professional nursing and hospital organizations, we do so only to contextualize Washington hospitals into broader national frameworks. A wealth of research literature exists on the impacts of staffing on patient health outcomes or hospital efficiency that could be comprehensively reviewed in future work.



Appendices

Hospital Staffing in Washington State

Appendices	
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II.	Additional Tables and Results.....41
III.	Sources for Tables in Exhibits.....53

I. Methodological Appendix

Data Entry Methodology

This section of the Appendix describes our methodology for recording the data in a consistent, easy-to-analyze format.

We began by looking through a small subsample of staffing plans from different hospitals over the years. Based on these, we developed a set of variables to record all relevant staffing information from all plans. The staffing plans were then divided between the study authors for transcription. Both authors were responsible for the same set of hospitals across all years in the study. This was done to maximize within-hospital consistency across years. We worked independently to enter the data into each spreadsheet assigned to us, but we met regularly to discuss trends or issues we encountered with the process. This included adding new variables as needed.

Hospital Names

As discussed in [Section III](#), multiple naming conventions exist for hospitals in Washington State. The Washington State Hospital Association lists 123 member hospitals.⁴¹ DOH lists 92 acute care hospitals subject to the staffing committee law.⁴² Staffing plans submitted to DOH sometimes featured inconsistent naming. For example, hospital names sometimes included abbreviations or typographical errors, and in two cases, hospitals changed their names during the study window.

We used names from the DOH facility inventory to select a set of standardized hospital names, except when staffing plans were aggregated at a different level than the DOH level. There were four cases where the names did not directly align.

- Arbor Health was known as Morton General Hospital prior to 2020.
- St. Anne Hospital was known as Highline Medical Center prior to 2020.
- DOH lists separate licenses for Swedish Medical Center, Swedish Edmonds, and Swedish Medical Center Cherry Hill, but Swedish Health Services submitted a single staffing plan to cover all three facilities.
- DOH lists a single license for Confluence Health Hospital, but Confluence Health Hospital—Central and Confluence Health Hospital—Wenatchee submitted separate staffing plans.

⁴¹ Washington State Hospital Association. (2024, February 2). [Member listing](#). Retrieved May 29, 2024.

⁴² [Health Care Facility Inventory](#). Washington State Department of Health. Retrieved November 17, 2023.

Submission Dates

Most staffing plan files had the submission date as part of the file name when WSIPP received them from DOH. For the handful that did not, we assumed that the recorded "date modified" value was the submission date.

Unit Names

Unit names were recorded as they appeared in each plan. Any spelling mistakes in the plans were corrected. Unit names using known acronyms were expanded where possible (e.g., "PC3" was entered as "Progressive Care 3").

Format

As described in the body of the report, we recorded the format as being either count, matrix, ratio, or indeterminate. Some units reported formatting in multiple ways. In these instances, if a patient-to-nursing staff ratio was explicitly stated, then the ratio was recorded, and the unit was assigned to the ratio format. If both counts and matrices were used in a plan, then the matrix information was entered, and the unit was assigned the matrix format. Ratios and matrix formats were the only formats from which patient-to-nursing staff ratios could be calculated. Prioritizing these formats allowed us to calculate staffing ratios for the most units possible.

Nursing Staffing

We recorded staffing information in several ways. For matrix and count formats, we recorded the number of nursing staff of each type. If the format for the unit was a matrix, we also recorded the number of patients that would need to be present for a given level of staffing in the plan. For ratio formats, we simply entered the ratios.

The assignment language directs WSIPP to describe the "maximum number of patients to which a direct care nursing or nursing assistant may be assigned." As such, when ranges of staffing were reported by staffing plans (e.g., "1-2 RNs for five patients" or "ratio of 2-3:1"), we only recorded the entry that would lead to the maximum patient-to-nursing staff ratio (one RN for five patients or 3:1 from the example).

Among count and matrix formatted staffing information, it was not unusual for hospitals to report different staffing levels by day of the week. For instance, a unit (or often clinic) might report staffing three RNS on Monday and Tuesday and four RNs on Wednesday through Friday. In these instances, we recorded the shift as taking place during the week and took the average number of RNs staffed across days (3.6 in this example).

Finally, as described in the body of the report, when staffing was reported as being from one of several nursing care types (e.g., "2 RNs or LPNs"), we recorded that information in a special variable for "nurses (any)." This variable was also used when the type of nursing staff was not indicated. As with other types of nursing staff, we only recorded the level when ranges of multiple or unspecified nursing staff were reported, leading to the maximum patient-to-nursing staff ratio.

[Data Cleaning](#)

Once all staffing plans had been entered, we visually checked the data for inconsistencies, such as information being recorded in the wrong variable column. We also conducted tests to ensure that the correct type of information was recorded for each format type.

To check for completeness, we needed to be able to tell whether a hospital reported a unit in one year but not another. However, some typographical inconsistencies in our entered data would present an issue for that analysis. To establish consistent names across years, we looked at the set of all unique unit names associated with each hospital and reopened staffing plans. We then manually paired units that should have been recorded identically and replaced their names across all years with the most recent unit name. We did not overwrite legitimate changes in unit names that might occur when two units merged (e.g., ICU and telemetry became ICU/telemetry) or split (e.g., ICU/telemetry became ICU and telemetry).

[Analysis Methodology](#)

[Unit Classification](#)

Next, we classified each unit as providing a particular type of service, such as critical, intermediate, or cardiac care.

We obtained a list of services provided by Washington State hospitals from DOH to establish categories for units. Although unit names within hospitals were standardized during data cleaning, the names of particular units varied from hospital to hospital. For example, an intermediate care unit might be labeled as an intermediate care unit, a progressive care unit, a PCU, or a step-down unit. We consolidated these names to account for this issue.

In addition, many units did not fit into a single classification of unit type. To handle this problem, we designed a set of dummy variables to take on a value of one if a given unit contained certain key phrases relating to a type of healthcare service. This approach allowed us to assign a single variable into multiple categories. The set of key phrases for each unit type was tested and refined based on visual inspection of the units in the data containing each. Extraneous units were filtered out using additional key phrases until only desired units were assigned to each classification. [Exhibit A1](#) reports the key phrases we used to assign units into categories for featured, obstetrical, and non-featured units.

[Calculating Patient-to-nursing Staff Ratios](#)

We calculated patient-to-nursing staff ratios for all units reported in a ratio or matrix format. For ratio formatted units, the patient-to-staff ratios were simply the reported ratios. For matrix formatted units, ratios were computed as the average ratio of patients-to-staff across staffing levels for different patient counts. As noted in exhibits throughout, when a hospital submitted multiple staffing plans in a single year, ratios between different plans were averaged with each other.

Our patient-to-nursing staff ratio analysis did not include units with count or indeterminate formats.

[State Hospital Staffing Law Search Methodology](#)

To build [Exhibit 19](#) and [Exhibit 20](#) in [Section IV](#) of the report, we conducted a comprehensive review of all 50 states' administrative codes. To be consistent in our search for hospital staffing-related policies, we employed the same search strategy for each state. We started by finding a state's administrative code website and navigating to sections regulating hospitals.

We then ran a text search to look for the terms “staffing committee,” “staffing plan,” and “ratio.” If we did not receive any results for each search term, we considered that state as not having a relevant hospital staffing policy and moved on to the next. The state codes referenced in [Exhibit 19](#) and [Exhibit 20](#) can be found in [Exhibit A14](#) and [Exhibit A15](#), respectively, in [Appendix III](#).

Exhibit A1

Search Criteria for Featured Units

Unit/service	Count	Search criteria
Cardiac care	362	Contains CARDI, HEART, CORONARY, or ICVU
Critical care	362	Contains INTENSIVE CARE UNIT, ICU, or CRITICAL, but not NEONATAL, NICU, INTERMEDIATE, STEPDOWN, PCU, or PROGRESSIVE
Emergency department	419	Contains EMERGENCY
Intermediate care	268	Contains PROGRESSIVE, PCU, INTERMEDIATE, or STEPDOWN, but not CARDI, NEONATAL, NURSERY, NICU, PSYCH, BURN, NEURO, CORONARY, or ONCOLOGY
Med-surg	859	Contains MED, MSU, or SURG, but not MEDICINE, INTERMEDIATE, WITHDRAWAL, OLYMPIC, IMAG, MEDICAL CENTER, MEDICAL CLINIC, MED CLINIC, SERVICE, or SURGERY
Obstetrical	533	Meets any of the following conditions or contains OBSTETRICS or NATAL
Antepartum	77	Contains ANTEPARTUM
Labor	79	Contains “- LABOR”, “- ACTIVE LABOR”, “- EARLY LABOR”, INTRAPARTUM, or INTERPARTUM, but not “- LABOR AND” or “- LABOR &”
Birth	32	Contains “- BIRTH” or “- DELIVERY”
Postpartum	194	Contains POSTPARTUM, POST-PARTUM, POST PARTUM, COUPLETS, MOTHER/BABY, MOTHER BABY, MOTHER-BABY, MBU, or NEWBORN, but not AMBU.
NICU	98	Contains NICU, NEONATAL ICU, or NEONATAL INTENSIVE CARE UNIT
Oncology	347	Contains CANCER or ONCOLOGY
Post anesthesia care	299	Contains PACU, POST ANESTHESIA, POST-ANESTHESIA, or POST ANESTHESIA RECOVERY UNIT

Notes:

Capitalized words/phrases indicate search terms.

Search terms in parentheses include punctuation and spaces.

Exhibit A1 (Continued)
Search Criteria for Other Units

Unit/service	Count	Search criteria
Acute care	170	Contains ACUTE
Addiction recovery	28	Contains ADDICTION, SUBSTANCE, ARU, ARS, or WITHDRAWAL
Anesthesia	349	Contains ANESTHESIA, PACU, or SEDATION but not BAKER CENTER GI LAB
C-Section	17	Contains C-SECTION or C SECTION
COVID	13	Contains COVID but not NON-COVID
Diagnostic	16	Contains (DIAG but not RADIO and not IMAG) or contains DECISION
Endoscopy	130	Contains ENDO but not ENDOCRIN
Food/nutrition	14	Contains FOOD, NUTRITION, DIET, or DIABETES
ICU	179	Contains INTENSIVE CARE UNIT or ICU but not NEONATAL, [any capital letter]+ICU, CARDI, PSYCH, BURN, NEURO, CORONARY, ONCOLOGY, INTERMEDIATE, or STEPDOWN
Imaging/rad.	140	Contains IMAG or RADIO but not ONCOLOGY (filters out radiation therapy)
Infusion	208	Contains INFUSION or "IV " (with a space)
Lab	175	Contains LAB or LABORATORY but not LABOR or UNLABELED
Medical	597	Contains MEDICAL, MED, or MSU but not MEDICINE, INTERMEDIATE, WITHDRAWAL, OLYMPIC, IMAG, MEDICAL CENTER, or MED CLINIC
Nursery	24	Contains NURSERY
OR	309	Contains OPERATING ROOM, OR (with nothing preceding), " OR " (with spaces), OPERATIVE, " OR" (with space and nothing following)
Pediatric	177	Contains PEDIATRIC, CHILD, or PEDS but not BIRTH
Progressive care	159	Contains PROGRESSIVE, INTERMEDIATE, PCU, or STEPDOWN but not NEONATAL, NURSERY, NICU, CARDI, PSYCH, BURN, NEURO, CORONARY, or ONCOLOGY
Rehabilitation	82	Contains REHAB
Renal	43	Contains DIALYSIS, KIDNEY, or RENAL
Respiratory	23	Contains RESP
Surgical	517	Contains SURG or MSU but not SERVICE or SURGERY
Telemetry	119	Contains TELE but not TELEMED

Notes:

Capitalized words/phrases indicate search terms.
Search terms in parentheses include punctuation and spaces.

II. Additional Tables and Results

Exhibit A2 reports the prevalence of services provided by Washington's hospitals.

Exhibit A2
Services Provided by Washington State Hospitals

Service	Number of hospitals	Percent of hospitals
Laboratory	91	99%
Imaging/radiology	90	98%
Outpatient	90	98%
Pharmaceutical	88	96%
Emergency	86	93%
Food and nutrition	86	93%
Diagnostic services	85	92%
Social services	85	92%
Medical unit(s)	84	91%
Respiratory care	81	88%
Surgical	78	85%
Anesthesia and recovery	77	84%
Intensive/critical care	61	66%
Infant care/nursery	56	61%
Cardiac care	55	60%
Obstetrics	55	60%
Pediatrics	45	49%
Oncology	42	46%
Dialysis	41	45%
Rehabilitation	30	33%
Neonatal level 2	27	29%
Psychiatric	19	21%
Neonatal level 3	11	12%
Neonatal level 4	6	7%
Alcohol and chemical dependency	5	5%
Organ transplant-adult	5	5%
Long term care	4	4%
Organ transplant-peds	3	3%

Note:

Health Care Facility Inventory. Washington State Department of Health. Retrieved November 17, 2023.

Exhibit A3 summarizes staffing guidance published by specialty nursing organizations.

Exhibit A3
Specialty Nursing Organization Staffing Guidance

Organization	Nurse-led staffing plan development	Endorses ANA staffing guidelines	Recommended patient-to-RN ratios
Academy of Medical-Surgical Nurses	No	No	Oppose mandatory ratios
American Association of Critical-Care Nurses	Yes	Yes	None
American Society of Perianesthesia Nurses	No	Yes	Acute: 0.5:1, Stable: 5:1
Association of Perioperative Registered Nurses	No	No	1:1
Association of Rehabilitation Nurses	No	Yes	None
Association of Women’s Health, Obstetric and Neonatal Nurses	Yes	Yes	Acute: 1:1, Stable: 5:1
Emergency Nurses Association	No	No	See note
Society of Pediatric Nurses	No	Yes	None

Note:

The Emergency Nurses Association recommends one nurse FTE per 2080 expected annual patient hours, based on the median patient length-of-stay.

Exhibit A4 provides definitions for the obstetrical subunits for which we conduct analysis.

Exhibit A4
Obstetrical Subunit Definitions

Service/stage	Description
Antepartum	Care administered any time prior to labor and delivery. Antepartum care includes sonography and monitoring of the development of the fetus or fetuses, as well as nutrition, treatment of symptoms of pregnancy, and counseling.
Labor	Care administered shortly before birth, including obstetrical triage, monitoring, induction or augmentation of labor, and pain management.
Birth	Care administered during birth. This may include fetal monitoring and telemetry and managing comfort.
Postpartum	Care administered immediately following birth, for both the newborn and parent. Monitoring of vitals, pain, and bleeding are a part of postpartum care
Neonatal intensive care units (NICUs)	Unit where newborns needing special care are sent after birth, such as those born early, with a low birthweight, or with special health conditions. Services ranging from nutrition and monitoring to open heart surgery are administered in NICUs depending on the specialization of the unit

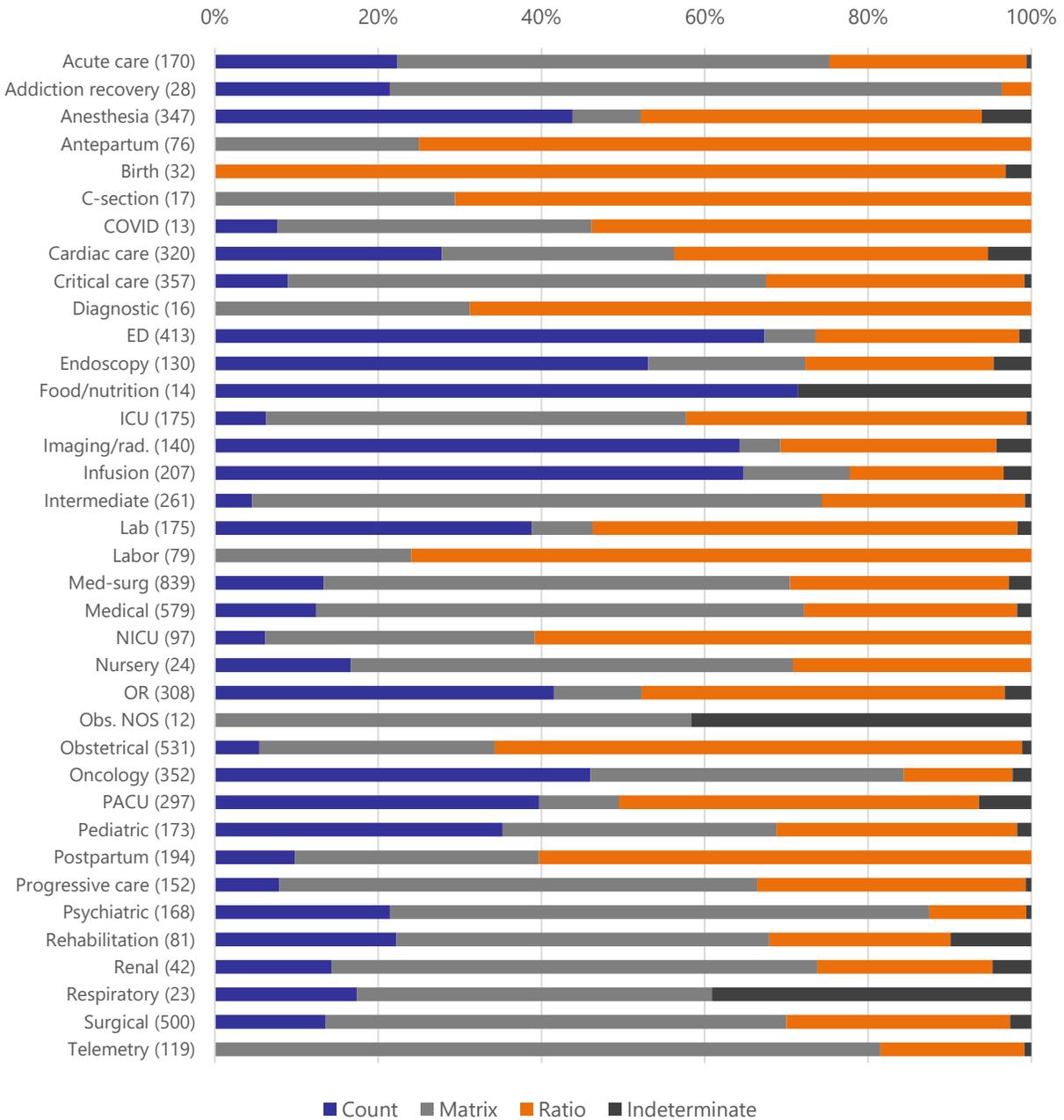
Note:

Sources for each unit can be found in [Exhibit A13](#) in [Appendix III](#).

[Exhibit A5](#) depicts the share of units that report information in count, matrix, and ratio formats for all unit types, including those not featured in the body of the report.

Exhibit A5

Format of Staffing Information for All Units



Notes:

Graph created using all submissions from all hospitals, 2019 – 2023, even if a single hospital made multiple submissions in a single year.

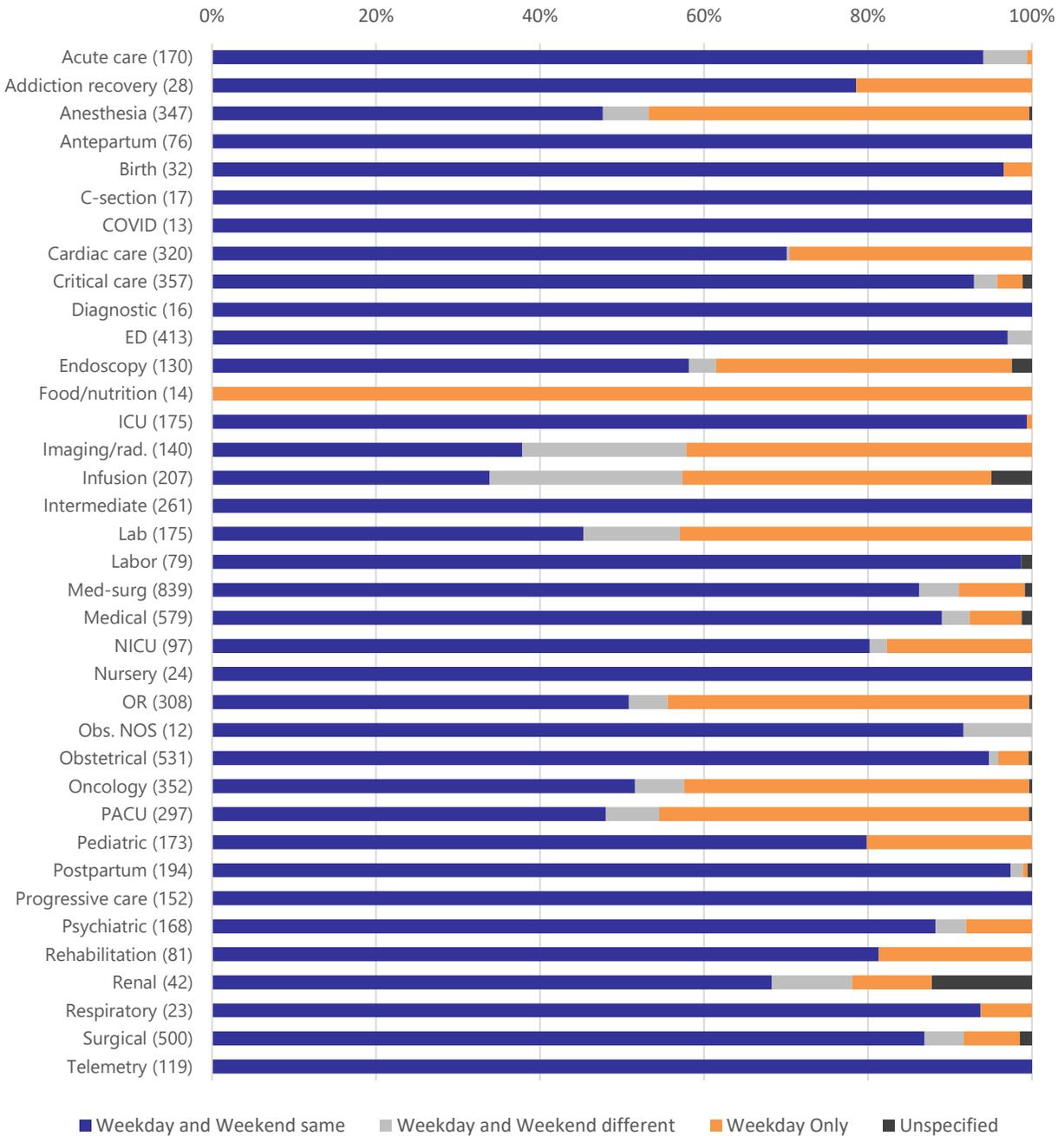
The number of hospital units from which each bar is calculated is given in parenthesis.

Exhibit A6 shows the share of units with the same versus different shifts for weekdays and weekends for all unit types, including those not featured in the body of the report.

Exhibit A7 shows average patient-to-nursing staff ratios for all unit types, including those not featured in the body of the report. In addition to RNs and CNAs, we kept track of the following two types of nursing staff: LPNs and medical technicians.⁴³ In some cases, hospital units do not report a specific staff type (e.g., “1 RN or LPN”). We report these instances under the category “Any” throughout this section.”

⁴³ Medical technicians are specialized hospital care staff that are trained in particular types of care or healthcare technology (such as medical imaging, emergency medicine, or laboratory services). National Registry of Emergency Medical Technicians. (2024). [Emergency Medical Technicians \(EMT\)](#); US Bureau of Labor Statistics. (April 17, 2024). [Occupational Outlook Handbook: Clinical Laboratory Technologists and Technicians](#).

Exhibit A6
Week and Weekend Shifts for All Units



Notes:

Depicted is the share of each type of unit that is staffed the same on weekdays and weekends, differently on weekdays and weekends, only during the week, and for which day of the week was not reported.

This graph is created using all submissions from all hospitals, 2019 – 2023, even if a single hospital made multiple submissions in a single year.

The number of hospital units from which each bar distribution is calculated is given in parenthesis.

Exhibit A7

Average Patient-to-staff Ratios for Other Units

Unit/service	RN	CNA	LPN	Tech	Any
Acute care	4.2	8.1	19.0	7.9	6.1
Addiction recovery	3.6	12.3	—	—	5.5
Anesthesia	2.1	12.4	3.5	6.2	2.1
Antepartum	2.8	—	—	—	3.0
Birth	0.8	—	—	—	0.5
C-section	0.7	—	—	—	0.5
COVID	2.8	14.0	—	3.4	—
Cardiac care	2.4	15.4	—	6.0	—
Critical care	2.0	11.5	—	8.4	3.3
Diagnostic	4.3	8.9	—	—	—
ED	3.9	9.9	8.0	9.0	3.8
Endoscopy	1.5	22.6	1.0	2.1	—
Food/nutrition	—	—	—	—	—
ICU	2.0	7.7	—	6.7	3.2
Imaging/rad.	1.6	—	—	1.2	—
Infusion	14.2	19.9	—	13.8	3.8
Intermediate	3.6	11.0	12.5	10.4	5.4
Lab	1.1	16.5	—	0.9	3.3
Labor	1.4	4.5	—	—	1.1
Med-surg	4.1	10.7	11.9	12.2	11.7
Medical	4.2	10.5	12.1	10.9	10.3
NICU	2.3	15.8	—	18.5	4.8
Nursery	2.3	—	—	—	—
OR	1.4	2.6	3.3	1.0	1.1
Obs. NOS	1.8	—	—	11.3	—
Obstetrical	2.5	17.3	8.2	14.8	4.9
Oncology	6.0	13.4	9.1	10.2	4.0
PACU	2.0	12.4	3.5	6.2	2.0
Pediatric	2.8	17.9	8.0	8.0	2.9
Postpartum	3.5	18.2	8.2	15.1	10.1
Progressive care	3.4	10.0	8.3	10.8	5.4
Psychiatric	5.6	9.0	12.5	11.5	7.9
Rehabilitation	4.6	8.5	7.7	9.1	6.3
Renal	4.2	13.0	—	9.9	5.0
Respiratory	4.1	13.0	—	—	—
Surgical	4.2	9.9	10.9	11.9	10.5
Telemetry	3.8	11.9	21.0	9.9	5.5

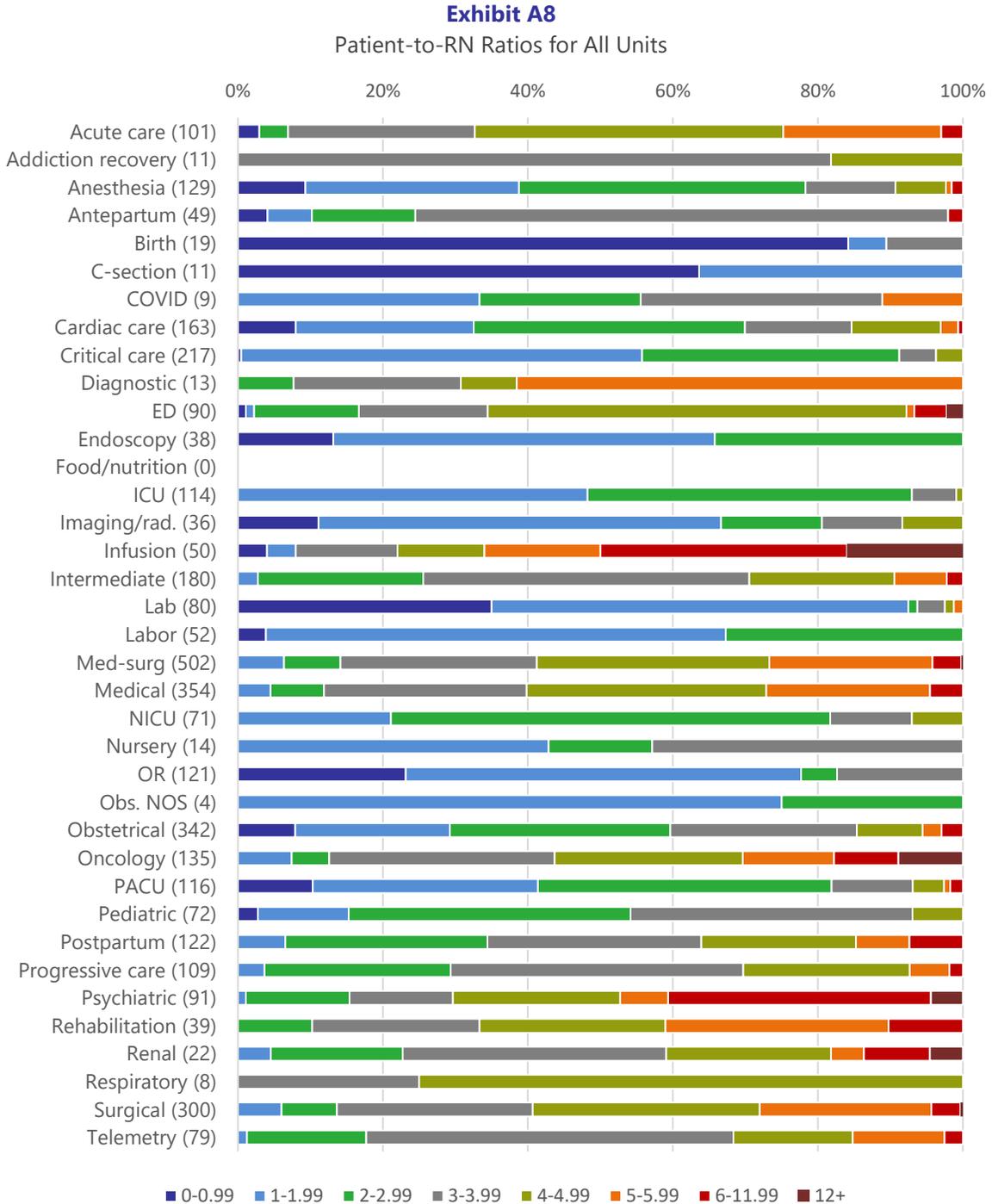
Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

Ratios are rounded to the first decimal place.

Missing ratios (notated with “—”) indicate that no units reported staffing that type of nursing staff.

Exhibit A8 and Exhibit A9 show the distribution of patient-to-nursing staff ratios for RNs and CNAs in all unit types, including those not featured in the body of the report.

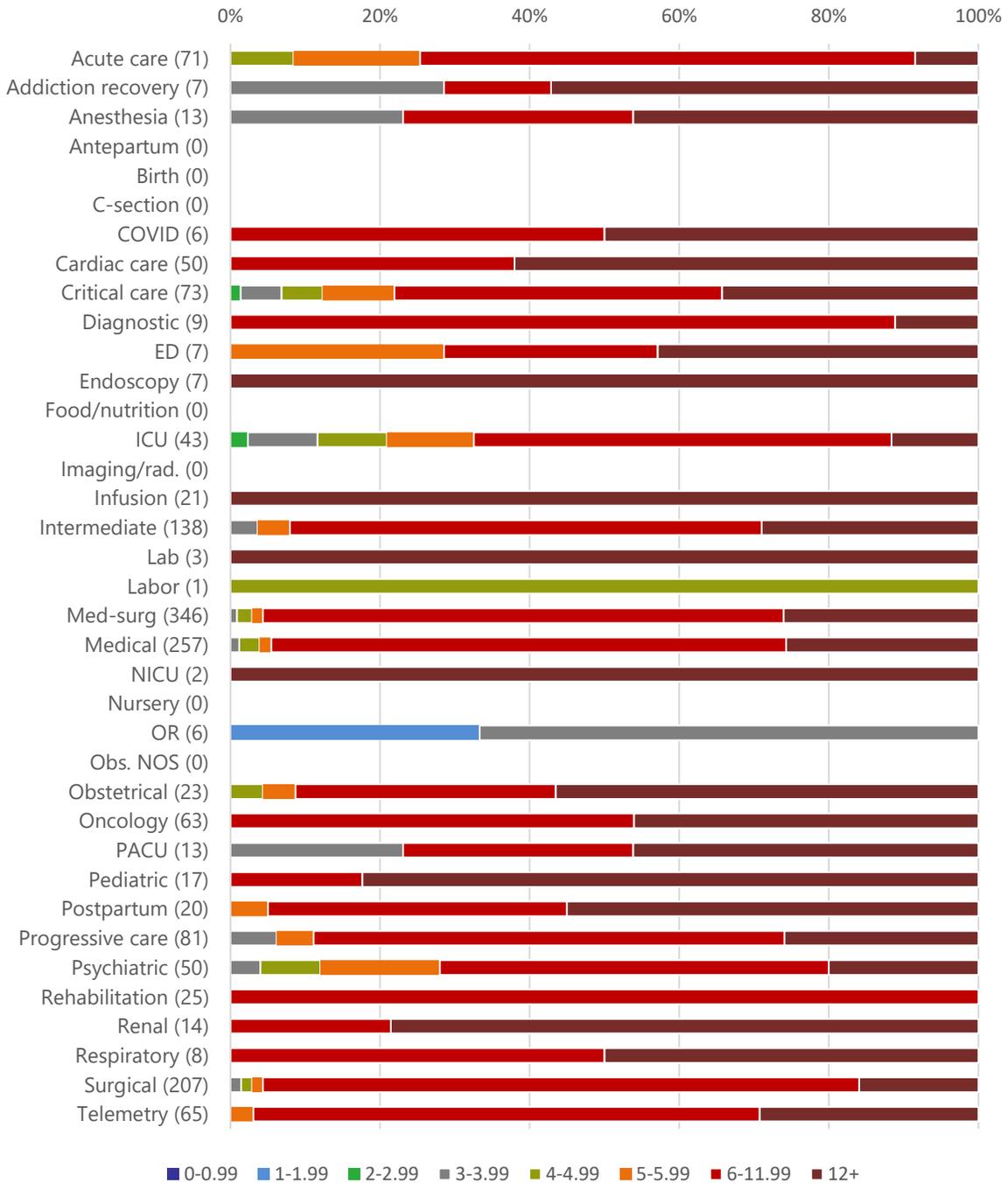


Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.
The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.

Exhibit A9

Patient-to-CNA Ratios for Other Units



Notes:

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.
 The number of hospital units from which each distribution of ratios is calculated is given in parenthesis.

As discussed in [Section III](#), the legislation for the assignment required WSIPP to analyze any trends over time in the staffing plans. However, we could not identify any trends in the timeliness, completeness, or format of staffing plan submissions over the study period. We also could not identify trends in patient-to-nursing staff ratios over the study period. [Exhibits A10-A13](#) portray the timelines of average ratios for featured and obstetrical units described in [Section III](#).

[Exhibit A10](#) plots the trend in average patient-to-RN ratios, and [Exhibit A11](#) plots the trend in average patient-to-CNA ratios in each featured unit by year from 2019-2023. In the “middle” years of our study window (2020-2022), patient-to-RN staffing ratios exhibited very little change on average. The end years (2019 and 2023) see more variation. However, this is likely because fewer hospitals submitted staffing plans in those years, causing the average staffing ratios to be more easily influenced up or down depending on which hospitals submitted plans.

While larger than patient-to-RN ratios, patient-to-CNA ratios were also relatively steady from 2020 to 2022 in most units. However, CNA staffing ratios in EDs change quite a bit throughout the study window. Likewise, obstetrical units and PACUs see a fairly significant shift. As with the RN staffing ratios, the endpoints of the CNA ratios exhibit greater variation, likely due to fewer staffing plan submissions in these years.

[Exhibit A12](#) shows the average patient-to-RN ratios in obstetrical subunits over the study period. These RN ratios are very stable over time.

As noted in the discussion of the limitations of our ratio analysis, the COVID-19 pandemic falls right in the middle of our study window. Internationally, hospitals were inundated with larger patient counts than usual, which could have disrupted planned staffing ratios. Thus, while these exhibits suggest that *planned* staffing ratios held relatively constant for most units throughout 2020-2022, *actual* staffing ratios could have changed substantially due to COVID-19.

Exhibit A10

Timelines of Average Patient-to-RN Ratios in Featured Units, 2019 – 2023

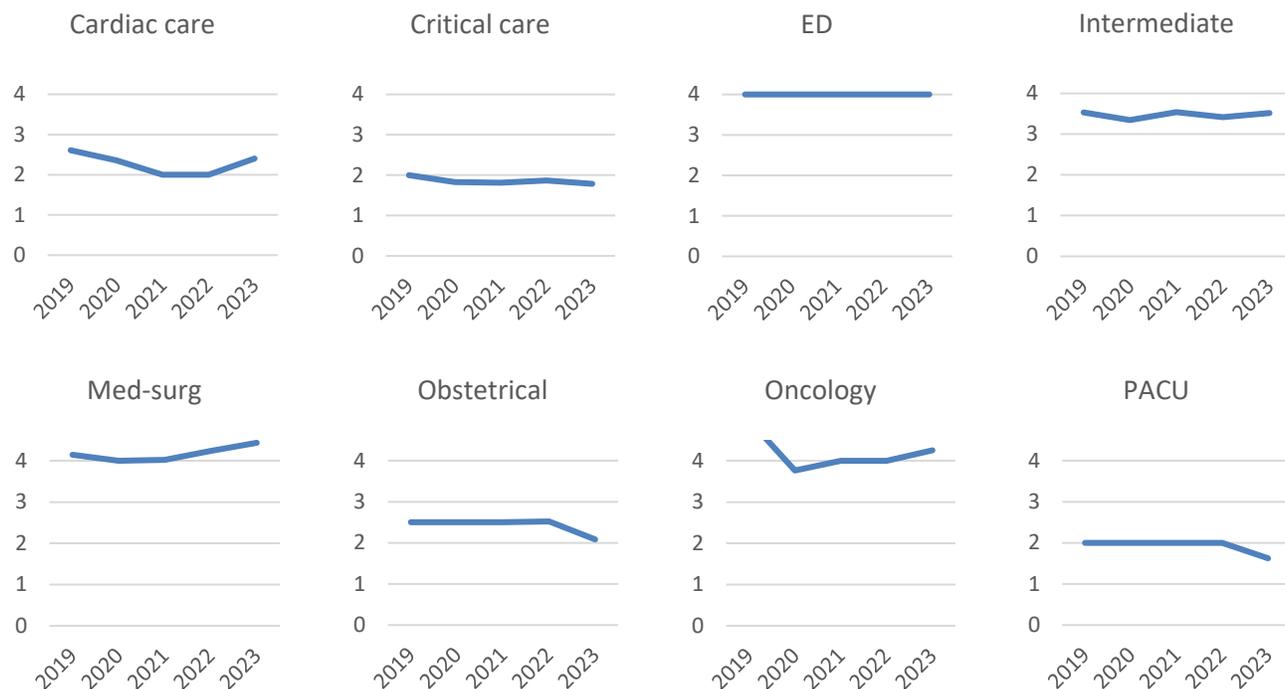
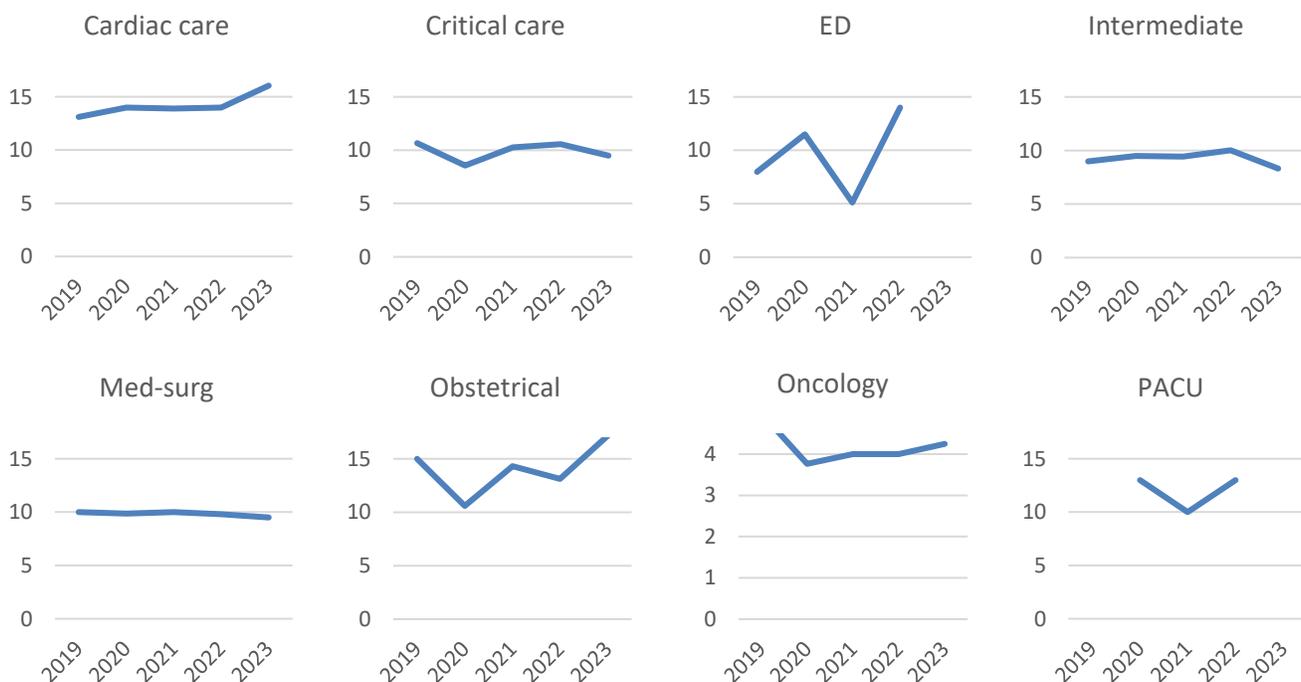


Exhibit A11

Timelines of Average Patient-to-CNA Ratios in Featured Units, 2019 – 2023



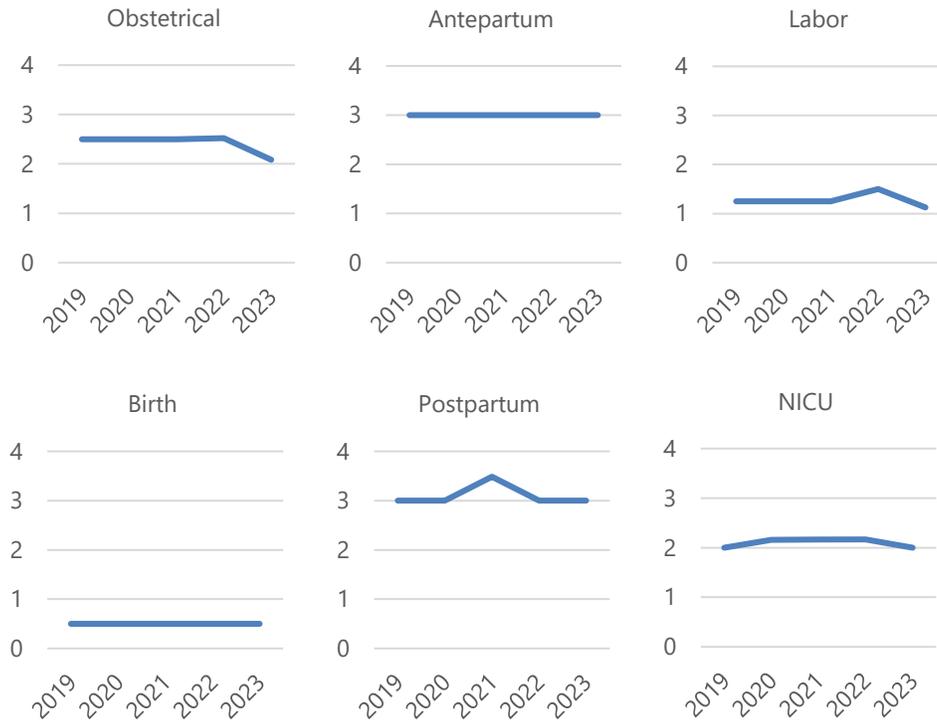
Notes:

Average patient-to-staff ratios in featured units are depicted by year.

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

Exhibit A12

Timelines of Average Patient-to-RN Ratios in Obstetrical Units, 2019 – 2023



Notes:

Average patient-to-staff ratios in featured units are depicted by year.

If a hospital submitted multiple staffing plans per year, ratios were averaged across submissions.

III. Sources for Tables in Exhibit

The sources for the definitions given in Exhibit 6 are shown in Exhibit A13. Sources for obstetrical subunits defined in Exhibit A4 are included under the obstetrical unit. The codes and statutes for Exhibit 19 are given in Exhibit A14.

Exhibit A13
Sources for Exhibit 6

Unit	Sources
Cardiac care	Kasaoka S. (2017). Evolved role of the cardiovascular intensive care unit (CICU) . <i>Journal of intensive care</i> , 5(72); Cleveland Clinic. (n.d.). Cardiac Telemetry Monitoring ; National Institute for Health, National Cancer Institute. (n.d.). Cardiology .
Critical care (CCUs)	National Institute for Health, National Library of Medicine. (August 19, 2020). MedlinePlus: Critical Care ; BaylorScott and White Health. (n.d.). Critical and Intensive Care Units .
Emergency departments (EDs)	Centers for Disease Control and Prevention, National Center for Health Statistics. (August 12, 2022). Emergency department .
Intermediate care	Prin, M., & Wunsch, H. (2014). The role of stepdown beds in hospital care . <i>American Journal of Respiratory and Critical Care Medicine</i> , 190(11), 1210–1216.
Medical surgical (Med-surg)	Academy of Medical Surgical Nurses. (n.d.). What is Med-Surg Nursing?
Obstetrical	N/A
Antepartum	Karrar, S.A., & Hong, P.L. (August 8, 2023). Antepartum Care . National Institute for Health, National Library of Medicine.
Labor	National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Division of Behavioral and Social Sciences and Education; Board on Children, Youth, and Families; Committee on Assessing Health Outcomes by Birth Settings; Backes EP, Scrimshaw SC, editors. Birth Settings in America: Outcomes, Quality, Access, and Choice . Washington (nursing): National Academies Press (US); 2020 Feb 6. 2, Maternal and Newborn Care in the United States.
Birth	Ibid.
Postpartum	National Institute for Health, National Library of Medicine. (November 21, 2022). MedlinePlus: After vaginal delivery – in the hospital .
Neonatal Intensive Care Units (NICUs)	Stanford Medicine. (n.d.). The Neonatal Intensive Care Unit .
Oncology	Mayo Clinic. (May 9, 2023). Oncology (Medical) .
Post anesthesia care (PACUs)	Renaissance School of Medicine, Stony Brook University. (December 9, 2010). Post Anesthesia Care Unit (PACU) .

Exhibit A15 presents the sources used in Exhibit 20.

Exhibit A14

Codes and Statutes for State Policies Requiring Staffing Plans

State	Codes and Statutes
Oregon	ORS Vol. 12 Tit. 36 Chapter 441.154-5
California	Cal. Code Regs. Tit. 22, § 70217
New Jersey	PL 2005, Chap. 21 Title 26:2H-5f-h
Rhode Island	RI Gen. Laws § 23-17.17-8
Vermont	VT Stat. Tit. 18 Ch. 42 Sub. Ch. 1
Illinois	ILCS 25 85/10.10
Ohio	ORC Tit. 37 Sec. 3727.51-56
Washington	RCW Tit. 70 Ch. 41 § 420
Nevada	NRS Ch. 449 Sec 2420-2423
Texas	Health and Safety Code Tit. 4B Ch. 257
New York	Public Health Law Art. 28 § 2805-T
Minnesota	MN Statutes Ch. 144 Sec. 7055
Massachusetts	General Laws Part I Tit. XVI Ch. 111 Sec. 231
Connecticut	General Statutes Sec. 19a-89e
Colorado	CRS Tit. 25 Art. 3-128

Exhibit A15

Sources for State Policies Requiring Fixed Patient-to-Staff Ratios

State	Source
California	Cal. Code Regs. Tit. 22, § 70217
Virginia	VAC Tit. 12 Agency 5 Ch. 410-441; VAC Tit. 12 Agency 5 Ch. 410-444
Arizona	AAC R9-10-221
Massachusetts	General Laws Part I Tit. XVI Ch. 111 Sec. 231
Ohio	OAC Ch. 5122-14-10
New York	Public Health Law Art. 28 § 2805-T
Oregon	H.B. 2697, 82nd Oregon Legislative Assembly, 2023 Regular Session. (Oregon 2023)

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