# **CHAPTER 102: INTENSIVE CARE NURSING UNITS**

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### 1 PURPOSE AND SCOPE

This document outlines Space Planning Criteria for Chapter 102: Intensive Care Nursing Units. It applies to all medical facilities in Veterans Affairs (VA).

An Intensive Care Unit (ICU) is specially equipped with trained personnel and facility inpatient accommodations to care for patients too acutely ill to be placed in a conventional Medical / Surgical Inpatient Unit (i.e., unstable vital signs, arrhythmias, fluid and electrolyte imbalance, and respiratory failure). Intensive Care Nursing Units can be classified as follows:

- A. General Intensive Care Nursing Unit
- B. Medical Intensive Care Nursing Unit
- C. Surgical Intensive Care Nursing Unit
- D. Coronary Intensive Care Nursing Unit

Refer to the following chapters for additional programming data:

- A. Chapter 274 Quarters, On Call
- B. Chapter 100 Medical / Surgical Inpatient Units

#### 2 DEFINITIONS

<u>Accessible</u>: A site, building, facility, or portion thereof that complies with provisions outlined in the Architectural Barriers Act of 1968 (ABA).

Architectural Barriers Act (ABA): A set of standards developed to insure that all buildings financed with federal funds are designed and constructed to be fully accessible to everyone. This law requires all construction, renovation, or leasing of sites, facilities, buildings, and other elements, financed with federal funds, to comply with the Architectural Barriers Act Accessibility Standards (ABAAS). The ABAAS replaces the Uniform Federal Accessibility Standards (UFAS).

CICU: An acronym for Coronary Intensive Care Unit

<u>Full-Time Equivalent (FTE)</u>: A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose total time commitment equals that of a full-time employee. One FTE equals 40 hours per week.

<u>Functional Area</u>: The grouping of rooms and spaces based on their function within a clinical service. Typical Functional Areas within VA Space Criteria are: Reception Area, Patient Area, Support Area, Staff and Administrative Area, and Education Area.

Input Data Statements: A set of questions designed to elicit information about the healthcare project in order to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements could be Mission, Workload, or Staffing related, based on projections and data provided by the VHA or the VISN about the estimated model of operation for the facility. This information is processed through mathematical and logical operations in VA-SEPS.

<u>Picture Archiving and Communication System (PACS)</u>: The digital capture, transfer, and storage of diagnostic images. A PACS system consists of: workstations for interpretation, image/data producing modalities, a web server for distribution, printers for file records, image servers for information transfer and holding, and an archive of off-line information. A computer network is needed to support digital imaging devices.

<u>Program For Design (PFD)</u>: A space program generated either manually or by VA-SEPS based on criteria set forth in this document and specific information entered about mission, workload projections, and staffing levels authorized.

<u>SEPS (VA-SEPS)</u>: Acronym for Space and Equipment Planning System, a digital tool developed by the Department of Defense (DOD) and the Department of Veterans Affairs to generate a Program For Design (PFD) and an Equipment List for a VA healthcare project based on specific information entered in response to Input Data Questions. VA-SEPS incorporates the propositions set forth in all VA space planning criteria chapters. VA-SEPS has been designed to aid healthcare planners in creating a space plan based on a standardized set of criteria parameters.

<u>Workload</u>: Workload is the anticipated number of clinic stops that is processed through a department/service area. The total workload applied to departmental operational assumptions will determine overall room requirements by modality.

#### 3 OPERATING RATIONALE AND BASIS OF CRITERIA

- A. Utilization projections or planned services/modalities for a specific VA project are provided by the VA Office of Policy and Planning and the VISN Support Services Center (VSSC). These utilization projections are generated by a methodology based upon the expected veteran population in the respective market/service area. Healthcare planners working on VA projects will utilize and apply the workload based criteria set forth herein for identified services and modalities to determine room requirements for each facility.
- B. Space planning criteria have been developed on the basis of an understanding of the activities involved in the functional areas of the Intensive Care Nursing Units and their relationship with other services of a medical facility. These criteria are predicated on established and/or anticipated best practice standards, as adapted, to provide environments supporting the highest quality health care for veterans.
- C. These criteria are subject to modification relative to development in equipment, medical practice, vendor requirements, and planning and design. The selection of the size and type of Intensive Care Nursing Unit equipment is determined by anticipated medical needs.

**TABLE 1: STRATEGIC PLANNING GROUP** 

SPECIALTY	BED SECTION NUMBER	BED SECTION NAME
Acute Inpatient Medicine	12	Medical ICU
Acute Inpatient Medicine	17	Telemetry
Acute Inpatient Surgery	63	Surgical ICU

Note:

Patient bed projections use only the Bed Sections numbers shown in Table 1: Strategic Planning Group Acute Inpatient Medicine and Acute Inpatient Surgery.

#### 4 INPUT DATA STATEMENTS

- A. Mission Input Data Statements
  - 1. Is a Nurse Workroom for each Intensive Care Nursing Unit authorized? (M)
  - 2. Is an On-Call Room for each Intensive Care Nursing Unit authorized? (M)
  - 3. Is a Copier / Printer for each Intensive Care Nursing Unit authorized? (M)
  - 4. Is a Waste Disposal Chute Room for the Common Support Area authorized? (M)

- 5. Is a Soiled Linen Disposal Chute Room for the Common Support Area authorized? (M)
- 6. Is a Recycling Room for the Common Support Area authorized? (M)
- 7. Is an Intensive Care Nursing Units Education Program authorized? (M)
  - a. Is a Residency Program Director authorized? (Misc)
  - b. How many Intensive Care Nursing Units Intern FTE positions are authorized?(S)
  - c. How many Intensive Care Nursing Units Resident FTE positions are authorized? (S)
  - d. How many Intensive Care Nursing Units Fellow FTE positions are authorized?(S)
  - e. How many Intensive Care Nursing Units Patient Care Instructor FTE positions are authorized? (S)

# B. Workload Input Data Statements

- 1. How many Acute Inpatient MEDICINE Intensive Care beds are projected? (W)
- 2. How many Acute Inpatient SURGERY Intensive Care beds are projected? (W)

## C. Staffing Input Data Statements

- 1. How many Social Worker FTE positions for each Intensive Care Nursing Unit are authorized? (S)
- 2. How many Dietitian FTE positions for each Intensive Care Nursing Unit are authorized? (S)
- 3. How many Ward Clerk FTE positions for each Intensive Care Nursing Unit are authorized? (S)
- 4. How many Physician FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 5. How many Physician Assistant FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 6. How many Nurse Clinician FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 7. How many Consultant FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 8. How many Clinical Researcher FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 9. How many Clinical Pharmacist FTE positions for the Intensive Care Nursing Units are authorized? (S)
- 10. How many Administrative Staff FTE positions for the Intensive Care Nursing Units are authorized? (S)

## D. Miscellaneous Input Data Statements

- 1. Is a Family Lounge for each Intensive Care Nursing Unit authorized? (Misc)
- 2. Is a Family Pantry for each Intensive Care Nursing Unit authorized? (Misc)
- 3. How many Protective Environment Isolation Patient Bedrooms for each Intensive Care Nursing Unit are authorized? (Misc)

### **5 SPACE CRITERIA**

The minimum number of patient beds, of all types, to generate one Intensive Care Nursing Unit is eight; the maximum is fifteen.

For functional descriptions of key spaces refer to the Design Guide for Medical / Surgical Inpatient Units.

# A. FA 1: Intensive Care Nursing Unit Calculation:

## B. FA 2: Intensive Care Nursing Unit Reception Area:

Allocated space accommodates eight standard chairs @ 9 NSF each, one bariatric chair @ 14 NSF, one accessible space @ 10 NSF, and circulation; total ten people. This space provides seating area for visitors. It is recommended for this space to have a visual connection to the Nurse Station.

This room provides privacy for grieving or counseling. Provide access from both Waiting and an adjacent corridor.

Allocated NSF accommodates one accessible toilet @ 25 NSF, one wall-hung lavatory @ 12 NSF, ABA clearances, and circulation.

Allocated NSF accommodates one accessible toilet @ 25 NSF, one wall-hung lavatory @ 12 NSF, ABA clearances, and circulation.

Consider combining the Family Lounge with the Family Pantry as appropriate. Consider sharing family services with an adjacent Intensive Care Nursing Unit if possible.

Consider combining the Family Pantry with the Family Lounge as appropriate. Consider sharing family services with an adjacent Intensive Care Nursing Unit if possible.

Patient Education / Resource Kiosk to be used for family and visitors' private education needs and as a medical information resource, which may include electronic and hard copy material. Locate accessible to public waiting area.

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# C. FA 3: Intensive Care Nursing Unit Patient Area:

1. Patient Bedroom, Intensive Care (BRIC1).......300 NSF (27.9 NSM)

Provide one for ninety percent of the total number of projected beds, of all types;

deduct the number of authorized Protective Environment Patient Bedrooms from
the calculated number of Intensive Care Patient Bedrooms.

Refer to Table 1 for Bed Section numbers.

2. Toilet, Intensive Care Patient (TPG01) ......60 NSF (5.6 NSM) Provide one per each Intensive Care Patient Bedroom.

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, ABA clearances, and circulation.

3. Patient Bedroom,

Airborne Infection Isolation (BRII1)......300 NSF (27.9 NSM) Provide one for ten percent of the total number of projected beds, of all types.

Refer to Table 1 for Bed Section numbers. Consider grouping Intensive Care Patient Rooms in pairs for clinical care and design efficiency. This room shall have Negative Pressure.

4. Anteroom,

Airborne Infection Isolation (BRAR1)......65 NSF (6.1 NSM)

Provide one per each Airborne Infection Isolation Patient Bedroom.

Patient Bedroom.

Protective Environment Isolation (BRII2)......300 NSF (27.9 NSM)

Provide one per each Protective Environment Isolation Patient Bedroom
authorized for each Intensive Care Nursing Unit.

Positive Pressure.

6. Anteroom.

Protective Environment Isolation (BRAR2) ......65 NSF (6.1 NSM)
Provide one per each Protective Environment Isolation Patient Bedroom.

7. **Toilet / Shower, Isolation Patient (TSPG1)......70 NSF (6.6 NSM)**Provide one per each Airborne Infection Control Isolation and Protective

Environment Isolation Patient Bedroom.

Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible counter lavatory @ 16 NSF, one accessible shower @ 28 NSF, ABA clearances, and circulation.

8. Consult Room (OFDC2) .......120 NSF (11.2 NSM)

Provide one per each Intensive Care Nursing Unit.

# D. FA 4: Intensive Care Nursing Unit Support Area:

- 2. Alcove, Nurse Observation (NSTA3) ......20 NSF (1.9 NSM) Provide one for every increment of two Intensive Care Patient Bedrooms.

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This room is used for storage of sterile and non-sterile medical supplies.

This room provides an area for cleanup of medical equipment, instruments, and for disposal of waste material.

This room is used for storage of clean linen on carts.

Allocated NSF can be decentralized to reduce travel distances for staff.

	12.	Alcove, Mobile X-Ray Machine (XRM01)		
	13.	Alcove, Wheelchair / Stretcher (SRLW1)		
	14.	Housekeeping Aides Closet (HAC) (JANC1)60 NSF (5.6 NSM)  Provide one per each Intensive Care Nursing Unit.		
E.	. FA 5: Intensive Care Nursing Unit Staff and Administrative Area:			
	1.	On-Call Room (DUTY1)		
	2.	<b>Toilet / Shower, On-Call Room (TSSU1)80 NSF (7.5 NSM)</b> Provide one per each Intensive Care Nursing Unit if an On-Call Room for each Intensive Care Unit is authorized.		
		Allocated NSF accommodates one accessible toilet @ 25 NSF, one accessible wall-hung lavatory @ 13 NSF, one accessible shower @ 28 NSF, ABA clearances, and circulation.		
	3.	Office, Nurse Manager (OFA09)100 NSF (9.3 NSM)  Provide one per each Intensive Care Nursing Unit.		
		Locate the Nurse Manager office in close proximity to the Nurse Station.		
	4.	Office, Nurse Supervisor (OFA09)		
	5.	Workstation, Social Worker (OFA07)56 NSF (5.3 NSM)  Provide one per each Social Worker FTE position authorized for each Intensive  Care Nursing Unit.		
	6.	Workstation, Dietician (OFA07)		
	7.	Workstation, Ward Clerk (OFA07)56 NSF (5.3 NSM)  Provide one per each Ward Clerk FTE position authorized for each Intensive Care  Nursing Unit.		
	8.	Copier / Printer Room (RPR01)80 NSF (7.5 NSM) Provide one per each Intensive Care Patient Unit if a Copier / Printer per each Intensive Care Unit is authorized.		
	9.	Lounge, Staff (SL001)		
	10.	Locker Room, Staff (LR001)		

November 29, 2011 Revised: October 03, 2016 11. Toilet, Staff (TNPG1)...... 60 NSF (5.6 NSM) Provide two per each Intensive Care Nursing Unit. Allocated NSF accommodates one accessible toilet @ 25 NSF, one wall-hung lavatory @ 12 NSF, ABA clearances, and circulation. F. FA 6: Support Area: 1. Material Handling Terminal, Clean (MMRP2)...... 80 NSF (7.5 NSM) Minimum NSF; provide an additional 20 NSF for every increment of two Intensive Care Nursing Units greater than two. Space designated for access to the Clean Materials lift. 2. Material Handling Terminal, Soiled (MMRP3)...... 80 NSF (7.5 NSM) Minimum NSF: provide an additional 20 NSF for every increment of two Intensive Care Nursing Units greater than two. Space designated for access to the Soiled Materials lift. 3. Chute Room, Waste Disposal (UTLC2)...... 40 NSF (3.8 NSM) Minimum NSF if a Waste Disposal Chute Room is authorized; provide an additional 40 NSF per each Intensive Care Nursing Unit greater than one. 4. Chute Room, Soiled Linen Disposal (UTLC3)...... 40 NSF (3.8 NSM) Minimum NSF if a Soiled Linen Disposal Chute Room is authorized; provide an additional 40 NSF per each Intensive Care Nursing Unit greater than one. 5. Storage, Environmental Management Service (SRS01) ...... 60 NSF (5.6 NSM) Minimum NSF: provide an additional 60 NSF for every increment of two Intensive Care Nursing Units greater than two. This space provided for storing bulk supplies and large equipment used by Environmental Management Services. 6. Recycling Room (UTR01).......40 NSF (3.8 NSM) Provide one if a Recycling Room is authorized. G. FA 7: Staff and Administrative Area: 1. Workstation, Physician (OFA07) ...... 56 NSF (5.3 NSM) Provide one per each Physician FTE position authorized. 2. Workstation, Physician Assistant (OFA07)...... 56 NSF (5.3 NSM) Provide one per each Physician Assistant FTE position authorized. 3. Workstation, Nurse Clinician (OFA07)...... 56 NSF (5.3 NSM) Provide one per each Nurse Clinician FTE position authorized. 4. Workstation, Consultant (OFA07) ...... 56 NSF (5.3 NSM) Provide one per each Consultant FTE position authorized. 5. Workstation, Clinical Researcher (OFA07)...... 56 NSF (5.3 NSM) Provide one per each Clinical Researcher FTE position authorized.

6. Workstation, Clinical Pharmacist (OFA07)...... 56 NSF (5.3 NSM)

7. Workstation, Administration (OFA07)...... 56 NSF (5.3 NSM)

Provide one per each Clinical Pharmacist FTE position authorized.

Provide one per each Administration Staff FTE position authorized.

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## H. FA 8: Education Area:

Spaces listed in this section are to be authorized. Spaces should be reviewed for coordination with SPC Chapter 402 – Educational Facilities.

- 1. Office, Residency Program Director (OFA09)......100 NSF (9.3 NSM)

  Provide one if an Intensive Care Education Program and a Residency Program

  Director is authorized.
- 2. Workstation, Patient Care Instructor (OFA07)......56 NSF (5.3 NSM)

  Provide one per each Patient Care Instructor FTE position authorized if an

  Intensive Care Education Program is authorized.
- 3. Workstation, Intern / Resident / Fellow (OFA07) .......56 NSF (5.3 NSM)

  Provide one per each Intern, Resident, and Fellow FTE position authorized if an Intensive Care Education Program is authorized.
- 4. Training Room, Resident (CFR02)......300 NSF (27.9 NSM) Provide one if an Intensive Care Education Program is authorized.

Allocated NSF accommodates ten conference chairs @ 7.5 NSF each, four 5'-0" x 2'-0" tables at 10 NSF each, one credenza @ 8 NSF, and circulation; total ten people.

### 6 PLANNING AND DESIGN CONSIDERATIONS

- A. Net-to-department gross factor (NTDG) for Patient Care Unit is **1.65**. This number, when multiplied by the programmed Net Square Foot (NSF) area determines the Departmental Gross Square Feet (DGSF).
- B. Consider grouping Intensive Care Patient Rooms in pairs for clinical care and design efficiency.
- C. Separation of patient, visitor, and support traffic should be considered to the greatest extent possible, and should be considered in the placement of the bed tower and in connections to ancillary services.
- D. Standardization of rooms and modular design should be considered to allow flexibility to adapt to new technologies and respond to changes in patient volumes.
- E. Design should accommodate patient privacy and confidentiality in all areas, and in reception and patient care areas in particular. This includes visual and auditory considerations.
- F. Where possible, the department should be configured to limit the mix of patient and service functions, and to maintain clear separation of clean and dirty functions to avoid cross contamination.
- G. Corridors should be designed to a minimum of 8 feet clear width to accommodate passage of equipment or beds and two stretchers and/or wheelchairs.
- H. Administration and support areas should be located and designed to maximize staff and space efficiency, and reduce staff travel distances.
- I. Refer to Department of Veterans Affairs (VA) Office of Construction and Facilities Management Technical Information Library (www.cfm.va.gov/til/) for additional technical criteria.
- J. Refer to Design Guide for Intensive Care Nursing Units for a detailed discussion of functional and design considerations.

# 7 FUNCTIONAL RELATIONSHIPS

Relationship of Medical / Surgical Inpatient Units to services listed below:

**TABLE 2: FUNCTIONAL RELATIONSHIP MATRIX** 

SERVICES	RELATIONSHIP	REASON
Medical /.Surgical Inpatient Units	3	G, H
Patient Prep and Recovery	3	G, H
Emergency Department / Urgent Care Clinic	3	G, H
Main Entrance	4	Н
Surgery	3	C, G
Cardiovascular Labs	3	C, G
Endoscopy	3	C, G
Ambulatory Surgery/ Minor Procedure	N	
Radiology	3	C, G
Diagnostic Testing	3	C, G
Pulmonary Clinic / Testing	3	C, G
Cardiology Clinic / Testing	3	C, G
Digestive Disease Clinic/Testing	3	C, G
Neurology Clinic/Testing	3	C, G
Ventilator Storage	1	B, G, I
Respiratory Therapy	1	G, I
Pharmacy	5	B, C, G, I
Laboratory	5	B, C, G, I
Social Work / Case Management	1	Н
PT/OT	3	Н
Food Service / Kitchen	5, X	E
Sterile Processing Service (SPS)	5	В
Staff On-Call Rooms	2	С
Linen Storage	5	В
Waste Management	5, X	B, E, F
Loading Dock	5	B, D

### Legend:

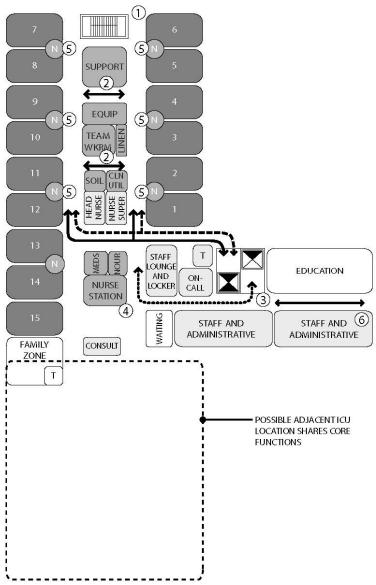
# Relationship:

- 1. Adjacent
- 2. Close / Same Floor
- 3. Close / Different Floor Acceptable
- 4. Limited Traffic
- 5. Connection Needed
- X. Not Applicable
- Y. Separation Desirable

### Reasons:

- A. Common use of resources
- B. Accessibility of supplies
- C. Urgency of contact
- D. Noise or vibration
- E. Presence of odors or fumes
- F. Contamination hazard
- G. Sequence of work
- H. Patient convenience
- I. Frequent contact
- J. Need for security
- K. Closeness inappropriate
- L Interference

## 8 FUNCTIONAL DIAGRAM



- WINDOWS AT THE END OF CORRIDORS
  ENABLE WAY FINDING AND BRING NATURAL
  LIGHT INTO THE CORE
- LOCATE SUPPORT SPACE DOORS IN CROSS CORRIDORS OFF STAGE OF MAIN CORRIDORS TO REDUCE TRAFFIC AND LIMIT NOISE IN PATIENT CORRIDORS. ACCESS FROM BOTH CORRIDORS
- SEPARATE PUBLIC ENTRY POINTS FROM PATIENT AND SERVICE ACCESS
- 4 LOCATE NURSE STATION OR COMMUNICATION CENTER ADJACENT TO ENTRANCE TO THE UNIT
- DECENTRALIZE NURSE STATIONS TO INCREASE PATIENT VISIBILITY AND REDUCE NURSE TRAVEL DISTANCES
- LOCATE STAFF SUPPORT CLOSE TO UNIT BUT
  AWAY FROM PATIENT ROOMS FOR STAFF RESPITE
  AND TO REDUCE NOISE ON UNIT

