Space Descriptions

Clinical Center
NIH Design Policy and Guidelines

C.1 PCUs

Every patient sleeping room must have an outside window in accordance with National Fire Protection Association (NFPA) Standard's as described in the Reference Materials.

C.1.1 Intensive Care Units (ICUs)

ICU's locations within the CCC should enhance the ability of the staff to provide the high levels of care needed by patients (including interaction with clinically related areas). ICU's locations should also consider the possibility of future growth in proportion to critical care needs. No traffic to other departments may pass through any critical care unit. Supply and staff traffic should be separated from public and visitor traffic. The ICUs should have direct and controlled access to the surgical suite, other ICUs, the Stepdown/Intermediate Care Unit, and Respiratory Therapy. It should also have direct connections (by elevator, if necessary) to Clinical Laboratories, Radiology, Nuclear Medicine, and the PCUs of the Institutes that rely most heavily on critical care services.

The ICUs should include at least one isolation bed with separate handwashing and gowning facilities per seven to nine beds on the unit.

The ICUs configuration should be designed to facilitate efficient and effective work flow within the unit and should support the use of professional staff in a safe and economical manner. Nurse stations should be located to provide direct observation of all patients and provide visual contact with the corridors and traffic entering the unit. The nurse station should be an open area located centrally to the patient beds. Functions that should be grouped at the nurse station include the clerical/control area, EDP/Medical Information Systems network, physiologic monitoring equipment and alarms, work areas for nursing and physician staff, storage for emergency carts, and the medication room. Functional areas that should be located near the nurse station and convenient to patient bed areas include the conference/report room, clean supply room, soiled holding room, special procedures/protocol room, nourishment area, and staff toilet. Functions that should be located outside of the immediate nursing activity and patient bed areas

include a staff lounge and locker facility, on-call physician sleep rooms, patient care equipment storage, and offices for medical and nursing personnel.

The ICU's patient bed area should be designed to provide adequate space to support high standards of clinical care in a cost-effective manner for the maximum reasonable numbers of staff and equipment anticipated. The position of the patient bed within the room should allow the patient a direct line of vision to and from the central nurse station. The bed should be placed away from the wall or have room to move the bed off the wall, allowing access to the patient from the head of the bed. Handwashing sinks should be located at each bed when full height partitions are used and for every two beds when cubicle curtains are used.

C.1.2 Stepdown Beds

Stepdown beds will be accommodated in rooms that will be planned similar to semiprivate and private patient rooms with monitoring support and additional medical gases. The nurse station for these beds must be sized to accommodate monitoring equipment.

C.1.3 Patient Care Units (PCUs)

Location of the PCUs should minimize the distance which must be traveled by clinical investigators between their laboratories, the ambulatory care clinics, and the PCUs through direct horizontal adjacencies whenever possible. When horizontal adjacency is not possible, vertical and horizontal distances between the PCUs and other related Institute activities should be minimized. The PCUs should be within one elevator trip to the Surgical Suite, ICU's, Step down Beds, Laboratory, Radiology, Nuclear Medicine and other clinically related PCUs and be easily accessible to ambulatory clinics. Location of the PCUs should provide for natural illumination and views and for the potential future growth in census level (to the extent this can be done without requiring current capital investment). No traffic to or from other departments or other PCUs should pass through any PCU. Supply and staff traffic should be separated from public and visitor traffic, as much as possible, prior to entering a PCU. The PCU configuration should

be designed to facilitate efficient and effective staffing.

Each PCU should group together support functions which serve both modules and will be adjacent to the nurse station and patient rooms, such as the unit secretary and central nurse station, conference room/clinical associated work area, clean supply/linen room, nourishment area, soiled holding room, equipment storage, office of the nurse manager/head nurse for the unit, offices for other professionals assigned to individual units, and a consultation room. The nurse station should be located to provide good visual contact with the corridors and traffic entering the PCU, as well as the patient rooms. It should be an open area, located centrally to the patient beds. The maximum allowable distance from the nurse station to the door to any patient room should be 30,000 mm.

PCUs that are composed of all private patient rooms offer the greatest flexibility of use and would allow the CCC to work at optimum occupancy levels without creating extra work in transferring patients between rooms. If the private room alternative becomes too costly and requires too much space, PCU mixes of up to one-third private beds and two-thirds semiprivate beds could be considered. Private patient room requirements are shown in the Guideplates. The number and type of patient rooms, private or semiprivate, are subject to the NIH's research needs, operational requirements, and overall patient care criteria. Each patient room should have access to a toilet and shower directly from the room. A minimum of one patient room per PCU is to be handicapped-accessible.

A handwashing sink equipped with approved controls shall be provided for both staff and patients in the following manner as a minimum:

- Private Room: One sink either in the bathroom or in the patient room

- Semiprivate Room: One sink in the patient room

The bed area should be designed to provide adequate space to provide high standards of patient care for the maximum reasonable numbers of staff and equipment anticipated. The position of the

patient bed within the room should allow the patient a view out the external window. The degree of visibility of patients from a nurse station or corridor position should be optimized and should be discussed further as specific requirements are defined.

Day hospital patients will be accommodated in rooms on the PCU that will be planned and equipped with medical gases comparable to inpatient rooms, with toilet rooms, and furnished with recliner chairs.

C.1.4 Mental Health PCUs (MHPCUs)

All criteria outlined for the PCUs apply equally to Mental Health Units (locked patient units). In addition, there are a number of criteria which need to be considered in the evaluation of MHPCUs:

The units should be self-contained. Access and egress from the unit must be controlled. Visual sight lines from the nurse station to all exits, patient corridors, and activity areas must be maintained.

Nurse stations in MHPCUs may be enclosed and secured against patient entry, depending on project-specific requirements.

MHPCU bed modules should contain a seclusion room for patients requiring close observation. This room should be located as close as possible to the nurse station in each module.

Maximum attention must be given to the prevention of self-inflicted injury by patients using materials, furniture, and equipment found in a MHPCU room; yet a homelike decor with dressers, desks, etc. is appropriate for patients with minor physical problems or longer lengths of stay.

Doors must swing out from patients, have vision panels, and be lockable from outside the room. Door swings for seclusion rooms must be coordinated with users. All screws are to be tamper-proof. All finishes, hardware, and devices must be rated for its purpose. Ceilings are to be gypsum wallboard or plaster. Sprinkler heads are to be recessed.

All electrical outlets should be tamper resistant.

C.1.5 Pediatric Patient Care Units (PPCUs)

All criteria outlined for the PCUs apply equally to PPCUs. In addition, there are a number of criteria which need to be considered in the evaluation of PPCUs:

Patient rooms shall be large enough to accommodate a family member staying with each patient. All private rooms at the recommended dimensions allow this function.

Patient rooms shall be visible from the PPCU corridor through approved glass panels.

Playroom areas shall be provided if a significant number of pediatric patients will be present. An adolescent lounge should be provided if significant numbers of adolescent patients will be present.

All electrical outlets are to be tamper resistant.

C.2 Clinics

Outpatients have several points of contact: clinic services, diagnostic services operated by the CCC, diagnostic services operated by individual Institutes, etc. The locations of clinics and diagnostic services, therefore, should facilitate movement between the points of contact by outpatients/ families. The admitting function should be near the expected point of entry which will be used by patients.

The Institute and CCC staff expressed a critical relationship between clinics and PCUs. Some of the highly specialized staff deal with protocol patients in both ambulatory and inpatient settings.

C.3 Diagnostic and Treatment Services

D & T departments provide specialty services to inpatients and outpatients of the CCC. Institute-operated D & T services include Endoscopy, Neurodiagnostics, and Pulmonary Functions Lab. Operated D & T departments include Surgery, Radiology, Rehabilitation Medicine, Nuclear Medicine, and Radiology. D & T departments are planned around patient flow through the department and technical requirements needed by the diagnostic or treatment modalities utilized by the unit.

Zoning of patient, staff, and administrative areas should allow traffic to these areas to be separated. Ideally, staff and supplies should enter the department through a different entrance than patients and visitors do. Administrative areas for the department should be easily accessible from patient areas, work areas, and procedure and examination rooms.

Space and systems planned to accommodate D & T functions need to be flexible to support the various equipment requirements of the departments. A 2,900 mm finished ceiling height is typically needed for major procedure rooms (operating rooms and radiology rooms) to accommodate medical equipment used to treat or diagnose patients. Extra structural support for equipment and the mechanical and electrical systems designed for these areas must be capable of supporting current and anticipated future needs to provide the greatest functional flexibility to these areas.

C.4 Administration Areas

Administration areas are best located centrally for flexibility. Office areas should be located adjacent to one another to allow expansion to occur between departments. Open office or modular furniture systems can be used to further support flexible office space where no "permanent" drywall partitions are used to separate functions.

C.5 Public and Educational Areas

Public and educational areas including the main and secondary elevator lobbies, cafeteria, gift shop, chapel, library, and auditorium should be easily accessible to patients, visitors, and staff. These functions should be planned not only to provide services, but also to reinforce the development of a circulation framework. Special consideration should be given to providing these areas with natural light and exterior views.

C.6 Support Services

The functional relationship of support services to the clinical departments requires efficient and well-designed transportation modes, including vertical service cores at appropriate points. When properly designed and supplied with a sufficient number of elevators, such building elements can improve both the efficiency of building functions and the environment. Materials movement should be direct and separated from visitor and other staff traffic. Food service may require dedicated systems to ensure that patients have an acceptable quality of nourishment free of delays.

Support departments such as Clinical Labs, Pharmacy, and Materials Management should be planned to operate from a centralized base, possibly with decentralized service areas (satellites). A central base with decentralized service areas could allow operational efficiencies (for example, where a satellite pharmacy can serve two PCUs on a floor), but excessive decentralization will result in service redundancy and excessive operational costs.

The specific relationships and systems of support services will change as patient care information increasingly is transferred by computers.