

SpaceMed Feature

Nursing Unit Space Per Bed Can Vary Significantly: Factors That Impact Space Allocation

Background



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Compare the actual room-by-room
space programs at
www.spacemed.com/nursing.pdf

For any given number of beds to be accommodated in new construction or in a reconfiguration of existing space, there is significant variation in the nursing unit space per bed from project to project. Historically, this variation was attributed to the mix of private, semiprivate, and multiple-bed patient rooms. Even though most hospital building projects in the U.S. today strive to achieve all private patient rooms, the total space required to support a specific number of beds continues to vary. Contributing factors include the size and layout of the private patient room and adjoining toilet/shower room, the specific grouping of the patient rooms within the unit, the amount of family, visitor, and staff amenities provided on the floor, the extent of point-of-care clinical and support services, and the overall design and layout of the floor itself.

A review of two different building projects with the same number of private patients rooms per floor (48) reveals the factors that influence space allocation and the overall space per bed. The space allocation and design of the patient care floors at each hospital to accommodate 48 acute medical/surgical patients results in a low space allocation of 500 department gross square feet (DGSF) per bed for Hospital A and a high space allocation of 800 DGSF per bed for Hospital B. Key differences in the planning approach for each project are as follows:

- **Hospital A** was programmed and designed to accommodate the 48 private patient rooms in two 24-bed nursing units with traditional patient rooms accompanied by a combined toilet/shower room. The two 24-bed nursing units share a common family/visitor reception area and limited clinical and staff support services are provided on the floor.
- **Hospital B** was programmed and designed to accommodate the 48 private rooms in eight-bed pods — decentralizing the nursing staff and selected support space closer to the patient — while providing increased flexibility to accommodate different types of patients and levels of acuity. The private patient rooms are sized to provide ample space for family members and care providers. Additional support spaces and amenities are provided on the patient care floor for families, patients, and staff.

Review of the Detailed Space Programs

A review of the actual space allocation for each of the two projects reveals the sensitivity of various programming and design decisions relative to the corresponding space per bed. As shown in the following diagram, the size of the patient room module has the greatest impact on the DGSF per bed followed by the amount of nursing unit support space.

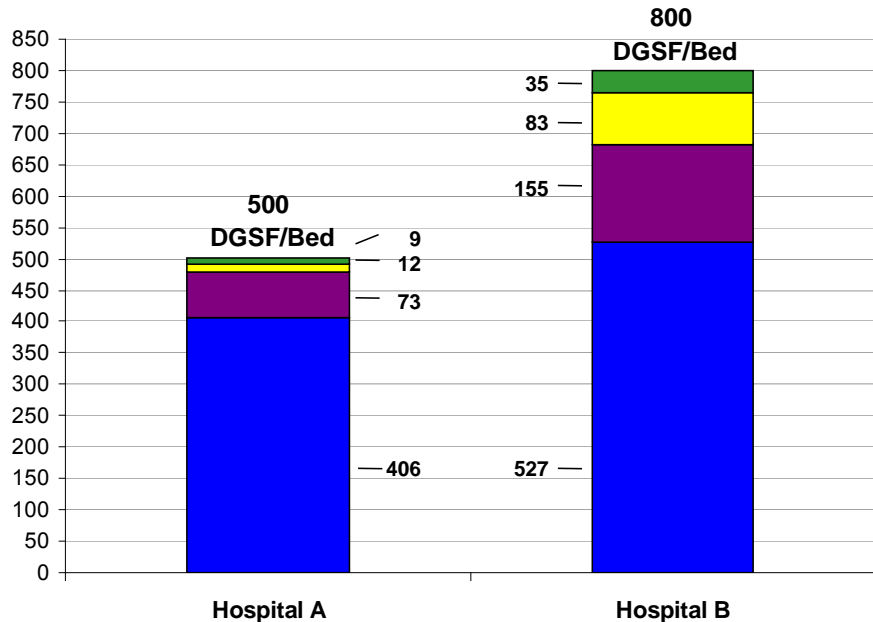
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- Common Family/Visitor Amenities
- Common Staff Support Space
- Nursing Unit Support Space
- Patient Room Module

Comparison of Department Gross Square Feet Per Bed



Specific variances between the space programmed for Hospital A versus Hospital B are as follows:

- **Patient room module.** The private patient rooms in the Hospital A project provide code-compliant patient care space along with a recliner chair for a family member or visitor. A combined toilet/shower room provides a wheelchair accessible toilet room with the ability to use the room as a shower if required. The larger private patient room at Hospital B includes an expanded area for family and visitors and slightly more space around the patient bed. A separate shower stall is provided as part of the toilet room and the entrance vestibule provides a charting area for the care provider.
- **Nursing unit support space.** At Hospital B, the patient rooms are organized into eight-bed pods whereby each pod has a decentralized nurse sub-station and alcoves for linen, medication, and emergency response carts. A larger multipurpose room with a contiguous toilet room is provided for each 24-beds at Hospital B. Point-of-care laboratory and respiratory care satellites are programmed along with more generous space for the administrative communication center, team conference room, and staff lounge/break room. Additional support spaces are also provided at Hospital B.
- **Common staff support space.** At Hospital A, additional staff office space, staff lockers, and conference/classroom and on-call facilities are all provided in a central location off of the patient care floor. These spaces are located on the patient care floor at Hospital B.

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- **Common family/visitor amenities.** A small family/visitor lounge with male and female toilet rooms is provided on the patient care floor at Hospital A. At Hospital B, a more generous lounge is provided with additional amenities including a family consultation/grieving room, family kitchenette, and an education center.

Impact of the Net to Gross Conversion Factor

The design and layout of the bed floor at Hospital A results in a net to department gross square feet conversion factor of 1.45 to accommodate nursing unit circulation corridors and the width of walls and partitions. This ratio increases to 1.55 at Hospital B where the nursing unit layout necessitates additional corridor space. The variance in the net to gross conversion factor alone results in a need for an additional 50 DGSF per bed for Hospital B compared to Hospital A.

What if Some Semiprivate Patient Rooms Are Provided?

Sometimes it is not possible to provide all private patient rooms due to site constraints, the project budget, or other factors. In this case, a common approach is to provide enough patient rooms to accommodate the average daily census such that the semiprivate patient rooms only need to be deployed for two patients during high census periods. If Hospital A and Hospital B were to each provide 16 privates and four semiprivates per 24-bed unit, the DGSF per bed ratios would decrease to 460 and 745 respectively.

Conclusion

This analysis is not meant to suggest that less space per bed on a patient care floor is more efficient or necessarily the goal. Many factors influence decisions on the size of the patient room, nursing unit support space, and family and staff support space to be provided on a particular nursing unit — including the types and acuity of the patients to be accommodated, required staffing ratios, operational processes and procedures, site constraints, and market dynamics

However, when making preliminary estimates of the space per bed during facility master planning or as part of a feasibility study, it is important to understand that these ranges can vary significantly.

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[SpaceMed Case Study 1310.10.1](#)