

Want to Cut Hospitalization Costs And Encourage Patient Self Help?

Here's a New Hospital Room Which Does the Job

By **MARKUS & NOCKA**
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A. Reasons for Developing Room

Widespread adoption of prepaid forms of hospitalization make present hospital facilities antiquated. Present facilities fall into two categories: 1. Private rooms too expensive for Blue Cross (or other) coverage. 2. Wards which were designed primarily for charity cases. Unless socialized medicine is accepted as inevitable more efficient means of private or semi-private care for this large middle group must be evolved.

B. Description of Room as Developed.

Assuming that for such a limited budget a room must be minimal, the feeling of space is important. Therefore the outside wall from bed level to ceiling and from wall to wall is a sheet of insulating glass. To further the illusion of space the wall opposite the patient's head is papered with a durable and easily cleaned plastic coated paper of a subdued foliated diamond lattice pattern. The ceiling and other walls are painted the soft grey green of the paper background.

To avoid the heat of the relatively vertical summer sun a continuous exterior catwalk of rectangular bars placed on edge at each floor level and enclosed with a pipe railing, traverse the building, simultaneously shading the patient and providing an easy means of washing the window exteriors. The fixed window demands forced ventilation but since the interior toilets require mechanized exhausts in any event, it was felt that the absence of maintenance of movable sash, screens, infiltration and accidental rain damage along with the housekeeping disadvantages of direct radiation would more than pay for the supplying of tempered fresh air.

The ventilation is designed for 7 air changes per hour in winter and 15 air changes per hour in summer. The fresh air is introduced in the center of the ceiling at the outside wall, exhausting through louvres at top and bottom of toilet door and finally venting through a grille in the toilet ceiling. The air is tempered by steam

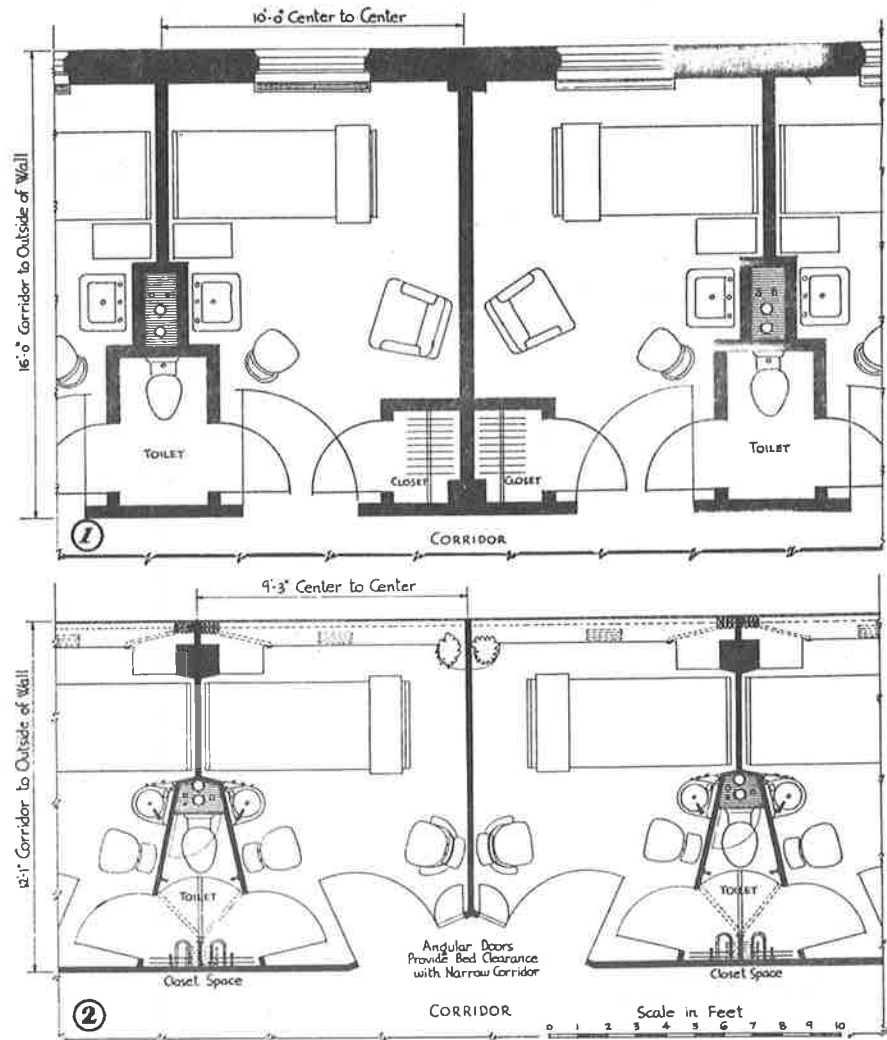
coils in the basement and heated further as required by a thermostat in the corridor of each exposure which controls booster coils serving the zoned area.

All mechanical services such as oxygen, suction, electrical conduits, telephone outlets and plumbing for the building as a whole have been concentrated in the pipe shaft for ease of installation and maintenance. Since the room partitions are not required to house miscellaneous piping they are of the thin solid plaster type.

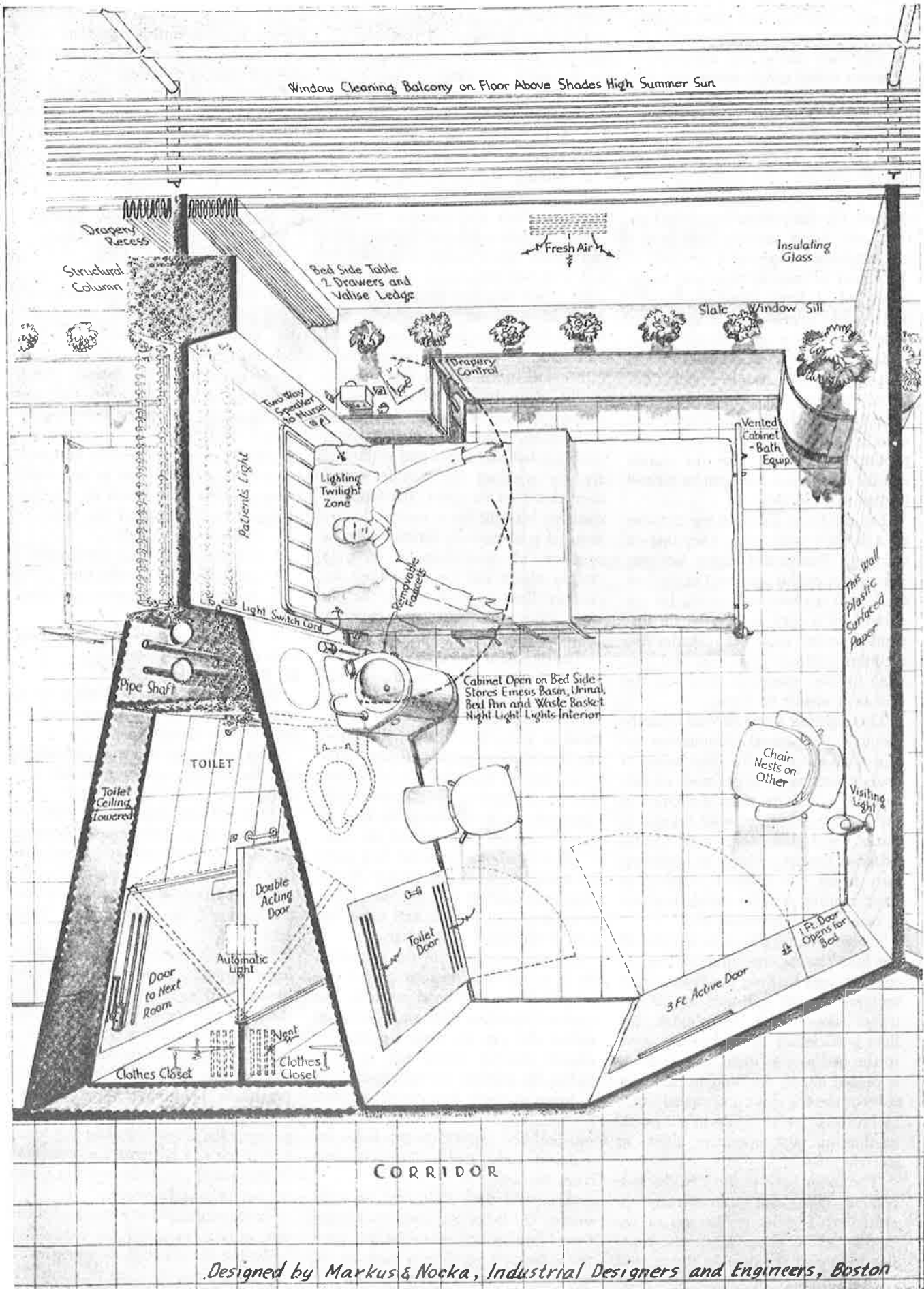
The window glass is mounted flush

New Hospital Room Stirs Enthusiasm

A life size model of the Markus & Nocka minimal private hospital room, described here, was built at the architects' office and was subjected to scrutiny by competent people in every phase of hospital work and met with unanimous enthusiastic approval, according to N. A. Wilhelm, M. D., director of Peter Bent Brigham Hospital, Boston, where the new hospital room will be built.



At the top is a present day standard private room with a gross room area of 160 square feet, corridor width of 8 feet and 5½ inch partitions of plaster on blocks. The bottom picture, in contrast, shows the minimal private room developed for Peter Bent Brigham Hospital, Boston, by Markus and Nocka, Boston industrial designers. This room, designed to encourage optimum patient self help and to lower hospitalization costs, has a gross room area of 112 square feet, a corridor width of 5 feet and 2½ inch solid plaster partitions. The scale in feet is shown at the bottom right of lower plan



Designed by Markus & Nocka, Industrial Designers and Engineers, Boston

with the outside wall making available a large horizontal sill for flowers, etc. The sill is covered with slate for permanence and ease of maintenance. At the bed foot end of the window sill a quarter round continuation into the room corner provides space for a large bouquet with a cabinet below for storage of bath towel, blanket and night blanket. At the head end of the bed the window still widens to form a bed side table. Under this are two drawers for the patient's personal effects, and below these at base height is a ledge for storage of a suitcase.

Control of sun or daylight is by means of a lined window drapery horizontally operated by a cord loop under the window sill adjacent to the patient's shoulder. The curtain when wide open folds back into a pocket between the glass and the structural column. In the bed side of this same column is a two-way microphone connecting the patient with the nurses station. The signal cord can be pinned to the bed clothing.

The artificial illumination consists of a double tube, slim line, instant starting, fluorescent light at the junction of ceiling and wall at the bed head, and is controlled locally by the patient by a cord pull. A baffle suspended under each tube shades the reclining patients head area and vertical baffles eliminate glare in the eyes of a visitor or nurse.

This lighting alone proved entirely adequate for general illumination except that the patient's face being in shadow took on an appearance of pallor. To eliminate this difficulty a swivel type aluminum wall bracket is placed near the door and locally switched so that a visitor or nurse can turn it on for indirect visiting or direct reading light for the chair which is placed directly below it.

A night light is placed in the base of the lavatory cabinet illuminating its contents and lighting the floor and is switched on the hall side of the entrance door. This illuminates the floor sufficiently for a nurse to come to the bed side at night. A receptacle is placed above the built-in table for radio or electric clock and one adjacent to lavatory for plugging in an examination or post operative light, or electric razor.

The toilet light is flush in the suspended ceiling and automatically operated by a roller in the top of the double acting door. When the toilet is unoccupied the door in the neutral position presses the button of a jamb type closet switch thus turning off the light and when pushed to one side

or other turns it on.

The physical shape of the room was dictated by:

1. Desire to have all possible operations performed by the patient, consequently locating a maximum amount of controls and equipment at the head of the bed.

2. Using otherwise unusable corners of room for storage.

3. Adding the customary outside wall thickness to the room by making the glass flush with exterior of wall.

The entrance door is divided into two leaves: one a twelve inch inactive leaf with top bolt, to be opened only when a bed or other large equipment is taken in or out: the other a 36" wide active door. If the standard 48 inch door were used its swing would utilize too much of the room space.

The door to the closet-toilet is closer operated. It opens primarily to a hanging space for the patients clothing, hat and shoes and secondarily, by pushing the double acting door ahead, to the toilet. Inasmuch as clothing brought by a patient to the hospital is necessarily limited the past practice of providing a separate clothes closet can be eliminated especially since by this means the patient enjoys a double door privacy between toilet and adjoining room.

The double acting door is so located that either seated or standing a patient can easily hold it against the neighboring closet wall with knee, hand or foot. This system eliminates the possibility of patients inadvertently locking one another out of the toilet. The flushometer is the concealed type operated by a combination foot or hand lever mounted low on the wall.

Directly above the toilet is a panel for access to all the plumbing. Above this panel is a bed pan cleanser. There is a nurse call button and on either side of the toilet, a grab bar.

On the room side of the plumbing shaft is a small lavatory placed adjacent to the bed head opposite the patient's shoulder. Hot and cold water valves and pop up waste handles are placed directly under the lavatory facing the patient for easy operation. A ledge at room base height follows the contour of the lavatory above to ward off bed casters. On this ledge are a urinal and waste basket accessible from the bed.

A curved door following the contour of the ledge and lavatory screens the plumbing and waste basket from the room and provides a rack for the bed-pan easily accessible when the door is opened. A shelf for the emesis basin is also provided. Between the

bed and the lavatory are hooks for face towel, wash cloth, and tooth brush, and directly over, a tumbler holder. The lavatory is equipped with a gooseneck spout and removable soap dish for ease of cleaning.

In general the room is designed to provide a feeling of openness, minimal space and yet avoid conflicts of door swings and furniture. The chairs were designed for comfort, cleanliness and minimum bulk.

C. How This Room May Solve the Low Cost Private Room Problem.

In first cost the reduction is obvious from the saving of approximately 30% gross floor area per room over the minimum now recommended. However the greatest savings should accrue in servicing the patient. Time studies which were the basis of design showed much of present day nursing routine unnecessary. To improve this situation the room has been designed to encourage the patient to do everything possible for himself by placing adjacent to the head of the bed:

1. Control of daylight
2. Control of artificial illumination.
3. Lavatory and accessories.
4. Bedside table, drawers and cabinet storage.
5. Two way microphone connecting with nurses station.

D. Future Possibilities.

This room is an indication of a trend. There is an immediate need for two further developments:

1. A relatively low cost bed which can be patient operated either hydraulically or by motors and:

2. A bed side stool which folds out of the bed in an assured position much the same as some railway car steps so that the patient can be sure of its location and the floor cleaning will not be hindered by unnecessary loose equipment.

Usage will show whether the small private room is preferable to a double semi-private type. With this in mind the partition between the bed foot ends is mechanically free so that a floor to ceiling curtain might be substituted for the 2½" thick plaster partition. The main value of such doubling up of rooms would be to give patients the benefit of company when and if the two patients are congenial. There would probably be little if any saving in cost however.

In developing this room we believe that only a beginning has been made in better coordination of room facilities for patient care and the simplifying of medical, nursing and house-keeping functions.