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You Need to Be Adding Private Patient Rooms-Now!

Gary L. Vance, AIA, ACHA
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Increasing the total number of private patient rooms has become an accepted trend in inpatient facilities and a marked reversal from the focus on outpatient services in the 1980s and 1990s. This initiative is driven by the needs of the patients and caregivers. Hospitals are responding to the consumer aspects of healthcare: providing more space, upgrading interiors, modernizing toilets/showers, and providing family friendly environments. To appeal to the caregivers, healthcare facilities are responding to the need for technology improvements, nursing proximity, more space for equipment, and mechanical/electrical upgrades.

However, simply responding to this trend without using a comprehensive planning methodology (CPM) could cause hospitals and healthcare systems to miss their patient room needs over the next decade. This comprehensive methodology for private patient rooms, which combines numerous independent planning methodologies and aggregates them, does the following:

- Considers the aging of the population and baby boomer healthcare needs
- Considers the demographics and community factors of the service areas
- Uses bed demand analysis to determine additional bed needs
- Analyzes the current private and semi-private patient room ratio/percentages
- Analyzes the current and projected average age of private and semi-private patient rooms

By using this comprehensive methodology to examine and analyze the private patient room planning trend, hospitals and healthcare systems can ensure that they will be prepared to meet the community and patient needs through 2012.

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Part One: Concept and Rationale

Logical Evolution of Facility Improvements

Throughout the planning and design process for hospitals and healthcare systems, there has been a logical evolution of facility improvements and developments. This evolution has resulted in multiple generational improvements within the areas of strategic planning, architectural planning, equipment planning, technology, design, and construction.

Since the expertise and specialty of healthcare planning and design truly began in the early 1970s, the majority of important healthcare planning and design areas have been through several generations of facility improvements and developments. In most instances this evolution has been continuous and progressive, which has resulted in a continuous improvement philosophy within the healthcare planning and design community. Although it is an informal process, it is used by most healthcare planning and design professionals and has contributed to the process of evidence-based design improvements.

Gap in the Generational Continuum

There is one very important segment of hospitals and healthcare systems that lacks this generational continuum in both specialty services and departmental areas: private and semi-private patient rooms. There are a variety of reasons why this has happened:

- The U.S. healthcare system provided too many patient beds in the 1970s and 1980s, thus oversaturating the market
- The predictions of decreased inpatient capacity occupancy in hospitals and healthcare systems were exaggerated and did not materialize to the predicted degree
- Permanently closed nursing units were renovated into non-patient care uses and were no longer available for nursing and patient care
- Older and underutilized nursing units were renovated for less acute uses such as psychiatric, rehabilitation, and long-term-care nursing units
- The emergence of the managed care and DRG reimbursement systems

Hospitals Are Significantly Behind

Even as this trend of increasing the number of inpatient rooms is advancing, hospitals and healthcare systems are not positioned to

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respond. In fact, due to the circumstances of the 1990s, hospitals do not realize how far behind they are in meeting the needs of patients, caregivers, and families for the coming decade. As we move forward, there are a number of factors setting us on a potential collision course.

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Collision Course

A number of operational factors have been independently addressed in recent years; putting them all together provides the basis for the wide-ranging CMP presented here. These factors are identified and briefly discussed below to illustrate their importance and relevance to the addition of private patient rooms to hospitals and healthcare systems by 2012.

- **Aging Population:** The baby boomer generation is defined as those persons born between 1947 to 1961. The first of the baby boomers will turn 65 in 2012 and the last of them will turn 65 in 2025. The collision will occur when this boomer group begins to make its mark on the healthcare system and, specifically, to require inpatient hospitalization.
- **Increased Acuity of Care:** The sheer number of baby boomers will continue to increase inpatient hospitalization and the acuity of care. The trend toward universal patient rooms is a response to this growth in the acuity of care.
- **Slowing of Inpatient Procedures Becoming Outpatient Procedures:** During the 1990s, the healthcare system saw a significant transformation of inpatient procedures into outpatient procedures. This was spurred by advances in medical and equipment technology, combined with the growing financial restraints of managed care systems (reimbursements, DRGs, etc.). However, at this point many so-called outpatient procedures still involve hospitalization, which means bed space right after the procedure, or in some cases an overnight stay before or afterward.
- **Stabilization of Inpatient Average Length of Stay:** Throughout the last decade, significant improvements in efficiencies in all aspects of delivering healthcare have led to reductions in the average length of stay. Despite improvements in technology, potential reimbursement/payment systems, and additional inpatient alternatives to inpatient care, most experts believe that the healthcare system will not see any significant reductions in the average length of stay over the next decade.
- **The Aging of Current Patient Rooms:** The analysis of the average age of a facility will gain importance over the next 10 years. The growing need for patient rooms will be compounded by the obsolescence and aging of existing patient rooms, and the majority of hospitals today are grossly unprepared to meet the facility needs of patients, caregivers, and families. Based on objective criteria, new rules of thumb will evolve in the coming years concerning the obsolescence of patient rooms. These rules will generally state that any patient room constructed prior to the early- to mid-1980s will not meet the facility's needs for private patient rooms in 2012.

Private Patient Room Design Trends

There were many positive improvements to patient rooms in the 1990s that enhanced the quality of the environment for the patient, caregivers,

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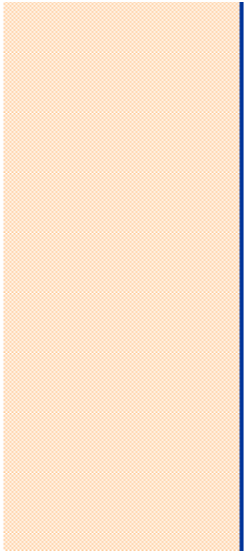
and family. Examples of this include square footage increases, more private rooms, improved toilet/shower facilities, increased medical gasses, improved lighting, and more defined sink locations.

Such improvements marked the beginning of the universal patient room trend. One of the most critical areas where changes will occur in patient rooms over the next decade is in the area of air quality. The healthcare industry will mirror society in demanding that air quality improvements be implemented in hospital building types and, specifically, in private patient rooms.



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Operational Considerations

As the patient rooms within nursing units move toward the 100% private room goal, the operational considerations are critical. Many existing nursing units designed and constructed over the last several decades typically include 24 to 32 total patient rooms. As these nursing units have and will continue to be transformed into 100% private patient room nursing units, there are a series of objective operational criteria that should be evaluated:

- Average nurse travel distance from nurse station to patient room door
- Average nurse travel distance from patient room door to primary support areas (clean utility, soiled utility, linen rooms, etc.)
- Other average nurse travel distances within the nursing unit

*It is important to note that some State Board of Health Departments still define maximum nurse travel distances to the furthest patient room

Private Patient Room and Toilet/Shower Area: Objective Criteria

Just as the nursing unit considerations and objective criteria continue to increase and grow, so too have the private room's. The benchmark square footage of the private patient room has increased dramatically based on objective criteria:

- Based on the rise of patient acuity, equipment needs within the patient room have increased
- Due to increased multi-disciplinary caregiver teams, the required patient room area for these caregivers has increased
- Due to increased patient consumerism, the expectations for the total square footage of the private patient room have increased
- Patient families are more involved in the caregiving process and the expectations for the total square footage of the private room have increased
- Patient families are more involved in the caregiving process and the family needs for comfortable accommodations have increased
- Due to increased patient consumerism, the expectations for a private toilet/shower room for each private patient room have increased
- Due to increased patient consumerism, the expectations for the storage of personal effects and amenity areas/features have increased

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Part Two: Method and Outcome

Comprehensive Planning Methodology (CPM) Overview

The previously discussed issues could have significant ramifications for healthcare facilities. Without a planning methodology, their greatest risk is inadequate nursing units, private patient room numbers, and designs. The same holds true if any of the key elements or steps of the methodology, as outlined below, are omitted from the process.

CPM--The Planning Steps

CPM involves a series of planning steps, identified below with a brief discussion of the basic independent study or planning process that is applicable to each. These planning steps are the foundation for analyzing private patient rooms in hospitals and healthcare systems.

1) Step 1 - Determine the future planning year

Based on the information contained herein, a meaningful and realistic planning timeframe is 10 years (2002 through 2012).

2) Step 2 - Determine the addition or reduction in the total bed need for the future planning year

- Prepare bed demand analysis based on detailed actual hospital census and other related data
- Prepare bed demand analysis based on hospital admission/discharge data
- Analyze and assess the hospital's current situation compared to competing hospitals. Determine if there will be a market share increase or decrease over during the planning years

3) Step 3 - Determine the primary and secondary service area demographics and community factors

- Prepare an analysis identifying the in and out migration, business growth, competing healthcare market factors, and current economy health

4) Step 4 - Determine the aging factors of the population and baby healthcare needs within the service areas

- Prepare an analysis identifying the specific factors of the service areas, including the average age, death rates and causes, and life expectancy of the population (actuarial demand)

5) Step 5 - Determine the existing private and semi-private patient room distribution percentages

- Prepare analysis based on each nursing unit and/or by floor
- Determine private patient room to semi-private patient room

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ratio/percentages

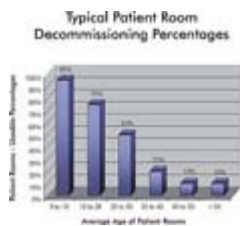
- Ensure that this is based on actual beds currently in use vs. licensed beds

6) Step 6 - Determine the average age of existing private and semi-private rooms

- Use and apply obsolescence factors to existing patient rooms based on benchmarks/metrics
- Prepare analysis documenting this existing condition

7) Step 7 - Determine the projected average age of private and semi-private rooms based on the future planning year

- Use the future planning year timeframe in the projection calculation
- Use and apply decommissioning factors to all patient rooms based on benchmarks/metrics
- Prepare analysis documenting this future projection



Importance of CPM

As previously noted, if hospitals simply react to the growing need for more private rooms, they will not be able to meet long-term demand. CPMs can ensure this does not happen. In addition to taking a variety of independent planning methodologies and aggregating them into one comprehensive approach, CPMs require a valuable cross-disciplinary approach that taps into the expertise of such healthcare professionals as strategic planners, marketing specialists, operational consultants, healthcare planners, architects, engineers, and facility managers.

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Part Three: Case Study

Example Case Study Using CPM

To further illustrate and explain this CPM, an example case study has been developed and is presented below. It is designed to replicate the current condition and situation of many community hospitals.

Planning Assumptions--Example Case Study

Outlined below are the basic hospital characteristics and planning assumptions for the example case study.

- A community hospital located in a growing suburb of a major metropolitan area
- 270-bed license and 270-available beds
- 270 beds located in three distinct buildings that compose the hospital
- 90 beds located within the original building, constructed in 1970
- 90 beds located within the building completed in 1982
- 90 beds located within the building completed in 1992
- Of the 270 available beds, 50% are private patient rooms and 50% are semi-private patient rooms

1) Step 1 - Determine the Future Planning Year

The example case study will use 2012 as the future planning year.

2) Step 2 - Determine the addition or reduction in the total bed need through 2012

The example case study will use the following planning assumptions:

- Market share increases - add 20 beds
- Population and census increases - add 20 beds
- Admission and discharge adjustments/increases - add 10 beds

3) Step 3 - Determine the primary and secondary service area demographics and community factors

- Stable population and immigration - add 10 beds
- Service industry growth and increases - add 20 beds

4) Step 4 - Determine the aging factors of the population and baby boomer healthcare needs for the primary and secondary service areas

- Based on average age, death rates and causes, and average life expectancy - add 20 beds

5) Step 5 - Determine the existing private patient room and semi-private patient room distribution percentages

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Existing Patient Room Distribution				
	Number of Beds	Number of Total Patient Rooms	Number of Private Patient Rooms	Number of Semi-Private Patient Rooms
Original 1970 Building	90 Beds	60 Patient Rooms	30 Rooms	30 Rooms
1982 Building	90 Beds	60 Patient Rooms	30 Rooms	30 Rooms
1992 Building	90 Beds	60 Patient Rooms	30 Rooms	30 Rooms
Totals	270 Beds	180 Total Rooms	90 Private	90 Semi-Private

6) Step 6 - Determine the existing average age of existing private patient rooms and semi-private patient rooms

Existing Average Age of Patient Rooms				
	Age of Patient Rooms Based on 2002	Total S.F. of Patient Rooms & Nursing Unit	Calculation of SF times Years	Average Age
Original 1970 Building	32	25,000 S.F.	800,000 SF Years	32 Years
1982 Building	20	30,000 S.F.	600,000 SF Years	20 Years
1992 Building	10	35,000 S.F.	350,000 SF Years	10 Years
Totals	62	90,000 S.F.	1,750,000 SF Years	19.4 Years

7) Step 7 - Determine the projected average age of existing private patient rooms and semi-private patient rooms based on 2012 planning year

Projected Average Age of Patient Rooms				
	Age of Patient Rooms Based on 2012	Total S.F. of Patient Rooms & Nursing Unit	Calculation of S.F./Years	Average Age
Original 1970 Building	42	25,000 S.F.	1,050,000 SF Years	42 Years
1982 Building	30	30,000 S.F.	900,000 SF Years	30 Years
1992 Building	20	35,000 S.F.	700,000 SF Years	20 Years
Totals	92	90,000 S.F.	2,650,000 SF Years	29.4 Years

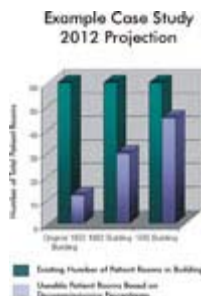
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Related Facility Impacts

As the requirements for private patient rooms with toilets/showers have dramatically increased, so too have the needs of the nursing unit support areas. This is a very important related factor because there are usually no practical or cost-effective means to increase the square footage of this area. For comparative purposes, included below are examples of typical program requirement for 30-patient room nursing units planned, designed, and constructed since the 1980s:

- 1980s space program: Total area of nursing support--2000- to 3000-square-feet
- 2000s space program: Total area of nursing support--3000- to 4500-square-feet

Nursing support encompasses the family waiting area, rest rooms, nurse station, charting, medication prep, physician dictation, report room, conference room, nourishment center, clean utility, soiled utility, linen rooms, exam/treatment room, tub room, equipment storage, nurse locker/toilet room, nurse office and janitor closet. Nursing support does not include patient rooms, patient room toilets/showers, corridors, circulation not within departments, and vertical circulation.

Hospitals and Healthcare Systems Need to Be Prepared

The primary goal of presenting and documenting this CPM is to provide a long-term and comprehensive view of the growing trend of increasing private patient rooms in hospitals and healthcare systems. Due to the 10-year planning timeframe, this CPM should be revisited and revised by hospitals and healthcare systems every several years. It certainly is understood that the majority of the steps within the methodology involve factors, assumptions, information, and data that are dynamic and will change the outcome of the methodology.

Comparative Analysis of Case Study--Lessons Learned

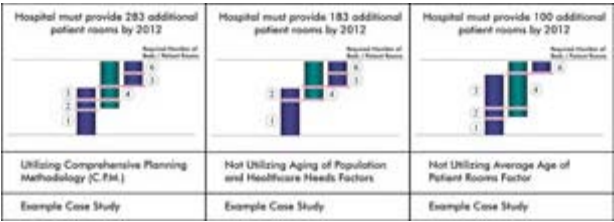
To emphasize the importance of this CPM, a comparative analysis was prepared using the example case study presented above. This comparative analysis describes various scenarios where an important step of the process was deleted from the methodology. This approach

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significantly changed the number of private patient rooms to be added to the example case study.



- 1

Number of total existing private and semi-private rooms.
- 2

Number of patient rooms lost due to conversion to private patient rooms.
- 3

Number of patient rooms lost due to average age of patient room factor.
- 4

Number of total additional patient rooms that must be provided.
- 5

Number of additional beds required due to aging of population and baby boomer needs.
- 6

Number of additional beds required due to bed demand.

What is evident from the comparative analysis is the significance of involving and including all of the steps of the CPM in the planning process. The impact of omitting one of the defined steps can be identified by comparing the charts above.

Through the involvement of a multi-disciplinary team of healthcare professionals and use of this CPM, the healthcare planning and design community can best serve its hospital and healthcare system clients.

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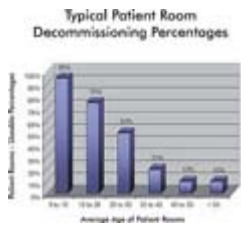


Figure 1

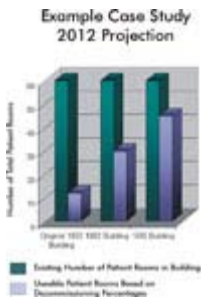


Figure 2



Figure 3

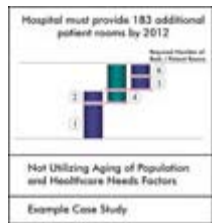


Figure 4



Figure 5



Figure 6

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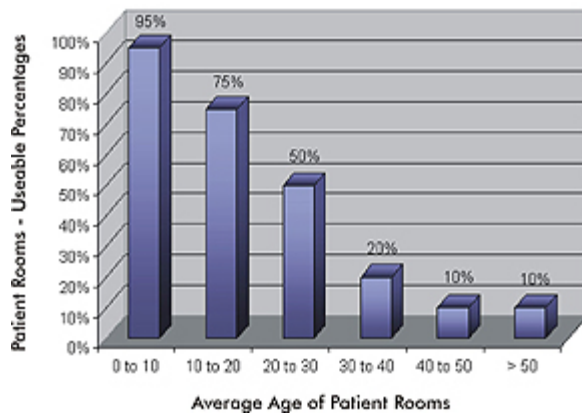
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Typical Patient Room Decommissioning Percentages



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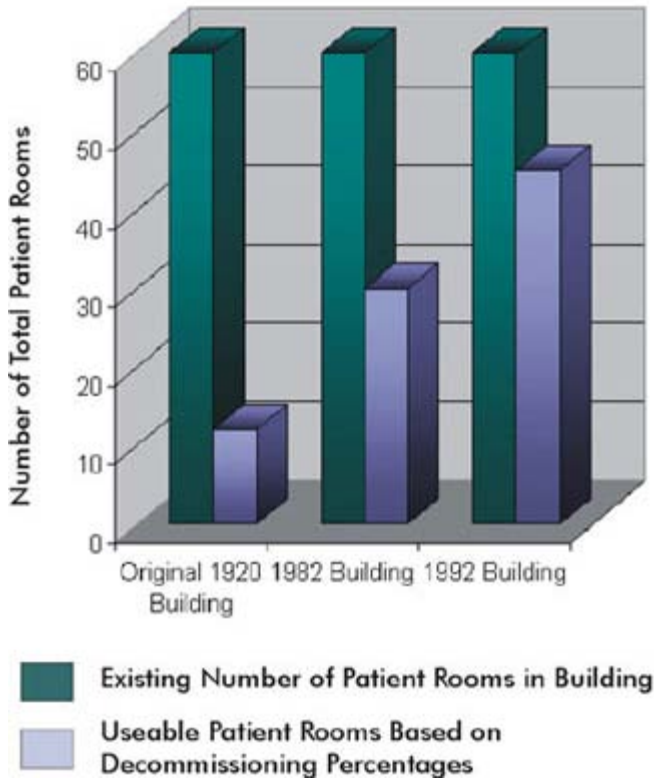
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Example Case Study 2012 Projection



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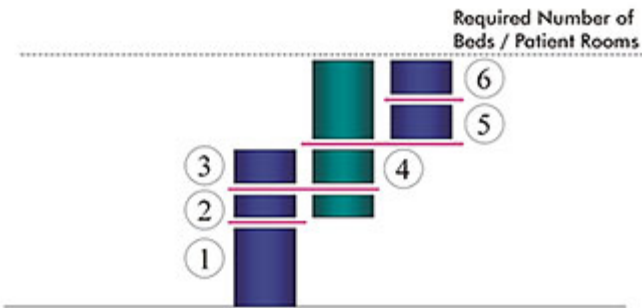
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Hospital must provide 283 additional patient rooms by 2012



Utilizing Comprehensive Planning Methodology (C.P.M.)

Example Case Study

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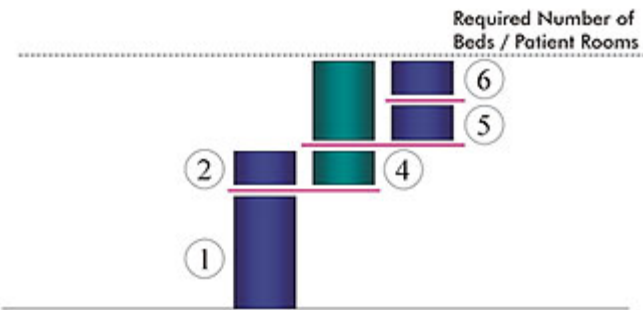
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Hospital must provide 183 additional patient rooms by 2012



Not Utilizing Aging of Population
and Healthcare Needs Factors

Example Case Study

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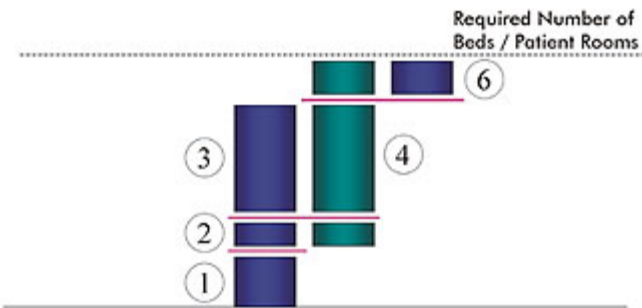
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Hospital must provide 100 additional patient rooms by 2012



Not Utilizing Average Age of Patient Rooms Factor

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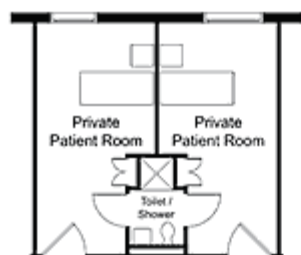
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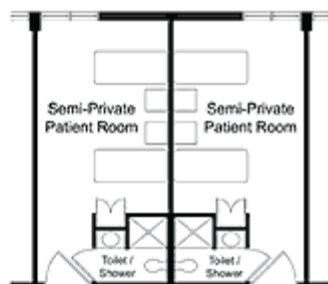
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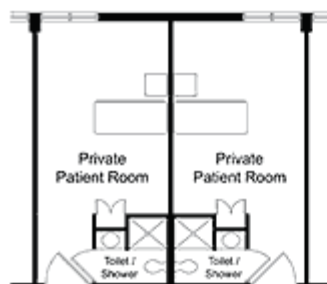
Evolution of Patient Room Size and Design



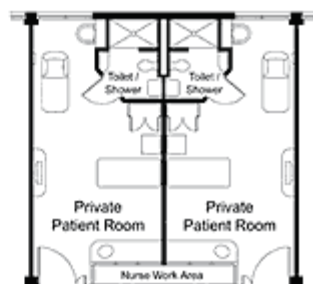
1970's Model



1980's Model



1990's Model



2000's Model

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