The Academy Journal

Women's and Infants Services

Trends, Planning Guidelines, Case Studies, and Lessons Learned

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Women's services may be defined as addressing the physical, psychological, and financial well-being of females of all ages as well as their children. Programs and facilities range from hot lines for counseling on abuse, adoption, birth control, depression, and pregnancy through to small satellite neighborhood centers focusing on testing and disease prevention. Large tertiary regional centers contain sophisticated facilities for treatment of cancer, infertility, high-risk pregnancies and low-birth-weight babies. Large academic medical centers and freestanding facilities associated with medical schools may handle between 3,000 and 8,000 births a year and offer neonatal intensive care facilities at the highest level, Level III, as well as labor delivery recovery suites (LDRs), and labor delivery recovery and postpartum suites (LDRPs)—often in combination.

The majority of facilities are hospital based for efficiency and backed up with specialists in case of a complication. There is still a strong tendency to make the facility appear as "unbig" a hospital as possible, often through dedicated entrances or separate pavilions.

The LDR concept has been successful in all of the case studies. Discussions with patients, staff, and physicians indicated that the design of the LDR room enhanced care. In-room computer workstations allowed the nurse and patient to interact while not jeopardizing the patient's privacy. Having in-room infant care, or nursery care being left up to the mother, is a way for a mother to get to know her infant at her own pace.

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Facilities:
Introduction to Women's Services

Women's services may be defined as addressing the physical, psychological, and financial well-being of females of all ages as well as their children. Programs and facilities range from hot lines for counseling on abuse, adoption, birth control, depression, and pregnancy through to small satellite neighborhood centers focusing on testing and disease prevention. Large tertiary regional centers contain sophisticated facilities for treatment of cancer, infertility, high-risk pregnancies, and low-birth-weight babies. Large academic medical centers and freestanding facilities associated with medical schools may handle between 3,000 and 8,000 births a year and offer neonatal intensive care facilities at the highest level, Level III, as well as labor delivery recovery suites (LDRs), labor delivery recovery and postpartum suites (LDRPs)—often in combination.

The majority of facilities are hospital based for efficiency and backed up with specialists in case of a complication. There is still a strong tendency to make the facility appear as "unbig" a hospital as possible, often through dedicated entrances or separate pavilions.

The following information compares a range of market-sensitive, operational, and facility programs that vary from a restricted budget, all-renovation project, to a blend of new construction and renovation, to an all-new freestanding, comprehensive facility. The data measure the square foot and cost of each project, which may be referenced back to the volumes and revenue stream of patients treated or new babies delivered.

Shifting Market Influences

Not too long ago, a number of studies showed that women made the decision in 70 percent of the country's households as to which hospital would be used for the family. Statistics also showed that 50 percent to 60 percent of the time, a woman would choose a hospital first rather than a physician for a birth. Her decision would be based on its facilities, birth experience philosophy, and convenience, rather than a particular physician on staff. The advent of managed care and encouragement for a 23-hour stay for a birth, followed by some home care, are economic forces that may be altering the criteria by which a hospital is selected. Nevertheless, for a hospital to even qualify for consideration as a provider of women's services, obstetrics,

or perinatal care, it usually has to meet certain criteria in terms of the quality of its staff and facilities, as well as the cost for a range of services. The degree to which facilities are up-to-date and allow for secure, quality, and pleasant care at a competitive price is now taken into account by both managed care providers and the family who is the consumer.

In addition to maintaining or protecting market share, the majority, if not all, of the institutions reviewed felt new or improved facilities were required if they were to keep valued staff or recruit new staff or specialists.

LDR and LDRP configurations as well as nurseries and postpartum facilities are reviewed. The analysis of the plans draws attention to what each facility was able to achieve for the amount of space and money available.

The criteria by which the decision was made to renovate or mix renovation with new construction are discussed, together with square footage, phasing, and cost data.

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Case Study: Renovation

Overlook Hospital, Summit, New Jersey

In April 1997, Overlook Hospital in Summit, New Jersey, a member of Atlantic Health System, determined that due to a significant decrease in patient satisfaction and a loss of physician referrals, the maternity department at the hospital should undergo a major upgrade and renovation. Although the department had been renovated only 12 years earlier, the configuration and condition of the facility was detrimental and causing a loss of patient volume and revenue. A study conducted by an independent health planning firm determined that making improvements to the patient care environment would most likely result in an increase from 2,700 to 3,400 births per year.

With a design intent focusing on improving patient satisfaction while at the same time achieving greater staff efficiency, the following project goals were defined early in the design process:

- Convert 17 semiprivate postpartum bedrooms to 29 private rooms upgraded with new finish materials, furniture, and new toilet rooms with showers
- Convert from a traditional three-room delivery model to a 10-bed LDR unit
- Provide additional space for family comfort, privacy, and amenities while visiting or staying overnight with patients
- Improve staff utilization by consolidating nurse stations while enhancing communications through integrated nurse call and paging systems
- Consolidate triage and antepartum functions into a single unit with common support and staffing functions
- Improve physician amenities by providing private on-call rooms with computer stations, a private lounge, and library areas
- Upgrade finishes materials throughout the maternity floor to replace the clinical hospital setting with a more attractive hospitality-based environment.

With a limited budget for the initial project construction, the design team provided a unique solution that will allow for a phased implementation prioritizing the most important patient satisfaction issues. The first phase includes the complete upgrade of the postpartum unit and the construction of six LDRs with new lobby, reception, and family lounge. The second phase will complete the project with four additional LDRs, the antepartum/triage unit, two new c-section rooms, and staff support areas.

Figure 9. Floor plan

Facts and Figures

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Number of Births per Year:	3,400
Number of LDRs:	10
Total SF:	36,000
Cost (Phase 1 & 2):	$6 million
Cost per SF:	$167

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Case Study: Alteration
New York Methodist, Brooklyn, New York

New York Methodist Hospital, affiliated with the New York Hospital-Cornell Medical Center, selected Ballinger to program, design, and document its new maternity service after visits to recently completed Ballinger projects at the Bryn Mawr Hospital and the Reading Hospital and Medical Center.

The 560-bed tertiary hospital is located in the Park Slope Section of Brooklyn. Presently delivering 3,000 births a year, the new facility is planned to accommodate over 4,500 births a year utilizing 12 LDR rooms and 30 semiprivate plus three private postpartum rooms. Although the patients are from diverse socio-economic backgrounds, a majority of the mothers are professionals on demanding career tracks; the result of this is an average-length stay of one day.

The whole of the fourth floor of the 1980 Carrington Pavilion (24,675 square feet) and one-half of the fifth floor (13,850 square feet) were made available for the project. Although there are up-to-date public and hospital patient elevators nearby, one requirement of the users was that there be a dedicated maternity elevator to the postpartum floor below. This was accomplished by adding an elevator outside the building in a recess. There was no disruption to clinical functions above or below the areas being renovated.

The hospital facilities department is acting as CM; Dan-Holly, of Hempstead, New York, is the builder. Medequip International of Plymouth Meeting PA is the equipment planner. The entire project totals 38,528 square feet. The target construction budget, including construction and design contingencies and A-E fees, is $3.6 million. Because of the intense level of construction activity in the New York City area, it is believed the actual construction cost, including a $500,000 allowance for new equipment, will be closer to $4.5 million.

Time frame is 18 to 24 months for phased construction. The per-square-foot cost works out to be between $100 and $125 a square foot in a time frame of 1999-2000 construction. Most building infrastructure services were available where needed; the fifteen semiprivate postpartum rooms are existing and are being renovated with upgraded furniture, finishes, and lighting.

Figure 10. Floor plan

Facts and Figures

Number of Births per Year:	3,000 present; 4,500 projected
Number of LDRs/ Postpartum Rooms:	12 and 33

Total Square Feet:	38,528
Cost:	$4.5 million (postpartum in existing rooms)
Cost per SF:	$125
Average LDR SF, including Toilet and Vestibule:	450 SF

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Case Study: Addition and Alteration
York Hospital, York, Pennsylvania

Although the present maternity service opened in new construction in 1991, a tight original budget, severe grade changes adjacent to the building affecting the floor configuration, some new code requirements, and a market preference shift from LDRs to LDRPs have all combined to make substantive adjustments to the suite necessary. Presently doing 2,400 to 2,600 births a year, York Hospital believes that with an all LDRP concept, 3,000 births would be possible.

When it was discovered that there was not sufficient space to add more than two LDRPs to the present "workable" 10, new construction options were developed and evaluated. The one selected retains the present neonatal intensive care unit (NICU) because it works well and is near the hospital emergency and helicopter elevators.

The proposed maternity suite will have 26 LDRPs, 13 postpartum rooms, 11 ob/gyn rooms, and 3 flex rooms. The square footage is 65,000 building gross square feet; the construction cost is $14 million to $16 million. The square-foot cost works out to be $229 per square foot.

Figure 11. Floor plan

Facts and Figures

Number of Births per Year:	3,000
Number of LDR/Ps:	26
Total Square Feet:	65,000 (includes ob/gyn beds and administrative support)
Cost:	$15 million
Cost per SF:	$230
Average LDR SF, including Toilet and Vestibule:	360

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Case Study: Addition
Hospital of the University of Pennsylvania, Philadelphia

The women and infants program at the Hospital of the University of Pennsylvania (HUP) had been languishing for several years, suffering from too-cramped quarters, older facilities, and disparate locations. A major building campaign and master plan, circa 1990, finally unlocked two contiguous floors as space (over 60,000 GSF) to accommodate the neonatal and obstetrical services. Still, the space was in three different structures with independent systems and low floor-to-floor heights. Infill construction between the two main wings afforded an opportunity to locate c-section rooms where their intensive service requirements could be more easily accommodated.

The plan on the seventh floor has all OB services including perinatal evaluation, antepartum, c-section, LDRs, department offices, and on-call spaces. The postpartum unit occupies an existing nursing unit on the floor above, and its nurseries are adjacent to the Level 3 MCU for staffing efficiencies.

The 14 LDRs allow over 50 percent of the patients who require or prefer shorter stays to remain in their room for their entire stay, while also providing space for those high-risk patients who require intense observation.

Figure 12. Floor plan

Facts and Figures

Number of Births per Year:	3,200-3,400
Number of LDR/Ps:	14 (9 LDRP / 5 LDR)
Total SF (renovated):	60,000
Cost:	$15 million
Cost per SF:	$183 ($11 million) total project
Average LDR SF, including bath and equipment storage:	360

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Case Study: Addition
The Reading Hospital and Medical Center
Reading, Pennsylvania

In 1990, the Reading Hospital decided to embark on a major addition/renovation to consolidate inpatient service lines. The 42,000-square-foot project included surgery, critical care units, cath labs, emergency, labor/delivery, NICU, and postpartum services.

The labor/delivery program is accommodated in one leg of an L-shaped wing. NICU and postpartum are located in the other leg. The obstetrics program occupies an expanded existing construction that captured an adjacent roof terrace area. The surgery expansion was built on the floor above.

Originally, the plan was based on 9 LDRs and 26 postpartum beds, but during construction the decreasing length of stay suggested reworking the plan to its current configuration of 13 LDRs and 22 postpartum beds. This affords the staff flexibility in accommodating patients who desire a shorter stay all in one room, when census permits, thus reducing housekeeping and other staffing requirements considerably.

Figure 13. Site plan

Facts and Figures

Number of Births per Year:	3,000
Number of LDR/LDRPs:	13
Total SF (renovated):	42,000
Cost SF (renovated):	$140
Average LDR SF, including toilet and equipment storage:	360

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Case Study: All Renovation
Milford Memorial Hospital, Milford, Delaware

In 1989, as part of an overall hospital strategic and master plan, Milford Memorial Hospital (MMH) a 140-bed community hospital in rural southern Delaware, identified the need for renovation/replacement of their obstetrics department.

The labor/delivery department had not been renovated in over 20 years, and its general character was causing women in the area to choose other hospitals in Dover or Wilmington for obstetrics care.

To keep and enhance their rna~market share, MMH decided to totally rethink their obstetrics department. The building housing labor/delivery, the oldest on campus (built in 1938), could not be renovated at a reasonable cost. The master plan identified it for softer functions. A new surgery addition allowed space for labor/delivery to be moved to the fourth (top) floor of a 1968 medical surgical building. This location allowed for easy HVAC replacement and higher ceiling heights.

At the same time, MMH decided to rethink how they delivered obstetrics services. Their relatively low annual birth rate suggested that they cross-train the labor/delivery and nursery staff and adopt an LDRP approach. Additionally, the obstetrics unit was placed adjacent to the women's med/surgical unit for further efficiencies and the creation of a separate women's floor.

Figure 14. Site plan

Facts and Figures

Number of Births per Year:	700-750
Number of LDRs:	7
Total SF (renovated):	9,724
Cost SF	$98.25
Average LDR SF, including toilet and vestibule:	378
Average LDR SF, excluding toilet and vestibule:	243

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Case Study: Addition and Alteration
St. Elizabeth Hospital, Elizabeth, New Jersey

A 1983 situation analysis of St. Elizabeth Hospital (SEH) discovered that patients in their part of New Jersey were leaving the service area for obstetrics care, and that steps should be taken to capture those patients. In spite of this trend, obstetrics admissions at SEH were increasing and the occupancy rate was well above the minimum standard.

As part of the 1985 master plan, a major addition that addressed all the important service lines and alleviated severe physical plant problems was planned for phased implementation over six years. The new building opened in 1993. The need for this addition was heightened by the closure of the other acute care hospital in the region. The obstetrics department was included in the new addition because several of the existing labor and delivery rooms were located in a 1975 structure scheduled to be demolished because of its unresolvable code deficiencies.

The existing layout of the obstetrics department was extremely cramped, seriously lacking in support space and patient privacy (all labor and delivery rooms were semiprivate). Additionally, the nurseries (normal and Level II) were cited for inadequate ventilation and failure to meet area guidelines. All of these were contributing to the loss of market share.

The construction of the new tower allowed for the replacement of the nurseries and adoption of the L/D/R approach for obstetrics. The area adjacent in the existing floor plate was backfilled with much-needed support space, and the postpartum unit has a higher complement of private rooms.

Figure 15. Floor plan

Facts and Figures

Number of Births per Year:	1,500
Number of LDRs:	5
Total SF (new):	14,000
Total SF (renovated):	12,600
Cost SF:	$2.4 million (new) + $1.1 (renovated) = $3.5 million
Cost SF (new):	$175
Cost SF (renovated):	$90
Average LDR SF, including toilet:	350
Average LDR SF, excluding toilet:	270

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Case Study: All Renovation
Mount Carmel Medical Center, Columbus, Ohio

In 1990, Ballinger was commissioned to provide a strategic facilities plan for Mount Carmel Medical Center (MCMC), a 425-bed tertiary care center in downtown Columbus, Ohio. Among the initiatives identified by the plan was the need to upgrade women's services in order to enhance the hospital's position in this extremely competitive region. New construction versus renovation options were to be evaluated.

To achieve these goals, MCMC integrated the special care nursery, labor and delivery, and two existing Postpartum Units on the sixth floor of the existing medical center. The staff support spaces (offices, lockers, conference, etc.) for all three units were consolidated on the seventh floor.

This 20,000-square-foot project was designed to accommodate 3,300 births annually. The program includes 8 L/D/R rooms with 2 delivery rooms and a 16-bassinet special care nursery providing Level II (2.9) care, and 4 additional postpartum rooms designated as birthing rooms for overflow from labor and delivery.

Key issues for this project included maintaining efficient adjacencies during construction while keeping all program elements operational, the phased installation of building systems, and the provision of convenient patient access throughout the process. This was accomplished by creating a temporary special care nursery in vacant ICU/CCU space and renovating the former SCN space for labor and delivery. Once labor and delivery had moved into their new LDR rooms, the vacant space was renovated for the special care nursery.

The major drivers in the decision to go the all-renovation route rather than new construction were:

- This existence of a recently renovated postpartum unit
- Phased components that could be implemented on year by year basis out of capital funds under the $2 million con cap
- Online time that would be two to three years sooner than new construction as part of a larger hospital project.

Figure 16. Floor plan

Facts and Figures

Number of Births per Year:	3,300
Number of LDRs:	8
Total SF:	20,000
Cost:	$2.5 million ($1.2 million for LDR)

Average LDR SF, excluding bath:	305
Average LDR SF, including bath:	360

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Case Study: Addition
The Bryn Mawr Hospital, Bryn Mawr, Pennsylvania

In May 1990, the Bryn Mawr Hospital, a 325-bed hospital in suburban Philadelphia, opened its west wing expansion. This was the last phase of the hospital's master plan, begun in 1985.

A major component of this addition was the Obstetrics department. Previously, it had been housed in a separate women's building built in 1923.

In the 10 years preceding the opening of this building, Bryn Mawr Hospital had experienced an 85 percent increase in obstetric admissions and births. With this growth in volume, levels of service for high-risk infants and mothers also developed.

The 1923 building with its 20-bed obstetric unit, 8-bed NICU, and a cramped labor and delivery area could not be reasonably renovated for these new volumes. The new addition provides for this growth in volume with a 28-bed obstetric unit, 30-bed nursery, a 20-bed NICU, and 7 LDRs. This expansion reflects Bryn Mawr's relative obstetric importance (fifth largest) in the Philadelphia region.

The LDR concept was embraced largely for patient convenience reasons, but also the LDR room concept improved overall room utilization. Since its opening in 1990, the declining length of stay for obstetrics has enabled the hospital to move over eight gyn beds into the postpartum unit, improving staffing efficiencies for women's services.

The number of beds for postpartum, normal nursery, and education areas are located on the next level up in a similar floor plate, approximately 27,000 BGSF.

Figure 17. Floor plan

Facts and Figures

Number of Births per Year:	2,200
Number of LDRs:	8
Total Square Footage:	54,000
Cost:	$9.5 million
Cost per Square Foot:	$175
Average LDR SF, including toilet and vestibule:	480
Average LDR SF, excluding toilet and vestibule:	410

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Case Study: Complete Replacement Facility
Jersey City Medical Center, Jersey City, New Jersey

The Jersey City Medical Center has embarked on a complete replacement facility on a 15-acre urban site in downtown Jersey City. A major component of the 626,000-square-foot, 400-bed hospital will be a complete women's services program, able to handle a large number of high-risk pregnancies. It is designed for up to 3,200 births a year.

Working closely with state health planners, a plan has been developed with two self-contained patient care units, with a total of 33 LDRP rooms, 13 in one unit and 14 in the other; each unit also has four to six postpartum rooms. Each of the patient care units has its own normal nursery and visitor- and patient-support services. Adjacent, on the same level, are facilities for high-risk observation, cesarean section or delivery rooms, and an intermediate and intensive care nursery.

The medical center is implementing a patient-focused approach to care; the manifestations of this for women's services may include the following:

- Direct access via dedicated elevator to the women's services floor from the emergency department
- Free valet parking
- All services on one level: LDRPs; normal, intermediate, and intensive care nurseries; and delivery and postpartum rooms
- Registration on the floor
- Satellite, preventative care, and education centers in several community locations
- Staff cross-training
- A reduction in purely supervisory personnel
- Satellite pharmacy and lab on the floor
- Imaging capabilities on the floor.

Figure 18. Floor plan

Facts and Figures

Building SF:	626,000 (67,000 for women's)
Construction Cost:	$112 million
Number of Births per Year:	3,200
Number LDRPs:	33
Cost SF:	$180 (x 67,000 = $12 million)
Average LDRP SF, excluding bath:	252
Average LDRP SF, including bath:	300

Lessons Learned and Recommendations

Overall, the LDR concept has been successful in all of the case studies. Discussions with patients, staff, and physicians indicated that the family-centered care offered at the units was exemplary and the design of the LDR enhanced that care. In-room computer workstations enhanced the nurse/patient interaction while not jeopardizing the patient's privacy. One patient commented, "I liked the privacy when needed and, at the same time, a lot of supervised care when needed. Also, the question of having in-room infant care or nursery care being left up to the mother is a wonderful way for a mother to get to know her infant at her own pace." Other patient comments included, "the rooms are comfortable, spacious, and cheerful."

Staff members indicated that, due to the frequent use of the in-room computer workstations, the traditional nurse's station was not used as much as had been envisioned. Instead, a staff breakroom/kitchenette could serve as a central gathering place for staff. During delivery, staff indicated the need for: (1) an equipment storage room within the LDR, and (2) greater space for IV equipment and charting at the infant stabilization area.

In contrast to enjoyment of the LDR, patients were not enthusiastic about most postpartum room designs. This was in comparison to the LDRP room; for no matter how luxurious or tasteful the postpartum room, space and budget considerations rarely allow it to be as spacious as the LDRP. Comments consistently voiced were:

- The rooms are too small to comfortably accommodate infant, father, family members, and other visitors
- The rooms did not have the home-like and decorative touches that were present in the LDRs
- The bathrooms were not large enough.

Typically, in renovation work, former private patient rooms (approximately 100 square feet) are converted into postpartum rooms. As shown in the chart of "Square Feet and Cost Analysis" LDRs can range from 265 square feet to 480 square feet.

Outpatient Women's Health Design

Outpatient women's services continue to provide "relationship-centered care" that goes beyond the reproductive years. This care includes maternal and child health services, midlife services, senior women's services, retail convenience products, health education, and complimentary medicine. Separate mother/child centers are being designed with on-site diagnostic rooms, laboratories, special procedure rooms, and pediatric units. During discussions about outpatient exam rooms, patients stated that their top priority was privacy. Patients requested privacy:

- while researching topics in the health education resource area

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- during examination
- during consultation.

Physicians stated that exam rooms with adjoining bathrooms work the best and that they prefer not to have separate consultation rooms. They would prefer larger exam rooms that include a patient-charting area that enables the physician to face the patient while talking. These same physicians commented that microscope rooms be located occur in closer proximity to the exam rooms. Both patients and physicians stated that current women's healthcare design that provides a "home-like" and healing environment is effective. The more "light and airy" facilities can be better.

Beyond the findings recorded here, no radical new physical configurations have been found different from the LDR/P idea. For larger annual volumes and births-over 3,400-a mix of LDRP and postpartums is the norm. In a few locales, where demographics and market expectations require, an all-LDRP facility may be appropriate. These, of course, have appropriate space, cost, and staffing implications.

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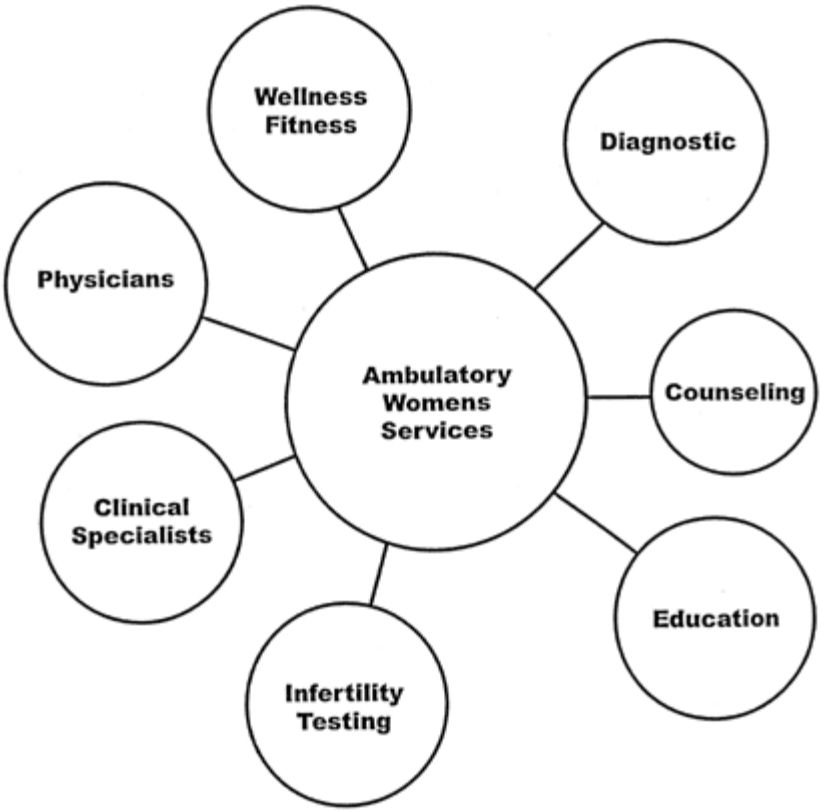

Figure 1: System Wide

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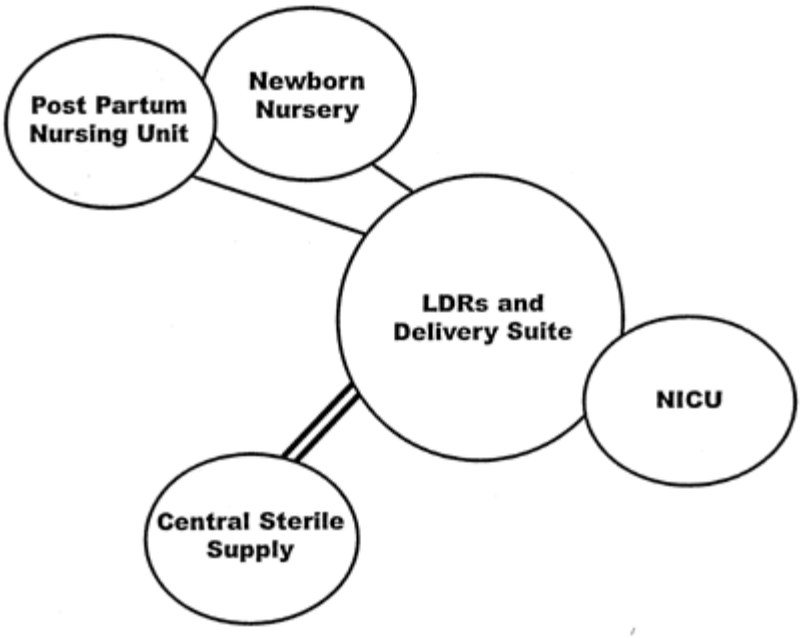

Figure 2: Hospital Wide

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Program

Program: Labor/Delivery/Recovery Suite

LOW-RISK FACILITIES	
Room Elements	**Recommended SF**
Combination Labor/Delivery/Recovery Room w/ Toilet & Shower & Scrub (8 at 350 SF / 10 at 350 SF)	2,800-3,500
Family Room w/ Toilet	300
Early Labor Lounge w/ Toilet	350
Control Station	150
Medication Preparation	60
Physician Charting & Dictation	80
Clean Supply	180
Equipment Storage	80
Soiled Utility	100
Nurse Supervisor Office	100
Stretcher/Wheelchair Storage	80
SUBTOTAL (Net SF) LOW-RISK FACILITIES	4,330-5,030

HIGH-RISK FACILITIES	
Room Elements	**Recommended SF**
Cesarean Birth Room (2 @ 400 SF)	800
Scrub/Gown Area	40
Infant Resuscitation Room	150
Sterile Supply	100
Equipment Cleanup & Soiled Utility	80
Anesthesia Workroom	120
Anesthesia Storage	40
Janitor Closet	50
Control Station	120
Recovery Room (2 beds)	240
Control Station	60
SUBTOTAL (Net SF) HIGH-RISK FACILITIES	1,800

STAFF AREA	
Room Elements	**Recommended SF**
Women's Lockers w/ Toilet and Shower	400
Men's Locker w/ Toilet and Shower	400
Staff Lounge	300
On-Call Room (3 @ 100 SF)	300
Staff Toilet and Shower	40
Conference Room	250
SUBTOTAL (Net SF) STAFF AREA	1,690
TOTAL NET SQUARE FEET	7,820-8,420

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Net-to-Gross Conversion Factor	x 1.6
TOTAL DEPARTMENT GROSS SQUARE FEET (DGSF)	12,500-13,632
BUILDING GROSS SQUARE FEET = DGSF x 1.30 =	16,250-17,721

Figure 3: Labor/Delivery Recovery Suite

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Equipment

Equipment Costs for LDR Rooms: 1998 Dollars

TYPE OF EQUIPMENT		COST
1.	Birthing-Type Bed or Chair	12,500
2.	Procedure Light (High-Intensity Fiber Optic: minimum $3,500; maximum $15,000)	10,000
3.	Bedside Stand	450
4.	Rocking Chair	200
5.	Comfortable Soft Chair	600
6.	Chair (Wood)	300
7.	Over-Bed Table	450
8.	Pack Table 40" x 40"	350
9.	Prep Table 16' x 30' (1 shelf)	175
10.	Basin Stand	200
11.	Kick Bucket	150
12.	Hamper (No Bags)	125
13.	Waste Container w/lid	75
14.	Infant Scale (Nonelectronic)	150
15.	Physician Stool	325
16.	Viewing Mirror	250
17.	Patient Lamp	175
18.	TV Stand	125
19.	Infant Exam Unit w/Warmer	3,700
20.	Mayo Stand	275
21.	Scrub Sink (1 Sink)	1,000
COST OF ROOM EQUIPMENT PER LDR ROOM		$ 31,575
SUBTOTAL COST FOR 12 LDR ROOMS ("Item A")		$ 378,900

Equipment Shared among the 12 LDR Rooms

(If funds allow, each room may be fitted out)

TYPE OF EQUIPMENT		COST
22.	Electronic Fetal Monitor (5 @ $12,000) Noncentralized	96,000
23.	Self-Contained Infant Resuscitation Unit (4 @ $8,000)	32,000
24.	Transport Bassinet (3 @ $800)	2,400
SUBTOTAL COST OF SHARED EQUIPMENT FOR 12 LDR ROOMS ("Item B")		130,400
TOTAL EQUIPMENT COST FOR LDR UNIT (A & B)		509,300
AVERAGE TOTAL EQUIPMENT COST PER LDR ROOM (÷ 12)		42,441
CONTINGENCY: 15 percent of $42,411 = $6,366		6,366
	Total:	$48,807

Figure 4: Equipment costs

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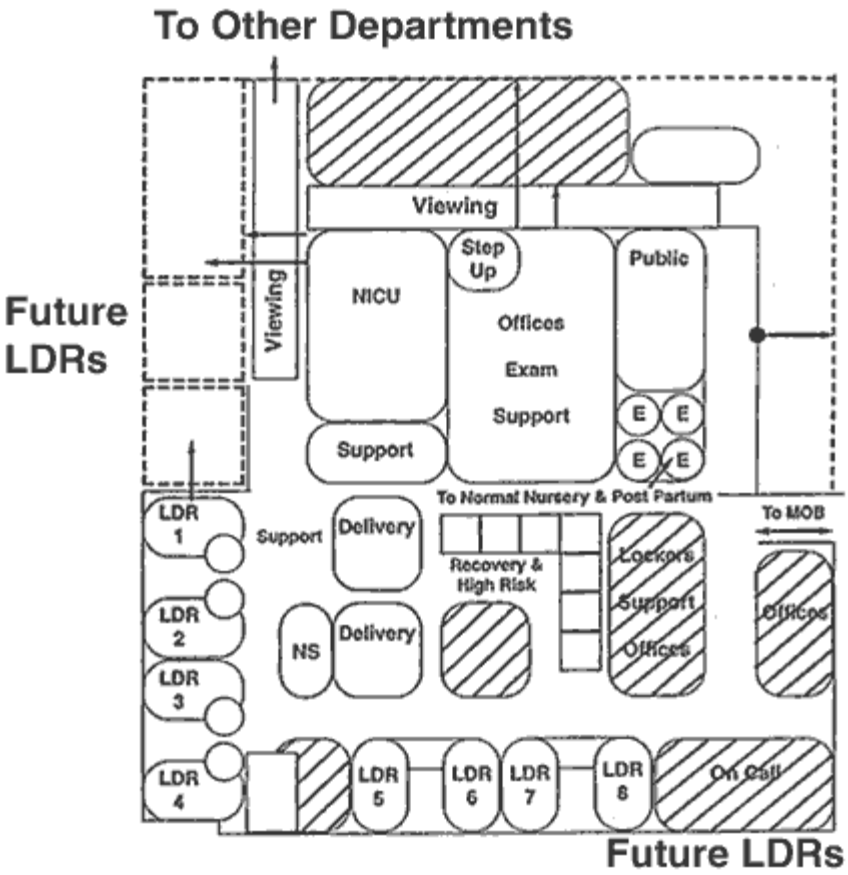

Figure 5: Short term expansion--long term expansion

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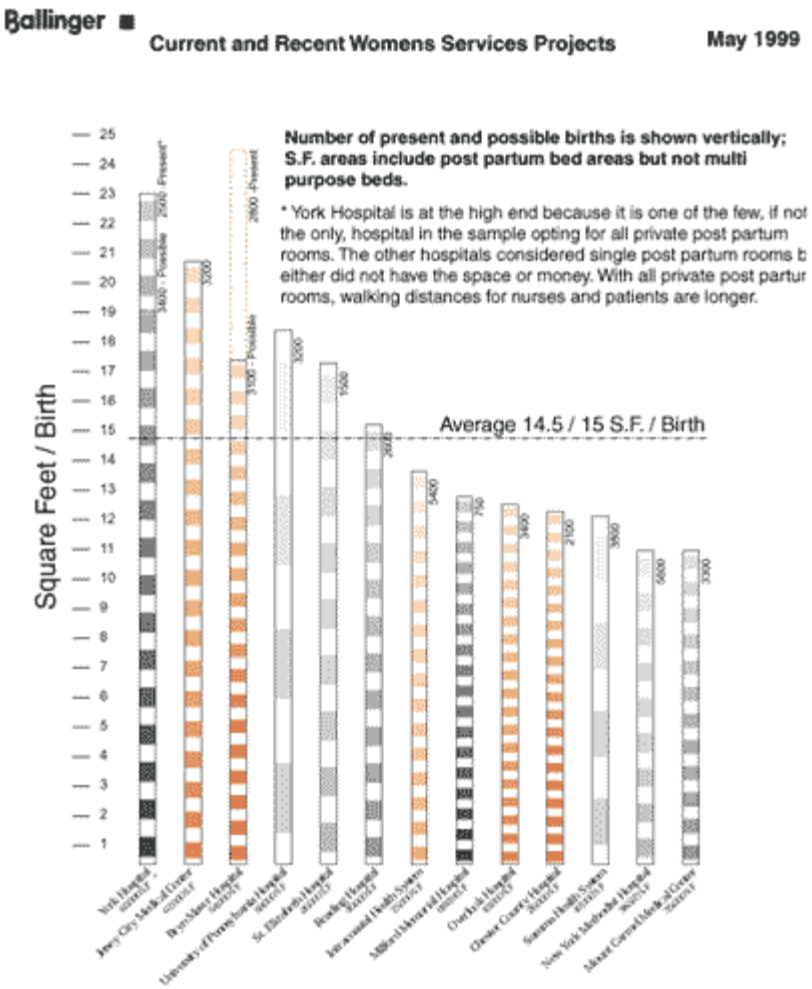

Figure 6: Comparison of square feet per birth

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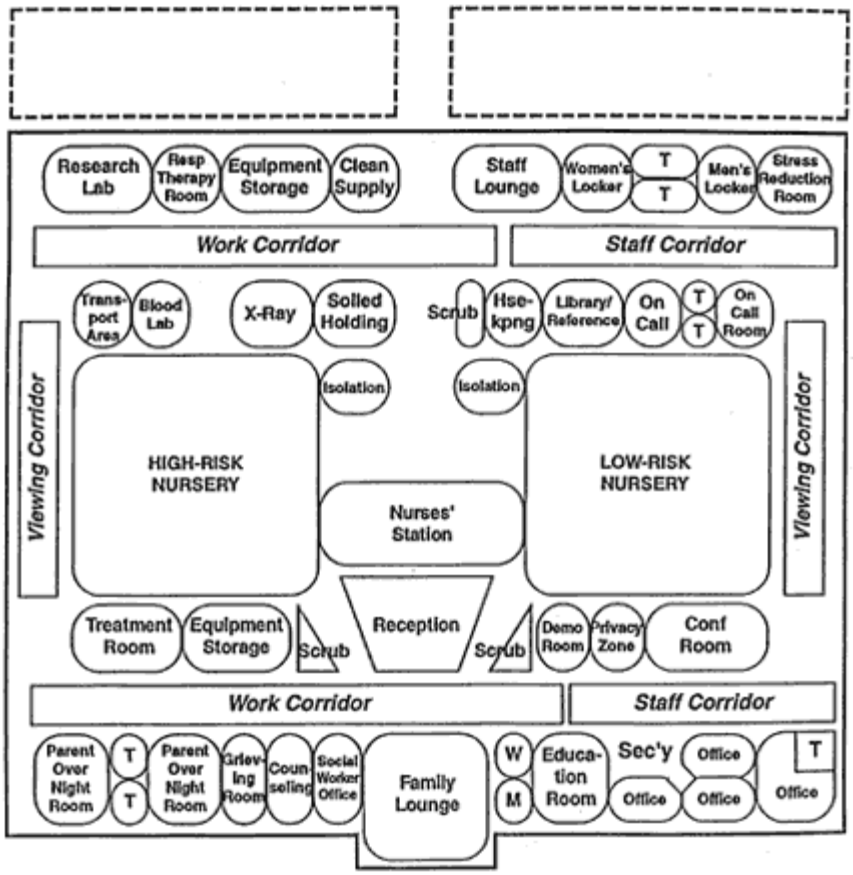

Figure 7: Nurseries

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Square Feet and Cost Analysis

Facility	Births/ Year	#LDRs/ LDR SF	#LDRPs/ PPs	Births/YR/RM Avg LOS Days	Total SF Total Cost	Cost/LDR (P)[5] SF/LDR (P)	S.F. ($)[1]
1. MMH	750	7 / 378	7 / 0	107 / 1-2V/3-4D/(24C%)	9,724 / 955,000	136,428 / 1,389	$98(R)[2]
2. Mount Carmel Medical Center	3300	8 / 360	0 / 4	412 / 0.9	32,000 / 2.5M	312,000 / 2,500	$125(R)
3. St. Elizabeth *New*	1500	5 / 350	0 / 14	300 / 1.2	14,000 / 2.45M	49,000 / 2,500	$175(N)
Renovation					12,600 / 1.1M	220,000 / 2,520	$87
Total					26,600 / 12M	690,000 / 5,320	$129
4. Bryn Mawr Hospital	2200	8 / 480	0 / 22	275 / 1.3 27%C	54,000 / 9.5M	1,187,500[6] / 6,750	$175
5. Jersey City Medical Center	3200	33 / 300	33 / 4-6	97 / 3.8	67,000 / 12M	363,636 / 2,030	$179
6. Gwinnett[3] Medical Center	3000	10 / 265	0 / ?	300 / 1.2	59,900 / 7.8M	780,000 / 5,990	$130

Notes for Square Feet and Cost Analysis Chart

(1) Costs are for year of completion-all are between 1990 and 1994 with the exception of JCMC, which is 1997.

(2) R = Renovation; N = New Construction; F = Freestanding.

(3 All projects are by Ballinger except Gwinnett, which is by Nix, Mann Associates.

(4) 1-2 day LOS for vaginal deliveries; 3-4 days LOS for cesarean; 24 percent is for cesarean births.

(5) P = Flexible for LDR or LDRP use in conjunction with postpartum rooms. 6Includes 26 postpartum beds; capacity is over 3,000 births/year.

Figure 8: Square feet and cost analysis

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