



Auburn Memorial Hospital Obstetrics Unit Redesign

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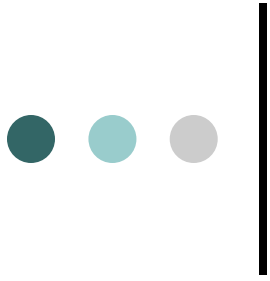
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<http://tenly.files.wordpress.com/2009/03/newborn-baby.jpg>



Introduction



Introduction

This project is intended to aid in the design of the new Obstetrics unit for Auburn Memorial Hospital in Auburn, NY. This report will address issues such as the design and look of the rooms for labor and delivery and use of rooms for single or multiple stages of labor and make recommendations for the redesign of the unit.

The recommendations within this report are based on the findings in the literature on the design of rooms for the birthing process. Given the short time frame for this project, 2 weeks, the design recommendations are only based on studies and articles regarding labor and delivery rooms and available information on Auburn Memorial Hospital.

**Auburn Memorial
Hospital,
Auburn, NY**





Background Information: Obstetrics Units

Beginning in the 1980's there has been a change in the way the birthing experience is viewed. Previously, birthing was addressed in the same manner as any other disease treatment was viewed. Women entering the hospital were treated like a sick patient rather than seeing the birthing process as a family experience. In reaction to this a new trend of birthing rooms were developed (Malkin). Rooms now are designed to create a more family-centered experience for both the mother and her family.

“The alternative birth movement is a reaction by women against a predominantly male medical establishment which has controlled obstetrical care in the United States.”

-Mathews, p. 39



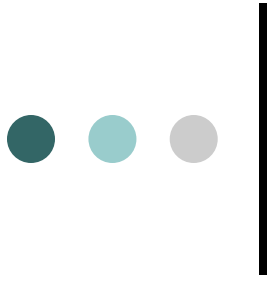
<http://www.galionhospital.org/images/obstetrics.jpg>

Background Information: Auburn Memorial Hospital

Auburn Memorial Hospital is located in Auburn, New York. Currently, the town of Auburn is shrinking, and therefore, the hospital is downsizing to remain efficient. Currently, Auburn Memorial is a 100 bed hospital. Auburn's main competition are the hospitals in Syracuse, NY, which includes SUNY upstate, Crouse Hospital and St. Joseph's Hospital.

Auburn Memorial's Obstetrics Unit is competing with these hospitals to recruit Obstetrician/Gynecologists to increase the number of births at the hospital. By recruiting doctors, Auburn was able to increase the number of births from 150 per year to 450. By re-designing the Obstetrics Unit at Auburn, the hospital can continue this upward trend.



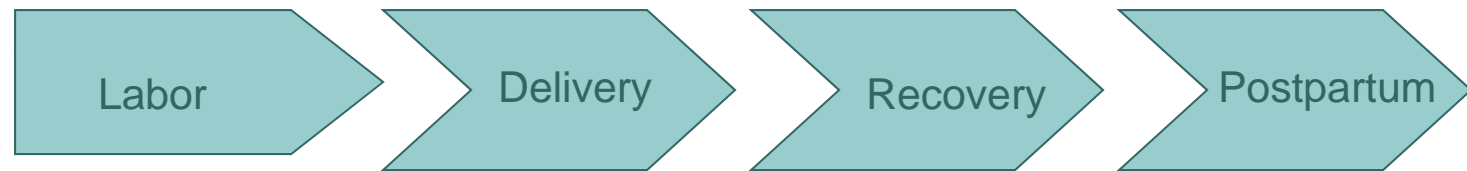


Problem Analysis



The Birthing Process

The Birthing Process can be broken down into four stages, these are:



“Systems analysts came to realize that this moving took a lot of staff time each time a patient was moved, and that it was potentially dangerous for some patients”

-Malkin, p.244

Traditionally women were taken to a different room within the hospital for each of these stages. This creates a problem however, because studies have shown that the transporting of the mother from room to room can be dangerous for the laboring woman and time intensive for the nurses. To help correct this issue, a new, alternative design of Obstetrics unit rooms was created, where woman remained in the same room for most or all of the birth process.



New Birthing Rooms

There are two different types of alternatively designed rooms within this new birthing design, with these designs services and people are brought to the laboring woman.

The Labor Delivery and Recovery rooms (LDR):

With this type, the woman stays in the same room for labor delivery and recovery, after which she is brought to a patient room for postpartum care.

Labor Delivery Recovery and Post-Partum Rooms (LDRP):

With this type of room, the woman stays in the same room throughout her stay at the hospital, what is in the room with the mother is what changes throughout her stay.



Reasons behind the change to alternative design rooms

Common reasons for hospitals to change to these an alternative room design include:

1. To increase the hospital's market share
2. To maintain the hospital's image as a trendsetter in the industry
3. To start a new maternity service for the community

(Linsay, 1992)

Auburn Memorial Hospital is trying to increase its market share in the obstetrics area, therefore changing to alternative design will likely set Auburn apart from traditionally designed units in the area and attract more of the market.



The Stakeholders

There are 4 stakeholders who must be considered while evaluating this change, they include:



1. Patients
2. Care Providers (doctors, nurses, allied health professionals)
3. Administrators
4. Family

These stakeholders each have their own priorities when evaluating the decision of what type of room the obstetrics unit at Auburn Memorial Hospital should select. Each of these stakeholder's views must be considered while evaluating the decision, however not all stakeholders will necessarily be satisfied with the decision.





Key Issues for addressing the change:

While evaluating the hospital for what type of Obstetrics unit room best fits, the following issues must be considered:

- **Safety:** Safety of both the mother and infant, as well as the safety of the staff working within the hospital.
- **Cost of new design:** A different type of room effects the up front cost of designing and building the labor and delivery rooms. It also effects the maintenance costs of the rooms and the cost of staffing for the new design (Lindsay)
- **Effects on staff:** A different design of obstetrics rooms has an effect on the demands on the staff in terms of time, activities required of them and training (Lindsay)
- **Stress on laboring woman and family:** The design of the obstetrics unit, in terms of aesthetics and the type of room (LDR versus LDRP versus the traditional labor, delivery and recovery rooms) has an effect on the emotional wellbeing of the woman in labor and her family.
- **Image:** Hospitals need to maintain a good image in the community to increase market share and to be seen as a trendsetter.



Recommendation:

Based on the literature and on the demographics of Auburn Memorial Hospital, I recommend that the hospital uses a design that allows multiple stages of the birth process in one room instead of the traditional obstetrics unit design.

This will allow Auburn to operate more efficiently by:

- Reducing the number of rooms required to be maintained
- The amount of time staff spends transporting patients
- The amount of staff to care for patients in Obstetrics (Lindsay, 1992)
- Reduction in the amount of duplication of equipment (Mathews, 1991)



Evaluation of LDR versus LDRP

The next step is to evaluate the differences between LDRs and LDRPs based on the needs and demographics of Auburn.

The following chart shows the relevant factors to consider when deciding between LDR and LDRP rooms and how they relate to Auburn Memorial:

Factor:	Labor Delivery Recovery	Labor Delivery Recovery Postpartum
The cost to build new facilities	Lower cost- Require fewer rooms	Higher Cost- need more rooms because patients do not leave room
The annual operating budget	Higher Cost- need to clean and maintain more rooms because each patient uses two	Lower Cost- Only one room used by each patient
The number of annual births at the hospital	Better for hospitals with high birth rates	Better for hospitals with lower birth rates
The Staff	Staff are required to move more patients, also have to learn a new system	Staff are required to learn a system even more different than they are used to
The Hospital and Community Demographics	Better for larger hospitals and communities	Better for smaller hospitals and communities

This chart demonstrates that based on a variety of factors, the LDRP design of room is overall better suited for the Auburn Memorial Hospital.

Design Recommendations

Based on the literature, I recommend utilizing the **Labor, Delivery, Recovery and Postpartum (LDRP)** design for this hospital.

Although there are disadvantages to this selection, the advantages outweigh them, and in the long run, the hospital will be better suited to keep up with the changes in the medical field



http://medicalcenter.osu.edu/SiteCollectionImages/images/maternity/big_suite.JPG

Stakeholder's Views on Change: Hospital Administrators



<http://www.bized.co.uk/images/execs.jpg>

Hospital Administrators feel that if a patient has a good experience with their birthing experience, they will be likely to come back to the hospital for other medical needs. Therefore, if Auburn creates more homey, welcoming birthing rooms that make the experience more family oriented and less like a medical treatment it is likely that the family will continue to come back to that hospital for other necessary medical procedures, according to Perry (1989). The LDRP rooms also have a lower operating cost, which appeals to the hospital administration as well.

Stakeholder's Views on Change: Healthcare Providers



Doctors: are resistant to the change because they feel that LDRPs create inconveniences for them during the delivery. This can create an environment where physicians do not want to work. This is because they are often trained to view pregnancy and delivery as an illness to be treated (Mathews, 1991). Doctors have also seen that new mothers are much calmer during labor and delivery as well, which is a benefit to all healthcare providers.

Nurses: Nurses are trained to function in the traditional multi-room birthing design. Any change will likely be met with resistance. The transition to LDRP is even harder than the LDR transition because it is even more different than the traditional design. (Mathews, 1992). Similar to the doctors, nurses may resist the change, however, this design allows nurses to develop more of a relationship with the patients they are working with, because they work with them throughout their stay, which allows them to make connections with new mothers and provide better care.



Stakeholder's Views on Change: Patients and Family

“Since older, well-educated parents have waited longer to have families, they tend to place great value on the childbearing experience and will shop for the facilities and programs that provide what they want.”

- Lindsay, 1992

Women coming to Auburn Memorial Hospital do not see themselves as being ill, rather they are coming to welcome the expansion of their family. Most of these women are likely to also be very nervous and coming into a very sterile feeling typical hospital room is not reassuring to them or their loved ones. A larger, less hospital-like room where they can stay throughout their time in the hospital allows the mother to settle into a room once she arrives and is less likely to feel like a patient if she is not being sent from room to room for access to equipment. The mother is also more likely to be calmer during labor and delivery.

Because this is a family event, the LDRP rooms provide enough room for the family to be present for the birth and to visit with the mother and baby following the birth. These rooms allow the birth to become a family event, which is appealing to both new mother and her family.



Advantages of LDRP

Saves Time: Changing the design so that staff and equipment are brought to the patient instead of bringing the patient to different staff and equipment saves time.

Less Expensive: The operating costs are less for LDRP rooms than for LDR or traditional units because there are fewer nurses required to staff units with these types of rooms and because there are fewer rooms to clean for each patient.

Safer for Patients: Each time a patient is transported, there is some risk, therefore it is safer for a patient to not be moved. It is also better for the baby to be with the mother in the LDRP instead of a nursery.

More Family Oriented: These rooms better accommodate the mother's family during both labor and after the birth because of the larger size and design.

More likely to keep up with changing healthcare: As the average length of stay becomes shorter for new mothers, there will be less of a need for postpartum spaces, therefore LDRP rooms will likely become the norm because there will be little use in moving a patient to a new recovery room for only a few hours. (Lindsay, 1992).

“if a hospital does not move a patient, it will achieve savings in transfer time, linen, housekeeping and ancillary support services”

-Lindsay, 1992



Room design benefits for Mother and Infant

The following chart demonstrates the benefits of the LDRP rooms for the mother and baby

Who:	Physical	Emotional
Mother	<ul style="list-style-type: none">-Is Safer-More efficient access to equipment	<ul style="list-style-type: none">-Has more dignity during stay-Is more educated about caring for baby-Is more comfortable-Is calmer during labor and delivery-Has more choice-An overall better experience-Able to spend more time with family
Baby	<ul style="list-style-type: none">-Care more related to state-Less crying-More quiet sleep than in a nursery	<ul style="list-style-type: none">-More contact with care giver-Care more related to state-Less indeterminate



Negative Ramifications of Design

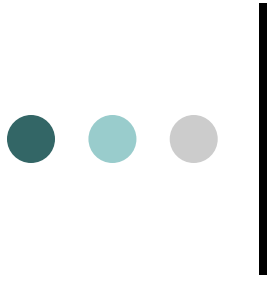
Staff Issues with change: There have been many reports that both nursing staff and Doctors have been resistant to the change to this alternative Obstetrics unit design. Hospitals have lost staff after the change to an alternative design.

- Not all hospitals have seen this as a negative occurrence as hospitals have sometimes tolerated staff insensitivity previously, and this change removes those people and replaces them with staff more “attuned to their patients concerns” (Lindsay, 1992)
- Surveys conducted before the change can also help evaluate staffs’ view of LRDP rooms
- Changes in how the rooms function, such as, having to change the bed in the room instead of changing the room itself can seem like more work for the staff, however training can help teach staff how to use the room design and how to make these changes seem less daunting as well as see the benefits to them with the new design.

Costs: There are much higher initial costs associated with building a LRDP unit for a obstetrics unit, however, there are lower costs associated with the operation of that unit. Not transporting patients saves staff time and there are lower maintenance costs because there are fewer rooms to maintain. Some places have also found that couple’s are willing to pay more for a more patient-centered experience with a LRDP room.

“hospitals have found in many communities that couples are willing to pay a surcharge to have a ‘catered experience’ to commemorate a very special moment in their lives.”

- Lindsay, 1992



Room Design Solution

Room Requirements:

The room must be designed to accommodate the following activities:

- Examination and Preparation
- Labor
- Delivery
- Rest and sleep
- Family Visiting
- Dining
- Waiting
- Infant Care

-Malkin, 1992



<http://www.cedarparkregional.com/About/PublishingImages/labordelivery.jpg>

Design Layout Recommendations:

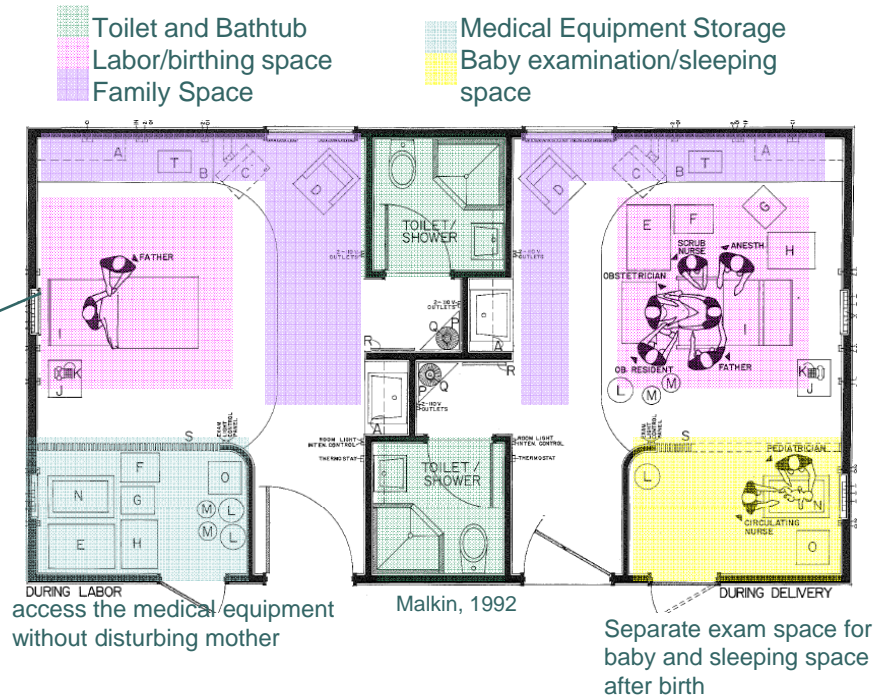
To accommodate all the activities, the design of the LDRP rooms should include the following elements:



- Room should be large enough to accommodate the mother's family along with the doctor and nursing staff
- There must be space to hold the medical equipment when it is not needed
- There must be space for mother's belongings to accommodate her throughout her stay
- There should be space for the baby following the birth
- Space for evaluating newborn should be away from mother to prevent crowding (Malkin, 1992)
- Walls should include sound-deadening materials to prevent noise transfer between rooms
- Signage should be clear and each room should be easily identifiable

Design Recommendations Room Layout

This is an example of the room layout for an LDRP. This diagram shows how the room is used both during labor and the birth. This room is larger than a typical patients room, which allows for a more family-centered experience. This space is also flexible which allows the space to accommodate each stage of the birth process.



<http://www.acadianmedicalcenter.com/piclib/202.JPG>

Design Recommendations for Design of Room



The room layout and size is important to the mother and family, however the design and décor of the LDRP is also very important to provide a calming and relaxing environment for the mother during labor and delivery. The room must also be designed to accommodate the mother's family that is present for the birth.

The overall look of the room is important also because the mother will be in the room for her entire stay. Therefore the look will have a strong impact on how she views the hospital.

Design Element Recommendations: Décor



- Should be designed using soft colors
- Use subtle wall coverings
- Indirect, full spectrum lighting that is also varied so that it can be adjusted, such as wall sconces, as well as indirect overhead lighting, surgical lighting for births can be stored in a closet or recessed in ceiling
- Medical Gasses should be disguised in headboard
- Art should be relevant to babies

Malkin, 1992 and Tetlow 1992

Design Element Recommendations: Furniture

The design of a LDRP room should include the following furniture elements:

- Equipment should be located at eye level for nurses and doctors
- Seating for family members
- Armoire for patient belongings
- A mirror that can be positioned to allow mother to see the birth



- Television and DVD player
- Built in cabinets for storage of medical supplies
- Items for birth process (birthing ball, calming music)
- Table

Additional Recommendations:

Caesarean Section:

Although Auburn does not accommodate high-risk patients, there are still new mothers who enter the hospital for caesarean section delivery. These mothers will still need to be transferred to an operating room for surgery, however they could be brought back to an LDRP room for recover so they would also be able to enjoy a larger room for their recovery from surgery.



Neonatal Units:

In the case that a baby is not healthy enough to be with the mother in the LDRP a Neonatal Intensive Care Unit is necessary. This room should be designed to reduce noise and to avoid overhead lighting to reduce overstimulation to babies. The room should be designed using calming colors and wood trim can help offset the look of the medical equipment in the room. (Malkin, 1992)



Conclusion:

Overall, the change to the LDRP design will ultimately benefit Auburn Memorial Hospital. Although not all stakeholders will be immediately happy with the changes recommended, the overall benefits of this design will help improve the obstetrics unit for all users of the space and the stakeholders. Most of all, the space will create a welcoming environment for the new mothers, which will help them and their families enjoy the new addition to their family.





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