Obstetrics Unit Labor and Delivery Design:

LDRR or LDRP?
When designing an obstetrics unit, a hospital often narrows its options to two distinct types:

- **LDR: Labor, Delivery, and Recovery**—Patients are moved from the LDR room into a separate postpartum room following birth.
- **LDRP: Labor, Delivery, Recovery, and Postpartum**—Patients spend their entire hospital stay in a single room.

While each unit type has positive features, neither has been shown to produce better clinical outcomes, provide a more enhanced experience, or be safer for patients. This makes determining which unit to choose difficult for hospitals—and emphasizes the importance of each facility making an informed decision based on desired care model and cost per case. The purpose of this article is to outline four key considerations for facilities and obstetrics unit leadership during this decision-making process.
1. Throughput and Unit Sizing Considerations

While selecting an obstetrics unit design is primarily about patient care, it is also a real estate decision. Unless the facility is completely de novo, the dimensions and layout of the available space might be better suited to one model versus the other. Table 1 summarizes these considerations.

**Table 1: Throughput and Unit Sizing Considerations**

<table>
<thead>
<tr>
<th>Consideration</th>
<th>LDR Model</th>
<th>LDRP Model</th>
<th>Conclusion</th>
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<tbody>
<tr>
<td>Individual Room Size</td>
<td>- LDR rooms are sized to accommodate the mother and her partner during natural labor, including the use of labor aids. Some larger units have in-suite birthing tubs.</td>
<td>LDRP rooms are at least as large as LDR rooms, and some units are even bigger to accommodate labor aids and family space. Birthing tubs are more common in LDRP rooms. Typically, these rooms are single purpose and difficult to convert.</td>
<td>LDRP rooms often occupy a larger footprint than LDR rooms and are harder to repurpose for needs the hospital may have related to addressing capacity concerns, as well as to utilize as nonmaternity rooms.</td>
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<td>Throughput and Planning Factors</td>
<td>- The use of separate postpartum rooms allows an LDR unit to be designed with fewer LDR rooms than an LDRP unit accommodating the same number of births.</td>
<td>- A lack of postpartum rooms limits flexibility in this care model, as LDRP rooms are single purpose.</td>
<td>When designed for the same number of births, an LDRP unit will require more birthing units than an LDR model.</td>
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<td>Total Unit Square Footage</td>
<td>The additional square footage of separate postpartum rooms is offset by fewer LDR rooms than an equivalent LDRP unit.</td>
<td>An LDRP unit is larger and completely dedicated to LDRP rooms.</td>
<td>The square footage of both types of units is nearly the same.</td>
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<td>Unit Footprint</td>
<td>- LDR rooms are not required to have an exterior window, potentially reducing the footprint required.</td>
<td>Each LDRP room is required to have an exterior window since the total length of stay in the room is expected to exceed 24 hours.</td>
<td>LDR units provide facility planners with more opportunities to design patient care areas.</td>
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### 2. Patient Experience Considerations

The patient experience can vary considerably between an LDR and LDRP model, particularly during the postpartum part of the hospital stay. Table 2 outlines these considerations.

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<td>Labor Experience</td>
<td>LDR rooms offer labor aids, water therapy, and a comfortable environment for labor. Although not required, most units are designed with natural daylight.</td>
<td>LDRP rooms offer labor aids, water therapy, and natural daylight.</td>
<td>Both units can be designed to offer a similar experience for women in labor.</td>
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<td>Noise</td>
<td>Postpartum rooms are located separately from labor rooms, making the experience quieter.</td>
<td>Since mothers in labor can be colocated with mothers in the postpartum part of their stay, an LDRP unit might be louder.</td>
<td>LDRP unit design should include strategies for noise reduction.</td>
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<td>Space for Partners and Families</td>
<td>• Most LDR rooms are designed to accommodate the mother's partner and the baby after birth. &lt;br&gt; • Postpartum rooms are also typically designed to accommodate the mother's partner and the baby.</td>
<td>LDRP rooms are designed to accommodate the mother's partner and the baby for the entire stay.</td>
<td>Both units can be designed for families and should be a certain size to ensure there is adequate room for the mother's partner, family members, and the baby.</td>
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<td>Rooming</td>
<td>• This model requires that patients change rooms, often relatively quickly after delivery. &lt;br&gt; • This move usually requires a wheelchair and may involve transporting a new mother and her baby through public spaces to different units or floors for postpartum care.</td>
<td>The patient and family are in the same space for the entire stay—from labor to recovery.</td>
<td>Depending on the location of the postpartum unit relative to the LDR, the LDRP can be more desirable because it avoids the need to move a patient during recovery.</td>
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</table>

**Table 2:** Patient Experience Considerations
3. Nursing Staff Considerations

Nursing staff in most facilities have a strong preference for one model versus the other. In addition, staff satisfaction changes in direct relation to leadership’s ability to create buy-in for a new unit design and operating system. Because reimbursement does not vary between the two models, facilities should understand how the variation in staffing could impact the bottom line. Table 3 provides an overview of the nursing staff considerations for each type of unit.

**Table 3: Nursing Staff Considerations**

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| Nursing Staff Training | Nurses may be trained in either labor or postpartum care, which increases specialization and conforms to more traditional nursing models—but limits the ability of obstetric nurses to cross-cover units. | • Nurses are cross-trained in both labor and postpartum care so they not only look after patients during their entire hospital stay but can also build relationships with them.  
• It may be more costly to cross-train staff for labor and postpartum care. | The staffing structure and training culture will determine whether cross-training is a worthwhile investment for the organization. |
| Nursing Care Preference| Many nurses who advocate for an LDR model prefer caring for mothers in either the labor or postpartum stage and feel that the needs and challenges are unique in each stage. | Nurses who advocate for an LDRP model often cite the benefits of continuity of care and the professional satisfaction of having additional expertise. | Since neither model is clearly better than the other, leadership should take nursing preferences into account when considering a change in unit type. |
4. Market Considerations

As a hospital contemplates building a new obstetrics unit, taking market dynamics into account will help the organization understand the needs of the community and lead to a better overall strategy. Offering an alternative experience to what competitors are providing will create a potential advantage, but only if that differentiation aligns with the preferences of the community. For example, offering a robust LDRP model with birthing tubs in each unit would be advantageous to a hospital in a region where patient preference is skewing toward more natural births and where birthing centers are gaining prominence. Undertaking the same strategy in a community where these preferences are not as strong would mean that the hospital expended additional capital for larger rooms without a market justification. In addition, obstetric planning is both a short-term and long-term process: facilities must be designed to handle changes in birth rates, patient demand, and preferences.

Planning for Next Steps

In making a final selection, the hospital should undertake a robust planning process, which might include the following:

- Conducting a market gap analysis
- Surveying the preferences of community providers
- Conducting a survey of the nursing staff
- Assessing the existing facility footprint and the patient flow attributes and limitations of each model
- Performing a scenario analysis to project volumes and revenue under each model
- Performing a final cost-benefit analysis
- Selecting the desired model
- Developing an internal marketing strategy to gain buy-in for the decision
- Developing marketing materials to highlight strengths of the program
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