Standardizing Space and Layout (LDR Complexes)

-MRS. LAKPA DOMA SHERPA
TUTOR,
DEPARTMENT OF NURSING,
ALIAH UNIVERSITY,
PARK CIRCUS CAMPUS

INTRODUCTION

- Labour rooms in every delivery point should be standardized for delivering high-quality services during childbirth. This presentation explains how to upgrade the labour rooms for standardization, i.e. Constructing new labour rooms/delivery units as per need or reorganizing the existing labour rooms.

The guidelines here have been designed to create new labour rooms or upgrade existing labour rooms using following methodology in different senarios;

- Senario 1 ; When the space and resources permit construction of new units; Labour room should be newly constructed to meet specifications as per the model labour room guidelines.

- Senario 2; When the space and resources do not permit construction of new units, but some additional space is available for the labour room in the premises: in such cases, labour room should be expanded/shifted to larger space to meet specifications as per these guidelines.

- Scenario 3: When new construction is not possible and no additional space is available for labour rooms: Every effort should be made to ensure that labour room space is re-organized as per these guidelines. In all cases, the facilities should adhere to these guidelines for re-organization of equipment, consumables, human resources, practices and protocols.

The guidelines for up-gradation of labour rooms focus on five important areas as given below:

- Space and layout
- Equipment and accessories
- Consumables
- Human resources
- Practices and protocols

Space and Layout

- Hire short term services of a registered architect in the district to assess the existing space of all delivery points and to draw specific plans for up-gradation of the labour rooms.
- Identify alternate/additional space for re-organizing/shifting the labour room.
- If major renovations need to be carried out, shift the labour room to an appropriate alternate space.
- Develop facility-specific plans for improving equipment, commodities, human resource, etc., simultaneously.
- Clearly lay down the SOPs for labour room practices and technical protocols including infection prevention based upon these guidelines. Designate a technical officer for each facility who will take daily rounds to monitor adherence to these protocols

Number of Labour Tables/beds

- The most important factor for defining the space and layout of the labour room is the number of labour beds in the facility. In this document, two types of labour rooms are being recommended—labour rooms with labour-delivery-recovery (LDR) room concept (a pregnant woman spends the duration of labour, delivery, and 4 hours postpartum in the same bed) and conventional labour rooms (a pregnant woman is admitted to labour room only at or near full dilation of cervix and is shifted to the postpartum ward after 2 hours).

- LDR concept is more client-centric and ensures better care, privacy, and comfort to the pregnant woman during labour process.
- It also obviates the need for having additional waiting area or labour area and associated services.
- It is being recommended that, if there is adequate space available without any significant resource constraints, all the DHs, AHs, SDHs, and FRU CHCs, and any facility with more than 500 deliveries in a month should be upgraded to have labour rooms as per the LDR concept.
- Even Non-FRU CHCs with delivery load more than 100 deliveries per month can be considered for up gradation to have LDR units if space and resource availability permits.
- For the rest of the facilities, and in DH/AH/SDH/FRU CHC where space for LDR rooms is not available, the labour rooms should be upgraded using the conventional labour room concept.

The following table gives the recommended number of labour tables per health facility as per delivery load:

Criteria	Number of labour table(s)
< 20 deliveries/month	1
20-99 deliveries/month	2
100-199 deliveries/month	4*
200-499 deliveries/month	6*
>500 deliveries/month	To be calculated as per the given formula for LDR or Conventional Labour Room concept as applicable
FRU CHC/AH/SDH/DH	To be calculated as per the given formula for LDR or Conventional Labour Room concept as applicable

Formula to calculate the number of beds for LDR units: No. of LDR beds = {(Projected LDR events in a year)*(Average length of stay)}/ {(365)* (Occupancy rate)}

- Step 1: Determine the number of LDR events in a year, i.e. the number of vaginal births per annum (projected number of births per annum plus the projected number of unplanned C-section births).
- Step 2: Take 0.67 days or 16 hours (12 hours for labour and delivery, 4 hours recovery, including the room clean-up) as the average length of stay.
- Step 3: 75% or 0.75 is the recommended occupancy rate for health facilities.
- Step 4: Insert the numbers attained in the above steps, in the formula, and calculate the number of LDR beds required.

For example, LDR bed requirement for a hospital with 7200 projected deliveries (6120 normal deliveries 1080 C-sections out of which 600 are unplanned C-sections) can be calculated as follows:

- Number of LDR events in a year: (6120+600) = 6720
- Number of LDR beds required = (6720* 0.67)/ (365*0.75) = 16 beds

Formula for calculating number of LDR units:

As per specifications given in the next section, each LDR unit will have 4 LDR beds. Thus the formula for calculation number of LDR units will be as follows:

Number of LDR units = (Number of LDR beds/4) rounded off to the next higher integer

Example: In the above example, the number of LDR beds was 16. Hence, in this facility, the number of LDR units will be = (16/4) rounded off to next higher integer = 4.

Formula to calculate the number of labour beds/tables for conventional labour rooms No. of labour beds = {(Projected labour events in a year)*(Average length of stay)}/ {(365)*(Occupancy rate)

- Step 1: Determine the number of labour and delivery events in a year, i.e. the number of vaginal births per annum (projected number of births per annum plus the projected number of unplanned C-section births).
- Step 2: Take 0.33 days or 8 hours (4 hours for pre-delivery preparations and delivery, and 4 hours for recovery and labour room cleaning) as the average length of stay.
- Step 3: 75% or 0.75 is the recommended occupancy rate for health facilities.
- Step 4: Insert the numbers attained in the above steps, in the formula, and calculate the number of labour beds required.

For example, labour bed requirement for a hospital with 7200 projected deliveries (6120 normal deliveries, 1080 C-sections out of which 600 were unplanned C-sections) can be calculated as follows:

- Number of labour events in a year: (6120+600) = 6720
- Number of labour beds required = (6720* 0.33)/ (365*0.75) = 8 labour beds

Each labour bed should be in a bed form with the following specifications:

- Adjustable side rails.
- Facilities for Trendelenburg/reverse positions.
- Facilities for height adjustment (hydraulic pump preferably).
- Stainless steel IV rod.
- Mobility: swiveling castor wheels & brakes.
- Mattress should be in three parts and seamless in each part with a thin cushioning at the joints, detachable at perineal end. It should be washable and water proof with extra set and
- disposable draw sheet.
- Steel basins attachments.
- Calf support, hand grip, leg support.

Standardizing Space and Layout (LDR Complexes)

- Having adequate space as per protocols for ensuring provision of recommended services, is one of the most important aspects of up-gradation of labour rooms. For this purpose, wherever needed, labour rooms should be newly constructed. Following specifications should be adhered to while constructing new labour rooms/labour room complexes:

LDR Complexes in CHCs, AHs, SDHs, and DHs

- It is being recommended that all the DH and FRU CHC/AH/SDH should be upgraded to have labour rooms as per the LDR concept. Even Non-FRU CHCs with delivery load more than 100 deliveries per month can be upgraded to have LDR units. Rest of the facilities should have conventional labour rooms. This means creating delivery units where a pregnant woman stays from the time of active labour until 4 hours after delivery
- Specifications for LDR based labour room complexes in FRU CHC/AH/SDH/DH area are being described in this section. Next section will cover description of conventional labour rooms for Non-FRU CHCs. The LDR based labour room complex will have two main components—Core LDR unit and support areas. Each institution will have varying number of LDR units based on the delivery load and relevantly sized support area.

Standard LDR unit

Each standard LDR unit will have the following components—4 labour areas with one labour table each, one nursing station, one newborn care area, two toilets and two washing areas. A suggested layout for a standard LDR unit is given as annexure I. The specifications for the components of the LDR unit are as follows:

Labour areas

Each LDR unit should have 4 labour areas with the following specifications:

a. Each labour area should be of size 10'X 10'.

b. There should be a partition between two consecutive labour areas extending up to the ceiling. The partition should be opaque till 6.5' and can have glass (optional) for the rest of the height.

c. Each labour area should have one labour table.

d. Each labour area should have one stool for birth companion.

e. Each labour area should have adequate lighting and ventilation.

f. Each labour area should have a ceiling/wall mounted fan.

g. There should be two curtains, one from each side of the door, extending to the partition walls of the nursing station area.

Nursing Station

- Each LDR unit should have a centrally located nursing station with the following:
- a. One table of size 4'X 2'.
- b. Two plastic/wooden chairs.
- c. A storage cupboard for storing documents and supplies.
- d. A white board on the wall next to the nursing station.

Newborn Care Area (NBCA)

Each LDR unit should have one centrally located NBCA

with the following:

a. Radiant warmer.

b. Resuscitation kit with functional bag and mask.

c. Mucus extractor.

d. Pre-warmed baby receiving towels.

e. Shoulder roll.

f. Paediatric stethoscope.

g. A clock with seconds hand on the wall near the NBCA.

h. An oxygen cylinder/oxygen concentrator in the vicinity of the NBCA

Toilets

Each LDR unit should have two toilets, one at each end of the unit, with the following:

a. Size of at least 6'X 6'.

b. A western style toilet.

c. A wash basin.

d. An external window of at least 2.5'X 1.5'.

Hand washing Area

Each LDR unit should have one hand washing area with the following:

a. A steel sink of dimension 28”X18”X8”.

b. Two elbow-operated taps with 24x7 running water supply.

c. A geyser of at least 10 liter capacity.

d. Soap dispenser.

e. Hand washing protocol should be mounted on the wall above the hand washing area.

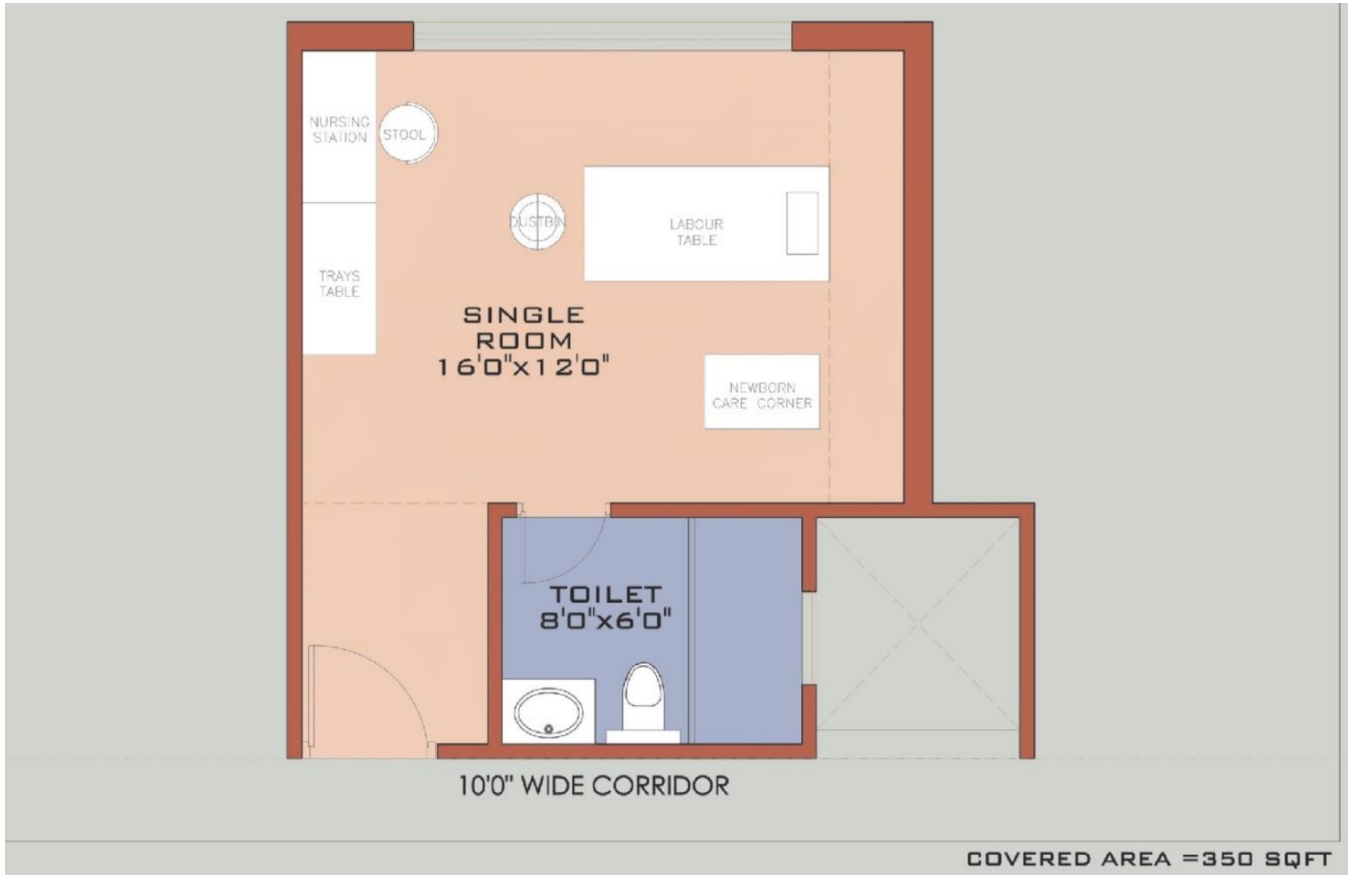
Washing area

Each LDR unit should have one washing area of size 6’2”X 6’ with the following:

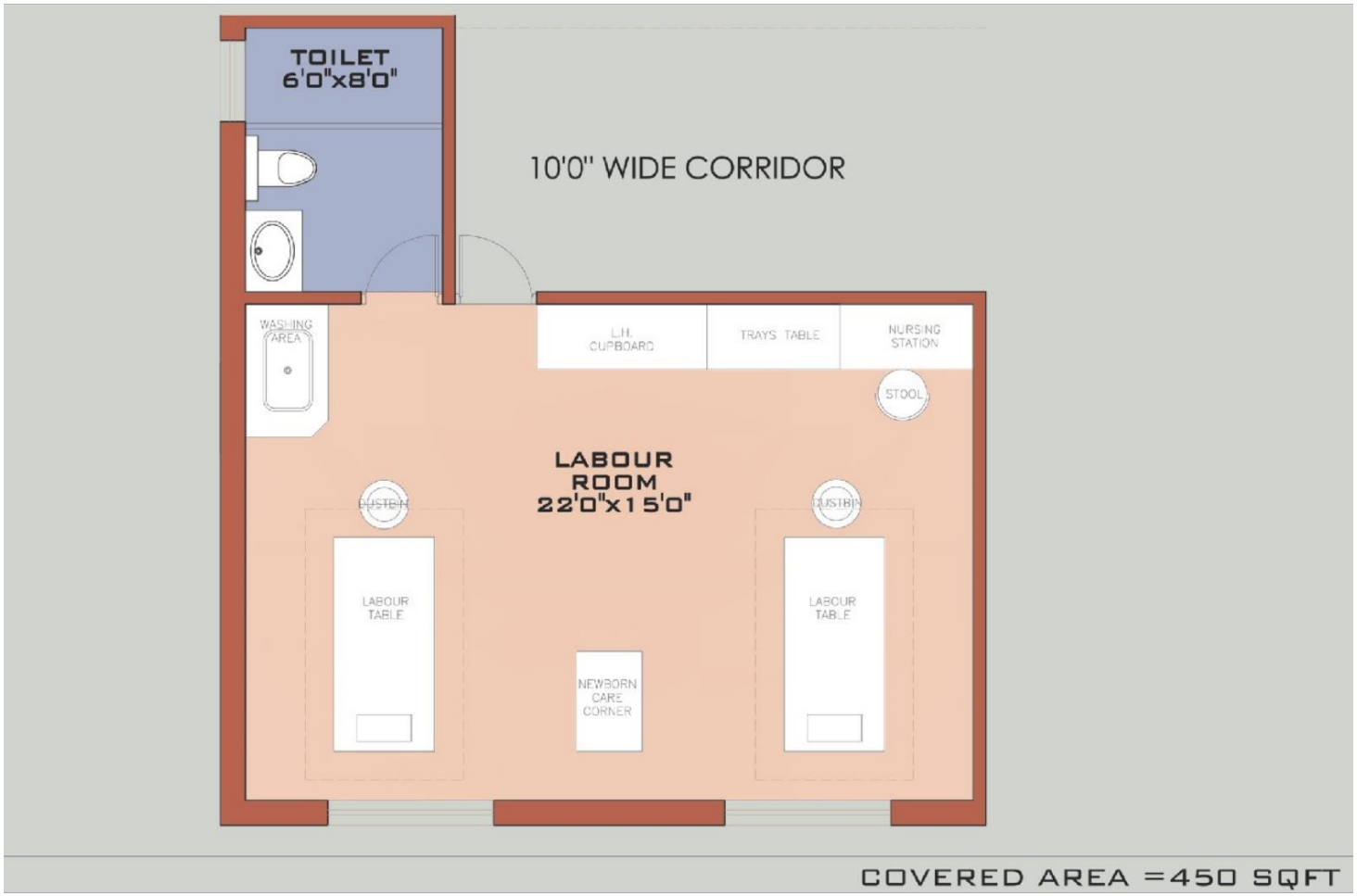
a. Two taps with running water supply.

b. One geyser of at least 10 liter capacity

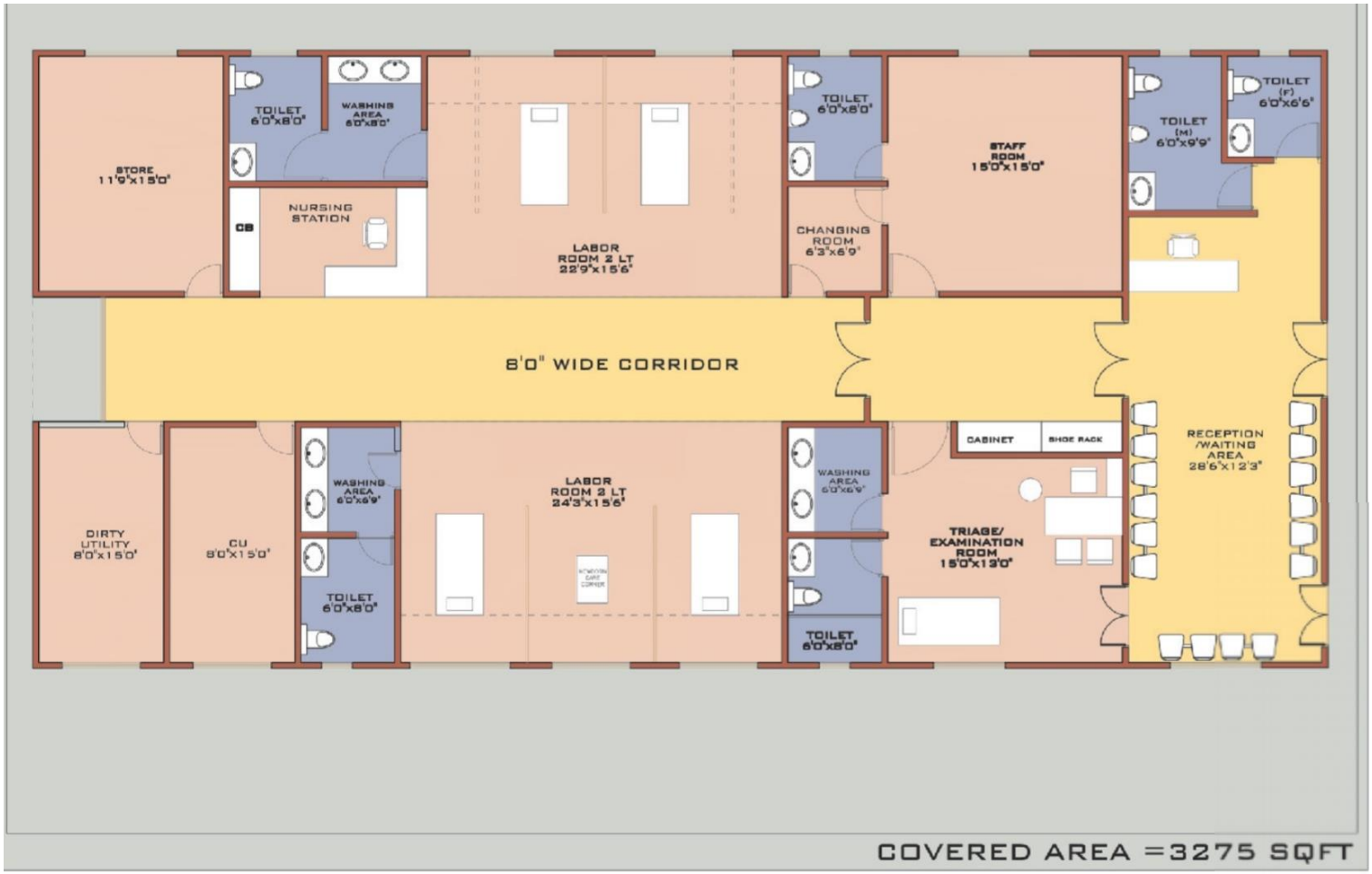
Conventional labour room complexes in sub centres & PHCs -1LT



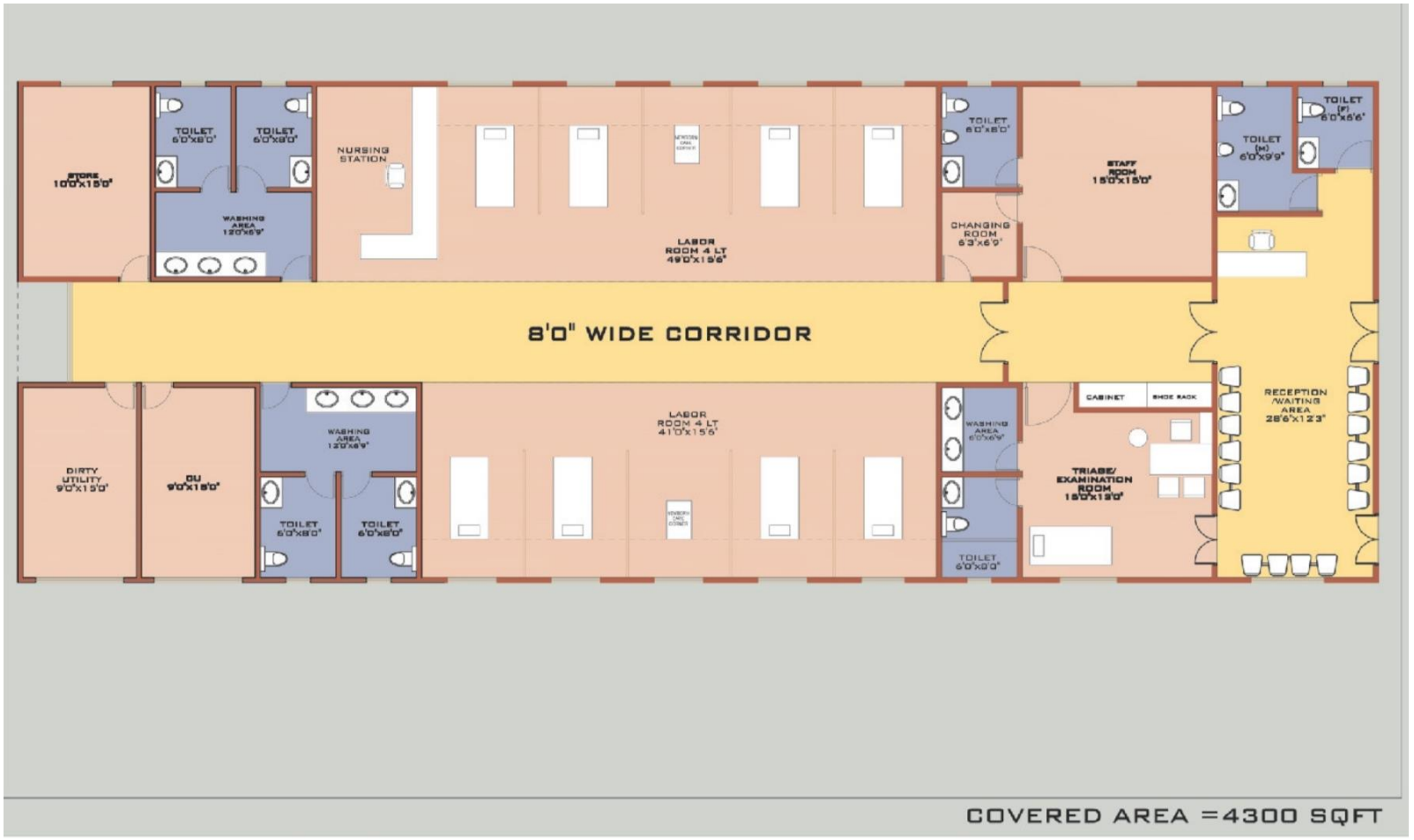
Conventional labour room complexes in Sub centres &PHCs-2LT



Conventional labour room complexes for CHCs



Conventional labour room complexes for DH



Thank you

Related sources:

- Guidelines for standardization of labour rooms at delivery points, maternal health division, ministry of health & family welfare government of India,April-2016.