Because of the emergence of new problems in the control of infections (especially staphylococcal) in newborn infants and because of new information, the Committee on Fetus and Newborn, together with representatives from the American College of Obstetricians and Gynecologists, the Children's Bureau, the Division of Hospital and Medical Facilities of the U. S. Public Health Service, the American Hospital Association, and several consultants, has prepared the following supplement to the section on Physical Facilities in Hospital Care of Newborn Infants. The principles enumerated, although based on the best current information, may need revision as more data become available. On the other hand, it should be noted that the basic techniques now recommended in Hospital Care of Newborn Infants have been altered only in detail. The established techniques for care of the newborn infant and the following principles of design should provide a sound basis for planning and designing newborn nurseries for a number of years to come.

PRINCIPLES TO BE FOLLOWED IN PLANNING A NURSERY UNIT

1. Nursing Personnel

A nursery should be planned so that one of the nursing personnel can care for 8-10 infants.* Under special circumstances one nurse might give adequate care to 12 infants. If rooming-in units are planned, one nurse should care for four mothers and their infants. Plans should include space for an additional graduate nurse per 16-20 infants for administrative, supervisory and teaching duties during at least one 8-hour period each day.

2. Space Allotment

A nursery should be planned so that each infant has a minimum of 30 square feet of floor space. This allotment should be in addition to entrance halls, nurse's station, examining rooms, etc. To prevent the spread of infection from infant to infant, it should be impossible to crowd bassinets together—this can probably best be accomplished by cubicle partitions.

Since part of the control of infection can be accomplished by having infants born on the same day cared for in the same nursery (the cohort system), hospitals averaging four or more deliveries per day ideally should plan pairs of nurseries with four, five or six bassinets per room. Each pair of such nurseries then would be under the care of one nurse. No nursery, regardless of floor space or nursing personnel, should have more than 12 infants. Special attention should be given to infants under 24 hours of age; this can most easily be done with the cohort system.

3. Observation Room

One observation bassinet should be planned for every 8 or 10 bassinets. The observation room, although separated so as to prevent cross infection between its occupants and normal newborn infants, should be placed so that there is maximum visibility by the nurse responsible and should be under the care of the regular nursery personnel. This nursery should be used for...
any infant with potential or suspected but not proved infection; when not used in this way it could be used for infants needing special care or observation or as an extra space for a normal infant. Whenever an infant in either the regular nursery or the observation room is found to have an infection, he should be immediately transferred away from the regular newborn nursery and should not be cared for by regular nursery personnel.

4. Ventilation and Air-conditioning

Since proper ventilation of each nursery separately is one essential for the control of infection, some system which provides for approximately 12 changes of air per hour should be used. Best results are obtained when the input of air, which should be fresh and uncontaminated, is in or near the ceiling and the output near the floor. An optimal system would provide for slight positive pressure in the nursery in order to reduce air-borne infection from other areas. Optimal temperature for nurseries appears to be 75° to 80°F, depending on special circumstances. In regions where environmental temperatures regularly rise above 85°F in summer months, air-conditioning is also essential for infant welfare and nurses' comfort. Breaks in technique are reduced by comfortable environmental conditions.

5. Technique

Provisions should be made for gowning and thorough hand washing in an ante-chamber, so as to minimize the possibility of spread of infection by personnel. This space might also be used for examination or treatment. In addition, a wash basin should be conveniently placed in each nursery unit and observation room so that personnel may wash their hands between the handling of infants. Splashing from the basin to the bassinets should be prevented by suitable partitions.

6. Visibility

Since maximum observation of all newborn infants is desirable, the nurse's station should be in a place which provides maximum visibility of all the infants for whom the nurse is responsible. To reduce the chance of infection to or from the nurse, she should be separated from the infants by glass walls when she is not working with them directly.

7. Lighting, etc.

Provisions should be made for adequate lighting (with detection of jaundice particularly in mind), humidity control (about 50% is recommended), easy access to nurseries, minimum risk of air contamination from other parts of the hospital, and the availability of suction and oxygen (either portable or fixed). Although it appears probable that ultraviolet light will become an important adjunct in the control of infection in newborn nurseries, it is presently too early to make specific recommendations. Persons planning nurseries should keep informed about developments in this area.

8. Floor Plans

Examples of acceptable plans for small, medium and large newborn services as well as a plan for a rooming-in service were reviewed.* Obviously the specific plans must be modified to suit local medical and nursing needs and the floor plans of existing structures. However, the general principles outlined should never be sacrificed to expediency.

9. Summary

Although these principles for the staffing and design of newborn nurseries should be followed so as to ensure maximum safety, nothing can obviate the need for trained and conscientious personnel who are in constant attendance and give careful attention to proven and accepted techniques of cleanliness. If infected persons are permitted to come into contact with infants or if faulty techniques are used, no physical

* These preliminary plans may be obtained by writing to Mr. August Hoenack, Division of Hospital and Medical Facilities, United States Public Health Service, Washington 25, D.C.
arrangement, however elaborate, will entirely prevent unfortunate accidents from occurring. All aspects of technique must be reviewed periodically and all mechanical aids such as ventilation checked frequently, if they are to provide maximum protection.

IRVING SCHULMAN, M.D., Chairman

March, 1960
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IRVING SCHULMAN

*Pediatrics* 1960;25;1083

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