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# OPEN-BAY VERSUS SINGLE-FAMILY ROOM: A DESCRIPTIVE SURVEY OF NEONATAL INTENSIVE CARE UNITS IN SPAIN

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## Background

The physical environment is a crucial factor for newborn brain development and a core measure for neuroprotective family-centered developmental care. There is a tendency in Spain to renovate the architecture of Neonatal Intensive Care Units (NICUs) to incorporate evidence into design and to allow the family presence in the units. However, to date, there is not an overall picture of the Spanish NICUs building stock.

## Aim

The purpose of this study was to describe the status of the physical environment of Spanish NICUs and its relationship with family participation.

## Methods

A descriptive, cross-sectional, multi-center study was conducted through an online survey that collected data from February to September 2023 from NICUs in all Spanish regions. The survey structure consisted of 5 sections: 1) hospital data; 2) NICU data; 3) functions and facilities; 4) family involvement; and 5) conclusions.

## Results

63 neonatal units completed the survey, giving a response rate of 81%. The age of the NICUs varied, but most were built between 1965 and 1985. Since their opening, 70% (44/63) had been fully or partially renovated, and there was an upward trend towards more renovation work in recent years (2020-2022). In terms of unit configuration, open-bay rooms were predominant and single-family rooms were a minority. Those units with single family rooms were more likely to have parental participation in rounds, safety protocols, oxygen management and nasogastric tube feeding, as well as to allow siblings to participate in kangaroo care.

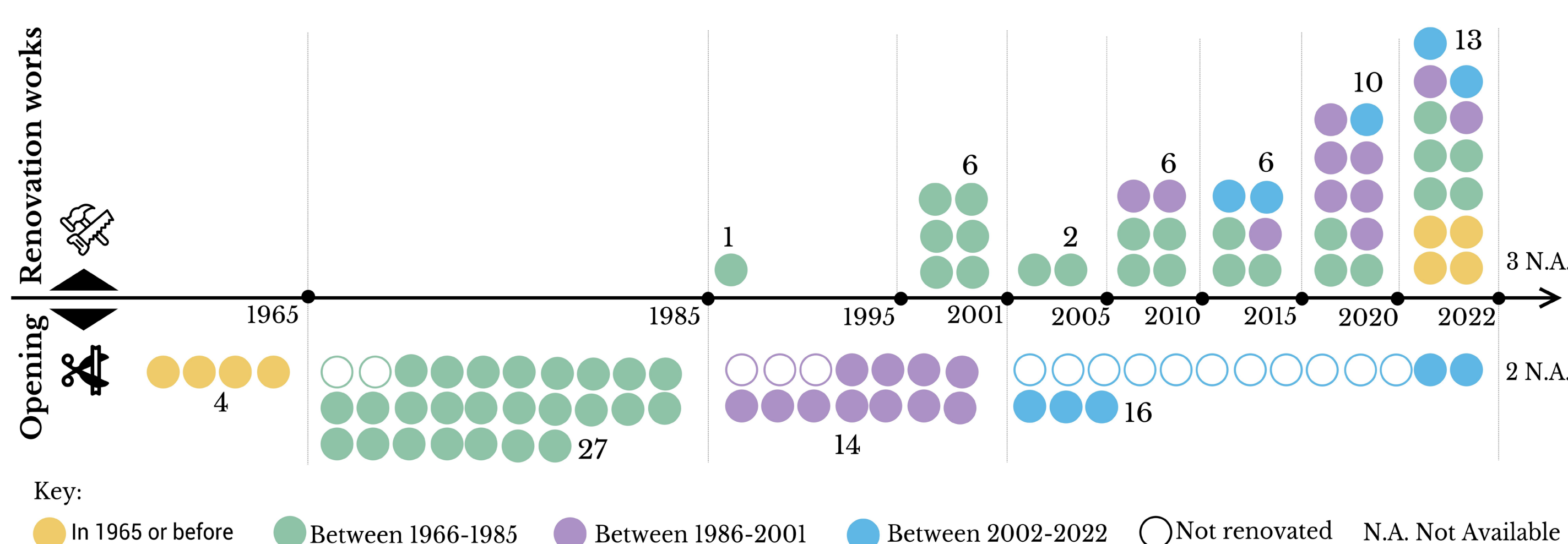


Figure 1. Cronobuilding® of Spanish level III NICUs.

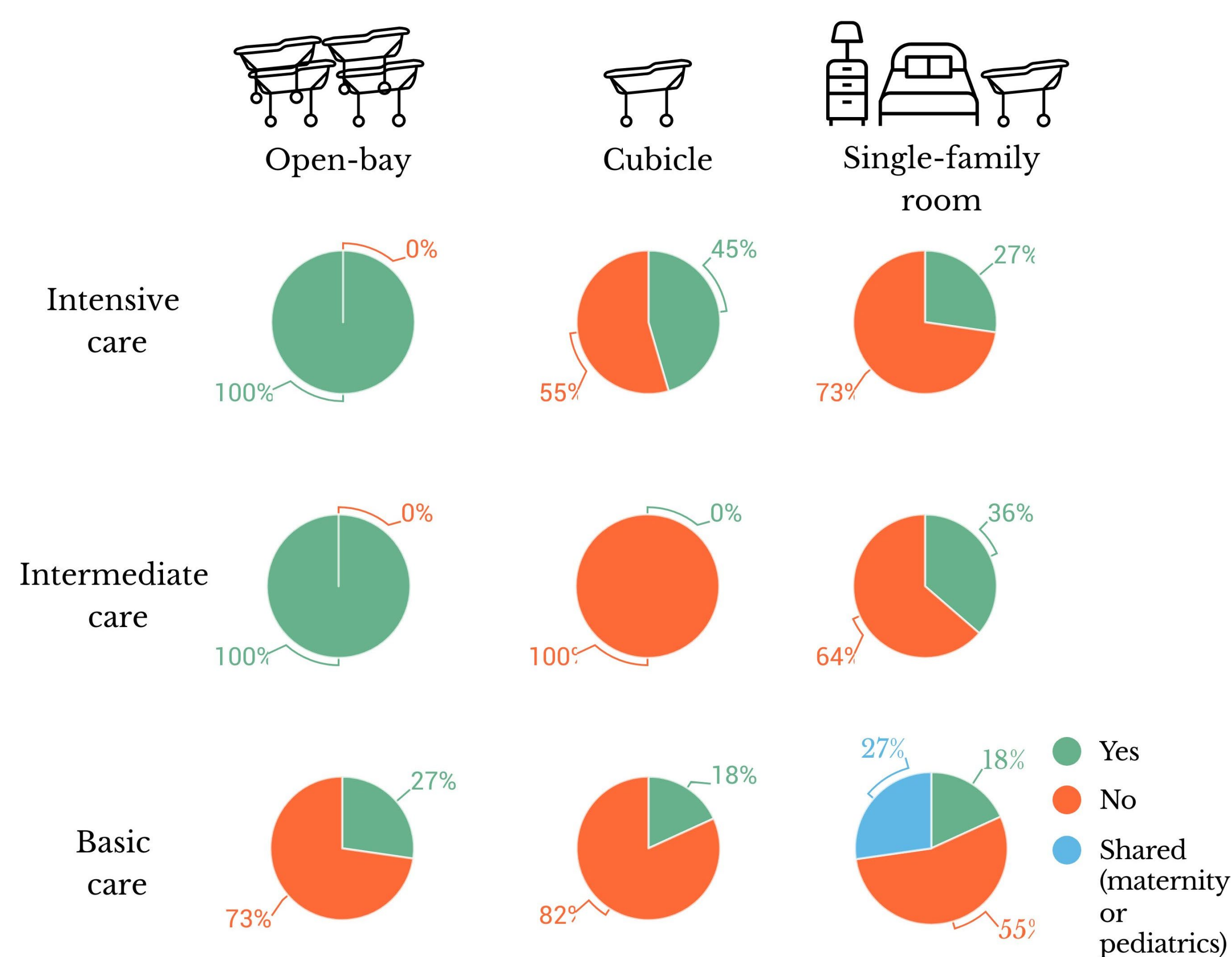


Figure 2. Room types for each level of care.

| Family participation   | Single-family room | No single-family room | p-Value |
|--|--------------------|-----------------------|---------|
| Parents may participate in daily rounds                          | 5/8 (63%)          | 8/55 (15%)            | <0.01   |
| Parents may participate in patient safety protocols              | 6/8 (75%)          | 18/55 (33%)           | 0.02    |
| Parents may participate in oxygen concentration management       | 4/8 (50%)          | 4/55 (7%)             | <0.01   |
| Parents may feed their infants through nasogastric tube          | 6/8 (75%)          | 18/55 (33%)           | 0.02    |
| Siblings may participate in kangaroo care (consented by parents) | 4/8 (50%)          | 6/55 (11%)            | <0.01   |

Table 1. Responses to parental participation and education in different areas of care.

## Conclusion

Widely variable architectural designs and policies were found in Spanish neonatal units. The presence of single-family rooms was limited and may have impacted the participation of parents in neonatal care.

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Solís-García G, Cambra-Rufino L, Piris Borregas S, Carrasco Pérez A, López Maestro M, De la Cruz Bértolo J, et al. Architectural design, facilities and family participation in neonatal units in Spain: A multicentre study. Acta Paediatr. 2024;00:1–6. <https://doi.org/10.1111/apa.17085>