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**[2178] NICU Decision-Making--The Effect of Nursery Structure on Achievement of Milestones in the NICU and Cost of Care**

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**BACKGROUND:** Several different NICU structures exist at the present time. NICUs can be classified as: neonatologist only (no NNPs or residents--Type 1); neonatologist/NNP (neonatologist and NNPs, no residents--Type 2), and academic NICUs (neonatologist, NNPs, residents--Type 3). To date, no studies have examined whether NICU organization affects common NICU milestones and outcomes.

**OBJECTIVE:** To examine the three nursery structures to determine if critical milestone decisions are deferred during weekends.

**DESIGN/METHODS:** The Paidos neonatal database (Paidos Home Healthcare Services, Deerfield, IL) was queried for all patients managed during the period of 1/1/00 - 6/1/01 within a single, large metropolitan area. Patients were classified by nursery type, and the following milestones were evaluated: day of discharge; day of enteral feed initiation; day full enteral feeding was reached; day full PO feeding was reached; the day a child moved to an open crib; and the day on which mechanical vent (MV) support was discontinued. Chi-square testing evaluated the differences between observed and expected outcomes. If decisions were independent of the day of the week, one would expect 2/7 (28.6%) of milestones to occur on the weekend.

**RESULTS:** 3,294 patients were treated during the study period. Of the nursery types, 3 were Type 1, 5 were Type 2, and 9 were Type 3 NICUs. Type 3 NICUs admissions were more mature than those to Type 2 or Type 1 NICUs (GA = 36.1 vs. 35.2 vs. 34.9 wks,  $p < .001$ ; BW = 2692 vs. 2582 vs. 2463 gms,  $p < .001$ ). LOS, however, was no different between the three; 15.3-16.5 days,  $p = \text{NS}$ ). With respect to milestones, Type 3 NICUs had a decreased rate of weekend discharges (21.5%,  $p < .001$ ), initiation of feeds (26.0%,  $p < .01$ ), and movement to an open crib (26.3%,  $p < .03$ ) than expected. Cessation of MV nearly reached significance (25.3%,  $p = .07$ ). Type 2 NICUs had a delay in discharge day (23.6% weekend,  $p < .001$ ) and time to reach full vol. feeds (26.1%,  $p < .04$ ). Type 1 NICUs, however, demonstrated no differences in all 6 variables, with milestones all randomly distributed.

**CONCLUSIONS:** Neonatologist-only nurseries are the most efficient at achieving common neonatal milestones, with continued weekend progress. Although patients were smaller, they had similar LOS to academic institutions. There is a definable additional cost of care in academic teaching NICUs.

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