

What Happens After Early Discharge of Newborns?

Kotagal UR, Atherton HD, Eshett R, Schoettker PJ, Perlstein PH. Safety of early discharge for Medicaid newborns. *JAMA* 1999;282:1150-6.

Study Overview

Objective. To determine the impact of a short postnatal length of stay (less than 1 day after vaginal delivery, less than 2 days after cesarean birth) on rehospitalization rates in the immediate postdischarge period for neonates insured by Medicaid.

Design. Retrospective, population-based cohort study.

Setting and participants. All ($n = 102,678$) healthy, full-term neonates (diagnosis-related group 391, gestational age > 37 weeks, and birth weight > 2 kg), born in Ohio to mothers receiving Medicaid health insurance for at least 30 days after birth between 1 July 1991 and 15 June 1995. Data were obtained from Ohio Medicaid claims data linked to vital statistics data.

Main outcome measures. Rehospitalization rates and diagnoses within 7 and 14 days of discharge, postdischarge use of health care resources (including emergency department, primary care, and home health visits), and intrastate variation in length of hospital stay and rehospitalization.

Main results. The proportion of neonates who were discharged following a short stay increased by 185%, from 21% in 1991 to 60% in 1995 ($P < 0.001$), and the mean (SD) length of stay decreased by 27% over these 4 years, from 2.2 (1.0) days in 1991 to 1.6 (0.9) days ($P < 0.001$) in 1995. The increase was statistically significant for both vaginal and cesarean deliveries ($P < 0.001$).

Rates of rehospitalization within 7 and 14 days of discharge decreased by 23%, from 1.3% to 1% ($P = 0.01$), and by 19%, from 2.1% to 1.7% ($P = 0.03$), respectively. These rehospitalization rates remained steady over the study period. Most rehospitalizations were due to jaundice (42% of rehospitalizations within 7 days and 26% of rehospitalizations within 14 days); other common diagnoses were respiratory problems, fever, infections, digestive disorders, bronchiolitis, dehydration, and breastfeeding problems. Only readmissions for bronchiolitis increased significantly over the study period ($P = 0.009$).

The proportion of neonates who visited a primary care physician within 14 days of birth increased by 117% ($P = 0.001$), from 22% in 1991 to 47% in 1995. The proportion of newborns who visited the emergency department within 14 days of dis-

charge increased from 4.9% in 1991 to 6.6% in 1993. This statistically significant ($P = 0.001$) increase persisted through the end of the study. These trends in rehospitalization, primary care visits, and emergency department visits were observed in and did not vary significantly across the state's 6 regions. The proportion of newborns with a home health visit was very low but increased from 0.06% in 1991 to 1.23% in 1995 ($P = 0.001$).

Factors significantly associated with greater rate of rehospitalization within both 7 and 14 days of discharge were white race, shorter gestation, primiparity, earlier year of birth, lower 5-minute Apgar score, vaginal delivery, married mother, and region of the state.

Conclusion

Reductions in hospital length of stay for full-term newborns insured by Medicaid in Ohio were not associated with increased rehospitalization rates in the immediate postnatal period. There were statistically significant increases in primary care and emergency department visits.

Commentary

The decrease in readmissions over the study period is noteworthy, but whether it reflects a positive trend in health care that will benefit newborns remains unclear. The decrease may be a result of better postdischarge care coordination, as suggested by the increase in primary care visits. However, it is possible that the pressure to shorten length of stay also led to pressure to reduce readmissions.

Applications for Clinical Practice

In the past decade, policies to reduce the length of stay for healthy newborns were implemented before the possible effects of early discharge on outcomes or health care use could be comprehensively evaluated [1]. The current study is the largest yet to address the issue of health care use after early discharge in a Medicare population. However, the critical question of whether neonates' clinical outcomes have been compromised by short-stay policies needs to be addressed in future studies. Meanwhile, increased attention should continue to be given to coordination of postdischarge care.

References

1. Kotagal UR, Tsang RC. Impact of early discharge on newborns. *J Pediatr Gastroenterol Nutr* 1996;22:402-4.