



## Summary

**Background:** Preterm birth is associated with significant and often life-long developmental, emotional and financial burdens. The incidence of preterm births is 7.1% in Switzerland. 1% are born before 32 weeks of gestation. Preterm infants face several challenges that continue late into life, including developmental delays, social, and behavioural problems and poor academic performance. Parents also suffer considerable emotional and physical stress which in turn can have a negative impact on the child's development. In Switzerland, during the transition from hospital to home, there are not many interventions intended to improve mental health outcomes in parents or to promote positive parenting to improve developmental outcomes for the preterm infant. There are also few interventions to reduce associated health care costs. In order to improve parent and preterm infant outcomes, reduce hospital stay in the neonatal intensive care unit (NICU), lower readmission rates, and avoid unnecessary use of primary care resources a unique, new model of transitional care was developed. The new '**Transition to Home**' (TtH) **model** makes use of the well-tested, successful methods of post-discharge care developed for elderly patients (Naylor's 'Transitional Care Model'), and the German social-medical aftercare program for families with chronically ill children ('Bunter Kreis').

**Aims:** Our study will evaluate the organizational and financial **feasibility and cost effectiveness** of the TtH model for infants born preterm by measuring the impact of an Advanced Practice Nurse (APN)-led intervention at the Children's University Hospital Bern. The intervention focuses on improving parental mental health and well-being, on infant growth and development, and on lowering overall costs. We will gather data and then adapt and test the model within a longitudinal interventional comparative effectiveness study, and prepare it for other Cantons in Switzerland to implement.

**Methods:** This pilot study will evaluate our TtH model with qualitative (focus groups and interviews) and quantitative (randomized controlled trial, surveys, documentation, cost-benefit and cost effectiveness) methods. We will randomly allocate 36 families of preterm children born during the 6-month recruitment phase to either the standard of care or the APN-led intervention. We will collect and compare data for duration of hospital stay, readmission, parental mental health, infant development, parent-child interaction, contact with healthcare professionals, study burden and costs for health-care resources.

**Expected value of the research:** We hope this new transitional care model will improve developmental outcomes for preterm infants and the mental health of their parents, promote inter-professional collaboration among healthcare professionals, and consolidate the new role of the APN in neonatology. We also expect readmission rates and emergency consultation rates to drop.

**Keywords:** preterm infants, transition to home, advanced practice nurse, nursing, cost-analysis, parents