Background Parents of infants born prematurely have to face stressors. New demands and increased parental responsibility are created when it is time for the family to take their infant home. Parents of preterm-born infants require various kinds of support after returning home with their infant. Therefore, an internet-based intervention program was designed; the family were given access to use of videoconference system from their home to have contact with staff at the neonatal unit. Objectives To investigate if real-time videoconferencing could be used as a tool for providing support to families with prematurely born infant after homecoming. Methods A total of 10 families participated in the intervention. All twenty nurses at the neonatal unit participated in the intervention and ten of the nurses volunteered to be interviewed. Data were collected by interviews, with ten couples of parents and ten neonatal nurses, before and after the intervention. A qualitative thematic content analysis was used to describe the manifest and latent content of the text. Findings The use of videoconferencing provided security for the families and was a tool for nurses to improve support to the families. Videoconferencing allowed supportive meetings despite the distance, and was like a real-life encounter. It was a tool for nurses to better assess the situation at home. The used technology was experienced as user-friendly by both the parents and the nurses. The technology opens up for use in other areas, as establishing contact with child health services and between hospitals. However, time is needed before videoconferencing can be mainstreamed to neonatal practice. Discussion Having access to videoconferencing can empower parents and give them confidence in their new situation at home with their infant. Technology provides a unique possibility of letting parents experience support from the staff even though they are in a remote location. It is a challenge to use different kinds of information and communication technology to improve care; this must be taken into account in developing future care. The findings from this study have implication for staff working in the context of neonatal care.