

The Association of Organizational Culture and Quality Improvement Implementation With Neonatal Outcomes in the NICU

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ABSTRACT

Introduction: Studies of adult patient populations suggest that organizational culture is associated with quality improvement (QI) implementation, as well as patient outcomes. However, very little research on organizational culture has been performed in neonatal patient populations.

Method: This combined cross-sectional survey and retrospective cohort study assessed employee perceptions of

organizational culture and QI implementation within 18 Canadian neonatal intensive care units. The associations between these data and neonatal outcomes in extremely preterm infants (born at < 29 weeks' gestation) were then assessed using multivariable analyses.

Results: Perceptions of unit culture and QI implementation varied according to occupation and age. Higher hierarchical culture was associated with increased survival without major

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Conflicts of interest: None to report.

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morbidities (odds ratio, 1.04; 95% confidence interval, 1.01-1.06), as were higher QI implementation scores (odds ratio range, 1.20-1.36 by culture type).

Discussion: Our data suggest that organizational culture, particularly hierarchical culture, and level of QI implementation may play a role in neonatal outcomes. *J Pediatr Health Care.* (2015) 29, 435-441.

KEY WORDS

Infant, premature, neonatal intensive care unit, organizational culture, outcomes assessment, quality improvement

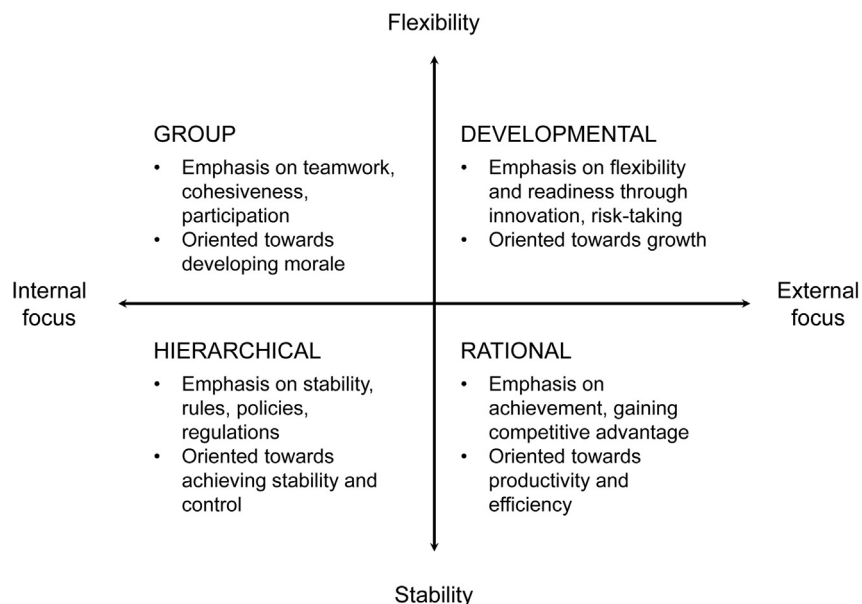
Quality improvement (QI) initiatives in health care organizations during the past two decades have had varying success (Kaplan et al., 2010; Nicolay et al., 2012; Schouten, Hulscher, van Everdingen, Huijsman, & Grol, 2008). Research into the determinants of successful practice change suggests that one important factor is organizational culture (Jacobs et al., 2013; Kaplan et al., 2010; Scott, Mannion, Marshall, & Davies, 2003; Shortell et al., 1995; Walshe & Freeman, 2002). One system for classifying organizational culture, the Competing Values Framework, assigns organizational behaviors into one of four culture types—group, hierarchical, developmental, and rational (Quinn & Rohrbaugh, 1983; Shortell et al., 2001; Figure). Although an organization will exhibit characteristics of all four culture types, in most settings one culture will dominate (Quinn & Rohrbaugh, 1983; Zammuto & Krakower, 1991). Using this system, Shortell and colleagues were one of the first groups to suggest that participative, flexible, risk-

taking organizational cultures (a combination of group and developmental culture types) are positively associated with QI implementation (Shortell et al., 1995).

The link between organizational culture and successful QI (Kaplan et al., 2010; Scott et al., 2003; Shortell et al., 1995; Walshe & Freeman, 2002) has been further explored to identify whether organizational culture has a direct impact on patient outcomes. Studies in adult patient populations and general hospital environments have shown that group-oriented organizational cultures with less of an emphasis on hierarchy are associated with improved nursing care (Roch, Dubois, & Clarke, 2014), greater perceived clinical effectiveness (Brazil, Wakefield, Cloutier, Tennen, & Hall, 2010), and greater patient satisfaction (Carman et al., 2010). A strong safety culture, as indicated by high levels of teamwork and management support, or a culture of teamwork in general (a group culture) has also been shown to be associated with better patient outcomes (Brown & Wolosin, 2013; Shortell et al., 2000; Wheelan, Burchill, & Tilin, 2003). Studies of the relationship between organizational culture and patient outcomes in the pediatric patient population are less common but also suggest that a group culture is associated with improved patient outcomes, such as a decrease in mortality in neonatal intensive care (Nembhard & Tucker, 2011), and a higher performance on safety (Profit et al., 2012).

Given the highly complex care that preterm infants in the neonatal intensive care unit (NICU) receive, it is

FIGURE. Competing values framework of organizational culture.



Adapted with permission from Quinn, R. E., & Rohrbaugh, J., A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis, *Management Science*, 29, 3, March, 1983. 1983, the Institute for Operations Research and the Management Sciences, 5521 Research Park Drive, Catonsville, Maryland 21228.

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