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Paid Family Leave to Enhance the Health Outcomes of Preterm Infants

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Abstract

Prematurity is the largest contributor to perinatal morbidity and mortality. Preterm infants and their families are a significant vulnerable population burdened with limited resources, numerous health risks, and poor health outcomes. The social determinants of health greatly shape the economic and psychosocial resources that families possess to promote optimal outcomes for their preterm infants. The purpose of this paper is to analyze the resource availability, relative risks, and health outcomes of preterm infants and their families and to discuss why universal paid family leave could be one potential public policy that would promote optimal outcomes for this infant population. First, we discuss the history of family leave in the United States and draw comparisons with other countries around the world. We use the vulnerable populations conceptual model as a framework to discuss why universal paid family leave is needed and to review how disparities in resource availability are driving the health status of preterm infants. We conclude with implications for research, nursing practice, and public policy. Although health care providers, policymakers, and other key stakeholders have paid considerable attention to and allocated resources for preventing and treating prematurity, this attention is geared towards individual-based

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health strategies for promoting preconception health, preventing a preterm birth, and improving individual infant outcomes. Our view is that public policies addressing the social determinants of health (e.g., universal paid family leave) would have a much greater impact on the health outcomes of preterm infants and their families than current strategies.

Keywords

prematurity; preterm infant; paid family leave; parental leave; perinatal morbidity; maternal-child relations

Prematurity is the largest contributor to perinatal morbidity and mortality (Matthews, MacDorman, & Thoma, 2015). Moreover, the prevalence and outcomes of prematurity in the United States are more severe than in other developed countries, attributed in part to the greater prevalence of poverty, inadequate access to health care, and racial inequalities in U.S. society (Saigal & Doyle, 2008). Approximately 400,000 preterm infants are born each year in the United States. Preterm/premature infants are classified in several categories, ranging from extremely preterm (born at 27 weeks gestation or earlier) to preterm/premature (37 weeks gestation or less) (Table 1). In 2016, all categories of preterm births combined accounted for 9.85% of U.S. births (Martin, Hamilton, & Osterman, 2017).

According to the Institute of Medicine's Committee on Premature Birth, in 2005, the annual societal economic burden associated with preterm birth was at least $26.2 billion (Institute of Medicine, 2007). Gestational age at birth is inversely associated with infant length of stay in the NICU, health care costs, survival, and health outcomes. Because of advances in neonatology, even the most extremely preterm infants (e.g., infants born 24 weeks gestation, or four months earlier than a term infant) are surviving to be discharged from the neonatal intensive care unit (NICU). Improvements in reducing morbidity have not kept pace with improvements in reducing mortality. Thus, increasing numbers of preterm infants and their families are entering the U.S. health care system with the financial costs and psychosocial burdens of prematurity-related chronic illnesses.

The purpose of this paper is to analyze the resource availability, relative risks, and health outcomes of preterm infants and their families and to discuss universal paid family leave as a public policy that would promote optimal outcomes for this population. We propose that paid family leave is essential to minimize maternal-infant separation for preterm infants hospitalized in the NICU and to promote infant health outcomes (Burtle & Bezruchka, 2016; Cooklin, Rowe, & Fisher, 2012; Dagher, McGovern, & Dowd, 2014; Greenfield & Klawetter, 2016). Longer durations of paid family leave is associated with significantly lower rates of preterm births, low birth-weight infants, congenital anomalies, and overall infant mortality (Burtle & Bezruchka, 2016; Rowe-Finkbeiner, Martin, Abrams, Zuccaro, & Dardari, 2016; Ruhm, 2011). While we often frame vulnerability in the context of mothers and their preterm infants, we acknowledge that the entire family is critical to the health and development of the infant. We argue that paid family leave (i.e., for biological parents, adoptive parents, or another caregiver taking care of an ill child) is necessary to promote the best outcomes for preterm infants and their families.

First, we discuss the history of family leave in the United States and draw comparisons with other countries. We use the vulnerable populations conceptual model as a framework to discuss why universal paid family leave is needed and to review how disparities in resource availability are driving the health status of preterm infants. We conclude with implications for research, nursing practice, and public policy.

Paid Family Leave: Background

The United States is the only developed nation that doesn't mandate paid leave for families with newborn infants (Shepherd-Banigan & Bell, 2014). Nearly every country with an advanced economy has found a solution to the work/family dilemma (Etehad & Lin, 2016). Countries with the strongest economies and lowest unemployment rates in the world provide paid family leave for their workers (Adaba, 2013; Deahl, 2016; Gault, Hartmann, Hegewisch, Milli, & Reichlin, 2014). Most countries recognize that the vast majority of families rely on two incomes (Adaba, 2013; Deahl, 2016). Most countries also realize that one of the biggest keys to economic prosperity is having healthy, stable families in which both parents can earn income and contribute to the overall success of the country's economy (Deahl, 2016).

For most developed countries, realization of the importance of paid family leave came after World War II (WWII). Massive casualties and a devastated infrastructure necessitated family leave policies in European nations to replenish their populations while keeping women in the workforce (Etehad & Lin, 2016). Developing countries quickly realized that offering paid family leave created job security for child-bearing women and contributed to much-needed economic growth (Gault et al., 2014). In 2012, leaders from around the world met through the United Nations' International Labour Organization (ILO) to agree upon a global standard of a minimum of 14 weeks of paid leave, compensating employees up to 70% of their salary with capped maximums (Adaba, 2013; Deahl, 2016; Etehad & Lin, 2016). Most countries meet or exceed the ILO's recommendations; more than 50 countries offer at least six months of paid leave for working mothers (Deahl, 2016).

Paid Family Leave Around the World

Countries with generous paid leave policies typically allow the vast majority of their residents (men and women) to be eligible for paid family leave. Some countries compensate employees at least 70% of their pay (so low-wage workers can afford to take leave), offer at least six months of paid leave, and pay for leave through a combination of contributions from employees, employers, and state and federal governments (Deahl, 2016; Weller, 2016). Many countries offer families paid leave that is "shared," so paid benefits can be taken by either parent. For example, in Iceland, each parent receives 80% of their salary for three months, with an additional three months of 80% pay split by the couple as they choose (i.e., nine months total of 80% pay). In Norway, a couple is eligible for 100% pay for 46 weeks or 80% pay for 56 weeks. In Lithuania, mothers receive 100% pay for 18 weeks, fathers receive four weeks of 100% pay, and the couple also receives an additional 52 weeks of 100% pay to share (Deahl, 2016; Weller, 2016).

Most countries use a type of “social insurance” system to pay for these benefits, so the responsibility to sustain the country’s paid leave policy is shared and doesn’t excessively burden citizens, companies, or the government (Deahl, 2016). Thus, employees, employers, and all levels of government contribute continuously to a fund from which individuals can draw when needed. These types of social insurance systems reduce the burden of paid leave for the self-employed, small businesses, and women who experience discrimination in hiring and promotion when they are of childbearing age. Knowledge of the success of other countries’ paid leave policies can provide insight into paid leave policies that might improve health outcomes of populations living in the United States.

Paid Family Leave in the United States

The United States remains the sole developed nation without a mandate for paid family leave. Under the Family and Medical Leave Act (FMLA) of 1993 (29 CFR Part 825), only eligible employees are entitled to 12 weeks of unpaid, job-protected leave per year (United States Department of Labor, 2015). FMLA does not cover employees who have worked at their employer less than 12 months, who have not worked 1,250 hours over the past 12 months, or whose companies employ 50 persons or less within 75 miles. Thus, employees of many small businesses, start-ups, and new employers are not eligible for the unpaid leave provided by FMLA. Furthermore, it is up to individual employers (or, in some cases, state and local laws) as to whether the FMLA-eligible employees receive pay during their unpaid FMLA leave.

Even when employers offer paid leave, most will not cover the entire period of a preterm infant’s hospitalization (which can be months for the most extremely preterm infants). Many working families, especially families with low incomes, cannot afford to take unpaid leave provided by FMLA because they cannot pay for basic necessities without full work income, i.e., even partial wage supplements are inadequate. A 2011 estimate of paid family leave from the U.S. Department of Labor estimated that only 11% of families have access to paid family leave benefits while they are taking unpaid leave through the Family and Medical Leave Act (Gault et al., 2014; US Department of Labor Bureau of Labor Statistics, 2012).

Several states have responded to the critical need for access to paid family leave by passing laws of their own. For example, in 2004, California enacted a state-based paid family leave insurance program. California’s law includes six weeks of paid leave with 55% wage replacement, capped with maximum payments per week, and with employee’s contributing no more than 1.5% of their wages. Leave is paid for by employees (~$30 per year), applying to all employees covered by short-term disability. Paid leave in California does not rely on a minimum number of hours or months of employment (Susser, 2004). California’s law also includes provisions for at least 70% wage replacement for low-income workers, so that families who are most dependent on income to meet essential needs can financially afford to take the paid leave passed by the law. California has not seen adverse effects in terms of labor or economic outcomes, and employers have reported no impact on business productivity, profitability, turnover, or morale (Appelbaum & Milkman, 2011; Baum & Ruhm, 2013; Milkman & Appelbaum, 2013; Rossin-Slater, Ruhm, & Waldfogel, 2011). Following the success of California’s law, several states have passed similar laws, including

New Jersey, Rhode Island, and Washington. But federal legislation for universal paid leave is needed to ensure families in all states have access to paid time off to take care of themselves and their children while remaining financially stable.

Vulnerable Populations Conceptual Model and Preterm Infants

The vulnerable populations conceptual model can guide testing of public policies that provide socioeconomic, psychosocial, and community resources to high-risk families before, during, and after pregnancy to decrease vulnerability. Preterm infants and their families are a vulnerable population (i.e., a social group who has increased susceptibility to poor health outcomes). Vulnerability is defined by increased risk of morbidity, mortality, and decreased quality of life, due to lack of resources (Aday, 1994). The vulnerable populations conceptual model describes how relationships among resource availability, relative risks, and health status produce vulnerability (Flaskerud & Winslow, 1998). All preterm infants and their families are vulnerable because of the vast amount of financial and human resources required to care for these infants and the lack of such resources necessary to achieve optimal infant health outcomes. However, vulnerability can be thought of as a continuum, where some preterm infants and their families are more vulnerable than others due to lack of available resources, such as paid family leave. Lack of resources increase relative risks, which are defined as exposures to risk factors that can negatively impact health status. Increases in the number of relative risks experienced and duration of exposure to risks significantly increases the morbidity and mortality (i.e., poor health status) of a preterm infant (Flaskerud & Winslow, 1998).

Applying the vulnerable populations conceptual model, child-bearing women with little education, low income, unsafe housing, inadequate social support, or lack of insurance (i.e., resources) are more likely to engage in unhealthy practices such as smoking, substance use, poor eating, or inadequate prenatal care (i.e., relative risks). These unhealthy behaviors increase the risk of a preterm birth (i.e., health status). Moreover, women who possess resource limitations are less likely to deliver at high-quality facilities (i.e., resources), increasing the odds that their preterm infants will receive inadequate care (i.e., relative risks), thus increasing the odds of infant health complications (i.e., health status). Parents with resource limitations are the least likely to receive paid family leave, and these parents will return to work much earlier than if they had access to paid leave (Shepherd-Banigan & Bell, 2014).

The federal FMLA and most state and local laws do not provide paid coverage for the amount of time parents of preterm infants will need to spend with their infant during hospitalization and the critical post-discharge period. Gaps in paid family leave benefits could result in the decision to not breastfeed, delay infant vaccinations, miss well-child visits, or increase separation from the infant due to financial necessity. In the following sections, we provide an in-depth application of the concepts of resource availability, relative risks, and health status to the vulnerability of preterm infants and their families (Table 2.)

Resource Availability: The Most Vulnerable Have the Lowest Access to Paid Leave

Resource availability differs based on an individual's personal characteristics, social ties, and neighborhood features. Examples include socially based resources (e.g., human capital, social connectedness, social status) and environmental resources (e.g., usage, access, quality of health care). Lack of resources can increase a given population's vulnerability (Flaskerud, 2002).

Human Capital.—Human capital is defined as the availability of income, jobs, education, and housing, and the lack thereof places certain social groups at greater risk for disease than others (Flaskerud & Winslow, 1998). Women in poverty (Olson, Diekema, Elliott, & Renier, 2010), who are unemployed (Casas et al., 2015), or who live in areas of high unemployment, are more likely to experience a preterm birth than women who hold high-paying jobs (Pearl, Braveman, & Abrams, 2001). Preterm infants are extremely sensitive to adverse environmental and social conditions, which amplifies the effect of inadequate resources (e.g., poverty) on the developing infant brain (Brumberg & Shah, 2015; Candelaria, Teti, & Black, 2011).

Because women who experience a preterm birth are more likely to have low-wage service jobs than women who have not experienced preterm birth, they are also the women least likely to have access to paid family leave benefits. Employers are often inflexible with hours and unsupportive of parents who require longer periods of absence to be with their infant in the NICU (Raffray, Semenic, Osorio Galeano, & Ochoa Marín, 2014; Youngblut, Loveland-Cherry, & Horan, 1990). Parents must decide whether to return to work and keep their jobs (severely limiting time with their infants), take unpaid medical leave, or leave their jobs altogether. Because mothers who are most likely to depend on paid family leave for financial survival are the least likely to receive these benefits, they often have no other choice than to return to work (Shepherd-Banigan & Bell, 2014). Adding a federal paid family leave law meeting the ILO's standards could alleviate this benefit disparity, while providing families with a necessary financial resource to take time off to care for their preterm infants.

Social Connectedness.—Social connectedness refers to an individual's level of integration or participation in society (Table 2). Women who are at high risk for experiencing isolation, stigmatization, marginalization, and discrimination (e.g., single mothers, mothers with unwanted pregnancies, abused women) are also at greater risk for preterm birth. African American women have the highest rates of preterm birth of any racial/ethnic group, with approximately 16% of all African American births being preterm (Martin, Hamilton, Osterman, Curtin, & Matthews, 2015). Researchers have attributed excess rates of preterm birth in African American women to marginalization and discrimination, as opposed to genetic differences (Mendez, Hogan, & Culhane, 2014). Women of color have the least access to paid family leave benefits than any other racial/ethnic group, and also have the lowest wage replacement rates when they are given paid leave (Shepherd-Banigan & Bell, 2014).

Parenting a preterm infant in the NICU heightens the risk of social isolation and can significantly alter integration of the infant into the new family unit (Rossman, Greene, &

Meier, 2015). Rates of visitation in the NICU are alarmingly low, in part because of the necessity for both parents to return to work (Gonya & Nelin, 2013; Raffray et al., 2014). One study including 32 extremely preterm infants demonstrated that parents visit their infants in the NICU on average 21 hours per week (Gonya & Nelin, 2013), and another study including 81 infants less than 30 weeks gestation showed that parents hold their infants on average two times per week (Reynolds et al., 2013). Well-documented barriers to visitation include the inability to pay for transportation, parking, meals, and childcare (Blomqvist, Frölund, Rubertsson, & Nyqvist, 2013; Greene et al., 2015; Heinemann, Hellström-Westas, & Hedberg Nyqvist, 2013), barriers most commonly experienced by families who are poor (Hensley et al., 2018). Families who can afford to visit frequently to the NICU have time to process the birth experience, bond with their preterm infants, learn about their infants' unique developmental needs, and practice safely caring for an infant with a chronic health condition. Universal paid leave would alleviate the financial necessity for families to work during this critical period of family formation, adding a socioeconomic resource that would facilitate frequent visitation.

Paid family leave could also provide financial support to families after NICU discharge. Because FMLA provides 3 months of unpaid leave, most families have exhausted their leave by the time preterm infants are discharged from the NICU. Having the financial ability to spend time with their infants after discharge is critical to infant health. Once home, parents are developing a new definition of family normalcy, while continuing to address the chronic and complex health care needs of a preterm infant (Bakewell-Sachs & Gennaro, 2004). Extended paid leave for families of infants with medical conditions would allow parents to be present during the infants' difficult transition to home, and to establish and support the new family unit.

Social Status.—Social status refers to the level of power and control a social group exerts in political processes, decision-making, and the distribution of resources. Parents experience feelings of powerlessness, loss of control with infant care, and grief over minimization of their parental role (Miles, Funk, & Kasper, 1991; Obeidat, Bond, & Callister, 2009). Parents in the NICU might identify themselves as visitors who require permission to take care of an infant whom they perceive as the health care provider's, and not as their own child (Callery, 2002; Heermann, Wilson, & Wilhelm, 2005). When parents are financially able to be present in the NICU due to paid family leave benefits, they receive more timely communication about their infant's diagnosis, prognosis, and treatment; have more time to process health information to make informed health care decisions; are able to practice infant care skills, developing competence in caregiving and advocating for their infant's best interests; and become empowered as parents through that parenting experience.

Environmental Resources.—Environmental resources include health care utilization, access, and quality (Flaskerud & Winslow, 1998). Preterm infants and their families have much greater health care needs than their healthy term peers (Table 2). A large number of resources are used to provide special education; physical, occupational, and speech rehabilitation; and additional outpatient and inpatient visits. Approximately half of all extremely preterm infants require readmission to the hospital before reaching 18 months

corrected age (corrected age is the chronological age adjusted for the number of weeks the infant is born premature), two thirds require physical or occupational therapy, one third are enrolled in long-term rehabilitation, one third require prescription medication (Luu, Lefebvre, Riley, & Infante-Rivard, 2010), and two thirds require neurodevelopmental or behavioral intervention during the first two years of life (Hintz et al., 2008).

When families lack adequate resources to obtain necessary services to promote best outcomes, their preterm infants accumulate more relative risks and experience poorer health status later in life, including developmental delays of all kinds (Orton, Spittle, Doyle, Anderson, & Boyd, 2009). Attendance at health care appointments takes considerable time, effort, and resources, often requiring parents to miss work. Many families skip infant health care appointments because they cannot take off work. Paid leave policies are associated with lower maternal and infant mortality rates, because parents are able to attend health care appointments that monitor their infants' chronic health care conditions and address care needs (Rossin, 2011).

Relative Risks: Paid Leave Increases Key Health Promotion Behaviors

Relative risk is a ratio of risk, where certain groups are exposed to more risk factors than others, and thus have a higher relative risk (Aday, 1994; Flaskerud & Winslow, 1998). Risk factors, including lifestyle choices, health behaviors, and experience of stressful events, can negatively impact health status (Table 2.

Breastfeeding status is an important relative risk that has been shown to impact a myriad of health outcomes in children, including growth, cognitive ability, obesity, asthma, diabetes, and respiratory disease (Section on Breastfeeding, 2012). Returning to work is a known barrier for mothers to provide human milk and to achieve successful breastfeeding, as increased maternal-infant separation decreases milk supply (Buckley & Charles, 2006; Parker & Patel, 2017). Paid family leave is significantly associated with increased breastfeeding rates and duration for mother-infant dyads (Cooklin et al., 2012; Guendelman et al., 2009; Huang & Yang, 2015; Mirkovic, Perrine, Scanlon, & Grummer-Strawn, 2014; Ogbuanu, Glover, Probst, Liu, & Hussey, 2011). In 2004, when California implemented the state law for paid family leave, there was a 20% increase in rates of breastfeeding at three, six, and nine months of age (Huang & Yang, 2015).

Another critical health promotion behavior that significantly reduces risk of debilitating disease in preterm infants is receiving scheduled vaccinations. Several studies in the United States and Europe have shown that preterm infants experience significant delays and lower rates of vaccination than healthy term infants (Batra et al., 2009; Ziegler & Strassburg, 2010). Paid family leave policies are associated with improved vaccination rates (Daku, Raub, & Heymann, 2012; Hajizadeh, Heymann, Strumpf, Harper, & Nandi, 2015).

Health Status: Paid Leave Improves Health Outcomes

The health status of a population includes morbidity and mortality rates, disease incidence and prevalence, and pathophysiological processes and changes that define health outcomes of a particular population (Table 2). Perhaps the biggest case for implementation of universal

paid family leave in the United States is the improvement that such a policy would make in terms of maternal and infant health outcomes (Heymann et al., 2017).

Paid family leave is associated with significant improvements in maternal mental health outcomes, such as stress, depression, and anxiety (Aitken et al., 2015; Avendano, Berkman, Brugiavini, & Pasini, 2015; Dagher et al., 2014). Maternal mental health problems are associated with long-term effects on infant attachment, emotional behavior, and cognitive skills (Apter-Levy, Feldman, Vakart, Ebstein, & Feldman, 2013; Letourneau, Salmani, & Duffett-Leger, 2010; Sohr-Preston & Scaramella, 2006). Because paid leave serves as a protective factor in minimizing maternal-infant separation, a significant source of distress for parents, paid family leave could reduce extraordinarily high parental rates of stress, depression, and anxiety in the NICU (Wraight, McCoy, & Meadow, 2015) and improve infant socioemotional development.

Paid family leave is significantly associated with reduced infant rates of congenital anomalies, low birth weights, prematurity, and overall mortality (Burtle & Bezruchka, 2016; Rowe-Finkbeiner et al., 2016; Ruhm, 2011). Researchers have suggested that the causal pathway between paid family leave and better health outcomes is that women are better able to take care of their pregnancies if they have protected time to take care of themselves (e.g., to attend prenatal visits), their infants (e.g., to attend pediatric wellness and illness visits), and their finances (Rossin, 2011). Several studies support this hypothesis, as access to paid family leave benefits increases primary care visits and reduces delayed medical care and emergency room visits for children (Asfaw & Colopy, 2017; Clemans-Cope, Perry, Kenney, Pelletier, & Pantell, 2008) and adults (Bhuyan et al., 2016). Inequalities in maternal-infant health outcomes persist in the United States because they are created from inadequate and unequal access to resources, like access to paid family leave (de Graaf, Steegers, & Bonsel, 2013). Universal paid family leave could reduce perinatal health disparities by providing equal access to a key socioeconomic resource for all families, regardless of income or occupation (AEI-Brookings Working Group, 2017; Clemans-Cope et al., 2008).

Implications for Practice, Research, and Policy

Implications for Practice: Advocacy is an Essential Component

NICU nurses, as patient advocates, should promote parental-infant bonding, facilitate developmentally supportive parent-infant interactions, and provide family-centered care. But nurses cannot provide family-centered care if parents cannot be at the bedside because of employment responsibilities. For this reason, paid family leave is critical not only to the family's outcomes, but also to the effectiveness of health care providers' interventions to promote optimal outcomes in preterm infants. As a profession, nursing is governed by a commitment to promote the public good (Fowler, 2017). According to the American Nurses Association Code of Ethics, nurses are accountable to the patients we care for and to society. Thus advocacy is an essential component of practice (Fowler, 2017).

As a profession that encompasses over 3 million constituents across the United States, nurses have a strong voice in advocacy efforts. Politicians depend on their nurse constituents to inform them how lack of paid family leave affects our patients, their families, and our

families. As individuals, nurses can support campaigns for paid family leave in their respective states. Nurses can learn about pending legislation in their states through the Family Values @ Work website (Table 3). There are currently numerous efforts at the state level to offer paid leave (Family Values @ Work, 2017). For nurses practicing in the five states that have already passed paid family leave laws (i.e., California, New Jersey, Rhode Island, New York, and Washington), nurses should inform their patients of the law and provide resources to help patients access paid leave (Table 3). Nurses can become informed voters and educated clinicians by not only reviewing information on paid leave from the websites listed in Table 3, but by also reviewing websites against paid family leave to understand all sides of this issue (e.g., COC, National Federation of Independent Business, SHRM, and IWF). Nurses can learn about proposed legislation on paid family leave at the federal level by using the legislation search function within the Congress.gov website. Nurses can also share with their state and federal representatives policy briefs that have already been crafted to address why paid family leave is greatly needed in this country ("Group Letter to Congress in Support of Real Paid Leave," 2017).

Collective action will be essential to the success of addressing this critical issue. Professional nursing organizations have the ability to publish position statements on relevant health care policies and legislation impacting their patients and their practice. At the time of this writing, none of the major nursing organizations whose members care for preterm infants and their families have issued position statements on paid family leave. This includes the American Nurses Association (ANA), the National Association of Neonatal Nurses (NANN), The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), National Association of Pediatric Nurse Practitioners (NAPNAP), the American College of Nurse-Midwives (ACNM), American Association of Critical Care Nurses (AACN), Sigma Theta Tau International (STTI), and Nursing Organizations Alliance (NOA). These nursing organizations could begin advocacy efforts by publishing policy briefs on how lack of access to paid leave affects their patients and their practice, and by encouraging their members to share these briefs with their state and federal representatives ("Group Letter to Congress in Support of Real Paid Leave," 2017). These and other actions on behalf of nursing organizations can signal Congress that supporting universal paid family leave is a critical public policy initiative that could improve the health of vulnerable infants and families (Table 3).

Success is likely to come from strategic partnerships and coalitions of groups consisting of organizations, voters, and legislators. This "roadmap to success" was very effective in California and Rhode Island, where health care providers and their respective organizations joined massive coalitions that included women's organizations, children's advocacy groups, research organizations, and policy organizations (see, for example, Table 2) to garner extensive support for passage of a state-paid family leave law (Raabe & Theall, 2016). Nursing organizations could join with these and other organizations to build on the achievements in these states.

Implications for Research

Recognizing the significant problem of prematurity and its associated morbidities, the U.S. Senate reauthorized the "Prematurity Research Expansion and Education for Mothers who Deliver Infants Early" (PREEMIE) Act in 2013 in response to the alarming increase in preterm births. An important component of the legislation is funding interdisciplinary research aimed at decreasing morbidities associated with preterm birth and maximizing the developmental potential of preterm infants. U.S. researchers have investigated individual-based strategies for promoting preconception health, preventing preterm birth, and improving maternal health outcomes (Damus, 2008). Public policies addressing the social determinants of health (e.g., universal paid family leave) have the potential to have a greater impact on the health outcomes of preterm infants and their families than current strategies.

Many researchers have demonstrated health benefits of paid leave in countries outside the United States (Schulte, Durana, Stout, & Moyer, 2017). U.S. researchers have yet to do so. Nurses and other researchers need to study the broader social determinants of health, including whether access to socioeconomic resources such as paid family leave improve health outcomes. Specifically, large-scale longitudinal research comparing infant health outcomes of similar states or cities that differ in provision of paid family leave is warranted in the United States.

There are several limitations in this paper that future research can address. First, we did not complete a financial analysis on the cost-benefit ratio of providing universal paid family leave in the United States. The Congressional Budget Office has not released any financial estimates of legislation that would provide paid leave. Second, we could not find any quantitative or qualitative studies addressing nurses' perspectives on paid family leave, and how access to paid leave may affect patients' outcomes. A national survey of nurses in the United States would help to address this gap in the research literature. Finally, we did not include a comprehensive review of studies addressing the impact of paid family leave in states that already have paid leave, including employers' or policymakers' perspectives. Research addressing these different perspectives is urgently needed.

Implications for Policy

The United States has a history of rejecting or delaying legislation that increases paid sick leave or family leave (Law, 2000). While a variety of historical, political, and cultural factors have contributed to the United States' lag behind nearly every other country, perhaps the main reasons for this lag include the decline of the U.S. labor movement after WWII and the pervasive influence of large corporate and financial interests in U.S. politics (Etehad & Lin, 2016). Organizations that have lobbied against legislation for paid leave include the Chamber of Commerce (COC), National Federation of Independent Business, Society for Human Resources Management (SHRM), and the Independent Women's Forum (IWF). The majority of witnesses for a December 2017 hearing on paid family leave by the U.S. House of Representatives Committee on Education and the Workface were from COC, SHRM, and IWF (Committee on Education and the Workforce, 2017).

Opponents against legislation for a federal mandate for paid family leave argue that such a policy would be costly for businesses, that businesses should not be mandated by the federal government with a “one size fits all” approach to providing specific benefits to their employees, and employers are best suited to meeting the needs of their employees (A Better Balance, 2015; Law, 2000). Opponents also argue that paid family leave laws could impact business profitability, productivity, job availability, and ability to plan for adequate staffing (Raabe & Theall, 2016; Susser, 2004).

Nonetheless, states that have passed paid family leave laws have shown either neutral or positive effects on businesses, including a decrease in employee turnover, increase in productivity, and a happier work culture (A Better Balance, 2015). Employers in states with paid leave laws (e.g., California, New Jersey) have reported no effect on business productivity, profitability, performance, turnover, and morale (Appelbaum & Milkman, 2011; Appelbaum, Milkman, Elliott, & Kroeger, 2014; Baum & Ruhm, 2013; Lerner & Appelbaum, 2014; Milkman & Appelbaum, 2013; Rossin-Slater et al., 2011). Several policy analyses around the world have shown that implementation of paid family leave policies has not compromised a country’s economic competition or employment after paid leave implementation (Earle, Mokomane, & Heymann, 2011). Even opponents of paid family leave acknowledge that providing paid family leave is an important tool in attracting and retaining the most talented applicants, and in keeping their businesses competitive (Committee on Education and the Workforce, 2017). Implementing a baseline safety net for families does not require a “one size fits all approach,” but instead would ensure fair, minimum standards for access to a socioeconomic benefit that has been repeatedly shown to cut health care costs, improve preventative health care utilization, and prevent the need for expensive medical treatment in the emergency room (Asfaw & Colopy, 2017; Bhuyan et al., 2016; Clemans-Cope et al., 2008).

Thus, the demonstrated health benefits of paid family leave support a federal approach to paid family leave (Law, 2000). A federal approach to enacting paid family leave legislation would provide more equitable access to paid leave across the country, reduce discrepancies in providing paid leave for interstate businesses, and have a greater impact on U.S. population health (Raabe & Theall, 2016).

The majority of Americans support legislation for paid family leave: 82% of Americans approve of legislation for mothers to care for a newborn, 69% for fathers to care for a newborn, and 67% for family to care for a sick family member (Horowitz, Parker, Graf, & Livingston, 2017). However, there are several components of a paid family leave policy that need to be considered to maximize benefits to families while minimizing costs to companies and the government. Essential components of paid family leave policies include eligibility for paid leave, length of paid leave, payments provided by leave, and the systems in place to pay for the paid leave policy.

Only 11% of American families have access to paid family leave benefits while they are taking unpaid leave through the Family and Medical Leave Act (Gault et al., 2014; US Department of Labor Bureau of Labor Statistics, 2012). Federal legislation for paid family leave needs to expand eligibility for benefits to full-time, part-time, casual, seasonal,

contract, and self-employed workers. Moreover, changing eligibility requirements from having to work at the same employer for a least a year to merely being employed during the previous year in which leave is taken would greatly increase access to paid leave benefits. A federal paid leave Trust Fund, paid for by employers, employees, and the government, would mitigate the financial effects on small businesses, because costs would be shared by employers, employees, and the government (Committee on Education and the Workforce, 2017). Moreover, a Trust fund make it possible for a newly hired employee to receive benefits without placing a financial burden on the new employer. Payments could be capped and placed on a sliding scale based on income, so that low-income workers receive at least 70% of their pay and could afford to actually take their paid leave benefits. Finally, the duration of paid leave should meet ILO standards (i.e., 14 weeks of paid leave) and recommendations based on current research evidence.

A large body of research demonstrates that the most effective length of paid family leave to improve health outcomes is one year (Feldman, 2007; Geva & Feldman, 2008; Schore, 2001; Schulte et al., 2017). As one of many examples, the American Academy of Pediatrics' position is that most infant nutrition should come from mother's milk the first year of infant life (Section on Breastfeeding, 2012). Returning to work is a known barrier for mothers to provide human milk and to achieve successful breastfeeding, as increased maternal-infant separation decreases milk supply (Buckley & Charles, 2006; Parker & Patel, 2017). Twelve weeks should be the absolute minimum length of paid leave necessary for dyadic safety, based on the time mothers and infants need to heal from the birth process and to establish infant diurnal and biological rhythms (i.e., sleep and wake patterns) necessary for optimal infant development (Feldman, 2006, 2009). Given that preterm infants are born early, this would include the months before their term due date, as well as 3 months after the term due date.

Because a majority of U.S. voters support paid federal family leave (Horowitz et al., 2017), legislators are increasingly recognizing that passage of paid family leave laws are important to their constituents and to their own reelection. Members of both parties recognize that current workplace policies and protections are not working for U.S. families in the 21st century (Committee on Education and the Workforce, 2017). Therefore, now is the perfect opportunity for nurses to reflect on how lack of access to paid leave affects the outcomes of their patients. Contact federal and state representatives and identify as a constituent and a nurse concerned about this issue. Persuade affiliate nursing organizations to advocate for paid family leave and to partner with appropriate public policy organizations (Table 3). Be an advocate for our patients on this critical issue.

Conclusion

The social determinants of health greatly shape the economic and psychosocial resources that families have available to promote optimal health and development in their infants. For families of preterm infants, unaddressed resource limitations create unsupportive environments for optimal infant health and development. Nurses are in a strategic position to advocate for socioeconomic resources that empower vulnerable families to expertly care for their high-risk infants. Nurses can use this strategic position, individually and collectively, to

advocate for access to universal, paid family leave, so that society can provide a strong foundation for families to thrive and support the development of their children.

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Table 1.

Categories of Preterm/Premature Infants.

Preterm/Premature Infant	Infant born 37 weeks gestation or less
Late Preterm Infant	Infant born 34–36 weeks gestation
Moderately Preterm Infant	Infant born 32–33 weeks gestation
Very Preterm Infant	Infant born 28–31 weeks gestation
Extremely Preterm Infant	Infant born 27 weeks gestation or earlier

Table 2.

Application of the Vulnerable Populations Conceptual Model to Preterm Infants and their Families

Concept	Subconcepts	Application to Preterm Infants	References
Resource Availability	**1) Human Capital** Availability of: a) Income	• MPTIs in poverty are more likely to experience PTB • Socioeconomic disadvantage increases risk of PTB • Poverty increases relative risks of PTIs: e.g., lower breastfeeding and vaccination rates	(Olson et al., 2010) (de Graaf et al., 2013) (Brownell et al., 2016; Flacking, Nyqvist, & Ewald, 2007)
	b) Jobs	• Unemployment is associated with increased PTB • Women living in areas of high unemployment are more likely to experience PTB • MPTIs face employment barriers of inflexible hours and/or lack of maternity leave benefits	(Casas et al., 2015) (Pearl et al., 2001) (Raffray et al., 2014; Shepherd-Banigan & Bell, 2014)
	c) Education: MPTIs	• Low education attainment is associated with increased PTBs • MPTIs are more likely to have low education status • MPTIs with low education have difficulty navigating the health care environment, understanding information related to PTI care, and procuring resources to meet PTI's health care needs • MPTIs less likely to increase education after PTB	(Auger, Abrahamowicz, Wynant, & Lo, 2014) (Basten, Jaekel, Johnson, Gilmore, & Wolke, 2015) (Pizur-Barnekow, Darragh, & Johnston, 2011) (Singer et al., 2007)
	Education: PTI	• PTIs are more likely to have school difficulties, repeat a grade, and require special education • PTIs are less likely to complete high school • PTIs are less likely to complete secondary education	(Larroque et al., 2011) (Doyle & Anderson, 2010) (Nomura et al., 2009)
	d) Housing	• Neighborhoods with high crime, violence, poor housing quality, and poverty have increased PTBs • Housing vacancy rates are associated with PTBs • PTIs in low socioeconomic neighborhoods are more likely to experience health risks and poor health	(Masi, Hawkley, Piotrowski, & Pickett, 2007; Nkansah-Amankra, Dhawain, Hussey, & Luchok, 2010) (Reagan & Salsberry, 2005) (Flouri, Mavroveli, & Tzavidis, 2010, 2012)
	2) Social Connectedness Examples include: a) Family life	• MPTIs are at high risk for marital problems • MPTIs are at high risk for divorce • MPTIs are at high risk for family dysfunction • MPTIs are at high risk for parenting stress	(Stjernqvist, 1992) (Saigal, Burrows, Stoskopf, Rosenbaum, & Streiner, 2000) (Treyvaud et al., 2011) (Brummelte, Grunau, Synnes, Whitfield, & Petrie-Thomas, 2011)
	b) Community life	• Visitor restrictions can isolate siblings • Visitor restrictions can isolate families from the community • Community may not understand PTB experience • Returning to normalcy in the community after NICU discharge is difficult	Levick et al., 2010) (Raffray et al., 2014) (Rossman et al., 2015) (Bakewell-Sachs & Gennaro, 2004)
	c) Stigmatization/Marginalization	• Risk of PTB is increased in women with unwanted pregnancies • Risk of PTB is increased in single mothers • Risk of PTB is increased in abused women • Risk of PTB is increased in women with low social support and/or resources	(Shah et al., 2011) (Raatikainen, Heiskanen, & Heinonen, 2005) (Messer, Kaufman, Dole, Herring, & Laraia, 2006) (Nylen, O'Hara, & Engeldinger, 2012)
	d) Discrimination	• African-American women have the highest rates of PTB	(Martin, Hamilton, & Osterman, 2016)
	3) Social Status Levels of: a) Power	• Power of health care providers versus parents • Parents feel powerless in the NICU • Parents are perceived as visitors who require permission to assume parental role	(Obeidat et al., 2009) (Dudek-Shriber, 2004) (Heermann et al., 2005)
	b) Authority	• Loss of parental control over infant care	(Miles et al., 1991)

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Concept	Subconcepts	Application to Preterm Infants	References
		• Lack of parental involvement in decision-making • Lack of communication about infant diagnosis, prognosis, and treatment	(Hall, 2005) (Hall, 2005)
	c) Decision Control	• Parental uncertainty in how to care for infant	(Hall, 2005)
	4) **Environmental Resources** a) Health care usage	• PTIs account for 50% of newborn hospital costs • Costs to family for PTI can be as much as $100,000 for initial hospitalization • PTIs have greater hospital readmissions, total hospitalizations during childhood • PTIs have greater outpatient care visits, rehabilitation therapies, and disability services	(Barradas et al., 2016) (Soilly, Lejeune, Quantin, Bejean, & Gouyon, 2014) (Korvenranta et al., 2009, 2010) (Larroque et al., 2008; Marret et al., 2009)
	Health care access Health care quality	• Limited access to Level III NICU facilities • Half of MPTIs/PTIs have Medicaid insurance • Options for high-quality primary care and childcare for PTI can be limited	(Samuelson, Buehler, Norris, & Sadek, 2002) (Russell et al., 2007) (Lopez, Anderson, & Feutchinger, 2012)
Relative Risk	**Increased number of & exposure to risk factors** Stemming from: Health behaviors/Lifestyle choices	• Increased risk of PTB in women who: a) Smoke b) Have poor nutrition c) Abuse drugs d) Are obese or overweight e) Have inadequate prenatal care	(Hammoud et al., 2005) (Bloomfield, 2011) (Lam, To, Duthie, & Ma, 1992) (McDonald, Han, Mulla, Beyene, & Knowledge Synthesis Group, 2010) (Vintzileos, Ananth, Smulian, Scorza, & Knuppel, 2002)
		• MPTIs are less likely to: a) Breastfeed b) Vaccinate their PTIs • PTIs have increased risk for: a) Presence of addictive drugs at birth b) Poor nutrition c) Altered sleep patterns d) Delayed growth e) Developmental delays	(Callen & Pinelli, 2005) (Ziegler & Strassburg, 2010) (Vucinovic et al., 2008) (Su, 2014; Yu, 2005) (Holditch-Davis & Edwards, 1998) (Corpeleijn, Kouwenhoven, & van Goudoever, 2013) (Guerra et al., 2014)
	Exposure to stress	•Maternal stress in the NICU is well-documented •Infant stress in the NICU is well-documented	(Wraight et al., 2015) (Smith et al., 2011; Weber, Harrison, & Steward, 2012)
Health Status	**1) Morbidity** Incidence/Prevalence of disease	• Prematurity is the largest contributor to perinatal morbidity • 2/3 of extremely PTIs have significant morbidity • PTIs are more likely to have comorbidities such as: a) Congenital anomalies b) PTB-related diseases: BPD, ROP, NEC, IVH c) Socioemotional problems d) Disabilities e) Cerebral palsy f) Cognitive outcomes g) Adult cardiovascular disease h) Depression in adulthood	(Reedy, 2007) (Stoll et al., 2015) (Honein et al., 2009) (Stoll et al., 2015) (de Jong, Verhoeven, Lasham, Meijssen, & van Baar, 2015) (Stoll et al., 2015) (Stoll et al., 2015) (Stoll et al., 2015) (Viltart & Vanbesien-Mailliot, 2007) (Doyle & Anderson, 2010)
	2) **Mortality** Premature death	• GA is the most important predictor of infant survival • PTIs account for 2/3 of all infant deaths • Very, late PTIs have 88, 9 times mortality rate of TI	(Martin et al., 2016) (Matthews et al., 2015) (Matthews et al., 2015)

PTI = preterm infant; MPTI = mothers of preterm infants; PTB = preterm birth; GA = gestational age; TI = term infant; BPD = bronchopulmonary dysplasia; ROP = retinopathy of prematurity; NEC = necrotizing enterocolitis; IVH = intraventricular hemorrhage

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Definitions of concepts and subconcepts are derived from Aday (1994) and Flaskerud & Winslow (1998).

Table 3.

Organizational Resources for Paid Family Leave

Organization	Website	About the Organization
National Women's Law Center (NWLC)	https://nwlc.orghttps://nwlc.org/issue/pregnancy-parenting-the-workplace/	NWLC reviews key issues and laws that affect women and their families, both at the federal and state level.
The Center for Law and Social Policy (CLASP)	https://www.clasp.org/https://www.clasp.org/family-act-proposes-national-paid-family-and-medical-leave	CLASP is a national, nonpartisan, anti-poverty nonprofit advancing policy solutions for low-income people. CLASP develops strategies for reducing poverty, promoting economic opportunity, and addressing barriers faced by people of color.
Family Values @ Work	http://familyvaluesatwork.org/http://familyvaluesatwork.org/states	Family Values @ Work is a national network of 25 state and local coalitions helping spur the growing movement for family-friendly workplace policies such as paid sick days and family leave insurance.
National Center for Children in Poverty (NCCP)	http://www.nccp.org/http://www.nccp.org/projects/paid_leave.html	NCCP is one of the nation's leading public policy centers dedicated to promoting the economic security, health, and well-being of America's low-income families and children. NCCP uses research to promote family-oriented solutions at state and national levels.
The FAMILY Act coalition	http://supportpaidleave.org/#1	The Coalition includes a range of organizations that support a comprehensive national paid family and medical leave standard and similar state paid leave laws.
League of Women Voters of the United States (LWVUS)	https://www.lwv.org/https://www.lwv.org/health-care-reform/league-joins-letter-support-paid-family-leave	The League is an activist, grassroots and nonpartisan organization that helps women play a critical role in advocacy.
The Brookings Institution.	https://www.brookings.edu/https://www.brookings.edu/research/paid-family-and-medical-leave-an-issue-whose-time-has-come/	The Brookings Institution is a nonprofit public policy organization that conducts in-depth research aimed at solving problems facing society at the local, national, and global level.
National Partnership for Women & Families	http://www.nationalpartnership.org/http://www.nationalpartnership.org/issues/work-family/paid-leave.html	The National Partnership for Women & Families is an nonprofit organization that advocates for fairness in the workplace, reproductive health and rights, access to quality, affordable health care, and

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Organization	Website	About the Organization
		policies that help women and men meet the dual demands of work and family.
MomsRising	https://www.momsrising.org/https://www.momsrising.org/issues_and_resources/maternity	MomsRising.org is an on-the-ground and online grassroots organization of more than a million people who are working to achieve economic security for all moms, women, and families in the United States.