
The Health Benefits of Paid Family and Medical Leave: A Report for the Colorado Department of Labor and Employment's Family and Medical Leave Implementation Task Force

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Executive Summary

Paid family and medical leave (PFML; i.e., Family Temporary Disability Insurance) is a government policy that provides employees paid time to step away from work to care for themselves or their family. The United States is the only developed nation that lacks a national paid family leave policy. Forty countries offer eight to 87 weeks of paid family leave.

Although the United States does not have a federal law, eight states have state PFML laws: California, New Jersey, Rhode Island, New York, Washington, Massachusetts, Connecticut, Oregon, and the District of Columbia. In states that do not have PFML laws, some companies have voluntarily provided paid leave to workers. According to a Bureau of Labor and Statistics report from 2012 these voluntary policies only cover 11% of the workforce in the United States. The states implementing PFML fund their programs through employee-paid payroll deductions, which is 0.17-1.00% of annual taxable wages, although there are some restrictions. Insurance programs administer the funds. More than 20 states, including Colorado, are considering PFML laws.

Purpose of Report

Colorado Senate Bill 19-188 requires the Colorado Department of Labor and Employment to prepare for the implementation of PFML for the state of Colorado by completing a thorough analysis of PFML programs by experts in the field, establishing a Family and Medical Leave Implementation Task Force, and commissioning actuarial and third-party studies. This legislation requires the Colorado Department of Public Health and Environment (CDPHE) to provide the Family and Medical Leave Implementation Task Force with a report detailing the health benefits related to PFML.

Report Methodology

This report includes the results of a third-party expedited literature review about the health benefits of paid family leave that included state and federal reports and academic journals from public, social, and occupational health. This review summarizes the results of PFML studies from other countries and in the handful of states in this country that have already implemented PFML.

In order to summarize the strength of the relationship between paid family leave and the health-related outcomes, CDPHE created the following categories:

- **Strong Evidence:** A systematic review contained several high-quality studies that showed a positive health benefit with some magnitude of effect, or four or more individual peer-reviewed research articles that showed a positive health benefit.
- **Moderate Evidence:** Two or three peer-reviewed research articles that showed a positive health benefit.
- **Limited Evidence:** One individual peer-reviewed research article that showed a positive health benefit.

Health Benefits of Paid Family and Medical Leave

While all studies included in this review were subject to some methodological challenges and limitations, overall findings suggest PFML may result in health benefits for infants, children, and mothers. The following table summarizes the key health benefits that may be associated with PFML policies.

Health Benefits of Paid Family and Medical Leave

Health Benefit	Strength of Evidence	Summary of Findings
Reduced Infant Mortality	Strong	Multiple systematic reviews and studies found a strong relationship between PFML and decreased infant mortality with reductions of 10% to 13% in the studies that measured the outcome this way.
Increased Breastfeeding	Strong	Multiple studies found a greater proportion of women continuing to exclusively breastfeed their infants at age six months when they had paid family leave (in California) or when the duration of paid parental leave was extended (in Canada), compared to before the PFML law went into effect.
Increased Immunizations	Strong	A 2016 systematic literature review of studies conducted in the U.S. and other countries found that PFML is strongly associated with increased childhood immunization.
Improved Maternal Mental Health	Strong	A study on paid maternity leave found that women who took increasing lengths of paid maternity leave reported reduced psychological distress. Two other recent studies found pregnancy-related depression and depressive symptoms decreased with longer leave duration. Another recent study of mothers in California showed they are 3-6% more likely to have good self-reported mental health than mothers living in states without PFML.
Improved Maternal and Infant Sleep	Moderate	Three studies found that PFML increased father’s involvement in child care. Two of these studies found that increased paternal involvement improved maternal and infant sleep.
Improved Child Health	Moderate	A study of California’s PFML found lower rates of attention deficit hyperactivity disorder and hearing-related issues among low-income, elementary-aged children after passing PFML laws. Another study indicated parents in California were 5-10% more likely to report good overall infant health after PFML went into effect. A third study found PFML was associated with better parent-reported physical and emotional health of their children with special health care needs.
Reduced Intimate Partner Violence	Moderate	A cohort study of more than 1,500 pregnant women found that PFML was associated with reduced rates of intimate partner violence (IPV) and significantly reduced the odds of reporting physical and emotional IPV up to one year postpartum.
Improved Maternal Physical Health	Limited	A study of mothers in Norway found PFML was associated with a healthier Body Mass Index, lower blood pressure, decreased pain, lower mental health rates, more exercise, and less smoking and that the effects were larger for first-time and low-resource mothers.

Additionally, research suggests increases in breastfeeding and immunizations may also lead to additional positive health outcomes for children such as reduced risk of child maltreatment,

respiratory infections, childhood leukemia, type 1 and 2 diabetes, sudden infant death syndrome (SIDS), non-specific gastroenteritis, atopic dermatitis, and asthma.

Increasing the amount of time that parents can spend with their infants is one possible mechanism connecting PFML to improvements in maternal and child health. Having extra time may promote breastfeeding, parental engagement, use of health services, and less parental stress all of which research suggests is associated with child or maternal health outcomes. PFML may also increase economic security for families, especially after the birth of a child, which could have positive impacts on child health.

Studies indicate PFML may also benefit employers by reducing the cost of health care and increasing worker productivity. PFML promotes gender equality in the workplace, which could stimulate economic growth due to more women participating in the U.S. workforce. A chief economist for the US Department of Labor estimated that the economy would benefit from more than \$500 billion in additional economic activity each year if women participated in the U.S. labor force at the same rates as women in countries with paid leave . Experts recommend a minimum of 12 weeks of paid family leave and medical leave.

Studies suggest federal PFML may help address economic inequality and the racial-wealth gap. PFML is often afforded to higher-wage workers, while low-income workers are more likely to lose wages or their jobs if they need to step away to care for a child or sick family member. In the U.S., 43% of black workers and 25% of Latino workers had access to PFML, compared to 50% of white workers.

Conclusion

Assessing the health benefits of national or state-level policies is inherently difficult because it is not possible to conduct randomized controlled trials about public policy. Since the United States does not have national Paid Family and Medical Leave (PFML), the majority of studies included in this review come from other countries or are studies related to California's PFML policy. The variability in PFML policies, study designs, sample characteristics, definitions of outcome variables, and state or national context makes it difficult to determine the strength of the research for each health area. Although additional research is needed to further identify and explain the health benefits of PFML, the results of this review suggest PFML may have important health benefits for caregivers and children.

Part I. Introduction

Colorado Senate Bill 19-188 requires the Colorado Department of Labor and Employment to prepare for the implementation of PFML for the state of Colorado by completing a thorough analysis of PFML programs by experts in the field, establishing a Family and Medical Leave Implementation Task Force, and commissioning actuarial and third-party studies. This legislation requires the Colorado Department of Public Health and Environment (CDPHE) to provide the Family and Medical Leave Implementation Task Force with a report detailing the health benefits related to PFML. CDPHE staff engaged with the task force to identify relevant health outcomes of interest to support the task force.

Part II. What is Paid Family and Medical Leave (PFML)?

Paid family and medical leave (PFML; i.e., Family Temporary Disability Insurance) is a government policy that provides employees paid time to step away from work to care for themselves or their family. PFML policies can increase the likelihood that employees will return to work healthier and more productive. Though employees may use PFML to care for any immediate family members (e.g., a parent, sibling, spouse, etc.), most use it to care for a child. As such, women tend to use PFML more than men, though PFML use is on the rise among fathers especially in states with PFML or related policies.¹

Most developed countries have adopted paid leave policies to better support employees as they address family needs.² The United States is the only developed nation³ that lacks a national family leave policy. Forty countries offer eight to 87 weeks of paid family leave. Although the United States does not have a federal law, eight states have state PFML laws: California, New Jersey, Rhode Island, New York, Washington, Massachusetts, Connecticut, Oregon, and the District of Columbia. More than 20 states, including Colorado, are considering PFML laws. The states implementing PFML fund their programs through employee-paid payroll deductions, which is 0.17-1.00% of annual taxable wages, although there are some restrictions. Insurance programs administer the funds.⁴

Disparities in Access to Unpaid Leave

Inability to afford unpaid leave. Younger workers and low-income workers are less likely to receive paid time off.⁵ According to the Center for American Progress, only 60% of the U.S.

¹ National Partnership for Women and Families. (2014). Expecting Better: A State-by-State Analysis of Laws that Help New Parents. Retrieved from <http://www.nationalpartnership.org/our-work/workplace/expecting-better-a.html>.

² Raub, A., Nandi, A., Earle, A., Chorny, N., Wong, E., Chung, P., Batra, P., Schickedanz, A., Bose, B., Jou, J., Franken, D., & Heymann, J.. (2018). Paid parental leave: a detailed look at approaches across OECD countries. *Los Angeles: WORLD Policy Analysis Center*.

³ Nations in the Organisation for Economic Co-operation and Development (OECD). See <https://www.oecd.org/>.

⁴ Pew Research Center (2016). Among 41 nations, U.S. is the outlier when it comes to paid parental leave. Retrieved from <https://www.pewresearch.org/fact-tank/2016/09/26/u-s-lacks-mandated-paid-parental-leave/>.

⁵ Ibid.

workforce has access to at least 12 weeks of unpaid leave under the Family Medical Leave Act, but roughly half of those who have access cannot afford to take unpaid time off.⁶

Income differences in access to paid leave. When employers provide PFML, it is most often afforded to higher-wage workers. One study showed 66% of first-time mothers with a college degree had access to PFML, compared to only 19% of first-time mothers with a high-school education.⁷ Most low-income fathers report taking no time off of work to care for or bond with a new child,⁸ and low-wage workers are more likely to lose wages or their jobs if they need to step away from work to care for a child or sick family member.⁹

Race/ethnicity differences in access to paid leave. Lack of PFML may perpetuate economic inequality and the racial-wealth gap. According to the Center for American Progress, in 2011 only 43% of black workers and 25% of Latino workers had access to PFML, compared to 50% of white workers in the United States.¹⁰

Women's participation in the workforce. Women's workforce participation has flatlined in the U.S. at around 47%, while other Organisation for Economic Cooperation and Development (OECD) countries continue to see growth.¹¹ This discrepancy is worse in Colorado, where there is a 12% gap in men's and women's labor force participation.^{12,13} New mothers who take paid parental leave are more likely to stay in the workforce, and women with PFML are 54% more likely to receive wage increases later in their careers.¹⁴ Paid parental leave for fathers also makes it easier for women to re-enter the workforce and prosper in their career.¹⁵ Increased female labor force participation increases per capita income, and can benefit the economy as a whole.¹⁶

⁶ Ajinkya, J. (2014). Who can afford unpaid leave. Center for American Progress. Retrieved from <https://www.americanprogress.org/issues/economy/news/2013/02/05/51762/who-can-afford-unpaid-leave/>.

⁷ Laughlin, Lynda. 2011. "Maternity Leave and Employment Patterns of First-Time Mothers: 1961-2008." Washington, DC: US Census Bureau.

⁸ Pragg, B., & Knoester, C. (2017). Parental leave use among disadvantaged fathers. *Journal of family issues*, 38(8), 1157-1185.

⁹ Ibid.

¹⁰ Sarah Jane Glynn and Jane Farrell. Latinos Least Likely to Have Paid Leave or Workplace Flexibility. Center for American Progress. 2012. Retrieved from <http://www.americanprogress.org/wp-content/uploads/2012/11/GlynnLatinosPaidLeave1.pdf>.

¹¹ Organisation for Economic Co-operation and Development (2018). Labour force participation rates. Retrieved from <https://data.oecd.org/emp/labour-force-participation-rate.htm>.

¹² U.S. Bureau of Labor Statistics. (2018). Employment status of the civilian noninstitutional population by sex, race, Hispanic or Latino ethnicity, and intermediate age, 2017 annual averages. Retrieved from <https://www.bls.gov/lau/ex14tables.htm> (Unpublished calculation by the National Partnership for Women & Families).

¹³ Institute for Women's Policy Research. (n.d.). Status of women in the states: The economic status of women in Colorado. Retrieved from https://www.wfco.org/file/IWPR_Briefing-Paper_CO_Oct2015.pdf.

¹⁴ Houser, L., & Vartanian, T. P. (2012). Pay matters: The positive economic impacts of paid family leave for families, businesses and the public. Rutgers Center for Women and Work.

¹⁵ Ibid.

¹⁶ Blau, F. D., & Kahn, L. M. (2013). Female labor supply: Why is the United States falling behind? *American Economic Review*, 103(3), 251-56.

Part III: Health Benefits of Paid Family and Medical Leave

This report includes the results of a third-party expedited literature review about the health benefits of paid family leave that included state and federal reports and academic journals from public, social, and occupational health. This review summarizes the results of PFML studies from other countries and in states in the U.S. that have already implemented PFML. The full literature review search methodology is included in Appendix I.

In order to summarize the strength of the relationship between paid family leave and the health-related outcomes, CDPHE created the following categories:

- **Strong Evidence:** A systematic review contained several high quality studies that showed a positive health benefit with some magnitude of effect, or four or more individual peer-reviewed research articles that showed a positive health benefit.
- **Moderate Evidence:** Two or three peer-reviewed research articles that showed a positive health benefit.
- **Limited Evidence:** One individual peer-reviewed research article that showed a positive health benefit.
- **Secondary Health Benefits:** Research about additional health benefits indirectly associated with the health outcomes that are directly tied to PFML laws.

Below is a summary of the health benefits organized by these evidence categories.

Strong Evidence of Health Benefits from PFML

Research indicates a strong amount of evidence associating PFML laws and the following health outcomes.

Decreased infant mortality rates.

Multiple systematic reviews indicate a strong relationship between PFML and decreased infant mortality.^{17,18} One peer reviewed study of low- and middle-income countries noted that each additional month of PFML was associated with 7.9 fewer infant deaths per 1,000 live births, a 13% relative reduction in infant mortality.¹⁹ Nandi et al. (2016) further found that the full-time equivalent of 10 weeks of paid leave was associated with a 10% reduction in the infant mortality rate and a 9% reduction in child mortality rates.²⁰ Patton et al. (2017) examined the effect of paid parental leave on infant and post-neonatal mortality rates across 19

¹⁷ Burtle, A., & Bezruchka, S. (2016). Population Health and Paid Parental Leave: What the United States Can Learn from Two Decades of Research. *Healthcare (Basel, Switzerland)*, 4(2), 30. doi:10.3390/healthcare4020030 for a review.

¹⁸ Aitken, Z., Garrett, C. C., Hewitt, B., Keogh, L., Hocking, J. S., & Kavanagh, A. M. (2015). The maternal health outcomes of paid maternity leave: A systematic review. *Social Science & Medicine*, 130, 32-41.

¹⁹ Nandi, A., Hajizadeh, M., Harper, S., Koski, A., Strumpf, E.C., Heymann, J. (2016). Increased duration of paid maternity leave lowers infant mortality in low- and middle-income countries: A quasi-experimental study. *PLoS Medicine*, 13, e1001985. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4811564/>.

²⁰ Ibid.

Organization for Economic Cooperation and Development (OECD) countries and saw a statistically significant association between PFML and both infant mortality and post-neonatal mortality rates.²¹ This study found that PFML of at least 12 weeks could prevent 600 infant or post-neonatal deaths each year in the U.S.²² Ruhm (2011) found that implementing 40 weeks of job-protected PFML had the greatest overall reduction to mortality.²³ Burtle et al. (2016), a systematic review of five studies, suggest that lower infant death rates may be the result of decreased stress during pregnancy, allowing for more time for prenatal health care visits, parental bonding, and increased breastfeeding and immunization rates.²⁴

Improved breastfeeding rates.

A study of breastfeeding rates in California before and after the state adopted a paid family leave program found an increase of 3-5% in exclusive breastfeeding at three and six months and a 10%-20% increase in any breastfeeding at three, six, and nine months.²⁵ Additionally, PFML increases the likelihood of breastfeeding and breastfeeding for longer through infancy.^{26,27} Following the extension of PFML from 6 months to one year in Canada, there was almost a 40% increase in exclusive breastfeeding at six months, compared to prior to the law change.²⁸ An extensive and recent review of population health and paid parental leave independently provided the same key findings that paid parental leave was associated with a larger proportion of mothers still exclusively breastfeeding their infants at six months, compared to mothers without paid leave.²⁹ The American College of Obstetricians and Gynecologists strongly encourages mothers to breastfeed exclusively for the first six months of the child's life.³⁰

²¹ Patton, D., Costich, J. F., & Lidströmer, N. (2017). Paid parental leave policies and infant mortality rates in OECD countries: Policy implications for the United States. *World Medical & Health Policy*, 9(1), 6-23.

²² Ibid.

²³ Ruhm, C.J. Policies to assist parents with young children. *Future Child*. 2011, 21-37-68.

²⁴ Burtle, A., & Bezruchka, S. (2016). Population Health and Paid Parental Leave: What the United States Can Learn from Two Decades of Research. *Healthcare (Basel, Switzerland)*, 4(2), 30. doi:10.3390/healthcare4020030 for a review.

²⁵ Huang, R., & Yang, M. (2015). Paid maternity leave and breastfeeding practice before and after California's implementation of the nation's first paid family leave program. *Economics & Human Biology*, 16, 45-59.

²⁶ Mirkovic, K. R., Perrine, C. G., Scanlon, K. S., & Grummer-Strawn, L. M. (2014). Maternity leave duration and full-time/part-time work status are associated with US mothers' ability to meet breastfeeding intentions. *Journal of Human Lactation*, 30(4), 416-419.

²⁷ Ruhm, C. J. (2000). Parental leave and child health. *Journal of health economics*, 19(6), 931-960.

²⁸ Baker M, Milliganezruchka, S. (2016, June). Population health and paid parental leave: what the United States can learn from two d K. Maternal employment, breastfeeding, and health: evidence from maternity leave mandates. *J Health Econ*. 2008 Jul;27(4):871-887.

²⁹ Burtle, A., & Bezruchka, S. (2016). Population Health and Paid Parental Leave: What the United States Can Learn from Two Decades of Research. *Healthcare (Basel, Switzerland)*, 4(2), 30.

³⁰ American College of Obstetricians and Gynecologists (2016). Optimizing support for breastfeeding as part of obstetric practice. Retrieved from <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Support-for-Breastfeeding-as-Part-of-Obstetric-Practice?IsMobileSet=false>.

Increased childhood immunizations.

According to a 2016 systematic literature review of studies conducted in the U.S. and other countries, PFML is strongly associated with increased childhood immunization.³¹ Researchers surveyed more than 250,000 live births from 20 low- and middle- income countries over an eight year period and discovered that PFML was associated with increased immunization rates.³² Similarly, another study found that PFML increased immunization rates across diverse countries, even after researchers controlled for other social factors, health care costs, and national prosperity measures.³³ Australian researchers also found a significant association between PFML and health outcomes including up-to-date immunization status and breastfeeding.³⁴

A study found that when mothers return to work within 12 weeks of birth, infants are less likely to receive well-baby visits and immunizations, are less likely to be breastfed, and may have lower cognitive and behavioral scores.³⁵ One study of the impact of PFML on immunization found no association; however, the researcher explains this may be due to the already high and stable rates of immunization in the European countries studied.³⁶

Not having access to PFML can increase barriers for families to access immunizations. Studies across diverse countries have reported work conflicts as limiting parents' ability to vaccinate their children.³⁷ A study of 1,500 employees in the U.S. from 1984-1991 indicates that difficulty leaving work was one factor associated with low immunization rates for children under age 2.³⁸

Improved maternal mental health.

Mothers who have access to maternity leave are less likely to experience pregnancy-related depression and related mental health issues. Whitehouse et al. (2013) found that women who took increasing lengths of paid maternity leave reported reduced psychological distress.³⁹ Kornfeind and Sipsma (2018) found that the risk for pregnancy-related depression decreases

³¹ Burtle, A., & Bezruchka, S., Population Health and Paid Leave: What the United States Can Learn from Two Decades of Research. *Healthcare* (Vol. 4, No. 2, p. 30). Multidisciplinary Digital Publishing Institute.

³² Hajizadeh, M., Heymann, J., Strumpf, E., Harper, S., Nandi, A. (2015). Paid maternity leave and childhood vaccination uptake: Longitudinal evidence from 20 low-and-middle-income countries. *Soc Sci Med.* 140:104-17.

³³ Daku, M., Raub, A., & Heymann, J. (2012). Maternal leave policies and vaccination coverage: A global analysis. *Social Science & Medicine*, 74(2), 120-124.

³⁴ Khanam, R., Nghiem, S., Connelly, L. (2016). The effects of parental leave on child health and postnatal care: Evidence from Australia. *Economic Analysis and Policy*, 49:17-29.

³⁵ Berger, L.M., Hill, J., Waldfogel, J. (2005). Maternity Leave, Early Maternal Employment and Child Health and Development in the US. *The Economic Journal*, 115(501) <https://doi.org/10.1111/j.0013-0133.2005.00971.x>

³⁶ Tanaka, S. (2005). Parental leave and child health across OECD countries. *The Economic Journal*, 115(501). <https://academic.oup.com/ej/article/115/501/F7/5089303>.

³⁷ Daku, M., Raub, A., & Heymann, J. (2012). Maternal leave policies and vaccination coverage: A global analysis. *Social Science & Medicine*, 74(2), 120-124.

³⁸ Fielding, J.E., Cumberland, W.G., Pettitt, L. (1994). Immunization Status of Children of Employees in a Large Corporation. *JAMA*. 271(7):525-530.

³⁹ Whitehouse, G., Romaniuk, H., Lucas, N., & Nicholson, J. (2013). Leave duration after childbirth: Impacts on maternal mental health, parenting, and couple relationships in Australian two-parent families. *Journal of Family Issues*, 34(10), 1356-1378.

with each additional week of maternity leave a mother takes.⁴⁰ Dagher et al. (2014) found that an increase in leave duration is also associated with a decrease in depressive symptoms until six months postpartum.⁴¹ In a recent study that compared self-reported maternal mental health in California to states that do not have PFML, Bullinger (2019) found mothers of infants in California were three to six percent more likely to report good mental health, but did not see any significant effects on fathers' mental health.⁴²

Moderate Evidence of Health Benefits from PFML

Research indicates a moderate amount of evidence associating PFML laws and the following health outcomes.

Improved maternal and infant sleep.

O'Brien (2009) found that PFML increases paternal involvement in child care.⁴³ These benefits are most salient when the leave granted to fathers is non-transferable (i.e., fathers cannot give their leave to their child's mother).⁴⁴ One study of 51 couples noted the short-term effects of father involvement may include better mother and child sleep, and decreased risk for maternal pregnancy-related depression.⁴⁵ Tikotzky et al. (2015) found in a longitudinal study of 57 families that when fathers are more involved during the first six months of their newborn's life infants are more likely to develop healthy sleeping habits.⁴⁶

Improved child health.

Recent research suggests California's PFML program may be associated with improved child health. For example, one study found that California reported lower rates of attention deficit hyperactivity disorder and hearing-related issues among low-income, elementary-aged children after passing PFML laws.⁴⁷ The authors of this study speculate PFML may narrow the inequality of health outcomes between high-income and low-income families.⁴⁸ Although this study does not explore the exact mechanism by which PFML impacts child health, the authors suggest potential mechanisms may be through increased rates of breastfeeding, greater

⁴⁰ Kornfeind, K. R., & Sipsma, H. L. (2018). Exploring the link between maternity leave and postpartum depression. *Women's Health Issues, 28*(4), 321-326.

⁴¹ Dagher, R. K., McGovern, P. M., & Dowd, B. E. (2014). Maternity leave duration and postpartum mental and physical health: implications for leave policies. *Journal of Health Politics, Policy and Law, 39*(2), 369-416.

⁴² Bullinger, L.R. (2019), The Effect of Paid Family Leave on Infant and Parental Health in the United States. *Journal of Health Economics, 66*, 101-116.

⁴³ O'Brien, M. (2009). Fathers, parental leave policies, and infant quality of life: International perspectives and policy impact. *The Annals of the American Academy of Political and Social Science, 624*(1), 190-213.

⁴⁴ Ibid.

⁴⁵ Sejourne, N., Beame, M., Vaslot, V., & Chabrol, H. (2012). Effect of paternity leave on maternal postpartum depression. *Gynecologie, obstetrique & fertilité, 40*(6), 360-364.

⁴⁶ Tikotzky, L., Sadeh, A., Volkovich, E., Manber, R., Meiri, G., & Shahar, G. (2015). VII. Infant sleep development from 3 to 6 months postpartum: Links with maternal sleep and paternal involvement. *Monographs of the Society for Research in Child Development, 80*(1), 107-124.

⁴⁷ Lichtman-Sadot, S., & Bell, N. P. (2017). Child health in elementary school following California's paid family leave program. *Journal of Policy Analysis and Management, 36*(4), 790-827.

⁴⁸ Ibid.

parental care during infancy, and reduced prenatal stress.⁴⁹ Another study found overall parent-reported infant health was 5-10% higher in California after PFML went into effect.⁵⁰ This same study found California parents were 2-6% more likely to report overall good infant health compared to states that do not have PFML.⁵¹ Additionally, Schuster et al. (2009) found that parents of children with special health care needs who missed one or more days of work for their child's illness and who received PFML reported that their children had better physical and emotional health.⁵²

Reduced intimate partner violence.

A study of more than 1,500 pregnant women found that PFML was associated with reduced rates of intimate partner violence (IPV).⁵³ Researchers suggest that access to paid maternity leave significantly reduced odds of reporting physical and emotional IPV up to one year postpartum.⁵⁴ The Centers for Disease Control and Prevention (CDC) recommends that states implement PFML to reduce gender inequality by protecting maternal employment and earnings, which can help women leave an abusive relationship.⁵⁵ Access to PFML ensures those recovering from IPV stalking, sexual violence, and harassment can take ample time off work to seek legal, medical, mental health, safety, or relocation services.

According to the CDC, access to psychological, physical, emotional, housing, and other supports for survivors and their children may help prevent future experiences of IPV and may reduce the negative consequences experienced by IPV survivors.⁵⁶ PFML can reduce the number of people affected by IPV, while also ensuring affected employees and their families receive the time, resources, and care they need to safely exit a dangerous environment or situation.⁵⁷

⁴⁹ Ibid.

⁵⁰ Bullinger, L.R. (2019), The Effect of Paid Family Leave on Infant and Parental Health in the United States. *Journal of Health Economics*, 66, 101-116.

⁵¹ Ibid.

⁵² Schuster, M. A., Chung, P. J., Elliott, M. N., Garfield, C. F., Vestal, K. D., & Klein, D. J. (2009). Perceived effects of leave from work and the role of paid leave among parents of children with special health care needs. *American Journal of Public Health*, 99(4), 698-705.

⁵³ Gartland, D., Hemphill, S. A., Hegarty, K., & Brown, S. J. (2011). Intimate partner violence during pregnancy and the first year postpartum in an Australian pregnancy cohort study. *Maternal and child health journal*, 15(5), 570-578.

⁵⁴ Ibid.

⁵⁵ Niolon, P. H., Kearns, M., Dills, J., Rambo, K., Irving, S., Armstead, T., & Gilbert, L. (2017). Preventing Intimate Partner Violence Across the Lifespan: A Technical Package of Programs, Policies, and Practices. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

⁵⁶ Ibid.

⁵⁷ Gartland, D., Hemphill, S. A., Hegarty, K., & Brown, S. J. (2011). Intimate partner violence during pregnancy and the first year postpartum in an Australian pregnancy cohort study. *Maternal and child health journal*, 15(5), 570-578.

Limited Evidence of Health Benefits from PFML

Research indicates a limited amount of evidence associating PFML laws and the following health outcomes.

Improved maternal physical health.

A study of mothers in Norway examined the impact of the introduction of paid maternity leave on maternal health.⁵⁸ Findings suggest PFML was linked to a healthier Body Mass Index (BMI), lower blood pressure, decreased pain, lower mental health rates, more exercise, and less smoking.⁵⁹ Butikofer (2018) found that effects were larger for first-time and low-resource mothers.⁶⁰

Secondary Health Benefits of PFML

Additional research has found secondary health outcomes that may be associated with PFML.

Reduced risk of child abuse and neglect.

Data from 1995-2011 compares the rates of abusive head trauma hospitalizations in California, which implemented PFML in 2004, and seven states that have not implemented PFML. Analysis of that data shows a significant reduction in abusive head trauma hospitalization after the passage of PFML in California compared to states without PFML.⁶¹ The Centers for Disease Control and Prevention (CDC) suggests increases in breastfeeding may be the mechanism through which PFML could reduce child abuse and neglect rates.⁶² A 15-year cohort study of more than 7,000 mother-child pairs comparing three groups of children (non-breastfed children, children breastfed for fewer than four months, and children breastfed for four or more months) found that the non-breastfed children had a 4.8 times greater risk of experiencing child abuse and neglect by their mothers relative to those breastfed for four or more months.⁶³

Additionally, the CDC suggests PFML reduces parental stress, a known risk factor for child abuse and neglect.⁶⁴ According to survey results from nearly 3,000 employees in the National Study of the Changing Workforce, administered in 2002 and 2008, employees with access to

⁵⁸ Butikofer, Aline and Riise, Julie and Skira, Meghan, The Impact of Paid Maternity Leave on Maternal Health. (March 5, 2018). NHH Dept. of Economics Discussion Paper No. 04/2018. Available at SSRN: <https://ssrn.com/abstract=3139823> or <http://dx.doi.org/10.2139/ssrn.3139823>.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Klevens, J., Luo, F., Xu, L., Peterson, C., & Latzman, N. E. (2016). Paid family leave's effect on hospital admissions for pediatric abusive head trauma. *Injury prevention*, 22(6), 442-445.

⁶² Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities.

⁶³ Strathearn, L., Mamun AA, Najman JM, O'Callaghan MJ. Does breastfeeding protect against substantiated child abuse and neglect? A 15-year cohort study. *Pediatrics*. 2009;123(2):483-493. doi:10.1542/peds.2007-3546.

⁶⁴ Fortson, B. L., Klevens, J., Merrick, M. T., Gilbert, L. K., & Alexander, S. P. (2016). Preventing child abuse and neglect: A technical package for policy, norm, and programmatic activities.

paid sick and vacation leave experience less depression, lower stress levels, and less frequent sleep problems than those without paid leave.⁶⁵

Improved maternal health outcomes from breastfeeding.

One study found that breastfeeding decreases the likelihood of mothers developing heart disease, breast cancer, type II diabetes, obesity, or ovarian cancer.⁶⁶ Mothers who breastfeed for longer are more likely to return to a healthy weight following pregnancy and childbirth, which predicts many positive health outcomes.^{67,68} Schwarz et al. (2009) analyzed 139,681 women and noted that increasing the duration of lactation was associated with a reduced prevalence of cardiovascular risk factors including hypertension, diabetes, and hyperlipidemia.⁶⁹

Improved child health outcomes.

A recent meta-analysis found that breastfeeding strengthens infant immune systems, and lowers the risk for respiratory tract infections, childhood leukemia, type 1 and 2 diabetes, sudden infant death syndrome (SIDS), non-specific gastroenteritis, atopic dermatitis, and asthma.⁷⁰

Longer maternity leave may increase parental attachment. In interviews with mothers and their four-month-old infants, Clark et al. found mothers with less leave time showed less “positive affect, sensitivity, and responsiveness” with their infant.⁷¹ According to the World Health Organization’s literature review on the connection between caregiver-child interactions and healthy childhood development, sensitive and responsive caregiving is a requirement for healthy neurophysiological, physical, and psychological development.⁷²

⁶⁵ Aumann, K., & Galinsky, E. (2009). *The state of health in the American workforce: Does having an effective workplace matter?* Retrieved from familiesandwork.org/site/research/reports/HealthReport.pdf.

⁶⁶ Ip, S., Chung, M., Raman, G. ... Lau, J. (2007). Breastfeeding and maternal and infant health outcomes in developed countries. Evidence Report/Technology Assessment No. 153. AHRQ Publication No. 07-E007. Rockville, MD: Agency for Healthcare Research and Quality.

⁶⁷ Amir, L. H., & Donath, S. (2007). A systematic review of maternal obesity and breastfeeding intention, initiation and duration. *BMC pregnancy and childbirth*, 7(1), 9.

⁶⁸ Dewey, K. G., Heinig, M. J., & Nommsen, L. A. (1993). Maternal weight-loss patterns during prolonged lactation. *The American journal of clinical nutrition*, 58(2), 162-166.

⁶⁹ Schwarz, E. B., Ray, R. M., Stuebe, A. M., Allison, M. A., Ness, R. B., Freiberg, M. S., & Cauley, J. A. (2009). Duration of lactation and risk factors for maternal cardiovascular disease. *Obstetrics and gynecology*, 113(5), 974

⁷⁰ Stuebe, A. (2009). The risks of not breastfeeding for mothers and infants. *Reviews in obstetrics and gynecology*, 2(4), 222.

⁷¹ Clark, R., Hyde, J. S., Essex, M. J., & Klein, M. H. (1997). Length of Maternity Leave and Quality of Mother-Infant Interactions. *Child development*, 68(2), 364-383.

⁷² World Health Organization. (2004). The importance of caregiver-child interactions for the survival and healthy development of young children: A review. Department of Child and Adolescent Health Development: Geneva, Switzerland. Retrieved from

<https://apps.who.int/iris/bitstream/handle/10665/42878/924159134x.pdf?sequence=1>.

PFML may also reduce pregnancy-related depression, which is associated with adverse outcomes for the mother's children including poorer mental and physical health; and behavioral, emotional, cognitive, and interpersonal problems.⁷³

A study from Norway followed children and mothers from 1977 to 2006 following Norway's transition from three months of unpaid family leave to four months of job-protected paid leave, with a provision for a further 12 months of unpaid leave.⁷⁴ The study found positive effects on teenage pregnancies for children born after the addition of paid leave.⁷⁵ One benefit of this study was that it matched individual children with individual mothers, rather than relying on population-level outcomes.⁷⁶

Part IV: Social and Economic Benefits

After the passage of Senate Bill 19-188, CDPHE staff reached out to key stakeholders and members of the Colorado Department of Labor and Employment Family Task Force to identify additional areas of research for this report. As a result, the third-party researcher conducted a brief narrative literature review to identify the benefits of PFML on the following additional outcomes.

Economic Benefits for Communities

Improved economic stability for families.

Research indicates that approximately half of low-income workers put off paying bills during their unpaid leave and many have to rely on public resources to feed their families.⁷⁷ PFML may enable employees to take leave and care for their family without exiting the workforce or compromising their current wage levels.⁷⁸ PFML can be an important component to families' financial security in a variety of caregiving situations through financial support while on leave and job security when caregivers return to work.⁷⁹

Improved women's economic growth after paid leave.

A Rutgers University study on the positive impact of paid family leave found mothers who were able to take more than four weeks of paid leave were 54% more likely to see an increase

⁷³ Stewart, D. E., Robertson, E., Dennis, C. L., Grace, S. L., & Wallington, T. (2003). Postpartum depression: Literature review of risk factors and interventions. *Toronto: University Health Network Women's Health Program for Toronto Public Health*.

⁷⁴ Carneiro, P., Pedro, C., Loken, K.V., Salvanes, K.G. A Flying Start? Maternity leave benefits and long-run outcomes of children. *J. Political Econ.* 2015, 123, 365-412.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Horowitz, J. M., Parker, K., Graf, N., & Livingston, G. (2017). Americans widely support paid family and medical leave, but differ over specific policies. *Pew Research Center*.

⁷⁸ U.S. Congress Joint Economic Committee. (2019). The economic benefits of paid leave: Fact sheet. Retrieved from https://www.jec.senate.gov/public/_cache/files/646d2340-dcd4-4614-ada9-be5b1c3f445c/jec-fact-sheet---economic-benefits-of-paid-leave.pdf.

⁷⁹ Ibid.

in wages in the year following the child's birth than women who take no leave at all.⁸⁰ This study also found women who return to work after a paid leave have a 39% lower likelihood of receiving public assistance and food stamps than women who take no leave at all.⁸¹ Further, findings from California that look at workers in low-quality jobs indicate that the use of PFML increased the probability that workers returned to the same employer after their leave.⁸²

Currently, women take parental leave at a 9:1 ratio compared to men. According to a United States Department of Labor study, if women participated in the U.S. labor force at the same rates as women in countries with paid leave, the economy would benefit from more than \$500 billion in additional economic activity each year.⁸³ Another study found that 10 years after motherhood, labor force participation is highest among mothers who receive paid leave.⁸⁴ Research on the economic impact of California's PFML policy suggests it increased the number of weeks women worked during the second year of the child's life by 6.9 weeks by increasing the probability of returning to work by the end of the child's first year.⁸⁵

A more gender-balanced society.

States and countries that offer PFML have increased the number of paternity leave claims over recent years.⁸⁶ For instance, after implementing PFML in California paternity leave increased by 400% in only eight years.⁸⁷

The primary cause of continued male-female disparities in wages and occupational attainment is rooted in the gendered divisions of caregiving labor, particularly the mother's withdrawals and reductions in employment.⁸⁸ PFML may help balance the proportion of men and women in both caregiving and work-related roles.

Decreased poverty and dependence on public resources.

A study on the effects of PFML in California found that workers earning \$10 per hour caring for a family of three or more would fall under the poverty line in just three days if they are

⁸⁰ Houser, L., & Vartanian, T. P. (2012). *Pay matters: The positive economic impacts of paid family leave for families, businesses and the public*. Rutgers Center for Women and Work.

⁸¹ Ibid.

⁸² Ibid.

⁸³ U.S. Department of Labor. (2015). The cost of doing nothing: The price we all pay without paid leave policies to support America's 21st century working families. Retrieved from <https://www.dol.gov/wb/resources/cost-of-doing-nothing.pdf>.

⁸⁴ Goldin, C., & Mitchell, J. (2017). The new life cycle of women's employment: Disappearing humps, sagging middles, expanding tops. *Journal of Economic Perspectives*, 31(1), 161-82.

⁸⁵ Baum, C.L., Ruhm, C.J. (2016) The Effects of Paid Family Leave in California on Labor Market Outcomes. *Journal of Policy Analysis and Management*, vol 35(2), 333-356.

⁸⁶ National Partnership for Women & Families. (2019). Fathers need paid family and medical leave. Retrieved from <http://www.nationalpartnership.org/our-work/resources/workplace/paid-leave/fathers-need-paid-family-and-medical-leave.pdf>.

⁸⁷ Ibid.

⁸⁸ Gornick, J. C., & Hegewisch, A. (2010). The impact of "Family-Friendly Policies" on women's employment outcomes and on the costs and benefits of doing business. A commissioned report for the World Bank.

forced to take unpaid leave.⁸⁹ PFML has the potential to decrease poverty and dependence on public resources (e.g., food assistance programs) across the U.S. because it provides working families with income when they need to take leave to care for their family. Controlling for factors that differentiate those with access to and use PFML from those who either have no leave or unpaid leave, one study showed that both men and women report lower levels of receiving public assistance in the year following a child's birth, when compared with those who do not take any leave.⁹⁰

Improved educational outcomes.

PFML is associated with improved educational and cognitive development among children.⁹¹ A study about the impact of PFML on children's education outcomes in Austria showed long-lasting benefits to children's educational and economic attainment, including higher rates of high school graduation and college attendance, and greater earnings at age 30.⁹²

A study from Norway followed children and mothers from 1977 to 2006 following Norway's transition from three months of unpaid family leave to four months of job-protected paid leave, with a provision for a further 12 months of unpaid leave.⁹³ The study found positive effects on IQ and college attendance, and saw reductions in drop out rates for children born after the addition of PFML.⁹⁴

Decreased nursing home use.

There is limited research on the health impacts of PFML related to caring for a parent. Data related to the number of family leave insurance claims to care for a parent were significantly less than leave claims to care for a newborn child in both California and New Jersey, despite the high number of work leaves related to the health of a family member (parent, spouse, or child).⁹⁵ However, Arora et al. (2018) examined California's PFML program between 1999 and 2008 to determine whether PFML influenced nursing home utilization and found that PFML was associated with an 11% relative decline in elderly nursing home use in California.⁹⁶

Better Workplace Culture

Reduced work-family conflict.

⁸⁹ Ibid.

⁹⁰ Houser, L., & Vartanian, T. (2012, January). Pay Matters: The Positive Economic Impacts of Paid Family Leave for Families, Businesses and the Public. Center for Women and Work at Rutgers, the State University of New Jersey Publication. Retrieved 6 June 2019 from <http://www.nationalpartnership.org/research-library/work-family/other/pay-matters.pdf>.

⁹¹ Danzer, N., & Lavy, V. (2018). Paid parental leave and children's schooling outcomes. *The Economic Journal*, 128(608), 81-117.

⁹² Ibid.

⁹³ Carneiro, P., Pedro, C., Loken, K.V., Salvanes, K.G. A Flying Start? Maternity leave benefits and long-run outcomes of children. *J. Political Econ.* 2015, 123, 365-412.

⁹⁴ Ibid.

⁹⁵ Morefield, B., Hoffman, A., Bray, J., and Byrd, N. (2016). *Leaving it to the Family: the Effects of Paid Leave on Adult Child Caregivers*. Retrieved from:

https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/Paid_Leave_Leaving_it_to_the_family_Report.pdf

⁹⁶ Arora, K., & Wolf, D. A. (2018). Does paid family leave reduce nursing home use? The California experience. *Journal of Policy Analysis and Management*, 37(1), 38-62.

Work-family conflict (i.e., incompatible demands between work and family) is consistently a top stressor across the U.S. In the U.S. 95% of women and 90% of men report experiencing work-family conflict.⁹⁷ The U.S. has higher levels of work-family conflict than any other developed country in the world.⁹⁸ More than 60% of employees report getting sick from workplace stress and 7% of employees report hospitalization as a result of workplace stress.⁹⁹

Several studies have shown when employers create or change policies to foster more family-supportive work settings, they see positive changes in employees' organizational commitment, on-the-job safety, job performance, job satisfaction, engagement, and turnover intent.^{100,101,102} Research indicates employees with less work-family conflict sleep better, have lower cardio metabolic risk (i.e., lower blood pressure and cholesterol), lower cortisol levels, less emotional strain, and lower risk for developing chronic disease or a mental or behavioral health disorder (e.g., depression, anxiety, substance use).^{103,104,105} In a study from California, human resources directors indicated employees who took paid leave after the birth of a child or to care for a family member with a serious illness were noticeably less stressed and in better health than employees who did not take leave.¹⁰⁶ New Jersey employers reported similar findings.¹⁰⁷

Improved employee morale.

Most New Jersey employers reported increased morale among their employees after state-wide PFML implementation.¹⁰⁸ Similar findings emerged from California where more than 90%

⁹⁷ Allen, T. D., & Martin, A. (2017). The work-family interface: A retrospective look at 20 years of research in JOHP. *Journal of Occupational Health Psychology, 22*(3), 259.

⁹⁸ Pfeffer, J. (2018). *Dying for a paycheck: How modern management harms employee health and company performance—and what we can do about it*. HarperCollins.

⁹⁹ Pfeffer, J. (2018). *Dying for a paycheck: How modern management harms employee health and company performance—and what we can do about it*. HarperCollins.

¹⁰⁰ Cullen, J. C., & Hammer, L. B. (2007). Developing and testing a theoretical model linking work-family conflict to employee safety. *Journal of occupational health psychology, 12*(3), 266.

¹⁰¹ Hammer, L. B., Johnson, R. C., Crain, T. L., Bodner, T., Kossek, E. E., Davis, K. D., Kelly, E.L., Buxton, O.M, Karuntzos, G., Chosewood, L.C., & Berkman, L. (2016). Intervention effects on safety compliance and citizenship behaviors: Evidence from the work, family, and health study. *Journal of Applied Psychology, 101*(2), 190.

¹⁰² Odle-Dusseau, H. N., Hammer, L. B., Crain, T. L., & Bodner, T. E. (2016). The influence of family-supportive supervisor training on employee job performance and attitudes: An organizational work-family intervention. *Journal of Occupational Health Psychology, 21*(3), 296.

¹⁰³ Berkman, L. F., Liu, S. Y., Hammer, L., Moen, P., Klein, L. C., Kelly, E., Fay, M., Davis, K., Durham, M., Karuntzos, G., & Buxton, O. M. (2015). Work-family conflict, cardiometabolic risk, and sleep duration in nursing employees. *Journal of occupational health psychology, 20*(4), 420.

¹⁰⁴ Crain, T. L., Hammer, L. B., Bodner, T., Kossek, E. E., Moen, P., Lilienthal, R., & Buxton, O. M. (2014). Work-family conflict, family-supportive supervisor behaviors (FSSB), and sleep outcomes. *Journal of occupational health psychology, 19*(2), 155.

¹⁰⁵ Hammer, L. B., & Zimmerman, K. L. (2011). "Quality of work life" In Zedec, S. (Eds). *APA Handbook of Industrial and Organizational Psychology, Vol 3: Maintaining, Expanding, and Contracting the Organization*.

¹⁰⁶ National Partnership for Women & Families. (2018). Paid family and medical leave: Good for Business. National Partnership: Washington, D.C. Retrieved from <http://www.nationalpartnership.org/our-work/resources/workplace/paid-leave/paid-leave-good-for-business.pdf>.

¹⁰⁷ Lerner, S., & Appelbaum, E. (2014). Business as usual: New Jersey employers' experiences with family leave insurance(No. 2014-12). Center for Economic and Policy Research (CEPR).

¹⁰⁸ Ibid.

reported no change or positive changes in employee morale.¹⁰⁹ Most employers reported that other employees collaborated and handled the extra work from the on-leave employee, as opposed to the employer hiring a temporary worker.^{110,111}

Reduced employee burnout.

Workplaces ignoring employees' needs to balance work and family may result in higher likelihood of burnout, more employee turnover, increased employee stress, and increased health care costs.¹¹²

Worker Performance

Increased worker productivity.

When workers are unable to take needed time off, they spend more hours working, but may be less productive.¹¹³ A recent study found that 70% of employed family caregivers reported investing less time or attention in work because of caring for their family member.¹¹⁴

A study in California found that 90% of California employers indicated they saw no change or a positive change in their workers' productivity after the legislature passed PFML laws in the state.¹¹⁵ PFML also increased the usual weekly work hours of employed mothers with young (age 1-3) children by 9%, further benefiting employers economically.¹¹⁶ One explanation for this increase may be that PFML increases job continuity and female employment rates.¹¹⁷

Employer Fiscal Impact

Improved outcomes for small businesses.

A recent study indicated that 70% of small businesses support PFML.¹¹⁸ The majority of small businesses in New Jersey did not report increased overtime costs due to PFML, despite having

¹⁰⁹ Klerman, J. A., K. Daley, and A. Pozniak (2012). Family and medical leave in 2012: Technical report. Technical report, Abt Associates Inc. Prepared for the U.S. Department of Labor (Contract No. GS10FOO86K).

¹¹⁰ Appelbaum, E., & Milkman, R. (2011). Leaves that Pay: Employer and Worker Experiences with Paid Family Leave in California. Washington, D.C.: Center for Economic and Policy Research.

¹¹¹ Appelbaum, E. & Milkman, R. (2013). Unfinished Business: Paid Family Leave in California and the Future of U.S. Work-Family Policy. Ithaca: ILR Press.

¹¹² Kutilek, L. M., Conklin, N. L., & Gunderson, G. (2002). Investing in the future: Addressing work/life issues of employees. *Journal of Extension*, 40(1), 1-7.

¹¹³ Goetzel, R. Z., Long, S. R., Ozminkowski, R. J., Hawkins, K., Wang, S., & Lynch, W. (2004). Health, absence, disability, and presenteeism cost estimates of certain physical and mental health conditions affecting US employers. *Journal of Occupational and Environmental Medicine*, 46(4), 398-412.

¹¹⁴ Feinberg, L. F. (2019). Paid family leave: An emerging benefit for employed family caregivers of older adults. *Journal of the American Geriatrics Society*.

¹¹⁵ Rossin-Slater, M., Ruhm, C. J., & Waldfogel, J. (2013). The effects of California's paid family leave program on mothers' leave-taking and subsequent labor market outcomes. *Journal of Policy Analysis and Management*, 32(2), 224-245.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Small Business Majority & Center for American Progress. (2017). Small businesses support paid family leave programs. Retrieved from: <https://smallbusinessmajority.org/our-research/workforce/small-businesses-support-paid-family-leave-programs>

significantly fewer employees.¹¹⁹ In California, small- and medium-sized businesses reported more positive outcomes than large businesses.¹²⁰

Reduced costs.

Employers may incur thousands of dollars in turnover costs when employees leave and do not return.¹²¹ In California 87% of employers agreed that the paid leave program did not increase costs to the businesses.¹²²

Secondary Health Benefits from Improved Financial Stability

Decreased caregiver stress.

Multiple studies indicate caregivers experience stress due to the financial and mental strain associated with making accommodations for care.^{123,124,125} Most caregivers need to make work accommodations to care for a family member, and about half will lose income as a result.^{126,127} One study found caregiver stress and the stress associated with chronic illness is associated with less exercise and sleep, weight gain, and higher rates of infectious disease, respiratory tract infections, hypertension, and coronary heart disease.¹²⁸ Schuster et al. (2009) examined the perceived effects of leave from work among employed parents of children with special health care needs and found 57% of parents reported a positive effect of

¹¹⁹ Ramirez, M. (2012). New Jersey Business and Industry Association: The Impact of Paid Family Leave on New Jersey Businesses. Bloustein School of Planning and Public Policy at Rutgers, the State University of New Jersey. Retrieved 26 September 2018, from <http://bloustein.rutgers.edu/wp-content/uploads/2012/03/Ramirez.pdf>

¹²⁰ National Partnership for Women & Families. (2018). Paid family and medical leave: Good for Business. National Partnership: Washington, D.C. Retrieved from <http://www.nationalpartnership.org/our-work/resources/workplace/paid-leave/paid-leave-good-for-business.pdf>.

¹²¹ Ibid.

¹²² Ibid.

¹²³ Aumann, K., Galinsky, E., Sakai, K., et. al. (2010). The Elder Care Study: Everyday realities and wishes for change. Families and Work Institute Publication. Retrieved from http://familiesandwork.org/site/research/reports/elder_care.pdf.

¹²⁴ Ho, A., Collins, S. R., Davis, K., & Doty, M. M. (2005). A look at working-age caregivers' roles, health concerns, and need for support. *Issue Brief (Commonwealth Fund)*, 854, 1-12.

¹²⁵ National Alliance for Caregiving. (2009). Caregiving in the U.S. National Alliance for Caregiving and AARP Public Policy Institute Publication. Retrieved from http://www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf.

¹²⁶ Ho, A., Collins, S. R., Davis, K., & Doty, M. M. (2005). A look at working-age caregivers' roles, health concerns, and need for support. *Issue Brief (Commonwealth Fund)*, 854, 1-12.

¹²⁷ National Alliance for Caregiving. (2009). Caregiving in the U.S. National Alliance for Caregiving and AARP Public Policy Institute Publication. Retrieved from http://www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf.

¹²⁸ Son, J., Erno, A., Shea, D. G., Femia, E. E., Zarit, S. H., & Parris Stephens, M. A. (2007). The caregiver stress process and health outcomes. *Journal of aging and health*, 19(6), 871-887.

leave on their own emotional health.¹²⁹ Access to PFML was cited as a solution or recommendation to improve caregiver outcomes in the literature.^{130, 131, 132}

Part V: What Are Other States Doing?

Current Policy

Developed nations. In 1883, Germany introduced the first paid family leave policy.¹³³ Since then, leave policies have changed considerably across the world to accommodate an increasingly older and more gender-balanced workforce.¹³⁴ Today, all Organisation for Economic Cooperation and Development (OECD) countries, except for the U.S., offer paid family leave. On average, countries offer 18 weeks of paid leave to mothers and eight weeks to fathers.¹³⁵ Many countries offer up to one year to either or both parents (e.g., Japan, South Korea, Bulgaria, and the United Kingdom).¹³⁶

The United States. In 1993, the U.S. passed the Family Medical Leave Act (FMLA), which offers 12 weeks of unpaid leave to full-time workers who have worked at least 1,250 hours in the last year at employers with at least 50 employees. This policy covers about 60% of the U.S. workforce, though many families cannot afford to take unpaid leave. The U.S. does not offer federally mandated paid leave, and only 16% of all private industry workers have access to paid leave nationwide.¹³⁷ However, eight states and D.C. have a state-wide paid policy; leave times vary (Table 1).

Colorado. In Colorado 88% of workers do not have access to paid leave (4% less than the national average) and 64% of Colorado workers who do have access to FMLA cannot afford to take unpaid leave.¹³⁸

¹²⁹ Schuster, M. A., Chung, P. J., Elliott, M. N., Garfield, C. F., Vestal, K. D., & Klein, D. J. (2009). Perceived effects of leave from work and the role of paid leave among parents of children with special health care needs. *American journal of public health, 99*(4), 698-705. doi:10.2105/AJPH.2008.138313.

¹³⁰ Ho, A., Collins, S. R., Davis, K., & Doty, M. M. (2005). A look at working-age caregivers' roles, health concerns, and need for support. *Issue Brief (Commonwealth Fund), 854*, 1-12.

¹³¹ National Alliance for Caregiving. (2009). Caregiving in the U.S. National Alliance for Caregiving and AARP Public Policy Institute Publication. Retrieved from http://www.caregiving.org/data/Caregiving_in_the_US_2009_full_report.pdf.

¹³² Schuster, M. A., Chung, P. J., Elliott, M. N., Garfield, C. F., Vestal, K. D., & Klein, D. J. (2009). Perceived effects of leave from work and the role of paid leave among parents of children with special health care needs. *American journal of public health, 99*(4), 698-705. doi:10.2105/AJPH.2008.138313.

¹³³ Tanaka, S. (2005). Parental leave and child health across OECD countries. *The Economic Journal, 115*(501), F7-F28.

¹³⁴ OECD Social Policy Division- Directorate of Employment, Labour and Social Affairs (2017). Key characteristics of parental leave systems. Retrieved from https://www.oecd.org/els/soc/PF2_1_Parental_leave_systems.pdf.

¹³⁵ Schulte, B., Durana, A., Stout, B., & Moyer, J. (2017). Paid family leave: How much time is enough? *New America*.

¹³⁶ Ibid.

¹³⁷ Congressional Research Service. (2019). Paid family leave in the United States. Retrieved from <https://fas.org/sqp/crs/misc/R44835.pdf>.

¹³⁸ The Heller School for Social Policy and Management at Brandeis University. (2015). *Working Adults Who Are Eligible For and Can Afford FMLA Unpaid Leave*. Retrieved from

The states implementing PFML fund their programs through employee-paid payroll deductions, which is 0.17-1.00% of annual taxable wages, although there are some restrictions. Insurance programs administer the funds.¹³⁹ More information regarding states that implement these methods of funding is below.

Summary of Existing State PFML Laws

State	Year Implemented	Length of Paid Leave	Method to fund insurance program	Summary of Outcomes
Rhode Island	2014	4 Weeks	Employee	<ul style="list-style-type: none"> • Greater proportion of dads took leave to bond with their child than in New Jersey or California. • No negative effects on employee workflow, productivity, attendance.
New Jersey	2009	6 Weeks	Employee	<ul style="list-style-type: none"> • Associated with lower levels of stress. • Employers reported increased morale among their employees. • Significantly improved mother's health.
California	2004**	6 Weeks**	Employee	<ul style="list-style-type: none"> • Lower rates of attention deficit hyperactivity disorder and hearing-related issues. • Prevent child abuse and neglect by preventing risk factors like family and maternal stress and depression. • Paternity leave increased 400%.
DC	2020	8 Weeks	Employer	<ul style="list-style-type: none"> • Not implemented yet.
New York	2018	10 Weeks	Employee	<ul style="list-style-type: none"> • More than 86,500 working New Yorkers took an average of 33 days of PFML to bond with a new child.

<http://www.diversitydatakids.org/data/ranking/529/working-adults-who-are-eligible-for-and-can-afford-fmlaunpaid-leave-share/#loct=2&cat=44,25&tf=17>.

¹³⁹ Pew Research Center (2016). Among 41 nations, U.S. is the outlier when it comes to paid parental leave. Retrieved from <https://www.pewresearch.org/fact-tank/2016/09/26/u-s-lacks-mandated-paid-parental-leave/>.

CDPHE Paid Family and Medical Leave Report

Washington	2019	12 Weeks	Employee and Employer	• Not fully implemented yet.
Massachusetts	2021	12 Weeks	Employee and Employer	• Not implemented yet.
Connecticut	2022	12 Weeks	Employee	• Not implemented yet.
Oregon	2023	12 Weeks	Employee	• Not implemented yet.

**Extending to eight weeks July 1, 2020

California, est. 2004

California provides six weeks (extending to eight weeks on July 1, 2020) of benefits to care for and bond with a new child, or care for a seriously ill child, spouse, parent, registered domestic partner, parent-in-law, grandparent, grandchild, or sibling. The state also allows for birth mothers to use paid leave in combination with state disability insurance (SDI), which may allow up to 16 weeks paid leave. Worker payroll deductions fully fund the program - currently 1% of employees' first \$118,371 in wages. Most employers protect PFML for parental/pregnancy leave. Workers typically receive 55% of their weekly wages, up to a maximum of \$1,252 per week in 2019. Between July 2004 and January 2015, California workers made 1.7 million claims (1.5 million, or 88%, were parents needing time to care for new children). Women filed 82% of claims, though claims by men have increased by more than 400%.¹⁴⁰

New Jersey, est. 2009

New Jersey provides up to six weeks of benefits "to eligible individuals to bond with newborns or newly adopted children and to care for a spouse, domestic partner, civil union partner, parent, or child with a serious health condition."⁶ Worker payroll deductions pay for the program with each worker contributing .08% of their taxable wage base up to \$27.52 per year. PFML workers typically make 66% of their weekly wages, up to \$650 per week in 2019 (adjusted annually). Between July 2009 and January 2018, employees made roughly 228,000 claims (about 80-85% of these were parents needing time to care for new children). Women file about 85% of claims, though men's claims are on the rise.¹⁴¹

Rhode Island, est. 2014

Rhode Island provides up to four weeks of benefits "to eligible individuals to bond with a newborn or newly adopted child and to care for a child, parent, parent-in-law, grandparent, spouse, or domestic partner with a serious health condition." Employees with their own disability can receive up to 30 weeks PFML. Rhode Island also protects against job loss and retaliation for taking leave to care for a family member. Workers typically receive 60% of wages, which employees fund through payroll deductions (1.2% of workers' first \$64,200 in

¹⁴⁰ State of California Employment Development Department. (n.d.). Paid family leave: General claimant overview. Retrieved from <https://www.edd.ca.gov/disability/pdf/pflGeneralOverviewTrainingDeck.pdf>.

¹⁴¹ New Jersey Department of Labor and Workforce Development. (n.d.). Family leave insurance. Retrieved from <https://myleavebenefits.nj.gov/worker/fli/>.

wages). Maximum weekly wages are \$852 and adjusted annually. In 2018, 6,700 workers filed claims, 80% of which were to care for a new child. Women file roughly 69% of claims. Current legislation is under way to expand PFML time from four to six weeks.¹⁴²

New York, est. 2018

New York provides 10 weeks of paid family leave (increased from eight weeks in 2018, and increasing to 12 weeks in 2021) to care for a child, parent, spouse, domestic partner, grandparent, or grandchild. Leave for family care is protected and can be used to bond with a new child, care for a family member, or attend to an urgency regarding a family member's active military duty. PFML leave is fully funded by the first 0.153% of the employee's annual wages, amounting to no more than \$107.97 per year. Workers are currently compensated 55% of their average weekly wages up to 55% of the state average weekly wage. Benefits are to increase to 60% of weekly wages in 2020 and 67% in 2021. Statistics on the number of claims are not yet available.¹⁴³

Washington, effective 2019

Washington will provide 12 weeks of paid leave per year to care for yourself or a family member. 16 weeks are available if you have both family and medical events in a year, or up to 18 weeks if a serious health condition in pregnancy results in incapacity. Employees can use paid leave to bond with a new child, care for a family member (child, parent, spouse, domestic partner, grandparent, grandchild, or sibling) with a serious health condition, care for their own serious health condition, or to attend to an urgency regarding a family member's active military duty. The program is funded through 0.4% of employees first \$132,900 in wages and premiums will be adjusted annually. Payments will not exceed \$1,000 in the first year. Workers can begin making claims January 1, 2020, though deductions began January 1, 2019.¹⁴⁴

District of Columbia (D.C.), effective 2020

D.C. will provide eight weeks of paid parental leave to bond or care for a new child, six weeks paid leave to care for an ill family member (child, parent, spouse, domestic partner, grandchild, grandparent, or sibling), and two weeks to address one's own illness. A quarterly employer payroll tax of 0.62% of employees total wages will fund PFML. Workers can make up to \$1,000/week. Payouts will be adjusted annually. Workers can begin making claims July 1, 2020, though deductions began July 1, 2019.¹⁴⁵

¹⁴² The Economic Progress Institute for Rhode Island. (2019). Expanding access to paid family leave. Retrieved from <http://www.economicprogressri.org/wp-content/uploads/2019/04/TCL-fact-sheet-MARCH-2019-1.pdf>.

¹⁴³ New York State. (2019). New York state paid family leave: Updates for 2019. Retrieved from <https://paidfamilyleave.ny.gov/>.

¹⁴⁴ Washington State Department of Labor & Industries. (n.d.). Paid family and medical leave. Retrieved from <https://www.lni.wa.gov/WorkplaceRights/LeaveBenefits/FamilyCare/ESD/default.asp>.

¹⁴⁵ District of Columbia Department of Employment Services. (n.d.). DC paid family leave. Retrieved from <https://does.dc.gov/page/dc-paid-family-leave>.

Massachusetts, effective 2021

Massachusetts will provide 12 weeks PFML to care for a child, parent, or parent of a spouse or domestic partner, spouse, domestic partner, grandchild, grandparent, or sibling. The state will also provide 26 weeks to care for a covered service member, and 20 weeks for employees to address their own health conditions. PFML is funded by employees and employers and implementation differs depending on the number of employees at the workplace and differs based on if it is for family or medical leave. Premiums began in 2019 and included 0.63% deductions of employees' wages (premiums will be adjusted each year). Weekly payments will not exceed \$850 in the program's first year and will be adjusted annually. Workers can begin making claims January 1, 2021. Deductions will start October 1, 2019.¹⁴⁶

Connecticut, effective 2022

Connecticut will provide 12 weeks PFML for employees to bond with and care for a new child, care for one's own serious health condition, serve as an organ or bone marrow donor, attend to an urgency related to a family member's active military duty, or to care for a child, parent, parent-in-law, spouse, grandparent, grandchild, sibling, or "individual related by blood or affinity whose close association the employee shows to be the equivalent of those family relationships." Connecticut PFML program will be funded by employees and will not exceed 0.5% of wages. The PFML Insurance Authority is in the process of setting official rates. Weekly payout will vary as a function of employee income. Workers can begin making claims January 1, 2022. Collections will begin January 1, 2021.^{147,148}

Oregon, effective 2023

Oregon will provide 12 weeks PFML for employees to bond with and care for a new child, care for one's own serious health condition, address or recover from a domestic violence situation, and/or to care for an ill child, grandparent, grandchild, or domestic partner. Funding will come from employees' wages, with contributions not exceeding 1% of earnings. Workers will receive job protection during their time off. Low-income workers will earn 100% of their wages, capped at \$1,215 per week. Additional details are under review.¹⁴⁹

Part VI: What Length of Paid Leave is Best?

At the request of the Governor, CDPHE reviewed the limited research on the impact of length of paid leave policies.

¹⁴⁶ Massachusetts Department of Family and Medical Leave. (2019). 458 CMR 2.00: Department of Family and Medical Leave. Retrieved from <https://www.mass.gov/regulations/458-CMR-200-department-of-family-and-medical-leave>.

¹⁴⁷ Altimari, D. (2019). Gov. Ned Lamont just signed a sweeping family and medical leave law. How will it work? *Hartford Courant*. Retrieved from <https://www.courant.com/politics/hc-pol-cla-family-leave-connecticut-20190625-tyk3pusbwnhqjfvhrscgkbbcim-story.html>.

¹⁴⁸ Ibid.

¹⁴⁹ Dake, L. (2019). Oregon house approves paid family and medical leave. *Oregon Public Broadcasting*. Retrieved from <https://www.opb.org/news/article/oregon-house-approves-paid-family-medical-leave/>.

A myriad of research exists regarding the optimal duration of PFML for individuals, families, employers, communities, and societies. Overall, there is evidence to suggest that most paid leave policies in OECD countries (except the U.S.) support the social and health needs of populations. The World Policy Analysis Center states there is rigorous research on the health, economic, and gender equality outcomes and strongly supports making six months paid leave available to parents of infants, with three months as a minimum bar for supporting health and women's economic opportunities.¹⁵⁰

Research on Six Weeks of Paid Leave

There are several advantages to offering six weeks of paid leave. A small 2015 study in which ABS Associates examined survey data collected for the U.S. Department of Labor showed that, of women who took paid or unpaid leave to care for a new baby, 23% returned to work after two weeks. Half of these women took one week of leave or less.¹⁵¹ *Guidelines for Perinatal Care*, published by the American Congress of Obstetricians and Gynecologists and the American Academy of Pediatrics suggests that recovery from childbirth takes four to six weeks.¹⁵²

Some research suggests six weeks may not be enough time for the mother to recover from childbirth. Particularly for births with medical complications, six weeks or less may not allow ample recovery time after birth. Mothers with fewer than eight weeks of PFML after the birth of a child were more likely to experience a decline in overall health and increased risk for depressive symptoms.^{153, 154}

Additionally, six weeks may not be enough for the child. After eight weeks, infants reach key developmental milestones including the ability to recognize faces and respond to sounds.¹⁵⁵ When mothers return to work within six weeks of birth they are 40% less likely to breastfeed exclusively, as is recommended by the World Health Organization.¹⁵⁶

Additionally, six weeks may not be enough time for parents taking care of children with special health care needs who require multiple health care visits. Though numbers vary considerably by condition, a study of parents of children with special health care needs found

¹⁵⁰ World Policy Analysis Center. (2018). Paid parental leave: A detailed look at approaches across OECD countries. UCLA Fielding School of Public Health: Los Angeles, CA.

¹⁵¹ Lerner, S. (2015). The real war on families: Why the US needs paid leave now. *In These Times*.

¹⁵² As cited in Rubin, R. (2016). Despite potential health benefits of maternity leave, U.S. lags behind other industrialized countries. *Jama*, 315(7), 643-645.

¹⁵³ Chatterji, P., Markowitz, S., & Brooks-Gunn, J. (2013). Effects of early maternal employment on maternal health and well-being. *Journal of population economics*, 26(1), 285-301.

¹⁵⁴ Chatterji, P., & Markowitz, S. (2012). Family leave after childbirth and the mental health of new mothers. *Journal of Mental Health Policy and Economics*, 15(2), 61.

¹⁵⁵ Centers for Disease Control and Prevention. (2009). Milestone moments. Retrieved from 3-5. https://www.cdc.gov/ncbddd/actearly/pdf/parents_pdfs/milestonemomentseng508.pdf.

¹⁵⁶ Rubin, R. (2016). Despite potential health benefits of maternity leave, US lags behind other industrialized countries. *Jama*, 315(7), 643-645.

that they used an average of 20 days to care for their child for acute sickness, 12 days to attend to doctor/emergency department visits, and 23 days for their child's hospitalization.¹⁵⁷

Considering the needs of a family member or employee on medical leave, medical leave of only six weeks is a risk factor for depression. Studies recommend more time.¹⁵⁸ Additionally, the average time on hospice is roughly 60 days (about eight and a half weeks) so six weeks may not be enough time to care for a terminally ill family member.¹⁵⁹

Research on Eight Weeks of Paid Leave

Considering various health and developmental milestones, eight weeks of PFML may provide more time for families to attend to their health needs as a parent. For example, at least eight weeks of PFML is associated with significantly less, or less frequent, depressive symptoms among U.S. women.¹⁶⁰ Eight weeks allows mothers and infants to recover for two months after childbirth. One study that looked at paid maternity leave in low- and middle-income countries found that every additional month of paid maternity leave was associated with a 13% reduction in infant (less than one year old) mortality, a 9% reduction in neonatal (less than 28 days old) mortality, and an 18% reduction in post-neonatal (between 28 days and one year old) deaths.¹⁶¹ While more research is needed to determine the causal pathway, the authors of this study suggest paid leave may result in giving mothers more time to breastfeed, care for ill babies, and vaccinate their children.¹⁶²

Many mothers are still experiencing fatigue and physical ailments (e.g., head, cesarean incision, and perineal pain; sleep disorders) at eight weeks, which may further increase their risk for a host of negative physical and mental health outcomes.^{163,164,165} Mothers who returned to work before 12 weeks are more likely to miss important vaccinations for their newborns.¹⁶⁶ While eight weeks would allow some employees enough time to care for sick or dying family members, a large portion would need more time.¹⁶⁷

¹⁵⁷ Chung, P. J., Garfield, C. F., Elliott, M. N., Carey, C., Eriksson, C., & Schuster, M. A. (2007). Need for and use of family leave among parents of children with special health care needs. *Pediatrics*, *119*(5), e1047-e1055.

¹⁵⁸ Hyde, J. S., Klein, M. H., Essex, M. J., & Clark, R. (1995). Maternity leave and women's mental health. *Psychology of Women Quarterly*, *19*(2), 257-285.

¹⁵⁹ Colby, W. (2006). *Unplugged: Reclaiming our right to die in America*. Amacom Books.

¹⁶⁰ Ibid.

¹⁶¹ Nandi, A., Hajizadeh, M., Harper, S., Koski, A., Strumpf, E.C., Heymann, J. (2016). Increased Duration of Paid Maternity Leave Lowers Infant Mortality in Low- and Middle-Income Countries: A Quasi-Experimental Study. *PLoS Medicine*, *13*, e1001985. Retrieved from <https://doi.org/10.1371/journal.pmed.1001985>.

¹⁶² Ibid.

¹⁶³ Ibid.

¹⁶⁴ Lothian, J. A. (2003). Listening to Mothers—The First National US Survey of Women's Childbearing Experiences. *The Journal of perinatal education*, *12*(1), vi.

¹⁶⁵ Brown, S., & Lumley, J. (1998). Maternal health after childbirth: results of an Australian population based survey. *BJOG: An International Journal of Obstetrics & Gynaecology*, *105*(2), 156-161.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

Research on Ten Weeks of Paid Leave

The average mother in the U.S. takes 10 weeks of paid or unpaid maternity leave, and there is some encouraging research on this length of time.¹⁶⁸ According to a study on family leave in 18 European countries, 10 weeks of leave was associated with 2.6% decreased infant (less than a year old) mortality and 4% decreased post-neonatal (between one month and one year) infant mortality.¹⁶⁹ Additionally, 10 weeks may be enough time for mothers to recover physically and mentally, and adapt healthy habits postpartum (e.g., safely return to exercise, etc.).¹⁷⁰ Infants may have ample time to connect with their parents and adjust to child care in 10 weeks.¹⁷¹ Ten weeks also provides employees up to two and a half months to care for a sick family member or recover from their own illness, meaning a larger portion of families have enough time to fully address a family member's care.¹⁷²

Research on Twelve Weeks of Paid Leave or More

The American Public Health Association, American Academy of Pediatrics, and the Pediatric Policy Council all endorse 12 weeks as the minimum amount of recommended leave for new moms.^{173,174} Congress agreed on 12 weeks of *unpaid* leave in the implementation of FMLA. Mothers are 40% more likely to breastfeed exclusively when they are able to take 12 or more weeks of maternity leave, compared to those who take six weeks.¹⁷⁵ It is only after 12 weeks of postpartum leave that mothers' self-reported measures of vitality and physical health typically begin to improve, as most mothers have had time to recover from the physical strains of birth and adopt healthy habits.^{176,177} Risk for pregnancy-related depression significantly decreases after 12 weeks of paid leave.¹⁷⁸ One study showed mothers who receive at least 12 weeks of PFML are 69% more likely to return to work after leave.¹⁷⁹

¹⁶⁸ Shepherd-Banigan, M., & Bell, J. F. (2014). Paid leave benefits among a national sample of working mothers with infants in the United States. *Maternal and child health journal*, 18(1), 286-295.

¹⁶⁹ Zero to Three. (2018). The child development case for a national paid family and medical leave program. Retrieved from <https://www.zerotothree.org/resources/204-the-child-development-case-for-a-national-paid-family-and-medical-leave-program>.

¹⁷⁰ National Collaborating Centre for Women's and Children's Health (UK). (2011). Caesarean section chapter 10: Recovery following caesarean section. 2011, <https://www.ncbi.nlm.nih.gov/books/NBK115312/>.

¹⁷¹ Ibid.

¹⁷² Ibid.

¹⁷³ American Public Health Association. (2014). Support for paid sick leave and family leave policies. Retrieved from <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/16/11/05/support-for-paid-sick-leave-and-family-leave-policies>.

¹⁷⁴ American Academy of Pediatrics. (2015). Major pediatric associations call for congressional action on paid leave. Retrieved from <https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/FAMILYLeaveAct.aspx>.

¹⁷⁵ Ibid.

¹⁷⁶ McGovern, P., Dowd, B., Gjerdingen, D., Moscovice, I., Kochevar, L., & Lohman, W. (1997). Time off work and the postpartum health of employed women. *Medical care*, 507-521.

¹⁷⁷ Dagher, R. K., McGovern, P. M., & Dowd, B. E. (2014). Maternity leave duration and postpartum mental and physical health: implications for leave policies. *Journal of Health Politics, Policy and Law*, 39(2), 369-416.

¹⁷⁸ Ibid.

¹⁷⁹ Gault Ph D, B., Hartmann Ph D, H., Hegewisch, A., Milli Ph D, J., & Reichlin, L. (2014). Paid parental leave in the United States: What the data tell us about access, usage, and economic and health benefits.

Outcomes are better for children, too. Infants are more likely to receive immunizations and proper checkups from pediatricians.¹⁸⁰ Children of mothers who return to work full-time before 12 weeks are more likely to have problem behaviors, such as avoidant and anxious behaviors, and delayed language development in early childhood years.¹⁸¹

Part VII: Conclusion

Assessing the health benefits of national or state-level policies is inherently difficult since it is not possible to conduct randomized controlled trials about public policy. Since the United States does not have national Paid Family and Medical Leave (PFML), the majority of studies included in this review come from other countries or are studies related to California's PFML policy. Most of the available studies are observational and may not account for all possible confounders. The variability in study designs, sample characteristics, definitions of outcome variables, and state or national context makes it difficult to determine the strength of the research for each health area. For example, some studies looked at health outcomes before and after the implementation of PFML, while others looked at the differences in health outcomes for different lengths of leave. Each PFML policy offers different lengths of leave, wage replacement rate, and payment structure, which presents challenges when trying to aggregate information across different studies. Additional research is needed to further clarify the effects of PFML on the health of caregivers and children.

While all studies included in this review were subject to some methodological challenges and limitations, overall findings suggest PFML may result in health benefits for infants, children, and mothers. Research indicates there is a strong association between PFML and reductions in infant and child mortality, increases in breastfeeding and immunization rates, and improved maternal mental health. There is also a moderate amount of evidence indicating a relationship between PFML and improved infant and maternal sleep, improved child health, and reductions in intimate partner violence. Additionally, one study demonstrated an association between PFML and improved maternal physical health. Increases in breastfeeding and immunizations may also lead to additional positive health outcomes for children such as reduced risk of child maltreatment, respiratory infections, childhood leukemia, type 1 and 2 diabetes, sudden infant death syndrome (SIDS), non-specific gastroenteritis, atopic dermatitis, and asthma.

Increasing the amount of time that parents can spend with their infants is one possible mechanism connecting PFML to improvements in maternal and child health. Having extra time may promote breastfeeding, parental engagement, use of health services, and less parental stress all of which research suggests is associated with positive child or maternal health outcomes. PFML may also increase economic security for families, especially after the birth of a child, which could have positive impacts on child health. There is little research on the health benefits of PFML for families caring for older relatives though access to paid leave

¹⁸⁰ Ibid.

¹⁸¹ Gaston, A., Edwards, S. A., & Tober, J. A. (2015). Parental leave and child care arrangements during the first 12 months of life are associated with children's development five years later. *International Journal of Child, Youth and Family Studies*, 6(2), 230-251.

when caring for aging parents may result in similar positive economic impacts and improved health for caregivers by reducing stress.

PFML also may benefit employers by increasing worker productivity and improving workplace culture. PFML promotes gender equality in the workplace, which could stimulate economic growth due to more women participating in the U.S. workforce. A chief economist for the US Department of Labor estimated that the economy would benefit from more than \$500 billion in additional economic activity each year if women participated in the U.S. labor force at the same rates as women in countries with paid leave. Experts recommend a minimum of 12 weeks of paid family leave and medical leave.

Appendix I: Methodology

The Colorado Department of Public Health and Environment (CDPHE) hired a research consultant from Colorado State University to conduct a review of the literature on health, social, and economic benefits of PFML laws, and the variance in impact by the number of weeks of paid leave. The research consultant reviewed and synthesized research to determine the health, social, and economic benefits either directly or indirectly associated with paid family and medical leave laws.

CDPHE and the research consultant created a list of potential social and health outcomes related to PFML based on past research, policy, and stakeholder input. The list included the following:

- Suicide
- Bullying
- Homicide
- Unintentional firearm deaths and injuries
- Motor vehicle deaths and injuries
- Traumatic brain injury
- Opioid overdose prevention
- Breastfeeding
- Maternal mental health
- Depression
- Men's mental health
- Cancer diagnosis
- Immunizations
- Health care cost savings
- Early education
- Early screening (from prevention savings to access to care)
- Emergency preparedness
- Domestic violence
- Substance use
- Food contagion/food-borne illness
- School absenteeism
- Bonding with non-birth parent
- Physical recovery from childbirth
- Healthy eating/active living
- Diabetes
- Obesity
- HIV screening and testing
- Heart disease
- Impact on fatherhood
- Veterans' benefits
- On the job injuries
- Business retention

- Reduced hospital costs/health care costs

To minimize bias and identify all relevant articles, the research consultant searched PubMed EBSCO using the following search terms: paid family leave; paid medical leave; paid family and medical leave; stress; postpartum depression; infant-parent bonding; family relationships; community connectedness; financial stability; financial strain; breastfeeding; infant health; paternal influence; paternal care; chronic illness; work-family conflict; men's mental health; crime; domestic violence; early intervention; child development; gender roles; women in the workforce; economic payout; productivity; return on investments; suicide; depression; infant mortality; childcare; immunizations; developmental disorders; nursing home usage; hospice care; abuse; neglect; intimate partner violence; health outcomes; marriage stability; worker morale; on the job injuries; substance use; substance use treatment; worker performance; veterans; recovery; opioid epidemic; opioid use; healthy eating; activity levels; worker safety; women in the workforce; equality; equity; society; community; employer returns; aging workforce; gender.

The research consultant also used research from leading journals in the fields of social, public, and occupational health. In addition to empirical sources, the research consultant gathered research from national and international institutes including the CDC, World Health Organization (WHO), National Institutes of Health (NIH), etc. Government reports and legislation from California, New Jersey, Rhode Island, Washington, Oregon, Connecticut, New York, Massachusetts, and the District of Columbia further supplemented the research process.

In order to summarize the strength of the relationship between paid family leave and the health-related outcomes, CDPHE created the following categories:

- **Strong Evidence:** A systematic review contained several high quality studies that showed a positive health benefit with some magnitude of effect, or four or more individual peer-reviewed research articles showed a positive health benefit.
- **Moderate Evidence:** Two or three peer-reviewed research articles that showed a positive health benefit.
- **Limited Evidence:** One individual peer-reviewed research article that showed a positive health benefit.
- **Secondary Health Benefits:** Research about additional health benefits indirectly associated with the health outcomes that are directly tied to PFML laws.

Appendix II: Definition of Key Terms*

Caregiver strain: Emotional, physical, or mental stress derived from the act of caring for someone.

Chronic strain: Low-grade, continuous emotional, physical, or mental stress.

Depression: A mood disorder marked especially by sadness, inactivity, difficulty in thinking and concentration, a significant increase or decrease in appetite and time spent sleeping, feelings of dejection and hopelessness, and sometimes suicidal tendencies.

Domestic violence: A pattern of behaviors used by one partner to maintain power and control over another partner in an intimate relationship.

Equity: CDPHE acknowledges that social, economic, and environmental inequities result in adverse health outcomes and have a greater impact than individual choices. Reducing health disparities through systems change can help improve opportunities for all Coloradans.

Equality: In the social setting, the act of giving everyone the same things to access happy and healthy lives.

Family and Medical Leave Act: (1993) Legislation that provides eligible employees 12 weeks of unpaid leave to care for a child, or a family member with a serious health condition.

Family leave: Leave to care for and bond with a new baby (birth, adopted or foster), elder care, care for a family member with chronic pain, or illness.

Gender wage gap: (i.e., the gender pay gap) The average difference in earnings between men and women in society.

Maternity leave: Time off from a job given to a mother to take care of a newborn child.

Medical leave: Longer term or intermittent leave to care for one's own health, treatment for a long-term illness, or recovery from a serious accident or injury.

Paternity leave: Time off from a job given to a father to take care of a newborn child.

Parental leave: Time off from a job given to a parent to take care of a newborn child.

Pregnancy-related depression and anxiety: A feeling of deep sadness, anxiety, etc. that a woman feels after giving birth to a child.

Poverty: The state of one who lacks a usual or socially acceptable amount of money or material possessions.

Racial-wealth gap: The economic gap between people of color and whites in the U.S. as a result of years of political and systematic inequality.

Substance use disorder: Behavioral disorder involving the excessive use of a drug (e.g., alcohol, narcotics, cocaine).

Work-family conflict: Conflict one experiences from incompatible demands between work and family roles.

*definitions directly or indirectly derived from Webster's Dictionary unless otherwise noted