

DAY ONE PROJECT

Transforming Infant Nutrition to Give
Every Baby a Strong, Healthy Foundation

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Summary

Breastfeeding can provide important health and financial benefits for new families. But insufficient healthcare coverage, underlying medical conditions, and economic obstacles can make breastfeeding difficult or impossible for many parents. In this memo, I propose a three-pronged approach—facilitated by an interagency collaboration through the [National Advisory Council on Maternal, Infant, and Fetal Nutrition](#)—to transform infant nutrition. First, to increase breastfeeding rates in the United States, the Centers for Medicare & Medicaid Services (CMS) should alter reimbursement policy by reimbursing tele-lactation/nutrition support for all babies covered under Medicaid. Second, the government should partner with the private sector to launch a “Synthesizing Human Milk Grand Innovation Challenge.” This challenge would catalyze new extramural R&D and innovation efforts to accelerate commercialization of breast-milk alternatives for those that can’t breastfeed. Third, the government should enact paid parental-leave policies to give parents financial flexibility and dedicated time after birth to breastfeed.

Challenge and Opportunity

To ensure that all babies begin their lives on equal footing, swift action should be taken to give as many babies as possible access to breastmilk and high-quality breastmilk alternatives. Though breastfeeding and breastmilk represent only 0.04% of the National Institute of Health (NIH) budget, access to breastmilk and infant nutrition are issues that affect the health and finances of all American families with very young children.¹ For babies, access to breastmilk has been shown to protect against respiratory illnesses, ear infections, gastrointestinal diseases, eczema, and sudden infant death syndrome.² For mothers, breastfeeding may help reduce postpartum blood loss and may lower risk of post-partum depression, Type 2 diabetes, rheumatoid arthritis, cardiovascular disease, breast cancer, and ovarian cancer.³ The U.S. Department of Agriculture (USDA) Economic Research Service has estimated that Medicaid would save at least \$172.6 million every year if breastfeeding rates among women, infants, and children increased to medically recommended levels.⁴ More broadly, one study highlighted by the American College of Obstetricians and Gynecologists (ACOG) estimated that increasing breastfeeding rates could save \$3.6 billion annually in the costs of treating some childhood illnesses.⁵

While breastfeeding can provide important health and financial benefits for new families, not all babies can breastfeed. 1 in 8 mothers in the United States face lactation dysfunction, which means that they cannot produce enough breastmilk to provide sufficient infant nutrition.⁶ Medical conditions such as Insufficient Glandular Tissue (IGT), mastitis, postpartum depression and anxiety (PPD/A), and infant birth defects—to name just a few—present challenges to breastfeeding. Adoptive parents can only breastfeed in certain circumstances, and birth mothers may be confused about whether they can breastfeed while on certain medications, may dislike the process of breastfeeding, or face difficulty breastfeeding while transitioning back to work.

For these and other reasons, 75% of babies use infant formula instead of breastmilk to some extent by the time they are 6 months old.⁷ A 2007 report from the Department of Health and Human Services (HHS)

¹ National Institute of Health. “Estimates of Funding for Various Research, Condition, and Disease Categories (RCDC).” https://report.nih.gov/categorical_spending.aspx.

² Chien, L.Y.; Tai, C.J. (2007). “Effect of Delivery Method and Timing of Breastfeeding Initiation on Breastfeeding Outcomes in Taiwan.” *Birth*, 34: 123–130; Ip, S.; et al. (2007). “Breastfeeding and maternal and infant health outcomes in developed countries.” *Evidence Report/Technology Assessment*: 1–186; American Academy of Pediatrics. “Breastfeeding.” <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Breastfeeding/Pages/default.aspx>.

³ Eidelman, A.I.; Schanler, R.J. (2012). “Policy Statement by the American Academy of Pediatrics: Breastfeeding and the Use of Human Milk.” *Pediatrics*, 129(3): e827.

⁴ Oliveria, V.; Prell, M.; Cheng, X. (2019). *The Economic Impacts of Breastfeeding: A Focus on USDA’s Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)*. United States Department of Agriculture (USDA) Economic Research Service (ERS).

⁵ Committee Opinion: American College of Obstetricians and Gynecologists. (2013). “Breastfeeding in Underserved Women: Increasing Initiation and Continuation of Breastfeeding.” *Obstetrics & Gynecology*, 570(122): 423–428.

⁶ Stuebe, A.; et al. (2014). “Prevalence and risk factors for early, undesired weaning attributed to lactation dysfunction.” *Journal of Women’s Health*, 23(5): 404–412.

⁷ Center for Disease Control (CDC). “Data and Statistics.” <https://www.cdc.gov/breastfeeding/data/index.htm>

Agency for Healthcare Research and Quality (AHRQ) found that existing formula-feeding solutions are associated with higher risks for chronic diseases including Type 2 diabetes, asthma, and childhood obesity.⁸ Formula feeding is also linked with higher rates of necrotizing enterocolitis (NEC) for premature infants.⁹ More research is needed to understand the underlying biochemical mechanisms of human breastmilk to develop infant formulas that better mimic breastmilk. In addition, infant formula is a major expense for the federal government. Infant formula is the single most expensive item that the federal Special Supplemental Nutrition Program for Woman, Infants, and Children (WIC) provides, and the program spends more on formula than any other food—a total of \$927 million in FY 2010.¹⁰

It is also important to note that paid parental leave is a critical part of the postnatal experience for mothers and babies. Increases in paid parental leave are consistently associated with better infant and child health, particularly in terms of lower infant mortality rates.^{11,12} Paid parental leave also gives parents the opportunity and flexibility to focus on breastfeeding, which can be extremely time-consuming. The children of educated, well-off mothers are more likely to breastfeed because they have access to paid parental leave, careers with access to breaks for breast pumping, and disposable income to hire support such as night nurses.¹³ However, according to a national survey of employers conducted by the Bureau of Labor Statistics (BLS), only 18% of private industry U.S. employees had access to paid family leave through their employers.¹⁴ Paid parental leave in the private sector is voluntary and more prevalent among managerial and professional occupations.

Plan of Action

CMS, USDA, NIH, state WIC agencies, and the private sector should work together through the [National Advisory Council on Maternal, Infant, and Fetal Nutrition](#) to transform U.S. infant nutrition for the better. The following specific actions are recommended:

First, to increase breastfeeding rates in the United States, CMS should alter its reimbursement policy to reimburse bi-weekly tele-lactation and nutrition support appointments for any baby covered under Medicaid during the baby's first three months of life. Currently, the Affordable Care Act requires private insurance plans and Medicaid expansion programs to cover maternity care—including prenatal screenings and lactation consultations—without cost sharing by the patient. But there is no federal requirement to reimburse for telemedicine. Advocates should encourage the Center for Consumer Information and Insurance Oversight (CCIIO) at CMS to expand mandatory maternal-health coverage to include telehealth and for CMS to implement this policy change. This can be done in collaboration with WIC, which already provides breastfeeding support through state agencies.

Second, the federal government should catalyze new R&D and innovation efforts to accelerate commercialization of high-quality breastmilk alternatives such as

⁸ Owen, C.G.; Whincup, P.H.; Cook, D.G. (2011). "Breast-feeding and cardiovascular risk factors and outcomes in later life: evidence from epidemiological studies." *Proceedings of the Nutrition Society*, 70(4): 478–484; Owen, C.G.; et al. (2005). "The effect of breastfeeding on mean body mass index throughout life: a quantitative review of published and unpublished observational evidence." *American Journal of Clinical Nutrition*, 82(6): 1298–130; Arenz, S.; et al. (2004). "Breast-feeding and childhood obesity—A systematic review." *International Journal of Obesity and Related Metabolic Disorders*, 28: 1247–1256.

⁹ Stuebe, A.; et al. (2014).

¹⁰ Carlson, S.; Greenstein, R.; Neuberger, Z. (2017). *WIC's Competitive Bidding Process for Infant Formula Is Highly Cost-Effective*.

<https://www.cbpp.org/research/food-assistance/wics-competitive-bidding-process-for-infant-formula-is-highly-cost>.

¹¹ 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.

¹² Nandi, A.; et al. (2016). "Increased Duration of Paid Maternity Leave Lowers Infant Mortality in Low- and Middle-Income Countries: A Quasi-Experimental Study." *PLoS Medicine*, 13(3): e1001985

¹³ Center for Disease Control. "Rates of Any and Exclusive Breastfeeding by Socio-demographics among Children Born in 2016."

https://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-socio-dem-2016.htm

¹⁴ Donovan S. (2020). *Paid Family Leave in the United States*. (CRS Report No R44835). Retrieved from U.S. Congressional Research Service website: <https://crsreports.congress.gov/product/pdf/R/R44835/18>.

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1. Organizing a national “Synthesizing Human Milk R&D Summit.” This Summit would bring together formula makers, academic researchers, clinicians, parent and infant advocacy groups, representatives of the public-health community, and government stakeholders. Government stakeholders include NIH, CMS, the Centers for Disease Control and Prevention (CDC), the U.S. Food and Drug Administration [FDA], the U.S. Surgeon General, and the U.S. Preventive Services Task Force (USPSTF). The goals for the event include (i) gathering input and commitments from stakeholders to lay the groundwork for a “Synthesizing Human Milk Grand Challenge” (see next bullet); (ii) identifying barriers to developing an infant formula that more closely mimics breast milk; and (iii) generating a white paper to summarize the current understanding of the underlying biochemical mechanisms of human milk.
2. Launching a “Synthesizing Human Milk Grand Challenge.” Based on the insights gained by the Synthesizing Human Milk R&D Summit, NIH should launch a “Synthesizing Human Milk Grand Challenge” that awards cash prizes for innovations in development of human breastmilk alternatives. Industry stakeholders should be recruited to match NIH investments in the prize amounts.
3. Dedicating extramural academic research funds from NIH as well as funds from the Small Business Innovation Research (SBIR) program to stimulate commercialization of high-quality breastmilk alternatives. These funds would help scale up innovations from the “Synthesizing Human Milk Grand Challenge” and would motivate additional R&D in academic settings to bring infant formula closer to human milk. In addition, a “synthesizing human milk” budget set-aside subpriority should be established as part of the SBIR NIH/NICHD program.¹⁵
4. Only purchasing validated infant formulas with federal funds. WIC should only buy infant formula solutions that demonstrate specific outcomes as outlined by an interagency committee convened by the USDA through the National Advisory Council on Maternal, Infant, and Fetal Nutrition. The committee should include representatives from NIH, CMS, CDC, USDA, FDA, USPSTF, and the American Academy of Pediatrics (AAP).

Third, in the longer term, the federal government should enact paid parental-leave policies that give parents financial flexibility and dedicated time after birth to breastfeed.

¹⁵ NICHD refers to the Eunice Kennedy Shriver National Institute of Child Health and Human Development.

Frequently Asked Questions

How much does the government spend on infant nutrition currently?

Regarding the federal government's role as a buyer of infant formula, WIC currently serves half of all infants in the United States and infant formula is the single most expensive item that WIC provides, and the program spends more on formula than any other food — \$927 million in fiscal year 2010 as an example. For reference, each year Congress provides USDA FNS with a specific amount of funds for state agencies to operate the WIC program. WIC leads an infant formula bidding process, which is a cost containment approach. It is highly effective because it allows for state WIC programs to receive significant discounts in the form of rebates. These rebates result in up to \$2B a year in savings, which means that 2 million more people can participate in this program. The national WIC association provides [more details](#) on this breakdown.

Surrounding the federal government's role in research in this arena, breastfeeding, lactation, and breastmilk represent only 0.04% of the NIH's budget (\$85M in 2019) despite the fact that this impacts every single American.

How does increasing breastfeeding rates and improving infant formula improve economic benefits?

Along with improved health outcomes, breastfeeding improves economic benefits by reducing costs for families, employers, health insurers, and taxpayers. As stated in the 2011 Surgeon General's Call to Action to Support Breastfeeding, "a study conducted more than a decade ago estimated that families who followed optimal breastfeeding practices could save more than \$1,200–\$1,500 in expenditures for infant formula in the first year alone (Ball et al, 1999). In addition, better infant health means fewer health insurance claims, less employee time off to care for sick children, and higher productivity, all of which concern employers (US Breastfeeding Committee, 2002)." By increasing breastfeeding rates through paid leave and creating an infant formula closer to infant formula, this could save CMS at least \$172.6M in Medicaid costs alone.

Why should it be the federal government taking action on infant nutrition vs. a state or local government?

Because the government is the single largest buyer of infant formula, and infant formula is the most expensive item as part of the WIC program funded by the federal government (USDA), the government has a uniquely high leverage and is incentivized to take action to save both healthcare costs and buyer costs on infant formula. Specifically, on the healthcare cost front, Medicaid would save at least \$172.6M every year if breastfeeding rates in the WIC population increased to medically recommended levels.

What is the first step you suggest to get this off the ground?

Currently, the Affordable Care Act requires private insurance plans and Medicaid expansion programs to cover maternity care without cost sharing to the patient, including prenatal screenings and lactation consultations, but there is no federal requirement to reimburse for telemedicine, and lactation support services are rolled out inconsistently. As a first step as part of our policy proposal, we recommend extending this policy to cover telehealth services to allow for more even and efficient delivery of lactation support services to increase breastfeeding adherence rates.

What about internal and external partnerships?

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We believe strongly that in order for impact to happen that this needs to be a collaboration between the public and private sector. In particular, we propose NIH to launch the ‘Synthesizing Human Milk R&D Summit’ (linked to NICHD Aspirational Goal identified in their Strategic Plan) to bring together the community to rally around this ambitious goal and build a coalition. The goals for the event include 1) gathering input and commitments from stakeholders to launch a “synthesizing human milk grand challenge” and 2) laying the groundwork to launch and celebrate a future grand challenge. During this Summit, we will identify the specific barriers to developing an infant formula closer to breast milk by bringing together the formula makers, academic researchers, clinicians, parent/infant advocacy groups, and public health community with government stakeholders. Government stakeholders include NIH, CMS, CDC, FDA, US Surgeon General, and US Preventive Services Task Force (USPSTF). In addition, a white paper will be generated to summarize the current state of our understanding of the underlying biochemical mechanisms of human milk.

In addition, we propose NIH to launch the ‘Synthesizing Human Milk Grand Challenge’ to award prizes to new innovative approaches in human milk, which is jointly funded by the NIH and the private sector, including formula manufacturers.

How does this idea complement or conflict with existing actions you surfaced exploring the policy landscape?

This effort complements existing efforts identified as part of the NIH’s Pediatric Growth and Nutrition Branch’s strategic priority of synthesizing human milk, the Affordable Care Act’s effort requirement that private insurance plans and Medicaid expansion programs to cover maternity care without cost sharing to the patient, including prenatal screenings and lactation consultations, and the USDA funding WIC State Agencies who support breastfeeding and provide WIC lactation experts, WIC peer counselors, WIC breastfeeding classes.

Also this effort complements the existing [National Advisory Council on Maternal, Infant, and Fetal Nutrition](#), and we propose that this effort is led through that council, which was originally specified as part of legislation (Section 17(k) of the Child Nutrition Act of 1966, as amended (S 42 USC 1786)). This legislation mandates that the Council authorizes the Secretary of Agriculture to appoint the members.



About the Author

Andrea Ippolito is a Lecturer in the College of Engineering and SC Johnson College of Business at Cornell University. Prior to joining Cornell, Andrea served as the Director of the Department of Veterans Affairs (VA) Innovators Network within the VA Center for Innovation. She is a former Presidential Innovation Fellow based out of the White House Office of Science and Technology Policy and General Services Administration. She obtained her MS in Engineering and Management from MIT in 2012, along with her BS in Biological Engineering in 2006 and Master of Engineering in Biomedical Engineering in 2007 from Cornell University.



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