

2019 WIC Research Update

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Senior Director, Research and Program Operations
National WIC Association



#NWAWLC19



National WIC Association

Overview

- Why research is important to WIC
- NWA's Research Priorities
- Who is doing WIC research?
- Vic Olivera & Xinzhe Cheng, USDA Economic Research Service - *Economic Impact of Breastfeeding in WIC*
- Summer Weber, Vanderbilt University Medical Center – *Mobile Apps for WIC Participants*



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Why is research and evaluation important to WIC?



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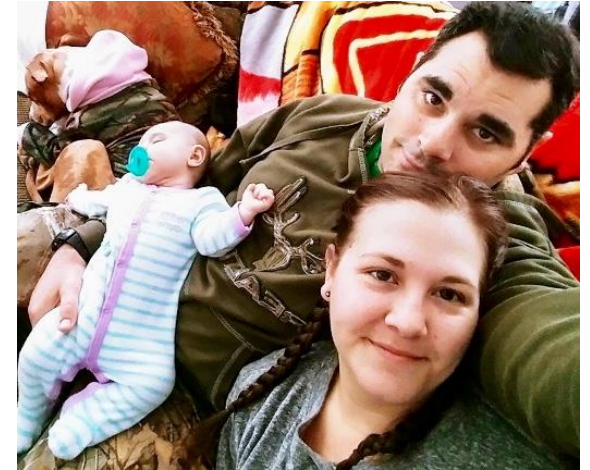


National WIC Association

Our Priorities for WIC Research: The NWA Research Needs Assessment

Objective: Identify research areas that support NWA and WIC programs nationwide to:

1. be responsive to emerging issues
2. continue to explore, demonstrate and integrate evidence-based practices that improve the health and well-being of low-income families



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NWA's Current Research Priorities

1. Health Outcomes Associated with WIC Participation
2. Impact of Potential Changes to WIC Food Packages
3. Aligning Policies and Procedures for Systems-Level Innovations
4. Understanding Changes in WIC Caseload to Target WIC Services to the Most At-Risk Families
- 5. Understanding How WIC Participants Use Technology and Considering Barriers to Technology Access**
- 6. Economic Value of WIC Participation**



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Are our priorities reflected in recent research efforts?

YES!!



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Stay in the know through *WIC Research to Practice*

Format: Abstract ▾

Health Equity, 2018 Oct 19;2(1):296-303. doi: 10.1089/he

Racial Differences in Breastfeed District.

Pineros-Leano M^{1,2}, Tabb KM^{2,3}, Simonovich SD^{2,4}

Author information

Abstract
Purpose: All understood, e breastfeeding (n=1010) were depression re through a clin percent of stu rates of breas income, nativ multiracial (O compared wit initiation of br intervention a

KEYWORDS: PMID: 30364880

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Center on Budget and Policy Priorities

ABOUT ▾

HOME / RESEARCH / MODERNIZING AND...

Modernizing and Streamlining Determination and Enrollment

JANUARY 6, 2017 | BY ZOÉ NEUBERGER^[1]

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PDF of this report (35 pp.)

MORE ON THIS TOPIC

POLICY BASICS

Policy Basics: Special Supplemental Nutrition Program for Women, Infants and

WIC — the Special Supplemental Nutrition Program for Women, Infants and Children — serves low-income pregnant and postpartum women, infants, and children who are at nutritional risk and plays a key role in WIC effectively and efficiently providing support, and referrals to health care services, and room to modernize and simplify enrollment and service delivery.

WIC is well-known for extensive research on nutrition and health of low-income families and better health care for children. WIC is a key program for child health and achievement for students.^[2] WIC is a key program for child health and achievement for students.^[2] WIC is a key program for child health and achievement for students.^[2]

WIC programs across the country are using technology to improve service delivery and enrollment.

Using Behavioral Science to Improve the WIC Experience

Lessons for the field from San Jose, California

Authors: Dani Grodsky, Antonia Violante, Anthony Barrows; Ideas42, Wendi Gosliner, Nutrition Policy Institute

May 2017

Secondary source ID

Researcher Spotlight: Angela Odoms-Young, PhD



Dr. Angela Odoms-Young is an Associate Professor in the Department of Kinesiology and Nutrition at the University of Illinois (UIC), Chicago. Dr. Odoms-Young started researching WIC in 2005 and has since built a strong relationship with the Illinois State Agency and through a data sharing agreement has been able to use WIC administrative records to contextualize research that has largely focused on interventions to recruit and retain WIC eligible children until age five. In addition, Dr. Odoms-Young has served as a Committee Member on the past two National Academy of Sciences, Engineering and Medicine review of the WIC food package. Dr.

Odoms-Young brings a wealth of research expertise to the WIC community; we are delighted to feature her in this edition of WIC Researcher Spotlight.

What drew you to study WIC?

My research interests focus strongly on examining intervention strategies/approaches that support and improve the health and well-being of low-income mothers and families. In 2003, I was invited to serve on a National Academies of Sciences-Health and Medicine Division (formerly the Institute of Medicine) committee to review the WIC food packages. This experience gave me a more in-depth understanding of the benefits of WIC.

What are the goals of your most recent research on WIC?

We recently completed a study in collaboration with Illinois WIC called WIC to 5. Informed by the Theory of Planned Behavior, that project focused on identifying and addressing barriers to WIC participation and retention among eligible children in Illinois. The goals of WIC to 5 were to: 1) Raise Client Awareness of WIC Eligibility and

- [Toddler Feeding Practices Study-2](#)
- [Short Interpregnancy Intervals and Adverse Pregnancy Outcomes by Maternal Age in the United States](#)

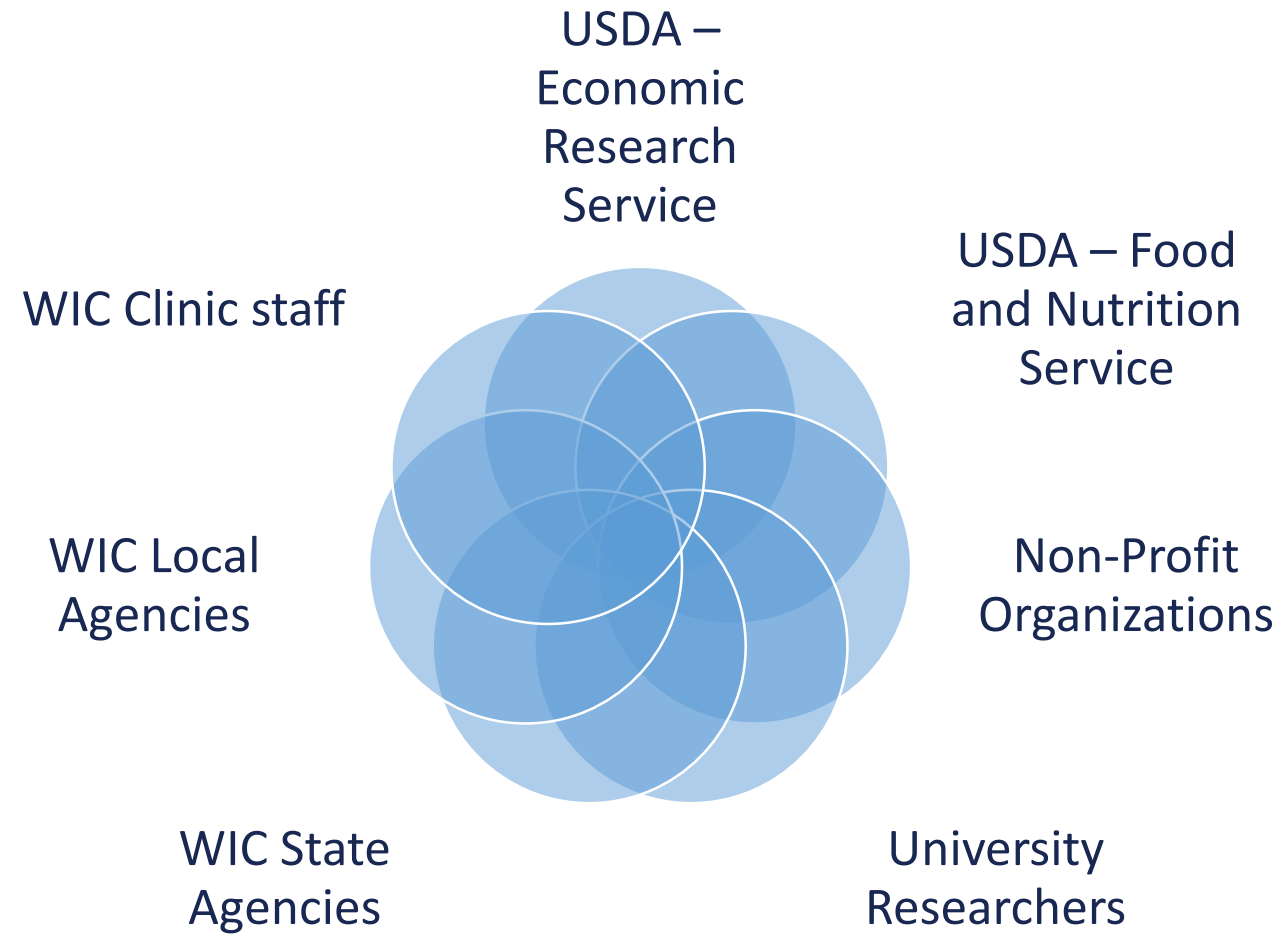
Maternal Health

- [Racial Differences in Breastfeeding Initiation Among Participants in a Midwestern Public Health District](#)
- [Women from racial or ethnic minority and low socioeconomic backgrounds receive more prenatal education: Results from the 2012 to 2014 Pregnancy Risk Assessment Monitoring System](#)

Childhood Overweight and Obesity

- [Sugar-Sweetened Beverage Attitudes and Consumption During the First 1000 Days of Life](#)
- [The impact of maternal BMI, gestational weight gain, and breastfeeding on early childhood weight: Analysis of a statewide WIC dataset](#)

Who Does WIC Research?



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True Collaborations



NWA's Guidance on
Planning, Conducting and
Communicating a WIC
Research Project

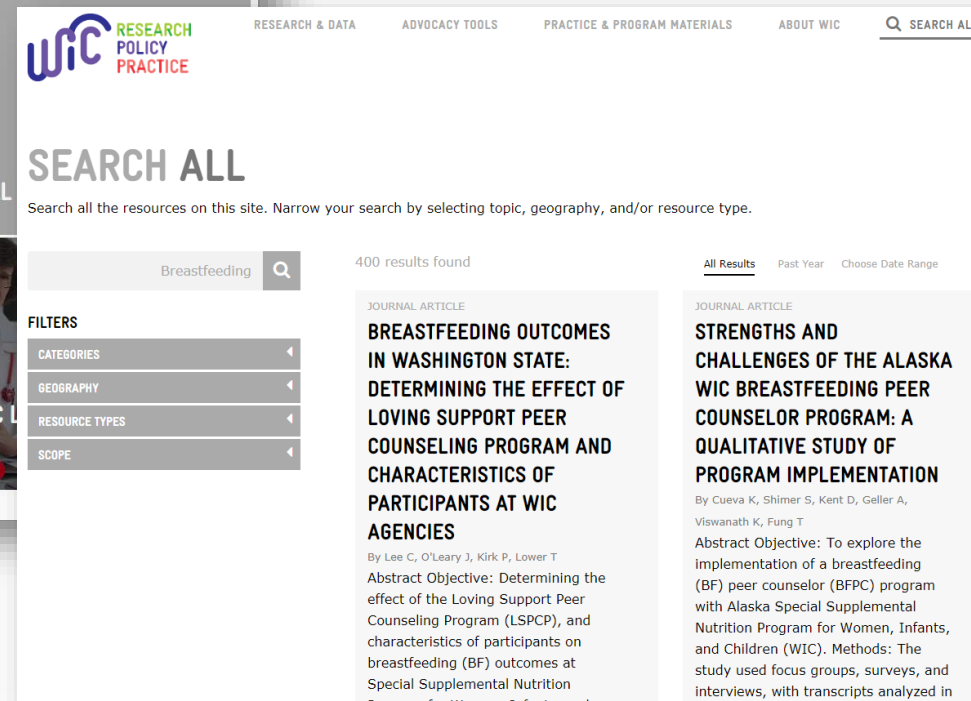
<https://www.nwica.org/research-activities>

Picture credit: Background vector created by rawpixel.com - www.freepik.com

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Coming soon...WIC Research, Policy & Practice Hub



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Mobile Apps for WIC Participants

Summer J Weber PhD, RD
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summer.weber@vumc.org



Outline

1

Background

2

WIC App Review

3

CHEW 2.0 Usability Testing

Background:

What WIC participants want



Choice

Participants are satisfied with WIC foods when they feel they have unrestricted choice



Efficiency

Participants desire efficiency in WIC at the clinic, vendor, and administrative levels



Support

It's easier to use WIC when participants have both institutional (workplace, clinic) and interpersonal (family, friends, peers) support

Background:

The need for apps in WIC



NWA 2018 Research Needs Assessment:

Understanding how WIC
Participants use technology
and considering barriers to
technology access



WIC works but enrollment is declining

Barriers to using WIC exist
at the clinic and store



WIC needs updated tools to help future generations

Technology could ease the use
of WIC, increase redemption of
WIC foods, and improve diet
quality of WIC participants

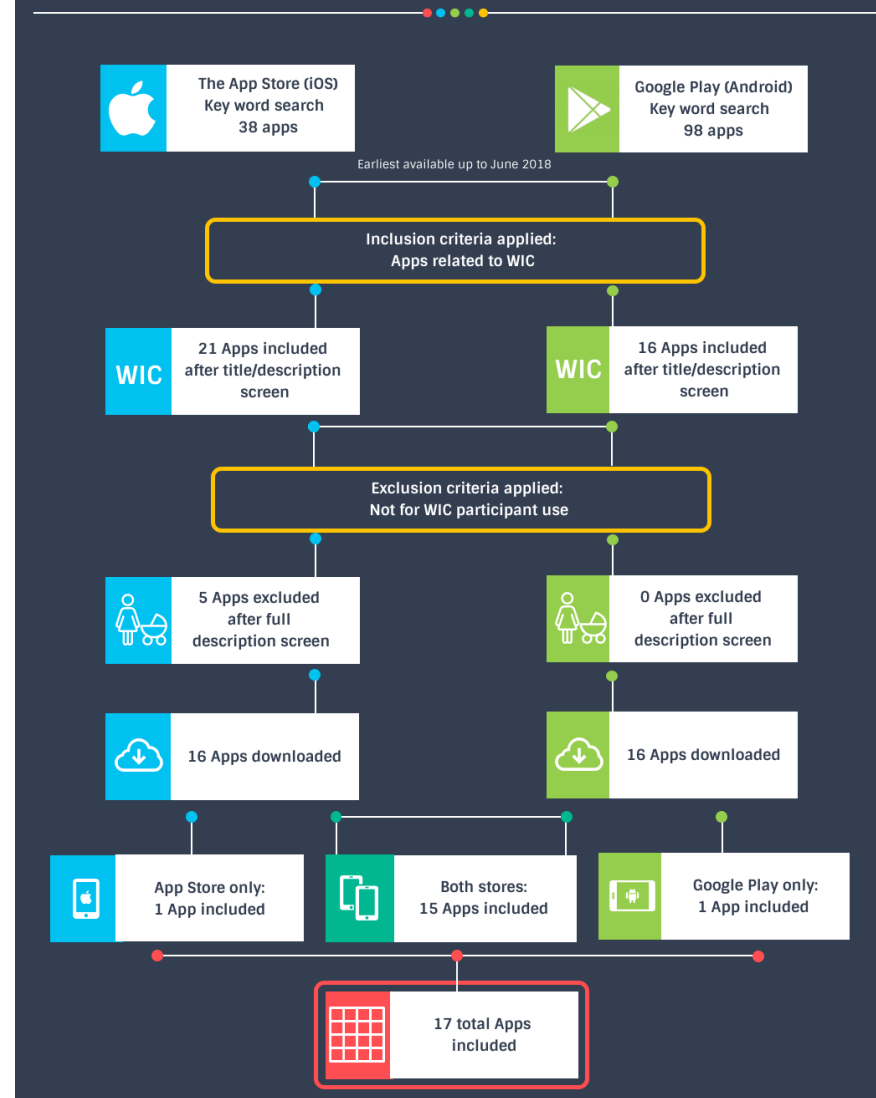


A Review of Smartphone Apps and Features for WIC Participants



Weber SJ, Dawson D, Greene H, Hull PC. Mobile Phone Apps for Low-income Participants in a Public Health Nutrition Program for Women, Infants, and Children (WIC): Review and Analysis of Features. JMIR Mhealth Uhealth 2018 Nov 19;6(11):e12261

Flowchart of the App Review Process





A Review of Smartphone Apps and Features for WIC Participants



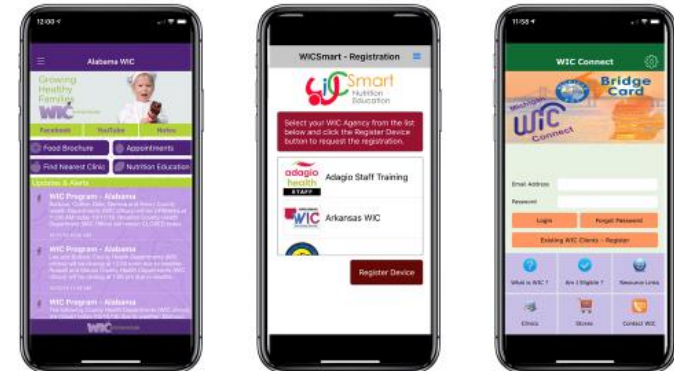
Apps requiring user verification to access features

Bnft (North Carolina)
EzWIC (Arizona and tribal territories)
Indiana WIC
Maryland WIC
My Minnesota WIC App
My OK WIC (Oklahoma)
My WIC (Chickasaw Nation)
WIC Connect (Michigan)
WIC Shopper (Available in many states)
WICSmart (Available in many states)
WIC2Go (New York)
Wisconsin MyWIC

Apps NOT requiring user verification to access features

Alabama WIC
Arizona WIC Clinic Search (no longer available)
Sacramento County WIC (no longer available)
WIC Food Shopping Guide (Wyoming)
WIC San Diego

Sample Preview Images of Smartphone Applications for WIC Participants



Classification of Features in Smartphone Applications for WIC Participants

App Features	Shopping Management						Clinic Appointment Management						Informational Resources						WIC-Required Education		Other User Input							
	View real-time benefit balance	View future benefits	View expiring benefits	Barcode Scanner	Manually enter UPC/ PLU	Transaction dispute	Vendor locator	View appointment	View missed appointment	View messages from clinic	Appointment reminder	Request appointment	Update participant information	Clinic location and contact info	Call WIC now	WIC eligibility info	Nutrition education (non required)	Community resources/ referrals	Breastfeeding resources	External links	Recipes	Food list	WIC tips	Web links to required nutrition ed	In-app required nutrition ed	Submit feedback to WIC	Report WIC Fraud	App usefulness poll
Apps requiring user verification																												
Bnft	☑	☑	☑	☑	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐
EzWIC	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐
Indiana WIC	☑	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐
Maryland WIC	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐
My Minnesota WIC App	☐	☐	☐	☑	☑	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐
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MyWIC	☑	☐	☑	☑	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
WIC Connect	☑	☑	☑	☑	☐	☐	☑	☑	☐	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐
WIC Shopper	☑	☐	☑	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐
WIC2Go	☑	☑	☑	☑	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐
WICSmart	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐
Wisconsin MyWIC	☑	☐	☑	☑	☐	☐	☑	☑	☑	☑	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐
Apps <u>not</u> requiring user verification																												
Alabama WIC	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐	☐	☐
AZ WIC Clinic Search	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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WIC Food Shopping Guide	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☑	☑	☑	☑	☐	☐	☐	☐
WIC San Diego	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☐	☑	☐	☐



A Review of Smartphone Apps and Features for WIC Participants



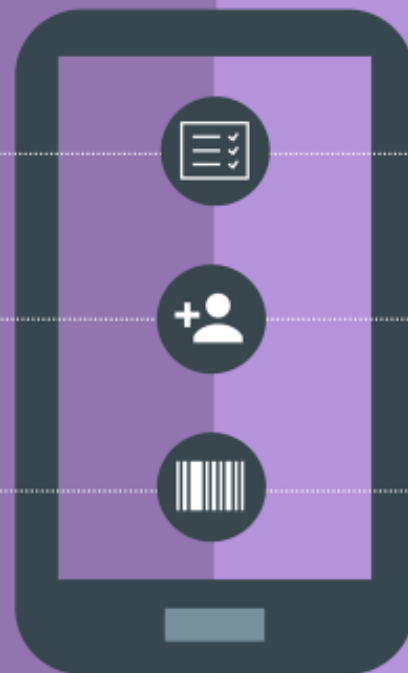
CONCLUSIONS/ FUTURE DIRECTIONS

Smartphone apps for families in WIC are common, especially in states that have implemented EBT for WIC.

17 WIC apps existed in 37 states, territories, and tribal nations.

Apps that assisted participants with **real-time shopping management** received the most positive user ratings and reviews.

The most common app features included **benefit balance checking** and **barcode scanning** features.



As EBT for WIC continues to roll out nationwide, more states are projected to adopt or develop apps.

Future app versions should consider expanding on **clinic management** and **nutrition information** features.

To evaluate WIC apps, collaboration between WIC agencies, EBT vendors, app developers, and researchers is necessary.

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture under award number 2017-68001-26352



User Testing of the **C**hildren **E**ating **W**ell (**CHEW**) Smartphone App for WIC Families



This material is based upon work that is supported by the
National Institute of Food and Agriculture, U.S. Department
of Agriculture, under award number 2017-68001-26352

Qualitative Interviews

Building on the original CHEW prototype app, our team is conducting qualitative interviews with families of WIC children in an iterative process to inform user-centered development of version 2.0 and to maximize usability of the app.



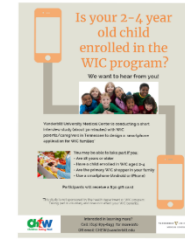
Interview Protocol

Participants are asked to speak about their experience using WIC services, shopping for WIC foods, and using smartphone technology. Participants are asked to form mental models about using recipes, shopping lists, and using WIC benefits and checking their WIC balance.



Qualitative Analysis

Interview transcripts are coded then analyzed using constant comparative analysis to identify emergent themes.



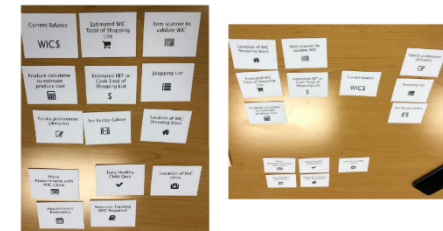
Participant Recruitment

WIC Caregivers of 2-4 year old children who use smartphones are being recruited from WIC clinics, health departments, and throughout the community to participate in in-depth audio-recorded interviews.



Desirable App features

Possible app features and functions were printed on sorting activity cards. Participants are asked to sort features by importance and then to place the cards into natural groupings of similar features.





User Testing of the **C**hildren **E**ating **W**ell (**CHEW**) Smartphone App for WIC Families



This material is based upon work that is supported by the
National Institute of Food and Agriculture, U.S. Department
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PRELIMINARY RESULTS

EMERGING THEMES



Desire for efficiency in WIC: Participants spoke about several barriers both at the clinic (e.g. long wait times) and at the store (e.g. unapproved items at checkout), which they felt should be addressed in the program.

Desire to maximize WIC benefits: Participants dislike leaving benefits behind due to stock issues or issues at checkout. Participants voiced excitement about opportunities for partial redemption of benefits once the transition from vouchers to EBT is complete.

Trying to get it done, trying again, trying to make it efficient, trying to maximize the benefit and do it all quickly in the store- I'll try to make it as quick as possible. Plus you know you still got to get home and do homework and get ready for school the next day and you know you don't want to spend a whole lot of time in the store. (WIC Caregiver; parent of 2 children)





User Testing of the **C**hildren **E**ating **W**ell (**CHEW**) Smartphone App for WIC Families



This material is based upon work that is supported by the
National Institute of Food and Agriculture, U.S. Department
of Agriculture, under award number 2017-68001-26352

PRELIMINARY RESULTS

USER PRIORITIES



Resoundingly, participants designated balance checking and barcode scanning the 'most important' features when asked about an app for WIC. Appointment scheduling and recipes appealed to participants, while clinic/store location features were of lower priority.



I think the 'scan items to validate that it is WIC', that's a good [app feature]. I think that's like the biggest one. Just to make sure. I have come across that a lot with just making sure that it is a WIC item. That's like the biggest thing. (WIC Caregiver; parent of 1 child)

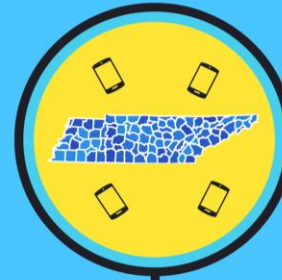


User Testing of the CHildren Eating Well (CHEW) Smartphone App for WIC Families



This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2017-68001-26352

PRELIMINARY RESULTS



CONCLUSIONS

User testing and input from WIC participants is helping to inform the development and user experience design of the CHEW 2.0 app. Interviews with participants have demonstrated the desire and need for updated tools for WIC.

IMPLICATIONS

After completing development and field testing, the CHEW 2.0 app will be implemented in WIC clinics across Tennessee as a supplemental education tool for families, with the potential for future dissemination to other states.

Questions?

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PARTNERS:

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DEPARTMENT of NUTRITION

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CE**
University of California
Agriculture and Natural Resources
Cooperative Extension

 **COOKING
MATTERS**

eatFresh.org 

The Economic Impacts of Breastfeeding: A Focus on USDA's WIC Program



Vic Oliveira and Xinzhe Cheng

USDA, Economic Research Service

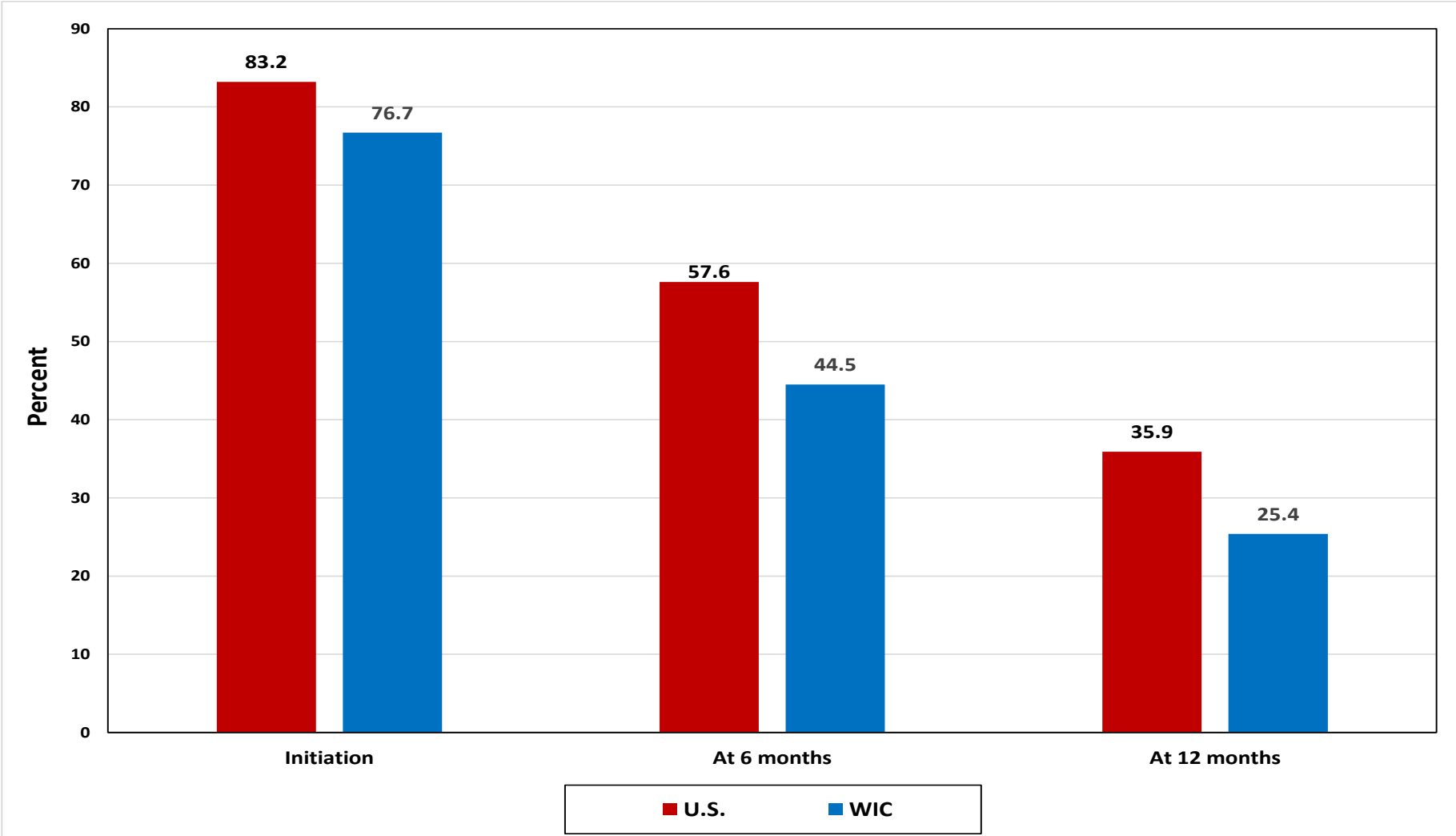
NWA 2019 Washington Leadership Conference

March 3, 2019

The American Academy of Pediatrics recommends:

“Exclusive breastfeeding for about 6 months followed by continued breastfeeding for 1 year (or longer) as complementary foods are introduced.”

Breastfeeding rates among children born in 2015



Source: Centers for Disease Control and Prevention.

Senate Committee on Appropriations (March 2018)

“The Committee requests within 12 months an updated study from the ERS on the economic benefits of breastfeeding, including its potential cost-savings for Medicaid and the WIC Program.”

Objectives

To estimate the effects of increased breastfeeding rates in WIC on:

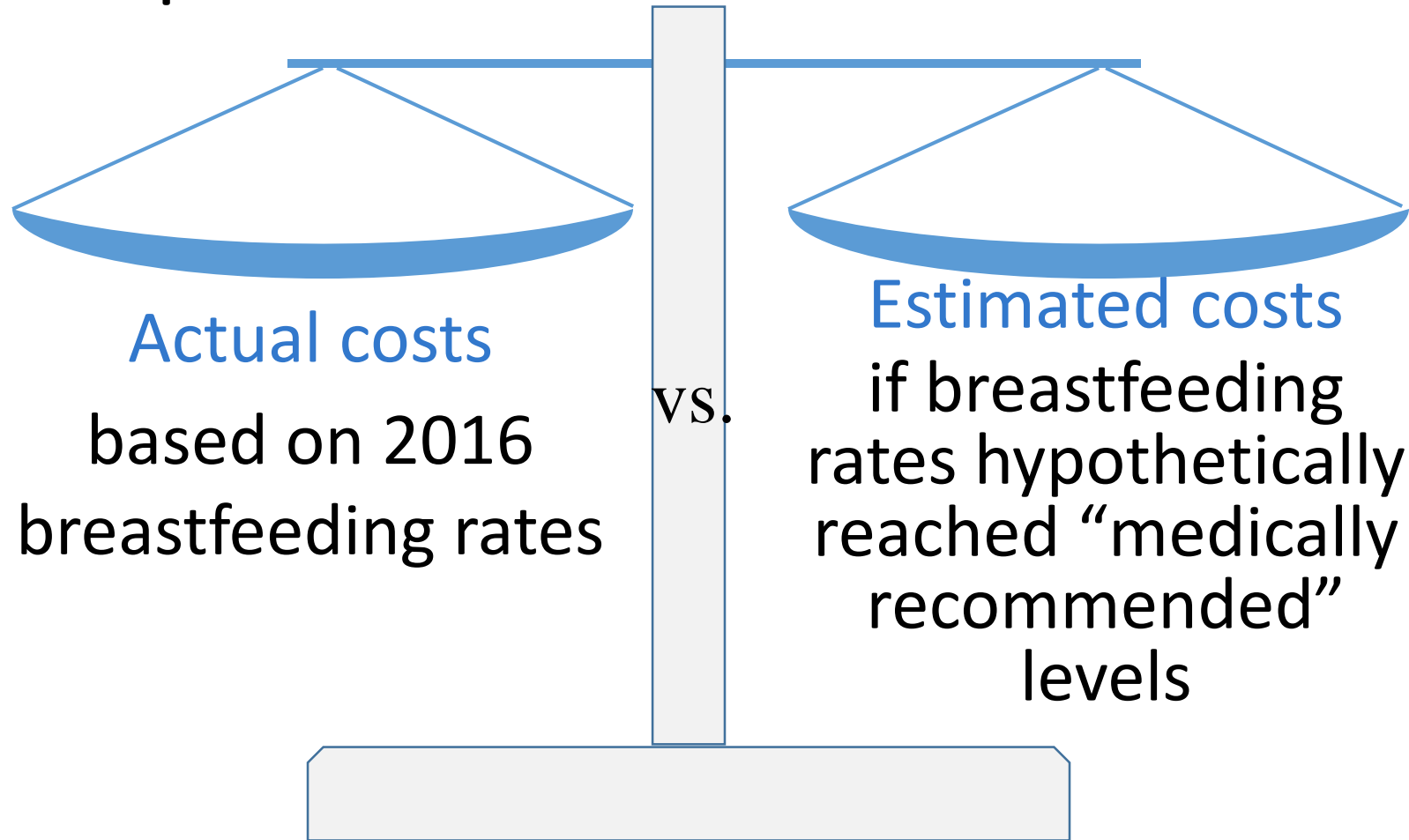
- WIC program costs
- Medicaid costs
- Health-related costs to WIC households

Objectives

To estimate the effects of increased breastfeeding rates in WIC on:

- WIC program costs
- Medicaid costs
- Health-related costs to WIC households

To quantify the economic impacts of breastfeeding in WIC, we compared:



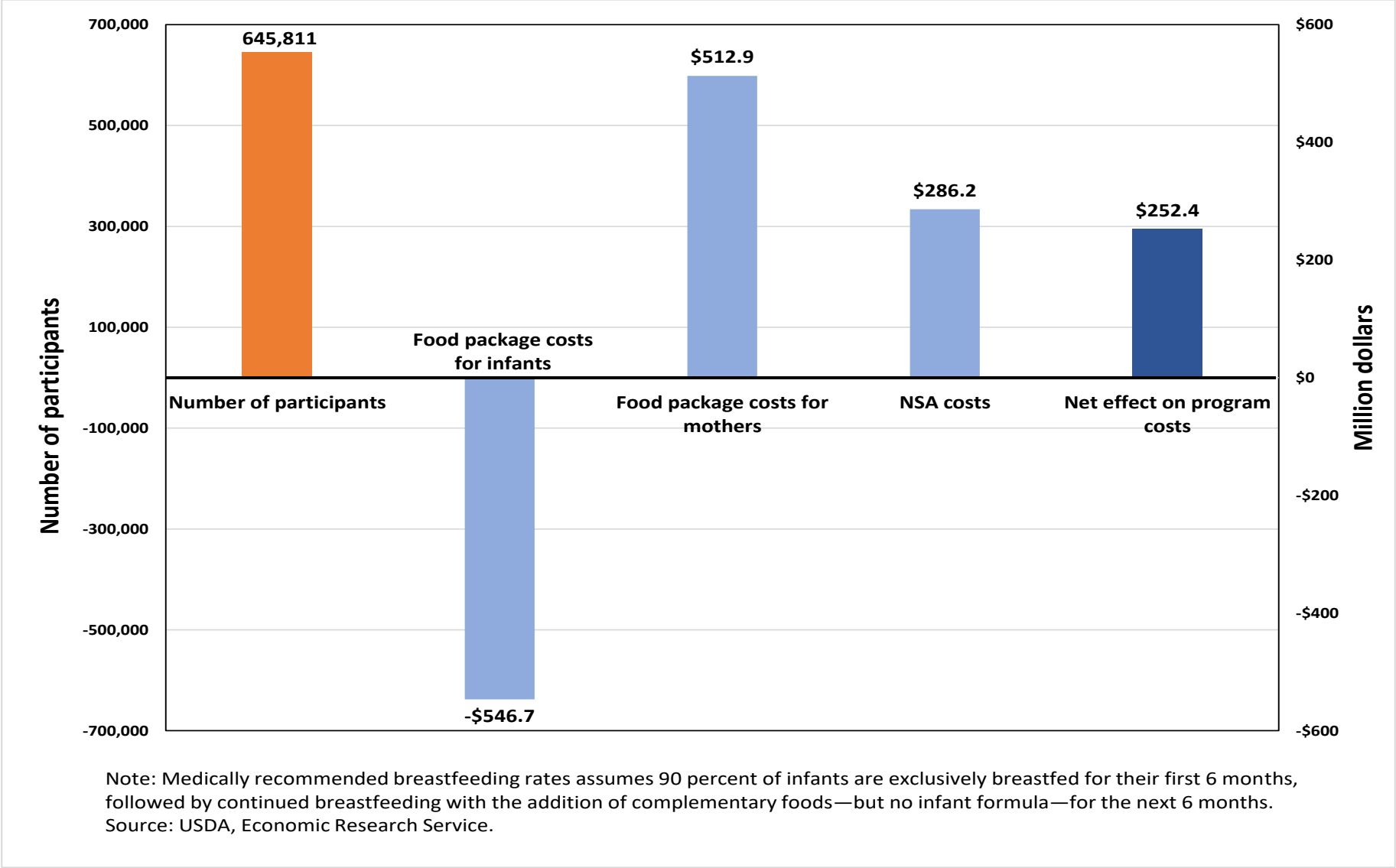
“Medically recommended” breastfeeding rates

Operationalized as 90 percent of infants are fully breastfed (i.e., no infant formula) for 12 months

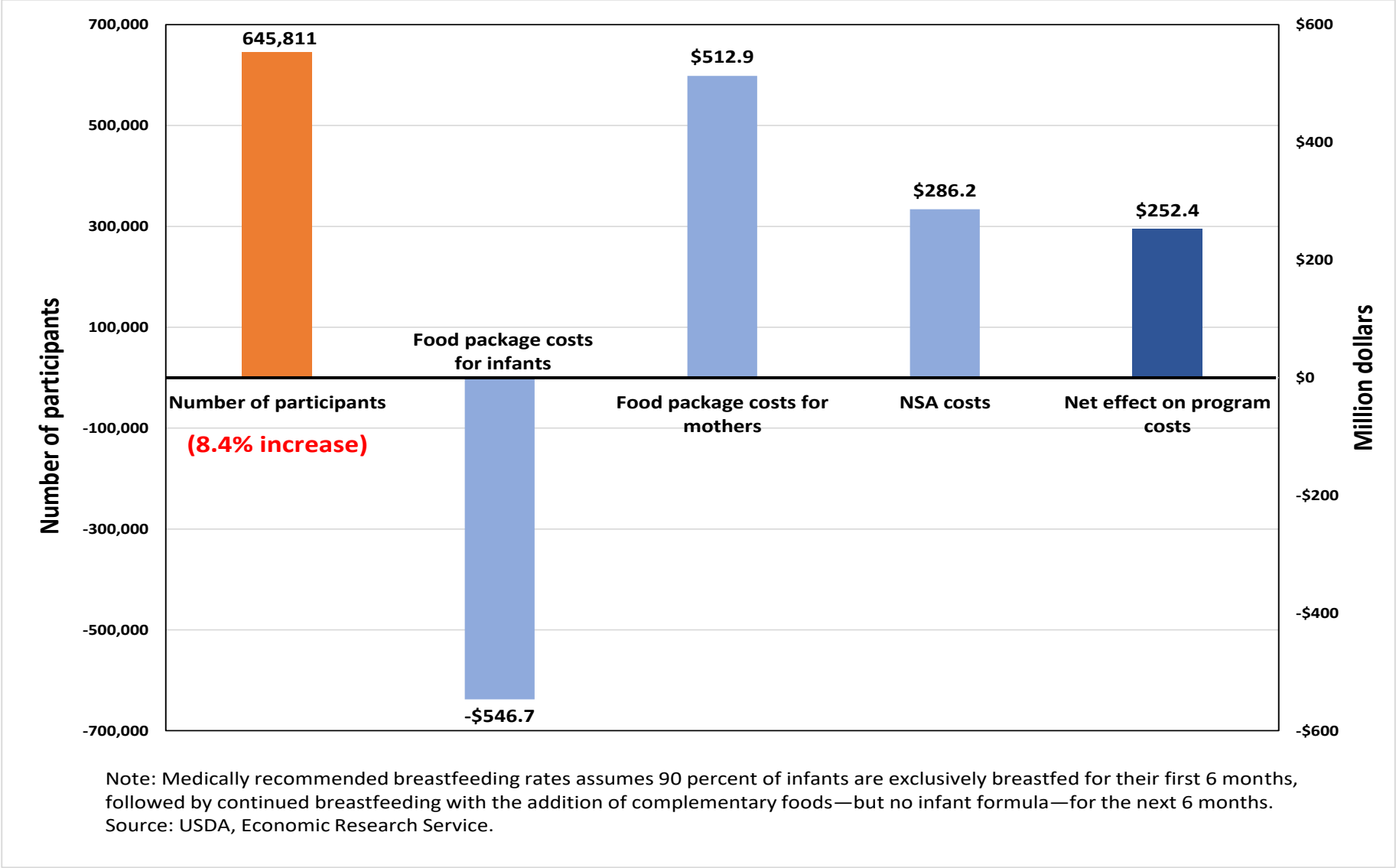
Effects of increased breastfeeding rates on WIC

- Number of participants
- Food package costs
- Nutrition Services and Administration (NSA) costs

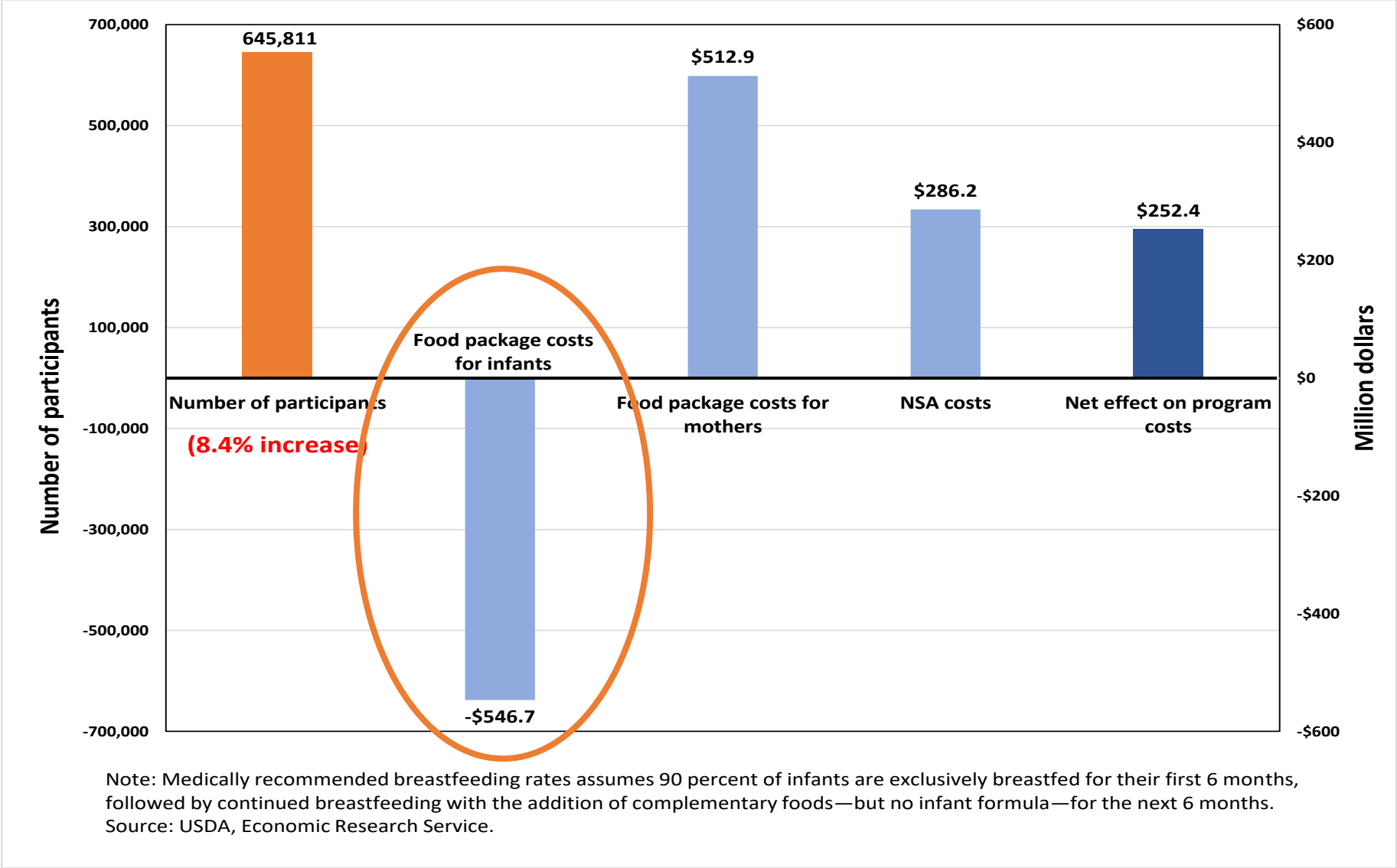
Estimated effects of increased breastfeeding rates in WIC



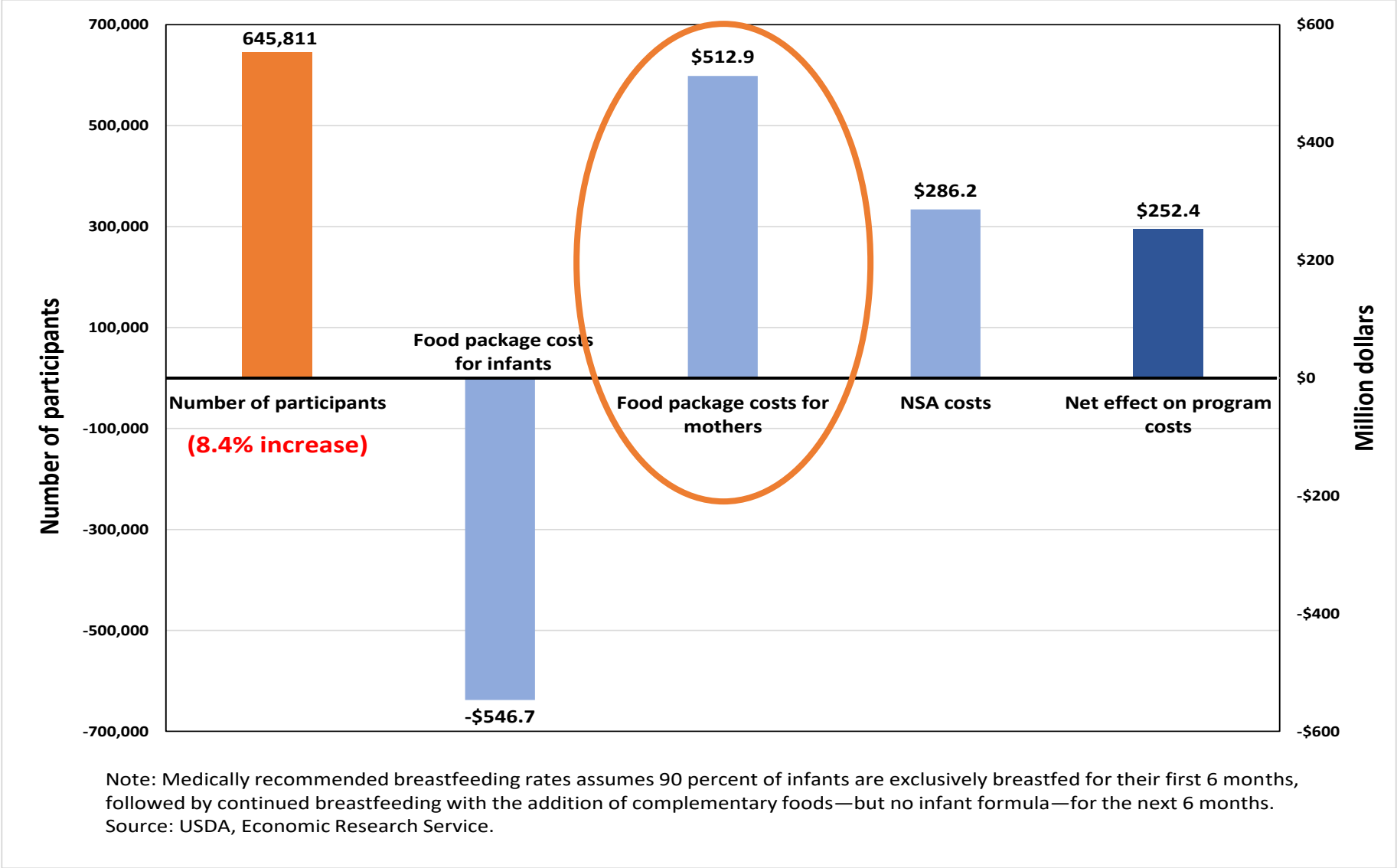
Estimated effects of increased breastfeeding rates in WIC



Estimated effects of increased breastfeeding rates in WIC



Estimated effects of increased breastfeeding rates in WIC



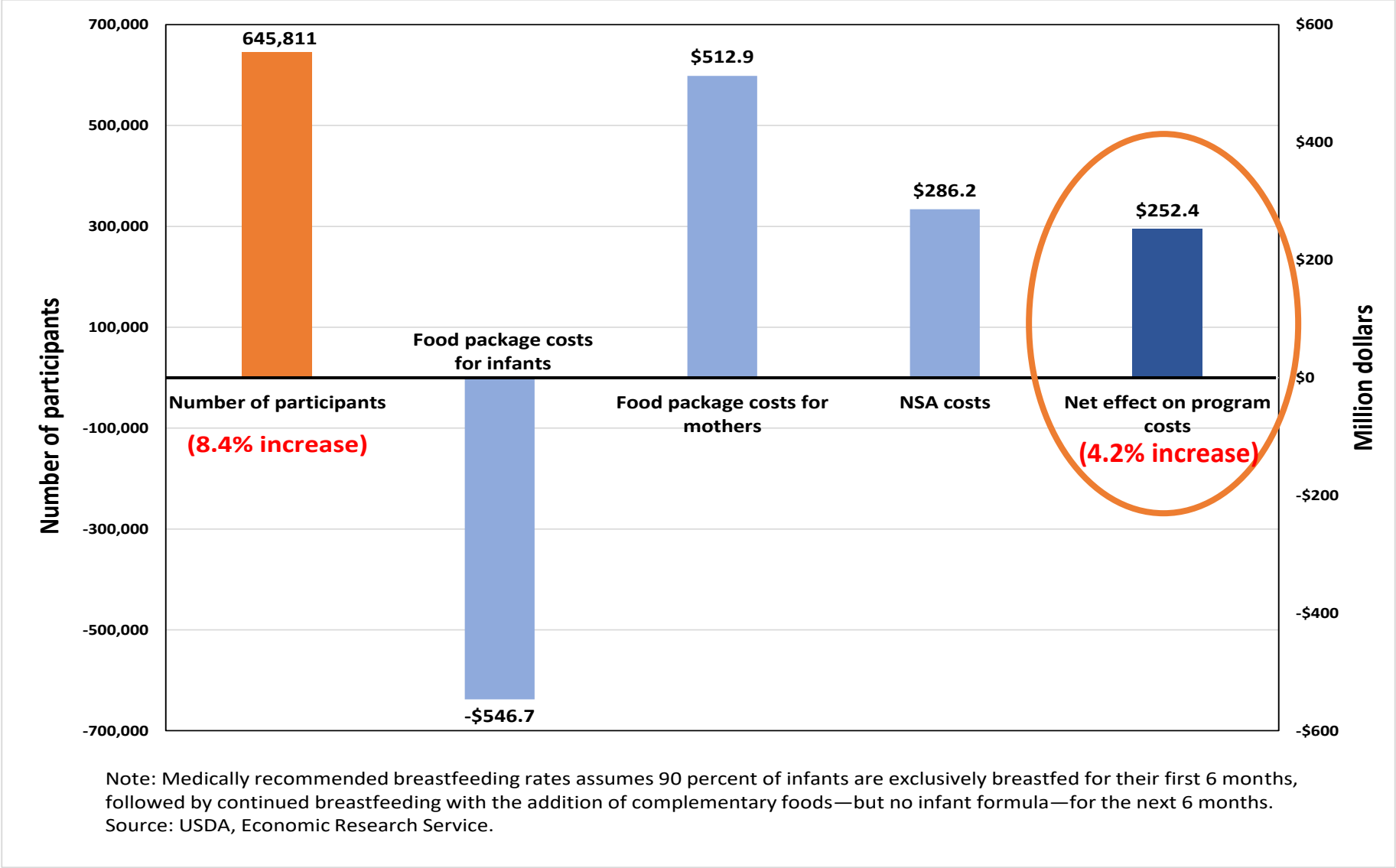
Estimated effects of increased breastfeeding rates in WIC



Estimated effects of increased breastfeeding rates in WIC



Estimated effects of increased breastfeeding rates in WIC





United States Breastfeeding
COMMITTEE

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A Public Health Imperative

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Breastfeeding Savings Calculator



BREASTFEEDING SAVINGS CALCULATOR

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Calculator



Cost of Suboptimal Breastfeeding Calculator

Select State:

Number of women age 15 in 2002: 1,994,060

Set Future rate to:

Number of births per year, 2012: 3,952,841

Number of VLBW births per year, 2012: 56,252

	Initiation	Exclusive in hospital	3 mo exclusive	6 mo exclusive	6 mo any	12 mo any
2012 Rate, %	80	64.72	43.3	21	43.3	29.2
Future Rate, %	90	90	90	90	90	90

[Start Calculator](#)

How the Calculator Works

Different durations of breastfeeding are associated with differences in health outcomes for mothers and for children. To create this cost calculator, we estimated the difference in disease burden associated with a unit-change in rates of any breastfeeding at 0 to 12 months and in exclusive breastfeeding from 0 to 6 months. Users can select the entire US, or a specific state, to see breastfeeding rates at baseline (either US rate in 2012 or 2014), and then specify "future" any breastfeeding rates of their choice at 0, 6 and 12 months, as well as exclusive breastfeeding rates at 0, 3 and 6 months. Users can hand enter the future rate, or select Healthy People 2020 goals, 80% rates at all time points, or 90% at all time points. The calculator then estimates the expected difference in disease burden.



14 Diseases Under Study

Pediatric

- Acute Lymphoblastic Leukemia (ALL)
- Crohn's disease
- Ulcerative colitis
- Ear Infections (Acute Otitis Media)
- Gastrointestinal Illness (GI)
- Lower Respiratory Tract Infection (LRTI)
- Obesity
- Necrotizing Enterocolitis (NEC)
- Sudden Infant Death Syndrome (SIDS)

Maternal

- Breast Cancer
- Diabetes (Type 2)
- Hypertension
- Myocardial Infarction

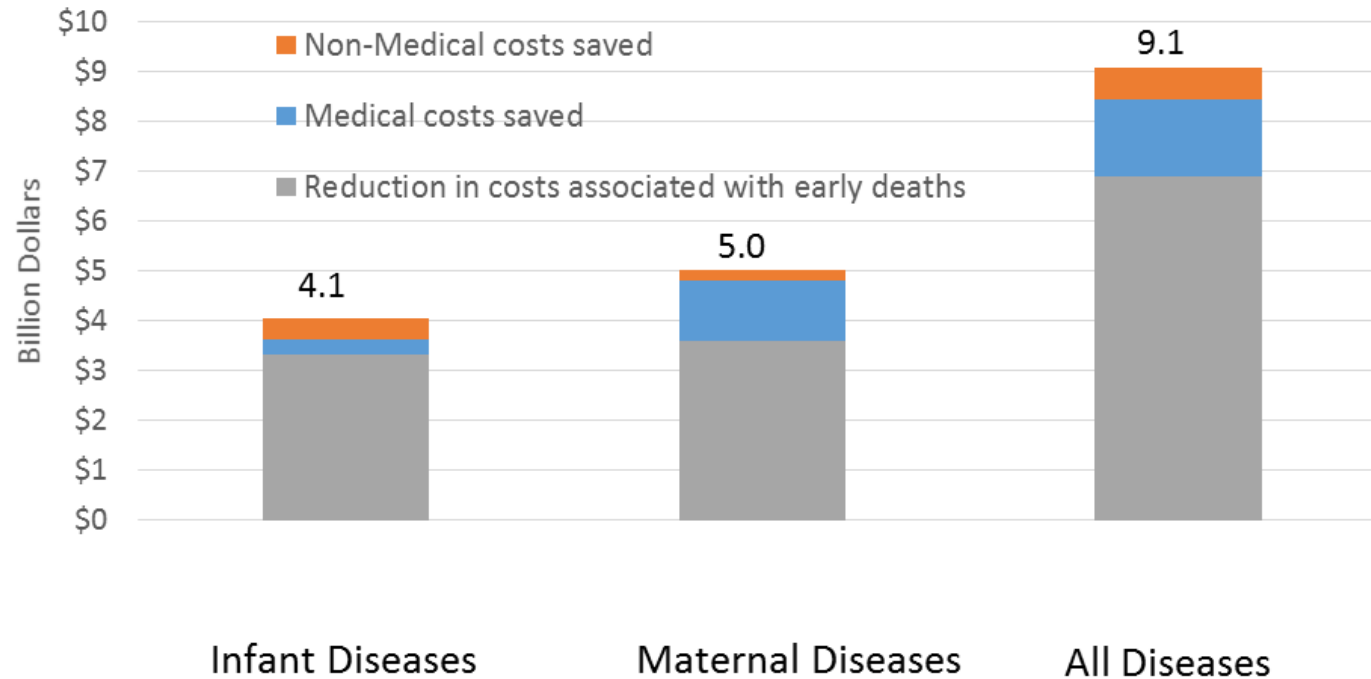


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Cost savings categories

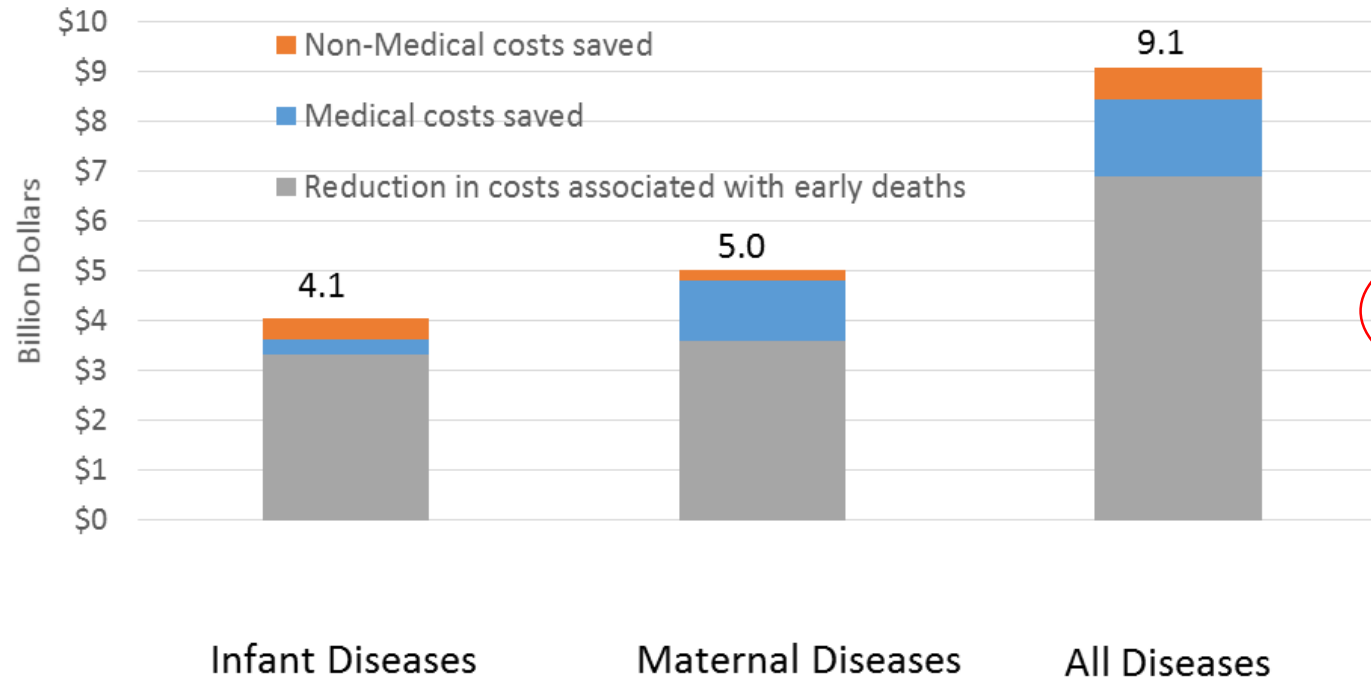
- Medical costs—physician fees, hospital costs, prescription drugs, medical supplies, etc.
- Nonmedical costs—lost wages from missed work
- Costs of early death—based on the value of a statistical life

Health-related Cost Savings



- \$0.635 billion in nonmedical costs saved
- \$1.5 billion in medical costs saved
- \$6.9 billion from reductions in early death

Health-related Cost Savings



- \$0.635 billion in nonmedical costs saved
- \$1.5 billion in medical costs saved
- \$6.9 billion from reductions in early death

Estimating effects of increased breastfeeding on Medicaid costs

- \$1.5 billion savings in medical costs
- 71% of WIC participants also participate in Medicaid
(71 percent of \$1.5 billion =\$1.1 billion)

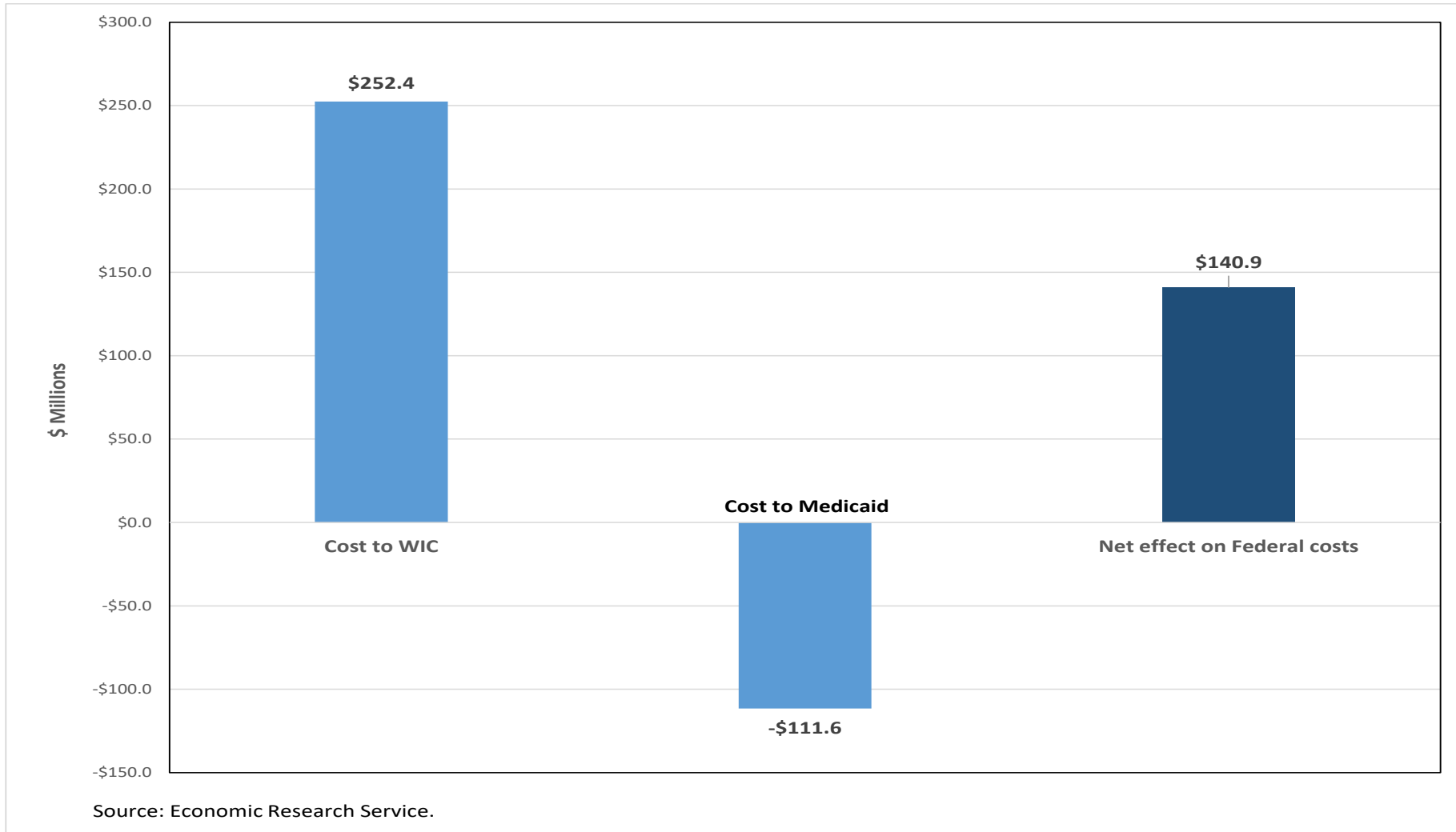
Estimating effects of increased breastfeeding on Medicaid costs

- \$1.5 billion savings in medical costs
- 71% of WIC participants also participate in Medicaid (71 percent of \$1.5 billion = \$1.1 billion)
- But some diseases may not occur until many years have passed (e.g., breast cancer)
- Savings that accrue while participant is *still likely to be enrolled in Medicaid*
- Restricted analysis to diseases with a short time horizon (e.g., ear infections, LRTI)

Estimated effects of increased breastfeeding in WIC on Medicaid costs

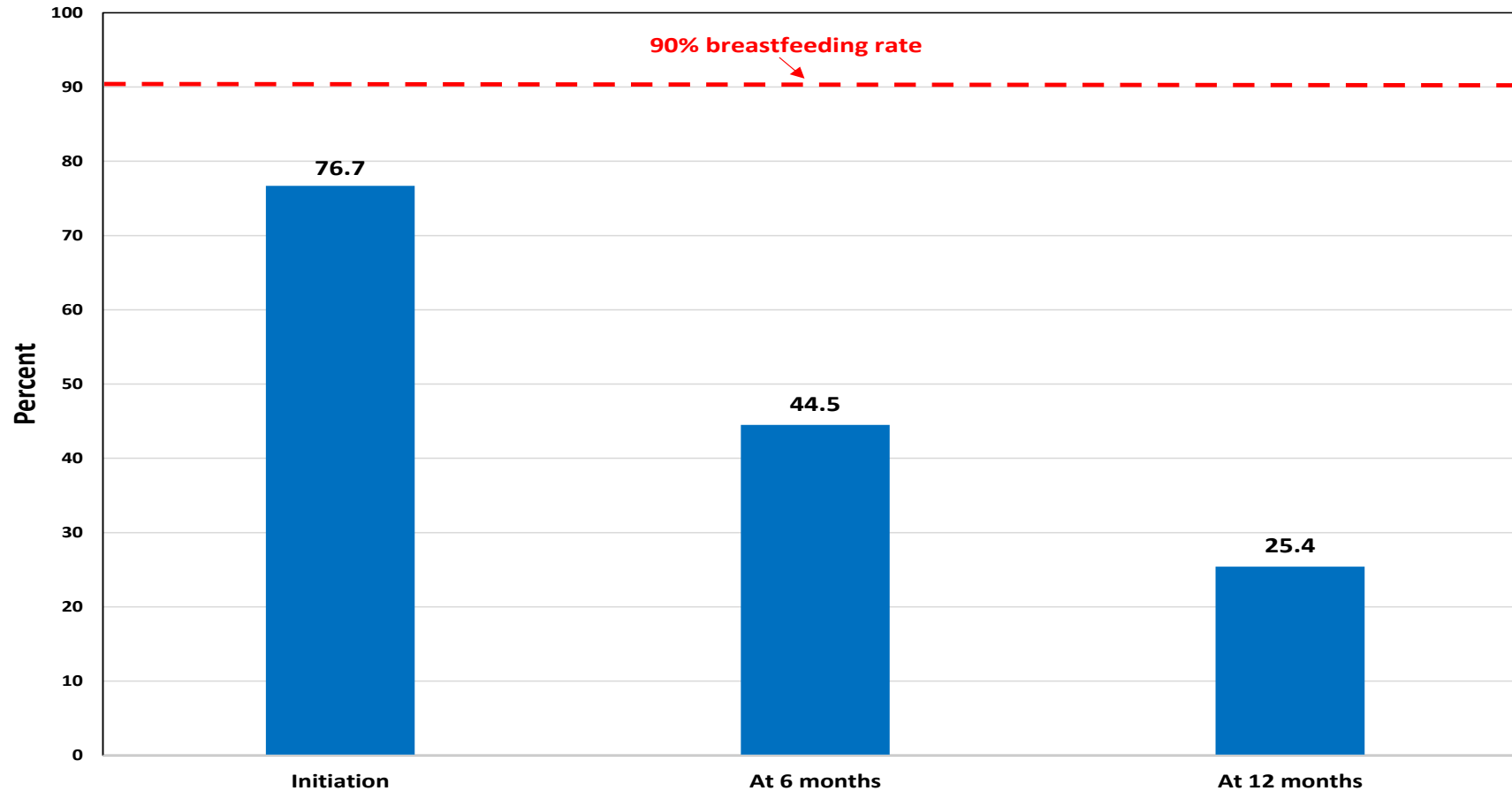
- Total savings of \$176.2 million, including:
 - \$111.6 million in savings to Federal portion of Medicaid
 - \$64.7 million in Medicaid savings to States

Estimated effects on Federal costs if breastfeeding rates in WIC increased



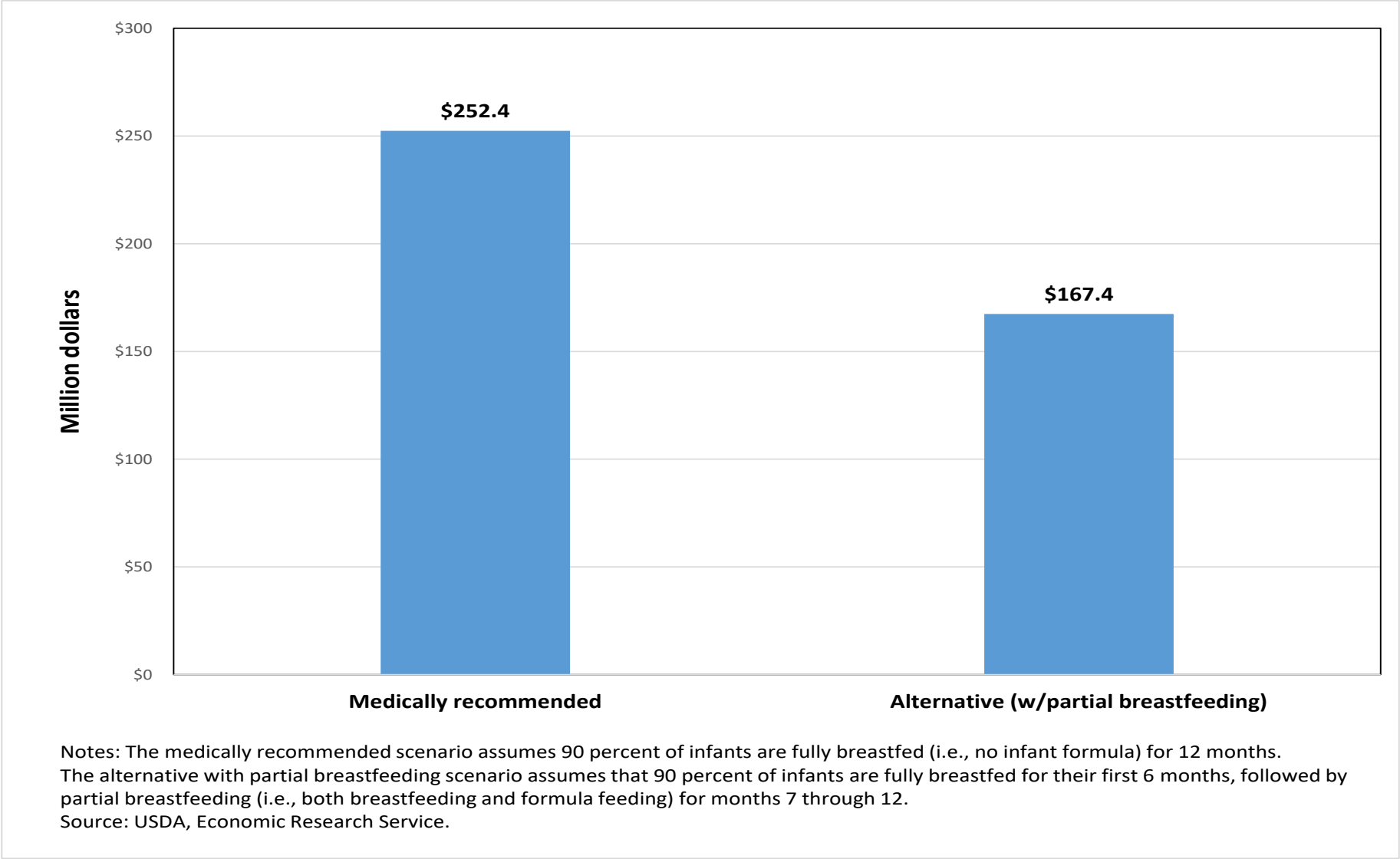
We also conducted a sensitivity analysis

Breastfeeding rates of infants participating in WIC, 2015








Source: Centers for Disease Control and Prevention.

Estimated effect on WIC costs under different hypothesized scenarios



Conclusions

Increased breastfeeding rates in WIC would:

- WIC program costs 
- Federal Medicaid costs 
- Total Federal costs 
- Length of time mothers participate in WIC 
- Health-related costs to WIC households 

The magnitude of these effects depends on the degree to which breastfeeding rates increase and partial breastfeeding occurs



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