

## EXECUTIVE SUMMARY

The Special Supplemental Nutrition Program for Women, Infants, and Children (often called the WIC program) is one of the largest food assistance programs in the United States. Started in 1972–1974, the WIC program was designed to meet the special nutritional needs of low-income pregnant, breastfeeding, and postpartum non-breastfeeding women; infants; and children up to five years of age who are at nutritional risk. The WIC program started as a pilot project and has now expanded to serve all 50 states and the District of Columbia as well as Puerto Rico, Guam, American Samoa, the American Virgin Islands, and 34 Indian Tribal Organizations.<sup>1</sup> The WIC program provides participants with supplemental foods, nutrition education, breastfeeding support, and referrals to health and social services. Its goal is to improve birth outcomes, support the growth and development of infants and children, and promote long-term health in all WIC participants.

Supplemental foods are made available monthly in the form of seven different WIC food packages. Most WIC participants access the food packages by redeeming vouchers or food-checks to obtain specific foods at participating retail outlets. In 2000, the WIC program served 54 percent of all U.S. infants (essentially all the income-eligible U.S. infants) and 25 percent of all U.S. children ages 1 year through 4 years,<sup>2</sup> along with many of

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<sup>1</sup>The term *WIC state agency* is used to refer to the entities administering the WIC program in all these 89 locations.

<sup>2</sup>Throughout the report, age ranges are inclusive of the upper boundary of the range.

their mothers. In fiscal year 2003, the cost of supplemental food for the WIC program was \$3.2 billion.

Many changes have occurred since the WIC program began.

- Advances have occurred in nutrition knowledge and its application.
- The food supply has expanded, and dietary patterns have changed.
- The WIC program has grown dramatically, and it serves a more culturally diverse population.
- Obesity has emerged as a major public health problem.

Despite these many changes, the WIC food packages have remained largely unchanged. Thus, it is time to address revisions in the WIC food packages that would enable the WIC program's potential to be realized more completely.

### COMMITTEE'S TASK

The U.S. Department of Agriculture's Food and Nutrition Service charged the Institute of Medicine's Committee to Review the WIC Food Packages with conducting a two-phase evaluation of the WIC food packages. In Phase I, the committee was tasked with reviewing the nutritional needs of population subgroups participating in the WIC program, assessing supplemental nutrition needs of these subgroups, and proposing priority nutrients and general nutrition recommendations. In Phase II, the committee was tasked with using the initial assessment to recommend specific changes to WIC food packages. In doing so, the committee was charged with considering the supplemental nature of the WIC program and making recommendations that are culturally suitable, non-burdensome to administration, efficient for nationwide distribution and vendor checkout, and cost-neutral. In addition, the committee was to consider burdens and incentives for eligible families and the role of the food packages in reinforcing nutrition education, breastfeeding, and prevention of chronic disease.

### CRITERIA AND PRIORITIES FOR REVISIONS

During Phase I of the project, the committee developed the criteria shown in Box ES-1 to guide its work. It also used various data sources to identify nutrients and food groups to try to increase or decrease in the food packages (called priority nutrients and priority food groups), with the goal of improving the nutrition of WIC participants. The committee's preliminary report, released in August 2004, included those findings. Subsequently, the committee received numerous public comments about the proposed

**BOX ES-1**  
**Criteria for a WIC Food Package**

1. The package reduces the prevalence of inadequate and excessive nutrient intakes in participants.
2. The package contributes to an overall dietary pattern that is consistent with the *Dietary Guidelines for Americans* (for individuals 2 years of age and older).<sup>a</sup>
3. The package contributes to an overall diet that is consistent with established dietary recommendations for infants and children younger than 2 years of age, including encouragement of and support for breastfeeding.
4. Foods in the package are available in forms suitable for low-income persons who may have limited transportation, storage, and cooking facilities.
5. Foods in the package are readily acceptable, widely available, and commonly consumed; take into account cultural food preferences; and provide incentives for families to participate in the WIC program.
6. Foods will be proposed giving consideration to the impacts that changes in the package will have on vendors and WIC agencies.

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<sup>a</sup>*Dietary Guidelines for Americans* provide science-based advice to promote health and to reduce risk for major chronic diseases through diet and physical activity. By law the *Dietary Guidelines* form the basis of federal food, nutrition education, and information programs, including the WIC program.

criteria, priority nutrients and priority foods, and the methods used; it also reviewed the August 2004 report of the Dietary Guidelines Advisory Committee. Then the committee conducted additional analyses and slightly revised the priority nutrients and priority food groups for the WIC population. The priorities relate to Criteria 1 through 3 in Box ES-1. Among others, iron, vitamin E, potassium, and fiber were identified as nutrients to increase; fruits and vegetables were food groups to increase in at least some of the packages. The work providing the basis for nutrient and food priorities is summarized in Chapter 2—*Nutrient and Food Priorities*.

## PROPOSED WIC FOOD PACKAGES

This section briefly describes the proposed WIC food packages, summarizes how the proposed food packages differ from the current food packages, and provides an overview of the rationale for the changes. For a complete description of the proposed food packages, see Chapter 4. Side-by-side comparisons of the current and revised food packages are presented in Appendix A.

The committee’s complete set of recommendations for the packages evolved from an iterative process that considered the six criteria, public comments, and cost and nutrient analyses (see Figure ES-1). Although the proposed changes are expected to have beneficial effects, the committee recognizes that some of them could cause unintended undesirable consequences. For this reason, the committee urges pilot testing and randomized, controlled trials of the changes before they are implemented nationwide (see Chapter 7—Recommendations for Implementation and Evaluation of the Revised WIC Food Packages).

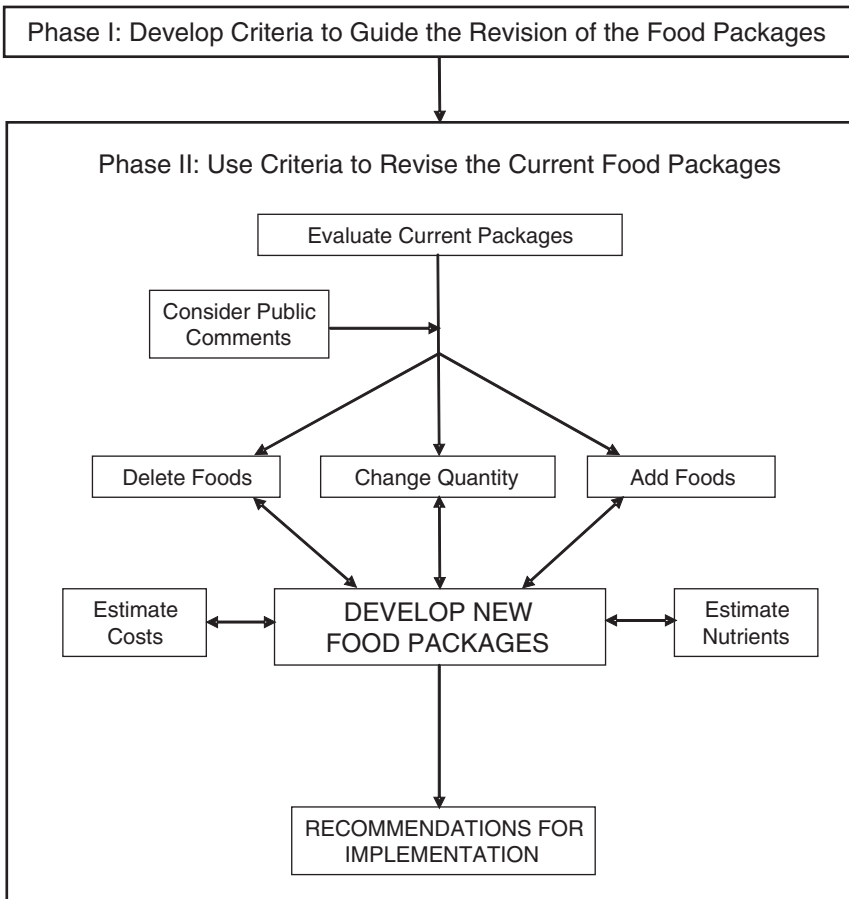


FIGURE ES-1 Process for revising the WIC food packages.

## Food Packages I and II for Infants

### *Change in Age Specifications and Breastfeeding Categories*

The committee made several important changes to the age specifications and breastfeeding categories for infants. Each merits priority for pilot testing and randomized, controlled trials.

The committee recommends that Food Package I serve infants from birth through age 5 months and that Food Package II serve infants ages 6 months through 11 months. Currently, the shift from Food Package I to II occurs at age 4 months. The proposed Food Package I would provide only iron-fortified infant formula for partially breast-fed and fully formula-fed infants until an infant is 6 months old. This change is consistent with recent position statements from the American Academy of Pediatrics emphasizing that the introduction of complementary feedings before 6 months of age only substitutes foods that lack the protective components of human milk and that exclusive breastfeeding should be used as the reference or normative model for feeding infants.

To support the successful establishment of breastfeeding, the committee recommends offering only two feeding options initially—full breastfeeding or full formula feeding. That is, formula would not be provided routinely during the first month after birth for any infants whose mothers intend to breastfeed. In a few circumstances, a small amount of powdered formula may be provided during the first month after birth if needed as the mother/infant pair establish a pattern of breastfeeding. As currently is the case, the breastfeeding mother could ask to have the infant assigned to full formula feeding at any time.

Beginning the second month after birth, a third infant feeding option is available—partial breastfeeding. The committee proposes the following definition of a partially breast-fed infant for the purpose of assigning WIC food packages: *the infant is breast-fed but also receives formula from the WIC program in an amount not to exceed approximately half the amount of formula allowed for a fully formula-fed infant.* In contrast, the current approach provides the same amount of formula to partially breast-fed and fully formula-fed infants and could allow a mother who breastfeeds an average of once daily to qualify as a breastfeeding woman. Under the new proposal, breastfeeding mothers who request more than the amount of formula allowed for partially breast-fed infants could receive up to the maximum amount of formula for the fully formula-fed infant, but the mother no longer would be eligible for Food Package V for a partially breastfeeding mother. Because Package V is more desirable than the package for non-breastfeeding mothers, this change might encourage a higher

level of breastfeeding among mothers who both breastfeed and formula-feed their infants.

### *Food Package I*

Food Package I provides iron-fortified formula only. The monthly amount of formula depends on the feeding method, form of formula provided (concentrated liquid, powdered, or ready-to-use), and the age of the infant, as follows.

- *Fully formula-fed infants* receive the equivalent of about 806 fluid ounces of formula (or 403 fluid ounces of concentrated formula) per month through 3 months of age; thus, Food Package I is unchanged for fully formula-fed infants from birth through 3 months of age. Fully formula-fed infants 4 months through 5 months of age receive the equivalent of about 884 fluid ounces of formula (or 442 fluid ounces concentrated) per month. Juice and infant cereal are no longer provided for infants ages 4 months through 5 months, to be consistent with current dietary guidance for complementary feeding of infants. Compared with the current package, the amount of formula is increased slightly for infants ages 4 months through 5 months to compensate in part for the decrease in nutrients and calories that results from the omission of juice and infant cereal.

- *Partially breast-fed infants* ages 1 month through 3 months receive an amount of powdered formula per month that reconstitutes to 384 to 435 fluid ounces of formula (depending on the container size and reconstitution rate). Partially breast-fed infants 4 months through 5 months of age receive the equivalent of about 442 fluid ounces of formula (in any form) per month. Because formula is supplemental to breast milk for partially breast-fed infants, the maximum allowance of formula is approximately 50 percent of the maximum allowance for fully formula-fed infants. This policy should encourage mothers using the combination feeding method (feeding both breast milk and formula) to aim for a greater contribution of breast milk to the infant's intake.<sup>3</sup> To promote food safety and minimize waste, powdered formula is recommended until partially breast-fed infants reach 4 months of age.

By definition, fully breast-fed infants do not receive formula from the WIC program. Instead, they receive the benefit of breast milk, which pro-

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<sup>3</sup>The food package for fully formula-fed infants is available if more formula is needed but any mother who requests that package will receive Food Package VI (available up to 6 months after giving birth) rather than Food Package V (available up to 12 months after giving birth), a more generous package offered to partially breastfeeding women.

TABLE ES-1 Maximum Monthly Allowances for Proposed Food Package II for Infants Ages 6 Months to 1 Year, by Feeding Category

	Fully Breast-Fed Infants	Partially Breast-Fed Infants	Fully Formula-Fed Infants
<i>Specialty Food</i>			
Infant Formula	—	156 fluid ounces of iron-fortified liquid formula concentrate [about 10 fluid ounces per day of formula as consumed]	312 fluid ounces of iron-fortified liquid formula concentrate [about 20 fluid ounces per day of formula as consumed]
<i>Food Group</i>			
Fruits and Vegetables	256 ounces of baby food fruits and vegetables [about 8 ounces per day]	128 ounces of baby food fruits and vegetables [about 4 ounces per day]	128 ounces of baby food fruits and vegetables [about 4 ounces per day]
Grains	24 ounces of iron-fortified infant cereal	24 ounces of iron-fortified infant cereal	24 ounces of iron-fortified infant cereal
Meat	77.5 ounces of baby food meat [about 2.5 ounces per day]	—	—

vides the nutrients they need and a wide array of protective and health-promoting components in a safe form.

### *Food Package II*

Food Package II is available for infants from 6 months through 11 months of age. This package differs substantially by infant-feeding category, as shown in Table ES-1. The proposed food package introduces the following changes:

- Formula—decreased for fully formula-fed infants (from 403 to 312 fluid ounces of liquid formula concentrate per month) and partially breast-fed infants (from 403 to 156 fluid ounces of formula concentrate);
- Baby foods—added to the food package to encourage healthy dietary patterns; and

- Juice—omitted to help make possible the addition of baby food fruits and vegetables.

The amount of infant cereal in the package is unchanged. The decrease in the maximum allowance of formula for fully formula-fed infants is consistent with meeting nutritional requirements. The decrease for partially breast-fed infants is to encourage a greater contribution of breast milk to the infant's diet. Decreasing the maximum amount of formula and omitting juice make possible other enhancements. For example, the addition of baby food fruits and vegetables in the second 6 months of infancy introduces infants to a variety of nutritious foods at an age when almost all infants are developmentally ready for semisolid foods. The baby food meat for breast-fed infants provides needed iron and zinc in forms with high bioavailability, and the larger quantities of baby food for fully breast-fed infants may encourage some mothers to continue full breastfeeding.

### **Food Package III for Those with Special Dietary Needs**

Currently, Food Package III provides only special formulas, juice, and cereal. The committee recommends the following:

- Continue to provide participants with the special formulas that are prescribed because of specific medical or developmental conditions;
  - In addition, provide the foods that they would receive from the package to which they would be assigned if they did not have special dietary needs, to the extent that is appropriate (for example, foods from Food Package IV for children ages 1 year through 4 years); and
  - Include infants with special dietary needs among the populations served by this package.

The committee supports the least restriction of WIC foods consistent with the participant's special health needs. The addition of infants with special dietary needs is recommended to increase efficiency in keeping track of foods and food costs for all individuals with special dietary needs.

### **Food Package IV for Children**

A side-by-side comparison of the current and revised food packages for children appears in Table ES-2. Food Package IV serves more than 50 percent of all WIC participants. The proposed food package introduces the following changes:

- Juice—limited to an amount that is consistent with the recommendation by the American Academy of Pediatrics;



TABLE ES-2 Comparison of the Current and Proposed Food Package for Children, Maximum Monthly Allowances

Food Group	Current Food Package IV	Revised Food Package IV
Fruits and Vegetables	288 fluid ounces of vitamin C-rich juice [about 10 fluid ounces per day]	128 fluid ounces of vitamin C-rich juice [about 4 fluid ounces per day]
	—	\$8 cash-value voucher for fresh fruits and vegetables <sup>a</sup>
Milk and Alternatives	24 quarts of milk [about 3 cups per day] with some allowed substitutions	16 quarts of milk [about 2 cups per day] with more allowed substitutions <ul style="list-style-type: none"> <li>• 1-year-old: whole milk (3.5–4% milk fat)</li> <li>• 2- through 4-year-old: 2% milk fat or less</li> </ul>
Grains	36 ounces of iron-fortified cereal (not limited to whole grains)	36 ounces of iron-fortified whole grain cereal
	—	2 pounds of whole grain bread or other whole grain options
Meat and Alternatives	2–2.5 dozen eggs	1 dozen eggs
	1 pound of dried beans or peas <i>or</i> 18 ounces of peanut butter	1 pound of dried beans or peas or the equivalent canned <i>or</i> 18 ounces of peanut butter

<sup>a</sup>Alternatively, a processed fruit and vegetable option is available.

NOTE: For side-by-side comparisons of the current and revised versions of all the food packages, see Appendix A.

- Fruits and vegetables—added, with fresh and processed options;
- Milk and milk alternatives
  - limited to approximately the amount recommended in the *Dietary Guidelines* or other dietary guidance;
  - as recommended by the American Academy of Pediatrics, whole milk for 1-year-old children and fat-reduced milk (2 percent milk fat or less) for older children;
  - yogurt allowed as a new option to substitute for part of the milk;
- Eggs—reduced in quantity to make other package enhancements possible;

TABLE ES-3 Proposed Food Packages for Women, Maximum Monthly Allowances

Food Group	Package V: Pregnant Women (throughout pregnancy), Partially Breastfeeding Women (from 1 month after delivery up to 1 year after delivery)	Package VI: Fully Formula-Feeding Women (from delivery up to 6 months after delivery)	Package VII: Fully Breastfeeding Women (from delivery up to 1 year after delivery)
Fruits and Vegetables	144 fluid ounces of vitamin C-rich juice [4.8 fluid ounces per day]  \$10 cash-value voucher for fresh fruits and vegetables <sup>a</sup>	96 fluid ounces of vitamin C-rich juice [3.2 fluid ounces per day]  \$10 cash-value voucher for fresh fruits and vegetables <sup>a</sup>	144 fluid ounces of vitamin C-rich juice [4.8 fluid ounces per day]  \$10 cash-value voucher for fresh fruits and vegetables <sup>a</sup>
Milk and Alternatives	22 quarts of milk, 2% milk fat or less, with some allowed substitutions [2.9 cups per day]  —	16 quarts of milk, 2% milk fat or less, with some allowed substitutions [2.1 cups per day]  —	24 quarts of milk, 2% milk fat or less, with some allowed substitutions [3.2 cups per day]  1 pound of cheese (in addition to substitutions allowed for milk)
Grains	36 ounces of iron- fortified whole grain cereal  1 pound of whole grain bread or other whole grain options	36 ounces of iron- fortified whole grain cereal  —	36 ounces of iron- fortified whole grain cereal  1 pound of whole grain bread or other whole grain options
Meat and Alternatives	1 dozen eggs  —  1 pound of dried beans or peas or the equivalent canned <i>and</i> 18 ounces of peanut butter	1 dozen eggs  —  1 pound of dried beans or peas or the equivalent canned <i>or</i> 18 ounces of peanut butter	2 dozen eggs  30 ounces canned fish (light tuna or salmon)  1 pound of dried beans or peas or the equivalent canned <i>and</i> 18 ounces of peanut butter

<sup>a</sup>Alternatively, a processed fruit and vegetable option is available.

- Dry beans or peas—canned forms allowed to increase participant options; and
- Whole grains—only whole grain cereals allowed; additional whole grains options were included.

### Food Packages V, VI, and VII for Women

As can be seen in Table ES-3, the packages for the three categories for women all provide juice, breakfast cereal, milk, eggs, dried beans or peas (or peanut butter), and fruits and vegetables. Food Packages V and VII provide whole grain bread as well, but the package for non-breastfeeding postpartum women does not. As currently is the case, the package for fully breastfeeding women provides the largest number of different kinds of food and the largest amount of food (for up to 12 months after delivery); the package for fully formula-feeding women provides the least (for up to 6 months after delivery).

Most of the changes in the packages for women were of the same type and made for similar reasons as those for children. Juice was decreased in the packages by approximately 50 percent, and a \$10 cash-value voucher for fresh fruits and vegetables was added. Milk also was decreased in all packages, but the packages continue to supply approximately the amounts recommended by the *Dietary Guidelines*, and more options for substitutions are allowed. Dried beans or peanut butter were added to Food Package VI for non-breastfeeding postpartum women to improve their intake of several nutrients, but whole grain bread was not added to this package. The nutritional needs of pregnant and breastfeeding women ordinarily are higher than those for the non-breastfeeding postpartum women who receive Food Package VI.

One goal of the changes in the infants' and women's packages was to reduce the disparity in the market value of the three options (full breastfeeding, partial breastfeeding, and full formula feeding) for mother/infant pairs. The market value of the breastfeeding packages has been increased substantially (see Chapter 5—*Evaluation of Cost*—Table 5-5). Further narrowing of the gap in market values would be desirable but did not appear to be feasible while maintaining cost neutrality and meeting the other criteria for the revision of the food packages.

## PROPOSED FOOD PACKAGES ARE IN LINE WITH THE COMMITTEE'S CRITERIA

### Proposed Food Packages Support Improved Nutrient Intakes

The committee redesigned the food packages to increase or decrease their content of priority nutrients with the goals of improving overall nutri-

ent consumption and reducing the prevalence of inadequate or excessive nutrient intakes among WIC participants.

Compared with the current food packages for children and women, the committee estimates that the revised packages provide greater amounts of nearly all of the nutrients of concern with regard to inadequate intake. The exceptions were potassium for children, calcium and vitamin D for pregnant and partially breastfeeding women, and vitamin C for pregnant and breastfeeding women. However, the amounts of calcium and vitamin C in most food packages are still close to or exceed required amounts. Furthermore, some allowed food choices could increase nutrient intakes above the committee's estimates.

The revised food packages for women and children provide less saturated fat, cholesterol, total fat, and sodium than the current food packages. For formula-fed infants and children, the amount of preformed vitamin A provided, which was undesirably high, has been reduced in most of the packages. Although zinc also was identified as a nutrient of concern for excessive intake in the diets of formula-fed infants and children, the committee did not find acceptable ways to address this concern. Knowing that the difference between the amount of zinc recommended and the amount consumed is small, the committee chose to promote adequate zinc intake for the entire group of WIC infants. The risk from possible inadequate zinc intake was judged to be greater than that from zinc intakes that might slightly exceed the Tolerable Upper Intake Level.

### Proposed Food Packages Are More Consistent with Dietary Guidance

#### *Dietary Guidance for Infants and Young Children*

All the proposed food packages for infants and children younger than 2 years are responsive to widely accepted dietary recommendations from professional groups. The recommendations address obesity concerns mainly by improving the overall nutrient density of the packages while keeping the caloric content the same or slightly lower.

#### *Dietary Guidelines for Americans*

All the proposed food packages for individuals age 2 years and older share new features that contribute to a diet consistent with *Dietary Guidelines for Americans* by:

- Including foods from each basic food group and allowing some variety and choice within food groups;

- Providing fruits and vegetables, with both fresh and processed options that have minimal restrictions on variety and choice;
- Promoting the consumption of whole fruits and vegetables as the major forms in this food group;
- Including only whole grain products in the breads and cereal food group;
- Reducing saturated fat, cholesterol, total fat, and, in some cases, calories;
- Specifying no added sugars or limitations on the amounts of caloric sweeteners allowed (to promote higher nutrient density and limit calories);
- Including options that contain no added salt or are reduced in sodium (to limit salt, that is, sodium); and
- Addressing container size as related to food safety concerns.

Overall, the emphasis on fruits and vegetables, whole grains, and fat-reduced milk and milk products are major steps in improving consistency of the WIC food packages with the *Dietary Guidelines for Americans*.

The addition of *fresh* fruits and vegetables merits special attention. To improve the consumption of these foods and the appeal of this option, especially for people of different cultural backgrounds, the committee recommends minimal restrictions on participant choice. To make the fresh produce option workable for retail vendors, the committee recommends that it be implemented through cash-value vouchers in small denominations. Because a fresh produce option might not be practical in some situations, the committee also recommends a processed option and a combined fresh and processed option for fruits and vegetables.<sup>4</sup> Processed options would be obtained using the standard food instrument.

### **Proposed Food Packages Have Features with Wide Appeal to Diverse Populations**

Among the features that may improve the incentive value of the WIC food packages and encourage participants to consume the foods provided are:

- a wider variety of foods; and
- more participant choices.

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<sup>4</sup>The committee's primary recommendation includes fresh fruits and vegetable rather than processed forms because of the wider variety available in most locations and the lower sodium content of likely choices.

The addition of fruits and vegetables greatly expands the variety of foods offered in most of the packages, and the addition of whole wheat bread or other whole-grain options expands the variety offered in three of the packages. Proposed participant choices include options for (1) fresh, processed, or combined fresh and processed fruits and vegetables; (2) canned or dried legumes (e.g., dry beans and peas); and (3) canned fish choices (for fully breastfeeding women only). The committee encourages WIC state agencies to allow yogurt as a partial substitute for milk for children and women, calcium-set tofu as a partial milk substitute for women, and calcium- and vitamin D-rich soy beverage (“soy milk”) as a milk alternative for women who choose this alternative.

### **Proposed Food Packages Address Concerns of WIC Program Staff and Vendors**

The committee carefully considered impacts that proposed changes might have on program staff and vendors and addressed concerns expressed by representatives of both of these stakeholder groups as follows:

- Because more foods are allowed, WIC state agencies are expected to have less need to obtain approval at the federal level for changes to address local needs. In addition, local agencies can be more flexible in prescribing culturally appropriate packages.
- By being more consistent with the *Dietary Guidelines* and with current dietary recommendations for infants and young children, the packages hold more potential for effective nutrition education.
- The feasibility of using cash-value vouchers for fresh produce is based on input from vendors.

Through public comments, WIC program staff emphasized that they could and would develop workable approaches to implement improvements in the WIC food packages.

### **PROPOSED FOOD PACKAGES ARE COST-NEUTRAL**

The committee considered cost containment throughout the process of revising the food packages. The goal was to achieve cost neutrality for the food package portion of the WIC program on a national level. Cost neutrality in this context implies that the estimated average cost of providing the set of revised food packages would not exceed the estimated average cost of providing the set of current food packages under the assumption of no changes in participation rates. The two sets of packages were evaluated assuming maximum monthly allowances were prescribed and obtained by

all participants. The cost of some packages increased, and the cost of others decreased. This shift in relative values was intentional and was designed to promote healthy dietary behaviors. For example, to promote and support breastfeeding, the committee increased the attractiveness of the combined food packages for fully breastfeeding mother/infant pairs. The costs of medical foods for participants with special dietary needs (e.g., Food Package III) were not included in the cost analysis because these costs were assumed to be unchanged.

The committee used the same methods to estimate the average cost per participant for the current and revised sets of packages. In addition, the committee calculated a range for the average cost per participant of the revised packages using several assumptions about allowed food substitutions. The average 2002 cost per participant for the current set of packages is estimated at about \$35 per month (\$34.76), while the average 2002 cost for the set of revised packages is estimated to range between \$34 and \$35 per month (\$34.03–\$34.95). Thus, cost neutrality was achieved. Compared to the cost of current food packages, the cost of the revised food packages would change less in response to changes in the costs of dairy products and infant formula due to the greater variety of foods in the revised packages.

## RECOMMENDATIONS FOR IMPLEMENTATION

The proposed revisions to the WIC food packages are by far the most substantial changes in the WIC food packages since the program's inception in 1974. Additionally, the committee's process for revising the WIC food packages is the first national application of the Institute of Medicine's framework for dietary planning for groups and the first effort undertaken to incorporate the *Dietary Guidelines for Americans 2005* into a national food program. The committee's recommendations for revising the WIC food packages resulted from a thorough and careful deliberation of how best to meet the criteria set out for the food packages while maintaining cost neutrality.

Nonetheless, the committee also recognized that it is impossible to predict *a priori* the effects of the revised WIC food packages on either food consumption or nutrient intakes. The WIC program can control only what is offered to participants, not what participants actually consume. With the revisions, food choices might change in unintended detrimental ways, rather than in intended ways. Moreover, the revised food packages could increase or decrease the incentive for different groups to participate in the WIC program, and they could increase or decrease breastfeeding rates. Implementation procedures and the type of nutrition education provided are likely to influence the effectiveness of the revised food packages. In light of these considerations, the committee made recommendations relating to pilot

studies, flexibility, workable procedures, breastfeeding promotion and support, nutrition education, and product availability.

- *Studies Prior to Implementation of the Revised Packages*—The committee urges that pilot tests and randomized, controlled trials be conducted prior to the full-scale implementation of the revised food packages. High-priority topics include the effects of recommendations regarding infant-feeding options during the first month after birth, the age for transferring to Food Package II, and changes in the contents of Food Package II.

- *Flexibility and Variety*—The committee urges the Food and Nutrition Service to retain, and possibly expand, the flexibility proposed for the revised food packages, so as to allow state and local agencies to adapt the packages to the needs of their WIC populations. It further recommends that WIC state agencies aim for the maximum variety and participant choice in food selections consistent with foods available in their area and with cost containment.

- *Workable Procedures*—The committee recommends that WIC state agencies use input from Competent Professional Authorities,<sup>5</sup> vendors, and participants to inform the design of new food vouchers; implement cash-value vouchers issued in small denominations for fresh produce; and work with vendors to ease the transition to cash-value vouchers for fresh produce.

- *Breastfeeding Promotion and Support*—In tandem with the proposed package changes for breastfeeding mother/infant pairs, the committee strongly recommends intensive support for breastfeeding mothers, particularly in the first few weeks after delivery, and further support to extend the duration of breastfeeding for at least one year postpartum. In view of a recent recommendation by the American Academy of Pediatrics that a daily vitamin D supplement be given to many breast-fed infants, it would be useful for the WIC program to work with mothers and health care providers to facilitate providing the recommended supplement for these breast-fed infants.

- *Nutrition Education*—The committee recommends adapting nutrition education to address changes in the food packages related to food choices, shopping, handling foods in the home, incentives for breastfeeding, and feeding infants and young children. To realize fully the potential of these revised food packages to improve the nutritional status of the WIC population, a revised system for providing nutrition education may be

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<sup>5</sup>Competent Professional Authorities (CPAs) are professionals and paraprofessionals who tailor the food packages and educate and counsel WIC participants.



needed that includes greater frequency and intensity of nutrition education efforts.

- *Product Availability*—The committee encourages food manufacturers to consider changes in some of their products to address the nutritional needs of WIC participants—for example, more choices with reduced salt (that is, sodium) content and economical packaging that is re-sealable.

### IT IS TIME FOR A CHANGE

The proposed changes to the WIC food packages hold potential for improving the nutrition and health of the nation's low-income pregnant women, new mothers, infants, and young children. The new packages are well-aligned with current nutrient and food intake recommendations, and they allow considerable flexibility in food selection. Thus, the committee anticipates that the revised food packages will provide greater incentives for families to participate in the WIC program and to consume the foods prescribed. The new packages are cost-neutral and thus should not result in higher average food costs per WIC participant. Although the burden to vendors and to WIC agencies may increase in the short term, it is anticipated that improvements in procedures will ease such burden in the long term. The changes to the food packages reinforce the *Dietary Guidelines for Americans* and should result in improved diets for WIC participants. In turn, the revised WIC food packages are expected to improve the WIC program's positive contribution to the nation's health.