

Chapter 5

Access to WIC Vendors and Availability of Prescribed Foods

State use of a competitive pricing policy at vendor application may restrict WIC participants' access to authorized vendors. Competitive pricing policies and food-item restrictions may both impact the availability of prescribed foods in authorized WIC stores. This chapter examines the effects of these policies and restrictions on participant access to vendors and food availability in the six case study States.

Competitive pricing policies are designed to limit the average cost of prescribed WIC food packages, either by keeping high-price stores out of the program or by causing them to reduce the prices they charge to WIC. Such policies, however, may restrict WIC participants' access to vendors if the policy reduces their number. As discussed in chapter 2, Connecticut, Oklahoma, and Texas had explicit price standards for vendor applications. All three States used a fixed threshold for evaluating prices of a standard package of WIC foods (which varied by State). If a store's price for the package of foods exceeded the threshold, the store had to lower its prices or not be authorized.¹ In the other three case study States, program analysts had greater flexibility in judging whether store prices were appropriate. The study therefore treats Connecticut, Oklahoma, and Texas as having "restrictive" vendor selection policies for purposes of comparing participant access and availability of food.

Chapter 2 also noted that very few retailer applications had been denied as a result of competitive pricing policies in any of the States. It is possible, however, that these policies may have dissuaded high-price retailers from applying for authorization, thereby reducing the number of stores participating and, potentially, participants' access to stores that were authorized.

Cost-containment practices may also reduce the availability of prescribed WIC foods. First, if competitive pricing restrictions have the unintended consequence of limiting the availability of well-stocked stores, then WIC participants may have difficulty finding prescribed foods at remaining WIC vendors. Second, when State cost-containment practices limit the number of different food items that may be purchased with the WIC food instrument, there may be a greater likelihood that an approved item will not be available when the WIC participant shops.

Research Approach

The first portion of this chapter examines whether measures of participant access to WIC vendors differ between the three States with the most restrictive price standards (Connecticut, Oklahoma, and Texas) and the remaining less restrictive States. Measures of access include distance, travel time, and out-of-pocket costs incurred when traveling to the store in which a participant does most of her WIC shopping, especially in comparison to the store in which most regular (non-WIC) shopping is done.

¹ Thresholds were determined as a percentage premium over average package price, as determined by store type and area. Connecticut required that an applicant's total price be within 7.5 percent of the average price. The thresholds in Oklahoma and Texas were 5.0 and 8.0 percent, respectively. Because the States used different approaches to calculate average prices, one cannot infer that Oklahoma necessarily had the most stringent policy of the three States.

The second portion of the chapter looks at the availability of prescribed foods using two different data sources. The Survey of Food Prices and Item Availability captured information on which State-prescribed food items were available in a sample of WIC vendors in each State. In addition, for respondents to the Survey of WIC Participants who said they did not buy all the WIC food items prescribed for them, the survey asked for the main reason they did not buy all of each item. One of the response codes to these questions was that the store ran out of the item, and the chapter examines whether the frequency of this response is related to the presence of food-item restrictions.

Participant Access to WIC Vendors

Survey respondents' access to WIC vendors was examined both in absolute terms and in relation to access to their regular food stores. In the vast majority of cases (87 percent), however, respondents did their WIC shopping at the same store where they did their regular food shopping.

Table 5-1 presents information on participant access to WIC vendors, based on data from the study's Survey of WIC Participants. The survey asked respondents about the store where they usually used their WIC food instruments. The table shows average distance to the WIC store (in miles), average travel time to the store (minutes), the percentage of respondents who incurred travel expenses when going to the WIC store, and the average out-of-pocket expenses incurred.

The average distance traveled to the respondent's usual WIC store was 3.9 miles.² Participants in California traveled the shortest average distance (2.6 miles), whereas Oklahoma participants traveled the longest average distance to shop (5.2 miles). Average travel time for the six States was 11.0 minutes (one way), with Connecticut and California participants spending, respectively, the least and most time to travel (9.5 and 12.7 minutes).

A cross-State average of only 5.1 percent of respondents said that they incurred out-of-pocket expenses for the trip to the store. These expenses included bus or taxi fares, tolls, and parking fees. Averaged over the entire sample of respondents, not just those who said they incurred costs, the average cost was \$0.14 for a one-way trip. With an average of \$0.45 per one-way trip, California respondents paid by far the highest out-of-pocket costs, largely because they were most likely (18.3 percent) to incur any out-of-pocket costs.³

When the averages in States without vendor restrictions are compared to averages in the three restrictive States of Connecticut, Oklahoma, and Texas, only two of the group differences in table 5-1 are statistically significant. Absolute travel time to the respondent's WIC store was, on average, 1.7 minutes shorter in the States with restrictions than without (significant at the 0.01 level), and respondents in the nonrestrictive States were significantly more likely to incur travel expenses (significant at the 0.01 level). These findings are opposite what one would expect if State cost-containment

² Group averages reported in this and following chapters give equal weight to data from each State, regardless of the size of the State's WIC caseload. If averages for groups of States (for instance, all restrictive or nonrestrictive States) were weighted by caseload, all results would be dominated by the experience of WIC participants in California and Texas, which have the largest WIC caseloads in the study.

³ The high travel times and out-of-pocket expenses in California appear to be related to how respondents traveled to their shopping destination. Respondents in California were the most likely to travel by bus or taxi, thereby incurring costs. They were also relatively likely to walk to the store, contributing to the higher travel times in California.

Table 5-1—Participant access to store where they usually used their WIC food instruments

Access measure	Individual States						State groups			
	CA	CT	NC	OH	OK	TX	All States	No restrictions	Restriction	Group difference
Distance (miles)	2.6	2.7	5.6	4.2	5.2	3.0	3.9	4.2	3.6	-0.5
Travel time (minutes)	12.7	9.5	11.5	11.2	10.1	10.7	11.0	11.8	10.1	-1.7**
Out-of-pocket costs incurred (percent)	18.3	0.9	3.3	0.5	2.4	5.4	5.1	7.4	2.9	-4.5**
Out-of-pocket costs	\$0.45	\$0.04	\$0.11	\$0.01	\$0.08	\$0.15	\$0.14	\$0.19	\$0.09	-\$0.10
<i>Sample size (number)</i>	<i>178</i>	<i>198</i>	<i>196</i>	<i>191</i>	<i>168</i>	<i>171</i>	<i>1,102</i>	<i>585</i>	<i>537</i>	<i>1,102</i>

Weighted estimates for States were obtained with SUDAAN software. Group estimates give equal weight to each State in the group. Sample size varies across measures due to item non-response. Sample sizes shown is the maximum for measures included in the table. Item non-response is below 2 percent for all measures.

Significant differences in means and proportions between State groups are noted by * (0.05 level), ** (0.01 level).

Out-of-pocket expenses are for one-way travel.

Connecticut, Oklahoma, and Texas had the most restrictive policies regarding use of competitive pricing at vendor application.

Source: Survey of WIC Participants.

practices reduced participant access. Thus, this cross-State comparison provides no evidence that State use of competitive pricing policies at application reduced participant access to WIC vendors.

Interstate variations in road networks, public transportation, and food store location decisions could obscure the possible effects of restrictive vendor authorization practices on participant access. Lacking site-level data on these factors, the study used several proxy measures in a multivariate analysis to determine whether cost-containment practices in Connecticut, Oklahoma, and Texas may have affected access. These measures were population density (persons per square mile), the ratio of population to stores, the percentage of the population living below the Federal poverty guidelines, and the percentage of the population participating in WIC.⁴ After controlling for these factors, residence in a State with restrictive practices either had no correlation with the WIC access measure (for out-of-pocket expenses) or a negative and significant correlation (for travel distance and time). Again, the evidence indicates that restrictive vendor authorization practices in these three States did not reduce WIC participants' access to vendors.

A second and better approach for controlling for State-by-State variations in factors affecting access is to examine the **extra** distance, time, and travel costs that WIC participants spent going to their usual WIC stores, compared to the distance, time, and out-of-pocket expenses incurred going to their regular food stores. This approach is better because, by using access to regular food stores as a base, it controls for State variation in non-WIC factors affecting access, like transportation system. Table 5-2 shows that in three of the six States (California, Connecticut, and Ohio), the average distance to WIC stores was less than the average distance to the respondent's regular food store, whereas the opposite was true in Oklahoma. Extra distance was virtually zero in North Carolina and Texas. A similar pattern holds for travel time. Finally, except for California, differences in out-of-pocket expenses for trips to WIC and regular stores were small: less than or equal to \$0.05 per one-way trip. In California, average trip costs to WIC stores were \$0.18 less than average costs to regular stores.

If States' vendor restrictions decreased WIC participants' access to WIC stores, one would expect to see significantly larger extra travel distances, times, and out-of-pocket expenses in table 5-2 for the restrictive States. The absence of significant findings means there is no evidence that State vendor restrictions affected participant access to WIC-authorized vendors in these States. A similar lack of significant differences was seen when access was examined separately for urban, suburban, and rural areas.⁵

⁴ All model variables were measured at the county level.

⁵ The sampling scheme for the Survey of WIC Participants used three strata: urban (central city portion of "metropolitan" counties, as defined by the Office of Management and Budget), suburban (noncentral city portion of metropolitan counties), and rural (nonmetropolitan counties).

Table 5-2—Comparison of access to regular and WIC stores

Access measure	Individual States						State groups			
	CA	CT	NC	OH	OK	TX	All States	No restrictions	Restriction	Group difference
Extra distance to WIC store (miles)	-0.3	-0.4	<0	-0.6	0.2	>0	-0.2	-0.3	-0.1	0.2
Extra time to WIC store (minutes)	-0.5	-1.7	<0	-1.0	0.1	0.2	-0.5	-0.5	-0.5	>0
Extra cost to travel to WIC store	-\$0.18	-\$0.05	\$0.00	-\$0.04	\$0.00	\$0.00	-\$0.05	-\$0.07	-\$0.02	\$0.06
<i>Sample size (number)</i>	<i>178</i>	<i>198</i>	<i>196</i>	<i>191</i>	<i>168</i>	<i>171</i>	<i>1,102</i>	<i>585</i>	<i>537</i>	<i>1,102</i>

Weighted estimates for States were obtained with SUDAAN software. Group estimates give equal weight to each State in the group. Sample size varies across measures due to item non-response. Sample size shown is the maximum for measures included in the table. Item non-response is below 2 percent for all measures.

Significant differences in means and proportions between State groups are noted by * (0.05 level), ** (0.01 level).

Out-of-pocket expenses are for one-way travel.

Connecticut, Oklahoma, and Texas had the most restrictive policies regarding use of competitive pricing at vendor application.

<0 Negative value too near zero to display.

>0 Positive value too near zero to display.

Source: Survey of WIC Participants.

The small, and often negative, measures of extra distance, time, and costs related to WIC shopping were largely due to most WIC participants using the same store for both their usual WIC and non-WIC shopping. Table 5-3 shows that a cross-State average of only 13.0 percent of survey respondents said that their usual store for WIC shopping was different than the store where they did most of their shopping, although the percentage nearly doubled (to 24.2 percent) in California because of the relatively large number of WIC-only food stores in that State.⁶ There was no significant difference in this measure between the restrictive and nonrestrictive States. As shown in the table, WIC stores were sometimes closer than the respondent's regular food store, and sometimes farther away.

By itself, the fact that most WIC participants in these six States (87.0 percent) did their regular and WIC shopping at the same store is strong evidence that WIC's competitive pricing policies did not limit access to WIC vendors. If stores were not being authorized because of high prices, then fewer participants would have been doing their WIC shopping at their regular food stores. The absence of any statistically significant differences in table 5-3 bolsters the finding of no effect.⁷

Availability of Prescribed Foods

If States limit the number of approved items within a given food category, there may be a greater chance that an approved item will not be available when WIC participants shop. This can be a particular hardship for participants because, when multiple food items are listed on the same WIC instrument, all the items must be purchased at the same time. If an approved item is not available, the participant must either forego buying the item with WIC benefits or postpone buying all of the items until a later trip. Chapter 8 (Food Instrument Redemption) provides a discussion of how the case study States aggregate multiple food items on single instruments.

Food-item restrictions can affect item availability in several ways. If States limit the brands allowed, then the possibility increases that the allowed brand(s) will not be on the shelf during the participant's shopping trip. For instance, California, Connecticut, and Texas limit infant cereal to Gerber brand because they have negotiated rebates with Gerber Foods. If a participant in these States finds a store out of Gerber cereal, her infant's prescribed cereal is unavailable. In North Carolina and Ohio, a WIC participant facing a similar situation could purchase Beechnut or Heinz infant cereal instead. (Participants in Oklahoma can buy Heinz or Gerber cereals, but not Beechnut.) One might therefore expect infant cereal availability to be more of a problem in the States with brand restrictions than elsewhere, even though WIC-authorized vendors are supposed to maintain ample inventories of a variety of food items within each food category (as discussed in more detail below).

⁶ Among the California survey respondents who said that they did their regular and WIC shopping at different stores, 80.7 percent said they did their WIC shopping at a WIC-only store.

⁷ One might argue that any evidence that participants did their WIC shopping at different stores implies an extra burden from additional trips. This is not necessarily the case; the survey did not ask whether any regular shopping was done at the same store as the WIC shopping. It is quite possible that WIC shopping trips act as substitutes for regular shopping trips rather than as additional trips. Furthermore, even if going to a different store for WIC shopping does indicate extra burden, that burden was not more prevalent in the States with restrictions.

Table 5-3—Same versus different stores for regular and WIC shopping

Access measure	Individual States						State groups			
	CA	CT	NC	OH	OK	TX	All States	No restrictions	Restriction	Group difference
						<i>Percent</i>				
Different store for regular and WIC shopping	24.2	15.8	5.9	14.2	12.7	5.4	13.0	14.8	11.3	-3.5
WIC store farther away	9.1	1.0	2.1	1.3	5.9	3.8	3.9	4.2	3.6	-0.6
Regular and WIC stores same distance away	4.8	6.1	1.6	6.4	4.2	1.6	4.1	4.3	3.9	-0.4
WIC store closer	10.3	8.7	2.2	6.5	2.6	0.0	4.2	4.6	3.8	-0.8
						<i>Number</i>				
<i>Sample size</i>	<i>178</i>	<i>198</i>	<i>196</i>	<i>191</i>	<i>168</i>	<i>171</i>	<i>1,102</i>	<i>585</i>	<i>537</i>	<i>1,102</i>

Weighted estimates for States were obtained with SUDAAN software. Group estimates give equal weight to each State in the group. Sample size varies across measures due to item non-response. Sample size shown is the maximum for measures included in the table. Item non-response is below 2 percent for all measures.

Significant differences in means and proportions between State groups are noted by * (0.05 level), ** (0.01 level).

Out-of-pocket expenses are for one-way travel.

Connecticut, Oklahoma, and Texas had the most restrictive policies regarding use of competitive pricing at vendor application.

Source: Survey of WIC Participants.

Similarly, package-size restrictions can also affect the availability of prescribed foods. As an example, Ohio required that all fluid milk be purchased in gallon containers, whereas Texas allowed purchase of both gallon and half-gallons. Depending on stores' ability to keep gallon containers of milk on the shelf, a WIC participant in Texas might have been more likely to find an allowed container of milk in the store than a participant in Ohio.

Restrictions on food type may also affect the availability of prescribed foods. When fewer types within a food category are allowed, opportunities for substitution when a preferred type is missing are diminished. For instance, California included only four types of cheese on its list of approved foods: American, Cheddar, Monterey jack, and mozzarella. Oklahoma allowed these four plus Colby. If a participant viewed Colby cheese as an acceptable substitute for Cheddar, then cheese availability should have been higher in Oklahoma than California, other factors (like store-stocking policies) held constant.

Finally, it is possible for vendor restrictions—as well as food-item restrictions—to affect the availability of prescribed foods. If higher priced stores, on average, carry more types of food and larger inventories than lower priced stores, then program restrictions on higher priced stores could increase the possibility of not finding prescribed food items. This assumption has not been tested, and indeed, higher priced stores may have fewer food item choices than low-priced stores (for instance, high-priced corner grocery stores compared with large supermarkets). Given the earlier findings in this chapter that vendor restrictions appear to have had no impact on store accessibility, there is no expectation that vendor restrictions could affect food-item availability in this sample of six States.

One food-item restriction that has not been mentioned is the requirement to purchase the least expensive brand of a food item. In the six case study States this means that participants must purchase the lowest-cost brand **available** within the store. By definition, this cost-containment practice cannot limit item availability.

In the analyses that follow, no attempt has been made to assess the availability of every single food item approved by the six States. Instead, individual food items approved for WIC in each State were combined with close substitutes (also WIC approved) to form food **groups**. The chapter then presents the percentage of WIC stores in each State that had at least one item from a food group available.

Three types of grouping were performed. The first was to ignore package size as long as it met State regulations. Thus, the study looked only at whether reduced-fat milk in an approved size was available, not at whether it was available in both half-gallon and gallon containers. Second, for single-strength juices, the analysis grouped together different package forms (frozen concentrate, liquid concentrate, refrigerated, and shelf-stable cans and bottles) within each type, as long as the different forms were State-approved. Finally, for breakfast cereals, all State-approved cold breakfast cereals were grouped by their predominant grain type (bran, corn, oats, rice, wheat, multi-grain), and hot cereals were treated as a separate group of breakfast cereal.

Even with this grouping, the issue of substitutions remains. If a store carries no oat-based cereals, some participants may view wheat-based cereals as an acceptable substitute, whereas others may not. The study examines the issue of personal preferences and substitutions at the end of this chapter by looking at the extent to which respondents to the Survey of WIC Participants did not buy a prescribed

food item because “the store ran out.” For these participants, it is clear that the store did not have an acceptable substitute available.

The issue of availability and substitutability is also examined by investigating whether each sampled WIC store met program standards: all WIC-authorized stores are required to meet minimum requirements for both the variety and quantity of stocked items within each food category, established by each State. The Survey of Food Prices and Item Availability was not designed to determine quantities of food items stocked, but it can be used to determine whether stores met minimum variety standards. Table 5-4 shows each State’s minimum requirements for each food category.

Table 5-4—Minimum variety requirements for WIC inventory^a

	CA	CT	NC	OH	OK	TX
Milk	1	1	3 (whole, low-fat or non-fat, non-fat dry)	1	3 (whole, low-fat, non-fat)	1
Evaporated milk	1	1	1	Not authorized	No minimum	1
Cheese	1	2	2	2 (American plus 1 other)	5	1
Eggs	1	1	Grade A, large or extra large, white or brown	1 (Grade A large)	1 (medium)	1
Infant cereal	1	2	2 (rice plus 1 other)	1	2 (each single grain)	1
Juice	1	3	2 (orange plus 1 other)	3 (orange plus 2 others)	All allowed types	2
Infant juice	Not authorized	Not authorized	No minimum	1	2 (frozen apple plus 1 other)	No minimum
Dried beans/peas	1	2	2	1	2	1
Peanut butter	1	1	1	1	No minimum	1
Cold cereal	1	3	4	3 (Cheerios plus 2 others)	Every type allowed	5
Hot cereal	1	1	No minimum	No minimum	2	No minimum

^a The number in each cell represents the number of different types or varieties of a food category required by the State to be available for purchase. “No minimum” means that the State did not specify a minimum variety requirement for that food. Cell entries also indicate further requirements specified by the States.

Source: State program manuals.

Availability of Different Types or Varieties of WIC Foods

The availability of approved WIC foods is shown in tables 5-5 through 5-11, with each table representing a different WIC food category. The respective tables are for milk, cheese, eggs, infant cereal, single-strength juices, dried beans or peas, and breakfast cereals. In each table, a blank cell indicates that the food item was not approved in that State. For each food category except dried beans/peas, the States have been classified as restrictive or not, based on food-item restrictions that could potentially affect availability. None of the six States imposed restrictions for dried beans or peas that could affect availability.

Availability is defined as an item normally being carried by the store. In many instances, data collectors checked store shelves to see if an item was present. When stores used scanning systems at the checkout, however, store managers or cashiers scanned a set of over 200 Universal Product Codes (UPCs) for Federally approved WIC foods, and data collectors used the resulting printed receipts to ascertain item availability and price.⁸ For items that generally do not have UPCs, like milk, eggs, and deli cheese, store shelves were always checked for item availability.

One of the 18 WIC stores sampled in Connecticut was found to carry a very low inventory of WIC items. This was a small store, so its chance of being sampled was small. Accordingly, its sampling weight was large, and this single store skewed the food availability results for Connecticut dramatically. For this reason, the store was dropped from the analysis sample.⁹

Milk

Table 5-5 shows the percentage of WIC stores in each State in which different types of milk were available. Many types of milk were carried by nearly all of the WIC stores, with low-fat and non-fat fluid cow's milk being somewhat less available, on average, than whole or reduced-fat milk. Evaporated milk was carried by all sampled WIC stores in the five States that allowed this item. A cross-State average of 80.3 percent of stores carried lactose-reduced milk.

California, Ohio, and Oklahoma generally limited purchases of cow's milk to gallon containers, so one might expect approved containers of milk to have been less available in these three States than in Connecticut, North Carolina, or Texas. The group difference column in table 5-5 shows no significant differences in the availability of milk in the States with and without restrictions, so the hypothesis that food-item restrictions might affect item availability is not supported for milk in this sample of States.

In all States but North Carolina, all sampled stores met the State's minimum variety requirements for availability of milk. In North Carolina, 90.2 percent of the stores met the minimum requirements. As was shown in table 5-4, North Carolina and Oklahoma both required approved stores to carry at least three varieties of cow's milk, whereas the other States required only one variety. When States with and without restrictions on milk are compared, however, the 3.3 percentage point difference in stores carrying minimum requirements is not statistically significant.

⁸ If the store did not stock an item, the printed receipt would not show a line for the item.

⁹ In July 2001, shortly after the end of the study's data collection period, this store lost program authorization when store ownership changed.

Table 5-5—Availability of approved milk in WIC stores

Food type	Individual States						State groups			
	CA	CT	NC	OH	OK	TX	All States	No restrictions	Restriction	Group difference
						<i>Percent</i>				
Whole	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2% reduced fat	100.0	75.5	95.5	100.0	100.0	100.0	95.2	90.3	100.0	9.7
1% low fat	100.0	71.7	87.1	66.8	97.1	97.2	86.6	85.3	88.0	2.6
Non-fat	71.0	71.7	90.2	65.4	100.0	100.0	83.0	87.3	78.8	-8.5
Non-fat dry	73.6	69.4	100.0	72.6	100.0	100.0	86.0	89.8	82.1	-7.7
Evaporated	100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	0.0
Lactose reduced/free	68.2	54.4	85.7	83.7	91.2	98.6	80.3	79.6	81.0	1.5
Store carries minimum variety	100.0	100.0	90.2	100.0	100.0	100.0	98.4	96.7	100.0	3.3
						<i>Number</i>				
<i>Sample size</i>	<i>18</i>	<i>17</i>	<i>18</i>	<i>18</i>	<i>18</i>	<i>17</i>	<i>106</i>	<i>52</i>	<i>54</i>	<i>106</i>

Weighted estimates for States were obtained with SUDAAN software. Group estimates give equal weight to each State in the group. Blank cell indicates item not approved in that State or group. Significant differences in means and proportions between State groups are noted by * (0.05 level), ** (0.01 level).

California, Ohio, and Oklahoma generally limited purchases of cow's milk to gallon containers.

Source: Survey of Food Prices and Item Availability.

Cheese

The availability of different types of State-approved cheese is presented in table 5-6. California and Oklahoma were the most restrictive States with respect to approved types and packaging of cheese. California allowed purchase of only four types (American, cheddar, Monterey jack, and mozzarella), and Oklahoma allowed only five (the previous four plus Colby). Furthermore, Oklahoma prohibited purchase of most sliced cheese. Where significant group differences exist in the table, however, the States with restrictions were more, rather than less, likely to carry approved cheeses than were stores in the States with fewer restrictions. Thus, the hypothesis that food-item restrictions for cheese might reduce the availability of approved cheese items in stores is not supported.

All stores in the two States with restrictions met minimum variety requirements for cheese, compared with a cross-State average of 96.2 percent of stores in the other four States. The 3.8 percentage point difference is not statistically significant.

Eggs

Connecticut had the most restrictive policy for eggs in the six case study States—only large white eggs could be purchased with the WIC food instrument. As shown in table 5-7, all stores in Connecticut had large white eggs in stock. All the sampled stores in the other States also meet minimum variety requirements. No relationship exists between the presence of food-item restrictions on eggs and the availability of eggs in the sampled stores.

Infant Cereal

California, Connecticut, and Texas limited approved infant cereals to Gerber brand. All four types of infant cereal (barley, oatmeal, rice, and mixed) were approved for purchase in each State, but only the availability of barley cereal differed between States with and without restrictions (table 5-8). Only 4.4 percent of sampled stores in North Carolina carried barley infant cereal, and this low availability created a large (44.7 percentage points) and statistically significant difference in availability between the States with and without restrictions.¹⁰ North Carolina did not restrict approved infant cereals to just one brand, however, so the evidence does not support a hypothesis that food-item restrictions created problems with availability. All the sampled stores in each State met the minimum variety requirements for infant cereal.

Juices

For single-strength juices, California imposed the greatest restrictions of the six States on types allowed, with only apple, grape, orange, pineapple, and tomato being approved for WIC purchase. California also limited allowed brands and packaging for juices. Oklahoma also limited allowed brands, and Texas required purchase of least expensive brands. These three States form the group of restricted States in table 5-9.

Orange juice was the most available juice in the six States, with a cross-State average of 99.4 percent of WIC-authorized stores carrying at least one of the allowed brands/types/package forms of the product. Allowed versions of apple, grape, grapefruit, and pineapple juice were also carried by over 90 percent of stores. In the two States that allowed tomato juice, an average of 74.1 percent of stores stocked an allowed version. A cross-State average of 64.7 percent of stores stocked vegetable juice in

¹⁰ The tables in chapter 3 show that none of the North Carolina respondents to the Survey of WIC Participants said they purchased barley, and the scanner data from North Carolina show only 0.2 percent of infant cereal purchases were for barley. The demand in North Carolina for barley cereal appears to be quite low.

the five States (all but Connecticut) where it was allowed for WIC purchase, and an average of 59.7 percent of stores carried cranberry juice in the two States (North Carolina and Ohio) where it was WIC approved.

Stores in States with juice restrictions were less likely to carry tomato and vegetable juice than were stores in the other States, and the differences were large: 38.9 percentage points for tomato and 15.0 percentage points for vegetable juice. The large differences are not statistically significant, however, because the sample sizes for these juices were smaller than indicated in the table (not all States allowed these juices). For all other juices, vendors in the restrictive States were more, not less, likely to stock the individual juices, so there is no consistent evidence that the restrictions on juice types, brands, and package forms were associated with availability problems.

As shown in table 5-9, most stores met State minimum variety requirements for approved juices. The stringent requirement in Oklahoma that vendors carry all allowed types, however, resulted in only 72.4 percent of sampled vendors in that State meeting the minimum requirement.

Peanut Butter

Connecticut limited WIC purchases of peanut butter to the least expensive brand available—a restriction that cannot affect availability. All sampled stores in each State carried peanut butter, and they all met minimum variety requirements. Given the uniformity of the findings, no table of results is presented for peanut butter.

Dried Beans or Peas

There were no restrictions among the six States in the brands or types of Federally approved dried beans or peas that could be purchased with WIC food instruments, so table 5-10 does not compute group differences for the availability of different types of dried beans/peas. With the exception of mayacoba beans, most stores in each State carried most of the types shown in the table.

Breakfast Cereals

Table 5-11 divides breakfast cereals into types based on predominant grain, with a separate category for hot cereals. California and Oklahoma form the group of States with restrictions; both States approved a relatively narrow choice of breakfast cereals, and Oklahoma allowed purchase only of store or private-label brands of cereal.¹¹

With the two exceptions of oat- and wheat-based cereals, WIC stores in California and Oklahoma were equally or more likely to carry approved cereals than were stores in the other four States. Even for the two exceptions, the differences in availability, 8.4 and 16.0 percent respectively, were not statistically different from zero. For hot cereals, the California and Oklahoma stores were significantly more likely, at the 0.05 level, to carry approved brands, by a margin of 12.2 percentage points. Thus, restrictions on allowed types and brands of cereal did not reduce the availability of allowed items.

¹¹ In early 2001, when these data were collected, the only national brands allowed in Oklahoma were hot Quaker and Nabisco cereals. In July 2001, Oklahoma added four national-brand cold cereals to its list of approved foods.

Table 5-10—Availability of approved dried beans or peas in WIC stores

Food type	Individual States						State groups			
	CA	CT	NC	OH	OK	TX	All States	No restrictions	Restriction	Group difference
						<i>Percent</i>				
Black beans	100.0	93.5	100.0	43.7	67.4	100.0	84.1			
Black-eyed peas	70.6	72.1	100.0	85.2	100.0	100.0	88.0			
Lentils	100.0	88.9	93.5	72.6	100.0	100.0	92.5			
Mayacoba	45.6	0.0	0.0	0.0	2.2	0.0	8.0			
Pinto beans	100.0	97.3	100.0	97.3	100.0	100.0	99.1			
Red kidney beans	100.0	91.6	93.5	83.7	78.4	100.0	91.2			
Small red beans	94.1	85.1	93.5	41.4	84.8	100.0	83.2			
Store carries minimum variety	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
						<i>Number</i>				
<i>Sample size</i>	<i>18</i>	<i>17</i>	<i>18</i>	<i>18</i>	<i>18</i>	<i>17</i>	<i>106</i>	<i>88</i>	<i>18</i>	<i>106</i>

Weighted estimates for States were obtained with SUDAAN software.

There were no differences among the six States in food-item restrictions that could potentially affect availability.

Source: Survey of Food Prices and Item Availability.

In five of the six States, 100 percent of sampled stores met their State's minimum variety requirements for cold cereals; only 74.4 percent of stores in Texas did so because some stores did not carry any rice-based cereals. In the three States with minimum variety requirements for hot cereal, all sampled stores met the requirements.

Summary of Availability

Based on the six case study States, there is no evidence that the presence of food-item restrictions adversely affected the availability of foods at WIC stores. Indeed, with most of the significant differences in tables 5-5 through 5-11 being positive (meaning that stores in States with food-item restrictions were more likely to carry the prescribed food item than stores in States without restrictions), there is some evidence that approved items were more available at WIC-approved stores when the States imposed food-item restrictions. This could reflect grocers' greater efforts or ability to maintain inventory of WIC-approved foods when the number of approved items is reduced. It may also reflect greater State enforcement of minimum inventory requirements when food-item restrictions are in place, or simply variation among the States in enforcement that mirrors the presence of food-item restrictions. Available data are not sufficient to explain this pattern, but it is clear that the data do not support a hypothesis that food-item restrictions decrease item availability.

Nonpurchase of WIC Items Due to Their Being Out of Stock

As mentioned earlier, for survey respondents who did not buy all of a prescribed food item within a particular food category, the Survey of WIC Participants asked for the main reason they did not. A relatively small number said the store had run out (of an item normally carried). Rather than coming back another time, or going to a different store to buy all the items on their WIC food instrument, these respondents decided simply to forego purchase of this WIC-prescribed food item.

Table 5-12 displays the percentage of survey respondents in each State who said they did not buy all of a purchased item because the store ran out. The survey did not ask whether the respondent meant only her preferred item or all allowed items within the food category. Most likely, because non-selected items cannot be picked up at a later time, respondents meant that neither their preferred item nor an acceptable (to them) alternative was available.

For most of the food items in most States, no respondents said that an out-of-stock item was the main reason they did not buy all of their prescribed food. In only four instances did more than 1.0 percent of survey respondents indicate a problem with item availability. In descending order of magnitude:

- 4.6 percent of respondents in North Carolina said their store ran out of their choice of infant cereal;
- 2.5 percent of respondents in North Carolina said their store ran out of their choice of breakfast cereal;
- 2.0 percent of respondents in Ohio said their store ran out of their choice of dried beans or peas; and
- 1.5 percent of respondents in Oklahoma said their store ran out of their choice of breakfast cereal.

The results in table 5-12 are not correlated with the presence of food-item restrictions that could potentially affect availability, as identified in tables 5-5 through 5-11. With so few respondents citing item availability as an issue, the results from the earlier tables are bolstered. There is no evidence that food-item restrictions or vendor restrictions in the six case study States had a significant impact on the availability of WIC-prescribed foods.

Table 5-12—Respondents giving “store ran out” as the main reason for not buying a food item

	CA	CT	NC	OH	OK	TX	Total
				<i>Percent</i>			
Milk	0.7	0.0	0.0	0.0	0.0	0.0	0.1
Cheese	0.0	0.0	0.0	0.0	0.0	0.9	0.1
Eggs	0.0	0.0	0.0	0.0	0.8	0.0	0.1
Infant cereal	0.0	0.4	4.6	0.0	0.0	0.0	0.8
Juice	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dried beans/ peas	0.0	0.0	0.0	2.0	0.0	0.0	0.3
Peanut butter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakfast cereal	0.0	0.0	2.5	0.4	1.5	0.0	0.7
				<i>Number</i>			
<i>Sample size</i>	<i>174</i>	<i>193</i>	<i>192</i>	<i>181</i>	<i>162</i>	<i>168</i>	<i>1,070</i>

Weighted estimates for States were obtained with SUDAAN software. Group estimates give equal weight to each State in the group.

Sample size varies across measures due to differences in food prescription rates and item nonresponse. Sample size shown is the maximum for measures included in the table. Item nonresponse is below 2 percent for all measures.

Source: Survey of WIC Participants.