

**Analysis of Alternatives  
for  
Implementing  
a Cash Value Voucher  
Program**

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# 1. INTRODUCTION

## 1.1 Purpose

The United States Department of Agriculture (USDA), Food and Nutrition Service (FNS) commissioned this study to identify and assess potential electronic and paper-based alternatives for delivering cash value vouchers (CVVs) to facilitate the purchase of fruits and vegetables in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program.

In August of 2006, FNS issued a proposed rule, which would increase participants' choices, improve the nutritional quality of the foods in the program, and expand cultural food options by offering fresh and processed (canned, frozen, and dried) fruits and vegetables, whole grain bread (with the option to substitute corn tortillas, whole-grain rice, or other whole grains), and the option of soymilk and tofu.

The proposed new food packages gives \$8.00 to women and \$6.00 to children for fruits and vegetables each month and adds fruits and vegetables in the form of baby food for infants between the ages of 6 to 12 months. The rule includes a CVV to facilitate the purchase of fruits and vegetables because few fresh fruits and vegetables are sold in standard weight units with uniform bar codes and their prices vary considerably across seasons, regions, and stores. A CVV could take many different forms, such as the paper-based voucher, akin to the current WIC Farmers' Market Nutrition Program coupon; an automated solution like one of the multiple card technologies currently in use in the commercial environment today; or another electronic process, such as electronic coupons.

This paper has the following purposes:

- Discusses the implications of the CVV component of the proposed rule on clients, States, and retailers;
- Provides important background information on industry trends in payment technologies, including Electronic Benefits Transfer (EBT) technologies;
- Outlines the technology challenges of implementing an electronic CVV according to the requirements of the proposed rule; and
- Summarizes and assesses six different CVV options, including cost implications, the impact on client access and ease of use, the feasibility for retailers and States, and the ability of the instrument to control which items are purchased.

Section 1.2 provides an overview of the contents of each section.

## 1.2 Organization

This document is organized as follows:

- Section 1, Introduction, discusses the purpose of the report.
- Section 2, Background, discusses the implications of the new rule for clients, retailers, and States; describes the current WIC EBT status in various States; and introduces Point of Sale (POS) devices and card technology.
- Section 3, Description of Alternatives, summarizes and assesses six CVV alternatives.
- Section 4, Alternatives Analysis, analyzes the six CVV alternatives, discusses the implications that apply to all the alternatives, provides a report card summarizing how the different alternatives meet (or fail to meet) certain key criteria, and presents an individual analysis of each alternative and a comparative analysis of all the alternatives.
- Section 5, Conclusion, describes the key findings of the report and key considerations for States as the move toward implementing CVVs.
- Appendix: Methodology provides a summary of the research methodologies used in this report.
- The Bibliography lists the sources used in preparing this report.

## **2. BACKGROUND**

To assess different options for implementing the CVV, it is important to understand the implications of using a CVV on clients, retailers, and States, as well as the salient industry trends in payment technology, including the implementation of EBT for WIC, POS devices, and card technology.

### **2.1 Implications for Clients, Retailers, and States**

The CVV is similar to the vouchers currently used for the WIC Farmers' Market Nutrition Program implemented by many States as well as pilot programs in New York and California WIC agencies, which have implemented successful pilots to provide a CVV for the purchase of fruits and vegetables. In the New York and California pilot projects, participants receive a cash value voucher in a small dollar denomination that can be used to purchase fruits and vegetables at a WIC-authorized retailer. However, unlike the Farmers' Market Nutrition Program, the CVV would be considered part of the clients' prescribed WIC food package.

A CVV is a major departure from the current WIC practice of prescribing specific food items rather than a dollar limit for WIC participants. Because the CVV is a cash benefit, participants would be motivated to optimize their purchasing power by using the CVV in a cost-effective manner that provides the greatest benefit. This optimization is significantly different from a standard WIC prescription where the prevailing food prices are not a factor for the participant in selecting a WIC retailer.

The proposed rule restricts the choice of fruits and vegetables by barring purchase of the following items: fresh fruits with added sugar; canned fruits and vegetables containing added sugar, fat, oils, or salt; white potatoes; catsup and other condiments, pickled vegetables and olives; soups; herbs and spices; edible blossoms; fruit baskets; vegetable trays; fruit leathers and roll-ups; peanuts; ornamental/decorative fruits and vegetables; juices (provided under another WIC food category); and canned/dried mature legumes (provided under another WIC category). Enforcing this policy is a significant challenge, with the grocery industry looking to avoid check-out clerks from the likely possibility of having to police the purchase of allowable fruits and vegetables.

Implementing a CVV for the purchase of allowable fruits and vegetables also impacts authorized WIC food retailers who must possess the infrastructure to process the new WIC CVV instrument and train check-out clerks to handle the CVV and possibly recognize and enforce the redemption of approved foods. Some retailers may have expenses and constraints in implementing a CVV, depending on the choice of CVV instrument. Some smaller retailers and those in rural communities may not have the technological infrastructure to process card technology or capture and send data electronically.

State Agencies also will be required to make changes to their operations in order to implement a CVV for fruits and vegetables. The current WIC program deals only with

specific quantities of predetermined food items; adding a food prescription that can support the purchase of a dollar value equivalent of fresh fruits and vegetables of random weight or quantity presents a new operational challenge for States. Most State Agencies, except Wyoming, currently use paper voucher/checks in their WIC programs. Four other States are piloting or expanding WIC EBT throughout their States. Section 2.2 outlines the current status of WIC EBT. Regardless of the instrument used, State Agencies need to make changes to implement a CVV for fruits and vegetables.

## **2.2 State WIC EBT Status**

WIC EBT follows on the success of Food Stamp EBT<sup>1</sup> by moving benefits from a paper voucher/check to an electronic transaction. WIC EBT is complicated by the fact that WIC benefits are not based on a specific dollar amount, but on specific quantities of foods, and that only certain foods are authorized for purchase under the program. Therefore, a transaction involves, among other things, verifying the food item's Universal Product Code (UPC) against an approved list and verifying that the cardholder has enough remaining balance of the food category to purchase the item.

WIC EBT is currently operational in five States. The implementations in these States include the use of offline, smartcard technology and online, magnetic strip card technology. The States of New Mexico, Nevada, Texas and Wyoming are operating offline systems and Michigan is operating an online system. The State of Wyoming is currently the only State to operate WIC EBT statewide. New Mexico and Texas are planning to expand statewide within the next couple of years. In 2005, Washington demonstrated an online system, and Kentucky intends to build on the technology developed for that project by piloting an enhanced version of the system in the near future.

In addition to WIC EBT, each State has a functioning Food Stamp Program (FSP) EBT system. Only 13 States operate a FSP-only EBT system, meaning there is great acceptance of multi-program EBT solutions by both State government and EBT vendors; however, only one of the 5 active WIC EBT States combines FSP and WIC on the same card at this time. With the exception of Wyoming, all State FSP EBT systems use online technology, and Wyoming is moving toward an online solution in their re-procurement.

Offline and online WIC EBT solutions are included as alternatives in this analysis. Section 3 provides more detailed descriptions of the two technologies.

## **2.3 Point of Sale Devices**

Within the grocery retail industry, being able to accept electronic transactions is no longer a competitive advantage; instead, it is a market-driven necessity. Driven by competition,

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<sup>1</sup> Per FNS data, 92% of authorized WIC vendors are also Food Stamp-authorized retailers, implying that an infrastructure for processing electronic benefit transactions is already present in the majority of WIC vendors. Presumably, this infrastructure could be used for a CVV benefit, albeit not without some modifications, depending on the final design and card instrument used.

grocers now accept a wide variety of tender types, including cash, checks, debit cards, credit cards, and EBT. Consequently, the grocers' POS systems have evolved to manage these multiple tender types. As a result, the vast majority of WIC-certified retailers possess the infrastructure to handle electronic payment transactions based on a magnetic strip debit and/or credit card.

As debit and/or credit card transactions have become more pervasive, POS devices have become ubiquitous in every retail establishment. The basic POS device technology used by grocers has changed little in the last 15 years. However, the reliability, processing speed, and cost of the POS devices have changed for the better. Today's POS systems offer an integrated package consisting of the main processor, integrated printer, and a tamper-resistant PIN entry device (PED); earlier generation POS devices separated these components. Another major change is the advent of a customer-initiated transaction; previous generations of the POS devices required the check-out clerk to initiate the transaction and handed the PED to the client to enter their Personal Identification Number (PIN) on a debit card transaction. Finally, many of the newer devices allow for snap-in components (e.g., a reader chip for tap-and-pay or an extra Subscriber Identification Module [SIM] for security) that increase flexibility for retailers to add functionality without having to replace the entire device. This modularity also extends to the software in a number of devices, allowing different applications to be added without affecting existing ones.

The POS vendors have taken advantage of the decreases in cost of microprocessors and memory and the increases in processing speeds to provide POS devices that are easier and faster to use and program. In addition, the improvement of the telecommunication infrastructure has allowed many retail establishments to use the Internet for electronic payment processing. Dial-up communications for electronic payment transactions, although still prevalent, is decreasing. While the current generation of POS devices supports both analog (telephone dial-out) and IP (Internet Protocol), most grocery retailers are opting to use IP for their communication protocol.

In addition to supporting magnetic strip technology for transaction initiation, a large number of the current generation of POS devices contain integrated smartcard readers. These smartcard readers are implemented using the ISO 7816<sup>2</sup> smartcard standards that define the physical specification requirements for reading data from smartcards. The cost of adding an integrated smartcard reader to the POS device is minimal, typically increasing the overall cost of the hardware by less than \$20.00 per POS device. The real cost of supporting smartcard transactions is not in the hardware costs (unless nonintegrated smartcard readers must be attached to the POS device).<sup>3</sup> Instead, the cost is driven by both the complex software that must be written for the POS device to interface with the smartcard and the cost of the smartcards.

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<sup>2</sup> The International Organization for Standardization (ISO). *Identification Card – Integrated Circuit Cards With Contacts*, Parts 1 through 15, 1999 – 2006.

<sup>3</sup> Even a standalone smartcard reader is relatively inexpensive, costing from \$50.00 to \$150.00, depending on features and processing capabilities.

The latest trend in POS transaction processing is the “tap-and-pay” option being introduced by MasterCard (PayPass®) and Visa® (Visa® Contactless). These branded cards contain radio frequency technology that is used to electronically capture the data contained in the card’s magnetic strip. Once the data is captured, transaction processing occurs as it would for a swiped transaction. However, this technology is still in pilot mode, with a limited number of banks and financial institutions currently participating. In discussions with the retailer associations, they did not see a business need or an overwhelming desire to embrace this technology within the retail environment, although this may change based on the incentives provided by the credit card associations (Visa® and MasterCard®). The current POS infrastructure in the majority of retailer establishments does not contain the readers to support these cards.

## 2.4 Card Technology

Card technology can be segmented into three categories:

- Magnetic strip cards
- Integrated circuit (IC) cards
- Radio frequency cards

Magnetic strip cards are the most common cards in use today for transaction processing within the United States, with hundreds of millions of cards being issued each year. The processing infrastructure is ubiquitous, with every retailer that accepts electronic payments having a magnetic card reader either integrated into their cash register system or contained within a standalone POS device. Besides being ubiquitous, magnetic strip card technology is fairly inexpensive, with a card costing as low as \$0.15 to \$0.20. This includes a new category of “disposable” magnetic strip cards that are paper-based, as opposed to plastic. These cards are similar to those used for transit payments (e.g., metro cards). This alternative may appear attractive, but it should be understood that the retail payment infrastructure depends on magnetic cards that adhere to the ISO standards 7810,<sup>4</sup> 7811,<sup>5</sup> and 7813.<sup>6</sup> Cards that do not follow these standards will not work in the existing retailer POS infrastructure. The cost of updating the retail payment infrastructure to accommodate a new type of card (e.g., a throw-away card that looks like an existing paper-based metro card) would be cost-prohibitive. Consequently, to have any traction in the retail community, any magnetic strip card used for a CVV needs to adhere to the ISO standards that govern the physical characteristics of magnetic strip cards.

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<sup>4</sup> The International Organization for Standardization (ISO). *Identification Cards – Physical Characteristics*, 2003.

<sup>5</sup> The International Organization for Standardization (ISO). *Identification Card – Recording Technique*, Parts 1, 2, 6, 7, 2001 – 2004.

<sup>6</sup> The International Organization for Standardization (ISO). *Information Technology – Identification Cards – Financial Transaction Cards*, 2006.

As a result of fraud and theft concerns, card technology has improved and now includes many fraud-reduction techniques, such as the use of fine-line and ultraviolet printing on the cards, holograms on the face of the cards, and card verification values both on the face of the card and encoded in the magnetic strip of the cards. While these security features are beneficial, they increase the cost of the cards.

The second category of technology being used to create financial transaction cards is the IC card, often referred to as a smartcard. The main advantages of the IC card are the greater level of security contained within the card and the ability to process transactions without connecting to a remote host (telecommunication infrastructure). These advantages are offset by a higher card price (anywhere from \$1.50 for a simple file card to \$3.00 and higher for a Java card) and the low cost and high reliability of the telecommunication infrastructure within the United States, which make it more desirable to use magnetic strip cards. Consequently, IC cards have not established a strong presence within the United States, although footholds have been established for some specific applications, such as offline WIC transaction processing and physical identification (ID) verification and validation using biometrics, such as in the Transportation Worker Identification Credential (TWIC) program. Currently, the major obstacle for the widespread implementation of IC cards is infrastructure. The infrastructure required for processing IC cards is simply not as ubiquitous as it is for magnetic strip cards. While the IC card infrastructure is starting to be implemented, it is still several years and tens of millions of dollars in investment away from being as prevalent as the magnetic strip card.

The third category of card technology is the Radio Frequency Identification (RFID) card. Similar to the IC card, this technology also uses an IC for transaction processing. Like the IC card, implementation is limited to specific applications where the technology makes business sense. A prime example of a business implementation of radio frequency cards is electronic toll collection for transportation. The radio frequency card allows the user to pass a card over a reader, which securely reads the data from the card and deducts the appropriate amount from the remaining balance for the transportation service being provided. Security is provided through encryption of transaction messages between the card and the card reader. The radio frequency card is also starting to make inroads in commercial transaction processing through programs such as Mobil Gas's Speedpass™ and the MasterCard® and Visa® tap-and-pay pilots described in Section 2.3. While the cards are cost-effective (the average cost of a card in volume is about \$1.00), the main issue in implementation is infrastructure. The infrastructure for transaction processing is not as prevalent as the magnetic strip card readers in retail installations.

### 3. DESCRIPTION OF ALTERNATIVES

The project team initially selected the following eight alternatives for consideration in implementing a CVV program:

- EBT—magnetic strip, online
- EBT—smartcard/IC, offline
- Store gift cards—magnetic strip, closed loop
- MasterCard®/Visa® stored-value cards (SVCs)—magnetic strip, open loop
- Bar-code store card (loyalty card)
- Electronic couponing
- Internet preorder and pick-up
- Paper CVV/check

The project team selected these alternatives based on knowledge of industry technologies and input provided by industry experts. Consideration was given to new innovations within the marketplace as well as existing retail technologies that could support a CVV transaction. The team presented the initial list to FNS and the Expert Panel for review and approval. Through this process and subsequent interviews, the bar code store card (loyalty card) and Internet preorder and pick-up were eliminated as described in Section 3.1. Sections 3.2 through 3.7 provide overviews of the remaining alternatives and discuss how each alternative would be implemented from the perspectives of the participant, the food retailers, the local Agency or clinic, and the State.

#### 3.1 Alternatives Excluded From the Comprehensive Analysis

##### 3.1.1 BAR-CODE STORE CARD (LOYALTY CARD)

Bar-code store cards, often referred to as loyalty cards, offer a personalized shopping experience for the cardholder. Loyalty cardholders receive incentives and personalized attention from the stores that issue the cards. While this option appears to be viable for automating the delivery of WIC benefits for fruits and vegetables, the following systemic issues exist:

- ***Proprietary Nature.*** Loyalty card programs are proprietary to the retail establishment issuing the loyalty card. A lack of established standards for loyalty cards prevents widespread multiretailer implementation of a loyalty card program for WIC. Any

implementation requires significant design and development by the retail vendor community before it could be used.

- **Financial Settlement.** Current loyalty card programs do not include financial settlement between different entities. This mechanism has to be built into the solution before it could be used.
- **Cost.** The cost to implement a loyalty card alternative would be enormous because it requires that the infrastructure be built from the ground up. For this reason alone, it is not a good alternative when other more cost-effective alternatives exist.

Bar-code store card technology simply does not perform the basic functions necessary to meet the needs of a CVV for purchasing fruits and vegetables under WIC.

### 3.1.2 INTERNET PREORDER AND PICK-UP

The Internet preorder and pick-up option allows a client to shop online for their fruits and vegetables and then go to a WIC-approved retail establishment to complete the transaction and pick up their order. The online experience allows the client to choose among WIC-approved retail locations and browse and select only allowable food items. The online functionality includes a shopping calculator to compute the value of a fresh fruit or vegetable purchase by choosing the weight or quantity. The store assembles the food package based on the Internet order, and the client exchanges a printed coupon for the food package at the store.

While this option may initially seem viable, the following list describes some significant implementation issues:

- **Client Access.** Although Internet access is increasing in the United States, only about 59% of all households and only 38% of households with incomes less than \$25,000 report Internet use from any location.<sup>7</sup> Providing Internet access at clinics may be a viable option, but some local clinics would have to acquire the necessary infrastructure to support an Internet transaction, and waiting time for participants at the clinics could increase depending on the number of users desiring Internet access.
- **Retailers Costs.** Retailers would incur additional costs associated with implementing this alternative, including the development costs associated with providing and updating price information for allowable food items for either their own web presence or one maintained centrally as well as the labor costs associated with putting the preordered food packages together.
- **Completing the Transaction.** The options for completing the transaction and initiating settlement and payment between the retailer and the State are unclear and could be costly.

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<sup>7</sup> U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration. *A Nation Online: Entering the Broadband Age*, September 2004.

A secure mechanism, such as using a voucher printed from the Internet or an EBT or store gift card, would have to be used at the point of pick-up. Using a printed paper voucher requires the retailers to use a manual process to initiate settlement and payment or develop software to read a specific bar code or other identifier on the voucher and send the necessary data to the State Agency. An EBT or debit card also could be used because it would automatically deduct the amount from the available balance.

This option does not appear to offer any cost or time savings over the others discussed in this analysis, and it could introduce a host of additional barriers for both clients and retailers. The one positive attribute offered by this option is the ability to guide participants in choosing only allowable food items.

## **3.2 Electronic Benefits Transfer—Magnetic Strip, Online**

### **3.2.1 OVERVIEW**

Online EBT is a payment method similar to commercial debit cards. In traditional EBT, the State establishes Food Stamp and/or cash account(s) on a host system maintained by an EBT processor. The State then posts benefits to these accounts and issues debit cards. Some States issue PINs, and other States allow the user to select a PIN to access the account. At the point of sale, the cardholder swipes their card, enters their PIN, selects which account (Food Stamps or cash) to use, and approves the sale amount. The transaction is routed from the POS terminal to an EBT host system for approval. The benefits are immediately deducted from the cardholder's online EBT account. It should be noted that Food Stamp benefits can be used to purchase only eligible food items, which is similar in concept to the use of the WIC CVV to purchase fruits and vegetables. Most cash register systems automatically identify Food Stamp versus non-Food Stamp items, providing automated compliance of the Food Stamp policy. Online EBT for Food Stamps and/or cash benefits is operational nationwide.<sup>8</sup>

Standard WIC benefit food packages also can be accessed via an online EBT system. Because WIC benefits are not based on a monetary value, WIC EBT systems function differently than traditional EBT. WIC benefits are food items expressed in numeric categories, subcategories and quantities. The WIC EBT balance maintained by the EBT host is made up of categories, subcategories, and quantities rather than a dollar balance. Additionally, because States authorize specific foods for purchase with WIC benefits, the EBT host also must maintain a database of the UPCs of the approved items. When an online WIC EBT transaction occurs, the EBT card is swiped, PIN entered, the POS accesses account information from the EBT host, and items are deducted from the balance after they are verified to be approved items and there is sufficient quantity in the cardholder's balance. This process usually involves several messages being sent between the POS and the EBT host.

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<sup>8</sup> Wyoming is moving from an offline system for Food Stamp benefits to an online system.

Online EBT operates within the framework of the commercial debit networks. Traditional EBT transactions are governed by the Qwest operating rules and the ANSI X9.58<sup>9</sup> messaging standards. Online WIC EBT systems have been designed to follow the ANSI X9.93<sup>10</sup> messaging and file-structure standards.

### 3.2.2 PARTICIPANT USAGE

To use an EBT CVV, participants must be issued a card and select a PIN to access their benefits. This is a familiar concept to most WIC participants because many have used a debit card or an EBT card for Food Stamp benefits.

### 3.2.3 RETAILER USAGE

To support the purchase of WIC fruits and vegetables via online EBT, retailers need the appropriate equipment and software. Online, magnetic strip card technology is one of the more widely used transaction technologies in the retail industry today. Most stores have integrated POS equipment in their cash register systems, while others may use stand-beside terminals that support a variety of electronic tender types, such as credit, debit, and EBT. Those retailers who do not take credit or debit cards but are authorized to accept Food Stamps and average over \$100.00 in monthly Food Stamp sales will likely have a stand-beside EBT-only POS terminal that has been provided by their State. Consequently, most retailers are familiar with the POS technology.

Additionally, stores may want their systems to be able to recognize and identify approved WIC fruits and vegetables. This moves WIC policy enforcement from the cashier to the front-end system by allowing the system to determine eligible items rather than the cashiers.

Retailer payment in an online EBT environment typically occurs within the next business day following the transaction. To reconcile, retailers compare EBT tender totals for a particular day to deposit amounts.<sup>11</sup>

Using the existing retailer EBT infrastructure, and specifically the Food Stamp EBT card, for the WIC fruits and vegetables CVV is a possibility. However, this approach requires some

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<sup>9</sup> American National Standards Institute. *ANSI X9.58-2002 Financial Transaction Messages – Electronic Benefits Transfer (EBT) – Food Stamps*, 2002. This document defines the standard transaction message formats used to exchange financial transactions between the retailer (acquirer) and the EBT processor (authorizer).

<sup>10</sup> American National Standards Institute. *ANSI X9.93 Financial Transaction Messages - Electronic Benefits Transfer (EBT) Part 1: Messages*, 2002. American National Standards Institute. *ANSI X9.93-2 Financial Transaction Messages - Electronic Benefits Transfer (EBT) – Part 2: Files*, 2004.

<sup>11</sup> Typically, a retailer or its processor establishes a daily cut-off time for EBT transactions. After this time, further transactions are posted to the following day's EBT receipts. The cut-off time can vary depending on the retailer and/or processor.

changes to the financial transaction message generated by the retailer<sup>12</sup> (either the ANSI X9.58 specifications used for Food Stamp EBT transactions or the ANSI X9.93<sup>13</sup> transaction authorization message used for WIC EBT transactions), as well as the back-end processing by the EBT host. The transaction message coming from the retailer is defined as an EBT transaction through the use of a processing code. The processing code consists of a transaction type (e.g., balance inquiry, purchase) and an account type (e.g., Food Stamp account or cash account). Because of current work being performed in developing WIC EBT standards, an account type also has been defined for WIC EBT transactions. An electronic EBT transaction for the fruits and vegetable CVV could be identified as such by using the WIC EBT account identifier in the processing code. The software in the retailer's POS device would have to be modified to recognize the new account type (WIC) and process the requested fruits and vegetables CVV transaction appropriately.

On the EBT host processor side, a WIC EBT account that holds the WIC CVV value would have to be established and maintained. It is possible for a client to have a single card that points to separate accounts that contain Temporary Assistance for Needy Families (TANF) cash, food stamps, and WIC benefits. The WIC account could contain all the WIC benefits (under the category/subcategory schema), or it could contain just the WIC CVV amount. WIC CVV transactions coming in from retailers from the EBT account would be processed against this WIC account in accordance with a predetermined set of processing rules. These rules include such items as:

- Validating the card
- Validating the PIN
- Checking and decrementing the available balance for the value of the transaction
- Handling requests for transaction amounts greater than the available balance in the WIC CVV account (whether a partial approval for the available balance or a denial is returned)

States need to address additional issues and determine processing rules before an EBT CVV can be implemented for fruits and vegetables. For example, if a State decides to automate the WIC CVV along with the balance of the WIC prescription (i.e., supporting both regular WIC benefits, which are identified by category, subcategory, and quantity, and the CVV benefit, which is based on a monetary value), the CVV value would have to be integrated into the prescription balance and presented to the client and the retailer in a meaningful manner. An important decision with ramifications to the retailer is the amount of checking at the store front-end on what fruits and vegetables are being purchased, and reporting the purchases

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<sup>12</sup> *ANSI X9.58-2002 Financial Transaction Messages – Electronic Benefits Transfer (EBT) – Food Stamps* document defines the standard transaction message formats used to exchange financial transactions between the retailer (acquirer) and the EBT processor (authorizer).

<sup>13</sup> International Organization for Standardization. ISO 8583 Standard for Financial Transaction Card Originated Messages - Interchange Message Specifications.

back to the EBT central host, and ultimately the WIC Agency. While none of these issues are considered showstoppers, they require careful and thoughtful planning for EBT to be successful for the fruits and vegetables CVV.

### **3.2.4 LOCAL AGENCY/CLINIC USAGE**

Local Agencies and clinics need the ability to issue cards and link those cards to an online account maintained by the EBT host. Clinics and Agencies also may provide other support activities, such as balance inquiries, benefit adjustments, and card replacement. The majority of WIC Agencies do not have experience with card-based systems, and their information systems need to be enhanced to support the necessary functionality.

### **3.2.5 STATE USAGE**

States need the ability to issue payments to retailers, perform financial reconciliation, and issue other related reports. Although most States conducted research on card technologies as part of their assessment of whether to move to WIC EBT, the majority of WIC Agencies do not have experience with card-based systems, and some functionality in their WIC systems may need to be enhanced to support these processes.

## **3.3 Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

### **3.3.1 OVERVIEW**

Offline EBT using a smartcard was initially used in the States of Wyoming and Ohio for Food Stamp benefits. Both States added WIC benefits to the card, with Wyoming expanding the WIC implementation statewide. Texas, New Mexico, and Nevada took the lessons learned from these projects and also implemented offline WIC EBT.

In the offline EBT model, benefits are loaded to a smartcard in the clinic. Account and benefit information is transmitted to a central database or EBT host. At the POS, the transaction occurs between the card, POS terminal, and an in-store EBT server. For WIC EBT, the system matches each item's UPC to a list of State-approved UPCs to ensure that only authorized food items are purchased. States could use this process, which is described more fully in Section 4.1, for monitoring and limiting purchases to allowable food items within a CVV program.<sup>14</sup> Transaction data, such as the card number, purchase amount, UPC, and quantity of food units, is stored on the in-store server until it is uploaded to a host system as part of the settlement process. Once uploaded to the host, account data is updated. Retailers are generally paid the next business day following the submission of the settlement file.

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<sup>14</sup> It should be noted that monitoring and controlling the types of food items being purchased is not a function of the smartcard, but instead is a function of the retailers' front-end POS systems. Consequently, monitoring and controlling which food items are being purchased can occur regardless of the card technology being used.

While account balance information is maintained on a host system, it is only updated when transactions are uploaded from the store. The card balance is generally considered the balance of record. The smartcard can maintain data for various purposes and functions such as maintaining monetary balances, WIC food item balances, medical information, and other account or demographic information.

Several standards have been established for offline EBT technology and for smartcards. These standards include the ANSI X9.93 standard and the ANSI X9.108 draft standard for trial use (DSTU).<sup>15</sup> Both standards are being used by WIC State Agencies in the process of implementing WIC EBT offline pilots.

### **3.3.2 PARTICIPANT USAGE**

From a participant perspective, the experience of using an offline EBT card would be no different than using an online EBT card. Participants would be issued a card from a local WIC Agency, select a PIN or use an assigned PIN, and purchase fruits and vegetables in a manner akin to using a debit card, credit card, or Food Stamp EBT card.

### **3.3.3 RETAILER USAGE**

Retailers need the appropriate equipment and software to read the smartcards and process transactions. Smartcard technology is being implemented in some retail locations for multiple uses, including the transaction of WIC benefits, store loyalty programs, and credit/debit transactions. Smartcard usage in the United States has increased in recent years through programs like MasterCard *PayPass*®, a contactless system that allows cardholders to wave their card in front of a reader to capture their card information.

Additionally, stores may want their systems to be able to identify approved WIC fruits and vegetables. This functionality allows the system to determine eligible items rather than the cashiers.

Payment is based on submitting the settlement file, which includes all transactions occurring within a particular time period. Ideally, a retailer settles on a daily basis. The EBT system receives and processes the settlement file, and payment is generally made the next business day. A reconciliation file is returned to the retailer following the settlement process. The retailer reconciliation process involves the information provided through the reconciliation file, store tender totals, and deposit amounts.

### **3.3.4 LOCAL AGENCY/CLINIC USAGE**

Local Agencies and clinics need the ability to issue cards and link those cards to an online account maintained by the EBT host. They also may provide other support activities, such as balance inquiries, benefit adjustments, and card replacement. The majority of WIC Agencies

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<sup>15</sup> American National Standards Institute. ANSI DSTU X9.108 Financial Transaction Messages - Electronic Benefits Transfer (EBT) - WIC Retailer Interface Standard, 2005.

do not have experience with card-based systems, and their information systems need to be enhanced to support the necessary functionality.

### **3.3.5 STATE USAGE**

States need the ability to issue payments to retailers, perform financial reconciliation, and issue other related reports. Although most States conducted research on card technologies as part of their assessment of whether to move to WIC EBT, the majority of WIC Agencies do not have experience with card-based systems, and some functionality in their WIC systems may need to be enhanced to support these processes. In an offline EBT environment, the State systems receive batch files from individual retailers and use them for processing payments; conducting the appropriate financial reconciliation; and developing reports for federal, State, and local stakeholders.

## **3.4 Store Gift Cards—Magnetic Strip, Closed Loop**

### **3.4.1 OVERVIEW**

Store gift cards are another version of online processing, which includes setting up an account on a host system, establishing a balance, and issuing a card to access the balance. Typically, neither a PIN nor a signature is required.

Store gift cards operate in a closed-loop environment, meaning that the card is proprietary and can be used only at a limited number of locations. For example, a Safeway gift card can be used only at Safeway stores and potentially other stores within the Safeway family, such as Dominick's and Von's. Because, by definition, the use of the card is within a closed loop, the rules and regulations governing the use of these cards is limited to specifically the requirements of the implementing retailer. While the location of use might be limited, there is typically no limitation on what can be purchased with the card. The transaction is simply an unrestricted cash transaction. Most retailers contract out the processing of their gift cards.

Once the use of the card expands from a single retailer (e.g., Safeway) to multiple retailers (e.g., Safeway, Krogers, Albertsons, and Wal-Mart), by definition the card is no longer a closed-loop card. States need to implement operating rules and processes to handle transaction processing and settlement. States would also need to establish agreements between the various parties using the card. Quickly, the closed-loop, single-retailer card becomes an open-loop, multi-retailer card that follows a fixed set of rules and regulations that govern the card use.

### **3.4.2 PARTICIPANT USAGE**

While the experience of using a store gift card would be similar to an EBT card (online or offline), credit card, or debit card, the card issuance would likely be different. Because store gift cards are proprietary to the store or chain, participants would either be issued a card at a participating store or, possibly, at a local WIC Agency. Participants must be issued a card to access their benefits. Because of the proprietary nature of the card programs, participants need to select which store they would want to purchase their fruits and vegetables. Many

store gift cards do not require the use of a PIN, and it is likely participants would have to go to a store to obtain an account balance instead of having a phone- or Internet-based service through an EBT vendor where they can check balances and manage their account.

### **3.4.3 RETAILER USAGE**

Retailers need the appropriate equipment and software to perform transactions with closed-loop prepaid debit cards. Some retailers have gift card programs and the associated infrastructure, while others do not. Retailers need to coordinate with the State, local Agency, or clinic for acceptance of the cards, transaction settlement, and reconciliation. When multiple vendors begin accepting the card, the card moves from being a closed-loop, single-vendor card to an open-loop, multi-vendor card.

Payment is based on the transactions that occur within a business day.<sup>16</sup> Payment typically occurs the next business day after the transaction has been made. Reconciliation involves matching tender totals to deposit amounts.

### **3.4.4 LOCAL AGENCY/CLINIC USAGE**

Local Agencies and clinics need the ability to issue cards with the correct amount for use at a specific retail location or chain. The majority of WIC Agencies do not have experience with card-based systems, and some functionality in their WIC systems may need to be enhanced to record the issuance of the closed-loop prepaid debit cards.

### **3.4.5 STATE USAGE**

States need the ability to fund the card balances. Tracking of purchases would be limited. Although most States conducted research on card technologies as part of their assessment of whether to move to WIC EBT, the majority of WIC Agencies do not have experience with card-based systems, and some functionality in their WIC systems may need to be enhanced to record the issuance of closed-loop prepaid debit cards.

## **3.5 MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

### **3.5.1 OVERVIEW**

MasterCard®/Visa® SVCs, also referred to as prepaid debit cards, are another version of online processing, which includes setting up an account on a host system, establishing a balance, and issuing a card to access the balance. These cards carry the brand (logo or bug) of either Visa® or MasterCard® and can be used at any location that takes cards from that association.

Unlike the closed-loop cards, these cards are not limited to a specific retail chain. The card can be used wherever Visa® or MasterCard® are used; however, some limitations might be

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<sup>16</sup> As with online EBT, a daily cut-off time would be established.

possible based on the merchant type and Bank Identification Number (BIN, the first six digits of the card number). This has been used for government-issued payment cards (e.g., travel cards) to restrict purchases to only authorized retailer types. For example, government-issued payment cards can be used to purchase office supplies but cannot be used in liquor or jewelry stores to purchase goods. The card issuer (financial institution/ processor that issued the card on behalf of the government) enforces the restriction by looking at the merchant type code. If the card is being used at an unauthorized merchant type (e.g., liquor store), the card issuer can automatically reject the transaction. This same type of logic can be used on an SVC for CVV benefits.

However, like the closed-loop cards, there are no limitations on what can be purchased with the prepaid debit card. Transactions can be either PIN- or signature-based, depending on whether the cardholder selects the debit (Automated Teller Machine [ATM]) or credit transaction at the POS. Because of their convenience and accessibility to a wide network of ATMs and merchants, these cards are growing in popularity, including use for gift cards, manufacturer rebates, tax refunds, and even payroll for employers.

### **3.5.2 PARTICIPANT USAGE**

Participants must be issued a card to access their benefits. Issuance may occur in a number of different ways including via mail or through the local WIC offices. Depending on how the program is implemented, participants may be required to select a PIN. Usage by the participant is similar to a credit or debit card.

### **3.5.3 RETAILER USAGE**

Retailers need the equipment and software to accept a Visa® or MasterCard® SVC card. For this alternative, the retailer also needs to establish a relationship with Visa® or MasterCard® (depending on the association selected by the State). Retailers typically pay interchange fees for each Visa® or MasterCard® credit transaction.

Online magnetic strip card technology is one of the more widely used transaction technologies in the retail industry today. Most stores have integrated POS equipment in their cash register systems that support EBT, credit, and debit transactions, including Visa® and MasterCard® while others may use stand-beside terminals that support a similar variety of electronic tender types. However, many retailers support limited or no electronic tender types.

Payment is based on the transactions that occur within a business day.<sup>17</sup> Payment typically occurs the next business day after the transaction has been made. Reconciliation would involve matching tender totals to deposit amounts.

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<sup>17</sup> As with online EBT and closed-loop prepaid debit card, a daily cut-off time would be established.

### **3.5.4 LOCAL AGENCY/CLINIC USAGE**

Local Agencies and clinics need the ability to issue cards with the correct value. The majority of WIC Agencies do not have experience with card-based systems, although more State Agencies are becoming familiar with card technology because of EBT. However, most State WIC Agencies need to enhance their WIC information systems to record the issuance of the prepaid debit cards.

### **3.5.5 STATE USAGE**

States need the ability to fund the card balances. Tracking purchases would be limited. Although most States conducted research on card technologies as part of their assessment of whether to move to WIC EBT, the majority of WIC Agencies do not have experience with card-based systems, and some functionality in their WIC systems may need to be enhanced to record the issuance of the open-loop prepaid debit cards. In addition, one of the big differences between these cards and an EBT card is the amount of control and influence the State can assert over the use of the card. It is not clear whether a State could restrict the use of a MasterCard® or Visa®-branded card to a relatively few number of retailers that have signed contracts with the State. Per Visa® and MasterCard® regulations, authorized Visa® and MasterCard® retailers are not able to discriminate against what cards they accept, but have to accept any card presented as payment. How this would play out in a fruits and vegetables CVV environment is not clear for an SVC, especially when the impacted retailer does not have a contractual relationship with the State WIC Agency issuing the card. In an EBT environment, the State WIC Agency has significantly more control over who can accept the card and the use of the card because there is no overriding set of rules and regulations for CVV as there is with Visa® and MasterCard® SVCs.

## **3.6 Electronic Couponing**

### **3.6.1 OVERVIEW**

An electronic coupon system allows a participant to select specific coupons through the Internet and print the coupons for use at the store. In current commercial applications, redeemed coupons are tracked to determine the participant's preferences, and the online experience is customized to highlight goods the participant is interested in purchasing. In a WIC fruits and vegetable implementation, participants could print coupons for specific values to purchase eligible foods.

Electronic couponing is a new concept being used by a number of retailers for customers with Internet access. One example is the website <http://www.coupons.com/> where users can select and print coupons for specific grocery or retail items. These coupons can be used like manufacturer coupons at a variety of participating stores.

### **3.6.2 PARTICIPANT USAGE**

The participant prints the coupon(s) from the Internet at home, at the clinic, or from some other location with Internet and printer access. The participant then takes the coupon to any

authorized retailer to be redeemed for eligible fruits and vegetables. The process is similar to using a store or manufacturer coupon.

### **3.6.3 RETAILER USAGE**

From the retailer perspective, accepting electronic coupons for fruits and vegetables is similar to accepting manufacturer coupons. The coupons are printed with a bar code that is scanned at the cash register. The primary difference between a manufacturer coupon and a CVV is the need to ensure that clients are not printing multiple copies of the CVV and obtaining more than the CVV amount authorized by the local Agency. Unfortunately, the only way to eliminate duplication is validating the coupon on a real-time basis when it is presented at the time of purchase. Tracking use of coupons on a real-time basis would significantly increase the cost of implementation and transaction processing.

Payment is based on submitting the redeemed coupons to a central location (e.g., the State or a contractor). The coupons are then processed and payments made to the retailer based on the coupons submitted.

### **3.6.4 LOCAL AGENCY/CLINIC USAGE**

The clinic staff needs to be able to issue benefits to the host system supporting the Internet couponing site. Some functionality in WIC systems may need to be enhanced to record issuing the benefit.

### **3.6.5 STATE USAGE**

States need to develop the automated information system and Internet functionality to facilitate the choice of allowable foods, record and track the electronic coupons, and the ability to pay retailers for coupon redemptions. Tracking of purchases would be limited. Functionality in the WIC information systems needs to be enhanced to record the CVV benefit.

## **3.7 Paper Cash Value Voucher/Check**

### **3.7.1 OVERVIEW**

This option uses a paper CVV/check showing a specified dollar value that can be used to purchase fruits and vegetables. Trained retail staff would be required to enforce restrictions on what items may be purchased with the coupons. This option is similar to the WIC Farmers' Market Nutrition Program, which uses fixed denomination coupons (e.g., \$1.00) to facilitate the purchase of fruits and vegetable at approved local farmers' markets. Both California and New York successfully implemented pilot programs that distribute fixed-amount CVVs to WIC participants for the purchase of fruits and vegetables in grocery stores.

The retailer returns the vouchers to the State for processing and payment. Another alternative is using checks processed through the banking system, which are similar to WIC checks used in many States.

### **3.7.2 PARTICIPANT USAGE**

Each participant receives a check or voucher for the value of benefits for which they are eligible. Typically, participants go to their local WIC office to pick up their checks. The paper instrument could be separated into smaller denominations to be used throughout the month.

### **3.7.3 RETAILER USAGE**

Retailers process the CVV or check as they currently process WIC paper benefits.

Retailers process WIC checks as a specific tender type and deposit them in the bank with regular checks. WIC checks are processed through the Federal Reserve and sent/transmitted to a banking contractor for prepayment editing and payment. A banking contractor confirms that the check is valid, contains all required signatures and correct dates, and is within the not-to-exceed amount. The banking contractor processes payments for checks meeting all of the edits, may pay vendors up to the not-to-exceed amount (depending on State policy), and rejects checks not meeting all of the edits.

The retailer mails CVVs directly to the State or its authorized agent for processing. Following the validation of the CVV voucher (e.g., amount and time frames), payment is made to the retailer either through a check drawn on the State bank or through an ACH deposit to the retailer's bank account.

### **3.7.4 LOCAL AGENCY/CLINIC USAGE**

Clinic staff needs to be able to issue the paper instrument, which in most cases will be similar to how they currently issue paper WIC food instruments. Some functionality in WIC systems may need to be enhanced to record the benefit and print the CVV or check.

### **3.7.5 STATE USAGE**

States need the ability pay retailers for redemptions, which may be similar to how they currently issue paper WIC food instruments. Tracking of purchases would be limited.

## 4. ALTERNATIVES ANALYSIS

This section analyzes the six CVV alternatives and includes a discussion of implications that apply to all the alternatives, a report card summarizing how the different alternatives meet (or fail to meet) certain key criteria, an individual analysis of each alternative, and a comparative analysis of all alternatives.

### 4.1 Universal Implications and Challenges

Regardless of the CVV option implemented, some common implications exist. These include purchase of allowable foods, changes to States' processes and systems, changes to retailers' processes and systems, training stakeholders, and individual recipient tracking. Sections 4.1.1 through 4.1.5 discuss each of these important implications; they are not repeated in the analysis of each alternative.

#### 4.1.1 PURCHASE OF ALLOWABLE FOODS

One of the most difficult challenges of implementing a CVV for fruits and vegetables is ensuring that only allowable foods are purchased. With the exception of those States implementing WIC EBT, this enforcement occurs through client training and the actions of store clerks in the checkout lane. With WIC EBT, enforcement occurs through hosting and maintaining a database of allowable UPCs. Adding fruits and vegetables complicates this process, however, because only some of the allowable fruits and vegetables—those that are prepackaged with fixed weight, count, or volume from national or large regional suppliers—have UPCs. Most fresh fruits and vegetables do not have a UPC; instead, they are purchased by weight and are identified by Price Look-Up (PLU) codes. There is movement toward standardizing PLU codes, but the effort is voluntary and standardized PLU codes are not universally used by the grocery industry, particularly among smaller retailers. In North America, the Produce Electronic Identification Board (PEIB) assigns both UPC and PLU numbers to produce.<sup>18</sup> Additionally, the International Federation for Produce Standards (IFPS) works to standardize PLU codes globally, and the PEIB and their counterparts in other countries submit PLU codes to the IFPS for approval and publishing as global PLU codes. The individual analysis of each alternative discusses its capacity to enforce the purchase of only allowable foods.

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<sup>18</sup> The PEIB is an industry-wide organization focused on improving the electronic collection and communication of sales data for fresh fruits and vegetables. The board is composed of representatives from all areas of the produce industry, and its activities are administered by Produce Marketing Association (PMA) staff. For more information, go to [http://www.pma.com/Template.cfm?Section=UPC\\_and\\_PLU\\_Codes&Template=/ContentManagement/ContentDisplay.cfm&ContentID=827](http://www.pma.com/Template.cfm?Section=UPC_and_PLU_Codes&Template=/ContentManagement/ContentDisplay.cfm&ContentID=827).

In the latter part of this study, a number of retailers were interviewed for their opinions on the impact that the fruits and vegetables CVV would have on their operations. As part of the interview process, the retailers were asked about their use of PLU codes and to what extent they are standardized. All the interviewed retailers said that the trend is to standardize PLU codes, and the majority of their PLU codes are standardized. These interviewees estimated that from 90% to 95% of their PLU codes are standardized and common among all grocery outlets in their area. Specifically, the large suppliers of these produce items use consistent PLU codes established through the GS1 Organization. GS1 is a global organization dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors. These retailers stated that the most common exceptions are seasonal produce purchased directly from local producers and farmers. For these types of produce, the retailer assigns an internal PLU code.

Almost universally, the interviewed retailers prefer using automation to identify allowable fruits and vegetables for the CVV program. The majority of the retailers stated that their front-end systems already have the capability to identify WIC-allowable items through a flag set on the grocery item. One of the interviewed grocers that did not currently identify WIC-allowable items in the front-end system stated that this was not a technical constraint, but simply had not been implemented because of other automation projects having a higher priority and a better return on investment.

In summary, the opinions expressed by the interviewed retailers were:

- Retailers prefer automated checking of WIC-allowable fruits and vegetables.
- With the exception of in-season produce purchased from local suppliers/farmers, retailers use standardized PLU codes for the majority of produce sold.
- Retailers prefer that their cashiers not be required to enforce State policies and rules for the purchase of allowable fruits and vegetables.
- States need to provide funding to support the automation.
- Retailers with stores in multiple States prefer establishing a national standard for allowable purchases using the CVV. These retailers expressed concerns regarding variability of items that are allowed if control is at the State level.

An interesting side note is that there was no consensus on a payment vehicle (e.g., paper voucher, online magnetic strip card, or offline smartcard). The choice appeared to be driven more by the location of the retailer and the payment methods currently being used. For example, retailers in the Texas WIC EBT pilot area were comfortable using an offline smartcard for the CVV, while retailers outside the Texas pilot area stated a preference for an online EBT magnetic strip card or a paper voucher, depending on the amount of automation currently in place in their stores.

#### **4.1.2 CHANGES TO STATES' PROCESSES AND SYSTEMS**

Implementing a CVV program for the purchase of fruits and vegetables will impact the current State management information systems supporting the WIC program. First, State systems need to be able to produce new food prescriptions for a CVV for fruits and vegetables. Only New York has run a statewide pilot allowing clients to purchase fruits and vegetables at any WIC-approved retailer, and would be in a position to produce a WIC check with the appropriate dollar denomination for a household. Because the dollar values would likely differ from the New York pilot, they also would require some minor system modifications.

States also have to make system modifications for settlement, payment, and tracking expenditure balances by client. Because a cash value transaction is new to all stakeholders, a process needs to be put in place for food retailers to communicate to the unique identifier associated with the CVV, the amount of the transaction, and possibly the foods purchased to the State Agency responsible for the WIC program.<sup>19</sup>

Depending on the requirements in the final rule and the tender type chosen for the CVV, States may have to develop and maintain a database of approved fruits and vegetables, the prices for each of those items, and their associated PLU codes. If a chosen tender type facilitates the automated authorization of specific food items at the time of the transaction, then it is necessary to make this database available to authorize the transaction. Because PLU codes are not standardized, the State database has to be developed and maintained in a manner that can accommodate different PLU codes for the same food item. Depending on the number of vendors and database structure of the current WIC program, the process of making these changes could be daunting for States. One State explained that each food item may require as many as 2,000 entries into their database because each store has a vendor number and an item number for each allowable food.

Timing of the implementation may have a significant impact on States. The unique circumstances of each State make the timing of any change an important consideration—for example, their capacity to make changes, the complexity of their current information systems and processes, and, in some cases, their movement toward new or enhanced systems. Running parallel processes for an existing program and for a CVV to support the purchase of fruits and vegetables adds administrative costs. If a State is going through a system enhancement or replacement, then the level of complexity and burden increase, creating the possibility of running three or more different, concurrent processes to support WIC implementation.

#### **4.1.3 CHANGES TO RETAILERS' PROCESSES AND SYSTEMS**

Introducing a CVV for fruits and vegetables creates new demands on food retailers. At a minimum, retailers need to train their cashiers, making them aware of the CVV and the

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<sup>19</sup> Although sending States information about what foods are purchased would not be required for settlement and payment, it is likely that States would want to know this information for programmatic purposes.

appropriate manner in which to handle the transaction. The retailers also have to communicate the unique identifier, dollar amount, and possibly the food items purchased to the State for reconciliation and payment. Depending on the tender type chosen, this process may be as simple as following the current process within the State, with minor modifications to add new data (e.g., the dollar amount of the fruits and vegetables being purchased), or the process may require more up-front programming to the POS devices and/or the retailers' back-end systems that communicate directly with States for reconciliation and payment purposes.

In addition, depending on the technology used, there may be additional transaction fees or additional equipment requirements incurred by the retailer. For example, Visa® and MasterCard® credit transactions incur an interchange fee that the retailer pays. The use of smartcards and/or RFID cards requires the installation and use of new equipment.

Major decisions that influence retailers' processes and costs are the extent to which the front-end systems check for allowable food items and how much checking the cashier performs. If the system is required to perform a complete validation against a list of allowable items maintained and updated by a central WIC Agency (State or federal level), then the up-front development and implementation costs are high. Regardless of the tender type being used (e.g., smartcard, online EBT, or SVC), the retailers have to develop a system to obtain the approved list of fresh fruits and vegetables (through UPCs and PLU codes), processes to maintain the list, and processes to check a WIC client's fresh fruits and vegetables against the approved list. Finally, if the WIC Agency wants to track what is actually being purchased, the retailer needs to transmit this data to the WIC Agency information system. In an online environment, data can be transmitted in real time. In a smartcard environment where the transaction occurs offline, a mechanism would have to be used to provide this information to the WIC Agency.

Depending on the implementation options selected, there may be significant impact to the retailers. In addition to these obvious impacts, there may be other impacts to retailers, which are discussed further in the analysis of each alternative.

#### **4.1.4 TRAINING STAKEHOLDERS**

All stakeholders will need to be trained about the new CVV program for fruits and vegetables. If an implemented alternative differs in the tender type currently used in a State, then the demand for training increases. Because WIC participants do not currently receive a cash benefit for the purchase of fruits and vegetables, training for participants is important regardless of the CVV alternative used. If a chosen alternative is different from the tender type currently used in the program, additional training will be important. If the CVV does not automatically enforce the purchase of allowable foods, then there will be an increased demand for both client education and retailer training on which foods are allowed. Because most States have ongoing training and communication with clients, local agencies/clinics, and retailers, the capacity to conduct this training appears to exist.

#### 4.1.5 INDIVIDUAL RECIPIENT TRACKING

From a recipients' standpoint, one of the primary advantages of electronic transaction processing is removing the stigmatism of being different, that is, receiving a benefit because of socioeconomic circumstances. When the transactions occur in an electronic manner at the retailer, the stigmatism is reduced, and often removed, because transaction processing occurs the same way as it does for any other customer using electronic payment.

However, one of the advantages of electronics, anonymity, also can be a disadvantage. In an electronic environment, it is typical for benefits to be aggregated under a household, with a responsible adult (also referred to as head of household) assigned the card to access the benefits. For the CVV, this means that multiple CVV benefits for a household (e.g., pregnant mom and two toddlers) may be combined under a single CVV account tied to a card. When the client uses the CVV benefits, there is no discrete tracking of whose benefits are being used. To the retailer, the CVV is another tender type being used for purchases.

The retailer does not know, nor care, whose benefits are being used to pay for the fruits and vegetables. In a multiple-recipient household, the only way to effectively track each recipient's use of their CVV in an electronic environment is issuing separate cards to each recipient so their benefits can be accessed individually. However, this solution does not appear to be practical because the responsible adult will have a multitude of cards, each with a small dollar value on it. When the responsible adult goes shopping for groceries, she is not concerned with what food items have been assigned to which WIC recipient, but rather, the food items for the household as a whole. The responsible adult most likely will use all the value on one card before using the second card, as opposed to using a percentage of value on each card. Therefore, it appears that isolating a recipient's benefits to separate cards to provide accountability will not have the intended outcome for the program and will unnecessarily raise overall program costs.

## 4.2 Report Card on Key Criteria

States need to consider a broad range of factors when evaluating different options for implementing a CVV program for fruits and vegetables. This report uses the following four key criteria and presents a rating system in Table 1:

- ***Client Access and Ease of Transaction.*** To what extent is this alternative accessible to and easy for clients to use? The rating for this criterion comes primarily from a client focus group with support from interviews with State representatives and retailers.
- ***Limiting Purchases to Allowable Foods.*** Can the alternative ensure that only allowable foods are purchased? This criterion speaks to the technological capability, not the degree of work involved in development.
- ***Ease of State Implementation.*** To what extent is this alternative easy for the majority of States to implement? The rating for this criterion comes primarily from interviews with State representatives and is supplemented by interviews with food retailers, POS device companies, EBT and credit card vendors, and industry association representatives.

- ***Ease of Retailer Implementation.*** To what extent is this alternative easy for retailers to implement? The rating for this criterion comes primarily from interviews with retail association representatives and is supplemented by interviews with State Agency representatives, POS device companies, EBT and credit card vendors, and industry association representatives.

Table 1 assesses each CVV implementation option in the left-hand column based on the rating system in the key. Section 4.3 discusses these criteria for each alternative.

**Table 1. Report Card for Rating CVV Implementation Options**

CVV Implementation Options	Client Access and Ease of Transaction	Limiting Purchases to Allowable Foods	Ease of State Implementation	Ease of Retailer Implementation
EBT—magnetic strip, online	+	+	ok	+
EBT—smartcard/IC, offline	+	+	ok	x
Store gift cards—magnetic strip, closed loop	x	x	x	x
MasterCard® /Visa® stored value cards—magnetic strip, open loop	+	x	ok	+
Electronic couponing	x	ok	x	x
Paper CVV/check	ok	x	ok	ok

Key:

+ = Very easy/able to fully enforce which food items are purchased

ok = Acceptable/able to enforce which food items are purchased with some human intervention

x = Difficult

### **4.3 Individual Analysis of Each Alternative**

Using a table format, this section analyzes and discusses each alternative for implementing a CVV program. Tables 2 through 7 contain the following discussion items:

- Current level of use
- Client access
- Benefit maximization
- Client ease of use
- State system implications
- State/local staff implications
- Retailer system implications
- Check-out lane dynamics
- Cost implications for all stakeholders
- Program integrity
- Implementation barriers
- Strengths

The discussion in Section 4.1 applies to each of the alternatives. In particular, many of the impacts related to State systems are outlined there. For the individual analysis, only those State system impacts specifically related to the CVV alternative are discussed.

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
Current level of use	Because of the national implementation of EBT in the FSP, a vast majority of retailers currently process online EBT transactions. Only pilots in Washington and Michigan tested the use of online EBT for WIC.	Although there is limited experience with online EBT in the WIC program, the CVV transaction for fruits and vegetables is more like Food Stamp transaction than a current WIC transaction.
Client access	Given the ubiquity of EBT technology among commercial food retailers, client access should be very high. One disadvantage of online EBT is the dependence on the availability of the telecommunications infrastructure. If access to the host is not available, the transaction cannot be completed.	
Benefit maximization	Card technology, including online EBT, maximizes the client's benefit because balances can be carried forward between transactions during the benefit availability period.	Clients feel strongly that they should be able to maximize their benefit by being able to keep their balance when the value of their purchase is less than the value of the voucher. Also, they feel strongly that they should be able to pay the difference if the transaction amount exceeds the benefit amount on their card.

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
Client ease of use	In general, card technologies provide an easy, dignified manner for clients to transact their benefits. There was a strong consensus among all stakeholders, including clients, that card technology is the quickest and easiest option. Clients indicate that they would want to use card technology for purchasing fruits and vegetables even if another tender type were used for the rest of the WIC transaction.	While card technology, including online EBT, is easy for clients to use and speeds their time through the lane, having a single POS device able to handle the transaction is preferable to having one only for the CVV. Having a different POS device handle the CVV transaction could have a stigmatizing effect.
State system implications	Because only a couple of States are moving forward with an online EBT solution for their WIC program, implementing an online EBT system for WIC fruits and vegetables would require new system development, either in house or with an third-party EBT provider (a new contract or contract modification).	Those States implementing or pursuing the implementation of an offline EBT solution may have to run dual processes, one online and one offline, for their WIC program, adding complexity and risk to their operations.  Some stakeholders thought that it may be possible to combine the CVV with the existing Food Stamp card if the back-end issues with payment and reconciliation could be worked out.

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
State/local staff implications	<p>Agency/clinic staff: Card authorization, update, and possibly issuance, depending on State policy</p> <p>State staff:</p> <ul style="list-style-type: none"> <li>– Defining user requirements and system testing</li> <li>– Contract management</li> <li>– Maintaining an allowable food UPC and PLU database</li> </ul>	
Retailer system implications	<p>Changes are required to cash register software to monitor purchases through allowable UPCs/PLU codes.</p> <p>Only those WIC-only retailers and some small retailers have to acquire equipment to process EBT.</p>	<p>Next to paper CVV/checks, online EBT requires the least amount of infrastructure investment on the part of retailers. National standards for allowable foods, UPCs/PLU codes, and the settlement/payment procedures would help reduce the overall costs of implementation.</p>

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
<p>Check-out lane dynamics</p>	<p>Going through the check-out lane should be quick with card technology, including online EBT.</p> <p>If a database of PLU codes associated with allowable fruits and vegetables were not used, then the cashier would be required to enforce the purchase of allowable foods.</p> <p>An EBT card reduces the issues related to carrying over a balance from one transaction to the next without losing benefit value.</p> <p>The time in the lane may be reduced if clients can add their own money to the transaction if the cost of their food items exceeds the benefit amount on the card.</p>	<p>It may be difficult for clients to select the appropriate quantity or weight of bulk fresh fruits or vegetables to arrive at the exact amount of their benefit. With an EBT card, coming under the benefit amount is less of an issue than exceeding it. Either option for addressing the issue poses difficulty for the retailer: 1) reducing the amount of the produce to meet the value of the benefit or 2) allowing the client to pay for the difference with their own money, creating another transaction with a different tender type.</p>

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
<p>Cost implications for all stakeholders</p>	<p>Card costs</p> <p>Contract with third-party EBT vendors and the associated Cost Per Case Month (CPCM) fees</p> <p>Transaction fees for use of the payment network</p> <p>Hardware and software costs for retailers that currently do not have infrastructure to support EBT</p> <p>Software development costs for retailer POS devices, State settlement/reconciliation systems, database of allowable UPCs/PLU codes, and State systems that generate food prescriptions</p> <p>In some States, contract modifications for local Agency/clinic contracts to reflect a new scope of work to handle an online EBT process</p>	
<p>Program integrity</p>	<p>Compared to the use of a paper CVV/check, using card technology, including online EBT, will likely reduce the possibility of trafficking as experienced in the FSP when it moved to EBT.</p> <p>The technology can support the purchase of only allowable fruits and vegetables.</p>	<p>While the technology accommodates restricting purchases to only allowable foods, the process of doing so is laborious. Because allowable food retailers are not standardized in their use of PLU codes, significant programming is necessary to account for variations across each approved retailer.</p>

**Table 2. Electronic Benefits Transfer—Magnetic Strip, Online**

Discussion Item	Analysis	Comments
Implementation barriers	<p>PLU codes are not standardized.</p> <p>Some retailers, including Farmer’s Markets, do not have EBT infrastructure.</p> <p>States incur new administrative costs.</p> <p>States with offline EBT systems are likely to resist an additional, parallel process that moves away from their current direction.</p> <p>Timing</p>	<p>Maintaining the same level of accountability in the current program—client education and policing by the cashier—would make implementation easier.</p>
Strengths	<p>Retailers have infrastructure for EBT and the experience using it.</p> <p>Clients and retailers support using EBT.</p> <p>Most next-generation EBT systems are designed to support more than one program.</p> <p>The technology is able to restrict transactions to allowable foods.</p>	<p>For a variety of reasons, including concerns over supply-chain security, it is likely that PLU codes will be standardized over time, making the possibility of developing and using a standard, national database from which States can choose allowable fruits and vegetables a distinct possibility, similar to the current, standardized UPC database effort.</p>

**Table 3. Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

Discussion Item	Analysis	Comments
Current level of use	The majority of food retailers are not using and do not have the capacity to conduct an offline EBT transaction. Approved WIC vendors in New Mexico, Nevada, Texas, and Wyoming use offline EBT systems for their WIC programs.	As retailers replace their old POS devices with current-generation devices, more food retailers will have the capacity to process transactions using smartcard technology.
Client access	If implemented among all the approved WIC retailers, offline EBT would be highly accessible to clients, working in any food retailer regardless of the availability of the networks necessary to transact a payment through an online system. Logic for transaction processing is resident at the store that settles regularly to the EBT host system via high-speed or dial-up communications. One drawback to an offline system is availability of up-to-date account balances at the central host, where account balances that include the current day's transactions are available only after a nightly batch process.	
Benefit maximization	Card technology, including offline EBT, maximizes the client's benefit because balances can be carried forward between transactions during the benefit availability period.	Clients feel strongly that they should be able to maximize their benefit by being able to keep their balance when the value of their purchase is less than the value of the voucher. Also, they feel strongly that they should be able to pay the difference if the transaction amount exceeds the benefit amount on their card.

**Table 3. Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

Discussion Item	Analysis	Comments
Client ease of use	<p>In general, card technologies provide an easy, dignified manner for clients to transact their benefits. There was a strong consensus among all stakeholders, including clients, that card technology is the quickest and easiest option. Clients indicate that they would want to use card technology for purchasing fruits and vegetables even if another tender type were used for the rest of the WIC transaction.</p>	<p>While card technology, including offline EBT, is easy for clients to use and speeds their time through the lane, having a single POS device able to handle the transaction is preferable to having one only for the CVV. Having a different POS device handle the CVV transaction could have a stigmatizing effect.</p>
State system implications	<p>Because only four States are moving forward with an offline EBT solution for their WIC program, implementing an offline EBT system for WIC fruits and vegetables would require significant system development, either in house or with a third-party EBT provider (a new contract or contract modification).</p>	<p>Those States implementing or pursuing the implementation of an online EBT solution may have to run dual processes, one online and one offline, for their WIC program, adding complexity and risk to their operations.</p>
State/local staff implications	<p>Agency/clinic staff: Card authorization, update, and possibly issuance, depending on State policy</p> <p>State staff: Defining user requirements and system testing</p> <p>State staff: Contract management</p> <p>State staff: Maintaining an allowable food and PLU database</p>	

**Table 3. Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

Discussion Item	Analysis	Comments
Retailer system implications	<p>Retailers operating in the four offline WIC EBT States, which also operate in other States, have the capacity to turn on WIC EBT functionality in their stores.</p> <p>Retailers not operating in the four offline WIC EBT States would likely need to invest in new offline, smartcard EBT systems, including new hardware and software.</p> <p>Retailers need to update cash register software to monitor purchases through allowable UPCs/PLU codes.</p>	<p>Because WIC is a small part of the overall retail business for the vast majority of food retailers, they are reticent to invest a lot of money in infrastructure.</p> <p>National standards would help reduce the overall costs of implementation. The models and standards developed in the Texas implementation could be used to expedite the replication of offline systems throughout the country. Additionally, the current generation of POS devices is being developed to handle both magnetic strip and smartcard technologies.</p>
Check-out lane dynamics	<p>Going through the check-out lane should be quick with card technology, including offline EBT.</p> <p>If a database of PLU codes associated with allowable fruits and vegetables were not used, then the cashier would be required to enforce the purchase of allowable foods.</p> <p>An EBT card reduces the issues related to carrying over a balance from one transaction to the next without losing benefit value.</p> <p>Lane time may be reduced if clients can add their own money to the transaction if the cost of their food items exceeds the benefit amount on the card.</p>	<p>It may be difficult for clients to select the appropriate quantity or weight of bulk fresh fruit or vegetable items to arrive at the exact amount of their benefit. With an EBT card, coming under the benefit amount is less of an issue than exceeding it. Either option for addressing the issue poses difficulty for the retailer: 1) reducing the amount of the produce to meet the value of the benefit or 2) allowing the client to pay for the difference with their own money, creating another transaction with a different tender type.</p>

**Table 3. Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

Discussion Item	Analysis	Comments
<p>Cost implications for all stakeholders</p>	<p>Card costs (anywhere from \$1.50 to over \$4.00 per card depending on card technology and volumes)</p> <p>Retailer hardware costs (POS devices, servers)</p> <p>Software development costs for retailer POS devices, State settlement/reconciliation systems, database of allowable UPCs/PLU codes, and State systems that generate food prescriptions</p> <p>Contract with third-party EBT vendors</p> <p>In some States, contract modifications for local Agency/clinic contracts to reflect a new scope of work to handle an online EBT process</p>	
<p>Program integrity</p>	<p>Compared to the use of a paper CVV/check, using card technology, including offline EBT, will likely reduce the possibility of trafficking, similar to the experience of the FSP when it moved to EBT.</p> <p>The technology can support the purchase of only allowable fruits and vegetables.</p>	<p>While the technology allows for purchases to be restricted to only allowable foods, the process of doing so is laborious. Because allowable food retailers are not standardized in their use of PLU codes, significant programming must occur to account for variations across each approved retailer.</p>

**Table 3. Electronic Benefits Transfer—Smartcard/Integrated Circuit, Offline**

Discussion Item	Analysis	Comments
Implementation barriers	<p>PLU codes are not standardized.</p> <p>Most retailers, including Farmer’s Market retailers, do not have an infrastructure to support an offline, smartcard EBT system.</p> <p>States incur new administrative costs.</p> <p>States with online EBT systems are likely to resist an additional, parallel process that moves away from their current direction.</p> <p>Timing.</p>	<p>Maintaining the same level of accountability in the current program—client education and policing by the cashier—would make implementation easier.</p>
Strengths	<p>Offline support is available when the commercial payment networks and Internet are not (for example, after a disaster).</p> <p>Clients and some States support using offline EBT transactions.</p> <p>Most next-generation EBT systems are designed to support more than one program.</p> <p>The technology is able to restrict transactions to allowable foods.</p> <p>The next-generation POS devices are built to handle magnetic strip and smartcard technologies.</p>	<p>For a variety of reasons, including concerns over supply-chain security, it is likely that PLU codes will be standardized over time, making the possibility of developing and using a standard, national database from which States can choose allowable fruits and vegetables a distinct possibility, similar to the current standardized UPC database effort.</p>

**Table 4. Store Gift Cards—Magnetic Strip, Closed Loop**

Discussion Item	Analysis	Comments
Current level of use	Some large retailers (e.g., Wal-Mart, Safeway, and Kroger) have closed-loop prepaid debit card systems; however, most food retailers do not offer this service.	These systems are typically referred to as store gift card systems.
Client access	Because closed-loop systems are proprietary, there is no interoperability between stores. Clients would have to choose among available retailers, limiting choice and flexibility and violating WIC regulations.	
Benefit maximization	Card technology, including offline EBT, maximizes the client’s benefit because balances can be carried forward between transactions during the benefit availability period. Depending on the technology used at a particular store, clients may be able to add their own money to the cards, even at the POS during the transaction, and thus be able to pay for any difference between the benefit amount and the purchase amount.	Clients feel strongly that they should be able to maximize their benefit by being able to keep their balance when the value of their purchase is less than the value of the voucher. Also, they feel strongly that they should be able to pay the difference if the transaction amount exceeds the benefit amount on their card.
Client ease of use	In general, card technologies provide an easy, dignified manner for clients to transact their benefits. There was a strong consensus among all stakeholders, including clients, that card technology is the quickest and easiest option. Clients indicate that they would want to use card technology for purchasing fruits and vegetables even if another tender type were used for the rest of the WIC transaction.	The ability to obtain card balances may be an issue depending on the characteristics of the program offered by the retailer. Smaller retailers may not have the support of a call center to give clients their balances.

**Table 4. Store Gift Cards—Magnetic Strip, Closed Loop**

Discussion Item	Analysis	Comments
State system implications	<p>This option requires extensive and complex system development and/or processes by States. States would either have to enter an agreement with retailers to authorize and load values on their closed-loop prepaid debit cards or develop a data exchange process with those systems that would authorize a benefit for a client/household for a specific month. A separate development effort would require retailers to send data back to the States for settlement purposes. These development efforts and processes would have to be established for each retailer.</p>	<p>Without an interoperable closed-loop system, this option does not meet WIC regulations requiring the tender type to be able to be used at any approved retailer.</p>
State/local staff implications	<p>Agency/clinic staff: Card authorization, update, and possibly issuance, depending on State policy</p> <p>State staff: Defining user requirements and system testing</p> <p>State staff: Contract management</p>	
Retailer system implications	<p>Most retailers would have to develop a closed-loop system that accepts a prepaid debit card and develop interfaces with State systems to load benefits, receive payment, and help the State reconcile.</p>	<p>Among other objectives, this report seeks to assess the viability of taking advantage of existing technologies and processes. For this reason, this option is not viable because it requires adding entirely new functionality (to address restricting purchases to allowable foods) to the closed-loop prepaid debit card systems.</p>

**Table 4. Store Gift Cards—Magnetic Strip, Closed Loop**

Discussion Item	Analysis	Comments
Check-out lane dynamics	<p>Going through the check-out lane should be quick with card technology, including a closed-loop prepaid debit card.</p> <p>The cashier will be required to enforce the purchase of allowable foods.</p> <p>A closed-loop prepaid debit card reduces the issues related to carrying over a balance from one transaction to the next without losing benefit value.</p> <p>The time in the lane may be reduced if clients can add their own money to the card to cover transactions that exceed the benefit amount on the card.</p>	<p>It may be difficult for clients to select the appropriate quantity or weight of bulk fresh fruits or vegetables to arrive at the exact amount of their benefit. With a closed-loop debit card, coming under the benefit amount is less of an issue than exceeding it where the retailer either has to: 1) reduce the amount of the produce to meet the value of the benefit or 2) allow the client to pay for the difference with their own money by adding money to the debit card or simply by giving cash.</p>
Cost implications for all stakeholders	<p>Card costs</p> <p>Retailer hardware costs to support a closed-loop prepaid debit card system.</p> <p>Software development costs for retailer POS devices, State settlement/reconciliation systems, and State systems that generate food prescriptions</p> <p>In some States, contract modifications for local Agency/clinic contracts to reflect a new scope of work to handle new processes associated with issuance</p>	

**Table 4. Store Gift Cards—Magnetic Strip, Closed Loop**

Discussion Item	Analysis	Comments
Program integrity	<p>Compared to the use of paper CVV/check, using card technology, including closed-loop prepaid debit cards with PIN numbers, will likely reduce the possibility of trafficking as experienced in of the FSP when it moved to EBT.</p> <p>As the technology exists today, it cannot support the purchase of only allowable fruits and vegetables without significant modifications.</p>	Prepaid debit cards without the use of PIN numbers or a signature would be more subject to trafficking.
Implementation barriers	<p>Closed-loop systems are proprietary and not interoperable, making it difficult if not impossible to meet the WIC standard of allowing participants to shop at any authorized vendor location.</p> <p>A closed-loop system cannot restrict the purchase to allowable foods.</p> <p>Most retailers, including Farmer’s Markets, do not have an infrastructure to support a closed-loop prepaid debit card.</p> <p>States incur new and significant administrative costs.</p> <p>States with online and offline EBT systems are likely to resist to an additional, parallel process that moves away from their current direction.</p> <p>Timing.</p>	

**Table 4. Store Gift Cards—Magnetic Strip, Closed Loop**

Discussion Item	Analysis	Comments
Strengths	The closed-loop system takes advantage of existing infrastructure of large retailers.	

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
Current level of use	The vast majority of retailers currently process open-loop SVC transactions. Some smaller retailers and WIC-only stores are not able to process any credit or debit cards, including SVCs.	
Client access	Given the ubiquity of debit/credit card technology among commercial food retailers, client access should be very high with the exception of some small stores, which may not process credit and debit cards. One disadvantage is the dependence on the availability of the telecommunications infrastructure. If access to the host is not available, the transaction cannot be completed.	

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
Benefit maximization	Card technology, including SVCs, maximizes the clients' benefit value because balances can be carried forward between transactions during the benefit availability period.	Clients feel strongly that they should be able to maximize their benefit by being able to keep their balance when the value of their purchase is less than the value of the voucher. Also, they feel strongly that they should be able to pay the difference if the transaction amount exceeds the benefit amount on their card.
Client ease of use	In general, card technologies provide an easy, dignified manner for clients to transact their benefits. There was a strong consensus among all stakeholders, including clients, that card technology is the quickest and easiest option. Clients indicate that they would want to use card technology for purchasing fruits and vegetables even if another tender type were used for the rest of the WIC transaction. Clients have the option of either using a PIN or signing for the transaction, offering some flexibility in case clients do not remember their PIN number.	One advantage of this option is the use of the existing POS systems at most retailers. Clients would not be forced to process a transaction using a separate device in the lane.

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
State system implications	<p>This option may be the easiest for States to implement. States need to set up an account with an SVC provider (e.g., Visa®, MasterCard®) to issue cards to WIC participants. The current technology allows for restrictions to be placed on which vendors can process the cards, enabling States to restrict use to approved retailers. States need to modify their systems to track authorization and reconciliation and facilitate payment to the vendor. Some SVC vendors have web-based interfaces that could be used by Agencies/clinics to establish accounts and set card values.</p>	<p>Taking advantage of the current system capabilities, there is no way to restrict which foods are purchased with the card.</p>
State/local staff implications	<p>Agency/clinic staff: Card authorization, issuance, update, and replacement</p> <p>State, local, or contract staff: Monitoring purchase of appropriate foods</p>	
Retailer system implications	<p>Some WIC-only retailers and small retailers have to acquire equipment to process an SVC.</p> <p>Retailers have to establish a relationship with a bank that supports cards from the approved SVC provider (e.g., Visa® or MasterCard®) to facilitate the transaction.</p>	

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
Check-out lane dynamics	<p>Going through the check-out lane should be quick with card technology, including SVCs.</p> <p>Clients will be required to enter a PIN or provide a signature to complete the transaction.</p> <p>An SVC removes the issues related to carrying over a balance from one transaction to the next without losing benefit value.</p> <p>The time in the lane may be reduced if clients can add their own money to the transaction if the cost of their food items exceeds the benefit amount on the card.</p>	<p>It may be difficult for clients to select the appropriate quantity or weight of bulk fresh fruits or vegetables to arrive at the exact amount of their benefit. With an SVC, coming under the benefit amount is less of an issue than exceeding it. Either option for addressing the issue poses difficulty for the retailer: 1) reducing the amount of the produce to meet the value of the benefit or 2) allowing the client to pay for the difference with their own money, creating another transaction with a different tender type.</p>

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
<p>Cost implications for all stakeholders</p>	<p>Card costs</p> <p>Transaction fees paid to the SVC vendor by the retailer</p> <p>Hardware costs for retailers that currently do not have infrastructure to support online credit/debit transactions</p> <p>Software development costs for State systems to account for issuance and expenditures</p> <p>State contract with an SVC provider</p> <p>In some States, contract modifications for local Agency/clinic contracts to reflect a new scope of work to handle the new card processes</p>	
<p>Program integrity</p>	<p>Compared to the use of a paper CVV/check, using card technology, including SVC, will likely reduce the possibility of trafficking as experienced in the FSP when it moved to EBT.</p> <p>Cards will require the use of either a PIN number or a signature to complete the transaction.</p> <p>The technology does not support the purchase of only allowable fruits and vegetables.</p>	

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
Implementation barriers	<p>An open-loop system provides limited ability to enforce the purchase of only allowable foods.</p> <p>Some retailers do not have the infrastructure in place to process credit/debit card transactions.</p> <p>States incur new administrative costs to pay for cards and system modifications.</p> <p>The cost of the interchange fees to Visa® or MasterCard® may be an issue if retailers have to pay those fees.</p> <p>Participants in some States may have multiple WIC cards for online and offline WIC EBT.</p> <p>States with offline and online EBT systems may resist supporting an additional, parallel process.</p> <p>Farmer’s Market retailers may have difficulty processing online debit/credit cards.</p>	
Strengths	<p>Retailers have infrastructure for SVCs and the experience using them.</p> <p>Clients and retailers support using SVCs.</p> <p>States and retailers can implement the open-loop system quickly, with little investment in</p>	

**Table 5. MasterCard®/Visa® Stored-Value Cards—Magnetic Strip, Open Loop**

Discussion Item	Analysis	Comments
	infrastructure or system development.	

**Table 6. Electronic Couponing**

Discussion Item	Analysis	Comments
Current level of use	Electronic coupons have limited use in the retail space, and they are not used for public benefits, including WIC.	Electronic coupons for fruits and vegetables could work in one of two ways: 1) a generic WIC fruits and vegetables coupon, which is accepted at all retailers and used for all allowable foods or 2) coupons for specific food items from a list of allowable foods, also accepted at authorized WIC retailers.
Client access	Clients need Internet access to use this option. Many clients do not have convenient Internet access, and offering this service at clinics may significantly increase the time clients have to spend at the clinic.	Less than 40% of individuals with incomes below \$25,000.00 per year have Internet access at any location.
Benefit maximization	Coupons would be issued for a particular dollar amount, and it is unlikely that retailers and State policy makers would be willing to give change if the value of the coupon exceeded the value of the items purchased.	The California and New York WIC fruits and vegetables pilot programs did not allow participants to receive change.
Client ease of use	The redemption of coupons is a standard transaction and would be easy for clients to use. However, it will be difficult for clients to estimate the quantity of bulk fresh fruits and vegetables that would add up to the	

**Table 6. Electronic Couponing**

Discussion Item	Analysis	Comments
	value specified on the coupon, making it likely that there would be either lost benefit to the client or difficulty reducing the amount of produce in the lane or paying the difference in a separate transaction.	
State system implications	This option requires States to develop an Internet site or other electronic couponing interface for clients to select available foods and print out coupons for specific denominations. Current State systems need to be modified to account for issuance and facilitate payment to retailers.	
State/local staff implications	<p>Agency/clinic staff: Assist participants in using an electronic coupon system</p> <p>State staff: Define user requirements and test new system functionality</p> <p>State staff: Update allowable foods on the electronic couponing website</p>	
Retailer system implications	There would be no change to most retailer systems because they currently accept coupons. Some WIC-only stores and smaller retailers may not have the capacity to scan coupons. A process for settlement and payment from the State must be put into place.	
Check-out lane dynamics	Going through the check-out lane should be quick because the coupons can be scanned.	.

**Table 6. Electronic Couponing**

Discussion Item	Analysis	Comments
	<p>Time in the lane may be increased if clients are allowed to add their own money to complete a transaction, or the quantity of produce has to be reduced.</p>	
<p>Cost implications for all stakeholders</p>	<p>Development and maintenance of the electronic coupon website or other interface</p> <p>Printing costs</p> <p>Internet connection fees</p> <p>Software development costs for State system modifications to track issuance and facilitate settlement and payment to retailers</p> <p>In some States, contract modifications for local clinic contracts to reflect a new scope of work to handle providing assistance to clients in using the electronic coupon system</p>	

**Table 6. Electronic Couponing**

Discussion Item	Analysis	Comments
Program integrity	<p>No PIN or signature is required with the use of coupons, making them a higher fraud risk.</p> <p>The potential duplication of coupons by printing them multiple times or making photo copies also presents a risk.</p> <p>If the system is implemented with a generic fruits and vegetables coupon, then the cashier would have to enforce the purchase of allowable foods.</p> <p>If the system is implemented in a manner that prints coupons for specific, allowable food items, then restricting purchase to allowable food items can be enforced by the paper CVV, not the cashier.</p>	

**Table 6. Electronic Couponing**

Discussion Item	Analysis	Comments
Implementation barriers	<p>WIC participants have limited Internet access, and some do not have experience using computers.</p> <p>Clients would have to use multiple tender types to purchase their WIC food items.</p> <p>Absent a national standard of allowable fruits and vegetables and a federal implementation of this option, States would have to develop and maintain an electronic coupon system, which is outside their experience and would increase their costs.</p> <p>If a generic fruits and vegetables coupon is used, there is no way to restrict purchases to allowable food items.</p>	
Strengths	<p>Electronic coupons are similar to a paper CVV/check with which clients and retailers have experience.</p> <p>Establishing a website to perform this function should not be too complex in terms of development or maintenance. States already maintain these lists in some format, usually available on their State websites.</p> <p>The capacity exists to offer client choice and enforce the purchase of allowable foods without having to maintain and build interfaces to database of UPCs and PLU codes.</p>	<p>It may be possible to develop a hybrid between electronic coupons and paper CVVs/checks. If clients could not negotiate an online system, they would have the option to fill out a paper form, choosing their food items and the amount of money to be spent on each. Clinic staff would input these choices into the system and print the coupons for the client.</p>

**Table 7. Paper Cash Value Voucher/Check**

Discussion Item	Analysis	Comments
Current level of use	Paper CVVs/checks are the predominant tender type used in the WIC program. With the exception of Wyoming, most State Agencies use either paper checks or vouchers.	Retailers prefer checks because the automated systems support their processing, creating operational efficiencies.
Client access	Paper CVVs/checks offer convenient access to clients who typically pick them up every 3 months at their local WIC office and participate in nutrition education or other instruction during the same visit.	
Benefit maximization	Paper CVVs/checks would be issued for a specific dollar amount, and it is unlikely that retailers and State policy makers would be willing to give change if the value of the coupon exceeded the value of the items purchased. While the CVVs/checks could be broken into small denominations, thus mitigating benefit loss, this option is not supported by retailers because the number of transactions would increase. Additionally, clients believed they would spend their entire household benefit amount for fruits and vegetables during a single shopping trip.	The California and New York WIC fruits and vegetables pilot programs, which used paper instruments, did not allow participants to receive change.

**Table 7. Paper Cash Value Voucher/Check**

Discussion Item	Analysis	Comments
Client ease of use	<p>The redemption of vouchers/checks is a standard transaction in the current WIC program and would be easy for clients to use. However, it will be difficult for clients to estimate the quantity of bulk fresh fruits and vegetables that would add up to the value specified on the voucher/check, making it likely that there would either be lost benefits or difficulty reducing the amount of produce in the lane or paying the difference in a separate transaction. Additionally, clients would have to use a separate transaction for their fruits and vegetables as they do with WIC checks.</p>	
State system implications	<p>This option requires changes to State systems to issue new types of vouchers/checks and to facilitate reconciliation and payment with vendors. A new data type, a dollar amount, would have to be added and tracked.</p>	<p>For those States in the process of system upgrades or new system development, the timing of implementation is important to mitigate risk and ensure that adequate funding is available for system changes.</p>
State/local staff implications	<p>State staff or contractors: Define user requirements, develop new system functionality, and test new system functionality</p> <p>State, local, or contract staff: Additional monitoring to ensure that the new benefit is executed properly</p>	

**Table 7. Paper Cash Value Voucher/Check**

Discussion Item	Analysis	Comments
Retailer system implications	There would be minimal change to retailer systems to account for the new voucher. The process for settlement and payment would be the same as other WIC checks or vouchers they process.	
Check-out lane dynamics	<p>Going through the check-out lane should be quick because the coupons can be scanned.</p> <p>Time in the lane may be increased if clients are allowed to add their own money to complete a transaction, or the quantity of produce has to be reduced.</p>	
Cost implications for all stakeholders	<p>Development and maintenance of the electronic coupon website or other interface</p> <p>Printing costs.</p> <p>Internet connection fees</p> <p>Software development costs for State system modifications to track issuance and facilitate settlement and payment to retailers</p> <p>In some States, contract modifications for local Agency/clinic contracts to reflect a new scope of work to handle providing assistance to clients in using the additional paper CVV</p>	

**Table 7. Paper Cash Value Voucher/Check**

Discussion Item	Analysis	Comments
Program integrity	<p>A paper CVV is open to counterfeiting, although low dollar amounts make this activity unlikely.</p> <p>If the system is implemented with a generic fruits and vegetables CVV, then the cashier would have to enforce the purchase of allowable foods.</p> <p>If the system is implemented in a manner that prints paper CVVs for specific, allowable food items, then restricting purchase to allowable food items can be detailed on the paper CVV, making enforcement easier for the cashier.</p>	
Implementation barriers	<p>Clients may have to use multiple tender types to redeem their WIC food items, depending on the WIC Agency.</p> <p>If a generic fruits and vegetables paper CVV is used, there is no way to restrict purchases to allowable food items.</p>	

**Table 7. Paper Cash Value Voucher/Check**

Discussion Item	Analysis	Comments
Strengths	<p>A paper CVV is similar to a paper WIC prescription voucher/check with which clients and retailers have experience.</p> <p>This low-cost solution is the easiest and quickest to implement.</p> <p>Using paper CVVs requires limited system development for States.</p> <p>Authorized vendors do not need new infrastructure.</p> <p>The capacity exists to offer client choice and enforce the purchase of allowable foods without having to maintain and build interfaces to a database of UPCs and PLU codes.</p>	

## 4.4 Comparative Analysis

To assess the six alternatives, it is important to compare their capabilities, strengths, and weaknesses. This section provides a comparison across multiple variables segmented into three categories: client impacts, retailer impacts, and State impacts as shown in Table 8, Table 9, and Table 10. Section 4.3 discussed each of these variables by alternative to assist in understanding the brief assessment found in these tables.

### 4.4.1 CLIENT IMPACTS

**Table 8. Impacts of Alternatives on Clients**

Capabilities, Strengths, and Weaknesses	EBT, Magnetic Strip, Online	EBT, Smartcard/ IC, Offline	Store Gift Card, Magnetic Strip, Closed Loop	MasterCard®/ Visa® SVC, Magnetic Strip, Open Loop	Electronic Coupons	Paper CVV/Check
Easy access to benefit?	Yes	Yes	No	Yes	No	Yes
Easy to use at the store?	Yes	Yes	Yes	Yes	Yes	Yes
Carry over benefit amount to next transaction?	Yes	Yes	Yes	Yes	No	No

#### 4.4.2 RETAILER IMPACTS

**Table 9. Impacts of Alternative on Retailers**

Capabilities, Strengths, and Weaknesses	EBT, Magnetic Strip, Online	EBT, Smartcard/ IC, Offline	Store Gift Card, Magnetic Strip, Closed Loop	MasterCard® / Visa® SVC, Magnetic Strip, Open Loop	Electronic Coupons	Paper CVV/Check
Software changes?	Changes to cash register devices (monitor foods, new tender type) and POS systems	Significant new investment for most retailers	Many retailers have to implement new systems	Only for those retailers not currently processing credit/debit cards	Changes to cash register and POS devices to accept new coupons, new tender type for POS systems	Changes in data sent to State for payment and reconciliation for some vendors with automated processes
Hardware investment?	Only those retailers not processing Food Stamp benefits	Most retailers require new servers and new or different POS devices	POS devices need to support a closed-loop solution	Only for those retailers not currently processing credit/debit cards	Only those retailers without the ability to redeem coupons (some WIC-only retailers)	None
Other costs?	Banks fees for accepting ACH deposit; transaction fees	Banks fees for accepting ACH deposit	Banks fees for accepting ACH deposit; contract with a gift card vendor	Banks fees for accepting ACH deposit; interchange fees to Visa®/ MasterCard®	Banks fees for accepting ACH deposit; time and cost to process paper coupons	Banks fees for accepting ACH deposit

**Table 9. Impacts of Alternative on Retailers**

Capabilities, Strengths, and Weaknesses	EBT, Magnetic Strip, Online	EBT, Smartcard/ IC, Offline	Store Gift Card, Magnetic Strip, Closed Loop	MasterCard® / Visa® SVC, Magnetic Strip, Open Loop	Electronic Couponing	Paper CVV/Check
Enforce purchase of allowable foods?	Technology supports	Technology supports	Cashier has to enforce	Cashier has to enforce	Technology could support, depending on implementation	Cashier has to enforce
Easy to implement?	3–4	4	5	1–2	3	2–3

The rating for the Easy to Implement row is a Likert scale, where 1 is very easy to implement and 5 is very difficult to implement.

**4.4.3 STATE IMPACTS**

**Table 10. Impacts of Alternatives on States**

Capabilities, Strengths, and Weaknesses	EBT, Magnetic Strip, Online	EBT, Smartcard/ IC, Offline	Store Gift Card, Magnetic Strip, Closed Loop	MasterCard® / Visa® SVC, Magnetic Strip, Open Loop	Electronic Couponing	Paper CVV/Check
Software changes to State systems?	Yes	Yes	Yes	Yes	Yes – could be significant to build a new system	Yes

**Table 10. Impacts of Alternatives on States**

Capabilities, Strengths, and Weaknesses	EBT, Magnetic Strip, Online	EBT, Smartcard/ IC, Offline	Store Gift Card, Magnetic Strip, Closed Loop	MasterCard® / Visa® SVC, Magnetic Strip, Open Loop	Electronic Coupons	Paper CVV/Check
State hardware investment?	May have to purchase EBT POS devices for retailers without them	Purchase compatible POS devices and perhaps services for retailers	Purchase compatible POS devices and perhaps services for retailers	Retailers without POS devices may have to purchase them for debit/credit transactions	Server to host new system and printers at local Agencies to print coupons	May need new printers or replace existing printers more often because of higher volume
Other costs?	Cards; EBT vendor; testing	Cards; EBT vendor; testing	Cards; testing	Cards; testing; increased monitoring	Printing costs; Internet access; increased monitoring	Printing costs; increased monitoring
Compliance issues?	Significant labor costs associated with enforcing the purchase of allowable foods	Significant labor costs associated with enforcing the purchase of allowable foods	Cannot meet the “any authorized vendor” requirements	Relies on cashier to restrict purchase to allowable foods	Need to develop coupons accepted by all participating retailers	Relies on cashier to restrict purchase to allowable foods
Program integrity issues?	PIN may reduce trafficking	PIN may reduce trafficking	No PIN or signature required	PIN/signature may reduce trafficking	Difficulty monitoring repeat use of coupons	Similar to current level of controls
Easy to implement?	4–5	5	5 + (not feasible)	1–2	5	1–2

The rating for the Easy to Implement row is a Likert scale, where 1 is very easy to implement and 5 is very difficult to implement.

## 5. CONCLUSION

This section presents the key findings of analyzing the six alternatives for implementing a CVV program and presents some issues for States to consider before implementing a program.

### 5.1 Key Findings

The following list describes the key findings:

- ***Monetary Investment.*** Regardless of the CVV option chosen, States and retailers need to invest some money to implement a CVV program. The option requiring the least up-front investment is creating new paper CVV/check with a dollar amount and a specification for its use for the purchase of fruits and vegetables. While this alternative may be the easiest to implement, it offers no automated process for restricting what foods are purchased, thus requiring retailers to police the benefit to ensure that only allowable fruits and vegetables are purchased. If States maintain the flexibility to decide which fruits and vegetables are allowed, then there will be significant variation across the nation, requiring inter-state retailers to enforce multiple standards. Additionally, this alternative may be more costly than EBT because of training check-out clerks, policing the food items purchased, cashier mistakes, and State costs to process checks and vouchers and reconcile them.
- ***Infrastructure Investment.*** Any CVV instrument other than a paper CVV/check requires an infrastructure investment by either the State or approved WIC retailers accepting the CVV. Investment could be significant for retailers that currently do not process any card-based tender types.
- ***Stakeholder Viewpoint.*** Most stakeholders interviewed reported that the only alternative that could be implemented within the next 12 months would be a paper alternative, with some stakeholders believing a stored value card solution, which relies on the store clerks to enforce the purchase of allowable foods, is an option for a short-term implementation.
- ***Allowable Fruits and Vegetables.*** States feel strongly about having the flexibility to decide which fruits and vegetables are available for selection in their States. Clients feel strongly that they want as much choice as possible in their selection of fruits and vegetables. Retailers want to minimize variation across States to create a more efficient implementation, suggesting that a national standard for implementation, transaction processing, and allowable fruits and vegetables is desirable.
- ***Tender Type.*** Participants prefer card technology for their tender type because it allows them to carry forward a balance, reduces stigma, and simplifies their transaction. The

specific card technology (magnetic strip, smartcard, or open or closed loop) makes no difference to clients as long as they can use the card at any participating retailer.

- ***Barriers to Implementation.*** Lack of internet access and being computer illiterate are barriers to a CVV alternative that requires participants to use the internet to facilitate the purchase of fruits and vegetables. Given the diversity in literacy levels, computer literacy levels, and access to the internet, the solutions that use electronic couponing and internet pre-order and pick-up are not feasible at this time. However, internet technology may be used by local staff that issues the benefit to facilitate creating a paper CVV/check that specifies a dollar amount by food item.
- ***Cost-Effective Technology.*** Given the relatively small volume of WIC transactions and the small dollar value of each CVV, retailers wish to avoid expensive system investments to implement a CVV program for fruits and vegetables. Although a long-term Total Cost of Ownership (TCO) of offline, smartcard WIC EBT systems may prove the most cost-effective technology compared to other alternatives, the current perception among the retail community is that an online system taking advantage of the current infrastructure is less costly and more likely to succeed. According to the interviews conducted for this study, most retailers seem to prefer online EBT cards; open-loop, magnetic strip prepaid debit cards; or a check for the fruits and vegetables CVV. There is likely to be some disagreement with this conclusion, however, among retailers implementing an offline EBT system.
- ***Administrative Issues.*** Mandating full accountability of foods purchased may not be practical in the short term. The absence of universally accepted PLU codes makes the enforcement of purchasing only allowable foods administratively difficult and costly. The current WIC paper vouchers/checks rely on cashiers to enforce and disallow payment for items improperly redeemed by participants. Most States using WIC EBT systems do not include items with PLU codes or random weight items in their approved food lists because of their complications. The only viable CVV option that can restrict items purchased without referencing a master database of UPCs/PLU codes or rely on cashiers is some form of electronic couponing where clients choose (either over the internet or with the assistance of local WIC office staff) specific allowable foods and cash amounts to purchase those foods (up to the total benefit level for the month) and then print those selections in the form of an coupon which is accepted at all available WIC retailers.

While limiting purchases to specified food items may be administratively difficult, all the card technology options possess the capacity to limit the use of the card to certain merchants. This level of internal control is comparable to the current level of control available in current paper voucher/check-based WIC programs. Retailers do not want their cashiers to have the responsibility for policing the use of the benefit to ensure that only allowable foods are purchased. Although RFID cards and low-cost, paper magnetic strip cards are used successfully for certain types of transactions, food retailers would need to make substantial infrastructure investments for their use to support a WIC CVV to purchase fruits and vegetables.

## 5.2 Key Considerations

The following list describes the key considerations for States in implementing a CVV program:

- ***Developing National Standards.*** The development of national standards will make the implementation of a CVV for fruits and vegetables more efficient and cost effective. Similar to WIC EBT, standards could be developed for transaction processing, data exchange between the retailers and States, and allowable UPCs and PLU codes. Multiple stakeholders supported the recommendation by one State to have a national Joint Application Design (JAD) session to develop standards.
- ***National Database of Allowable CVV Product.*** Similar to the National UPC database being developed by FNS, there should be consideration for a national database that defines the fruits and vegetables allowable for the WIC CVV. One of the fears expressed by the Retailer Associations and a number of the retailers is variability of allowable fruits and vegetable within States. The retailers expressed a desire to have a single, national set of food items that would be allowable for the fruits and vegetables CVV.
- ***Developing an Optional National CVV for WIC Fruits and Vegetables.*** Although it may be a departure from the current practice of State implementation, the USDA could offer a CVV option for States to use until such time as they are able to incorporate a CVV for fruits and vegetables into their current WIC systems. Three possibilities are (1) a national WIC EBT card, (2) a stored value card (open-loop, magnetic strip prepaid debit card), and (3) the electronic coupon option where clients choose (with or without help from the local Agency) food items and dollar amounts for allowable foods and then print coupons reflecting those choices.
- ***Giving States Time and Flexibility to Implement the CVV for Fruits and Vegetables.*** Given the different development paths for WIC automation and the necessity to make significant programmatic and system changes, flexibility in terms of time frames and CVV choice may be helpful if States are responsible for implementing the CVV with current resources.

## **APPENDIX: METHODOLOGY**

Research methods used in this report include a literature review, structured interviews, and focus groups. The project began with a literature review and then a focus group with an Expert Panel to identify alternatives, potential interviewees and key factors for data collection and analysis. The literature review included a survey of industry and academic publications, a review of existing EBT and CVV evaluations, and a review of technical documentation related to the full cycle of transactions necessary for a CVV implementation.

The Expert Panel consisted of representatives from USDA, state government, local WIC offices, EBT vendors, the Food Marketing Institute, and academia. The Expert Panel offered guidance and input throughout the project including recommendations of interviewees, confirmation on CVV options for analysis, and comments on the CVV descriptions and alternatives analysis.

Structured interviews were conducted with representatives from State WIC programs, local WIC offices, card technology vendors (including EBT vendors), cash register vendors, payment association representatives, and food retailer representatives. All interviews are listed in the Bibliography. Additionally, a focus group was held with current WIC participants to gather information about their experience, preferences, and assessment of different CVV alternatives.

## LIST OF ABBREVIATIONS AND ACRONYMS

ATM	Automated Teller Machine
BIN	Bank Identification Number
CPCM	Cost Per Case Month
CVV	Cash Value Voucher
EBT	Electronic Benefits Transfer
FNS	Food and Nutrition Service
FSP	Food Stamp Program
IC	integrated circuit
ID	indentifier
IFPS	International Federation for Produce Standards
IP	Internet Protocol
JAD	Joint Application Design
PEIB	Produce Electronic Identification Board
PIN	Personal Identification Number
PLU	Price Look-Up
POS	Point of Sale or Point of Service
RFID	Radio Frequency Identification
SIM	Subscriber Identification Module
SVC	stored-value card
TANF	Temporary Assistance for Needy Families
TCO	Total Cost of Ownership
TWIC	Transportation Worker Identification Credential
UPC	Universal Product Code
USDA	United States Department of Agriculture
WIC	Women, Infants, and Children

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