

Special Supplemental Nutrition Program for
Women, Infants and Children (WIC)

WIC Electronic Benefits Transfer (EBT) Cost Analysis Model

2009

Introduction

The WIC EBT Cost Analysis Model is intended to support the creation of a State's WIC EBT Feasibility Study and/or Implementation Advanced Planning Document (IAPD) by providing a tool for calculating the detailed costs of alternative WIC EBT solutions and capturing the benefits and risks of WIC EBT. The purpose in creating and using a model across all States is to support uniformity in cost, benefit and risk assessments.

The WIC EBT Cost Analysis Model has the capability of assessing up to five different alternatives:

1. Baseline -- The "as-is" environment of the existing paper-based system
2. On-line WIC EBT using outsourced services
 - a. Acquired through a separate procurement process *or*
 - b. Acquired through the use of the State's existing contract with an EBT service provider
3. Off-line WIC EBT using outsourced services
4. On-line WIC EBT using in-house processing
5. Off-line WIC EBT using In-house processing

A State is not required to assess all of the WIC EBT alternatives with this model. Rather, the State should first determine which alternatives may be viable within their State's environment. If an alternative is not considered viable for the State and subsequently is not assessed in detail, the State may want to provide its reasons for rejecting the alternative within its business case. Regardless of the number or type of alternatives assessed by the State, the State should ensure that applicable planning activities, cost analyses and documents follow the guidelines of the U.S. Department of Agriculture (USDA), **Food and Nutrition Service (FNS) Handbook 901** (Advanced Planning Document Handbook), August 2007.

Organization of the Model

The WIC EBT Cost Analysis Model is an *Excel* workbook, with worksheets organized as follows:

- An index sheet with hyperlinks to each of the worksheets in the workbook
- A worksheet that lists WIC program and other applicable data that may be necessary to complete the analysis
- A detailed summary sheet that pulls in cost, benefit and risk data from the subsequent spreadsheets
- A baseline summary that pulls in all baseline cost data associated with the paper-based WIC environment
- Baseline worksheets for state, local and retailer data
- WIC EBT worksheets for implementation and operation costs for state, local and retailer data
- A benefit analysis worksheet
- A risk analysis worksheet

Using the Cost Analysis Model Spreadsheets

It is understood that there are common elements in all States' WIC processes but that each State may have its own unique processes, materials and requirements that may not be applicable to other States.

Therefore, the worksheets in this Model have been designed to be flexible. Some general notes about the workbook and worksheets include:

- All worksheets are locked to protect formulas but are not password protected. This will allow States to add, delete or modify formulas, elements or formatting where necessary.
- Activities, materials and services found throughout the workbook are provided as a guideline to the State conducting the analysis. Line items may be changed or deleted or new items may be added to fit the State's specific activities, materials, and requirements.
- Throughout the workbook, States are to enter only the cost elements associated with the paper-based or WIC EBT benefit issuance, redemption and settlement, and retailer activities. A guideline for determining which baseline costs are captured is to ask whether the process, material, service or fee will be impacted by WIC EBT. If the answer is yes, then this process or material should be captured in the cost model.
- Except for specific items, such as contracted banking and WIC EBT services, the workbook is designed to calculate cost of living increases for out years. Regardless of whether a cost is associated with the baseline, WIC EBT implementation or WIC EBT operations always enter the current actual or estimated costs.
- Worksheets are currently formatted for printing specific cells. If additional rows or columns are added print areas may need to be redefined.

Getting Started

Index Page

Enter the name of the State agency conducting the analysis in the orange box on the index sheet. This name will be replicated throughout the workbook.

The Analyst may also enter any general assumptions used by the State to complete the workbook.

State Specific Quantities

The worksheet titled "State-Specific Quantities" has been created to assist the State identifying the data elements that may be needed or considered to complete the model. Shaded quantities are values that are automatically pulled into other spreadsheets, so they *must* be entered. Additional elements that are State-specific may be added to the list.

The Analyst will need to acquire the labor rates, including fringe benefits, for applicable employee and contractor labor categories.

Summary Sheets

The Detailed Summary Sheet and the Baseline Summary Sheet have been designed to pull data in from subsequent worksheets. These sheets represent the end products of the cost study activities. No data entry is required for these worksheets.

Baseline Data

Baseline cost information consists of the following:

- State Labor: The activities of State employees and contractors that support paper-based processes.
- Clinic Labor: The activities of employees and contractors at the regional and local clinic levels that support paper-based processes.
- State Materials: The materials that support paper-based processes at the State and clinic levels.
- Banking: The costs incurred for settlement and payment; usually these are the costs associated with the State's banking contractor.
- Retailer: These are *retailer-borne* costs that are associated with paper-based WIC. It is meant to capture only those costs that would be alleviated with the implementation of WIC-EBT.

Capturing State and Local Time Spent on Paper-Based Processes

A planning cost benefit analysis is a comparison of the “as-is” against “to-be” environments. This means that the time to conduct activities within the “to-be” environment must be estimated, based on the experience of the State and the limited number of States that have deployed WIC EBT. Comparing one State's paper processes against another State's WIC EBT processes is not the same as conducting a direct comparison of activities within the same State, as is done with pilot evaluations.

As a State's paper-based activities will be compared against WIC EBT estimations, a detailed three-month time study is not required and the specific approach in capturing baseline staff time may be defined by the State. Nevertheless, while assessing its “as-is” environment, a State should endeavor to capture the time that staff and contractors spend on paper-based WIC activities to the greatest degree of accuracy. At a minimum, the State should:

1. Capture the workflows at the State and local levels, ensuring all work elements associated with the paper-based system and that will be impacted by WIC EBT are identified.
2. Use time study/capture sheets to capture the times of repetitive activities at the State and local levels or use stop-watches to record times while observing the activities. The length of a time study or number of observed transactions may be determined by the State, but should be sufficient to capture a sampling of repetitive activities.
3. Request staff and contractors to provide their best estimates for non-repetitive (occasional) activities. For example, an estimate for ordering voucher stock may be two hours each quarter.

The spreadsheets that calculate State, local and contractor labor costs require the Analyst to enter the applicable labor rate, the estimated number of transactions per year and the estimated **minutes** per transaction. For example, a WIC clinic associate may have a labor rate of \$25.00 (including fringe benefits). The State may determine it has 25,000 WIC issuance transactions per year. If time studies indicated that it takes an average of 2.5 minutes to issue a three-month packet of food instruments, then the estimated cost per year would be \$26,042.

In the case of the State-level employee ordering blank vouchers, there would be four transactions per year, at a labor rate of \$30.00 and 120 minutes per transaction, at a total labor cost of \$240 per year. *Note:* The worksheets will add the State's overhead rates to the calculated labor cost.

Baseline State and Local Materials Costs

These costs include materials and maintenance fees and are calculated by multiplying a cost per unit times an estimated annual quantity. As shipping is sometimes charged to the WIC agency, the

spreadsheet allows entry of the total annual shipping cost. *Note:* Because there are various ways that shipping charges are assessed, the spreadsheet does not calculate the shipping cost based on quantities. The Analyst must calculate the annual shipping cost and enter the total amount into the spreadsheet.

Baseline Banking Costs

Banking costs are the funds paid to the banking service provider to reconcile food instruments, draw down funds from the State's financial institution, and settle funds to retailers. In general, these costs can be obtained from the provider's invoices. Enter the cost per unit and the annual quantity. The worksheet will calculate the estimated cost per year. As these are contracted services, the fees are assumed not to be subject to inflation during the out years.

Baseline Retailer Costs

This spreadsheet is intended to capture retailer-borne costs that will likely be eliminated or mitigated if WIC EBT is implemented by the State. **It is not required to use this spreadsheet or to calculate any items within this spreadsheet to prepare the cost benefit analysis.** However, the spreadsheet can capture important cost information that may be used to support WIC EBT within the retailer community and to support the State's overall business case. This spreadsheet is divided into two sections – costs subject to inflation (labor) and costs that are not likely to be subject to inflation (fines, bank fees, interest rates, etc.)

In-Lane Costs

The State does *not* have to capture and calculate the costs for a paper-based purchase in-lane for this cost analysis. If a State opts to show this cost, it should follow the processes described within the WIC EBT National Evaluation Model, understanding that conducting the transactions with the actual items described within the Model are not as important as purchasing the same *quantity* of items. Again, the time comparison would be an actual paper-based transaction in one State against a WIC EBT transaction conducted in another State.

Back-Office Costs

These costs are related to activities such as preparing bank deposits, handling rejected vouchers, and training personnel. To calculate these costs, the Analyst will need to obtain data (labor rates, estimated times, etc.) through the use of site visits, interviews or surveys of the State's retailers.

Fines, Fees, and Interest

In addition to labor costs, there are a number of other ways that **a retailer can incur costs or losses in the paper-based environment that will likely be alleviated with WIC EBT.** These include:

- Non-payment for Food Instruments that were rejected by the banking contractor and were not able to be resubmitted for payment. Often these rejects are the result of errors made at the cash register, such as accepting a voucher that is outdated. Only record the errors that will not occur in the WIC EBT environment.
- Non-payment for amounts that exceed the maximum allowable amount of the food package. There are obvious reasons for this and also non-obvious reasons. For example, a cashier may reverse the order of registering a client's vouchers. This means that if a client has two vouchers, one for a \$25 food package and one for a \$10 food package, the cashier will ring up the \$25 food package on the \$10 voucher and vice versa. The retailer is then paid \$10 for the

\$25 food voucher and \$10 for \$25 worth of food on a \$10 food voucher – a total of \$20 for \$35 of food and a loss of \$15 to the retailer.

- Bank fees assessed to retailers for rejected vouchers.
- Cost of money – Payment on a voucher may take 3-5 days from the date of purchase; payment for WIC EBT is usually done within a 24-hour settlement period. There may be a cost to the retailer for the delay in settlement time. This can be calculated by multiplying the number of units (total amount settled over the period of one year) by the annual interest rate for three to five days. $((\text{Annual Interest Rate})/365 \text{ Days}) * (\text{Number of days to settle a voucher-one day})$
- Fines assessed to retailers for repeated errors that would not occur in the WIC EBT environment.

WIC EBT Costs

WIC EBT costs are calculated using the same formulas as in the paper-based system. The main difference is that transaction times and quantities of materials are estimated. States should use existing documentation, such as other States' pilot and program evaluations, contracts, and in-house IT pricing to create the most accurate estimations.

To create the Model, there were basic assumptions made concerning WIC EBT **operational** costs. These are:

- State-level labor costs for an in-house solution will be the same, regardless of whether the system is an on-line or an off-line system.
- State-level labor costs for an outsourced solution will be the same, regardless of whether the system is an on-line or an off-line system.
- Regional and local labor costs for an on-line system will be the same, regardless of whether it is an in-house or outsourced solution.
- Regional and local labor costs for an off-line system will be the same, regardless of whether it is an in-house or outsourced solution.
- Retailer-borne operational costs will be the same, regardless of the solution.

State Level Labor

There are two worksheets to capture State-level labor costs – one for implementation and one for operations. Implementation and operational activities may be assigned to staff or to contractors. Contractors are separated from staff on the worksheets because the labor overhead charges are sometimes different.

The worksheet that captures implementation costs allows the Analyst to capture up to two full years of data, defined as the Design, Development and Testing Phase and the Implementation Phase. The worksheet requires entering the time period worked in months. By entering the time period in months, the Analyst can specify the number of months worked on an activity during each of the phases. For example, if the design phase is expected to last nine months, then an entry may be Project Manager, \$40 (labor rate), 1 (FTE), 9 (months), for a cost of \$62,280. In this way, the State may define the limited activities of some staff, such as "Test Specialist", and the limitations of a phase, for example a rollout in a very small State may be planned over six months. Design, development, and/or configuration fees assessed by an outsourced provider may be included in contractor labor cost or on the State Materials worksheet.

As with the baseline, the operations worksheet should reflect only those activities that have been impacted by WIC EBT. This worksheet should reflect one year of operations.

Regional and Local Labor

This worksheet is divided into two sections – one for implementation activities and one for operations. As with State-level labor, the worksheet should only reflect those activities that have been impacted by WIC EBT. The worksheet assumes no difference between an in-house or outsourced solution. For the most part, this difference should be transparent to the user. Note that in an off-line environment, benefits must be loaded onto the card – a transaction that is not necessary in an on-line environment.

Materials and Services

There are two worksheets for WIC EBT materials and services at the State and local levels: implementation and operations. As retailer costs borne by the State are complex, these are captured on a separate spreadsheet.

The implementation costs for materials and services are divided into two separate phases: Design, Development and Test Phase and the Implementation Phase. The model provides examples of the types of materials and services that may occur within each phase. Both phases will likely require travel. A line item for travel has been provided.

Operations costs should reflect one year of operations. Operations cost categories include the added cost of WIC EBT vendor fees associated with an outsourced solution. These fees are assumed to be consistent (not subject to inflation) over the contract period.

Retailer Costs (Borne by the State)

The items and quantities on this worksheet depend on the amount of support that the State provides to its WIC retailers to become WIC-EBT ready. This may include:

- Terminal integration – providing retailers with a set amount of funds, per lane, to support the retailers' efforts to integrate their own point of sale (POS) terminals for WIC EBT.

Loading Benefits: In an off-line system, benefits are recorded on the chip of the smart card. WIC staff must insert the card into a read/write terminal and allow time for the terminal to write the benefits to the card. If an error is made or a food package must be changed, the card must be inserted and the benefits removed and new benefits loaded to the chip. This does not take a lot of time, but it is an additional step when compared to on-line systems.

Key Ceremony: "Keys" are actually mathematical algorithms that provide security to card-based systems, databases and applications. A key ceremony is a secure process of passing the digital keys from a software provider or manufacturer to the client. A key ceremony will likely be required for in-house solutions to enable secure transactions between the host system and POS terminals. It will also be required for off-line systems so that terminals can securely read and write to the chip of the smart card. There is usually a fee assessed for a key ceremony.

Integrated Circuit Chip File Layout: For an off-line solution, the file structure of the chips on the smart card must be designed and loaded onto the smart card prior to delivery to the State. With an in-house solution, the State may incur a separate fee for the file layout. In an outsourced solution, it may be a separate cost or it may be rolled into the Cost per Case Month.

- Smart card terminal upgrade – providing funds to support the upgrade of existing terminals to accept smart card technologies.
- WIC EBT-only terminal configuration – includes terminal, printer, PIN pad and scanner (used to scan the Universal Product Code (UPC) bar codes on items purchased). The cost may be different for a magnetic stripe configuration and a smart card configuration.
- Electronic cash register (ECR) system purchase support – providing monetary support to retailers so that retailers can purchase a basic ECR system that is already integrated with the State's WIC EBT system. The cost may include the cost of one WIC EBT terminal configuration or the State may show this cost separately.
- ECR system integration support – providing a retailer with some or all of the funds necessary to integrate their existing ECR system with WIC EBT.

Retailer Costs (Borne by the Retailer)

These worksheets allow entry of any costs that the State assumes will be borne by the retailer during implementation and operations. Unlike the baseline, it does not provide placeholders for bank rejects, fines, etc., as the errors analyzed for the baseline are assumed to be eliminated under WIC EBT. *Note:* The use of this sheet is **optional**. It may be difficult to estimate and calculate retailer implementation costs, such as upgrades to terminals or ECR integration, as some of the information is proprietary and gathering the information depends on the cooperation of the retailer community. In addition, if the State captured only those retailer-borne costs in the paper-based environment that would be eliminated by WIC EBT, there would be no counterpart to report on this worksheet.

WIC EBT Benefits

This worksheet may be used by the State to identify benefits and place numerical ratings (values) on those benefits. List benefits that are non-quantifiable in dollar terms, such as:

- Improved data quality
- Greater reporting accuracy
- Availability of real-time transaction reports
- Greater security and privacy for participants

For each benefit assign a numeric rating of 1 to 5 (with 1 being the least benefit and 5 being the most benefit) that indicates the importance of the benefit to the State or to stakeholders (Column C): the level of impact the benefit is expected to make on the WIC program or its stakeholders (Column D): and the impact that the specific WIC EBT alternative will have on the benefit (Columns E-H). The spreadsheet will calculate average benefit ratings for each of the alternatives that are being evaluated. **(Note: If an alternative is not being evaluated, do not enter numerical values into that alternative's column.)**

WIC EBT Risks

This worksheet may be used by the State to identify risks and place numerical ratings (values) on those risks. In most risk methodologies, risks may be identified in one or more of the following categories:

- Organizational and Change Management
- Business
- Data and Information
- Technology
- Security
- Privacy
- Resources
- Schedule

For each identified risk, assign a numeric rating of 1 to 3 (with 1 being the least risk and 3 being the greatest risk) that indicates the level of risk of implementing EBT (Column C); and the impact of each alternative on that risk (Columns D-G). In other words, does the alternative decrease or increase the risk of WIC EBT? The spreadsheet will calculate the average risk ratings for each of the alternatives that are being evaluated. **(Note: If an alternative is not being evaluated, do not enter numerical values into that alternative's column.)**