



WIC Vendor Management Study, 2013

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SYSTEMS RESEARCH FOR BETTER HEALTH

Purpose

- Examine management of WIC retail delivery system and determine the extent to which WIC vendors adhere to program rules
 - Complete WIC transaction in accordance with proper program procedures
 - Allow only WIC allowable foods to be purchased
 - Charge the WIC program appropriately for the foods purchased
- Part of a larger effort to ensure WIC program integrity and to comply with the Improper Payments Information Act of 2002 (IPIA)

Background

- This study is the fourth of its kind
- Major changes to WIC program since last WVMS
- Needed to adapt study methodology accordingly
- *Arguably* the new baseline to which all future bookend studies will be compared



Study Methodology

Methodology

Data Sources

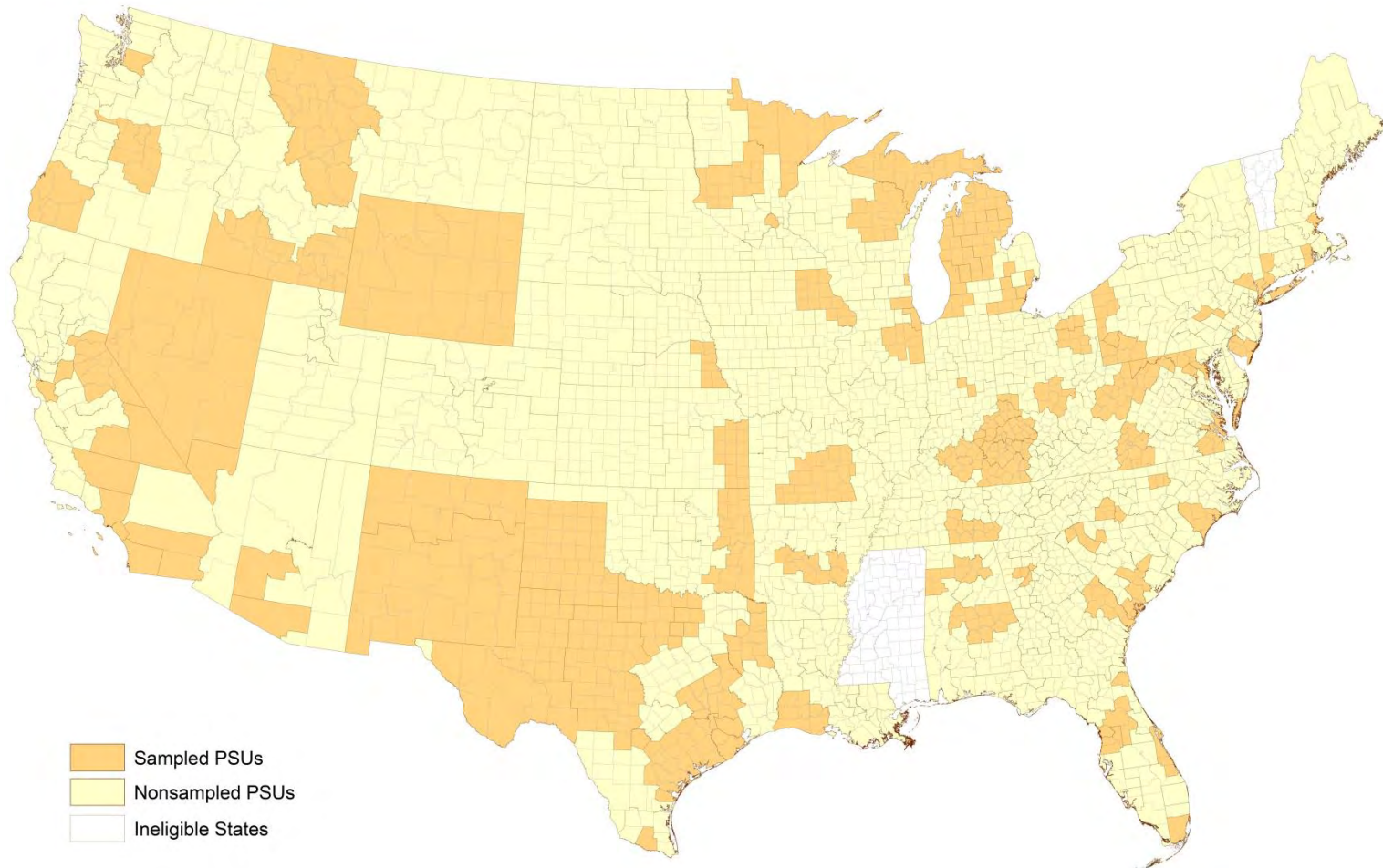
- WIC State Plans
 - Vendor management practices and policies
- The Integrity Profile (TIP)
 - Used to define sampling frame and select a nationally representative sample
 - Provided key info needed to develop sampling weights and national estimates
 - Vendor-specific info used in analyses
- Compliance buys
 - Source of outcome data and vendor-specific info used in analyses
- State agency reconciliation files
 - Redemption amount (submitted and paid)

Methodology

SAMPLING : Target Population

- All vendors authorized by State agencies with retail food delivery operations.
- Excluded from the study:
 - Direct delivery, home delivery, and military commissaries
 - Vendors operating in Alaska, Hawaii, Puerto Rico, the U.S. Territories, and ITOs
 - Pharmacies that provide special-order infant formula
 - Mississippi and Vermont (using home or direct delivery systems)
- 47 State agencies, including DC, were represented in the target population.

Primary Sampling Units (PSU)



Methodology

SAMPLING : Selecting the vendors

- 25 vendors randomly selected from each of the 119 selected PSUs
 - 16 for inclusion in the study
 - 9 for reserve vendors
- A total of 1,904 vendors were selected into the study sample
 - 640 EBT vendors and 1,264 paper FI vendors
- 1,071 vendors comprised the reserve pool

Methodology

COMPLIANCE BUYS : Procedures

- Vendors randomly assigned to receive a woman, child, or infant food package
- Three compliance buys conducted at each vendor between August and October 2013
 - Safe, partial, and substitution buys
- Buys included both a traditional WIC food instrument and a cash value voucher
 - For EBT, purchase of food items from both categories (traditional and cash value)

Methodology

COMPLIANCE BUYS: Procedures

- Safe Buy
 - CB intends to complete her WIC purchase as any WIC participant would if she were to follow the correct procedures.
- Partial Buy
 - CB intends to purchase some but not all of the items listed on the FI or, in the case of the CVV/CVB, less than the full the value of the benefit.
- Substitution Buy
 - CB attempts to substitute an unauthorized food item
 - Within an approved food category for minor substitution
 - Clearly outside an approved food category for a major substitution

Methodology

COMPLIANCE BUYS : Instrumentation

- Data was collected covertly using a smartphone application that was developed specifically for this study and comprised two main components
 - Food items fields
 - Questionnaire
- Comparable information collected between this and previous studies
- Advantages of using smartphone device over paper-based forms

Methodology

ANALYTIC DATA FILE: Analytic variables and data analysis

- Merged data from numerous sources into one analytic file
- Developed analytic variables
 - Administrative errors
 - Substitutions
 - Overcharge and undercharge
- Conducted analyses
 - Using SUDAAN

Study Findings

Vendor Characteristics

Findings

Characteristics of WIC vendors

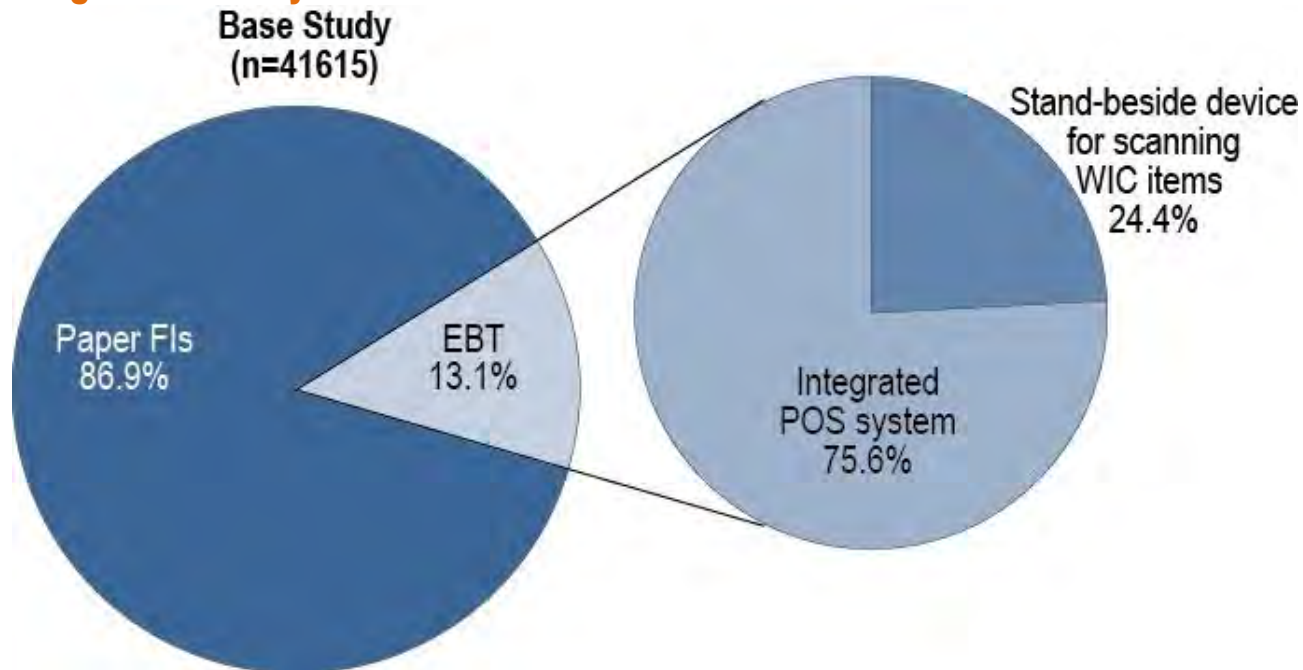
- One in four authorized vendors has 0-2 registers
- Percentage of vendors with 8+ registers increased between 1998 and 2005—from 34% to 40%—but has remained consistent since
- Scanning equipment present in 83% of vendors, up from 74% in 2005
- Nearly 17% of vendors are designated by their state as high-risk

Findings

Characteristics of WIC vendors

- More than 13% of authorized vendors are in EBT states
- Stand-beside devices present in 1 out of 4 vendors in EBT states

Percent of vendors accepting EBT, and among them, the percent of vendors with integrated POS systems versus stand-beside devices



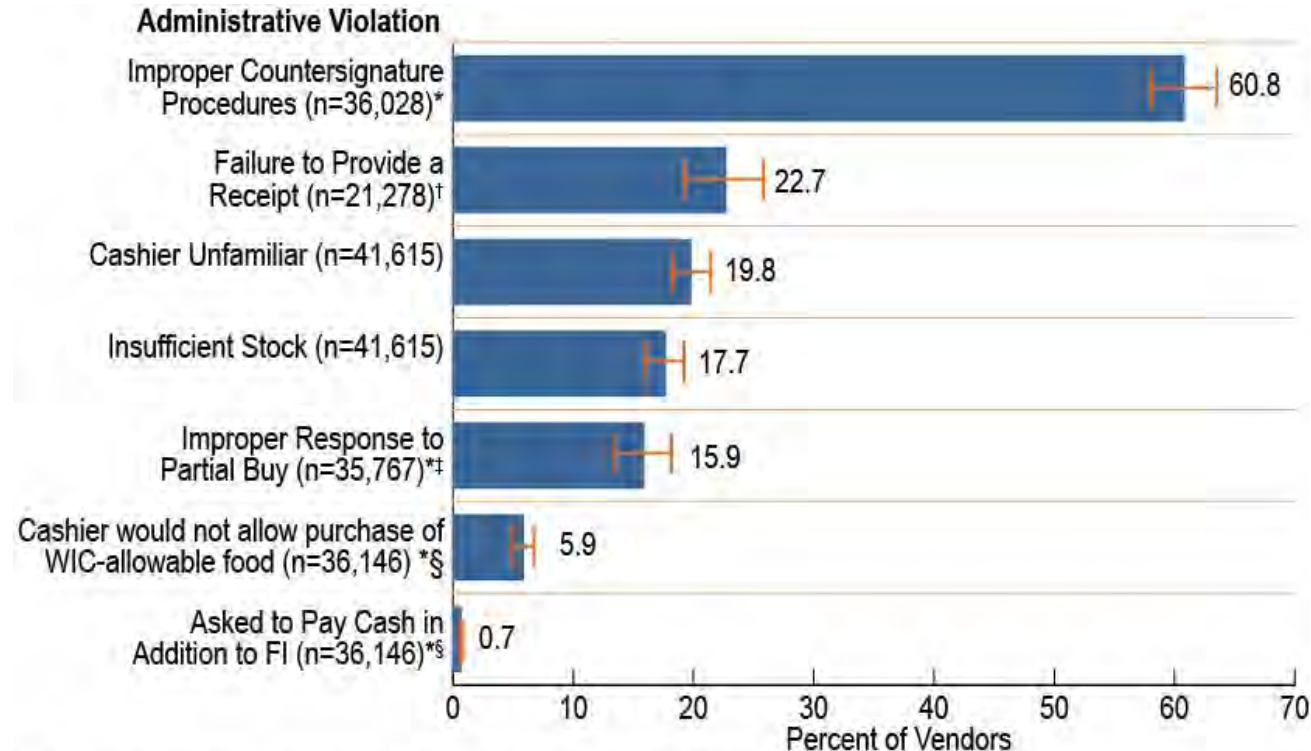
Study Findings

Administrative Violations

Findings

Administrative Errors

Percent of vendors committing each administrative error at least once across all three buys, base study



Note: Results are based on a weighted estimate of vendors that had three completed buys.

*Includes vendors in states that have paper food instruments. Not applicable to EBT states.

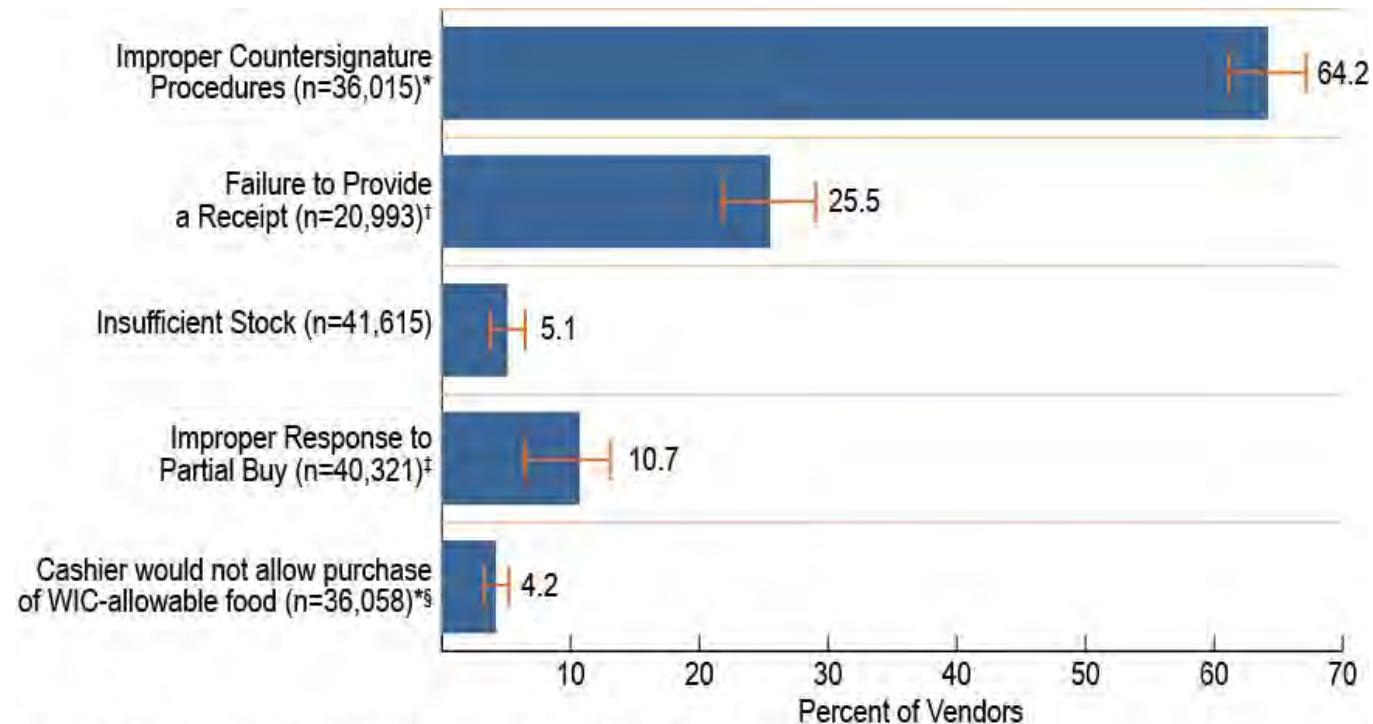
†Includes vendors in states that require provision of receipts to participants.

‡Vendors were provided with only one opportunity across all three buys to commit this error: during the partial buy. For the

Findings

Administrative Errors

Percent of vendors committing each administrative error at least once across all three buys, CVV study



Note: Results are based on a weighted estimate of vendors that had three completed buys.

*Includes vendors in states that have paper food instruments. Not applicable to EBT states.

†Includes vendors in states that require provision of receipts to participants.

‡Vendors were provided with only one opportunity across all three buys to commit this error: during the partial buy. For the CVV study, failing to permit a partial buy was the improper response.

Findings

Administrative Errors

- Improper countersignature procedures more common among:
 - Larger vendors (number of registers) and vendors with high volume of sales, in urban areas, without scanning equipment, and authorized by State agencies with a high vendor-to-participant ratio
- Failure to provide a receipt more common among:
 - Smaller vendors (number of registers) and vendors with low volume of sales, in small or isolated rural towns, without scanning equipment, and authorized by State agencies with paper FIs

Study Findings

Substitutions

Findings

Substitutions

- Development of analytic variables
 - Substitution identified as allowed if the CB indicated in the questionnaire that the cashier rang up the purchase and did not ask her to pay cash for the unauthorized items
- Unlike administrative errors and over- and undercharges, substitutions require the WIC participant to take action
- Study does not attempt to quantify the overall frequency of participant-initiated substitutions, only to determine how vendors respond when presented with this scenario
- CB's were instructed to follow the cashier's lead and not attempt to coerce the cashier to allow the substitution

Findings

Substitutions

Number and percent of vendors allowing buyer-initiated minor and major substitutions, base and CVV studies

	Base Study		CVV Study	
	Weighted N	% (SE)	Weighted N	% (SE)
Minor Substitution				
Accepted	7,500	18.4 (1.88)	16,584	42.4 (3.00)
Rejected	33,156	81.6 (1.88)	22,544	57.6 (3.00)
Major Substitution				
Accepted	2,297	5.6 (1.10)	7,223	18.2 (2.64)
Rejected	39,067	94.4 (1.10)	32,507	81.8 (2.64)

Findings

Substitutions

Percentage of vendors allowing major and minor substitutions in the 1998, 2005, and 2013 WVMS

	1998 Study	2005 Study	2013 Base Study	2013 CVV Study
	Percentage (SE)	Percentage (SE)	Percentage (SE)	Percentage (SE)
Minor substitutions	34.7 (2.65)*	27.8 (2.20)*	18.4 (1.88)	42.4 (3.00)
Major substitutions	3.7 (0.75)	6.5 (1.30)	5.6 (1.10)	18.2 (2.64)

*Statistically significant difference when compared to 2013 base study at $p < 0.05$.

Study Findings

Improper Payments

Findings

Overcharge and Undercharge

- Development of analytic variables
 - Determine best price
 - Identify potential over- and undercharges
 - Manual review to confirm an IP occurred
 - Yes/no and dollar amount variables created

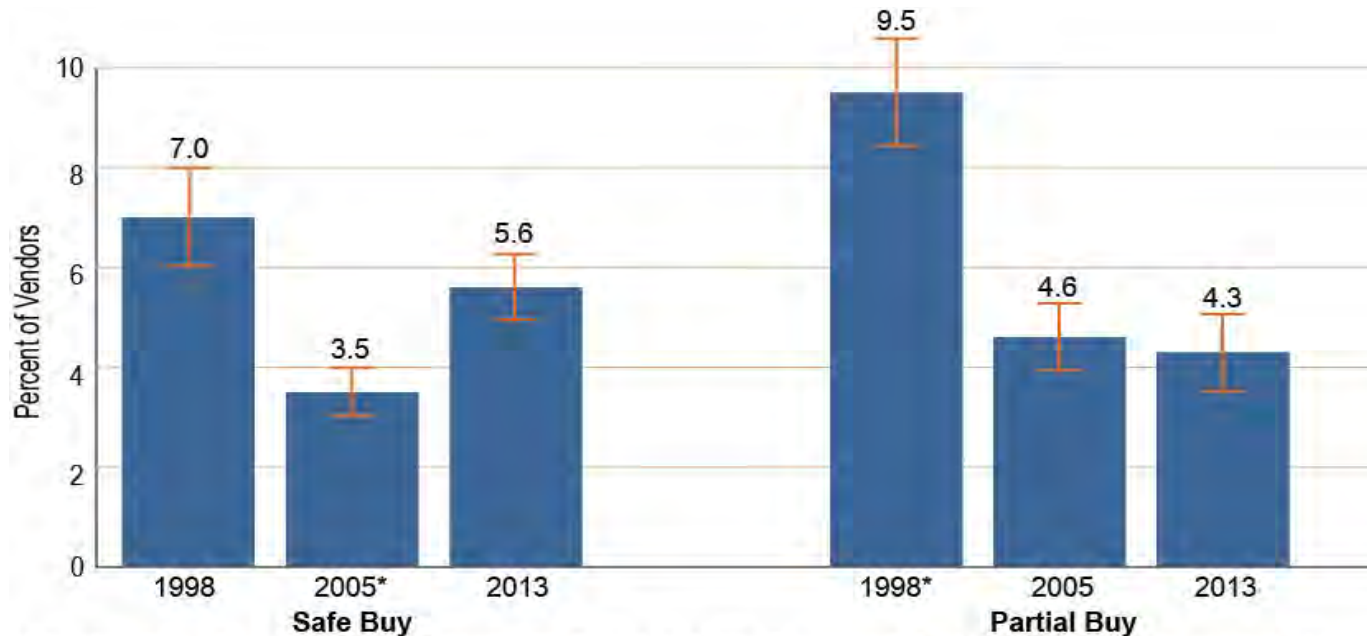


Findings

Overcharge

- Overall, the rate of overcharge increased for the base study safe buy, remained the same for base study partial buy

Percentage of vendors overcharging in the 1998, 2005, and 2013 WVMS



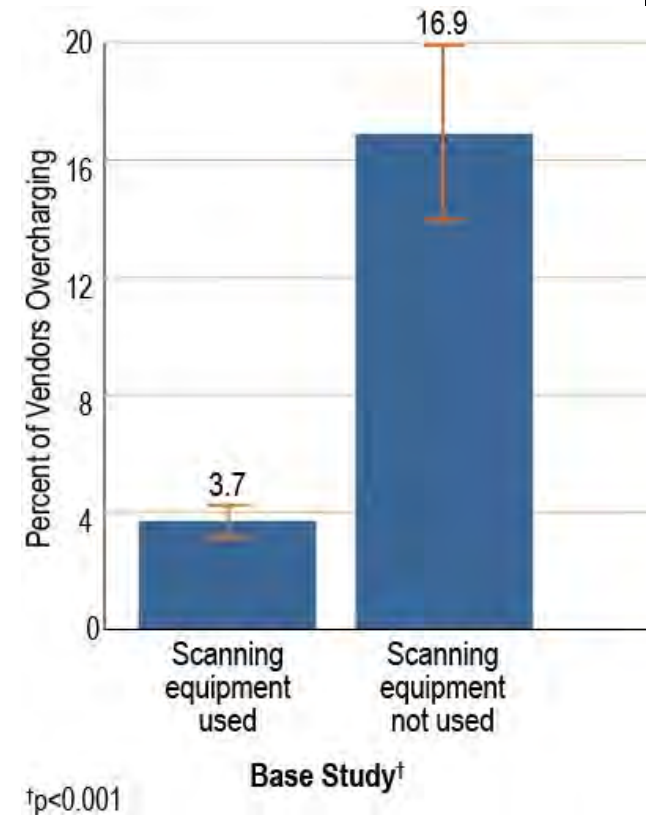
Note: Results are based on a weighted estimate of vendors that had a completed safe buy or partial buy, respectively.
*Statistically significant difference when compared to 2013 base study at $p < 0.05$.

Findings

Overcharge

- During the **base study**, higher rates of overcharge were observed among vendors with:
 - Smaller size (based on #of registers)
 - 14.4% (≤ 2 registers), 2.8% (8+ registers)
 - Lower volume of WIC sales
 - 9.9% ($< \$2,775/\text{mo}$), 3.6% ($\$15,880+/\text{mo}$)
 - No scanning equipment/did not use scanning equipment
- Vendors who failed to provide a receipt during the base study were 13.9 times (95% CI: 8.5 to 22.9) more likely to overcharge

Percent of vendors overcharging by use of scanner (n=38,975), safe buys



Findings

Overcharge

- During the **CVV study**, 5.2% and 7.4% of vendors overcharged during the safe and partial buys, respectively, and higher rates of overcharge were observed among vendors:
 - Without scanning equipment/did not use scanning equipment
 - 15.4% versus 3.0%
 - Who did not enter the purchase price or did not enter purchase price in front of the CB
 - 20.3% versus 2.9%
 - Authorized by State agencies with paper FIs
 - 5.5% versus 2.7% in EBT
- Vendors who failed to provide a receipt during the CVV study were 8.2 times more likely to overcharge

Findings

Overcharge

- Developed multivariate models to determine which vendor and State agency characteristics are the strongest predictors of overcharge
- New variable created to identify vendors who committed an overcharge on either the safe or partial buy
- Highly correlated characteristics were regrouped to simplify the model
 - # of registers combined with scanning equipment
 - Benefit type (EBT or paper) combined with State's receipt policy

Findings

Overcharge

Unadjusted and adjusted odds of vendors overcharging at least once, logistic regression model findings, base study

Base Study	OR	95% CI	p-Value (t-test)	AOR*	95% CI	p-Value (t-test)
Registers and scanning equipment						
0-2 registers, NO scanning equipment	7.0	4.41,11.01	<0.0001	5.0	3.04,8.31	<0.0001
0-2 registers, YES scanning equipment	3.7	2.03,6.88	<0.0001	3.8	2.09,7.06	<0.0001
3 or more registers	REF	--	--	REF	--	--
Volume of WIC sales in FY 2011 (monthly average)						
Low (<\$7,125)	1.9	1.31,2.85	0.0010	1.4	0.96,2.14	0.0761
High (\$7,125 or more)	REF	--	--	REF	--	--
Identified as high risk by WIC State agency						
Yes	2.3	1.35,3.98	0.0027	1.2	0.65,2.05	0.6170
No	REF	--	--	REF	--	--
Benefit delivery and receipt requirement						
Paper FIs / NO receipt required	3.0	1.73,5.32	0.0002	2.7	1.35,5.50	0.0057
Paper FIs / YES receipt required	1.2	0.62,2.14	0.6421	1.2	0.60,2.49	0.5752
EBT / receipt required (true for all EBT states)	REF	--	--	REF	--	--

*Model includes all significant predictors.

Findings

Overcharge

Unadjusted and adjusted odds of vendors overcharging at least once, logistic regression model findings, CVV study

CVV Study	OR	95% CI	p-Value (t-test)	AOR	95% CI	p-Value (t-test)
Registers and scanning equipment						
0–2 registers, NO scanning equipment	12.5	7.34,21.45	0.0000	10.0	5.51,18.19	0.0000
0–2 registers, YES scanning equipment	4.2	1.81,9.64	0.0010	5.3	2.17,12.88	0.0003
3 or more registers	REF	--	--	REF	--	--
Volume of WIC sales in FY 2011 (monthly average)						
Low (<\$7,125)	2.5	1.43,4.25	0.0013	1.6	0.86,2.77	0.1413
High (\$7,125 or more)	REF	--	--	REF	--	--
Identified as high risk by WIC State agency						
Yes	2.1	1.19,3.57	0.0101	0.7	0.37,1.34	0.2771
No	REF	--	--	REF	--	--
Geographic location						
Urban	3.1	1.35,7.22	0.0084	2.9	1.11,7.37	0.0299
Large rural city/town	1.1	0.27,4.54	0.8841	1.5	0.33,7.07	0.5909
Small or isolated rural town	REF	--	--	REF	--	--
Benefit delivery and receipt requirement						
Paper FIs / NO receipt required	4.6	2.37,8.93	0.0000	2.5	1.15,5.57	0.0219
Paper FIs / YES receipt required	2.0	0.84,4.59	0.1164	1.5	0.66,3.59	0.3154
EBT / receipt required (true for all EBT States)	REF	--	--	REF	--	--

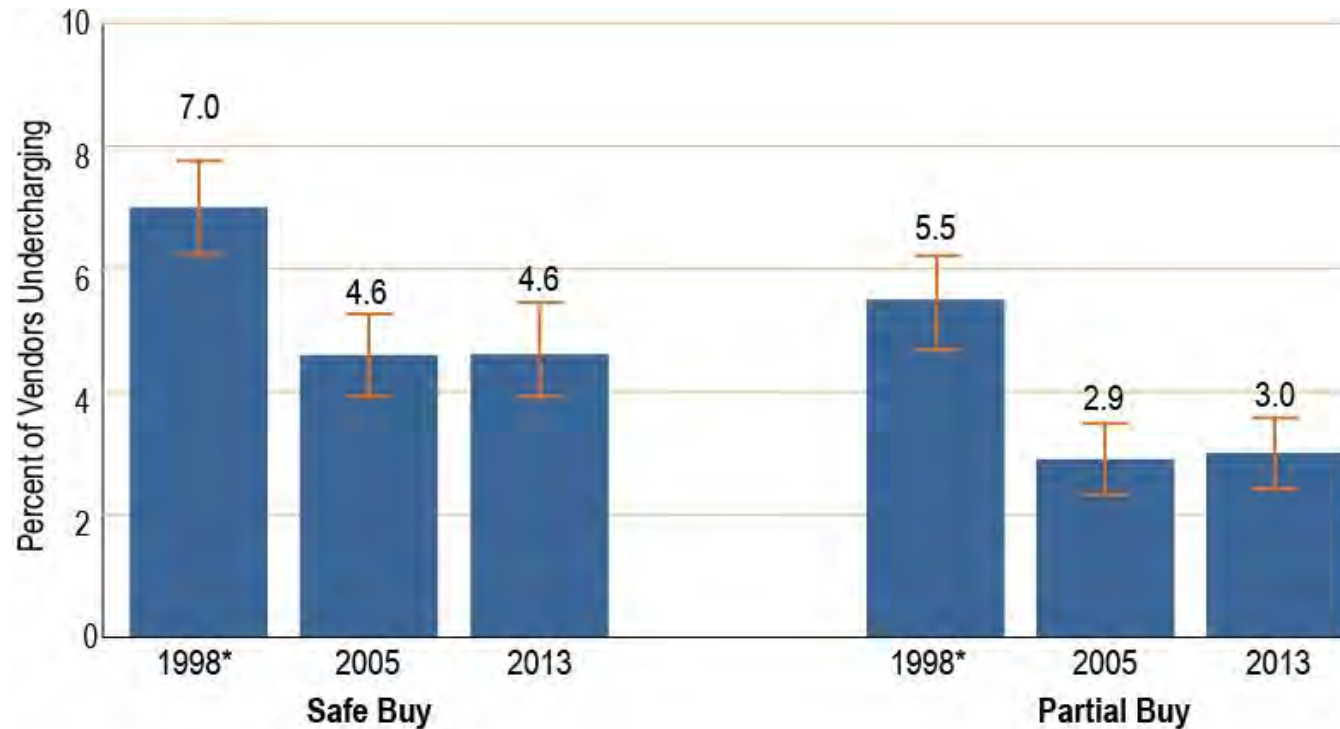
*Model includes all significant predictors.

Findings

Undercharge

- Overall, the rate of undercharge remained the same

Percent of vendors undercharging by study year



*p<0.05, compared to 2013 base study

Findings

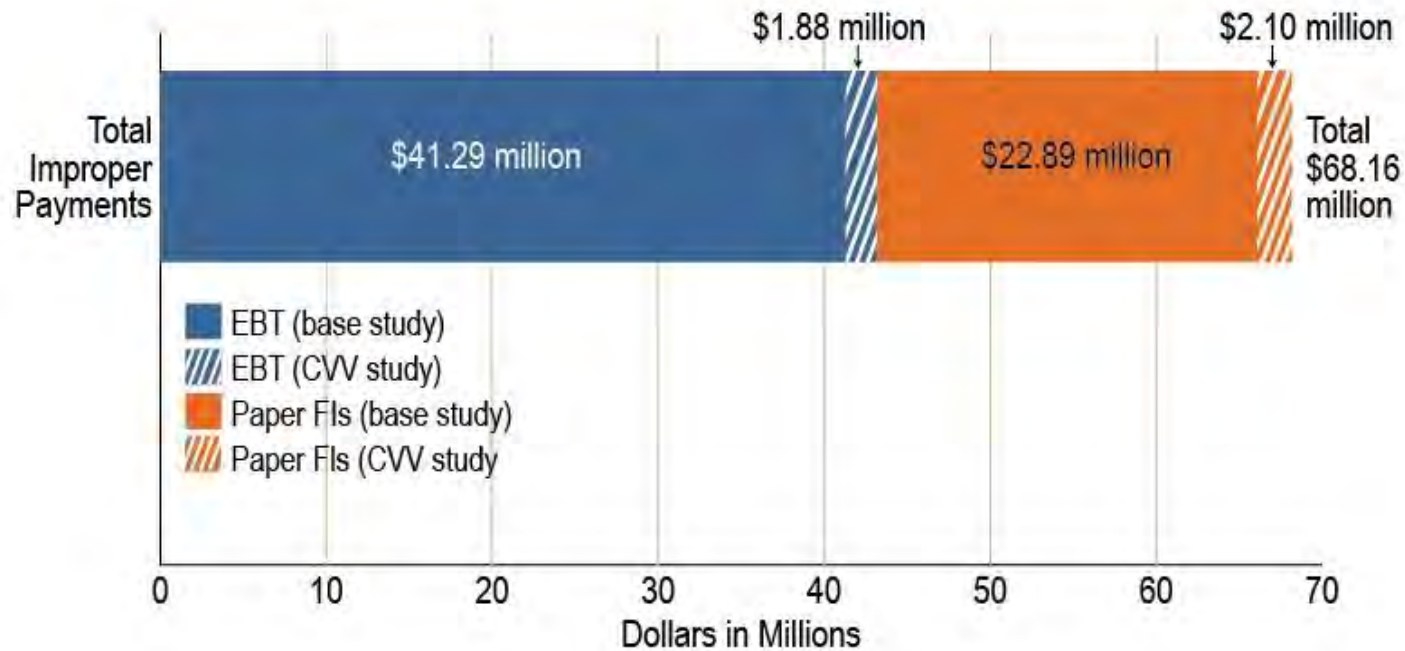
Undercharge

- Undercharges most likely unintentional
- Vendors with the following characteristics had higher rates of undercharge during the **base study**
 - Smaller size (based on #of registers)
 - 12.3% (≤ 2 registers), 2.0% (8+ registers)
 - No scanning equipment/did not use scanning equipment
 - 18.3% versus 2.7%
- Similar trends were observed for the **CVV study** with regard to vendors size and use of scanning equipment.
- Vendors who failed to provide a receipt were 5.7 times more likely to undercharge during the base study (95% CI: 3.3 to 9.7) and 6.1 times more likely during the CVV study (95% CI: 3.1 to 11.8)

Findings

National Estimates of Improper Payments (Dollar Amount)

National estimate of improper payments overall and by study type



Findings

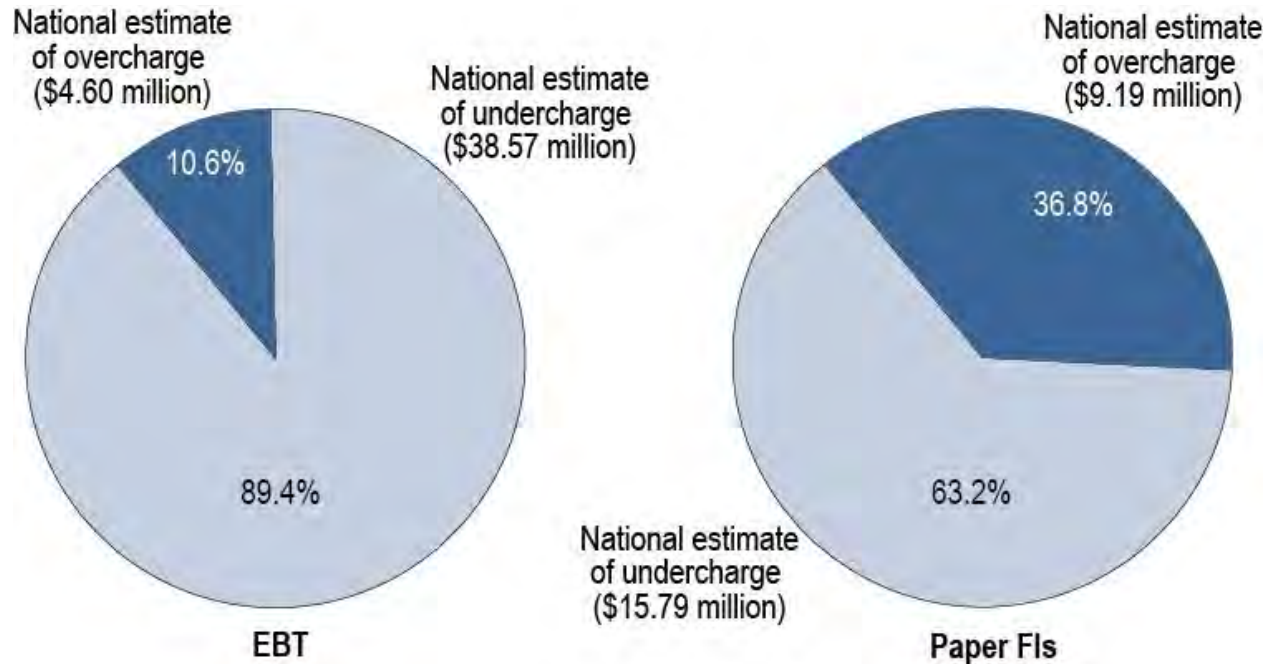
National Estimates of Improper Payments (Dollar Amount)

- Approximately 80 percent (\$54.4 million) of the total national estimate of IP is attributed to undercharges, while 20 percent (\$13.8 million) can be attributed to overcharges.
- Net value of these two violations is negative (-\$40.6 million), which means vendors charge WIC less than they should for the foods they distribute to program participants.
- Approximately \$4.8 billion dollars were spent providing food to WIC participants each year (food costs only, does not include infant rebate amount) in FFY2012
 - Overcharges account for only 0.29% of all food costs incurred by the WIC program

Findings

National Estimates of Improper Payments (Dollar Amount)

Proportion of total national estimate of IPs attributed to over- and undercharge



Conclusions and Recommendations

Conclusions

- Vendor allowance of buyer-initiated substitutions has declined for traditional WIC benefits but is disproportionately high for benefits with a cash value.
- Findings suggest that EBT helps to mitigate substitutions, but the rate of minor substitutions with the cash value benefit are still high.
- EBT appears to have a limited impact on the overall rate of overcharge which has increased since 2005.



Conclusions, *continued*

- While the rate of undercharge remains the same, the average value of undercharge has increased and is greatest among vendors in EBT States.
- The two most common administrative errors—improper countersignature and failure to provide a receipt—are both associated with more serious vendor violations.
- There was a significant increase in the percentage of vendors with insufficient stock.



Recommendations

- Conduct further research to understand compliance issues in EBT and how they can be measured
- Strongly encourage vendors to use scanning equipment when conducting WIC transactions
- States should require vendors to provide a receipt
- Take a closer look at WIC EBT transactions that include the use of a loyalty card



Questions?