



October 2018

# SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM

Disseminating Information  
on Successful Use of Data  
Analytics Could Help States  
Manage Fraud Risks

Accessible Version

# GAO Highlights

Highlights of [GAO-19-115](#), a report to congressional requesters

## Why GAO Did This Study

The federal government provided \$64 billion in SNAP benefits in fiscal year 2017 to help approximately 42 million low-income individuals purchase food. SNAP is administered by FNS in partnership with states. To help reduce the risk of improper receipt or use of SNAP benefits, states use data analytics, including data matching and data mining, to identify patterns or trends indicative of potential fraud in SNAP purchases. Based on concerns about potential SNAP benefit trafficking across state lines, GAO was asked to review out-of-state transactions and states' efforts to combat such fraud.

This report examines (1) the extent to which SNAP households in selected states made out-of-state purchases that may indicate potential fraud, (2) the advantages and challenges selected states have experienced in using data analytics to identify potential fraud, and (3) how FNS has assisted states in implementing leading practices for data analytics. GAO analyzed fiscal year 2017 data on SNAP purchases for North Dakota, Washington, and the District of Columbia, which had large percentages of non-border out-of-state purchases and interviewed FNS officials and officials in these states as well as in Massachusetts, Mississippi, New Mexico, and Wisconsin about their use of data analytics compared with leading practices.

## What GAO Recommends

GAO recommends that FNS more widely disseminate information to states about successful strategies used by states to adopt data analytics. FNS agreed with this recommendation.

View [GAO-19-115](#). For more information, contact Kathryn A. Larin at (202) 512-7215 or [LarinK@gao.gov](mailto:LarinK@gao.gov) or Seto J. Bagdoyan at (202)512-6722 or [BagdoyanS@gao.gov](mailto:BagdoyanS@gao.gov).

October 2018

# SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM

## Disseminating Information on Successful Use of Data Analytics Could Help States Manage Fraud Risks

## What GAO Found

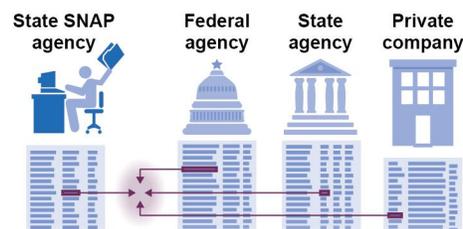
Supplemental Nutrition Assistance Program (SNAP) recipients are allowed to spend their benefits outside their state of residence, and GAO's analysis of fiscal year 2017 SNAP data in three selected states found that overall about 2 percent of households made purchases, both in state and out-of-state, potentially indicative of trafficking—the prohibited exchange of benefits for cash or nonfood goods or services. Also, GAO found little difference in potential trafficking behaviors between households that made one or more purchases out-of-state and those that shopped only in their home state.

Officials in all seven states GAO reviewed said they conducted data matching. Officials in five of these states stated that they use more sophisticated data analytics including data mining to help identify potential fraud (see figure). These officials cited advantages to using more sophisticated analytics to automate fraud detection and prioritize cases, allowing them to focus investigative resources on cases most likely to involve fraud. For example, officials in Mississippi reported that overpayment collections increased \$2 million since the state incorporated more data techniques into its fraud detection efforts. However, officials in all seven selected states cited factors such as high cost, resource demands, data limitations and organizational support as challenges that affect their ability to use or maintain more advanced data-analytics techniques.

### Example of Use of Data Analytics by State SNAP Agencies

#### Data matching

State SNAP agency matches its eligibility data with third-party sources to verify client information or detect unreported changes that could indicate fraud.



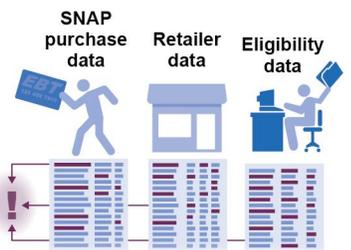
#### Data mining

Computer algorithms comb data sets for hidden patterns or anomalies that could indicate fraud.

#### Data-mining algorithm



- Unusual purchase patterns
- Household data anomalies



Source: GAO analysis of information from U.S. Department of Agriculture's Food and Nutrition Service and state Supplemental Nutrition Assistance Program (SNAP) agencies. | [GAO-19-115](#)

The U. S. Department of Agriculture's Food and Nutrition Service (FNS) has helped some states adopt certain leading practices for data analytics, but its current outreach is limited. FNS has provided assistance to some states through pilot projects, grants, and training, but, beyond a recently issued guide, FNS has done little to disseminate information more broadly about successful efforts to adopt data analytics. FNS officials said they are in the early stages of promoting data analytics for SNAP fraud prevention and detection, and their efforts have focused on assessing the current capability of states to use data analytics and determining analytic practices that are effective. State officials GAO interviewed said that training provided was helpful but expressed concern about their access to information on successful data analytic approaches. Disseminating information to states on successful strategies could help states address challenges.

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### Abbreviations

AASD	American Association of SNAP Directors
eDRS	Electronic Disqualified Recipient System
EBT	electronic benefit transfer
FNS	Food and Nutrition Service
HHS	Department of Health and Human Services
NAC	National Accuracy Clearinghouse
NDNH	National Directory of New Hires
PARIS	Public Assistance Reporting Information System
PIN	Personal Identification Number
PVS	Prisoner Verification System
SAVE	Systematic Alien Verification for Entitlements
SNAP	Supplemental Nutrition Assistance Program
SSA	Social Security Administration
UCOWF	United Council on Welfare Fraud
USDA	U.S. Department of Agriculture
OIG	Office of Inspector General

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October 2, 2018

Congressional Requesters

In fiscal year 2017, the federal government provided almost \$64 billion in benefits to help approximately 42 million low-income people purchase food through the Supplemental Nutrition Assistance Program (SNAP). In recent years, the size and costs of the program have raised questions about the extent of the controls in place to combat fraud. Program officials have long-standing concerns that some recipients falsify information about their household circumstances to improperly receive benefits or misuse their benefits to solicit or obtain non-food goods, services, and cash—a practice known as trafficking. For example, according to a press release from the Department of Justice, in 2018, an individual operating as a retailer in Maryland was convicted in federal district court for food stamp and wire fraud relating to the exchange of benefits for cash. The retailer redeemed over \$1.5 million in SNAP benefits for transactions in which he paid recipients approximately half the value of the benefits in cash and kept the rest of the proceeds.

The U.S. Department of Agriculture’s (USDA) Food and Nutrition Service (FNS), in partnership with the states, administers SNAP. FNS and states share the role of combating fraud and abuse in the program. State agencies are directly responsible for detecting, investigating, and prosecuting recipient fraud, while FNS is responsible for providing guidance and monitoring this state activity.

Federal law allows recipients to use their benefits at any authorized SNAP retailer nationwide, including those outside recipients’ state of residence. Out-of-state purchases occur for varied reasons, such as temporary travel or employment in another state. Those who live near state borders may spend their benefits in the neighboring state if retailers are more conveniently located or food prices are lower. However, long-term out-of-state purchases, particularly in states that do not border the state where the recipient is enrolled in SNAP, may raise questions about a recipient’s actual residence and how the benefits are being used.<sup>1</sup>

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<sup>1</sup> According to FNS officials, they have analyzed out-of-state transactions and concluded that they are not a significant indicator of fraud.

You asked us to examine the out-of-state use of SNAP benefits. In this report, we answer the following questions:

1. To what extent are SNAP households in selected states making out-of-state purchases that may indicate potential recipient fraud?
2. How are selected states using data analytics—including analyses of out-of-state transactions—to identify potential SNAP recipient fraud, and what advantages and challenges, if any, have they experienced?<sup>2</sup>
3. How has FNS assisted states in implementing leading practices for data analytics?

For all three objectives, we reviewed relevant federal laws, regulations, program guidance, and reports. For objective 1, we analyzed all out-of-state SNAP transactions for fiscal year 2017 using data provided by FNS. We selected the District of Columbia and two states—North Dakota and Washington—with large amounts of non-border out-of-state transactions (compared to all SNAP benefits issued in the state) for further review.<sup>3</sup> For these states, we reviewed fiscal year 2017 transaction data for households that spent all their benefits in a non-border state in that year. We also analyzed all transaction data for households in these states for indicators of potential trafficking.<sup>4</sup>

For objective 2, we selected these three states as well as Massachusetts, Mississippi, New Mexico, and Wisconsin for our review. We selected these seven states to reflect a range of individual state experiences based on the percentage of non-border state transactions, receipt of related technical assistance, and FNS's reports on their capacity to conduct data analysis. We interviewed knowledgeable officials from the seven state SNAP agencies about their efforts to use data analytics to detect potential recipient fraud and the advantages and challenges states face in doing so. We obtained related documentation when possible. While information from these seven state SNAP agencies is non-generalizable, it provides illustrative examples of state agencies' efforts to use data analytics.

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<sup>2</sup> Data analytics are techniques to analyze and interpret data and identify patterns or trends.

<sup>3</sup>A non-border out-of-state transaction is a purchase in a state that does not border the recipient's home state, the state in which the recipient is enrolled in SNAP.

<sup>4</sup> Throughout the report, when we refer to states or state SNAP agencies, this includes the District of Columbia.

For objective 3, we obtained documentation of FNS's efforts to assist states in implementing data analytics and interviewed FNS officials in headquarters and all seven regional offices as well as officials from the seven states and others representing state associations. We compared these efforts to leading practices for data analytics described in GAO's Fraud Risk Framework.<sup>5</sup> We focused primarily on FNS's efforts to assist states beginning in fiscal year 2015, which follows our 2014 report on SNAP recipient fraud.<sup>6</sup> Our 2014 report included recommendations for FNS in assisting states with recipient anti-fraud efforts.<sup>7</sup> All of the data included in this report were assessed and determined to be sufficiently reliable for our purposes. More information on our methodology can be found in appendix I.

We conducted this performance audit from May 2017 through October 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

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### Federal and State Roles in Addressing SNAP Fraud

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The goal of SNAP, formerly known as the federal Food Stamp Program, is to help low-income individuals and households obtain a more nutritious diet by supplementing their income with benefits to purchase allowed food

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<sup>5</sup> GAO, *A Framework for Managing Fraud Risks in Federal Programs*, [GAO-15-593SP](#) (Washington, D.C.: July 2015). While the Framework was designed to aid federal program managers in managing fraud risk, the concepts are applicable to state agencies as well.

<sup>6</sup> GAO, *Supplemental Nutrition Assistance Program: Enhanced Detection Tools and Reporting Could Improve Efforts to Combat Recipient Fraud*, [GAO-14-641](#) (Washington, D.C.: Aug. 21, 2014).

<sup>7</sup> We testified on the steps FNS has taken to address these recommendations in May 2018. GAO, *Supplemental Nutrition Assistance Program: Observations on Employment and Training Programs and Efforts to Address Program Integrity Issues*, [GAO-18-504T](#) (Washington, D.C.: May 9, 2018).

items.<sup>8</sup> The federal government pays the full cost of the benefits and shares the responsibility and costs of administering the program with the states. The overarching rules governing SNAP are set at the federal level. Accordingly, FNS is responsible for promulgating program regulations and ensuring that state officials administer the program in compliance with program rules. FNS officials in seven regional offices assist headquarters officials in this oversight work. FNS also determines which retailers are eligible to accept SNAP benefits for food purchases and investigates and resolves cases of retailer fraud. The states, or in some cases counties, administer the program by determining whether households meet the program's eligibility requirements, calculating monthly benefits for qualified households, and issuing benefits to participants on an electronic benefit transfer (EBT) card. States are also responsible for investigating possible violations by benefit recipients and pursuing and acting on those violations that are deemed intentional.<sup>9</sup>

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## Types of SNAP Fraud and State Anti-Fraud Mitigation Strategies

Intentional program violations include acts of fraud, which involve obtaining something of value through willful misrepresentation.<sup>10</sup> Eligibility fraud involves individuals making false or misleading statements in order to obtain benefits, including statements about household composition, household expenses, and income. Failing to report changes to household circumstances that may affect benefits can also result in eligibility fraud under certain circumstances. When recipients are certified for SNAP, state agencies assign them to a reporting system for notifying the state of certain changes.<sup>11</sup> These changes include when they have a change of address, both in-state or out-of-state. Some systems require recipients to report within a certain period of time of the change occurring, often within 10 days. Other reporting systems— including simplified reporting — require recipients to submit reports periodically. Households subject to reporting on a periodic basis must generally submit reports not less often than once every 6 months. One type of eligibility fraud is dual participation, in

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<sup>8</sup> See 7 U.S.C. § 2011 et seq. and 7 C.F.R. Part 271 et seq. for the statutory and regulatory provisions governing the program.

<sup>9</sup> 7 C.F.R. § 273.16.

<sup>10</sup> For the definition of an intentional program violation, see 7 C.F.R. § 273.16(c).

<sup>11</sup> For more information about such reporting systems, see 7 C.F.R. § 273.12.

which a recipient receives benefits in more than one state in the same month.

Another type of SNAP fraud is trafficking, in which benefits are exchanged for cash or non-food goods and services.<sup>12</sup> Trafficking may occur when recipients collaborate with retailers who pay cash for SNAP benefits. For example, a retailer might allow a recipient to charge \$100 on his or her EBT card and then pay the recipient \$50 instead of providing food. Trafficking also occurs when a recipient exchanges an EBT card and the corresponding Personal Identification Number (PIN) for cash or non-food goods or services (e.g., rent or transportation) from another individual.<sup>13</sup>

According to a September 2012 USDA Office of Inspector General (OIG) report, the magnitude of program abuse due to recipient fraud is unknown because states do not have uniform ways of compiling such data. OIG recommended that FNS determine the feasibility of creating a uniform methodology for states to calculate their recipient fraud rate.<sup>14</sup> In 2014, FNS responded that it would be infeasible to implement the recommendation as it would require legislative authority mandating significant state investment of time and resources in investigating, prosecuting, and reporting fraud beyond current requirements.

States must adhere to various federal requirements for detecting SNAP recipient fraud, conducting investigations, and providing due process prior to disqualifying recipients from participating in the program.<sup>15</sup> The household is responsible for repaying ill-gotten or misused benefits. States may generally retain 35 percent of the fraudulent benefits they recover, and the rest are returned to the federal government.

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<sup>12</sup>Under federal law, it is illegal for a person to knowingly use, transfer, acquire, or possess SNAP benefits in any manner that is contrary to the laws and regulations that govern the SNAP program. 7 U.S.C. § 2024(b). The statute applies to program recipients and retailers as well as people not participating in the program.

<sup>13</sup>Similar to a bank card, for security purposes, SNAP EBT cards require a PIN to access the benefits associated with the card.

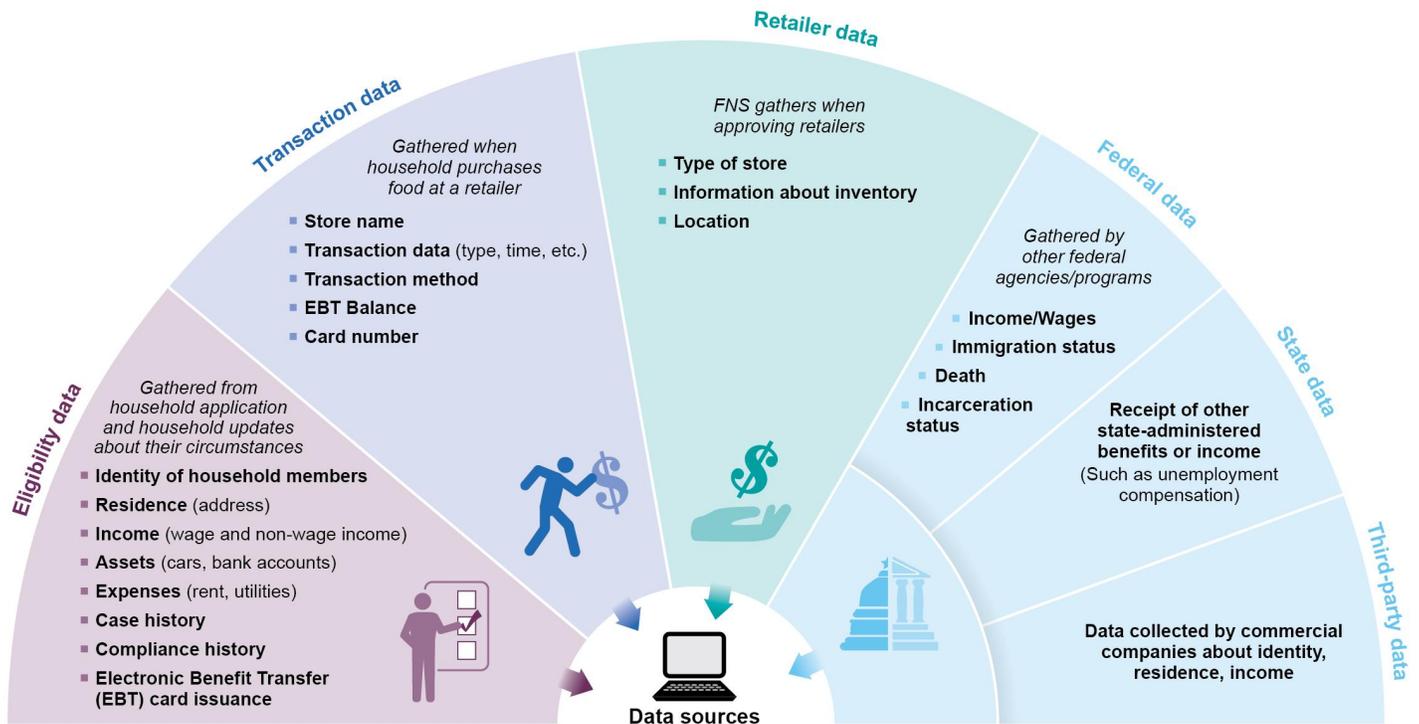
<sup>14</sup>USDA OIG, *Analysis of FNS' Supplemental Nutrition Assistance Program Fraud Prevention and Detection Efforts*. Audit Report 27002-0011-13 (Washington, D.C.: Sept. 28, 2012).

<sup>15</sup> See, e.g., 7 C.F.R. §§ 272.4, 273.16.

## Data Analytics

The use of data analytics enables the discovery and communication of meaningful patterns in data so that states can determine which potential SNAP fraud cases to review in detail. States have access to various types of data in their case management systems, including recipient-provided information and benefits data collected throughout the SNAP eligibility determination process. Other information sources available to states include transaction data collected by EBT processors, data from previous fraud investigations, and third-party data from other government agencies or commercial vendors (see fig. 1).

**Figure 1: Types of Data Available to States for SNAP Data Analytics**



Source: GAO analysis of information from U.S. Department of Agriculture's Food and Nutrition Service (FNS) and state Supplemental Nutrition Assistance Program (SNAP) agencies. | GAO-19-115

Note: In gathering and maintaining these data, agencies must comply with various privacy requirements set by laws and regulations, including various requirements at the federal level.

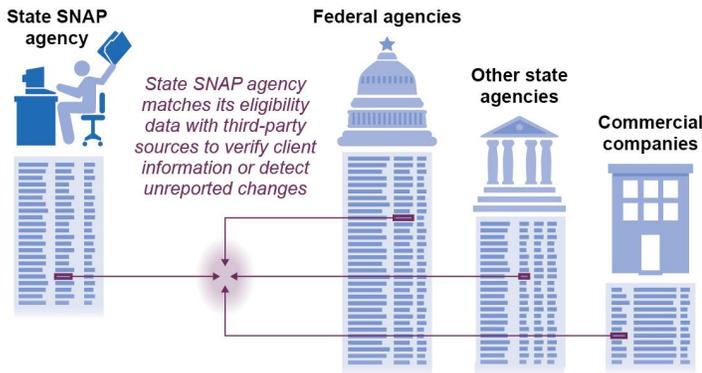
Data-analytics activities can include a variety of techniques to prevent and detect fraud, including data matching and data mining. Data matching is the large scale comparison of records and files to detect errors or incorrect information. It can be used to verify information provided by

recipients or detect unreported changes. Data mining is the use of automated computer algorithms to detect otherwise hidden patterns, correlations, or anomalies within large data sets indicative of potential fraud, thus assisting programs in recovering these dollars (see fig. 2).

**Figure 2: Example of How a State SNAP Agency Might Use Data Matching and Data Mining to Detect Fraud**

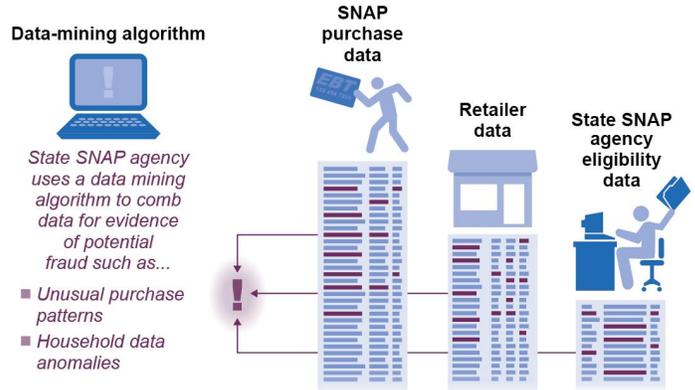
**Data matching**

The large-scale comparison of records and files, which were collected or held for different purposes, to detect errors or incorrect information that could suggest fraud has occurred.



**Data mining**

The use of automated computer algorithms to detect otherwise hidden patterns, correlations, or anomalies within large data sets that could suggest fraud has occurred.



Source: GAO analysis of information from U.S. Department of Agriculture’s Food and Nutrition Service and state Supplemental Nutrition Assistance Program (SNAP) agencies. | GAO-19-115

Note: This is a hypothetical example of how these techniques might be used based on information reported to us by selected states.

Federal laws and regulations require states to conduct certain data matches when an application for benefits is submitted and other times to verify an individual’s reported employment and immigration status, as well as to ensure the information provided is not for an individual who is incarcerated, deceased, or disqualified from the program (see table 1).

**Table 1: Selected Required and Optional Data Matches for SNAP Recipients by State SNAP Agencies**

<b>Data source</b>	<b>Maintained by</b>	<b>Description</b>
National Directory of New Hires (NDNH)	Department of Health and Human Services	SNAP agencies must conduct a match to verify applicant employment and income data.
Systematic Alien Verification for Entitlements (SAVE)	U.S. Citizenship and Immigration Services	SNAP agencies must conduct a match to verify applicants' immigration status.
Prisoner Verification System (PVS)	Social Security Administration	SNAP agencies must conduct a match to verify individual is not incarcerated.
Death Master File	Social Security Administration	SNAP agencies must conduct a match to verify information is not for an individual who is deceased.
Electronic Disqualified Recipient System (eDRS)	Department of Agriculture	SNAP agencies must report disqualifications and conduct a match to ensure benefits are not provided to currently disqualified individuals.
Public Assistance Reporting Information System (PARIS)	Department of Health and Human Services	States may conduct a match to verify information on individuals' SNAP benefit receipt in other states. The system also includes information on military veterans receiving Veterans Affairs compensation and current and retired federal employees' compensation.

Source: Food and Nutrition Service's Fraud Framework for the Supplemental Nutrition Assistance Program (SNAP) and relevant federal laws and regulations. | GAO-19-115

Note: This list is not exhaustive. States may match with other data sources. For the required data matches, some of the specific requirements vary, such as when the data matching must be completed.

GAO's Fraud Risk Framework identifies the following leading practices to help managers effectively use data to mitigate the likelihood and impact of fraud (see table 2).<sup>16</sup>

<sup>16</sup> [GAO-15-593SP](#).

**Table 2: GAO Leading Practices for Using Data Analytic Tools and Techniques to Prevent and Detect Fraud**

Practice	Description
Build support within the program for data analytics.	To be effective, data analytics initiatives need support across the program and, in particular, from program managers.
Ensure employees have sufficient knowledge, skills, and training to perform data analytics.	Managers who effectively implement data-analytics initiatives ensure that they have employees who understand how to use the data to perform data analytics.
Combine data across programs and from separate databases within the agency to facilitate reporting and analytics, if legally permissible.	Effective data-analytics initiatives combine data from various sources within the agency, which can enable managers to identify potential instances of fraud that may not be evident when analyzing data from separate programs or within separate databases. Centralizing data-analytics activities into one location can facilitate the use of data to identify potential instances of fraud and save resources.
Pursue access to necessary external data, including pursuing data-sharing agreements.	Using data from other federal agencies or third-party sources can help managers identify potential instances of fraud. Specifically, data sharing allows entities that make payments—for example, to contractors, vendors, or participants in benefit programs—to compare information from different sources to help ensure that payments are appropriate.
Consider program rules and known or previously encountered fraud schemes to design data-analytic tests.	The specific data-analytic tests that will be most effective in helping managers prevent or detect potential fraud will vary by program because of the different fraud risks programs face. By using information on previously encountered fraud schemes or known fraud risks, managers can identify signs of fraud (i.e., red flags) that may exist within their data. Effective fraud risk managers collect and analyze data on identified fraud schemes and use these lessons learned to improve fraud risk management activities.
Apply system edit checks to help ensure data meet requirements before data are accepted into the program's system and before payments are made.	System edit checks are instructions programmed into an information-processing system to help assure that data are complete, accurate, valid, and recorded in the proper format, such as checks to identify missing data, incorrect data, or erroneous dates. System edit checks can be used to compare data entries to requirements, and automatically deny entries that do not meet requirements or flag them for further review.
Conduct data matching to verify key information, including self-reported data and information necessary to determine eligibility.	To effectively prevent and detect instances of potential fraud, managers take steps to verify reported information, particularly self-reported data and other key data necessary to determine eligibility for enrolling in programs or receiving benefits. Specifically, managers conduct data matching using government or third-party sources to verify data electronically.
Conduct data mining to identify suspicious activity or transactions, including anomalies, outliers, and other red flags in the data.	Activity or transactions that deviate from expected patterns can potentially indicate fraudulent activity. Therefore, managers who effectively use data analytics to detect potential fraud look for unusual transactions or data entries that do not fit an expected pattern. Specifically, applying filters or predefined rules to transactions can help identify those that exhibit signs of fraud.
Tailor the output of data analytics to the intended audience to help ensure the results are usable.	This can help increase the likelihood that data-analytics initiatives will be effective.
Review the results of data analytics and refer appropriate cases to the OIG for further investigation.	This includes reviewing identified cases to remove false positives, such as by taking steps to verify the facts and circumstances of identified cases and checking for math or other errors.

Source: GAO, A Framework for Managing Fraud Risks in Federal Programs, [GAO-15-593SP](#) (Washington, D.C.: July 2015). | GAO-19-115

While these leading practices can help managers design and implement effective data-analytic tools and techniques to prevent and detect potential fraud, as discussed in the Fraud Risk Framework, these techniques alone may not be sufficient to ensure that ineligible individuals

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do not fraudulently enroll in a program or receive benefits. As a result, managers may need to combine data-analytics activities with additional controls as part of their efforts to combat fraud, in a strategic, risk-based manner.

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## SNAP Transaction Data from Selected States Show Relatively Few Households with Out-of-State Purchases Indicating Potential Fraud

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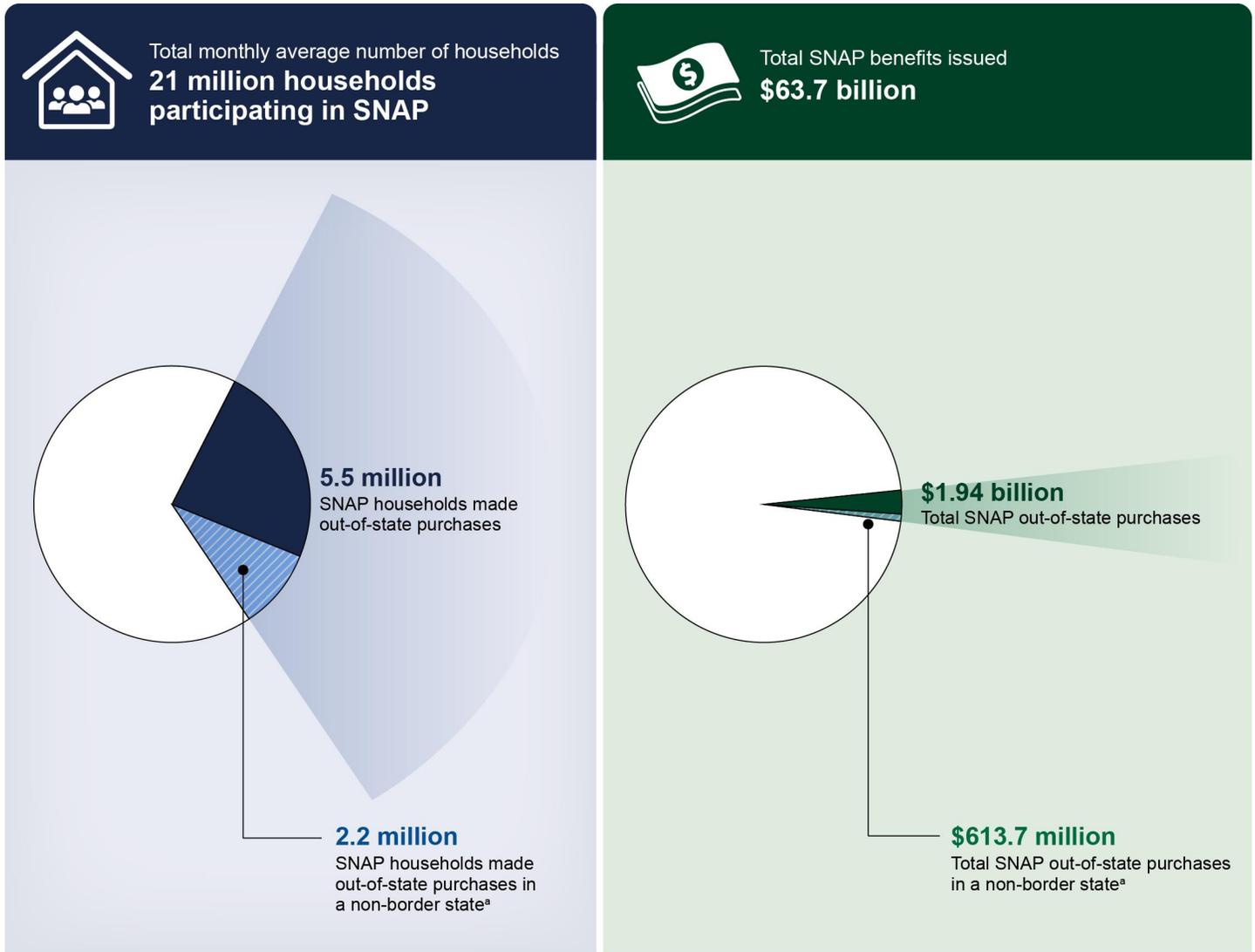
### Out-of-State Purchases Are Allowed by SNAP Rules and Their Dollar Value Represents a Small Percentage of Purchases

A relatively large number of SNAP households made purchases outside their home state, as allowed under the SNAP statute,<sup>17</sup> but the total dollar value of out-of-state purchases was small compared to SNAP purchases overall, according to our analysis of FNS SNAP transaction data. We identified approximately 5.5 million households that made out-of-state SNAP purchases in fiscal year 2017. In comparison, FNS reported that the monthly average number of SNAP households was approximately 21 million in fiscal year 2017. Out-of-state purchases made up approximately 3 percent of all SNAP benefits in fiscal year 2017, with a total dollar value of about \$2 billion (see fig. 3).

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<sup>17</sup>7 U.S.C. § 2016(b), (j).

**Figure 3: Supplemental Nutrition Assistance Program (SNAP) Households Making Out-of-State Purchases and Purchases' Dollar Value, Fiscal Year 2017**



Source: GAO analysis of Food and Nutrition Service (FNS) data. | GAO-19-115

<sup>a</sup> A non-border state is a state that does not border the household's home state (the state where the household is enrolled in SNAP). States include the District of Columbia.

Out-of-state purchases may occur for different reasons, one of which may be because a recipient lives on or near a state border, and regularly shops across the state line. For example, District of Columbia recipients spent about half of their SNAP benefits out of state in fiscal year 2017. All District of Columbia residents are in close proximity to both Maryland and

Virginia, which are no more than approximately 7 miles from any point in the District. In general, about a third (34 percent) of households nationwide with out-of-state purchases spent \$50 or less on those purchases in fiscal year 2017. See Appendix II for a detailed listing of out-of-state purchases by state. Out-of-state purchases may also indicate potential program violations, including eligibility fraud or trafficking. However, because out-of-state purchases are permitted, analysis of additional household and transaction information is generally needed to identify potential fraud, as discussed below.

Of out-of-state transactions, purchases in a state that did not border the recipient's home state (non-border state) made up approximately 1 percent of all SNAP benefits in fiscal year 2017, as shown in figure 3 above. There were 2.2 million SNAP households that made at least one purchase in a non-border state in fiscal year 2017, and the percent of SNAP benefits spent in a non-border state in that year ranged between approximately 0.6 percent and 1.9 percent. In fiscal year 2017, states whose SNAP recipients spent the highest percentage of their SNAP benefits in non-border states included Colorado, Hawaii, Montana, North Dakota, and Rhode Island.

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### SNAP Purchases in Non-Border States Raise Questions of Residency for a Relatively Small Percentage of Households in Selected States

Overall, we found that for fiscal year 2017, less than 0.5 percent of households in our three selected states spent all their SNAP benefits for the entire fiscal year in a non-border state (see table 3).<sup>18</sup> Use of benefits in stores that are a long distance from a recipient's residence for extended periods of time, such as purchases exclusively in non-border states over multiple months, could be an indicator of program violations, including eligibility fraud. The total value of SNAP transactions by households in our three selected states that made all purchases in non-border states in fiscal year 2017 was approximately \$1.9 million. These

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<sup>18</sup>When calculating households spending all benefits in a non-border state in fiscal year 2017, we reviewed the distribution of total SNAP benefits spent by these households and decided to exclude households in which the total dollar amount of benefits spent for the year was less than \$200. We did this in order to avoid including households who may have moved and spent their benefits in a non-border state for a short period of time before reporting the move. By including only higher dollar households, we could better focus on households that spent all benefits in a non-border state for a longer period of time.

purchases represent about 0.1 percent of all SNAP benefits for fiscal year 2017 in the three selected states.

**Table 3: Number and Percentage of Selected State Supplemental Nutrition Assistance Program (SNAP) Households Spending All Benefits in a Non-Border State, Fiscal Year 2017**

Selected states	Number of SNAP households spending all benefits in non-border state <sup>a</sup>	Approximate % of all SNAP households in the state <sup>b</sup>
District of Columbia	208	0.29%
North Dakota	109	0.43%
Washington	2,208	0.42%

Source: GAO analysis of Food and Nutrition Service SNAP data. | GAO-19-115

<sup>a</sup> A non-border state is a state that does not border the household's home state (the state where the household is enrolled in SNAP).

<sup>b</sup> Percentage estimated by dividing number of households by FNS monthly average number of households for the states in fiscal year 2017.

When SNAP benefits are used in a non-border state over an extended period of time, this could indicate possible intentional program violations such as an unreported move and other household changes that could impact eligibility. SNAP officials we interviewed said that in some cases a recipient may delay reporting a move if they are enrolled in SNAP in a state with a lower barrier to entry to the program. At the same time, the rules around reporting a move and residency may make it difficult to determine when a recipient has violated program rules. Recipients are not required to immediately report a move in some cases due to simplified reporting rules that allow a recipient to report household changes only periodically, generally every 6 months.<sup>19</sup> Also, officials we interviewed in the three selected states told us that there are no set time limits for a SNAP recipient to reside in a new state before the former state revokes the recipient's residency. For example, a recipient may be out of state for an extended period of time for personal reasons, such as helping a

<sup>19</sup>States may adopt a simplified reporting option that requires SNAP recipients to report immediately only if their gross income rises above 130 percent of the federal poverty level, instead of requiring a variety of changes to be reported immediately, including address changes and changes to household composition and income. Our three selected states have adopted simplified reporting rules. We previously reported that simplified reporting results in participants reporting fewer changes and reduces the amount of paperwork that caseworkers must process. We reported that in 2005, USDA estimated that simplified reporting reduced the SNAP improper payment rate by 1.2 to 1.5 percent. GAO, *Supplemental Nutrition Assistance Program: Policy Changes and Calculation Methods Likely Affect Improper Payment Rates, and USDA Is Taking Steps to Help Address Recipient Fraud*, [GAO-16-708T](#) (Washington, D.C.: July 6, 2016).

relative, but still intend to reside in the state where they are enrolled in SNAP. In that case, according to state officials, the recipient would not necessarily need to report a move and may not be violating program rules.

In addition to the program violations related to an unreported move, use of SNAP benefits in a non-border state over extended periods of time could bring into question whether a recipient is also enrolled in SNAP in another state (i.e., dual participation). Also, it may indicate changes in the household that could impact eligibility, including questions about whether a recipient is earning unreported income in the state where they are using their benefits. While state SNAP agencies stated that they conduct data matching meant to detect dual participation and unreported income, states also noted challenges with these matches. State agencies told us that they use the PARIS system to detect possible dual participation, and both NDNH and the Work Number to identify recipient income.<sup>20</sup> However, challenges officials cited in using these systems included lags in the data provided, and additional work required to confirm data. The use of data analytics to review recipient transaction data may help states identify suspicious household activity more easily than with data matching alone given the challenges associated with these systems. In addition, data analytics may be another tool to help states identify suspicious activities in a timely manner. Given the possibility for eligibility fraud or other program violations, we plan to refer the households that our data analysis identified as spending all benefits in a non-border state to their respective state SNAP agencies for further investigation.

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<sup>20</sup>The PARIS file maintained by the Department of Health and Human Services (HHS) provides information on individuals' receipt of SNAP benefits in other states, and may indicate if an individual is enrolled in SNAP in another state. The NDNH is also maintained by HHS and includes information on individuals' employment and wages. The Work Number is a commercial verification service operated by Equifax Inc. that provides payroll information from participating employers for a fee.

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## Selected Households' Out-of-State and In-State SNAP Purchases Had Similar Levels of Potential Trafficking

Based on our analysis of fiscal year 2017 transaction data in the three selected states, we found that SNAP households without out-of-state purchases were generally just as likely to have made the types of purchases that may indicate trafficking of benefits as households with out-of-state purchases.<sup>21</sup> Overall, we found that approximately 2 percent of all households in the three selected states, including both households that shopped out-of-state and those that shopped in state only, had a high number of purchases potentially indicative of SNAP trafficking. However, for two selected states, there was little to no difference in the percentage of households with this activity when we compared households that only shopped in their home state and households that shopped out-of-state. For one state, a greater percentage of households that shopped out-of-state had purchases indicative of SNAP trafficking, but households in this state also had different shopping patterns in general, as discussed below. In addition, for households that shopped out-of-state, few of the transactions we flagged as indicators of potential trafficking occurred outside the home state. Although we found that rates of trafficking indicators were generally similar between households that shopped out-of-state and those that only shopped in their state of residence, the analysis of transaction data for other factors may allow states to identify households at risk of trafficking and make them a higher priority for investigation. Our prior work reported on the benefits of SNAP transaction data analysis for this purpose.<sup>22</sup>

Specifically, we found that for North Dakota and Washington, households that made one or more purchases out of state had similar rates of

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<sup>21</sup>Types of purchases indicative of trafficking are based on common criteria used by FNS and state SNAP officials to identify potential trafficking of benefits. If a purchase met criteria for being an indicator of potential trafficking, we “flagged” the transaction. Thus, discussion of trafficking flags refers to those purchases that were flagged as suspicious because they met the criteria for being a purchase indicative of trafficking. While the transactions we flagged in our three selected states are generally deemed potential indicators of fraud by SNAP officials, there could also be legitimate reasons for these purchases and taken alone, cannot conclusively establish trafficking. For that reason, in our analysis we set a threshold of 20 or more flagged transactions per household simply to focus on those with potentially higher risk for trafficking. We plan to refer the households we identified with high numbers of such transactions to the respective state SNAP agencies.

<sup>22</sup>[GAO-14-641](#).

purchases flagged for potential trafficking compared to households that shopped only in their home state. This held true both for households that only shopped in border states, as well as for households that shopped in non-border states (see table 4). For example, 1.4 percent of Washington SNAP households that only shopped in their home state had purchases resulting in 20 or more trafficking flags in fiscal year 2017, and 1.8 percent of Washington households that also shopped in border states had 20 or more trafficking flags. For Washington households that also shopped in non-border states, 1.5 percent made purchases resulting in 20 or more flags.

**Table 4: Percentage of SNAP Households with Purchases Indicating Potential Trafficking, Comparing Out-of-State to Home-State Purchases, Fiscal Year 2017**

Selected state	Households shopping in home state only	Households shopping in border states	Households shopping in non-border states
District of Columbia	1.4%	5.7%	8.0%
North Dakota	2.5%	3.3%	2.2%
Washington	1.4%	1.8%	1.5%

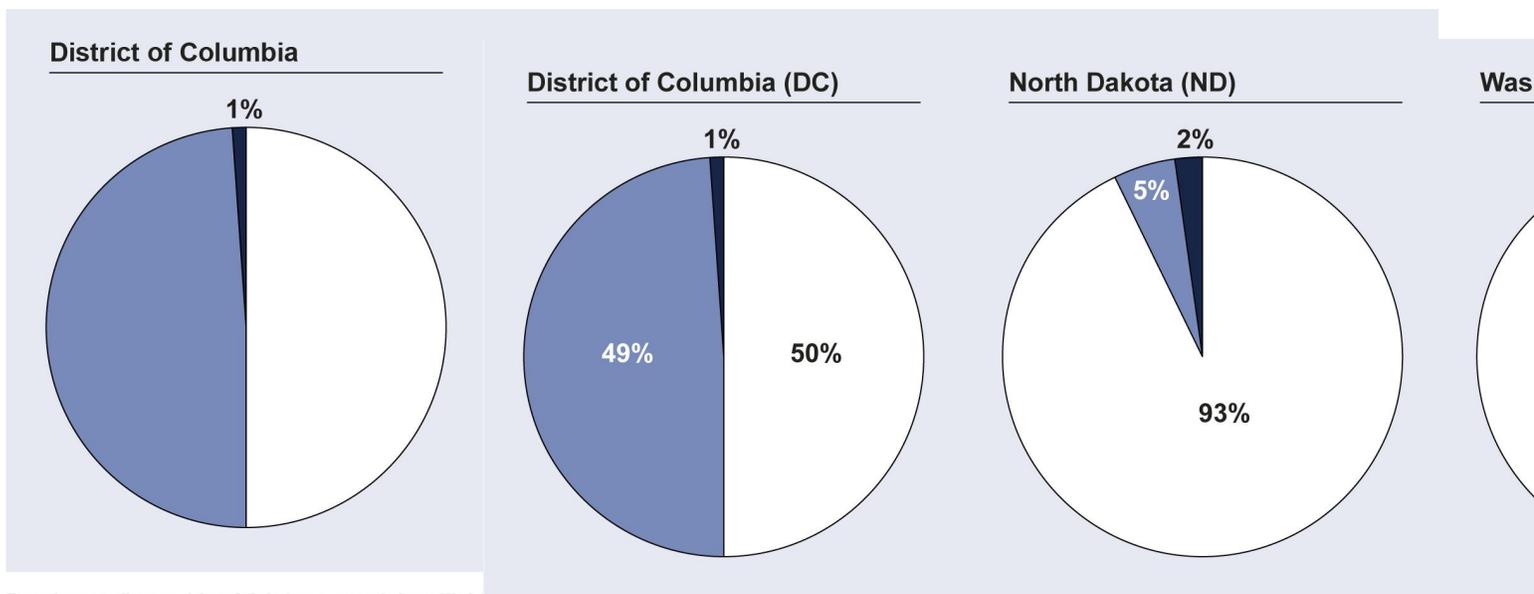
Source: GAO analysis of Supplemental Nutrition Assistance Program (SNAP) data. | GAO-19-115

Note: Types of purchases indicative of trafficking are based on common criteria used by FNS and state SNAP officials to identify potential trafficking of benefits.

Our analysis of District of Columbia households identified higher rates of potential trafficking indicators for households that shopped out-of-state, compared to the other two selected states. Specifically, 1.4 percent of District of Columbia SNAP households that only shopped in their home state had purchases resulting in 20 or more trafficking flags in fiscal year 2017, and 5.7 percent of households that also shopped in border states had 20 or more trafficking flags. For District of Columbia households that also shopped in non-border states, 8 percent made purchases resulting in 20 or more flags. However, the difference in rates for District of Columbia trafficking indicators may reflect the different shopping patterns of its households when compared to other states. As stated previously, District of Columbia households made about half of their SNAP purchases out-of-state, which is a significantly higher amount compared to any other state. And all District of Columbia households are in close proximity to the bordering states of Maryland and Virginia, approximately 7 miles or less. Also, a small percentage of District of Columbia households shopped only in their home state in fiscal year 2017—approximately 7 percent of all households reviewed. In comparison, approximately 62 percent of North Dakota households, and 76 percent of Washington households made all purchases in their home state.

For the households in North Dakota and Washington that shopped out-of-state in fiscal year 2017, we found that most transactions indicating potential trafficking occurred in the recipient's home state rather than out-of-state (see fig. 4). District of Columbia households were the exception and most transactions indicating potential trafficking occurred in the recipient's home state or in a border state. However, the pattern of trafficking flags also aligns with where District of Columbia SNAP recipients tend to shop, given that approximately half of their SNAP purchases were made in border states in fiscal year 2017.

**Figure 4: Location of Supplemental Nutrition Assistance Program (SNAP) Purchases Flagged for Potential Trafficking Indicators in Selected States, Fiscal Year 2017**



Purchases flagged by GAO for potential trafficking

- Home state
- Border state
- Non-border state<sup>b</sup>

Source: GAO analysis of Food and Nutrition Service (FNS) data. | C

Purchases flagged by GAO for potential trafficking<sup>a</sup> occurring in:

- Home state
- Border state
- Non-border state<sup>b</sup>

Source: GAO analysis of FNS data. | GAO-18-582

<sup>a</sup> Types of purchases flagged as indicative of trafficking are based on common criteria used by Food and Nutrition Service (FNS) and state SNAP officials to identify potential trafficking of benefits.

<sup>b</sup> A non-border state is a state that does not border the household's home state (the state where the household is enrolled in SNAP).

While we identified households in selected states with out-of-state purchases that indicated potential trafficking, identifying such households required additional data analysis of factors beyond purchase location.

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Analysis of additional data elements may allow states to better identify potential trafficking requiring investigation. We found out-of-state purchase information alone is of limited benefit to identify SNAP households that may be engaged in trafficking.

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## Some Selected States Reported Using Data Analytics Beyond Required Data Matching and Cited Advantages As Well As Organizational and Resource Challenges

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### Selected States Reported Doing Required Data Matching, and Some Reported Conducting Additional Data Analytics

Officials we interviewed in all seven of the states we selected for review of use of data analytics reported conducting federally required data matching to verify information provided by households when they initially apply or recertify for SNAP benefits.<sup>23</sup> Federal law and regulations require states to conduct certain data matches when determining SNAP eligibility, including matches that provide information on people who may be incarcerated, deceased, or disqualified from receiving SNAP benefits due to intentional program violations. The five databases that state SNAP agencies are required to conduct matches against when determining SNAP eligibility are the Department of Health and Human Services' (HHS) National Directory of New Hires, the Social Security Administration's (SSA) Prisoner Verification System, SSA's Death Master File, U.S. Citizenship and Immigration Services' Systematic Alien Verification for Entitlements and FNS's Electronic Disqualified Recipient System (eDRS). As we previously reported, state SNAP agencies use data matching to obtain information about households' income, verify information provided by households, or identify potential discrepancies.<sup>24</sup> Specifically, agencies are required to verify household data electronically by matching their data with specific government sources and have the option to match against additional data sources.

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<sup>23</sup> For this study, we interviewed officials from the District of Columbia, Massachusetts, Mississippi, New Mexico, North Dakota, Washington, and Wisconsin.

<sup>24</sup>GAO, *Supplemental Nutrition Assistance Program: More Information on Promising Practices Could Enhance States' Use of Data Matching for Eligibility*, [GAO-17-111](#) (Washington, D.C.: Oct. 19, 2016).

In addition to the required data matching, officials we interviewed in all seven selected states also reported conducting other data matching with a range of internal and external data sources. These matches used information from federal, state, and commercial data sources on earned income from employment or self-employment or unearned income from other government benefit programs. According to state officials, these sources included Unemployment Insurance information from state workforce agencies, the PARIS file from HHS, and The Work Number, a commercial verification service. Other sources that could be used include Old-Age, Survivors, and Disability Insurance income information and Supplemental Security Income information from multiple data matches with the SSA. In addition to verifying applicants' initial eligibility, data matching can identify changes in key information that could affect continued eligibility.

Beyond data matching, officials in all seven selected states said that they had access to EBT reports notifying them of suspicious transactions, although the type and frequency of use of these reports varied.<sup>25</sup> For example, while some state officials said that they manually generated reports on an ad hoc basis, other state officials said that they had automated reports that they received and reviewed on a weekly or monthly basis. As we previously reported, automating data analytics tests can allow agencies to monitor large amounts of data more efficiently than with manual tests.<sup>26</sup> Furthermore, officials in all seven selected states reported that they had examined out-of-state transactions to some extent. Some states had access to out-of-state reports as part of their suite of EBT reports but did not review them often, while other states automatically received alerts if households consistently used benefits out of state over a certain extended period of time, such as 70 or 90 days. For example, officials from Massachusetts told us that they flag certain transactions to help ensure recipients comply with the state's residency requirements for eligibility. Specifically, after a client spends their benefits out of state for 70 days or more, the state agency will send a letter asking the client to prove they are still a Massachusetts resident. Officials generally reported that tracking out-of-state transactions was most useful

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<sup>25</sup> According to state officials, states have access to EBT reports through their contracts with their EBT vendors, although the agreements made under these contracts vary by state.

<sup>26</sup> [GAO-15-593SP](#).

for finding potential dual participation—a household receiving benefits in two or more states.

Officials we interviewed in five of seven selected states reported conducting further, more sophisticated data analytics involving data mining—the active and recurring monitoring of EBT transactions using algorithms to detect and flag transactions that indicate potential recipient fraud, often on a real-time or near real-time basis. For example, officials told us that these states—the District of Columbia, Massachusetts, Mississippi, Washington, and Wisconsin—examined a range of indicators of potential recipient fraud. Some of the five selected states automated their data mining to monitor data for potential fraud indicators on a continuous, real-time basis.

In addition to data mining, some of these five states reported using other more advanced data analytics techniques, including mapping analysis and a form of predictive analysis to identify SNAP purchases that could indicate trafficking. For example, officials in the District of Columbia reported using location mapping to identify households that spent their benefits long distances from home. Officials we interviewed in Wisconsin reported developing an automated check intended to flag particular types of case characteristics indicative of potential fraud. According to the Wisconsin officials, if a particular case is flagged, a caseworker must follow up and provide extra scrutiny before the case can move forward in the eligibility process. As we previously reported, certain types of predictive data analytics can increase the effectiveness of anti-fraud programs by identifying particular types of potentially fraudulent behavior.<sup>27</sup>

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<sup>27</sup> [GAO-15-593SP](#).

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## Selected States That Reported Conducting Additional Data Analytics Also Employed More Leading Practices and Cited Advantages in Using Data Analytics

Officials we interviewed in the five selected states that reported conducting additional data analytics—the District of Columbia, Massachusetts, Mississippi, Washington, and Wisconsin— employed more of GAO’s leading practices for data analytics than the two states that used data matching alone—New Mexico and North Dakota.

- **Organizational and leadership support.** The five states with more sophisticated data analytics techniques all reported to us that they had organizational and leadership support for those activities. GAO’s leading practices state that to be effective, data-analytics initiatives need support across the program and, in particular, from program managers.<sup>28</sup> Officials in these states cited support from executive and legislative state leadership for the use of data analytics to combat SNAP recipient fraud. For example, officials in Wisconsin reported that the governor’s office worked to centralize the agency’s data-analytics activities and support infrastructure to improve business processes. Officials in Mississippi told us that the state’s executive leadership fully supports the use of data to combat SNAP recipient fraud and that the state legislature in 2017 passed a law to assist in the identification of waste, fraud, and abuse.
- **Pursue external data.** These states also reported to us that they were able to obtain external data necessary for their data analytics activities. For example, officials in Mississippi told us that they interface with an array of data sources, including the National Accuracy Clearinghouse, the state Department of Employment Security, and the state Department of Education, among others.<sup>29</sup> GAO’s leading practices state that using data from other federal agencies or third-party sources can help managers identify potential instances of fraud. As we mentioned previously, the states that

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<sup>28</sup>[GAO-15-593SP](#).

<sup>29</sup> The National Accuracy Clearinghouse is a data sharing system that was developed under a grant administered by FNS and funded by the Office of Management and Budget (OMB) to enable state agencies to share information in real-time about the receipt of SNAP. FNS administered the grant on behalf of OMB’s Partnership Fund for Program Integrity Innovation. Five states (Alabama, Florida, Georgia, Louisiana, and Mississippi) have been part of the pilot. FNS is currently developing an action plan for further rollout.

reported conducting additional matching beyond that required by federal law and regulation also reported using an array of federal, state, and third-party sources for these data matches.

- **Consider program rules or previously encountered schemes.** These five states also reported that they considered program rules and known or previously encountered fraud schemes to help design their data analytics practices, another of GAO's leading practices for data analytics. These leading practices note that by using information on previously encountered fraud schemes or known fraud risks, managers can identify signs of fraud (i.e., red flags) that may exist within their data. For example, two states reported that they change their data analytics techniques in response to changing patterns of fraud.

All five selected states that reported conducting additional data analytics practices beyond data matching cited a number of associated advantages, including increased efficiency and effectiveness of their anti-fraud efforts.<sup>30</sup>

- **Automating fraud detection.** All five states reported that data analytics provided the advantage of automating the detection of potentially fraudulent activity. For example, officials in Mississippi noted that a new investigation management system implemented in their state would use algorithms to detect potential fraud and automatically generate flags, whereas in the past they had to examine transactions manually.
- **Financial savings.** Four states reported that data analytics had the advantage of financial savings through the collection of overpayments and the closure of cases. For example, officials in Washington said that its data matching activities saved millions of dollars through the closure of cases. Officials in Mississippi reported that its overpayment collections increased \$2 million since moving to a new investigation management system a few years ago that incorporates more data analytics techniques.
- **Prioritizing and enhancing investigations.** Four states reported that data analytics helped them prioritize and enhance fraud investigations. For example, officials in Washington said that they had a system in place that used an algorithm to rank each fraud referral

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<sup>30</sup> Because we asked state officials to generally discuss the advantages associated with their data analytics practices, not all officials we interviewed commented specifically about each advantage.

based on a number of factors and moved higher-risk referrals to the top of the list of investigations. Officials in Wisconsin said that they combined eligibility, transaction, and retailer data and analyzed it to produce a prioritized list of individuals who appeared most likely to have trafficked at a specific retailer, allowing them to focus their investigative resources on cases most likely to be fraud.

- **Preventing fraud.** Finally, two states reported that data analytics had the advantage of improving the return on investment of anti-fraud activities through the prevention of fraud before it occurs. For example, officials in Wisconsin estimated that data analytics has helped them prevent a large proportion of fraud before it occurs, thereby improving the cost-benefit of their anti-fraud practices. Officials in Mississippi noted that data analytics can be an effective deterrent.

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### Selected States Reported Organizational and Resource Challenges in Effectively Using Data Analytics

Officials we interviewed in all seven selected states reported a range of organizational and resource challenges that either prevented them from using more advanced data analytics techniques or made their current data analytics practices difficult to implement.<sup>31</sup>

- **Quantifying benefits of data analytics.** Officials we interviewed in two states said it was challenging to quantify the benefits of data analytics, therefore resulting in a lack of sound evidence for supporting the utility of this type of work. For example, officials in Washington reported that it was difficult to conduct a cost-benefit analysis of data analytics because of the challenge of quantifying how often fraud is prevented before it occurs. Officials in Wisconsin reported that it attempted to measure future savings from fraud prevention but that there is no guidance for how to determine these savings.
- **Obtaining organizational support.** Officials in two states reported that it was challenging to obtain sufficient organizational support for conducting data analytics. For example, officials in North Dakota reported that they could not say how much support exists in the state

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<sup>31</sup> Because we asked state officials to generally discuss the challenges associated with their data analytics practices, not all officials we interviewed commented specifically about each challenge.

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government to pursue additional resources for data analytics. Those in the District of Columbia noted that it is sometimes difficult to convince certain employees of the need for data analytics to detect fraud.

- **Appearing to criminalize legitimate use.** Officials in three states said that a challenge to using more advanced data analytics was that it could appear to profile recipients or make it appear to the general public and to policy-makers that certain legitimate uses of SNAP benefits, such as using benefits out-of-state, were not allowed. For example, Washington tracked the number of replacement EBT cards as a possible indicator of fraud, but officials said that there were many cases in which the client had legitimate reasons for needing a high number of replacement cards, such as mental health issues or homelessness. Washington officials further noted the challenge of using demographic data in a predictive model, reporting that it puts them at risk of profiling even though it can be helpful. For example, when they examined recipients with high balances on their EBT cards, demographic information provided an explanation. In particular, elderly individuals were being frugal with their benefits.
- **Dealing with changing patterns of fraud.** Officials we interviewed in three states said that a challenge to using data analytics was dealing with changing patterns of fraud. They said that the characteristics of transactions that may indicate potential fraud are constantly changing as fraudulent actors change their tactics in response to state enforcement. For example, officials in Mississippi said that recipients committing fraud might change from high-dollar to low-dollar transactions, in which case the state would need to adjust its monitoring accordingly.
- **Obtaining necessary data.** Officials we interviewed also reported challenges with obtaining data needed to conduct data analytics. Officials in three states said that simplified reporting presents a challenge to using data analytics to detect potential recipient fraud. Specifically, simplified reporting made it challenging to use certain information as potentially indicative of fraud because recipients are not required to report certain changes—for example, a move out of state—until it is time for them to recertify for benefits. In addition, officials in three states reported a challenge in verifying necessary data in order for them to be considered reliable for use. For example, Massachusetts reported that one of the biggest challenges of developing investigative leads through data analytics is that not all data are considered equally reliable. For SNAP, FNS guidance defines some data matches as “verified upon receipt” if the match is

with a primary or original source of the data (such as information on a government benefit provided by the administering agency, such as SSA).<sup>32</sup> Eligibility workers can use this information without taking additional steps to verify that the data are accurate, according to FNS guidance. In contrast, data from a secondary source, defined in the guidance as not being verified upon receipt, require additional verification before the state agency can take action on an eligibility determination.

- **High costs and resource demands.** Officials in six selected states cited the high costs and resource demands of using advanced data analytics techniques. For example, officials we interviewed in North Dakota, which conducted only data matching, said that they lacked the funding and staff resources to use more advanced techniques. Officials we interviewed in New Mexico noted that they lacked the staff resources to use data analytics. Officials from North Dakota said that they had the option to procure a data analytics tool, but said that the costs were prohibitively high. Officials in Wisconsin, which was employing more data analytics, said that they were not able to purchase access to a third-party data source using SNAP funding alone, and that they had to seek funding from another federal program in order to afford these efforts.<sup>33</sup>

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<sup>32</sup> USDA, *Questions and Answers on the Noncitizen Eligibility and Certification Provisions Final Rule* (Washington, D.C.: Nov. 21, 2000).

<sup>33</sup> The SNAP fraud units in the states we interviewed were responsible for combating fraud in more than one federally funded program, sometimes making it possible to use other funds from other programs to help manage anti-fraud efforts.

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## FNS Supported Certain States in Adopting Leading Practices for Data Analytics, but Assistance and Information Sharing Has Been Limited

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### FNS Helped Some States Adopt Certain Leading Practices for Data Analytics

FNS provided individualized assistance and training to several states across the country to build their capacity for data analytics on SNAP, consistent with several of GAO's leading practices. FNS provided assistance through grants, pilot projects, and training at conferences. The pilot projects also informed FNS's early efforts to help states improve their fraud prevention, detection, and investigation processes using data analytics. Specifically, in recent years, FNS's assistance to states has aligned with 4 of the 10 leading practices for data analytics identified by GAO in its Fraud Risk Framework.<sup>34</sup>

#### Ensure Employees Have Sufficient Knowledge, Skills, and Training

In fiscal years 2014 through 2017, FNS conducted a 10-state pilot project to identify and test promising practices in state fraud prevention and detection. As part of the project, each participating state received training and technical assistance in the use of data analytics, in addition to a review of its business processes. For example, officials from Utah, who participated in the pilot, said that FNS provided training to them on mining social media data. The officials added that the timing of the training was excellent because the state was beginning to build its capability for data analytics on its own. They said that their data analytics team has

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<sup>34</sup> GAO's leading practices to effectively use data to mitigate the likelihood and impact of fraud are: build support within the program; ensure employees have sufficient knowledge, skills, and training to perform data analytics; combine data across programs and from separate databases within the agency; pursue access to necessary external data; consider program rules and known or previously encountered fraud schemes; apply system edit checks; conduct data matching to verify key information; conduct data mining to identify suspicious activity or transactions; tailor the output of data analytics to the intended audience; and refer appropriate cases to the OIG for further investigation. GAO, *A Framework for Managing Fraud Risks in Federal Programs*, [GAO-15-593SP](#) (Washington, D.C.: July 2015).

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incorporated what they learned during the pilot and use various data analytic techniques every month. As a result, according to officials, the state's overpayment collections increased.

In fiscal years 2014 and 2015, FNS awarded nine Recipient Trafficking Prevention Grants and five Recipient Integrity Information Technology Grants to a total of 13 states, some of which funded training and staff to perform SNAP data analytics.<sup>35</sup> For example, in fiscal year 2014, Kentucky received a grant to purchase and receive training on an analytic tool with the ability to analyze data and capture posts coming from various social media sites. In fiscal year 2015, Alaska received a grant that included 3 months of training related to the installation of the state's new fraud case management system that, among other things, would provide real-time data and automate manual processes to detect fraud and track cases. According to Alaska's grant application, this would allow the state to devote more time to investigations, prosecutions, recoupment, and analysis and increase the number of completed investigations.

State officials we interviewed said that they also gained data analytics knowledge and skills from other states at conference workshops. For example, officials from North Dakota told us that they attended a conference presentation in which officials from another state discussed a performance measure that is designed to assess the savings associated with detecting SNAP fraud.

### Combine Data Across Programs Within the Agency

FNS has provided grant funding and training to some states to help them combine data from different databases within the state to facilitate SNAP data analytics. For example, FNS's fiscal year 2015 information technology grants helped five states develop centralized data systems and consolidate data from multiple outdated systems. Nevada received a grant to fund the acquisition of a new data system that, according to its grant application, would combine the state's data on known SNAP fraud cases with transaction data and third-party data sets. The data on known fraud cases would be used to continuously refine data analyses to identify similar anomalies and patterns in the transaction data. Maine used its grant to acquire a new investigation case management system that

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<sup>35</sup> Nevada received two separate grants.

consolidates data from multiple systems in a centralized repository. Similarly, New Jersey received a grant to acquire new computer systems that, according to its grant application, will integrate SNAP case management system data with data from several of the state's data systems, allowing investigators to perform analyses in real time. In addition to the grants, in fiscal year 2016, FNS sponsored a 5-day course on fraud detection that demonstrated how states could combine eligibility data with transaction and other data to identify potential fraud. Officials from six states participated.

#### Pursue Access to External Data and Conduct Data Matching

FNS has provided grants to assist some states in accessing and using external sources for data matching. For example, in fiscal year 2014, FNS provided recipient trafficking prevention grants to three states—Florida, Nevada, and Ohio—to update the systems that they use to match their SNAP recipients and those that have been disqualified in the state with FNS's national database of disqualified recipients. According to FNS, each grantee state planned to use the funds to link its system with FNS's database through the web rather than using a "batch" processing system, which will allow them to match data on applicants at the time of application or recertification rather than at specific intervals after eligibility is determined. Florida officials mentioned in the related grant proposal that using the state's current batch processing system meant that other states did not have real-time access to information about the state's disqualified recipients, thereby potentially increasing the chance of an ineligible individual receiving benefits.

In addition, FNS administered a grant on behalf of OMB, which funded a pilot program for five southeastern states to develop the National Accuracy Clearinghouse (NAC), a data sharing system that allows participating states to identify applicants who are receiving benefits in the partnering states in near-real time. According to one state official, a primary benefit of the NAC is that it enables each participating state to match data on individual beneficiaries across five states without having to connect to five different states' computer systems. One member of the NAC consortium from Florida said that the ability to match in near-real time is helpful because the data available in the PARIS system is older and would only identify individuals potentially receiving benefits in multiple states months after they have occurred, rather than at the time of

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application. As we have previously reported, data on benefit receipts is updated quarterly in PARIS.<sup>36</sup>

### Conduct Data Mining

FNS has funded pilot projects, training, and grants to assist some states in developing their capacity for data mining to identify potential fraud. FNS's 10-state pilot to test advanced data analytics techniques included the use of data mining, among other data analytic techniques. One of the techniques involved mining recipient transaction data for households that had shopped at disqualified retailers to develop a prioritized list of retailers and recipients to investigate. According to state officials we interviewed in Wisconsin, the technique automated a time and labor intensive process that state analysts had previously performed manually. The pilot project also used other data mining techniques to develop profiles of recipients who commit fraud. For instance, in Utah, the data analysis showed that they are more likely to have multiple replacement EBT cards and make more purchases from small stores than other recipients. At the end of the pilot, FNS sponsored a training course that included detailed instruction on data mining.

Although past efforts by FNS have been limited to some states and encouraged some leading practices, more recently, in May 2018, FNS released a SNAP Fraud Framework that provides more comprehensive guidance to help states adopt all of GAO's 10 leading practices for data analytics. Specifically, FNS's SNAP Fraud Framework provides a collection of examples, promising practices, and procedures to help state agencies with the prevention and detection of SNAP fraud that encompass all 10 data analytics leading practices from GAO's Fraud Risk Framework.<sup>37</sup> (For a comparison of the practices in the two frameworks, see appendix III.) According to FNS officials, the SNAP Fraud Framework is meant to take a holistic, integrated approach to fraud, including data analytics, but they recognize that states differ in their readiness to adopt analytics. The framework's data analytics section provides a range of approaches, examples, case studies, and methods that allow all states to begin embedding analytics into their processes. FNS officials reported

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<sup>36</sup> GAO, *Supplemental Nutrition Assistance Program: More Assistance on Promising Practices Could Enhance States' Use of Data Matching for Eligibility*, [GAO-17-111](#) (Washington, D.C.: Oct. 16, 2016).

<sup>37</sup> [GAO-15-593SP](#).

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that they began conducting outreach to state officials about the framework in the summer of 2018. FNS officials said that they are also considering using grant funds to assist states with the implementation of components of the framework. Furthermore, FNS officials said that some of the potential technical assistance may include showing states how to develop their own analytic tools.

FNS has also developed a maturity assessment to evaluate each state's capacity to implement the various components of the fraud framework. It includes a state's use of data analytics for fraud detection and investigations, and its learning and development opportunities for stakeholders who use the results of data analytics, such as investigators, hearing officials, and court officials. According to FNS officials, FNS's regional offices will conduct maturity assessments as part of management reviews by the end of fiscal year 2018.

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### FNS's Assistance on Developing Data Analytics Capabilities Has Reached a Limited Number of States

Although FNS has assisted some states in developing their data analytic capabilities, the methods it has used to do so were meant to reach only a limited number of states. Specifically, much of FNS's direct assistance to states came in the form of pilot projects, competitive grants, or conferences. According to officials, FNS is in the early stages of promoting states' use of data analytics for SNAP fraud prevention and detection, and its efforts have focused on assessing the current capacity of states to use data analytics and determining analytic practices that are effective. Furthermore, FNS's efforts generally had specific end dates and did not provide ongoing assistance to reach a broader group of states and provide them with the knowledge and tools to develop and maintain their data analytics efforts. (See table 5 for more information on the reach of FNS's direct assistance efforts.)

**Table 5: FNS SNAP Recipient Fraud Detection Initiatives to Enhance Data Analytic Capacity, 2014-2018**

FNS initiative	Number of states participating	Time period of initiative
FNS Recipient Integrity Project	10	November 2014- November 2016
FY 2014 Supplemental Nutrition Assistance Program (SNAP) Recipient Trafficking Prevention Grant	7	September 30, 2014- September 30, 2016
FY 2015 SNAP Recipient Integrity Information Technology Grant	5	September 30, 2015- September 29, 2018
SNAP Fraud Analytics Training Conference: FNS SNAP Recipient Fraud Prevention and Detection Project	6	August 2016

Source: GAO analysis of information provided by the Food and Nutrition Service (FNS). | GAO-19-115

Notes: Only grants intended to enhance states' data analytic capacity were included. Some states received more than one type of assistance. The total amount of funding available was up to \$7 million for the fiscal year 2014 grants and up to \$7.5 million for the fiscal year 2015 grants. The number of grants awarded depended on the available funding and the number of applications that met FNS's requirements for quality and the nature of the project. No Recipient Trafficking Prevention Grants or Recipient Integrity Information Technology Grants were awarded in fiscal years 2016 or 2017.

Although FNS provided some training on using data analytics, it was not conducted on a recurring basis, and state officials we interviewed expressed concerns about their access to information on successful data analytics approaches. Officials we interviewed in five of our seven selected states said that they attended FNS conferences that provided training in data analytics and participated in regional discussions on the topic; however, these events were provided occasionally and limited to states within the region. State officials said that participating in conferences in which they could learn from other states' experiences was particularly helpful, and they wanted more opportunities to do so. State officials also told us that it would be beneficial if FNS took a more active role in disseminating states' successful practices, particularly with regard to data analytics. Further communications about data analytics would be consistent with federal internal control standards that call for agencies to communicate necessary quality information to external parties in order to achieve the agency's objectives.<sup>38</sup> Federal agencies can support external parties, such as state agencies, in achieving the federal agency's

<sup>38</sup> GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

objectives by sharing information on effective practices used by the program or other external parties.

Furthermore, officials we interviewed in selected states most frequently cited high costs and resource demands as a challenge to using advanced data analytics techniques.<sup>39</sup> Although FNS has provided some financial support to state efforts, officials in two states that we reviewed told us that they were not always able to sustain efforts beyond the life of the FNS pilot or grant. For example, officials we interviewed from Wisconsin said that FNS's contractor for the 10-state pilot, in an effort separate from the contract, developed a tool that identified SNAP purchases made from disqualified SNAP retailers. Although the state officials found the tool to be highly efficient because it could sift through large amounts of data, the tool was only available to the state for a fee, which they said it could not afford.<sup>40</sup> Similarly, officials from Washington told us that as part of a recipient trafficking prevention grant, the state was able to hire two investigators to detect potential SNAP fraud that may be occurring via social media. However, according to state officials, the state was unable to maintain the effort after the grant ended.<sup>41</sup>

In our prior work on establishing data analytic programs to address fraud, we noted that one way to handle resource challenges is to identify opportunities that leverage a program's existing capabilities. In September 2016, GAO convened a forum of data-analysis experts to discuss considerations for entities establishing and refining data analytics programs, during which the costs of such programs were raised.<sup>42</sup> Panelists, which included officials from FNS, noted that in developing a data analytics program, an entity should consider ways of leveraging

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<sup>39</sup> Beyond these grants, FNS pays 50 percent of administrative costs for fraud detection and investigation, including data analytics, according to FNS officials.

<sup>40</sup> According to FNS officials, this tool was not part of the FNS contract with the vendor. Officials said that the terms of the contract specified that the contractor would develop and provide to the state an analytical model based on known traffickers in the state and that the state would be able to continue using the model using the software of their choice. FNS offered hands-on data analytics training to the pilot states on conducting data analytics using free software.

<sup>41</sup> According to FNS officials, the grant selection criteria included the state's ability to maintain the project after grant funding expired and they stated that the state of Washington asserted in its proposal that it would be sustainable.

<sup>42</sup> GAO, *Highlights of a Forum: Data Analytics to Address Fraud and Improper Payments*, [GAO-17-339SP](#) (Washington, D.C.: Mar. 31, 2017).

resources throughout the entity. For example, panelists suggested that an entity could improve its data analytics group by combining a data warehouse from one department with existing statistical software from another and incorporating it with its current fraud-prevention system. The forum also suggested that a data analytics group should look across the agency to find staff that may have an interest or experience in working with data. Panelists noted that such efforts may be improved by seeking staff from a diverse set of positions and perspectives, including auditors, evaluators, investigators, and attorneys.

Similarly, some state officials we interviewed shared creative ways to leverage existing resources. For example, officials from Florida and Wisconsin stated that they were able to leverage recovered funds from other programs to purchase access to a commercial database that matches eligibility data for individuals across related programs. In Mississippi, officials said that they used SNAP transaction data to identify individuals living out of state and then determine whether those individuals were ineligible for both SNAP and other assistance programs. By combining data and analyses across two programs, the state officials said that they were able to close more cases and significantly increase cost savings.

However, other state officials noted that leveraging resources, especially data, poses challenges that states will need to learn how to resolve. Specifically, some states reported facing problems sharing data across different systems and with restrictions on sharing sensitive personal information. For example, officials representing four states from the American Association of SNAP Directors (AASD) told us that, for states to leverage data, SNAP states' data systems need to be integrated across states.<sup>43</sup> However, in their view, the cost of integration may exceed the benefits from integrating the data. In addition, state officials said that in order to leverage personal data, some states as well as programs in the same state will need to reach agreements that define how data will be extracted and used while protecting privacy. For example, a Wisconsin official told us that its data analytics group has difficulty acquiring data

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<sup>43</sup> AASD is an organization formed to strengthen the administration and management of SNAP through the exchange of experience and knowledge among those agencies of federal, state, and local government that administer it. AASD is an "affinity group" of the American Public Service Human Services Administration and is a bipartisan, nonprofit membership organization representing state and local health and human service agencies through their top-level leadership.

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across programs within the state because of confidentiality and privacy rules as well as the difficulty of reaching data-sharing agreements with other programs.<sup>44</sup>

Moving forward, FNS's SNAP Fraud Framework, combined with its maturity assessment, will form the core of FNS's efforts to assist states with data analytics in a broad-based, systematic manner. According to FNS officials, the agency will be conducting outreach to states about the fraud framework and assessing both states' capacities in data analytics and barriers to gaining the necessary knowledge and tools for developing and maintaining those efforts.

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## Conclusions

To ensure that SNAP funds are used for the purposes for which they were intended, both the federal government and state agencies should have appropriate controls for detecting and addressing fraud. The use of data analytics, such as mapping and predictive analysis, may help SNAP agencies increase program integrity and improve administrative efficiency. Data mining and data matching techniques can help identify potential SNAP fraud, and predictive models can help identify characteristics of SNAP traffickers. Our use of analytics on SNAP out-of-state transaction data from three selected states identified only slight differences between those households who shopped out of state and those who did not, suggesting that analyses of other data elements that have been shown to be indicative of potential trafficking may allow states to better identify potential trafficking and, thereby, better target resources.

Although FNS has efforts underway to promote the use of data analytics to improve SNAP fraud detection through its fraud framework and maturity assessment, officials in our selected states cited challenges with accessing and maintaining needed resources such as staff, technology, and tools. While these challenges may limit states' ability to implement data analytics, some of our selected states have successfully overcome such challenges to implement or enhance data analytics programs. For

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<sup>44</sup> In our prior work, we have noted a number of challenges that state and local human service agencies face as they balance the need to protect clients' personal information while increasing the use of data sharing. GAO, *Human Services: Sustained and Coordinated Efforts Could Facilitate Data Sharing While Protecting Privacy*, [GAO-13-106](#) (Washington, D.C.: Feb. 8, 2013).

example, two states described leveraging recovered funds and reinvesting them to combat fraud. Another state leveraged transaction data across two programs, resulting in financial savings and enhanced collections, which could be reinvested to combat fraud. As FNS conducts outreach to help states implement its fraud framework and uses its maturity assessment to assess states' anti-fraud capabilities, it has an opportunity to regularly assist states with adopting advanced data analytic techniques. Based on the experiences described by state officials, finding ways that states can leverage existing resources to improve their data analytic capabilities may be an important part of any solution. In its role as the federal oversight agency, FNS is in a position to collect and widely disseminate information about those states that have built support for data analytics and leveraged existing resources to implement or expand their data analytics programs to states seeking such examples. With wider dissemination of these examples of state successes, all state SNAP agencies could be better positioned to enhance their own efforts to identify and address SNAP fraud.

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## Recommendation for Executive Action

Building on ongoing efforts, the Administrator of FNS should develop and implement additional methods to widely distribute information to state agencies on an ongoing basis about successful efforts to adopt data analytics and strategies to leverage existing data, technology, and staff resources to enhance data analytics. (Recommendation 1)

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## Agency Comments and Our Evaluation

We provided a draft of this product to the U.S. Department of Agriculture for comment. In oral comments on September 14, 2018, FNS officials from SNAP's Program Accountability and Administration Division and the Deputy Associate Administrator for SNAP agreed with our recommendation. They noted that they have been moving in the general direction of this recommendation and would build on current efforts to address it but noted that state readiness and technical capabilities are limiting factors in the adoption of data analytics. FNS also provided technical comments, which were incorporated into the report as appropriate.

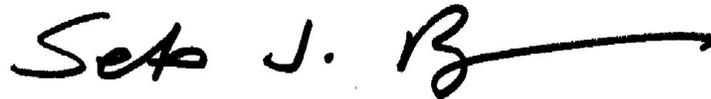
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As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to relevant congressional committees, the Secretary of Agriculture, the FNS Administrator, and other relevant parties. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact us at (202) 512-7215 or [LarinK@gao.gov](mailto:LarinK@gao.gov) or (202) 512-6722 or [BagdoyanS@gao.gov](mailto:BagdoyanS@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff that made key contributions to the report are listed in appendix IV.



Kathryn A. Larin  
Director  
Education, Workforce  
and Income Security Issues



Seto J. Bagdoyan  
Director  
Forensic Audits and Investigative Service

*List of Requesters*

The Honorable Trey Gowdy  
Chairman  
Committee on Oversight and Government Reform  
House of Representatives  
The Honorable Mark Meadows  
Chairman  
Subcommittee on Government Operations  
Committee on Oversight and Government Reform  
House of Representatives

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The Honorable Jim Jordan  
Chairman  
Subcommittee on Healthcare, Benefits, and Administrative Rules  
Committee on Oversight and Government Reform  
House of Representatives  
The Honorable Gary Palmer  
Chairman  
Subcommittee on Intergovernmental Affairs  
Committee on Oversight and Government Reform  
House of Representatives

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# Appendix I: Objectives, Scope, and Methodology

The objectives of this report were to review the following: (1) the extent to which SNAP households in selected states are making out-of-state purchases that may indicate potential recipient fraud; (2) the extent to which selected states are using data analytics—including those applied to out-of-state transactions—to find potential SNAP recipient fraud, and what advantages and challenges, if any, have they experienced doing so, and (3) how FNS has assisted states in implementing leading practices for data analytics for fraud detection. To address these objectives, we primarily focused on federal and state SNAP recipient anti-fraud work since the beginning of fiscal year 2015—the period which follows our August 2014 report on SNAP recipient fraud.<sup>1</sup> We reviewed relevant federal laws, regulations, program guidance, and reports, and we interviewed FNS officials in headquarters and all seven regional offices to address all three objectives and obtained relevant documentation.

To assess the extent that SNAP households in selected states made out-of-state purchases that may indicate potential recipient fraud, we analyzed all out-of-state purchase data nationwide and we analyzed transaction data for SNAP households in the District of Columbia and two states—North Dakota and Washington.<sup>2</sup> We selected these states as they were among the top states for out-of-state spending in a non-border state in fiscal years 2015 and 2016, the two most recent years' of SNAP data available when we started this review.<sup>3</sup> We obtained SNAP transaction data from FNS for all participating households in the three selected states, and analyzed fiscal year 2017 data for households that spent all their benefits in a non-border state in that year. We also analyzed fiscal year 2017 data for all households in these three states for purchases that may indicate trafficking, based on common suspicious transaction types. We tested the transaction data for ten different suspicious transaction

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<sup>1</sup> [GAO-14-641](#).

<sup>2</sup>In this report, we refer to the District of Columbia as a state when we discuss our selected states for review.

<sup>3</sup>Spending in non-border states means purchases made in a state that does not border the recipient's home state, the state in which the recipient is enrolled in SNAP.

types that have been used by FNS and state SNAP officials to identify potential trafficking. While the transactions we flagged for potential trafficking in our three selected states are generally deemed potential indicators of fraud by SNAP officials, there could also be legitimate reasons for these purchases and they do not prove trafficking. For that reason, our analysis focused on households with a greater frequency of questionable purchases in fiscal year 2017 indicating potential trafficking—specifically purchases that resulted in 20 or more trafficking flags. We assessed the reliability of SNAP transaction data used in analyses through review of related documentation, interviews with knowledgeable officials, and electronic testing of the data, and found them to be sufficiently reliable for our purposes.

To determine how selected state agencies are using data analytics to identify potential SNAP recipient fraud, we interviewed officials from seven state SNAP agencies about their efforts. We obtained related documentation when available. We selected the District of Columbia, Massachusetts, Mississippi, New Mexico, North Dakota, Washington, and Wisconsin to reflect a range of experiences based on the percentage of non-border state transactions, receipt of related technical assistance, geographic region, and FNS’s reports on their capacity to conduct data analysis. We interviewed state SNAP agency officials who oversee anti-fraud practices in each of our seven selected states. During each interview, we collected information on each state’s data analytics activities and whether they have implemented leading practices for data analytics from GAO’s Fraud Risk Framework.<sup>4</sup> We also discussed the advantages and challenges of using data analytics. While information from these seven state SNAP agencies is non-generalizable, it provided illustrative examples of agencies’ efforts to use data analytics.

To determine the degree to which FNS has assisted states in developing the use of data analytics, we reviewed grant documentation FNS awarded to states to help prevent recipient trafficking or improve technology used to improve program integrity. We also reviewed the terms of work for a contract FNS awarded to a private consulting firm to conduct a pilot project with 10 states during fiscal years 2014-2017, as well as reports delivered by the contractor detailing the results of the work. In addition, we reviewed a guide to data analytics that FNS developed for a 5-day training session in August 2016, as well as the data analytics “maturity

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<sup>4</sup> [GAO-15-593SP](#).

assessment” questionnaire that is intended for FNS regions to use to assess the capacity of the states. We also obtained and reviewed FNS’s SNAP Fraud Framework and Supplementary Materials that was released in May 2018. After developing an inventory of how FNS has assisted states in assessing and developing its data analytic capacity, we analyzed FNS’s actions with respect to GAO’s set of leading practices for data analytics from GAO’s Fraud Risk Framework and GAO’s standards for internal control.<sup>5</sup> We also analyzed FNS’s SNAP Fraud Framework to assess the degree to which it addressed GAO’s leading practices on how to use data analytics to detect, prevent, and investigate SNAP fraud. Unless specified, we reviewed only data analytic activities that occurred since the beginning of fiscal year 2015, which marks the end of our previous analysis of FNS’ anti-fraud activities concerning the SNAP program. To obtain FNS’ views, we interviewed SNAP program officials at both headquarters and at each of SNAP’s seven regional offices. To obtain a broader perspective on the use of data analytics across states, we interviewed officials representing the American Association of SNAP Directors (AASD)<sup>6</sup> and the United Council on Welfare Fraud (UCOWF).<sup>7</sup> AASD representatives included officials from the SNAP anti-fraud units for California, New York, Tennessee, and Texas. UCOWF representatives included officials from Florida, Louisiana, and Utah. In addition, we interviewed the Deputy Executive Director of American Public Human Services Association, AASD’s parent organization, and officials representing USDA’s Office of Inspector General.

We conducted this performance audit from May 2017 through October 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe

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<sup>5</sup> [GAO-14-704G](#).

<sup>6</sup> The AASD is an organization formed to strengthen the administration and management of SNAP and contribute to the professional development of its members. According to AASD, it supports, among other things, experience and knowledge exchange among federal, state, and local government agencies by providing expert advice and consultation on SNAP.

<sup>7</sup> The UCOWF is an organization of investigators, administrators, prosecutors, eligibility workers, and claims and recovery specialists from local, state and federal agencies from the United States and Canada who have combined their efforts to fight fraud, waste, and abuse in social services programs. UCOWF states that its primary goal is to strengthen the integrity of our public assistance programs.

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that the evidence we obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017

In fiscal year 2017, the share of SNAP benefits spent out of state varied by state from approximately 1 percent to 13 percent, with most out-of-state purchases made in a border state.<sup>1</sup> States whose SNAP recipients had the highest percent of out-of-state purchases included Delaware, District of Columbia, Idaho, Nebraska, New Mexico, Rhode Island, South Dakota, Tennessee, Vermont, and West Virginia. All of these states made at least 5 percent of total purchases out of state.<sup>2</sup> The states with the lowest percent of out-of-state spending by SNAP recipients included Alaska, California, Florida, Hawaii, Michigan, and Texas (see fig. 5). Detailed information on out-of-state spending by SNAP recipients, by state, is also provided in table 6 below.

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<sup>1</sup>The District of Columbia was the outlier to the range of out-of-state spending, as SNAP recipients spent approximately 49 percent of all benefits out of state in fiscal year 2017.

<sup>2</sup> Percentages were rounded to the nearest whole number.



**Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017**

**Table 6: Supplemental Nutrition Assistance Program Out-of-State Spending by State, Fiscal Year 2017 (Spending amounts in millions of dollars)**

State	Total spending	Total out-of-state spending	Out-of-state spending as a percent of total spending	Non-border <sup>a</sup> state spending		
				Total spending in non-border states	Non-border spending as a percent of total spending	Top three states where recipients had non-border spending
Alabama	1,161	46	4%	9	1%	Texas 1.30 Louisiana 0.92 North Carolina 0.52
Alaska	191	2	1%	2	1%	Washington 0.35 California 0.23 Oregon 0.16
Arizona	1,335	45	3%	12	1%	Texas 2.06 Washington 0.73 Illinois 0.70
Arkansas	511	22	4%	4	1%	Florida 0.48 Illinois 0.36 Georgia 0.34
California	6,733	89	1%	45	1%	Texas 7.12 Washington 3.81 Florida 2.59
Colorado	702	17	2%	11	2%	Texas 2.30 California 1.30 Florida 1.18
Connecticut	653	19	3%	8	1%	Florida 2.36 New Jersey 0.72 North Carolina 0.71
Delaware	211	16	7%	3	1%	Florida 0.56 New York 0.46 Virginia 0.38
District of Columbia	200	99	49%	3	1%	North Carolina 0.64 Florida 0.35 Georgia 0.26
Florida	4,788	95	2%	65	1%	New York 6.60 Texas 5.57 North Carolina 5.24
Georgia	2,540	87	3%	29	1%	Texas 2.98 New York 2.55

**Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017**

n/a	n/a	n/a	n/a	Non-border <sup>a</sup> state spending				
State	Total spending	Total out-of-state spending	Out-of-state spending as a percent of total spending	Total spending in non-border states	Non-border spending as a percent of total spending	Top three states where recipients had non-border spending		
Guam	103	0	0%	0	0%	Virginia	1.80	
						California	0.08	
						Washington	0.04	
Hawaii	480	8	2%	8	2%	Hawaii	0.03	
						California	2.01	
						Nevada	0.89	
Idaho	234	12	5%	2	1%	Washington	0.75	
						California	0.68	
						Arizona	0.26	
Illinois	2,934	117	4%	33	1%	Texas	0.24	
						Florida	4.24	
						Texas	3.89	
Indiana	955	35	4%	9	1%	Georgia	3.15	
						Florida	1.66	
						Texas	0.86	
Iowa	482	19	4%	4	1%	Tennessee	0.80	
						Texas	0.77	
						Florida	0.33	
Kansas	318	14	5%	3	1%	California	0.29	
						Texas	0.83	
						Florida	0.22	
Kentucky	944	33	3%	7	1%	California	0.21	
						Florida	1.77	
						Georgia	0.76	
Louisiana	1,440	41	3%	14	1%	Michigan	0.64	
						Florida	2.20	
						Georgia	2.17	
						Alabama	1.22	
Maine	235	7	3%	2	1%	Massachusetts	0.49	
						Florida	0.40	
						New York	0.14	
Maryland	987	47	5%	11	1%	Florida	2.11	
						North Carolina	1.67	
						New York	1.42	

**Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017**

n/a	n/a	n/a	n/a	Non-border <sup>a</sup> state spending			
State	Total spending	Total out-of-state spending	Out-of-state spending as a percent of total spending	Total spending in non-border states	Non-border spending as a percent of total spending	Top three states where recipients had non-border spending	
Massachusetts	1,159	41	4%	8	1%	Florida	2.64
						Maine	0.71
						Pennsylvania	0.55
Michigan	2,069	37	2%	21	1%	Florida	3.20
						Texas	2.14
						Georgia	2.14
Minnesota	603	16	3%	6	1%	Illinois	1.23
						Texas	0.62
						Florida	0.36
Mississippi	743	26	3%	8	1%	Texas	2.03
						Georgia	1.17
						Florida	1.15
Missouri	1,116	39	3%	10	1%	Texas	1.89
						Florida	1.34
						California	0.80
Montana	172	6	3%	3	2%	Washington	0.67
						California	0.34
						Oregon	0.26
Nebraska	242	12	5%	3	1%	Texas	0.54
						Florida	0.35
						California	0.23
Nevada	625	23	4%	9	2%	Texas	1.16
						Florida	0.74
						Illinois	0.64
New Hampshire	113	3	3%	1	1%	Florida	0.23
						New York	0.10
						Connecticut	0.06
New Jersey	1,116	27	2%	10	1%	Florida	3.57
						North Carolina	1.03
						Georgia	0.89
New Mexico	670	47	7%	5	1%	California	1.36
						Nevada	0.44
						Florida	0.43
New York	4,737	123	3%	49	1%	Florida	14.92

**Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017**

n/a	n/a	n/a	n/a	Non-border <sup>a</sup> state spending			
State	Total spending	Total out-of-state spending	Out-of-state spending as a percent of total spending	Total spending in non-border states	Non-border spending as a percent of total spending	Top three states where recipients had non-border spending	
						North Carolina	5.80
						Georgia	5.24
North Carolina	2,172	63	3%	22	1%	Florida	4.89
						New York	2.64
						Maryland	1.66
North Dakota	78	4	5%	1	2%	Texas	0.15
						California	0.07
						Arizona	0.06
Ohio	2,225	49	2%	18	1%	Florida	3.56
						Georgia	1.91
						Texas	1.17
Oklahoma	880	40	5%	8	1%	California	0.88
						Florida	0.87
						Louisiana	0.59
Oregon	1,009	32	3%	8	1%	Arizona	1.11
						Texas	0.74
						Florida	0.51
Pennsylvania	2,673	77	3%	19	1%	Florida	5.10
						North Carolina	1.87
						Virginia	1.74
Rhode Island	270	34	13%	4	1%	Florida	0.96
						New York	0.68
						Pennsylvania	0.23
South Carolina	1,066	37	3%	12	1%	Florida	2.68
						New York	1.04
						Virginia	0.92
South Dakota	141	11	8%	1	1%	Colorado	0.16
						Texas	0.10
						California	0.08
Tennessee	1,587	86	5%	18	1%	Florida	4.16
						Texas	2.19
						Illinois	1.43
Texas	5,805	60	1%	36	1%	Florida	4.08
						California	3.20

**Appendix II: Out-of-state SNAP Spending By State, Fiscal Year 2017**

State	Total spending	Total out-of-state spending	Out-of-state spending as a percent of total spending	Total spending in non-border states	Non-border <sup>a</sup> state spending		
					Non-border spending as a percent of total spending	Top three states where recipients had non-border spending	
Utah	286	14	5%	3	1%	Georgia	2.34
						California	0.88
						Texas	0.31
Vermont	113	12	10%	1	1%	Washington	0.23
						Florida	0.15
						Maine	0.09
Virgin Islands	55	2	3%	2	3%	Connecticut	0.06
						Florida	0.80
						Georgia	0.24
						New York	0.13
Virginia	1,116	33	3%	12	1%	Florida	2.23
						Georgia	1.32
						New York	1.20
Washington	1,364	40	3%	17	1%	California	4.28
						Texas	1.28
						Arizona	1.23
West Virginia	481	51	11%	5	1%	North Carolina	1.01
						Florida	0.87
						South Carolina	0.58
Wisconsin	878	25	3%	8	1%	Texas	0.97
						Florida	0.93
						Indiana	0.63
Wyoming	47	2	5%	1	1%	Texas	0.07
						Arizona	0.06
						California	0.04

Sources: Total spending as reported by the Food and Nutrition Service (FNS), all other data from GAO analysis of FNS data. | GAO-19-115

<sup>a</sup> SNAP spending in non-border states means purchases made in a state that does not border the recipient's home state, the state in which the recipient is enrolled in SNAP.

# Appendix III: Leading Practices for Data Analytics and FNS's 2018 SNAP Fraud Framework Comparison

In May 2018, FNS released a fraud framework that provides guidance to help states adopt all of GAO's leading practices for data analytics. The table below compares guidance in FNS's SNAP Fraud Framework to the leading practices in GAO's Fraud Risk Framework.

**Table 7: GAO's Leading Practices for Data Analytics and Comparable Practices Cited in FNS's 2018 SNAP Fraud Framework**

GAO's leading practice for data analytics	Comparable practices cited and illustrated in FNS's 2018 SNAP Fraud Framework
Build support within the program for data analytics.	Encourages states to strive to be analytics-driven. Notes that analytics should be a priority supported by top leadership and stakeholders and not confined to a state's information technology or data departments. Provides examples of the benefits of data analytics and a case study of how one state used data analytics in an agencywide approach to preventing and detecting fraud.
Ensure employees have the knowledge, skills, and training to perform data analytics.	Emphasizes having the right people with the right skills in place, including program experts. Provides details on how to organize an analytics team. It offers examples of organizational models and sample job descriptions for data engineers and analysts.
Combine data across programs and separate databases within the agency.	Recommends states utilize both eligibility data and EBT transaction data to implement analytics methodologies and bring data together in a data warehouse—a central repository of integrated data from disparate sources. It also provides detailed examples of using multiple data sources from within the agency.
Pursue access to necessary external data, including pursuing data sharing agreements.	Encourages the use of third-party information, if applicable, in an analytic data system for matching. It also provides detailed examples of use of external data.
Apply system edit checks to help ensure data meet requirements before data are accepted into the program's system and payments are made.	Provides the steps necessary to ensure high data quality, including a series of questions for states to ensure each step of the data process contains internal controls. Offers guidance on how states can ensure proper data governance and management, system architecture, security, and proper data standards.
Consider program rules and known fraud schemes to design data-analytic tests.	Emphasizes the need for state investigators to relay their program and policy expertise (e.g., recent fraud trends and behaviors) to maximize the effectiveness of the analytics process. Provides detailed examples of rules-based techniques that reflect known fraud schemes and indicators to flag or highlight data of interest.

**Appendix III: Leading Practices for Data Analytics and FNS's 2018 SNAP Fraud Framework Comparison**

<b>GAO's leading practice for data analytics</b>	<b>Comparable practices cited and illustrated in FNS's 2018 SNAP Fraud Framework</b>
Conduct data matching to verify key information.	Encourages state agencies to use matches to verify recipient information and detect potential changes in household circumstances affecting eligibility. Emphasizes the use of other state and federal data sources to verify recipient-reported information and detect potential dual participation.
Conduct data mining to identify suspicious activity or transactions such as anomalies, outliers, and other red flags.	Provides a comprehensive method and process model for developing data mining techniques.
Tailor the output of data analytics to the intended audience to help ensure the results are usable.	Emphasizes the need to tailor the output of data analytics to the intended audience, including investigators, hearings officers, prosecutors, and judges and to obtain stakeholder feedback and case outcomes. Encourages the use of data analytics in evidence packages for referrals for administrative disqualification or prosecution.
Review the results of data analytics and refer appropriate cases to the Office of Inspector General (OIG) for further investigation.	Encourages states to develop specific information baselines on what their investigative teams deem necessary to turn a referral into an investigation or case. Encourages states to partner with USDA's OIG and covers the use of data analytics in evidence packages for referrals for administrative disqualification or prosecution.

Source: GAO analysis of the Food and Nutrition Service's (FNS) Fraud Framework for the Supplemental Nutrition Assistance Program (SNAP) and GAO's leading practices for data analytics.  
 | GAO-19-115

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# Appendix IV: GAO Contacts and Staff Acknowledgments

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## GAO Contacts

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## Staff Acknowledgments

In addition to the contacts named above, the following staff members made key contributions to this report: Danielle Giese and Philip Reiff, Assistant Directors; Celina Davidson and Lara Laufer, Analysts-in-Charge; Camille A. Keith; Kelly Snow; and Daren Sweeney. Also contributing to this report were Susan Aschoff, James Bennett, Alexander Galuten, James Murphy, Almeta Spencer, and Shana Wallace.

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# Appendix V: Accessible Data

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## Data Tables

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### Accessible Data for Example of Use of Data Analytics by State SNAP Agencies

Data matching: State SNAP agency matches its eligibility data with third-party sources (federal agencies, state agencies, and private companies) to verify client information or detect unreported changes that could indicate fraud.

Data mining: Computer algorithms comb data sets for hidden patterns or anomalies that could indicate fraud. The data-mining algorithm searches SNAP purchase data, retailer data, and eligibility data for unusual purchase patterns and household data anomalies

Source: GAO analysis of information from U.S. Department of Agriculture’s Food and Nutrition Service and state Supplemental Nutrition Assistance Program (SNAP) agencies. | GAO-19-115

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### Accessible Data for Figure 1: Types of Data Available to States for SNAP Data Analytics

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Eligibility data	Transaction data	Retailer data	Federal data
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Eligibility data	Transaction data	Retailer data	Federal data
<p><b>Eligibility data:</b> Gathered from household application and household updates about their circumstances</p> <ul style="list-style-type: none"> <li>• Identity of household members</li> <li>• Residence (address)</li> <li>• Income (wage and non-wage income)</li> <li>• Assets (cars, bank accounts)</li> <li>• Expenses (rent, utilities)</li> <li>• Case history</li> <li>• Compliance history</li> <li>• Electronic Benefit Transfer (EBT) card issuance</li> </ul>	<p><b>Transaction data:</b> Gathered when household purchases food at a retailer</p> <ul style="list-style-type: none"> <li>• Store name</li> <li>• Transaction data (type, time, etc.)</li> <li>• Transaction method</li> <li>• EBT Balance</li> <li>• Card number</li> </ul>	<p><b>Retailer data:</b> FNS gathers when approving retailers</p> <ul style="list-style-type: none"> <li>• Type of store</li> <li>• Information about inventory</li> <li>• Location</li> </ul>	<p><b>Federal data:</b> Gathered by other federal agencies or programs</p> <ul style="list-style-type: none"> <li>• Income/Wages</li> <li>• Immigration status</li> <li>• Death</li> <li>• Incarceration status</li> </ul> <p><b>State data:</b> Receipt of other state-administered benefits or income (Such as unemployment compensation)</p> <p><b>Third-party data:</b> Data collected by commercial companies about identity, residence, income</p>

Source: GAO analysis of information from U.S. Department of Agriculture’s Food and Nutrition Service (FNS) and state Supplemental Nutrition Assistance Program (SNAP) agencies. | GAO-19-115

**Accessible Data for Figure 2: Example of How a State SNAP Agency Might Use Data Matching and Data Mining to Detect Fraud**

Data matching: The large-scale comparison of records and files, which were collected or held for different purposes, to detect errors or incorrect information that could suggest fraud has occurred.

- State SNAP agency matches its eligibility data with federal agencies, other state agencies, and commercial companies to verify client information or detect unreported changes

Data mining: The use of automated computer algorithms to detect otherwise hidden patterns, correlations, or anomalies within large data sets that could suggest fraud has occurred. The data-mining algorithm searches SNAP purchase data, retailer data, and state SNAP agency eligibility data.

State SNAP agency uses a data mining algorithm to comb data for evidence of potential fraud such as unusual purchase patterns and household data anomalies

Source: GAO analysis of information from U.S. Department of Agriculture’s Food and Nutrition Service and state Supplemental Nutrition Assistance Program (SNAP) agencies. | GAO-19-115

**Accessible Data for Figure 3: Supplemental Nutrition Assistance Program (SNAP) Households Making Out-of-State Purchases and Purchases’ Dollar Value, Fiscal Year 2017**

Total monthly average number of households	21 million households participating in SNAP
SNAP households made out-of-state purchases	5.5 million households
SNAP households made out-of-state purchases in non-border state	2.2 million households
Total SNAP benefits issued	\$63.7 billion
Total SNAP out-of-state purchases	\$1.94 billion
Total SNAP out-of-state purchases in a non-border state	\$613.7

**Accessible Data for Figure 4: Location of Supplemental Nutrition Assistance Program (SNAP) Purchases Flagged for Potential Trafficking Indicators in Selected States, Fiscal Year 2017**

n/a	Purchases flagged by GAO for potential trafficking occurring in		
State	Percentage of flagged purchases in home state	Percentage of flagged purchases in border state	Percentage of flagged purchases in non-border state
DC	50%	49%	1%
ND	93%	5%	2%
WA	93%	5%	2%

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**Accessible Data for Figure 5: Out-of-State Spending of Supplemental Nutrition Assistance Program (SNAP) Benefits, by State, Fiscal Year 2017**

<b>State</b>	<b>Percentage of SNAP benefits spent out-of-state in FY17</b>
Alaska	1%
Alabama	4%
Arkansas	4%
Arizona	3%
California	1%
Colorado	2%
Connecticut	3%
District of Columbia	49%
Delaware	7%
Florida	2%
Georgia	3%
Guam	0%
Hawaii	2%
Iowa	4%
Idaho	5%
Illinois	4%
Indiana	4%
Kansas	5%
Kentucky	3%
Louisiana	3%
Massachusetts	4%
Maryland	5%
Maine	3%
Michigan	2%
Minnesota	3%
Missouri	3%
Mississippi	3%
Montana	3%
North Carolina	3%
North Dakota	5%
Nebraska	5%
New Hampshire	3%
New Jersey	2%
New Mexico	7%

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Appendix V: Accessible Data

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<b>State</b>	<b>Percentage of SNAP benefits spent out-of-state in FY17</b>
Nevada	4%
New York	3%
Ohio	2%
Oklahoma	5%
Oregon	3%
Pennsylvania	3%
Rhode Island	13%
South Carolina	3%
South Dakota	8%
Tennessee	5%
Texas	1%
Utah	5%
Virginia	3%
Virgin Islands	3%
Vermont	10%
Washington	3%
Wisconsin	3%
West Virginia	11%
Wyoming	5%

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