The Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps, is the largest federal food assistance program and helps millions of households with low or no income purchase food. Households currently access SNAP benefits by using an electronic benefits transfer (EBT) card, which works like a debit card, to purchase eligible food in authorized retail food stores. In most states, the SNAP EBT card does not provide access to any other major government benefits except for cash assistance. As new technologies change the way people shop and make payments, and with the growing need for online purchasing options amid the COVID-19 pandemic, how might SNAP benefit delivery also need to change?

The SNAP benefit delivery process involves several entities. Administered by the US Department of Agriculture’s (USDA’s) Food and Nutrition Service (FNS), SNAP benefit delivery also involves state governments, EBT processors, grocery retailers, and SNAP beneficiaries, among others. Little research on SNAP has focused on the benefit delivery process. Instead, most of the literature focuses on program access issues, such as eligibility rules and application processes (e.g., Rowe et al. 2009) or on the adequacy of the benefit amount (e.g., Gundersen, Waxman, and Crumbaugh 2019; Ziliak 2016). Similarly, most recent efforts to modernize the SNAP program have focused on eligibility and application processes (e.g., Hahn, Katz and Isaacs 2017; Isaacs 2016), including the use of technology to improve these processes (Loprest, Gearing, and Kassabian 2016), rather than on ways to modernize the technologies SNAP beneficiaries use to purchase food.
This brief addresses the knowledge gap on SNAP benefit delivery and explores possibilities for modernizing SNAP delivery through new technologies. We examine both the current and potential future SNAP benefit delivery models while considering principles of equity and inclusion. We define an overarching equity principle that SNAP beneficiaries should have access to the same customer experience as consumers using other forms of payment, and we define an overarching inclusion principle that all SNAP beneficiaries should be able to access food without stigma regardless of where they live.

Specifically, this study addresses the following research questions:

- What is the current state of SNAP benefit delivery, and how does the current landscape impact various stakeholders?
- What are the features of cost-effective benefit delivery systems that ensure equitable and inclusive access to benefits?
- How can future benefit delivery technologies be implemented equitably and inclusively?

The answers to these questions can help federal and state policymakers make informed decisions about modernizing SNAP to promote equitable and inclusive benefit delivery.

In short, we find that the SNAP EBT system has generally worked well to meet consumers’ needs in recent years, but as customer payment methods continue to evolve in new directions (e.g., mobile payments and online purchases) the SNAP program will need to adapt to ensure participants can engage with retail purchases in the same manner as other customers. Social distancing during the COVID-19 pandemic has heightened and accelerated the need for an option to make online purchases using SNAP benefits.

The overarching equity principle is that SNAP beneficiaries should have access to the same customer experience as consumers using other forms of payment, and the overarching inclusion principle is that all SNAP beneficiaries should be able to access food without stigma regardless of where they live.

This brief contains three major sections. First, we share our findings about the current state of SNAP benefit delivery through the EBT system, including how the system works, what works well, and what aspects of the system could improve. Second, we identify the features necessary for any SNAP benefit delivery system to ensure consistency with the overarching principles of equity and inclusion. Third, we explore how the potential future of SNAP benefit delivery can keep up with rapid changes in
commercial payment infrastructure and the ways Americans purchase groceries. We conclude with a list of actionable items based on our findings.

BOX 1

Study Methods

To address our research questions, we reviewed relevant literature and documents and conducted phone interviews with a range of stakeholders across the country, including

- nine national experts on SNAP and EBT, including former FNS officials, former state SNAP administrators, people with experience working with EBT processors, and members of the Electronic Funds Transfer Association (EFTA)\(^4\) specializing in the business, policy, and operating issues of government electronic payment programs;

- seven state officials administering SNAP or EBT processes in three states;

- six representatives of national and regional grocery and food retailer associations;

- three representatives of EBT processors and related technology companies; and

- four consumer advocates, such as food bank directors and nonprofit community service agencies focused on SNAP, in four states.

We also interviewed experts and practitioners based in California, Louisiana, Mississippi, New York, and Texas. We selected these to include both states with a large share of the national SNAP caseload and states working with each of the active SNAP EBT processors as well as to include regional diversity, racial and ethnic diversity, and diversity of residential density. Nearly all of the interviews occurred before the COVID-19 pandemic had spread to the US.

We affirmed for each person we interviewed that we would keep his or her comments confidential by not identifying who made specific remarks without explicit permission. Further, we offered them complete anonymity. Respondents who were willing to be identified are listed in our acknowledgments.

\(^4\) The EFTA is a nonprofit trade association dedicated to the advancement of electronic payments and commerce.

Current State of SNAP Benefit Delivery

Our interviews revealed that the current SNAP EBT system is generally reliable and secure for delivering SNAP benefits inclusively and equitably with minimal stigma, but outages are increasing, and market constraints limit innovation. The current EBT system was designed “to follow the commercial rail,” according to the several people we interviewed who had been part of the EBT development process. This means that rather than creating a new technology or new payment method specifically for delivering SNAP benefits, FNS chose to use existing technology and processes so that, to the extent possible, SNAP transactions would mirror the common purchase transactions that retailers and the general public experience. Following the commercial sector helps ensure that retailers are already accepting (and consumers are already familiar with) the purchasing methods and technology used for SNAP. In this section, we explain how the government context of SNAP affects the benefit delivery
method and describe in detail how the SNAP EBT system works; we then discuss both what works well with the current system and what challenges exist.

**How Does the Government Context Shape SNAP Benefit Delivery?**

Though SNAP benefit delivery was designed to follow the commercial sector, it cannot escape its government context. Because SNAP is a government program, SNAP benefit delivery and the EBT process have different regulations than commercial transactions.

For example, the delivery mechanisms must ensure that all SNAP recipients are able to access their benefits to purchase food. A state official we interviewed explained, “Governments aren’t able to operate like businesses because they have to serve everyone. They cannot pick and choose their customers as businesses do.” The need to serve all SNAP recipients and meet the government’s high standards can prevent change from occurring too rapidly or radically.

Even among government programs, SNAP benefit delivery is more complicated than the delivery of some government cash benefits because SNAP benefits can only be used to purchase food. For some government cash transfers, such as child support payments, states can and do use branded debit cards (e.g., VISA or Mastercard). Branded debit cards are accepted by more retailers than EBT cards, but they may charge user fees.

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“Governments aren’t able to operate like businesses because they have to serve everyone. They cannot pick and choose their customers as businesses do.”—State SNAP official

**How Does the SNAP EBT System Work?**

The EBT payment system involves interactions between four types of actors: government entities, EBT processors, retailers, and consumers. Each SNAP transaction requires communication between the four actors to ensure validity and proper transfer of funds (see the appendix).

- **At the federal government** level, the US Department of Agriculture’s Food and Nutrition Service administers and regulates the SNAP program in accordance with federal law. This includes authorizing retailers to accept SNAP EBT payments and establishing guidelines for processing EBT transactions. The US Department of the Treasury processes payments from USDA to the states for their daily SNAP EBT purchases.

- **State government agencies** administer the SNAP program within their states, contract with EBT processors, and approve applications from consumers to participate in the SNAP program. Each state contracts with a single EBT processor to handle all SNAP EBT transactions.
- **Consumers** apply to receive SNAP benefits and, once approved, are sent an EBT card that benefits are loaded onto. It is a magnetic stripe card requiring a PIN that can be used at grocery stores similarly to a debit card.

- **Retailers** apply to USDA FNS for authorization to receive EBT payment and must have point-of-sale (POS) equipment and software that can handle EBT transactions from an approved EBT processor (USDA 2019). In the past, POS equipment for EBT was a standalone system, but now EBT transactions are integrated into most POS machines, so SNAP beneficiaries swipe their EBT cards on the same equipment customers use for other debit or credit cards. Retailers are charged some transactional fees and regular monthly fees for SNAP transactions but are exempt from certain additional fees that retailers pay on most standard transactions. In particular, for SNAP transactions, retailers are not charged the interchange fees that apply to most debit or credit card purchases to cover the banks’ handling costs or risk of fraud.

When customers swipe their EBT card at an approved retailer, the clerk presses a button on the POS equipment to verify the transaction through the EBT processor’s center, which verifies that the terminal is valid, the case associated with the EBT card is active, the consumer has entered a valid PIN, and the amount of the purchase does not exceed the household account balance (Stegman, Lobenhofer, and Quintero 2003). Once the transaction is approved, the customer’s account is debited and the retailer account is credited for the purchase amount (Stegman, Lobenhofer, and Quintero 2003). If the system is down, the retailer can call the EBT service line for verification and use a paper voucher to complete sales, using the vouchers to settle transactions once the system is back online.

At the end of each day, EBT processors total up all the EBT transactions from each retailer for that day and report them to the government to be fulfilled (USDA 2019). The federal government transmits the funds to cover the day’s EBT transactions to the state, which then transmits the appropriate amount of funds to each EBT processor, which then passes funds on to the retailer’s bank account. Funds are available to the retailer after two or three business days.

**What Works Well with Current SNAP Benefit Delivery?**

Despite the EBT system’s complicated nature, respondents generally agreed during interviews before the COVID-19 pandemic had spread to the US that the EBT system “works pretty well” and largely ensured wide access for both consumers and retailers. SNAP experts note that the EBT system is a highly successful public-private partnership that supports more than a billion transactions a year, though most also had suggestions for improvement that we discuss later.

“The technology works. It’s just ancient.”—SNAP EBT expert
General satisfaction with the EBT system among the retailers and SNAP beneficiaries who rely on the EBT process daily may reflect that process’s relatively few frustrations compared with what people experience when applying for and recertifying their eligibility for SNAP (the former is generally much more efficient and less stigmatizing). The system is also more efficient and far less stigmatizing than the previous system of issuing paper “food stamps” that customers redeemed when checking out at the grocery store. The switch from food stamps to EBT cards in the 1990s is credited with increasing program participation among eligible households (Danielson and Klerman 2006). Additional input from a diverse group of SNAP beneficiaries is needed now to better understand customers’ current preferences and challenges.

The SNAP EBT system also is regarded as secure. When asked whether the current EBT system poses any security threats, respondents generally agreed that threats were minimal. One respondent said, “No, not really. It’s pretty tight.” Because EBT transactions require customers to enter a unique PIN, they are more secure than credit-card transactions. Fraud is very low in the SNAP program (around 1 percent, compared with 3 to 10 percent in health care spending7 or about 15 percent for taxes).8 This is in part because the electronic records generated by the EBT system make fraudulent activity easier to identify. The shift from paper food stamps to EBT transactions saw a reduction in the trafficking rate (primarily selling SNAP benefits for cash) from nearly 4 percent to the current 1 percent.9 One consumer advocate we interviewed expressed concerns about fraud, both with SNAP recipients selling EBT cards and with SNAP applicants providing misleading information about their eligibility for the program. Other consumer advocates, however, noted that “fraudulent activity” often resulted from SNAP participants exchanging their SNAP benefits for cash to support other basic needs, such as purchasing diapers. They also noted that ultimately all SNAP benefits are used to purchase food, either for the authorized beneficiary or someone who fraudulently obtained the EBT card.

What Are the Challenges with Current SNAP Benefit Delivery?

Though the EBT system has worked well to date, it faces several growing and urgent challenges. The COVID-19 pandemic has suddenly exacerbated the disparate health risks faced by people with low incomes, including SNAP beneficiaries. The lack of an online purchasing option for SNAP beneficiaries requires them to swipe an EBT card and enter a PIN, making it impossible for them to purchase food without an increased health risk from personal contact during the current COVID-19 pandemic. Even before the pandemic, SNAP beneficiaries may have been experiencing resurging stigma. As more shoppers have begun to pay by dipping chip cards or by tapping their mobile phones and as fewer shoppers swipe debit cards, SNAP beneficiaries swiping their EBT cards and entering PINs become more apparent to fellow shoppers. Further, the EBT system increasingly experiences outages and other quality challenges caused in part by a lack of competition among EBT processors and the very low amounts states pay processors for their services. We discuss each of these challenges here in greater detail.

LACK OF ONLINE OPTION FOR SNAP PURCHASES INCREASES HEALTH RISK DURING COVID-19 CRISIS

During the COVID-19 pandemic, the way people shop for food has changed very quickly. To practice social distancing, people have increasingly used online options for food purchases, either by having food...
delivered to their homes or by ordering ahead for curbside pickup at a grocery store. However, the requirement that SNAP beneficiaries swipe their EBT cards and enter a PIN makes it impossible for them to purchase food without personal contact (except in the limited areas participating in a SNAP online purchasing pilot program, described later in this brief). Home delivery and ordering ahead are possible, but for the SNAP beneficiary to swipe his or her card and enter a PIN when receiving groceries, the delivery person or curbside staff would need to have mobile POS equipment to facilitate that transaction away from the grocery checkout lane.

**STIGMA MAY BE RESURGING FOR SNAP BENEFICIARIES**

SNAP benefit delivery through EBT poses the potential resurgence of stigma for people using those benefits. The potential for stigma arises whenever someone paying for food with SNAP benefits stands out from other consumers. SNAP EBT cards were initially developed with the intention that they appear just like other debit or credit cards customers use, but according to our interviews, SNAP EBT cards can sometimes be conspicuous. For example, we heard about a distinctive, bright yellow EBT card in Mississippi. We also heard that among college students, using a card at all (as opposed to mobile payment technologies like Apple Pay or Google Pay), might make them stand out. Technological challenges that hold up the checkout line can also bring unwanted attention to a customer using SNAP benefits. These can be caused not only by EBT outages but also by someone using SNAP to pay for part of their purchase and another form of payment for the rest (a split-tender transaction).

**OUTAGES AND OTHER QUALITY CHALLENGES ARE INCREASING**

The EBT system has increasingly experienced outages and other quality challenges. An EBT outage refers to “any system, technology or network disruption, deficiency or delay in the transaction authorization process that adversely impacts a recipient’s ability to use SNAP EBT benefits at the point-of-purchase,” according to the EFTA. When a SNAP beneficiary swipes a valid EBT card in the grocery checkout line and the transaction cannot be completed, the source of the problem could originate anywhere in the complex authorization process: the clerk could have pressed an incorrect key; the POS equipment or EBT terminal might be broken; the store’s phone or internet connection could be down; or there might be connectivity issues or software glitches with a third-party processor, the state’s contracted EBT processor, or the state’s EBT recipient database. Though outages of any kind may be equally problematic for the person unable to use their EBT card in the grocery checkout line, those originating with the EBT processors are increasing and of most concern to the EFTA’s eGovernment Payments Council.

Quantifying the scale of the outage problem is difficult given the complexity of the process. Though experts agree that outages are increasing, processor performance data presented in a recent document of the EFTA’s eGovernment Payments Council on SNAP EBT outages “show they are meeting commercial industry performance standards for system up-time” (EFTA 2020). The two processors that provided their performance data to the Council reported 100 percent “up-time” in 2019. One of the major processors did not provide data to the council. Nonetheless, the data may not tell the full story: both a state official and an EBT expert we interviewed said that a processor’s system may be officially up but still remain inaccessible and prevent valid SNAP transactions. For example, the system may
merely be slow, preventing many transactions, without being completely down. EBT experts, state officials, and retailers said outages occur a few to several times a year and last anywhere from a few minutes to several hours. Outages might affect one state, several states, or all of the states served by a processor. Overall, the people we interviewed agreed that although outages occur infrequently, they occur too often.

Outages create challenges for both consumers and retailers. For consumers, an outage means they are unable to purchase food. It can also create stigma if their stalled transaction slows the checkout line. For retailers, outages force them to either take on risk that EBT sales will not be reimbursed by the government or temporarily lose sales to customers using EBT cards. As discussed, retailers can call the EBT service line during an EBT outage to request authorization of the transaction and use a paper voucher to complete the sale, settling the transaction later with the state. However, some retailers may be unable to get through to the EBT service line because of high call volume and decide to use a voucher for the transaction anyway, assuming the government will repay them. If the consumer turns out to have an insufficient SNAP balance, the retailer risks losing money on the transaction (Stegman et al. 2003). Alternatively, if retailers do not have vouchers or are unable to obtain phone authorization for vouchers, they may lose sales during the outage.

Outages are especially problematic both for large retailers (because of the large number of SNAP recipients affected) and for any retailers whose customers are mostly SNAP recipients. One person we interviewed cited a rural area of their state where a single supermarket serves the community and as much as 60 percent of transactions there are paid by SNAP. If the EBT system goes down, the store loses the majority of its business, and the majority of customers cannot access food. Another person we interviewed discussed a similar scenario in an urban community.

Other quality challenges, in addition to outages, are increasing according to our interviews. For example, one of the major EBT processors reportedly has not always incorporated daily updates to the list of authorized SNAP retailers. This means shoppers at a newly approved store may be unable to make SNAP purchases, while retailers that have lost their authorization (e.g., for fraud) are still able to accept SNAP benefits. Further, a state official said in the past, processors had a bank-oriented culture that focused on customer service and keeping customers happy, but service levels are now “not what they used to be.”

**LACK OF COMPETITION AND LOW COST PER CASE CONTRIBUTE TO OUTAGES AND OTHER QUALITY CHALLENGES**

According to our interviews, a lack of competition among EBT processors and the low cost per case that states pay processors are at least partly to blame for the increasing outages and other quality challenges.

The number of EBT processors has always been small, though the specific companies in the market have changed as some enter or exit and others reorganize. Each state contracts with one EBT processor to handle all SNAP transactions in the state. Currently, only two EBT processors, Conduent and FIS, hold nearly all of these contracts. A third processor, Solutran, has a contract only with Montana, and a
fourth processor, Inmar, will be starting its first contract this year, in Louisiana. The finite demand for EBT processors and high startup costs limit incentives for additional companies to enter the market. As one respondent said, "The market is the 50 states."

Though limited competition would theoretically increase prices, prices have actually fallen. A representative of one EBT processor told us states paid them $4.50 per case per month in the early 1990s compared with about $0.30 to $0.40 now. A key explanation is that most states award contracts based on the lowest-cost proposal rather than best overall value (EFTA 2020). These state procurement rules drive prices down and make it very difficult for competitors to beat out a very low bidder. Experts, state officials, and processors we interviewed argued that if state procurement rules allowed greater freedom to select the best technology, even at a higher price, it could improve the quality of service and innovation in SNAP benefit delivery. In the past, EBT processors were sometimes able to offer extra services to states, but now with prices so low, processors are less able to modify state systems or develop new technology. Because contracts last several years (averaging 7 years and ranging from 3 to 10 years) and because state SNAP agencies have difficulty obtaining legislative approval for additional funding, states typically wait until the next contract cycle to get new features even though they currently exist elsewhere.

A couple of other aspects of the procurement process, in addition to the emphasis on the low costs, contribute to a lack of competition among SNAP EBT processors. First, each state currently develops its own unique request for proposals (RFP), requiring EBT processors to develop customized bids and negotiate customized contracts with each state. This state-by-state RFP process is time consuming for both the states and the processors and contributes to high fixed costs that make it difficult for new vendors to enter the market. To address this challenge, one processor suggested that FNS consider developing a nationwide standard RFP format to speed up the procurement process. A state official suggested that FNS administer a centralized process to approve vendors; states could then choose among the approved vendors without doing their own RFP processes. Second, the current state procurement processes often give preference to bidders with SNAP EBT experience, further impeding the entry of new competitors. However, if RFP selection criteria were written to equally consider both SNAP expertise and experience processing similar financial transactions (or something similar in size or scope), they could allow new competitors to viably bid.

CARD REPLACEMENT CAN BE DIFFICULT
A final challenge with the current EBT cards is that they wear out or get lost, requiring SNAP participants to obtain new ones. This requires either an in-person visit to a social service office or a week or more of waiting for a new card to arrive by mail. This can present challenges for those consumers who cannot take leave from work, are without reliable transportation, or lack sufficient cell phone minutes to wait for a customer service representative. Frequent requests for new cards can also lead to a consumer being investigated for fraud.
Features of Equitable and Inclusive SNAP Benefit Delivery

Our interviews found that the current EBT system upheld principles of equity and inclusion well before the COVID-19 pandemic, and they are important principles for SNAP benefit delivery technology to maintain. The EBT system facilitates equity and inclusion by being widely accessible to SNAP consumers and retailers, which allows consumers choices about where to purchase their groceries. As mentioned, the overarching equity principle for SNAP is that beneficiaries have access to the same customer experience as consumers using other forms of payment, and the overarching inclusion principle is that all beneficiaries can access food without stigma regardless of where they live. To ensure consistency with these principles, SNAP benefit delivery systems should (1) minimize stigma, (2) maximize participation of diverse retailers and payment methods, (3) avoid increased costs, and (4) meet the diverse needs of beneficiaries by both following technological advances in the commercial sector and maintaining existing technology. Policymakers and regulators should develop guidelines for adopting new technologies consistent with these principles of equity and inclusion.

1. **Minimize stigma.** For SNAP beneficiaries to have the same experience as other consumers accessing food, the experience of using SNAP benefits should not bring them embarrassment or shame. Other shoppers should not be aware that someone is using SNAP benefits. The use of SNAP EBT cards helped reduce stigma in the grocery checkout line at a time when many customers were paying for groceries with debit and credit cards. As new forms of payment and POS technologies emerge and become more common, SNAP benefit delivery technology should evolve similarly.

2. **Maximize participation of diverse retailers and payment methods.** For SNAP participants to access food from the same retailers as others and regardless of where they live, their SNAP benefits need to be widely accepted by retailers. Any costs or equipment requirements that limit retailers’ acceptance of SNAP will in turn reduce food access for SNAP participants. To maximize participation among diverse retailers, SNAP benefit delivery technology should be cost neutral for retailers, and the program should help retailers upgrade technology as needed to accept multiple forms of SNAP payment.

   ▪ **Maintain cost neutrality for retailers.** Several of our interview respondents emphasized that food retailers’ profit margins are so small (1 to 1.5 percent) that introducing any new retailer fees or increasing costs could lead some retailers to stop accepting SNAP. New costs could include a revised fee structure for SNAP transactions or the acquisition of new equipment to accommodate new payment methods. The costs associated with new equipment include not only purchasing hardware but also the hidden costs of selecting and maintaining a system and training staff.

   ▪ **Facilitate technology upgrades.** If new SNAP benefit delivery methods require stores to use different equipment, retailers will need help upgrading their systems efficiently and effectively. A seamless transition with no downtime would be necessary to ensure SNAP
participants can access food. Our interview respondents noted that assistance upgrading technology would be especially important for small businesses in rural areas and small inner-city neighborhood stores that disproportionately serve communities of color. A test of new SNAP delivery methods, one respondent noted, is “Can the corner store in New York City keep up with the technology?”

3. **Avoid increased costs not only for retailers but also for consumers.** Any new SNAP benefit delivery technology should be cost neutral for consumers as well. Increased costs, such as fees associated with SNAP transactions, would diminish access and run counter to principles of equity and inclusion.

4. **Balance existing and new technology needs.** The principles of equity and inclusion require a balance between (a) following changes in the commercial sector such that people can shop without stigma and (b) maintaining access through existing technology so that no one loses access to food. This may mean allowing a tech-savvy college student to make SNAP purchases on her mobile phone while also ensuring that someone who has no mobile device can continue to swipe an EBT card. One respondent noted that ensuring access to food requires that SNAP benefit delivery technology accommodates the “lowest common denominator.” The SNAP program could also help consumers transition to using new technologies by adopting the most user-friendly methods. According to an expert we interviewed, “if it’s not user-friendly or has a major learning curve, people just won’t use it. They will stick to what they know.”

**Future of SNAP Benefit Delivery**

As new technologies rapidly emerge and the world changes, current SNAP benefit delivery methods are becoming outdated and the existing EBT system no longer delivers benefits as efficiently, effectively, equitably, and inclusively as it once did. The COVID-19 pandemic has accelerated the pace of change, heightened the value of technologies that allow purchases without physical contact, and highlighted social and economic inequities. As a guiding principle for responding to growing pressures to adopt new SNAP delivery technologies, the experts we interviewed said that the SNAP program should continue to follow in the technological footsteps of the private commercial sector without leading or falling too far behind. Following the commercial sector helps ensure retailers are already accepting the purchasing methods and technology used for SNAP; not falling too far behind helps ensure SNAP beneficiaries can use new technologies that retailers and other customers are using. Similarly, new technologies for SNAP benefit delivery should be adopted to the extent they promote the principles of equity and inclusion. In this section, we consider several potential technologies and other changes for SNAP benefit delivery and weigh them against the principles of equity and inclusion. We then discuss implementation issues that could arise regardless of any specific technology change.
Potential Future Technologies for SNAP Benefit Delivery

For several generations, Americans have purchased food primarily at grocery stores, first with only cash, then also with checks, and later with credit and debit cards. But modern technology is rapidly changing not only how we pay for food at grocery stores but also whether we physically go to the store at all as well as how we receive and share information. Most Americans now have multiple options for where and how to purchase groceries. For SNAP participants to have the same options, potential technological changes to SNAP benefit delivery could include allowing online purchases, enabling mobile payments and other mobile applications, using chip cards, and delivering multiple benefits on a single card. Each of these potential technological changes creates opportunities and challenges and has implications for equitable and inclusive access to SNAP food purchases, including effects on stigma, retailer participation, cost, and consumer choice. Considering these potential changes in light of the principles of equity and inclusion can help federal and state policymakers make informed decisions about modernizing SNAP benefit delivery. Such decisions should also account for SNAP beneficiaries’ needs and preferences regarding these and other potential ways that technology can enhance their experience.

“As technology advances, it is important for SNAP to advance, too, so we can ensure the same shopping options are available for both non-SNAP and SNAP recipients” — USDA Secretary Sonny Perdue

ONLINE PURCHASES

In April 2019, the USDA launched a two-year Online Purchasing Pilot in New York State that would enable SNAP participants to select and pay for groceries online for the first time. The pilot, authorized in the 2014 Farm Bill, was intended to ensure that online transactions can be safe and secure before they are implemented nationwide. In early 2020, pilot implementation continued as planned in several other states. In light of the COVID-19 pandemic, the pilot was expedited, and several other states received approval from the USDA during April and May 2020 to join the pilot program. As of June 9, 2020, 37 states were participating in the SNAP online pilot, and 4 others were planning to join in the coming months.

Seven retailers were selected in 2017 to participate in the initial pilot launch, including Amazon and Walmart as nationally authorized retailers. To address the increased need for online purchases amid the pandemic, FNS offered that any retailer that is approved to accept SNAP can be approved to participate in the pilot provided that the state they operate in is part of the online purchasing pilot and the retailer meets online purchasing requirements. As of June 9, 2020, the FNS website indicates that in addition to Amazon and Walmart, three other retailers (ShopRite, TheFreshGrocer, and Wright’s
Markets) are currently accepting online SNAP payments in selected states. Online purchases can be for both home delivery (e.g., Amazon) and store pick-up (e.g., grocery store) provided no delivery or packing fees are charged to the SNAP participant. Outside of the pilot, some retailers allow SNAP customers to order online and swipe the EBT card to pay for the food at the time of pickup at the store.

This pilot marks a critical step in ensuring SNAP recipients continue to have the same shopping options as other consumers, because the Food Marketing Institute estimated (before the pandemic had spread to the US) that in five to seven years, up to 70 percent of US consumers will regularly purchase consumer packaged goods online. In 2019, 9 percent of spending on all purchases in the US was from online transactions, and that share is expected to grow to 11 percent in 2023 (Worldpay 2020). A 2019 survey of SNAP recipients found that 51 percent of SNAP recipients were “completely likely” to buy groceries online if given the option. In a statement about the SNAP online pilot program, USDA Secretary Sonny Perdue said that “as technology advances, it is important for SNAP to advance, too, so we can ensure the same shopping options are available for both non-SNAP and SNAP recipients.”

Although the availability of online purchasing options promises to expand convenience, access, and choice for SNAP beneficiaries, not all SNAP beneficiaries can participate. Online purchasing could be particularly beneficial for the SNAP beneficiaries who live in food deserts (communities where low-income residents must travel unusually long distances to the nearest store selling fresh produce or other healthy food). Online shopping also offers greater accessibility for individuals with transportation limitations, a disability, or chronic illness or pain, including the 6 percent of total SNAP participants who are nonelderly adults receiving disability payments from the Social Security Administration. However, a 2019 Yale University study found that over 60 percent of SNAP-participating households in rural food deserts in the then-eight states in the SNAP online pilot were not addresses that any of the participating vendors would deliver to (Brandt et al. 2019). The coverage issue in rural areas is a particular challenge as a 2012 USDA report found that rural participants may travel over 14 miles to their most-used store, leading rural recipients to redeem only 53 percent of their SNAP benefits on average compared with 64 percent in cities (USDA 2012). Further, SNAP participants cannot use their benefits to pay for service or delivery charges, which could create a financial barrier to online access. This option may also be inaccessible to households without internet access, underscoring the importance of maintaining high-quality offline purchasing options.

The 2018 Farm Bill requires nationwide implementation of online acceptance of SNAP after the pilot program finishes in April 2021. The COVID-19 pandemic has underscored the need for online purchasing options, particularly for older SNAP users and those with health conditions. This has led some to state that the USDA “quickly needs to make [the online purchasing pilot] universal” and make grocery delivery free for SNAP-eligible individuals. FNS will evaluate the SNAP online pilot to inform formal parameters for online SNAP purchases outside of the pilot. After the pilot phase, the USDA anticipates all eligible and interested retailers will be able to participate.

MOBILE PAYMENTS AND OTHER MOBILE TECHNOLOGY
The people we interviewed widely agreed that mobile payments are “the future.” As the commercial sector increasingly uses mobile payments, the question remains how SNAP can best follow this
commercial lead. According to our interviews, the EFTA has been actively looking into how to overcome any barriers preventing EBT from accommodating mobile payments.

To promote equity and inclusion, it is important to consider expanding SNAP benefit delivery to accommodate mobile payments rather than replacing EBT cards with a mobile-only system. Some customers may prefer making mobile payments, but not every SNAP participant has a smartphone or is comfortable using it. A 2019 survey by the Pew Research Center found that over 80 percent of Americans owned smartphones, though the rate was somewhat lower (71 percent) both among people with annual incomes below $30,000 and among people living in rural areas. According to multiple experts, cell phones are the only technology or internet access that some SNAP participants have, but rates vary across populations. People experiencing homelessness and people returning from incarceration are less likely to have phones, and older people may be less comfortable using apps even if they have a smartphone. However, one respondent in California noted that seniors there are comfortable with apps. Rural areas don’t always have reliable cellular network access, which could affect participants’ ability to check their SNAP balances using an app. Current EBT infrastructure would need to continue to be an option for those who need it. The principle of equity and inclusion requires that the “lowest common denominator will always dictate access” to SNAP benefit redemption, so EBT cards would need to remain functional until all beneficiaries and retailers have adopted a new technology.

Three distinct mobile technologies are relevant for the future of SNAP benefit delivery: mobile wallets, mobile POS systems, and mobile apps.

**Mobile wallets** are apps that store card or account information on smartphones to allow contactless payment. Examples of mobile wallets include Apple Pay, Google Pay, Samsung Pay, and Android Pay. They are more secure than directly swiping magnetic stripe cards because they require a fingerprint scan or PIN to begin the payment transaction. They use near field communication (NFC) to share encrypted data with an NFC “contactless payment” reader that processes the payment. Many POS systems that accept chip cards can also accept the NFC from the mobile wallets. NFC payment doesn’t require Wi-Fi access for the user and works as long as the NFC payment reader has access to the payment system. Mobile wallet payments accounted for 6 percent of POS spending in the US in 2019 and are predicted to grow to 7 percent by 2022 (Worldpay 2020; Olsen et al. 2019). Credit cards are expected to remain the most common payment method for POS purchases in the US, growing from 39 percent of spending in 2019 to 44 percent in 2022. For online purchases, mobile wallets are expected to surpass credit cards as the most common payment method, with credit card use falling from 33 percent of online spending in 2019 to 27 percent in 2022, while mobile wallet use grows from 24 percent to 33 percent of online spending over the same period.

Mobile wallets offer several improvements to SNAP benefit delivery that adhere to the principles of equity and inclusion. Allowing SNAP EBT cards to be stored in mobile wallets could make it easier for household members to use their SNAP benefits. Currently, some states issue only one card per household, so two household shoppers need to coordinate possession of the card. Among populations where mobile wallets are already prevalent, such as college students, allowing the use of mobile wallets
can reduce the stigma of using SNAP benefits. As the use of mobile wallets becomes more prevalent, the stigma of using a SNAP EBT card could grow. Mobile wallets also preserve a balance between old and new technology: SNAP participants could still receive a physical EBT card and could choose to swipe the card as they do now or upload it to their mobile wallet and leave the card in a safe place at home. Not all retailers accept mobile payments, but allowing the option of using either a physical card or mobile payment would maximize retailers’ participation without imposing new costs on those who do not upgrade to new technology.

**Mobile POS systems**, such as Square, are wireless, handheld devices that accept magnetic stripe credit and debit card payments without being physically connected to the internet or a phone line. These are typically used by farmers markets, street vendors, and food trucks to accept credit card payments. Expanding mobile POS system capabilities for SNAP purchases could expand participation of small, nontraditional food retailers; expand access for SNAP participants; and avoid the stigma of their being refused access to these merchants. Like mobile wallets, mobile POS systems do not eliminate the current cards or equipment; rather, they increase the options for how consumers use SNAP to purchase food. For example, accommodating EBT transactions on mobile POS systems could expand SNAP participation among farm stands, food trucks, and small businesses who use this technology. For mobile POS machines, backup systems would be needed in case cell towers go down. Standard magnetic stripe POS systems have a similar limitation: if phone lines are down (e.g., during hurricanes or other natural disasters), the magnetic stripe technology doesn’t work.

**Mobile apps** already exist for SNAP beneficiaries to check their monthly balance, submit forms, and perform some other functions, but none yet facilitate payment for food purchases. Future mobile apps could allow for SNAP benefit redemption, using technology similar to the mobile wallet, and provide access to other services and features.

Currently, FreshEBT, a product of Propel, is the most ubiquitous mobile app and is available free to SNAP participants in every state and territory. The core function of FreshEBT is to allow people to check their SNAP account balance, but the app also offers a budgeting tool as well as job announcements, coupons, and advertisements of money-saving offers. Most experts and consumer advocates we interviewed reported that people like these apps, although one noted that it can be cumbersome to remember to check the app on a mobile phone. The two existing processors and two new entrants to the SNAP EBT processing market, Solutran and Inmar, also have their own apps for obtaining SNAP balances and other information.

A potential new technology would be a single app that not only provides balances and other information but also facilitates payment for food purchases. One respondent envisioned an app where participants could get information on benefits (e.g., how to apply for SNAP), identify which food items were allowable under SNAP rules (perhaps even by scanning items as they walk through the store), check their SNAP benefit balance, and scan at the register to pay. This technology could also identify coupons available for the items being purchased, allowing shoppers to make the most of their SNAP dollars. Apps that are available at no cost to consumers or retailers could help people access SNAP more easily, though increased data or roaming charges to access mobile apps could be a problem for some
users. More research into customer’s needs and preferences could validate the use case of a single app and uncover other potential ways that technology can enhance the experience of SNAP customers and retailers.

**EMV CHIP CARDS**

EMV chip cards, or cards equipped with computer chips that are “dipped” rather than swiped at the register, are considered by some to be the next technological step following magnetic stripe cards. In the context of SNAP, however, they are not seen as an improvement over magnetic stripe EBT cards. Though EMV cards are harder to clone and less susceptible to fraud than magnetic stripe cards, the required use of a PIN with EBT cards already prevents cloning and has kept SNAP fraud rates very low. EMV cards are also considerably more expensive than magnetic stripe cards. The cost to replace EMV cards is measured in dollars ($1 to $3 depending on functionality), while magnetic stripe costs are measured in cents (as little as 10 cents). In addition to higher costs to states for issuing new cards, retailers incur transaction fees with EMV cards that they currently do not incur with magnetic stripe EBT cards. Regarding the equity and inclusion principles, EMV cards have the same minimal stigma as magnetic stripe cards but fail to meet the cost-neutrality principle. SNAP EBT experts and state SNAP administrators we interviewed agreed that switching to EMV cards does not provide enough added benefit to justify the increased cost. One expert noted that switching to EMV would be like “killing a fly with a sledgehammer.”

**MULTIPLE BENEFITS ON A SINGLE CARD**

Another idea for future EBT technology is to combine several benefits from several agencies onto a single card instead of maintaining a separate card for each. Typically, the only other benefits combined with SNAP on EBT cards are cash benefits from the Temporary Assistance for Needy Families program, which is usually administered by the same state agency that administers SNAP. Adding other benefits to the SNAP EBT card, such as Social Security benefits or even a local transportation benefit, could streamline payments for people who receive benefits from several programs, but this would require intensive interagency coordination, which poses substantial challenges.

This particular change would not affect stigma because it would maintain the magnetic stripe card. However, using a single card may make things easier for consumers who receive multiple benefits. They would have fewer cards to keep track of and could check out of stores faster because they would not need to swipe several cards. A card with multiple benefits would have cost similar to the existing EBT card.

One major challenge with this technology, though, is that benefits are not all managed by the same government agency. Coordination between agencies over a single card could be difficult to implement. Further, not all members of a household may have the same benefits. For example, SNAP applies to a household, but one member of the household may also receive Social Security benefits that apply only to them. Thus, if another member of the household were to use the card, they should have access to only the SNAP benefits. Such restrictions would be difficult to implement.
Even incorporating another federal nutrition assistance program, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), onto a single card is not straightforward. Though WIC is in the process of completing the transition from paper vouchers to EBT, most states use a separate EMV chip card for those benefits rather than the SNAP EBT card. WIC differs from SNAP in that it is available only to pregnant, postpartum, and breastfeeding women, infants, and children up to age 5. Also in contrast to SNAP, WIC can be used to purchase a narrow selection of food items, and the program encourages participants to meet with staff who provide nutrition counseling and referrals to health services.

Another solution for multiple cards would be to implement a mobile technology, as discussed above, that would allow all the cards to be loaded onto a mobile phone app or wallet. This would eliminate the issue of interagency coordination. Each agency could continue to manage their own separate cards that are kept separate but loaded onto the same device.

OTHER TECHNOLOGY IMPROVEMENTS
Other suggestions for SNAP technology improvements arose in our interviews. For example, a state official wished for a technological solution to the challenge of enforcing existing restrictions on SNAP purchases.

Other respondents wished technology could encourage healthy food choices. Some SNAP participants can already access healthy food discounts, such as buy-one-get-one deals or other reduced prices on fresh foods, meaning that buying fresh fruits and vegetables provides a better value. Through the Gus Schumacher Nutrition Incentive competitive grant program, USDA has awarded $85.6 million since 2015 to more than 100 nonprofit organizations and public agencies for programs incentivizing SNAP beneficiaries to purchase fresh produce. Future technology could make implementing such incentive programs easier.

Several respondents also hoped technology improvements could facilitate greater use of SNAP at farmers’ markets, which is a priority for FNS. Some farmers’ markets are eligible to receive free equipment to process SNAP EBT transactions. Often farmers’ markets have a centralized location where SNAP participants can swipe their EBT cards to receive tokens that they use at the individual farm stands, but this process can be time consuming and stigmatizing. The FNS website has information about a one-year grant opportunity for eligible farmers’ markets to receive free technical assistance, equipment, and access to a SNAP mobile application that would allow them to accept SNAP EBT payments on their own smart devices. The grant opportunity is provided through a cooperative agreement with the National Association of Farmers Market Nutrition Programs, in partnership with Novo Dia Group, Inc.

Implementation Considerations for Improved SNAP Benefits Delivery
To ensure that SNAP consumers can continue to shop for food in the same ways as everyone else, SNAP benefit delivery will need to keep pace with the rest of the consumer market, but implementing changes in SNAP is likely to be a slow and complex process.
As a successful public-private partnership, the program faces a challenge in that any changes to benefits delivery would need the support of many stakeholders, including Congress and FNS as well as states, processors, and retailers, and those changes should be made with input from SNAP participants. Experts who were involved in the development of EBT remember that “it took a lot of players to get EBT through,” as could hold true for any changes toward future technologies.

Before fundamental changes can occur to the SNAP EBT system, Congress and/or FNS would need to approve the changes. Changes could be initiated either through pilot programs or through the regulatory process. Congress can use the Farm Bill to authorize an experiment as was done with EBT and is currently being done with online payments, but that bill is only reauthorized every four years, which may not be frequent enough to keep pace with changes in commercial payment processing. An evaluation of the pilot would inform decisions on how to move forward. Pilots are expensive, however, and require both authorization and funds from Congress. Alternatively, FNS can propose and launch changes to the regulations that govern SNAP and the technologies that service it. The regulatory process can take almost five years because changes require drafting new regulations, allowing a period for public comments, issuing the final rule, and then providing guidance on implementation. By the time the regulatory process is over, the new rules may already be out of date. This is a problem in many areas of technology that are regulated by the government.

New technologies such as apps for making SNAP purchases likely would also require data-sharing agreements among states and private entities, which (depending on a state’s political will and procedures) can take anywhere from a few weeks to several years, according to our interviews.

Another challenge that comes with allowing SNAP benefits in mobile wallets or facilitating mobile SNAP payments is the timing of funds transfers. In the current EBT system, funds are issued to households by adding credit to the EBT account, but that money stays in the government account until a purchase is made. If the states were to switch to using a mobile wallet, some experts wondered if funds might be transferred to Apple or Google, for example, before the SNAP participant makes a purchase. With billions of dollars in annual SNAP transactions, this detail would have enormous financial implications, because whichever company receives the benefits dollars transfer has the potential to earn interest on the funds until they are redeemed by consumers.

Further, new technology could create opportunities and risks for data collection and use. New technology could offer SNAP participants an opportunity to have more information and control over their benefit balance and could offer opportunities for data-driven targeted outreach to help SNAP participants purchase healthy food and find the lowest prices. However, new technology could also facilitate new restrictions on food choices, undermining equity. The data generated by new technology also could newly infringe on the privacy of SNAP beneficiaries if it were misused.

Finally, to build trust and encourage adoption of new technologies, the SNAP program would need to be careful about how it introduces the new technology to the public. A consumer advocate we interviewed noted that given recent policy changes that reduce access to SNAP, it would be critical to explain and demonstrate that technology changes are designed to increase access.
Conclusion

When the SNAP program modernized from paper food stamps to EBT cards, equity and inclusive access measurably improved. The program now is on the verge of moving to the next generation of modernization in a way that maintains or improves equitable and inclusive access. The COVID-19 pandemic has accelerated the need for change.

Through our interviews, we have found that the current EBT system generally has worked well for delivering SNAP benefits in a manner consistent with the commercial sector, but experts remarked that a lack of competition among EBT processors, driven by high costs of entry and very low profits, diminishes incentives for innovation or process improvements. As a result, system outages and slowdowns are increasing, and some states are experiencing reduced service quality from their EBT processor. At the same time, the commercial payments sector is experiencing technological innovations that threaten to render EBT cards outmoded. Interviews with SNAP EBT experts, state SNAP officials, EBT processors, retailers, and consumer advocates revealed a clear message that a one-size-fits-all approach to SNAP benefit delivery will no longer suffice. They strongly recommended offering SNAP participants more choices in how they access and use their benefits. For example, some SNAP participants will continue to prefer the current EBT card system, and others would appreciate the ability to upload their EBT card to a mobile wallet and to use SNAP for online food purchases.

For any new technology to be adopted, policymakers and regulators will need to develop guidelines that maintain equitable and inclusive access to SNAP benefits. Consistent with the overarching principle that SNAP beneficiaries should have access to the same customer experience as consumers using other forms of payment, we identify the following principles for promoting equity and inclusion:

- Minimize stigma for SNAP customers
- Maximize participation of diverse retailers by maintaining cost-neutrality for retailers and helping them upgrade their technology as needed, to accept multiple payment methods
- Avoid increased costs to SNAP customers
- Balance needs for both existing and new technologies

To achieve an equitable and inclusive modernization of SNAP benefit delivery, federal and state SNAP policymakers and regulators can (1) actively consider and evaluate new benefit delivery methods that increase choice for SNAP beneficiaries while maintaining the high level of access achieved through EBT; (2) be clear in their commitment to principles of equity and inclusion; (3) create the conditions that encourage and enable innovation among both existing EBT processors and new market entrants; (4) plan for pilots with willing, innovative retailers; and (5) engage a diverse group of SNAP beneficiaries in modernizing benefit delivery and designing new technology.

Though the focus of this study is modernizing SNAP benefit delivery through new technology, this goal needs to be considered in the larger context of SNAP, including perennial issues related to eligibility rules, application and recertification processes, and benefit amounts. A consumer advocate
we interviewed urged careful consideration of the trade-offs between prioritizing the SNAP program’s limited funds for piloting new benefit delivery technology or piloting increased SNAP benefit amounts. A future representative survey of SNAP participants could help FNS weigh these fundamental trade-offs and understand variation by age, life stage, geography, and other factors. Within the narrower focus of modernizing benefit-delivery technology, such a survey could fill a gap in understanding how people currently experience the EBT process and their interest in and current use of online or mobile purchases. It could also help illuminate other ideas or nuances about needs and future technologies to promote equitable and inclusive access to SNAP benefits.
Appendix: Overview of the SNAP EBT Process

Before purchase
- Household applies for SNAP benefits. Once approved, they are mailed an EBT card.
- Retailers apply for authorization to accept SNAP benefits. Once approved, they may upgrade existing or purchase new POS equipment from an approved EBT processor to accept EBT payments.
- State EBT agency maintains master file of benefit amounts in accounts for all authorized households which is shared with EBT processors. They add new accounts daily and post benefits to each household’s account monthly.

During purchase
- Customer uses EBT card at retailer by selecting “EBT” on electronic card reader, swiping the EBT card, and entering PIN.
- If EBT system is down, retailer can call EBT processor’s service line to request authorization. If given, retailer uses paper voucher to complete sale.
- When EBT system is back up, retailer uses vouchers to settle transaction.
- Clerk presses button on POS equipment, sending transaction to EBT processing center to check that the purchase (1) came from a valid terminal, (2) involves an active case, (3) uses a valid PIN, and (4) does not exceed the household account balance.
- If the four conditions are met, approval is sent to the POS equipment and the customer account is immediately debited and the retailer account is credited for amount of purchase in state database.

End of day
- At the end of the EBT processor’s business day, the EBT processor system totals all SNAP sales made by each authorized retailer via EBT and transmits that information to the Federal Reserve Bank through the Automated Clearinghouse Network. The EBT processor also informs the state how much money is needed to cover EBT transactions and transmits transaction account information to balance account records for each customer.
- The state’s computers request funds from the US Department of Agriculture, which sends the funds electronically through the Treasury Department to the state’s bank account via the Automated Standard Application for Payment system. The state transmits the appropriate amount of funds to each EBT processor’s bank account.
- The EBT processor deposits the appropriate amount of funds into each retailer’s bank account, settling the retailer’s transactions for the day. The funds are available to the retailer in two to three business days, depending on the policies of the retailer’s bank.
Notes

1 People can use SNAP benefits to buy most groceries, but SNAP benefits cannot buy alcoholic beverages or hot or prepared foods, such as hot coffee, hot pizza, cheese platters, items from a salad bar, or ice cream served in cups, bowls, or cones. For more information, see “Retailer Eligibility – Prepared Foods and Heated Foods,” US Department of Agriculture, Food and Nutrition Service, September 29, 2017, https://fns-prod.azureedge.net/sites/default/files/snap/2017-02-Policy-Retailer%20Eligibility-Prepared-Heated-Foods.pdf.


3 This is often a third-party processor rather than the EBT processor that has the contract with the state. A retailer might choose to work with a single company that facilitates all of their debit and credit card transactions as well as their SNAP EBT transactions. That third-party company might also help the smaller retailer acquire the necessary equipment and navigate administrative processes.

4 Many retailers that are newly authorized to receive EBT payment will be able to use their existing POS system, though some may need to make software upgrades to accept EBT payment or purchase necessary equipment. The state offers free POS equipment and software to some retailers (such as farmers’ markets and nonprofit food cooperatives), so they can accept EBT transactions.


6 The EBT service line is typically managed by the retailer’s EBT processor, though a few states run their own EBT service line.


References


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