

E-vouchers for Family Planning: Advantages, Challenges, and Trends



Summary

Vouchers are a health financing tool in the form of tokens, which are distributed to target populations who exchange them for free or discounted health services at participating clinics. In the context of family planning programs, vouchers are a High Impact Practice Enhancement to expand access to critical health services and improve quality of care. Voucher programs are increasingly transitioning from paper to digital vouchers (called e-vouchers) to improve efficiency, flexibility, and scalability. E-vouchers replace physical tokens such as paper cards with a digital value provided to the user through a smartphone app, a text message, or an electronic card. This brief examines the advantages of e-vouchers, barriers to their use, cost considerations, and future trends. The findings will help family planning program implementers assess the feasibility of using e-vouchers and whether they will add value in meeting programmatic objectives.

Keywords: digital health, family planning, health financing, reproductive health, vouchers

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November 2019

Executive summary

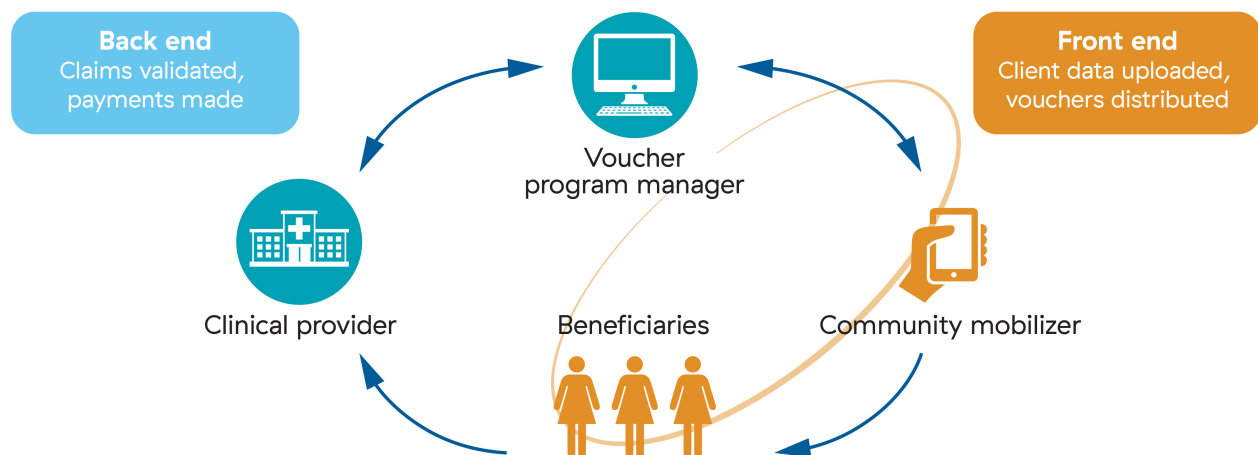
Vouchers are a health financing tool in the form of either paper or electronic tokens, distributed to target populations who exchange them for free or discounted health services at participating clinics (Menotti and Farrell 2016). Evidence shows that vouchers reduce financial barriers to care. They also stimulate demand through social and behavior change activities, and strengthen supply through quality assurance interventions and competitive incentives for providers (Ali et al. 2018). In the context of family planning programs, vouchers are a High Impact Practice Enhancement to expand access to critical health services and improve quality of care (HIP 2019).

Family planning voucher programs are increasingly transitioning from paper to digital vouchers (called e-vouchers) to improve efficiency, flexibility, and scalability. E-vouchers replace physical tokens

or paper with a digital value provided to the user through a smartphone app, a text message, or an electronic card. This brief examines the advantages of e-vouchers, barriers to their use, cost considerations, and future trends. Project reports and key informant interviews with voucher managers from family planning, humanitarian assistance, and agriculture programs informed the brief.

The voucher cycle for e-vouchers and paper vouchers is similar, including processes for accrediting and supervising service providers, identifying and qualifying eligible beneficiaries, marketing and distributing vouchers, validating vouchers redeemed, tracking utilization of services, and processing claims. The focus of this brief is on the channel of voucher distribution or the “front end” of the system facing the beneficiary.

Voucher Cycle



A literature review and key informant interviews revealed the benefits and limitations of e-vouchers for program managers, community mobilizers, and beneficiaries. The author found no data on differences in paper voucher and e-voucher redemption rates or impact on health outcomes based on the type of voucher. There was agreement among informants on the following findings:

- Programs chose to replace paper vouchers with digital versions for a variety of reasons, including a desire to better track in real time voucher activity by the beneficiary and provider, flexibility to adjust the voucher amount or services covered, and an ability to better engage beneficiaries and connect them with additional health or financial services. E-vouchers can also mitigate fraud because they cannot be copied or transferred.
- The administrative costs of forecasting, printing, shipping, storing, collecting, and entering data from paper vouchers are a burden that caused programs to make the change from paper to e-vouchers. However, the cost of the transition is significant. Costs include identifying and contracting with software vendors; designing and developing the system; orienting, training, and supporting staff and providers; investing in hardware, and purchasing telecommunications equipment and services. Once these upfront costs are invested, costs per transaction will decline as the program scales, resulting in long-term savings. For short-term voucher initiatives, e-vouchers may not be the most economical option.

- High mobile phone penetration across the world masks gaps in phone ownership and access, especially for women (GSMA 2019a). More than 60 percent of people in low- and middle-income countries, and primarily those living in rural areas, have no internet connectivity (GSMA 2019b). Nearly all e-voucher programs reported portions of target beneficiary populations who did not own or have access to phones. Programs also reported that community mobilizers (agents who identify and enroll beneficiaries) may have limited experience with digital applications and struggle to learn how to use them. E-voucher programs all experienced gaps in internet or mobile coverage, power outages, software bugs, or malfunctioning equipment. For these reasons, dual approaches are recommended, providing options for beneficiaries to choose either paper or e-voucher format.

Looking ahead, programs expect to expand their use of e-vouchers based on the benefits, the continued growth of phone ownership, lower costs for mobile data, and greater exposure to digital payment platforms among consumers. As program implementers and donors gain insights from e-voucher programs, these programs will be able to increase enrollment of future clients, improve data quality and follow-up, and facilitate integration with additional digital health and financial services.



E–vouchers for Family Planning: Advantages, Challenges, and Trends

Vouchers are an evidence-based, high-impact practice intended to increase uptake of family planning services. Family planning programs are instituting a number of innovative approaches using digital technology to improve the efficiency and effectiveness of voucher initiatives. This evolution toward e-vouchers is part of a broader integration of digital applications in all aspects of health care delivery, including data collection, provider training, supply tracking, and electronic medical records (WHO 2018). There has been limited documentation on the use of digital approaches to vouchers, to compare their strengths and weaknesses relative to traditional paper voucher initiatives. The Sustaining Health Outcomes through the Private Sector (SHOPS) Plus project addresses that gap. This brief identifies best practices for family planning programs, implementing partners, donors, and digital platform developers. It concludes with trends that will influence the future use of e-vouchers.

Methods

SHOPS Plus conducted a review of existing literature on the use of e-vouchers in family planning and other development sectors. The project looked at e-vouchers used in humanitarian assistance, agriculture, and infectious disease programs. Sources included peer-reviewed articles, project reports, case studies, technology vendor websites, voucher implementation guides, and policy documents. The literature provided useful descriptions of e-voucher program elements, innovations used, achievements, and challenges.

The project also conducted key informant interviews with e-voucher program managers, implementers, evaluators, and technology organizations working in Africa, Asia, and the Middle East to supplement the available literature. (View a list of key informants in the appendix.) These interviews formed the basis of the findings related to technical considerations in e-voucher design, lessons learned, and future trends.

Vouchers in family planning

Vouchers are a health financing tool in the form of either paper or electronic tokens, distributed to target populations who exchange them for free or discounted health services at participating clinics (Menotti and Farrell 2016). In addition to reducing financial barriers to care, voucher programs stimulate demand through related social and behavior change activities, and strengthen supply through quality assurance interventions and competitive incentives for providers (Ali et al. 2018). In the context of family planning programs, vouchers are a High Impact Practice Enhancement to expand access to critical health services and improve quality of care (HIP 2019).

In the last decade, organizations throughout Asia and Africa have introduced medium- and large-scale voucher programs. Systematic reviews of the use of vouchers in reproductive health programs provide evidence that vouchers have a significant effect on voluntary contraceptive uptake in a range of settings (Gorter et al. 2012). Studies have found increases in service use, particularly among low-income and marginalized groups for whom cost is a barrier (Bellows et al. 2016; Eva, Quinn, and Ngo 2015). Vouchers can enable access to health services in the private sector when public facilities are unable to provide services or have limited reach in specific geographic areas (HIP 2019). Most programs engage both private and public providers to ensure maximum reach (Menotti and Farrell 2016).

Globally, mobile connections stand at more than 7 billion, with 5.1 billion unique subscribers.

Advancements in mobile technology, coupled with increasing affordability of SMS (short message service, or texting) and data services, have led to an increase in digital health applications throughout the developing world. The World Health Organization (WHO) recently published guidance for public health officials to make use of vital digital applications that promote health, serve the vulnerable, and help achieve universal health coverage (WHO 2019). Globally, mobile connections stand at more than 7 billion, with 5.1 billion unique subscribers. Mobile broadband penetration has risen sharply, with the expectation that by 2020, more than 50 percent of subscribers will have smart phones and 90 percent of those users will reside in low- and middle-income countries (GSMA 2019b). Voucher program managers have taken notice: family planning voucher experts and researchers increasingly recommend that programs explore options for leveraging the efficiency and reach of digital technology (Ali et al. 2018; Grainger et al. 2014; HIP 2019).

Elements of e-vouchers

E-vouchers include a disbursement mechanism for distributing the funds, and are used in a variety of formats, primarily SMS-based code, a mobile app, or a smart card (Table 1). Like paper vouchers, e-vouchers are used in programs to increase access to a particular set of goods or services. Specific e-voucher design depends on the country context.

Table 1. Types of e-vouchers

Format	Description	Characteristics
SMS-based code	Community mobilizers qualify beneficiaries and send a request through SMS to the voucher management system. The system sends a voucher code to the agent or beneficiary phone.	This format requires a reliable mobile phone signal and basic mobile phone; no need for internet.
Mobile app on smart phone or tablet	Community mobilizers register beneficiaries on a smart phone app, which uploads the information to the voucher management system. The system generates a code through the community mobilizer’s app, which serves as the voucher.	Internet connectivity is needed. Data entry of beneficiary information is automated through the app.
Smart card	Community mobilizers provide qualified beneficiaries with computerized plastic cards (like debit cards) that contain bar codes. Beneficiaries redeem value with participating providers who use point-of-sale devices to upload beneficiary information from the card.	Requires hardware (cards and readers) that use short-range wireless technologies to allow data to be exchanged without network access. Data from the readers can sync with voucher system databases later.

E-vouchers are designed to mimic, yet streamline, the processes for paper voucher programs, with similar elements. All voucher programs include a financing mechanism, a targeting mechanism, and a redemption system. Both paper or electronic voucher programs include processes for accrediting and supervising service providers, identifying and qualifying eligible beneficiaries, marketing and distributing vouchers, validating vouchers that are redeemed, tracking use of services, and processing claims.

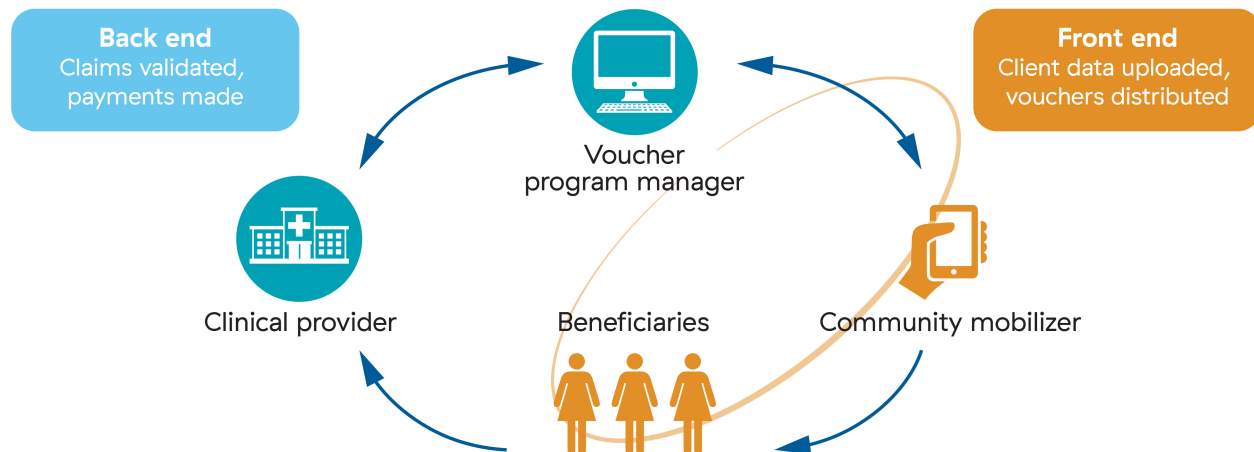
As shown in the voucher cycle figure, the actors in a voucher program include:

- **Voucher program manager:** The implementing organization or an independent voucher management agency that sets standards, monitors quality, and oversees operations.
- **Community mobilizers:** Paid staff or volunteers who conduct outreach and education, and distribute the vouchers.¹
- **Beneficiaries:** Target populations who meet pre-defined criteria based on income, location, age, or need.
- **Clinical providers:** Participating service providers from the private sector who allow vouchers to be redeemed for services in return

for compensation from voucher program managers; recruited and monitored by the implementing organizations.

Digitized voucher systems also provide opportunities for direct distribution from voucher managers to beneficiaries such as through toll-free call centers that can conduct eligibility screening. These call centers can send e-vouchers directly to beneficiary phones. However, voucher programs have found that community mobilizers remain critical stakeholders in engaging beneficiaries in services. These individuals are the primary channel for enrollment in voucher programs.

Voucher Cycle



¹ Organizations use different terms for *community mobilizer*, such as *community health educator*, *community health worker*, *community volunteer*, *outreach worker*, *interpersonal communication agent*, *field agent*, and *community agent*.

Voucher programs consist of front-end systems (facing the users) and back-end systems (facing the program manager). This brief will not focus on back-end systems, which are computerized from the start of a voucher program. The back-end system gives the voucher program manager online access to databases for tracking provider transactions, validating vouchers, processing provider claims, conducting analyses, and generating reports. Because the same voucher management functions are required whether the voucher distribution is paper or electronic, the inputs for the back-end processes are the same.

This brief also does not address reimbursement processes for providers, which may be cash-based or use digital financial services. Voucher management agencies design provider reimbursement channels that depend on local context, such as provider access to bank accounts or the availability of mobile money services (Corby 2013).

The voucher cycle figure highlights the area of interest for this brief in orange: the channel of distribution to the beneficiary. The front-end function includes a process that establishes a participant's identity—through identity documentation, use of a PIN (personal identification number), or biometric identification (Mercy Corp 2018). Elements for e-voucher systems include software, hardware, and a connectivity channel, and rely on technology vendors to develop the software platforms.

In practice, voucher programs use hybrid formats in which distribution may be partially digitized, or they combine digital channels. For example, for beneficiaries who do not own phones, voucher programs can send community mobilizers e-codes on their phones via SMS or a mobile app, and the community mobilizer can write the code on a piece of paper or provide the code through a physical card. The beneficiary can then provide that number



Vouchers are a health financing tool in the form of either paper (shown here) or electronic tokens, distributed to target populations who exchange them for free or discounted health services at participating clinics.

Photo: Marie Stopes International. All rights reserved.

to a participating provider, which will be validated through electronic information management systems. E-voucher programs use a range of low-tech and high-tech approaches, depending on the digital environment and program objectives.

Voucher programs can serve as a stepping stone to additional health financing services by introducing essential elements such as subsidized care and quality assurance (Menotti and Farrell 2016). The back-end voucher functions such as provider accreditation and claim verification can help to prepare providers to qualify for other financial programs such as access to credit and reimbursement through insurance schemes. For beneficiaries, receipt of digital vouchers may provide the first step toward financial inclusion, by highlighting phones as a channel for economic activity as well as communications.

Pioneering use of e-vouchers in development

Early adopters of e-vouchers include program managers of applications in agriculture, humanitarian services, and bed net programs. The introduction of electronic platforms was intended to improve the transparency of the subsidy programs, with more timely accounting of outstanding liabilities created by voucher redemption. One of the first large-scale applications was an e-voucher program in Nigeria in 2009, developed to improve distribution of subsidies to qualified farmers to purchase agricultural inputs (seeds and fertilizers) through participating private sector suppliers (Obayelu 2016). Farmers were enrolled in an “e-wallet” service, a phone-based savings account that is linked to electronic payment services. The program sent subsidies to the farmers’ e-wallet accounts, which could then be used like cash to make electronic payments to participating retail agents. The UN Food and Agriculture Organization introduced an e-voucher system in Zimbabwe in 2011 that provided swipe cards loaded with a specific financial value to vulnerable beneficiaries (FAO 2013).

Mercy Corp first piloted an e-voucher cash assistance platform in Nepal in 2013 to provide access to essential food and supplies from local merchants. Because e-codes were associated with unique beneficiaries, they were less vulnerable to loss, duplication, and fraud than paper vouchers. Beneficiaries were provided with unique voucher

MEDA’s e-voucher program allowed for flexible targeting, changing subsidies based on need.

codes and PINs through outreach workers. The vouchers could be redeemed at participating local vendors, which would validate the vouchers through a smart phone app on the vendor’s phone. A different approach was needed in the Democratic Republic of the Congo, where there was no network coverage in regions requiring emergency assistance. In 2014, Mercy Corp developed a smart card system in which it would distribute card readers to pre-qualified vendors at local agriculture fairs; the vendors would swipe electronic cards that beneficiaries had received, preloaded with a cash value. Mercy Corp would then bring the card reader devices back to their offices at the end of a fair to sync the smart card transactions (Mercy Corps 2018).

The Mennonite Economic Development Associates (MEDA) piloted an e-voucher in Tanzania in 2011 to replace paper vouchers used to subsidize insecticide-treated bed nets. One rationale for switching to the electronic format was limiting

the validity period for the voucher, to encourage net use when it was most effective for the client (such as early in a pregnancy). The e-vouchers also allowed for more flexible targeting; MEDA could easily increase the subsidy for beneficiaries in priority geographic areas. Clinic staff would initiate registration of beneficiaries on an SMS-based platform. A unique number was written on a card given to the beneficiary, which was then provided to an authorized retailer for electronic redemption (MEDA 2013). Over a one-year period, more than 453,000 e-vouchers were distributed, reducing the average life cycle of a voucher (from production to reconciliation and payment) from 257 days for paper to less than 60 days for e-vouchers.

Building on the experience in other sectors, Marie Stopes International (MSI) and Population Services International (PSI) have applied the

e-voucher model to family planning. MSI has been an innovator in the use of e-vouchers to promote family planning, introducing SMS-based vouchers in both Ethiopia and Madagascar in 2013 (MSI 2013, 2016). The proportion of young people under 20 who access services at MSI clinics is low. MSI initially believed that mobile vouchers targeting youth would be seen as novel and appealing, thus increasing youth demand within the broader poverty voucher program. Since that time, MSI has invested in e-voucher platforms in Ethiopia, Kenya, Nepal, and Uganda. Population Services International (PSI) is developing an in-house e-referral application through its “Connecting With Sara” initiative, which the organization is piloting in 10 countries. The initiative includes options for incorporating e-vouchers (PSI 2018). PSI is investing in its digital platform to enable more personal and versatile engagement with beneficiaries through their phones.



A man in rural West Bengal, India, repairs a fishing net while young girls sit together and use a mobile phone. Currently, just 59 percent of women in India own mobile phones, with far lower penetration in rural areas.

Photo: © 2018 Pranab Basak, Courtesy of Photoshare

Advantages and limitations of e-vouchers

E-voucher programs in international development show the potential of digital technology to improve voucher program flexibility, efficiency, scalability, and accountability. Among other advantages, the continual submission of data from community mobilizers and health providers allows voucher managers to follow up immediately in the event of data inconsistencies or technical problems. For some beneficiaries, however, paper vouchers have features that make them preferable to digital, and their needs must be taken into account. The table below summarizes some of the advantages of e-vouchers reported by program managers and beneficiaries.

Table 2. Advantages of e-vouchers and paper vouchers

E-voucher benefits <i>as seen by program managers</i>	Paper voucher benefits <i>as seen by beneficiaries</i>
<p>Security: Digital reduces the likelihood of vouchers being transferred or copied, and mitigates fraud. Beneficiaries can use phone or PIN to retrieve lost codes.</p> <p><i>The government of Malawi switched from a paper voucher system for agricultural inputs to an e-voucher system in 2013 due to myriad challenges, including an influx of counterfeit coupons that resembled genuine ones.</i></p>	<p>Familiarity/tangibility: Physical objects such as tokens or laminated cards provide some beneficiaries with a greater sense of value than digital codes.</p> <p><i>When beneficiaries in focus groups in Kenya were provided a choice between SMS or paper vouchers, MSI found that many opted for paper cards.</i></p>
<p>Integration: Digital platforms make it easier to integrate voucher interventions with additional services, such as digital financial services that include savings and insurance, and to coordinate with other donor programs.</p> <p><i>Following the successful role of an agriculture e-voucher in Kenya, software developer Mezzanine is reconfiguring its platform for Unilever to provide other product subsidies to the same farmers.</i></p>	<p>Privacy: Because phones are often shared, use of e-vouchers may be perceived as less discrete or confidential than paper vouchers for some beneficiaries.</p> <p><i>Marie Stopes Madagascar revised its e-voucher program to offer paper vouchers because it found that many young people preferred not to provide their mobile number due to the sensitive nature of the SMS content.</i></p>
<p>Adaptability: Once beneficiaries are registered, digital systems can layer additional services such as transport vouchers, extend expiration dates, or increase discounts for certain sub-segments of the population, without re-issuing vouchers.</p> <p><i>Marie Stopes Ethiopia reports that it is able to easily experiment with voucher values for its socially marketed products as it assesses beneficiary ability and willingness to co-pay.</i></p>	<p>Equity: Due to gaps in phone ownership, digital vouchers have the potential to leave behind the poorest with the least likelihood of phone access and lowest digital skills.</p> <p><i>In a Nigerian Catholic Relief Services e-voucher food assistance program using smart cards, some illiterate beneficiaries had trouble verifying their expenditures and balance, leaving them vulnerable to exploitation from providers (CRS 2018).</i></p>

Beneficiary engagement: As a two-way channel, digital can enhance engagement with beneficiaries through appointment reminders, educational content, on-demand information, and follow-up messages from community mobilizers and clinical staff.

Triggerise, an e-voucher technology platform, enables solicitation of beneficiary feedback after voucher transactions to monitor satisfaction and quality.

Trust: In countries where there is weak oversight of digital providers, e-vouchers can be seen as scams.

Most farmers in Nigeria thought it was scammers at work when they received text vouchers, so many of them did not redeem their vouchers (Obayelu 2016).

To determine whether e-voucher systems are feasible, voucher programs must first assess readiness within the local context. Considerations include the state of mobile infrastructure, the digital literacy of community mobilizers, the capacity of program staff to manage technology partners, and voucher program objectives. Conducting a thorough assessment of the digital ecosystem is a fundamental principle for effective digital development.² Based on the realities of many low-resource settings, there are barriers limiting the use of e-vouchers, as summarized in Table 3. These limitations must be balanced against limitations of paper voucher programs.

Table 3. Limitations of e-vouchers and paper vouchers

E-voucher barriers as seen by program managers	Paper voucher barriers as seen by program managers
<p>Technical capacity: Family planning program staff often lack experience with technology solutions. Digital platforms involve managing new partners, including platform developers and SMS aggregators, and providing technical support.</p> <p><i>A Zambia government e-voucher program for farmers encountered challenges due to the inability of retailers to properly operate point-of-sale card readers or maintain the hardware.</i></p>	<p>Administrative burden: Paper vouchers require more administrative steps, such as forecasting the number of vouchers for record books and the voucher stock. (E-vouchers are never “stocked out,” and need not be physically distributed to community mobilizers.)</p> <p><i>Marie Stopes Uganda transitioned from paper due to the burden of producing vouchers with costly security features such as watermarking.</i></p>
<p>Lack of infrastructure: Many communities still lack reliable mobile phone connectivity, electricity, and/or internet access. This can lead to frustration and lack of confidence in the e-voucher system.</p> <p><i>Marie Stopes Uganda experienced numerous problems with the reliability of their e-voucher platform due to dropped SMS messages and slow internet, preventing transactions.</i></p>	<p>Incomplete or untimely data: Paper-only voucher systems impose time lags, and result in missing or inaccurate data. Phone-based registration of beneficiaries can improve the completeness of data collected by community mobilizers, through features such as pre-loaded checklists and validation rules to prevent errors.</p> <p><i>Mercy Corp e-vouchers for displaced populations are used in local shops, with geo-tagging, time stamps, and itemization of purchases. These e-vouchers better track beneficiary needs than paper versions and permit fine-tuning of operations.</i></p>

² Principles for Digital Development <http://digitalprinciples.org>

Lessons learned

This section summarizes insights from the literature and interviews on four topics: cost considerations, role of community mobilizers, beneficiary experience, and e-voucher design and planning. The author found no data on differences in paper voucher and e-voucher redemption rates or impact on health outcomes based on the type of voucher.

Cost considerations

The literature on voucher program costs is scant. Data comparing the cost per voucher for paper vouchers compared to e-vouchers in family planning programs were not available. Programs often bundle start-up and ongoing costs, with wide variations in program geographic reach, time horizons, and impact metrics. In one paper evaluating the cost effectiveness of paper voucher programs in Kenya and Uganda, administrative costs were estimated to be 25 percent of total program costs, but the administrative costs include many management functions that would be the same regardless of the means of distribution (Bellows 2012).

Many voucher programs are in transition from paper-based to digital, and the administrative costs for managing both digital and non-digital elements may be shared between the types of vouchers. An e-voucher system introduced by Catholic Relief Services in northern Nigeria found that maintaining paper records in addition to the digital platform was essential for data triangulation and verification (CRS 2018). No data were available to identify cost

implications of maintaining both paper and digital processes, nor to compare the volume of clients driven by the alternative approaches.

Paper voucher program costs include costs for printing, marking for fraud resistance, warehousing, transporting, collecting, and reconciling. Anti-counterfeit measures such as embedding barcodes are costly, and require programs to adopt complex processes for activating and tracking their physical vouchers. This was a main driver of MSI's decision to explore use of digital vouchers. The author found no data or analyses breaking down specific cost thresholds that led programs to move from paper to digital, nor whether this was influenced by the value or volume of the vouchers provided.

Cost categories for e-voucher programs include assessments of infrastructure (mobile, internet, and power) and technology use by community mobilizers and targeted beneficiaries, identification and contracting of technology vendors, scoping required changes to business processes, software development, hardware procurement such as tablets or point-of-sale readers, fees for telecommunications charges, training, maintaining the platform, and providing technical support. In a comparison of paper vouchers and e-vouchers for a bed net voucher program in Tanzania, MEDA estimated a savings of up to 7.5 percent on operational costs, attributed to more targeted monitoring and field supervision, and additional savings on the processing costs of paper vouchers (MEDA 2013).

Recommended practices

Plan to capture cost economies over time.

Costs to plan, design, deploy, and train users on an e-voucher system are high at the beginning, but once the system is up and running, these initial costs amortize as the system scales. A key consideration in determining whether to invest in an e-voucher system is the time horizon. A paper voucher system may make more sense for programs with short-term funding and objectives. Longer-term programs will realize significant cost-efficiencies over time when compared to the recurrent costs of manual operations.

Budget for non-technical costs. Programs need to allocate extensive resources when first transitioning to e-voucher platforms to hire technical staff, orient stakeholders, and manage partners. The key investment is not in the software and communications charges but in developing the business processes, including how data will be shared, accessed, and protected. As the system matures, and beneficiaries, community mobilizers and program staff become more familiar with the platform, resource needs decline.

Role of community mobilizers

For decades, community mobilizers have been instrumental in reaching out to disadvantaged groups (Ali et al. 2018). Voucher programs typically use community-based teams to identify and reach potential voucher beneficiaries, explain the concept of vouchers and their purpose, provide education on available services, establish eligibility, distribute vouchers, escort beneficiaries to service providers (as needed), and follow up with beneficiaries who do not redeem vouchers. E-voucher programs can theoretically cut out these field agents and replace them with digital campaigns, online education, phone-based self-registration and voucher access, and ongoing engagement through call centers. Yet all voucher programs reported that the community

mobilizer model remains critical to the success of voucher programs. As digital platforms become more widespread, the role of community mobilizers will shift to include educating beneficiaries on e-voucher mechanics and transitioning toward more virtual communications.

The community mobilizer is critical to the success of voucher programs.

Vouchers have a marketing and health education function that is relevant in contexts where a change in health-seeking behavior is sought because populations are unfamiliar with, or reluctant to use, specific services. Voucher programs typically combine voucher distribution with supplemental behavior change campaigns through local launch events, community meetings, posters and pamphlets, and radio or TV (Grainger et al. 2014). These marketing functions do not eliminate the need for interpersonal communications from trusted health advocates who can address concerns, answer questions, and provide confidence in the voucher system and the services provided.

For some e-voucher programs, supplementary activities are used to complement community mobilizer recruitment and engagement, and offer new channels for expansion. Marie Stopes Ethiopia uses a call center to establish eligibility and provides e-vouchers for walk-ins at participating clinics, estimating that 18 percent of voucher clients are enrolled through this option. Other programs have had limited success incentivizing voucher use other than through field agents. The In Their Hands project implemented by Marie Stopes Kenya tested the promotion of e-vouchers through comics and content in Shujaaz magazine, but found low response through this channel (Benoit Renard, pers. comm.).



Clients at a family planning clinic in Cambodia hold up vouchers they received for transportation and services. A paper voucher system may make more sense for programs with short-term funding and objectives.

Photo: © 2012 Marcel Reyners, Courtesy of Photoshare

Program managers have had different experiences orienting, training, and monitoring community mobilizers on the use of e-voucher platforms. Several reported that competence with the system could take community mobilizers 8 to 12 months, while others reported that they were able to learn in a single training session.

Recommended practices

- **Expect mistakes in the beginning as community mobilizers learn the system:** Once they gain experience with the platform, community mobilizers will have fewer difficulties activating new accounts, understanding confirmations, and generating the codes. Financial incentives for effective referrals motivate mobilizers to use digital applications.
- **Make familiarity with technology a criterion for recruiting community mobilizers where possible:** Marie Stopes Ethiopia uses this approach and reports that a half-day training as part of an overall voucher program orientation is adequate because the recruited individuals are already familiar with mobile apps. Age is a key factor in the ability to use digital platforms. Younger individuals are likely to be more tech savvy; older individuals may be less savvy and have poor vision, making it a challenge to read text messages.
- **Keep e-voucher processes simple:** In some programs, staff are required to keep paper registers as back-up due to unreliable networks, doubling the work in registering clients in an e-voucher system. Programs can be tempted by digital's flexibility and versatility to collect excessive data when registering clients, which may lead to resistance from community mobilizers. Zambia's agriculture e-voucher program found that retailers struggled to operate unfamiliar electronic card readers due to limited information and communications technology capacity, requiring changes to their process (Mezzanine 2018). To ensure usability, community mobilizers should be core partners in the design process.
- **Expand the potential reach of voucher programs through call centers:** While the role of community mobilizers remains central to engaging non-users of reproductive health services, direct engagement of beneficiaries through mobile phones can complement community-based efforts in voucher programs. Call centers advertised through social and mass media may reach beneficiaries who are not identified by community mobilizers, and provide additional channels for promoting and distributing vouchers.

Beneficiary experience

Where phone access and use is high among target beneficiaries, e-vouchers provide eligible clients with a discrete, interactive, and secure channel for receiving subsidies to defray contraceptive costs. The literature on e-vouchers focuses on the benefits to program implementers, and offers limited insights into the beneficiary experience. Research on beneficiary feedback about e-vouchers is needed, particularly with regard to features of e-vouchers that beneficiaries found motivational or confusing.

The rapid rise and high percentage of mobile phone ownership masks the gap between the wealthy and poor in many countries. More than 60 percent of populations in low- and middle-income countries have no internet connectivity, primarily in rural areas (GSMA 2019b). Voucher programs are often designed to channel subsidies to the poorest and most disadvantaged segments of the population, who are the least likely to use phones. There is also a gender gap, with many fewer women than men owning their own phones. Currently, just 45 percent of women in Mozambique, 50 percent in Pakistan, and 59 percent in India own phones, with far lower penetration in rural areas (GSMA 2019a). Marie Stopes Madagascar found that only 20 percent of its target population owned a phone (MSI 2016). In one rare case, the Nigeria agricultural voucher program provided financial assistance so that eligible farmers without phones could purchase one to participate in the e-voucher program, but such support would be cost prohibitive at scale (Obayelu 2016).

Programs report that even when phone access is not a barrier, beneficiaries may prefer a tangible object, which engenders a greater sense of value to them. Also, paper vouchers may be more discreet. In a voucher program for sex workers in Nicaragua, beneficiaries reported that a color-coded paper voucher made them more comfortable during clinic visits because they never had to explain to guards,

receptionists, or doctors that they were sex workers since colored voucher cards immediately indicated this fact (Gorter et al. 1999). Pulling up a text message on a phone may not avoid embarrassment in the same way. Voucher distributors in Marie Stopes Uganda's program for adolescents also reported their appreciation of a physical card, which made it unnecessary to explain reasons for their visit (Ddungo et al. 2018).

MSI documented that in some cases, young people who shared phones within a household preferred not to provide their number due to the sensitive nature of the content (Burke et al. 2016). This finding will depend on the particular circumstances of beneficiaries. PSI noted that programs that target married adolescents and involve husbands find higher acceptance of program-related text messages than programs targeting unmarried adolescents.

Recommended practices

Design e-vouchers based on beneficiary

preferences: Conduct formative research and make beneficiaries co-design partners to ensure that e-vouchers meet their needs. The objective is to maximize the number of vouchers redeemed for service uptake. Factors that will matter to beneficiaries include straightforward enrollment processes, clear instructions about the value and terms of services covered, information on where vouchers can be redeemed, and trouble-free redemption. Program managers can use digital's two-way capability to increase engagement through reminder messages, health tips, encouragement, and support.

Offer beneficiaries a choice: To accommodate beneficiaries with no access to phones, or those who prefer paper, a number of e-voucher programs have community mobilizers generate e-codes on their phones and write them on a piece of paper, which clients can redeem at participating clinics (Burke et al. 2016). This hybrid approach can be combined

with additional security steps such as requiring beneficiaries to provide a PIN when redeeming vouchers (Mercy Corps 2018). In Madagascar, MSI found the e-codes on paper challenging to track, so they switched to a full paper voucher system with their outreach team, and set up a separate call center advertised on television that youth could call toll-free and to request an e-voucher (MSI 2016).

Consider offering paper as an additional visual aid: Even when clients are registered electronically for vouchers, paper cards can serve as motivational nudges. The visual cue of the physical voucher may provide a stronger reminder than the text message, which may be forgotten in the clutter of other messages. Vouchers can include a lot of information, including the type and quantity of services, the period of validity, and eligible providers, to be supplemented by text reminders and educational materials. For some beneficiaries, though, physical vouchers meant for confidential services may be seen as indiscrete, so the beneficiary should decide which format they prefer.

E-voucher design and planning

Family planning program implementers who have limited experience with digital applications may see technology as difficult to understand. They may worry about the capacity to cope with new systems and need to rely on IT experts. Program managers can turn to outside consultants to help them assess requirements, identify and oversee platform developers, and manage the roll-out of an e-voucher program. Managers of e-voucher programs cite dealing with their technology provider as their major challenge (Mercy Corps 2018). Other challenges include understanding software terminology, anticipating and articulating functional requirements of the technology, and forecasting ongoing support costs as programs scale.

Depending on the program design, program managers may need to contract with software developers, SMS aggregators, and suppliers of smart phones. As the technology sector has matured, the number of qualified technology options has greatly expanded. Informants noted the vast difference between the limited platforms available for earlier initiatives and today's expansive choices, including vendors with the ability to integrate with payment platforms, electronic health records, case management software, and social media platforms. Technology changes rapidly, and programs reported challenges in keeping up and adjusting investments.

Informants referenced more than a dozen software platforms offering e-voucher capabilities, including Apposit, Bluesquare, CommCare, Datawinners, DHIS2, Genius Tags, Greenmash, Koe, Magus, Mezzanine, RedRose, Transversal, Triggerise, and Viamo. Voucher program satisfaction with these technology partners was generally positive, with the flexibility to easily customize and add new features noted as a priority factor. There are concerns about *vendor lock-in*, in which use of proprietary software makes it difficult to transition to a competitor's platform. Several informants expressed a desire for a sharable, open source platform to better standardize e-voucher features.

Recommended practices

Designate an e-voucher program manager:

Resources needed to design, deploy and manage an e-voucher program include a dedicated staff person who can coordinate the process. Depending on internal staff capacity, activities that can be outsourced include an assessment of software requirements, procurement of hardware such as tablets, negotiations with mobile network operators or SMS aggregators, distribution of SIM cards, software development, training, and technical support. A dedicated program focal point is needed

to align the sequencing, oversee budgets, and escalate problems for resolution.

Co-create e-voucher design with a technology partner: Once program managers have identified their needs for an e-voucher system including functionality, scale, timeline, and budget, they can identify qualified vendors through a competitive procurement process. Prior to finalizing contract terms, it is recommended that programs collaborate with vendors on platform design to ensure full understanding of program requirements and capacity, including reporting needs, data security, and processes for fixing software bugs (Mercy Corps 2018).

Use a phased approach to implementation: E-voucher systems should be as simple as possible for beneficiaries and community mobilizers, with an eye toward minimum administrative burden. It is best to start incrementally, collecting and transmitting the minimum amount of information required, with only the most basic features. Additional features and adaptations can be made going forward.

Tailor the design to the environment: The availability of reliable mobile services in the geographic area is a key consideration, and programs considering e-voucher platforms should first conduct a thorough assessment of the reach and reliability of the infrastructure. Marie Stopes Ethiopia determined that due to unreliable internet access, e-voucher communications should be SMS-based rather than through smart phone applications. Key system requirements include the ability for voucher platforms to work offline and sync data when connectivity and power are available. MSI supervisors would issue batches of e-codes to voucher distributors every month, to use in the event they had technology issues and could not generate codes in the field. Marie Stopes Ethiopia reported frequent power blackouts, requiring them to use paper records as a back-up. Connectivity gaps can also be addressed with smart cards and readers that need no network connections, such as those used in agriculture e-voucher programs in Zimbabwe and Nigeria (Obayelu 2016).



E-voucher programs should be easy for beneficiaries and community mobilizers to use.

Photo: Javier Acebal



Looking ahead

Family planning e-voucher programs are still in a pioneering phase, as programs continue to navigate persistent gaps in rural network coverage, unreliable internet services, and barriers to phone access for women. However, all program informants reported plans to expand their use of e-vouchers due to their advantages of scalability, flexibility, and efficiency. Voucher programs generate large amounts of valuable data concerning beneficiary behaviors, provider incentives, service delivery, and barriers to care. E-vouchers provide more timely, actionable data than paper vouchers, allowing programs to respond more effectively and refine eligibility criteria, adjust subsidy levels, and track impact over time.

Global NGOs such as MSI and PSI are evolving from singular country e-voucher technology to the use of more global frameworks and standardized processes, which can be customized for country context. Mercy Corps has developed a list of pre-vetted technology vendors and standard operating procedures for field programs to use when implementing e-transfer platforms. These “global goods” provide efficiency and replicability in e-voucher implementation. WHO’s recent guidelines on digital interventions for health system strengthening do not mention e-vouchers as a promising application; future iterations should consolidate evidence on this topic (WHO 2019).

Several trends in digital technology are likely to support the growth of e-vouchers as a health financing tool, and support their coordination with other donor and government initiatives.

Trends in mobile data: Smart phone costs are plummeting globally, and internet capacity is expanding. Mobile networks are increasing their investments in data services, resulting in lower prices, often at the expense of SMS quality. Currently, SMS channels are favored by many e-voucher programs, but some are re-evaluating as spam becomes a nuisance. Marie Stopes Uganda reported that text messages in their e-voucher system were frequently dropped or delayed. PSI Nepal is piloting enrollment in e-vouchers through social media, and platform developers such as Triggerise anticipate the use of WhatsApp in the distribution of subsidy vouchers in the future. The growth of mobile web services will impact e-voucher versatility and cost.

Trends in digital health: As the information and telecommunications infrastructure evolves, health programs are increasingly using digital technology to advance universal health coverage through improved program management and service delivery. Digital health interventions span 28 diverse categories including location mapping, client health records, referral coordination,

and supply chain management (WHO 2018). Within this context, use of e-vouchers will increase as a natural extension of other investments in client communications, data visualization, and provider training.

Rise of digital financial services: Mobile money and other digital financial services are increasingly being integrated into health programs (Rohatgi, Galdalva, and M'Bale, et al. 2019). As populations switch from cash to digital payment platforms such as Kenya's m-Pesa, the acceptability and appeal of e-vouchers is likely to increase as the concept of virtual value becomes familiar. Access to financial services makes it easier to invest in health through interventions such as health insurance, health e-wallets for savings, and earmarked remittances, thus linking e-voucher to broader health financing schemes. Integration of digital payments within e-voucher platforms facilitates performance-based incentives and more timely compensation to voucher mobilizers and participating clinics.

Rise of digital identification: More than one billion people lack legal identification, and digital ID interventions hold promise for expanding access to services (USAID 2018). Technologies to establish identification include sensors for face recognition, iris scans, finger prints, palm prints, and machine learning algorithms using data from photos. The growing interest and investment in digital IDs expands options for e-voucher design. For individuals registered in a system using biometrics, services need not be tied to mobile phone numbers. This can improve beneficiary tracking, and prevent duplication because people often use multiple SIM cards, and toggle between mobile phone providers. By eliminating the need for cards, codes, or phones, providers can validate e-vouchers on the spot.

Conclusion

E-vouchers and paper vouchers co-exist in family planning, where programs accommodate diverse needs and preferences of individuals and communities. Lessons learned from existing programs suggest that the line between paper vouchers and e-vouchers is blurring. True paper voucher systems are becoming outmoded, with digital elements edging their way from back-end systems to direct engagement with frontline providers, and ultimately, their clients. Programs are phasing their transition to ensure that the most vulnerable populations, the least likely to adopt new technologies, are not excluded from benefits.

To further guide program implementers in best practices for designing voucher programs, more research is needed to calculate and compare costs and benefits under various e-voucher program scenarios. Additional research is also recommended to examine any spillover social or economic impacts from transitioning to electronic vouchers in terms of financial inclusion, digital literacy, or responsiveness of service delivery.

As the rapid pace of technological change continues, health financing services will be increasingly linked to digital channels for a more inclusive health system. The transition from paper to electronic delivery of vouchers helps to close the loop between clients, community mobilizers, and service providers. Vouchers are meant to serve as a catalyst for enhancing long-term health financing strategies. E-vouchers can be a first step toward other forms of risk protection, such as savings, credit, and insurance, to support long-term resilience.

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Appendix. Key informants

Organization	Contact	Date of discussion
Greenmash	Andrew Wyborn, Managing Director	February 2019
Independent Consultant	Anna Gorter, International Voucher Program Consultant (for KfW, World Bank, DfID, EKN, MSI, PSI, PopCouncil)	March 2019
Mercy Corps	Alexa Swift, Senior Advisor, Economic Coping and Recovery	April 2019
Mezzanine	Stephen Kinuthia, Regional Manager, East Africa	April 2019
MSI Ethiopia	Tesfaye Mesele, Voucher Program Manager	May 2019
PSI	Matthew Wilson, formerly Senior Technical Advisor, MSI Voucher Programs	April 2019
PSI Nepal	Tom How, Chief of Party, Nirija Shrestha, Program Manager	March 2019
Triggerise	Benoit Renard, CEO	April 2019
Viamo	David McAfee, CEO	February 2019
UNFPA	Cedric Anil Muhebwa, formerly Voucher Strategy, Marie Stopes Uganda	April 2019

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