Lessons Learned from the MAVEN Project Pilot

Using Physician Volunteers to Increase Access to Care via Telehealth

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Preface

In 2015, the Medical Alumni Volunteer Expert Network (MAVEN) Project began offering telehealth visits at three community health centers in Massachusetts and California. The goal of the multisite pilot was to develop and test methods for using physician volunteers to increase access to care via telehealth. In 2016, the California Health Care Foundation funded a RAND Corporation project to conduct a preliminary assessment of the pilot and generate recommendations to support quality improvement efforts.

This report describes the evolution of the pilot. It also summarizes feedback regarding the strengths and limitations of the program and presents a set of recommendations for MAVEN Project administrators. This report will be of interest to physician volunteers and community health centers currently implementing or considering participating in the MAVEN Project. It will also be of interest to health care organizations and clinical practitioners who are implementing telehealth programs aimed at the underserved.

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Introduction

The Medical Alumni Volunteer Expert Network (MAVEN) Project is a 501(c)(3), California charitable nonprofit organization with offices in California and Massachusetts that aims to improve access to care for underserved populations by linking volunteer physicians to underserved communities through telehealth. Since it began operating in 2013, it has recruited retired and semiretired licensed physicians to serve the needs of vulnerable populations seeking care at safety-net clinics. The MAVEN Project uses Health Insurance Portability and Accountability Act (HIPAA)–compliant telemedicine technologies to enable remote video consultation, teaching, and mentoring for safety-net providers and patients.[1] The program is described in more detail in Chapter Three.

The MAVEN Project was initially developed to address provider shortages, as well as to leverage a largely untapped resource: retired and semiretired physicians. In the United States, there are concerns that there is an absolute shortage of physicians. The Association of American Medical Colleges predicts a shortfall of 46,100 specialist physicians by 2025 (IHS, 2015). Shortages are especially dire in areas that serve low-income populations; the Health Resources and Services Administration has categorized more than 6,000 communities in the United States as health professional shortage areas because they lack sufficient numbers of providers (U.S. Department of Health and Human Services, undated). At the same time, there are approximately 275,000 active physicians between the ages of 55 and 75 who are nearing retirement and more than 100,000 physicians of all ages who are currently inactive (IHS, 2015). Given the shortfall of physicians in the United States, recruiting retired and semiretired physicians to provide care via telehealth increases the total supply of active physicians and the capacity of the existing workforce. Volunteer physicians also benefit because the model provides a meaningful opportunity to serve vulnerable patients and remain engaged as their professional commitments wind down.

In 2013, the MAVEN Project began recruiting volunteers and safety-net clinics to participate in its pilot program. In September 2015, it began offering services at the first pilot site, the Community Health Center of Franklin County in Massachusetts. Two additional pilot sites, Ampla Health in California and Lynn Community Health Center in Massachusetts, began offering telehealth visits in the subsequent five months. In May 2016, RAND researchers began conducting interviews with stakeholders involved in the implementation of the pilot to inform quality improvement efforts. This report describes the early implementation of the MAVEN Project pilot and summarizes the results of those engagements.

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[1] HIPAA is Public Law 104-191, August 21, 1996.

Methods

Data Sources

Semistructured Interviews

From March 2016 to June 2016, we conducted semistructured interviews with volunteers, on-site referring clinicians, and administrators across the three pilot sites ($n = 13$). We interviewed six physician volunteers representing five specialties (cardiology, rheumatology, hematology/oncology, family medicine, and gastroenterology). We also interviewed four on-site clinicians (i.e., nurse practitioners, physician assistants, and physicians) who referred patients to MAVEN Project volunteers and three administrators who played a role in the program's implementation. Finally, we conducted one site visit to Lynn Community Health Center in Massachusetts to interview on-site clinicians and administrators and observe workflow.

To gain additional perspective on the use of volunteers in telehealth and to identify promising practices, we conducted an environmental scan of other programs linking physician volunteers to underserved communities via telehealth. Through a targeted literature review, we identified three additional programs: AccessDerm (Nelson et al., 2016), Swinfen Charitable Trust (Patterson and Wootton, 2013), and Project Access of Northern Virginia. To understand their clinical models, we completed three additional interviews with representatives from these programs.

Interviews covered multiple topics. Interviews with volunteers included questions on motivation of volunteers, barriers to serving as a volunteer, initial concerns about the program, perceptions of the training process, strengths and limitations of the program, and recommendations for improving the volunteer experience and the program itself. Interviews with clinic staff included questions on initial perceptions and concerns with the program, motivation for participating, previous telehealth experience, workflow changes to accommodate the program, changes to the program over time, the program's impact on patients, experiences with the volunteers, barriers to implementation, strengths and limitations of the program, and recommendations for improving the program.

Data on Program Outputs

We requested data from MAVEN Project administrators on the volume of telehealth visits at each site, numbers and types of volunteers trained and engaged, and site characteristics. We present these data in Tables 3.1 and 3.2 in Chapter Three.

Qualitative Analysis

As we were conducting interviews, we analyzed qualitative data on an ongoing basis to identify themes. These themes included topics covered in the interview protocols, as well as topics that spontaneously emerged in the interviews. Identifying and refining themes throughout the data-collection process allowed us to probe for those themes in subsequent interviews. We also maintained a running list of recommendations and supporting justifications suggested by interview participants.

Once data collection was complete, we reviewed the themes and developed a list of recommendations for MAVEN Project staff to consider moving forward. In the sections that follow, we first present a key theme (typically a barrier, challenge, or strength) identified by interview participants and some illustrative quotes to add context. For themes that describe challenges, we then present concrete recommendations to address them. In some cases, we drew recommendations directly from interview participant quotes, so they represent the opinions of clinic staff and volunteers. We included these recommendations to inform MAVEN Project administrators about the perspectives of their partners. In other cases, our recommendations were informed by our understanding of what has worked in other volunteer programs, as well as telehealth programs more broadly. We include detail on the source of the recommendation (RAND researcher versus interview participant) in Table 4.1 in Chapter Four. For strengths, we do not include an associated recommendation; however, the MAVEN Project might want to consider leveraging its strengths when considering future planning and business opportunities.

MAVEN Project Description and Evolution

Pilot Sites

The three clinic sites involved in the 2015–2016 pilot included the Community Health Center of Franklin County and Lynn Community Health Center in Massachusetts and Ampla Health in Northern California. Franklin and Ampla are in rural areas, and Lynn serves a predominantly urban population in the greater Boston area. All of the clinics serve large populations of underserved patients (4 to 16 percent uninsured and 48 to 65 percent Medicaid) (see Table 3.1).

Table 3.1
Pilot-Site Characteristics

Characteristic	Community Health Center of Franklin County	Ampla Health	Lynn Community Health Center
Location	Franklin County, Massachusetts	Butte, Colusa, Glenn, Sutter, Tehama, and Yuba Counties, California	Essex County, Massachusetts
Sites in network	3	13	5
Active MAVEN Project sites	2	8	1
Patients			
Percentage uninsured	4	15	16
Percentage on Medicaid[a]	48	60	65
Rural or urban	Rural	Rural	Urban
Prior telehealth experience	No	Yes	No
MAVEN Project launch date	September 2015	November 2015	February 2016
MAVEN Project model	Provider-to-provider curbside consult	Direct patient visits	Direct patient visits
Technology used	Doctor on Demand platform, telephone calls, and secure email	CTN Connect Polycom platform; Zoom	Doctor on Demand platform; Zoom
MAVEN Project volunteers trained	10	22	10
MAVEN Project volunteers participating	9	15	7

NOTE: CTN = California Telehealth Network.

[a] This estimates the number of beneficiaries eligible for Medicaid only. Dual-eligibles (people eligible for both Medicare and Medicaid) are not included in this estimate.

The Telehealth Model

The MAVEN Project pilot was designed to be responsive to the needs of participating safety-net clinics, and MAVEN Project administrators took an experimental approach, adjusting plans and processes as needed to address emerging challenges. As such, the telehealth model varied across pilot sites. First, the MAVEN Project offered whichever specialties each pilot site needed. Fifteen total specialties were offered across the program (range of five to 14 per site), with variation in uptake across sites. Second, MAVEN Project administrators allowed each clinic to dictate the type of telehealth encounter it would use. At Franklin, clinic staff opted for curbside consults in which a physician volunteer consulted with an on-site clinician (provider-to-provider telehealth model) via video, phone, or email. Ampla and Lynn, in contrast, implemented direct patient visits (provider-to-patient telehealth model). In this model, a patient who presented to the safety-net clinic interacted with a physician volunteer via telehealth for 30 to 45 minutes, and an on-site clinician joined for either the full visit or for the final 15 minutes of the visit. Finally, the technology to support telehealth visits varied across sites. Ampla initially used the CTN Connect Polycom platform because it had prior experience using that platform for telehealth visits. It later migrated to HIPAA-compliant Zoom, a videoconferencing application. Franklin and Lynn, on the other hand, initially used Doctor on Demand's direct-to-consumer telehealth platform (Doctor on Demand, undated). Franklin later migrated to telephone calls and (asynchronous) secure email, while Lynn later implemented HIPAA-compliant Zoom.

Volunteers were recruited from the alumni associations of several leading medical schools and typically committed to a set number of hours each month during which they agreed to be on call (Franklin) or to be scheduled for patient visits (Lynn and Ampla). Volunteers were required to be licensed in the state where the clinic was located; as such, volunteers licensed in Massachusetts could serve both Franklin and Lynn. Nonetheless, volunteers could be located anywhere from several minutes to multiple hours from the clinics they were serving. Volunteers generally conducted MAVEN Project visits and activities from home.

Program Outputs

From September 2015 to August 2016, 32 physician volunteers in the MAVEN Project completed 277 telehealth visits across the three clinic sites (Table 3.2). Seventeen curbside consults occurred at Franklin, while 260 direct patient visits occurred at Ampla and Lynn. Across all three sites, the highest-volume specialties were rheumatology ($n = 119$), hematology ($n = 40$), cardiology ($n = 36$), and adult endocrinology ($n = 20$).

Changes Made During Implementation

As the pilot matured, MAVEN Project administrators made multiple changes to the program to address emerging challenges and to respond to clinic needs. In this section, we describe the most significant changes to the pilot as it evolved.

Table 3.2
Telehealth Visit Volume, September 2015–August 2016

Specialty	Franklin	Ampla	Lynn	Total
Cardiology	2	5	29	36
Dermatology	—	3	14	17
Endocrinology, adult	—	20	—	20
Endocrinology, pediatric	—	2	—	2
Gastroenterology	4	—	15	19
Genetics	—	1	—	1
Gynecology	—	0	—	0
Hematology	6	14	20	40
HIV/AIDS	—	0	—	0
Internal medicine	5	10	—	15
Otolaryngology	—	2	—	2
Psychiatry, pediatric	—	6	—	6
Rheumatology	0	110	9	119
Surgical care	—	0	—	0
Wound care	—	0	—	0
Total	17	173	87	277

NOTE: 0 = specialty was offered but no visits occurred.
— = specialty was not offered. HIV = human immunodeficiency
virus. AIDS = acquired immunodeficiency syndrome.

Technology

Although the MAVEN Project initially implemented Doctor on Demand's telehealth plat-form and CTN Connect's Polycom platform, staff quickly learned that participating clinics did not require technology specifically designed for telemedicine. In the case of Doctor on Demand, the company donated it off the shelf, without any modifications. Because Doctor on Demand was designed as a direct-to-consumer commercial product, it had some features that were unnecessary or burdensome for volunteers who were not billing for their time. For example, each visit would time out at 15 minutes, requiring the volunteer or health center staff to press a button to continue the visit. The platform worked well and was stable, however. CTN Connect's Polycom platform, on the other hand, posed significant logistic and connec-tion problems. Although other versions of CTN Connect's Polycom platform were successfully used for other California telehealth programs, the specific version deployed for the MAVEN Project was a new beta version that had not been used previously across the clinic's firewall. It was unreliable and unstable with multiple volunteers' operating systems and computers. This resulted in connection problems and dropped calls.

Clinic staff observed that they needed only stable, reliable videoconferencing to conduct visits rather than telemedicine-specific technology. Low-cost videoconferencing solutions are

widely available. As a result, the MAVEN Project migrated to HIPAA-compliant Zoom at Ampla and Lynn in the summer of 2016.

Previous Telemedicine Experience
At the beginning of the pilot, MAVEN Project administrators sought out clinic partners with prior telehealth experience. In fact, Ampla was selected to participate in part because it had a track record as a hosting site for telehealth visits. However, MAVEN Project administrators quickly learned that there are unique challenges to implementing a new telehealth program in a clinic that has experience with different telehealth providers. Because Ampla already had telehealth with established workflows, MAVEN Project visits had to be aligned with existing processes and platforms. For the future, MAVEN Project administrators have decided not to prioritize clinics with prior telehealth experience because managing and integrating multiple telehealth providers brings its own unique challenges.

Role of On-Site Staff
Although both Ampla and Lynn engaged in direct patient visits, the role of the on-site provider varied across sites. At Ampla, the physician volunteer and patient interacted directly for the first 30 minutes, and the on-site clinician joined for only a final 15 minutes to participate in a three-way conversation. In addition, on-site clinicians worked with different physician volunteers depending on a patient's needs. On-site clinicians were dissatisfied with this model because they had difficulty balancing their in-person patients (who were scheduled at the same time) and telehealth patients. They also did not have sufficient opportunities to build rapport with the physician volunteers. Some stakeholders referred to the final 15 minutes in which all three parties interacted as "awkward" because the on-site clinician and physician volunteer were essentially discussing complex medical concepts and terms in front of the patient.

At Lynn, on the other hand, each on-site clinician was matched with a particular physician volunteer with whom each worked consistently. The on-site clinician, furthermore, was fully dedicated to the telehealth visit and present in the room for the entire time. MAVEN Project administrators felt that this was a superior model to the model initially implemented at Ampla because teaming volunteers and on-site providers increased engagement in the pilot and allowed for ongoing mentorship. For the future, MAVEN Project administrators plan to suggest the Lynn model to participating clinics.

Staffing for Small Clinics
Franklin had the ongoing challenge of low clinician demand for telehealth visits, in part because it is a small rural clinic with unpredictable demand. At Franklin, volunteers sometimes made themselves available for consults but were not contacted by on-site clinicians. This under-utilization affected volunteer morale and engagement. MAVEN Project administrators learned that, when telehealth visits are first offered at a clinic, uptake is likely to be slow as processes and relationships are developed. As such, it is preferable to train a pool of volunteers to serve multiple small clinics. In the future, MAVEN Project administrators will try to bring several small clinics in one state on board at the same time so that there is more-predicable demand and volunteers are consistently engaged.

Educational Programming

Several months into the pilot, MAVEN Project administrators added a variety of educational activities to the program, including lunch-and-learn sessions (Franklin and Ampla) and interactive, didactic trainings among physician volunteers and on-site staff (Lynn and Ampla). Although these activities were not initially a formal part of the program, they have become an important feature. These activities help to build rapport between on-site clinic staff and physician volunteers in the absence of common, in-person interactions. They have also helped to improve the quality and running of telehealth visits and have provided educational opportunities and mentorship to on-site staff.

Findings and Recommendations

In analyzing the semistructured interview data, we identified seven themes and 11 recommendations. In this chapter, we present themes, illustrative quotes to support each theme, and recommendations. Table 4.1, at the end of the chapter, summarizes the recommendations.

Theme 1: Positive Impact on Patients

Numerous interview participants, including both on-site clinicians and volunteers, shared anecdotes about the pilot's positive impact on the health and quality of life of patients. Although it is too early to conduct a formal impact evaluation of the pilot, there was consensus that, when volunteers were engaged, patients benefited in multiple ways. Volunteers often reassured patients that there was no serious problem. As a result, those patients avoided weeks to months of uncertainty and anxiety. In addition, by seeing a volunteer via telehealth, patients could avoid costly and inconvenient travel to an in-person specialist or could be seen by an in-person specialist more quickly based on the volunteer's recommendation. Here are some illustrative quotes of the various ways the pilot affected patients:

> The patients [referred to the MAVEN Project] have saved time and avoided a long drive into the city.

> We had a patient with poorly controlled diabetes. The volunteer endocrinologist was very good and made recommendations. Since then, we have seen improvements in the patient's numbers and attitudes.

> One patient was concerned he had a connective-tissue disease. The volunteer rheumatologist told him he didn't have it, and that put the patient's mind at ease. [The patient] seemed happy not to have the disease . . . . Often, hearing from a specialist is all the patient wants.

> I [volunteer rheumatologist] have made people feel better about their situations. For example, there are many false positives for lupus, and I have told patients they don't have lupus . . . . When people are worried about their health, I can reassure them that something is not happening.

> One patient had a new hepatitis C diagnosis. She had no idea how she got it and was in denial. She didn't want to see a specialist, and I [on-site clinician] wanted to convince her to. I had the MAVEN [Project] volunteer talk to her. He told her that 80 percent of patients with her diagnosis would have some issue (for example, high odds of liver cirrhosis, cancer)

but it is curable. Giving the patient the statistics was helpful. I had already sent her to the gastroenterologist [local specialist], but, until then, she had refused to go. I think this convinced her.

I [volunteer hematologist] saw someone a few weeks ago with myeloma. The labs were worrisome for kidney function and anemia. It was clear that this patient needed urgent follow-up by [a] local specialist. A visit was already scheduled for them but not for three weeks. Based on my evaluation, I got them to be seen in person in two days.

I [volunteer hematologist] saw a gentleman who was an unemployed goat-tender; he tended goats on his brother's farm. He had no insurance. The clinic thought his red blood cell count was too high. They had done a reasonable evaluation but needed to do additional things. I talked to him through a translator. I told him we can manage this, and he had confidence in me and comfort that the health system would be able to provide him with care. He had polycythemia vera. We needed to rule out secondary causes, such as living in Denver (because of low oxygen) or smoking. Now the treatment is simple. You just take a unit of blood from him and then have no more problems. This treatment plan would not have been available to him if not for [the] MAVEN [Project]. He may have slipped through cracks and then showed up with stroke. Patients like him are not going to get health care. Now we have helped him have a normal life expectancy, and he is confident he can get the care he needs.

I [volunteer hematologist] had a patient with thalassemia minor. My recommendations will be minor, but, because of my recommendations, that issue is settled in her life. People will not be scratching their head about her anemia for years, and that is very important. Anemia is uncommon enough, and the PCP [primary care provider] did not know where to go with it. The PCP can come to closure on that now.

Theme 2: Volunteer Satisfaction with Pilot Features and Overall Experience

Volunteers agreed that many features of the pilot were appealing. In addition, although most volunteers had recommendations to improve the pilot, they generally evaluated it positively overall. Volunteers were also very pleased with MAVEN Project administrative staff and the improvements made to the pilot over time, including solutions for administrative issues, such as malpractice coverage. These are some illustrative quotes by volunteers:

What I like about [the] MAVEN [Project] is the opportunity to give back. I also missed practice and didn't want my training to go to waste. I spent many years to get this amount of clinical training. [The MAVEN Project] is helping me put it to use.

The flexibility has been good. I can do the visits from anywhere, which helps with my family situation.

[The MAVEN Project] works well for me because I was looking for ways to continue to be involved in medicine a little bit.

The clinic staff keep telling me they like me. That is rewarding.

[The MAVEN Project] has been a lot of fun. Medicine is great fun when you are not stressed. I am retired from 70-hour weeks. Now this is low pressure.

[The] MAVEN [Project] gives me an incentive to keep up with things, to read journals. I didn't want to just abandon [medical practice]. Also, I like using technology and meeting nice young practitioners . . . . Doing it from home was delightful. I don't have to go to an office . . . . It has been terrific . . . the interaction with young people and being able to help.

I was really pleased that the malpractice issue was solved by [the] MAVEN [Project]. I can't afford to buy a whole malpractice insurance to do a bit of volunteering. The fact that they found a way to cover malpractice insurance made it feasible.

The communication with MAVEN [Project administrative] staff worked great. They responded to an evolving situation and evaluated whether the evolving plan would work.

[Because of the work of the MAVEN Project administrators,] I have seen improvement since [the pilot] started.

Theme 3: Quality of the Volunteers

The on-site clinicians had only positive things to say about the physician volunteers recruited by the MAVEN Project. The on-site clinicians frequently praised the clinical skill of the volunteers, as well as their professionalism. Here are some illustrative quotes by the on-site clinicians:

[The physician volunteers] are very helpful and insightful people, and I am happy with them . . . . I like them more than our other telehealth providers. These people are even better.

I have been thrilled to consult with a specialist who wants to be consulted with. It is really a mixed bag when you call [local] specialists. Some are nice and helpful, and others are unpleasant. This makes you hesitant. MAVEN [Project] volunteers are people I am supposed to call. I am excited to have that for free . . . . They are really nice people across the board. Really glad to hear from me, knowledgeable. I have always left feeling really good.

I am pleased with the volunteers. They are very nice, patient. They have been good.

Every time I've called a volunteer, it has been a great experience, very positive.

The volunteers generally get very positive reviews. They are nice, interactive. They are more sociable than you would think of specialists being.

These are some of the best doctors I have ever worked with.

Theme 4: Low Utilization

Numerous interview participants across all professional categories (volunteers, on-site clinicians, administrators) mentioned that low utilization of MAVEN Project volunteers by on-site clinic providers was a leading challenge. These are some illustrative quotes:

> They didn't know how to use us. Or they were so busy that they didn't have time to make the calls.

> Underutilization is a problem.

> [The referring providers] are doing okay. More often, they are not opting for telemedicine when it could be okay. We have acceptable numbers for our referrals, but there are a lot referrals going out that could be MAVEN [Project referrals] and are not.

Participants had several theories as to why utilization was lower than expected, including lack of clarity over which patients to refer, lack of trust or comfort with volunteers, the presence of competing goals, and part-time availability of clinicians creating scheduling challenges. In this section, we detail these barriers and offer a set of recommendations aimed at increasing utilization.

Lack of Clarity on When to Refer to the MAVEN Project

Although underutilization of MAVEN Project volunteers was repeatedly identified as an issue, some on-site physicians and volunteers identified cases in which referral to MAVEN Project volunteers (usually by a physician assistant or nurse practitioner) was inappropriate. Clinic staff sometimes referred patients to MAVEN Project volunteers for simple things that could be easily addressed within the clinic. As described by one interview participant,

> We have many referrals [to the MAVEN Project] that may be unnecessary and we can organize in clinic.

- **Recommendation 1: Consider developing standardized criteria for referrals and conducting collaborative training sessions about referral decisions with on-site staff and volunteers.** For example, when a new volunteer is brought in, ask him or her to review charts with on-site staff and collaboratively select which cases would be good candidates for MAVEN Project volunteers and why. Then document those discussions into standardized criteria for referrals. Such training and resources might increase the likelihood that on-site clinicians will refer to MAVEN Project volunteers, as well as the likelihood that those referrals will be appropriate. One pilot site is experimenting with an interesting innovation: adding a question to its referral form asking whether a MAVEN Project consult is appropriate and, if not, why not. If this approach is effective in increasing utilization, it should be integrated into the workflow of all clinic sites. This same site has also screened all referrals manually to assess their appropriateness for a MAVEN Project volunteer, which is less efficient than having the referring provider make the determination. Further experimentation is needed to find a low-burden method for identifying appropriate patients for MAVEN Project referrals.

Competing Program Goals

Although interview participants did not independently mention the issue of having too many competing goals, we observed that program goals varied by site and specialty. A major factor that influenced a clinic site's goal with respect to a particular MAVEN Project offering was how available and personable local specialists were. Interview participants mentioned the following goals: to reduce the wait time for patients to be seen by a local specialist (in that the MAVEN Project volunteer's recommendation would help them be seen in person sooner), to help on-site clinicians manage more cases without a referral to a local specialist, to substitute for a visit to a local specialist, to improve the triage process to assess whether in-person specialty care was needed, to provide educational opportunities for on-site staff, and to reduce total costs in anticipation of accountable care payment models.

- **Recommendation 2: Prior to implementing a particular service at each site, write the goal statement for that unique offering that takes into account patient acuity, the "telehealthabilty" of the service line, and the state of local specialty care.** Goals will help align all stakeholders and will facilitate the referral process. They will also help the MAVEN Project in selecting evaluation metrics and assessing whether a new offering was successful.

Lack of Rapport

Numerous participants across professional categories felt that lack of familiarity and rapport between on-site clinicians and volunteers was a major barrier to uptake. Clinic staff in particular emphasized the importance of rapport as a facilitator in engaging MAVEN Project volunteers. In addition, the volunteers sought greater in-person interaction so that they could be confident that the on-site clinician would carry out their recommendations. Some illustrative quotes of the link between rapport and uptake are as follows:

> Uptake is slow. I'd be curious. I've offered to go up there and meet with them face to face so they know who they are working with. On the provider side, there is uncertainty and more comfort level with sending patients to places where they know the subspecialist and have worked with them in the past. This lack of history could be the cause of the hesitancy.

> I'd like to go to [the clinic] and see people in person and meet the patients. A telecon[ference] of just the professionals a few times a year is not going to engender the trust you need that they will carry out your wishes.

> Training did not include—but I am not sure how you would include it—a direct discussion with the health center that I was ultimately paired with. There was always a third party between me and the health center on what would be useful and not really any activity that would build the relationship with the people that I would be working in that health center. You need to build those relationships.

- **Recommendation 3: Facilitate more in-person interaction between volunteers and on-site clinicians prior to launching a service line.** For example, request that clinic staff attend volunteer trainings, or require volunteers to visit the clinic at least once a year. Several volunteers requested that clinic staff attend volunteer trainings so that they can get a sense for the providers and the patients and to begin to build rapport. Requiring

that the volunteer visit the clinic and meet clinic staff prior to initiating consults might also help build rapport. Effective rapport-building strategies might differ by specialty and location. Some testing and evaluation might be required to find strategies that work more broadly.

Difficulty of Relying on Part-Time Volunteers

Numerous participants, including on-site clinic staff and volunteers, mentioned that the limited hours of MAVEN Project volunteers and the need to track the schedules of part-time volunteers were barriers to greater uptake, particularly for curbside consults. These are some illustrative quotes:

> If you're going to take time out of the schedule, you want to get something reliable.

> I have had times that I need a consult, but I need it when I need it. If [the MAVEN Project volunteer is] on Friday at noon and I need it Monday . . . . Sometimes I have a question and then I forget. So I need to wait a week. Ideally, I could call any specialty at any time.

> When you are on the volunteer end—what we are offering is so intermittent and of so little help—there's no way to build it into their workflow. My experience with ancillary things in clinical work is that it is astronomically harder to incorporate it if it isn't there 100 percent of the time that you are open. If there was a cadre of volunteers that covered 9 to 5, Monday to Friday, the clinic then knows that someone is always there, that would be very different.

- **Recommendation 4: Consider experimenting with a panel of volunteers in which all specialties or a subset of specialties are available 24/7 for curbside consults via mobile phone.** In the AccessDerm model, a request for a consult goes out to dozens of clinicians, and the first one available picks up the case. Because of this redundancy, they can turn around asynchronous consult reports in under 24 hours. Something similar could be used for the MAVEN Project once it scales to increase uptake. One challenge of using this model is that clinic staff might not have a rapport with the volunteers. Therefore, for curbside consults, there might always be a trade-off between on-demand access and working with a familiar volunteer.

Theme 5: Workflow Challenges

Numerous interview participants identified difficulties with workflow as the leading barrier in implementing the pilot. Workflow issues are common in new telehealth interventions and can derail otherwise-promising pilot projects. Many participants had specific recommendations on how to improve workflow.

Several participants noted that each service line required its own unique workflow and that there was no "one-size-fits-all" approach. For example, workflow can vary based on diagnostic testing required, need for synchronous versus asynchronous visits, number of follow-up visits required, and other factors. As one interview participant explained,

> You need to create different workflow for each specialty. Each is its own creature.

- **Recommendation 5: Instead of offering diverse specialties based on local needs, initially focus on a narrower set of specialties, such as hematology, rheumatology, and cardiology, and develop workflow models for each one.** The pilot sites have begun developing workflow models for various specialties, and this work should be leveraged in future implementations at other sites. To determine the specialties on which to focus, the MAVEN Project should consider volume of the patients who might use it; the clinical and financial value of the specialty (which is challenging to estimate); volunteer availability; and the cost, complexity, and time burden of implementation and workflow integration. Focusing on a narrower set of specialties at the beginning might be less responsive to local needs, but it allows the MAVEN Project to get many complex factors right before it expands more broadly. It is customary for telehealth programs to start narrow and broaden out after they have demonstrated value. Focusing on a narrow set of specialties will also facilitate formal evaluation in the future.

Several participants at Ampla and Franklin expressed frustration with the need to balance in-person care and telehealth visits at the same time. Both volunteers and on-site staff independently recommended that certain days or blocks of time be fully dedicated to the MAVEN Project and telehealth. These are some illustrative quotes:

> We need to work on this. MAVEN [Project] visits get scheduled in between regular scheduled appointments. I get behind, and my regular patients are waiting.

> If had an afternoon where I only did telemedicine, things would go more smoothly.

> I think the major thing is if we could have a telehealth day when this is done.

> The [on-site] doctor does not always come in promptly. The doctor [balancing other commitments] is supposed to come in at a certain time at the end of the [MAVEN Project] visit. If the doctor is late, the patient and I stare at each other.

- **Recommendation 6: Encourage clinics that are not already doing so to establish a block of MAVEN Project appointments in which on-site providers are fully dedicated to the MAVEN Project.** This is common practice in many successful telehealth programs, including those implemented by the U.S. Department of Veterans Affairs.

Two interview participants affiliated with Ampla expressed concern that the current workflow model required the on-site clinician and the volunteer to discuss the patient's condition in front of the patient and that that occasionally led to awkwardness or required the clinicians to censor themselves. As explained by one interview participant,

> It is strange to talk in front of the patient, and that can be improved. I would like to have [a] consult just the two of us [on-site clinician and volunteer]. Sometimes feels odd . . . for example, if you have to mention technical terms.

- **Recommendation 7: In workflow models for direct patient care, consider integrating some time for dedicated provider-to-provider communication.**

Theme 6: Volunteer Concerns and Their Impact on Retention

Numerous comments and recommendations related to improving volunteer satisfaction and the likelihood that they would continue with the program over multiple years. In general, volunteers were very excited about the pilot and pleased with the way MAVEN Project administrators consistently addressed problems as they arose. They did, however, have some helpful feedback on ways to improve the pilot to enhance the volunteer experience.

Multiple volunteers mentioned that they did not always get information on what ultimately happened to their patients and that this lack of follow-up was disappointing. Here are some illustrative quotes:

> I advised that [the patient] go to PCP. I spoke to PCP and got feedback that that did happen. But not getting feedback is a problem.

> So far, there is no longitudinal follow-up. I think that will continue. That is an issue in terms of my curiosity and gratification.

> I didn't know what this would be like. I like the follow-up. Part of the joy of practicing medicine is seeing the impact. I have done more initial consultations because the nature of patients I see doesn't require follow-up.

> One thing that is frustrating is follow-up. Once we give advice . . . it would be nice if we could get follow-up information as to what happened with the patient. It doesn't seem to have been forthcoming. But maybe they haven't seen the patient yet. This would be more satisfying if we could have a few words about follow-up in terms of how the patient is doing.

- **Recommendation 8: Consider developing a feedback mechanism or process for volunteers to track patients' outcomes and see the results of their work.** Volunteers by definition are not motivated by money, so their primary benefit is a feeling of helping patients. A standard report to keep volunteers aware of patient outcomes will increase their satisfaction and retention.

Several volunteers struggled with the appropriate time commitment to the MAVEN Project that would maximize their personal satisfaction. They were concerned that, given the low volume of visits, there might be insufficient demand to allow them to meet their personal goals with the program and to remain comfortable with MAVEN Project systems and processes. Following are some illustrative quotes:

> I have concern about the critical mass to maintain interest. We have had a couple dozen patients so far. But what is the critical mass to maintain my interest and my acuity? I am not doing much other medicine . . . . I am not sure how this fits into my life. I don't have the answer.

> My site has five patients for this Friday. This is the first time in a month. Better to have them every two weeks for interest and face time. I would do more than I am doing.

> There was minimal uptake on part of health center. If you don't keep using it—you forget password, forget login. I had those on file and could figure it out, but technology does not become easy unless there is repetition.

- **Recommendation 9: Request and monitor that volunteers do a certain number of visits per week or month to maintain interest and competency in the program.** The ideal number of visits might vary with individual volunteers, so the MAVEN Project should investigate what this "sweet spot" is for volunteers in general, as well as for specific individuals given their preferences. The MAVEN Project should regularly monitor the volunteers to encourage the right level of participation.

One volunteer expressed a desire for more training on the proper professional conduct in telehealth visits (e.g., tips for talking to patients via telehealth and how that differs from in-person practice). The volunteer explained,

> I don't have experience in telehealth before this. There is a learning process. I am working out what works and what doesn't. I did my own research on how to do this. It would have been nice if MAVEN could provide it—some training that includes good practices in digital health.

- **Recommendation 10: Train volunteers on proper conduct in telehealth visits using materials developed by professional associations and telehealth companies.** For many clinics, the MAVEN Project will be their first foray into telehealth. Consider adapting materials produced by various entities, such as the American Telemedicine Association and direct-to-consumer companies, on proper professional conduct in telehealth visits and tips for building rapport with patients. Incorporate these guidelines into MAVEN Project training materials.

Theme 7: Unintended Consequences

Two on-site clinicians mentioned that they were excited about the MAVEN Project because their patients are often unwilling to go to local specialists because of costs and lack of familiarity, and they wanted to provide an alternative for those patients. However, during the data-collection process, we became concerned that certain patients who confront these barriers to in-person care might opt to use the MAVEN Project as a substitute for the care of a local specialist. As explained by one interview participant,

> We want to provide better care to our patients. We give referrals [for in-person care] to our patients, but they don't go. There are a number of barriers: (1) language (they don't speak anything other than native language) and (2) money (they don't have the money to travel). Often people walk here or take public transportation. Traveling to outlying communities is not an option they would consider. They also have fear. Other places don't provide translation services, and they are worried about unfamiliar places.

Although no interview participant mentioned concern regarding the impact that using the MAVEN Project as a substitute for needed but challenging-to-access in-person care could have on a patient's quality of care, we identified it as a potential problem that should be explored.

- **Recommendation 11: Assess inappropriate use of the MAVEN Project by patients (i.e., frequency with which patients use MAVEN as a substitute for in-person care**

when it is not appropriate). One potential unintended consequence of offering this service is that patients who should seek in-person care might elect not to, seeing the MAVEN Project as substitute. The MAVEN Project should assess the extent to which this occurs and the downstream consequences and help clinics ensure that introduction of volunteers does not lead to inappropriate reliance on telehealth visits.

Table 4.1
Summary of Recommendations

Recommendation	Source
1. Consider developing standardized criteria for referrals and conducting collaborative training sessions about referral decisions with on-site staff and volunteers.	RAND
2. Prior to implementing a particular service at each site, write the goal statement for that unique offering that takes into account patient acuity, the "telehealthabilty" of the service line, and the state of local specialty care.	RAND
3. Facilitate more in-person interaction between volunteers and on-site clinicians prior to launching a service line.	Interview participants
4. Consider experimenting with a panel of volunteers in which all specialties or a subset of specialties are available 24/7 for curbside consults via mobile phone.	RAND
5. Instead of offering diverse specialties based on local needs, initially focus on a narrower set of specialties, such as hematology, rheumatology, and cardiology, and develop workflow models for each one.	RAND
6. Encourage clinics that are not already doing so to establish a block of MAVEN Project appointments in which on-site providers are fully dedicated to the MAVEN Project.	RAND
7. In workflow models for direct patient care, consider integrating some time for dedicated provider-to-provider communication.	Interview participants
8. Consider developing a feedback mechanism or process for volunteers to track patients' outcomes and see the results of their work.	Interview participants
9. Request and monitor that volunteers do a certain number of visits per week or month to maintain interest and competency in the program.	RAND
10. Train volunteers on proper conduct in telehealth visits using materials developed by professional associations and telehealth companies.	Interview participants
11. Assess inappropriate use of the MAVEN Project by patients (i.e., frequency with which patients use the MAVEN Project as a substitute for in-person care when it is not appropriate).	RAND

Conclusions

Our interviews across the three pilot sites suggest strong enthusiasm on the part of volunteer physicians and community health centers in using telehealth to improve access to specialists. We received a great deal of positive feedback on numerous facets of the program. We consistently heard that clinic staff found the volunteers to be personable, patient, and highly skilled. Clinic staff and volunteers were also consistently pleased with the MAVEN Project administrative staff, finding them responsive and helpful. Also, the pilot positively affected patients in a variety of ways, including helping patients to obtain timely in-person specialty care, improving chronic-illness management, and providing reassurance.

Our recommendations focused on improving various aspects of the program from the training of volunteers to clinic workflow and were not directed at a wider policy audience. However, as volunteer programs emerge and mature, additional work is needed to assess the sustainability and impact of these programs and how they align with other telehealth programs serving underserved populations.

As expected in early pilots, many barriers were encountered. Several of these barriers, such as difficulty incorporating telehealth into clinic workflow, are well documented in the telehealth literature and typical of new programs. Further formative development and experimentation will be needed to address these barriers and establish sustainable and scalable processes. Because the demand for such services on the part of community health centers, as well as the supply of physicians interested in volunteering, will continue to grow, we believe that this model has the potential to create substantial value when fully developed.

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