



SP4PHC

Strategic Purchasing for Primary Health Care

PROCESS EVALUATION OF THE COVID-19 TELEMEDICINE REGULATORY SANDBOX IN THE PHILIPPINES

To support the COVID-19 telemedicine program of the Philippines Department of Health (DOH), ThinkWell conducted a process evaluation of a “regulatory sandbox”—an approach that enables the deployment of innovative products and solutions within a controlled policy environment (Chatterjee 2016)—for telemedicine from April to August 2020 in Metropolitan (Metro) Manila. This evaluation assessed how it was implemented, the outputs and outcomes observed, and lessons learned on how telemedicine can further prosper as the Philippines moves to a new normal in a post-pandemic world. This study was conducted by ThinkWell under the Strategic Purchasing for Primary Health Care (SP4PHC) project, supported by the Bill & Melinda Gates Foundation.

INTRODUCTION

Despite government and private sector efforts to implement telemedicine programs, significant scale has not yet been achieved in the Philippines.

Telemedicine is defined as the practice of medicine delivered “from a distance” with the help of data transmitted through telecommunication systems (WHO 2010). Prior to COVID-19, there were various government and private sector telemedicine initiatives in the country. The development of policies, such as the Philippine eHealth Strategic Framework and Plan 2014-2020 (DOH 2014), illustrated a path forward for telemedicine in the country, but slow and insufficient policy prioritization hindered wide-scale implementation. Some regulatory gray areas and questions on legalities remained unresolved, with limited investment in public financing for telemedicine. These factors make it challenging for telemedicine providers to engage healthcare workers and patients, especially the most impoverished.

Several technical challenges also lead to the lack of scale of telemedicine in the country. The DOH also recognizes that significant work must be done to improve capture and use of health data through

electronic medical records (EMRs) across different health providers, since this is indispensable for the effective delivery and governance of telemedicine. Scaling issues for telemedicine also reflect the broader challenges facing the country’s information and communications technology (ICT) environment where, on the average, internet speed is a third of that in leading ASEAN neighbors at almost 10 times the cost (ASEAN Information Center 2020; Porcalla 2020). In 2019, 43% of the country’s population was reported to be computer literate (World Bank 2021), a significant increase from only 10% just 10 years earlier, but still well behind regional peers.

The potential of telemedicine to maintain and even improve access to health services in the Philippines was made clear when restrictions to in-person service delivery were imposed during the COVID-19 pandemic. With cases remaining high, lockdowns continued and made it increasingly difficult for some populations to visit a physician when needed. In addition, fears and misconceptions about COVID-19 discouraged patients from visiting health facilities. The reallocation of health resources for the pandemic response deprioritized the provision of non-emergency, non-COVID-related health services. The health system needed to adapt to the

new environment and establish alternative ways to deliver health services. With the challenges caused by the pandemic, health care providers increased adoption of telemedicine platforms (Zuellig Pharma 2020).

POLICY INTERVENTIONS BY THE DOH FOR TELEMEDICINE DURING THE COVID-19 RESPONSE

Recognizing its potential to address the problems in health access during the pandemic, the DOH started to develop policies and programs on telemedicine. The DOH adopted a phased approach to implementing telemedicine in response to the COVID-19 crisis. These two phases, as described by the DOH, are illustrated in Figure 1. The first phase is a centralized approach by the DOH involving two further approaches: 1) the deployment of telemedicine services commissioned and developed

centrally by the DOH, and 2) the engagement of private telemedicine providers within a “regulatory sandbox” (DOH 2020a; DOH 2020b). Subsequently, a second phase involved encouraging the local government units (LGUs) to adopt telemedicine solutions certified by the DOH (DOH 2020c).

A regulatory sandbox is an approach that enables the deployment of innovative products and solutions for public consumption within a controlled policy environment (Chatterjee 2016). It gives innovators a better understanding of the regulatory processes compared to other pilot processes; for regulators, this can help them identify crosscutting regulatory issues in a supervised environment (Rosemberg, Potau, Leistner et al. 2020). Some documented benefits include a better understanding of regulation barriers to the innovation process, better knowledge sharing, and political buy-in.

Figure 1. DOH telemedicine programs implemented as part of the COVID-19 response

	Phase I		Phase II
	DOH DEVELOPED SERVICES (HOTLINE, CHATBOT)	PARTNERSHIP WITH PRIVATE TELEMEDICINE PROVIDERS (REGULATORY SANDBOX)	ENABLING OF LGUs
Inputs & skills needed	Project management Application or website development	Memorandum of Agreement or Contracting Partner management	Provision of technology Technical and project management support
Rationale	Faster to roll-out	Innovations of private sector can be fully tapped	Mandated by the devolved health system
Description	Centrally developed digital solutions include offering a hotline for COVID-19 concerns and developing a chatbot to help disseminate information	No-cost partnership arrangement with DOH- and NPC-vetted telemedicine providers to offer free consultations during the pandemic	Guidance and brokering of vetted telemedicine solutions for LGUs

Source: Authors, based on data collected from the evaluation

The DOH had to devise new policies and processes to operationalize the sandbox for private telemedicine providers. The rules for the telemedicine sandbox were encapsulated in a Joint Memorandum Circular by the DOH and National Privacy Commission (NPC). Through the sandbox, private providers agreed to offer telemedicine services free of charge for three months during the COVID-19 lockdowns in Metro Manila. After the lockdowns were lifted, providers were allowed to charge for services rendered (DOH 2020b). Private providers interested in participating were required to undergo a certification process, looking at their compliance to patient data and their adherence to privacy requirements jointly identified by the DOH and the NPC (DOH 2020b, 2020d).

The DOH also issued Department Memorandum 2020-0163, which outlined the application process in granting certification to ICT solutions, including telemedicine (DOH 2020e). A dedicated team of five evaluators was assigned to review the submissions of providers and appraise plus validate the appropriateness of their tools. Once certified, providers were required to provide teleconsultations, digital triaging, and/or other essential services, either through telephony or online platforms, for both COVID-19 and non-COVID-19 cases for three months. To ensure a link to the current health system, they were also required to establish mechanisms to refer patients to appropriate health care providers in coordination with the LGU in a network set-up, based on DOH and Philippines Health Insurance Corporation (PhilHealth) policies. In exchange, the accepted telemedicine partners were legitimized and advertised to the public as an official telemedicine partner of the DOH. Two “waves” were implemented from April to June 2020 and from July to August 2020. Each wave had a different set of telemedicine providers who participated.

ThinkWell conducted a process evaluation of the COVID-19 telemedicine regulatory sandbox implemented by the DOH from April to August 2020. This support aimed to:

- Describe how the DOH implemented telemedicine during the COVID-19 pandemic in its sandbox for private providers.
- Document the outputs and outcomes of the various telemedicine programs within the sandbox.
- Assess the internal and external factors that may have contributed to these outputs and outcomes.
- Provide policy recommendations to improve how telemedicine is implemented in the Philippines.

This brief summarizes the results of this process evaluation.

METHODOLOGY

ThinkWell conducted this process evaluation using a convergent, parallel, mixed-methods design. The quantitative method included an analytic, cross-sectional review of the monitoring data from the telemedicine sandbox. Joint Memorandum Circular 2020-003—“Guidelines on the Monitoring and Evaluation of the Use of Telemedicine in COVID-19 Response”—specified the indicators collected, including performance, operational, and outcome measures (DOH 2020d) ([Annex 1](#)). However, there were issues in the data collected by THE DOH about completeness and quality. Data that were shared with the researchers was limited to the aggregated number of daily consults, COVID-19, and non-COVID-19 cases, as well as the number of health staff reporting for duty. Due to this, researchers were only able to analyze a limited amount of information from this dataset and triangulated this with other sources of information. Still, qualitative investigation drew information from literature and document review. This included policies and process documents, as well as key informant interviews and focus group discussions with key stakeholders, including policymakers, telemedicine providers, and telemedicine experts. The team conducted a total of eight key informant interviews and focus group discussions. These aimed to describe the implementation of telemedicine as part of the COVID-19 response of the DOH, the outcomes from the project, and the context in which this intervention was implemented. This study adapted a framework on the key functions and relationships

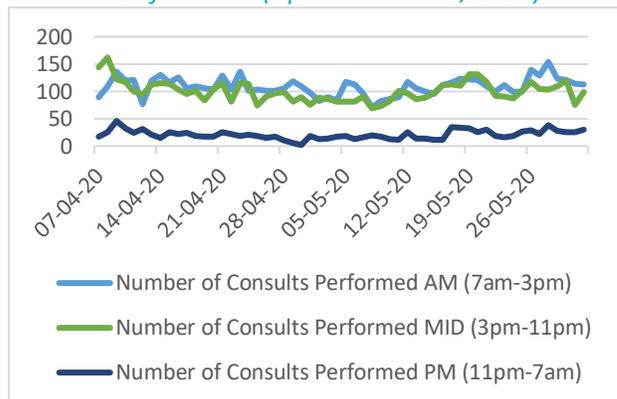
of a process evaluation, developed by the United Kingdom Medical Research Council (Moore, Audrey, Barker et al. 2015).

RESULTS

A total of five private providers were engaged during the sandbox (Table 1). The first wave involved two providers who offered free video chat and telephony-based teleconsultations between April to June 2020 during the expanded community quarantine (ECQ), which was the strictest form of lockdown during this time. During the second wave, which ran from June to August 2020, three providers were engaged. None of the providers during the second wave had the capacity to provide teleconsultations through telephony. Instead, they relied on online channels, either through chat or video calls. These second-wave providers could charge patients a fee when quarantine restrictions were loosened in succeeding months, effectively removing policy restrictions on charging.

Data from the first wave suggest that the demand for telemedicine services was greater than the available supply. For the duration of the wave, there were six to 45 physicians on call, depending on the entry or exit of each provider in the sandbox (Figures 2 and 3). A total of 52,097 teleconsultations were provided in this first wave, virtually all of which were provided through telephony. Providers reported that most of these calls came from Metro Manila, but there were also calls coming from other provinces. Both providers noted that they received more calls than expected. Providers reported that the volume of calls was managed by shortening call algorithms and using callbacks where patients waiting for a teleconsultation were offered the option for a health worker to call them once available. Employing a no out-of-pocket arrangement could potentially explain the high volume of calls observed.

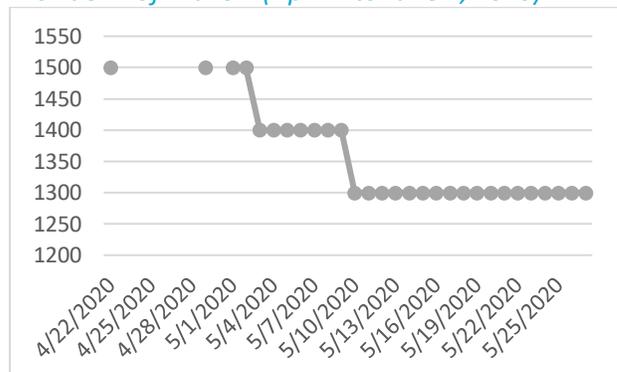
Figure 2. Reported number of consultations for Provider 1 of Wave 1 (April 7 to June 1, 2020)



Source: Authors, based on data collected from the evaluation

Note: There was an average number of six physicians in the morning and afternoon shifts and two in the afternoon.

Figure 3. Reported number of consultations for Provider 2 of Wave 1 (April 7 to June 1, 2020)



Source: Authors, based on data collected from the evaluation

Note: There was an average number of 39 physicians and 37 physician's assistants for the whole day. Issues in memorandum of agreement (MOA) finalization also caused the lack of reported cases on certain days.

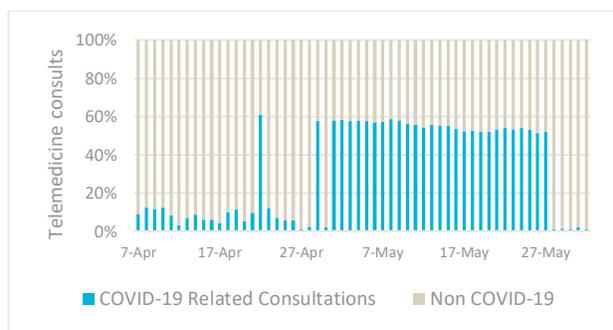
Table 1. Comparison of telemedicine providers engaged for COVID-19 services for the telemedicine regulatory sandbox

		WAVE 1 April to June 2020		WAVE 2 June to August 2020		
		Provider 1	Provider 2	Provider 3	Provider 4	Provider 5
Years in Service in the Philippines		5 years	6 years	<1 year		
Source of Technology		Partnered with a Spanish company + local in-house development	Part of a Swiss group of companies	Local in-house development		
Channel	Telephony					
	Mobile/Web Application					
	Chat					
	Video Consults					
Package of Technology	Synchronous Modalities					
	EMR					
	Online Scheduling					
	ePrescription					
	Billing					
	Medicine Delivery					
Package of Services	Triaging (COVID-19)					
	Teleconsultation (primary)					
	Teleconsultation (specialist)					
	HMO-linked					
	Facility-linked					
Business Model Outside the Sandbox		Subscription basis		Fee-for-service		
Provider–Physician Arrangements		Employed		Independent providers (sells license/subscription to use the platform)		
Charges During the Sandbox		Free (ECQ)		Some free, some with charges (post-ECQ)		

Source: Authors, based on data collected from the evaluation

There was also significant variation in the share of COVID-19-related calls between the two providers in the first wave. A total of 49% of the consults for both providers were identified as related to COVID-19 (Figure 4). However, when looking separately at each provider, the first provider identified only about 4% of their calls as related to COVID-19, while the second provider identified 64%. Moreover, what significantly skewed the results for the first wave was that the second provider accounted for approximately 90% of all on-call physicians and provided 75% of all teleconsultations during the period. The difference in utilization trends can be potentially attributed to the differences in the internal rules between the two providers on how COVID-19-related teleconsultations were recorded, as well as to the lack of a common data dictionary for COVID-19 and COVID-19-related data. Both providers mentioned that they were able to resolve most of the calls online or on the phone, with less than 10% being referred to facilities near the patient for face-to-face consults.

Figure 4. Trends comparing the share of COVID-19 and non-COVID-19-related telemedicine consultations in Wave 1 (April 7 to June 1, 2020)

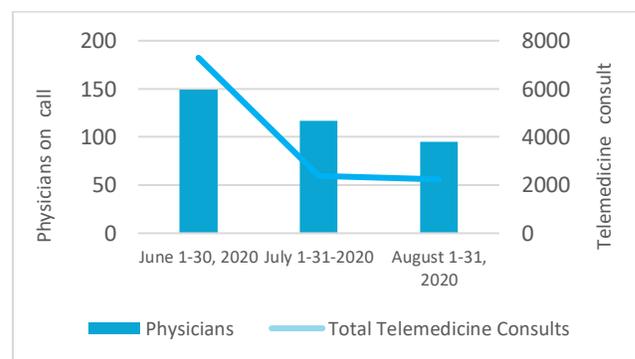


Source: Authors, based on data collected from the evaluation

The results from the second wave of the regulatory sandbox paints a different picture, with shifts in supply and demand as the pandemic dragged on in the third quarter of the year. During this period, lockdowns were less strict and the population was more mobile. A big difference during this wave was that telemedicine providers were allowed to charge, although some provided a limited amount of free consultation. Additionally, second-wave providers employed a gig economy model where physicians using their telemedicine platforms were allowed to set their own rates and patients accessed

teleconsultations on a fee-for-service basis. Both the number of participating physicians and the average number of consultations provided per physician declined significantly, compared to Wave 1. Comparatively, the three providers only delivered 11,192 consultations during this wave (Figure 5). Only 1% of consultations were tagged as related to COVID-19 although, as mentioned, the lack of standardization in definition makes this difficult to interpret.

Figure 5. Trends comparing the total number of physicians with total telemedicine consultations in Wave 2 (June to August 2020)



Source: Authors, based on data collected from the evaluation

Numerous policy and regulatory gaps were observed during the sandbox. The variability in how telemedicine technologies are designed contributes to the emergence of unique issues indicative of the apparent “newness” of the industry. The current regulatory landscape was difficult for providers to interpret and navigate, especially since this was designed with non-electronic solutions in mind. It has proved difficult to design and implement new regulations in a context where businesses have already built and deployed their telemedicine products. Liabilities for telemedicine also need to be clarified to ensure that patient and provider rights are protected. Table 2 summarizes the different issues and risks identified and observed during the sandbox.

Table 2. Policy and regulatory gaps identified during the telemedicine sandbox

Identified Issues	Risks
Offshore storage of data (means of storage is through a foreign company)	Accountability in case of data breaches and unethical data handling
Means of verification (uncertainty in identity of doctor and patient)	Means to ensure capacity to practice medicine
Rights and responsibilities of patients and physicians using telemedicine platforms	Means to protect and ensure patient and provider rights
Capacity of providers to provide high-quality telemedicine	Quality to provide medical services via ICT platform
Inability to scale certification system	Reduced provider interest over time
Data collection and reporting	Inability to monitor quality of services

Source: Authors, based on data collected from the evaluation

The actual implementation of the regulatory sandbox itself was not without challenges, especially as it was conducted during a pandemic.

Although government and private sector stakeholders supported the sandbox initiative, sustaining commitment toward it was difficult, especially as more pressing issues of the pandemic arose. As mentioned, data reporting and monitoring mechanisms were only developed during the implementation of the sandbox. The data that were eventually collected were incomplete and of poor quality, which affected the takeaways that could be culled. After their engagement, providers were interested in continuing to be contracted with the government but were not updated about the results of the sandbox and of the next steps of the DOH. Even with these challenges, the insights from the sandbox can be used to inform further policy development by the DOH on integrating telemedicine.

Moving forward, there may be continued value in conducting similar exercises to test and develop policies for telemedicine and other innovations.

In the next potential round, sufficient resources should be committed to ensure a better and more rigorous conduct, and there should be more explicit testing

of policies to ensure safety (e.g., certification, licensing) and access (e.g., reimbursement models), longer wave times, and coverage of different populations and geographies.

SUMMARY

Both the public and private sectors that took part in this study acknowledge the importance of telemedicine and other eHealth innovations in improving access to health services. While scale and utilization of telemedicine services through the sandbox diminished over time, the total number of Filipinos who were able to seek teleconsultations, for both COVID-19 and non-COVID-19 issues, were significant. The sandbox was able to create welfare for the public by providing access to physician consultations that otherwise would have been inaccessible. Continued utilization in Wave 2, when there were fewer restrictions, suggests that there is demand for this service outside of the pandemic.

In scaling telemedicine, the government plays a significant role in setting appropriate incentives for both providers and beneficiaries. Currently, the sandbox demonstrated that there are still significant regulatory and policy gaps. Naturally, telemedicine providers charging different amounts can lead to significant changes in consumption patterns. The government must ensure that it creates policies to guarantee the expanded access, especially for low-income populations, by creating incentives for telemedicine providers. One possible mechanism is for PhilHealth, which is mandated by the Universal Health Coverage (UHC) Law to pay for individual-based service, to contract and strategically purchase from telemedicine providers. In addition, policies and regulatory requirements can help encourage market entry by making it clearer which standards and rules providers must follow and the benefits and penalties involved. This can help providers better design their services and weigh investment costs vis-à-vis potential profit.

Formalizing telemedicine policies to function outside of pandemic situations and sandboxes can further legitimize telemedicine practice. Similarly, the government needs to build rules that would standardize data management protocols, enable controls and checks for compliance to data protection, and require the validation of identities

to improve market regulation and increase consumer trust in using the technology. To improve governance, policymakers need to design rules and programs for eHealth by understanding its implications to health as well as its opportunities and risks, and knowing which levers can be pulled to ensure better outcomes. Stronger engagement with academia is needed to help government build up this knowledge and empower other government agencies and institutions in building regulation.

As new policy and regulatory vulnerabilities and risks arise from more integration of telemedicine into the health system, effective monitoring and evaluation can inform policy action. Understanding the trends in health information technology can allow governments to foresee how the regulatory landscape will evolve in succeeding years and encourage adaptability in developing policies for new eHealth solutions. The government, especially the DOH, should continue monitoring the telemedicine and eHealth solutions market, looking at how telehealth companies are operating in the country, how saturated the market is, and how integrated (or not) telemedicine is in health service delivery. The DOH can contract with universities or research firms to solicit insights related to regulation, design and implementation, and policy, either by providing research grants or by setting up an eHealth observatory. The goal would be to ensure that regulators have constant access to information so that they are better equipped to build more responsive policies for telemedicine. In addition, the sandbox as a mechanism should be used iteratively to test different types of regulations that build on each other and to evaluate how the market responds to develop and refine its telemedicine policy.

The UHC Law offers a new opportunity to refocus policy interest on telemedicine. Section 36 of the law expressly mandated the DOH and PhilHealth to “enable the adoption of effective e-Health solutions” to “incentivize the use” of telemedicine (Congress of the Philippines 2019). It also implies that both agencies are held accountable through congressional review to ensure the appropriate scale-up of telemedicine practice in the country. The UHC Law offers legal backing to further scale up telemedicine, especially for ensuring that

appropriate incentives are offered through PhilHealth as strategic purchaser of individual-based services and the DOH and LGUs for population-based services. The DOH and PhilHealth continue to explore and work on developing policies and programs to carry out this mandate. The DOH has already included telemedicine as one of the components of an integrated health information system at a network level. It also continues to dialogue with legislative bodies to develop laws that would ensure better regulation for eHealth. To date, an eHealth bill is approved on the third and final reading in congress that aims to develop the architecture of health information in the country and improve human resource capacities for eHealth initiatives (Cervantes 2021). PhilHealth also continues to explore the contracting of and purchasing from telemedicine providers and how to best incentivize their service delivery. Across these multiple fronts, the stage is being set for the government and providers to collaborate in extending services in the Philippines through telemedicine to ultimately help achieve its UHC goals.

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For more information, please visit our website at <https://thinkwell.global/projects/sp4phc/>.

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ANNEX 1: MONITORING AND EVALUATION INDICATORS SPECIFIED IN JOINT MEMORANDUM CIRCULAR 2020-0003

Dimensions	Indicators for Monitoring	Source/Method	Frequency of Collection	Unit Responsible for Monitoring
Outcome & Summary Measures	Output			
	Average patient satisfaction rating of the telemedicine services provided by the health care provider	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
Performance Measures	Input			
	# of physicians engaged as providers of telemedicine services	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
	# of unique individual patients who sought health services through telemedicine per health care provider (disaggregation: individual health facility vs. individual physician; daily vs. weekly)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
	Output			
	# of telemedicine consultations received per health care provider (disaggregation: individual health facility vs. individual physician; daily vs. weekly)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
	Type of telemedicine consultations received per health care provider (disaggregation: COVID-19 vs. non-COVID-19 health concerns; individual health facility vs. individual physician; daily vs. weekly)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
	Reasons for consultations (disaggregation: COVID-19 vs. non-COVID-19 health concerns; individual health facility vs. individual physician; daily vs. weekly)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs

	Clinical classification (disaggregation: COVID-19 vs. non-COVID-19 health concerns; individual health facility vs. individual physician)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
	Type of disposition per telemedicine consultation received (disaggregation: COVID-19 vs. non-COVID-19 health concerns; individual health facility vs. individual physician)	Submitted telemedicine reports	Weekly	NEHPMO, KMITs
Operational Measures	Input			
	# of telemedicine providers engaged by DOH	Signed performance commitment & MOA	Weekly	NEHPMO, KMITs
	# of LGUs with engaged telemedicine providers	Signed MOA	Weekly	NEHPMO, KMITs
	# of health facilities engaged per telemedicine provider	Signed performance commitment & MOA	Weekly	NEHPMO, KMITs
	Presence of a Data Protection Officer	Submitted telemedicine reports	One time/as updated	NEHPMO, KMITs
	Privacy policy for telemedicine providers	Telemedicine privacy policy	One time/as updated	NEHPMO, KMITs
	Privacy management program in place for telemedicine providers	Privacy management program implementation plan or privacy manual	One time/as updated	NEHPMO, KMITs
	Activities			
	Telemedicine program implementation plan in place for telemedicine providers	Telemedicine program implementation plan	One time/as updated	NEHPMO, KMITs
	Output			
# of patient complaints received by health care providers	Submitted telemedicine reports	Weekly	NEHPMO, KMITs	

				KMITS
	# of patient complaints closed by health care providers	Submitted telemedicine reports	Weekly	NEHPMO, KMITS
	Types of complaints (i.e., privacy and security breach, medical errors, cost for access)	Submitted telemedicine reports	Weekly	NEHPMO, KMITS
	# of security incidents and personal data breaches reported within NPC protocols (incident reporting mechanism)	Submitted telemedicine reports	Weekly	NEHPMO, KMITS

Abbreviations: NEHPMO = National eHealth Program Management Office; KMITS = Knowledge Management and Information Technology Service