Impact of Primary Care Benefits on Outpatient Health Care Utilization and Estimated Out-of-Pocket Expenses: A Follow-up Pre-post Study of Three Primary Care Sites in the Philippines

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ABSTRACT

Background. Health inequity is a prevailing issue in the Philippines. Universal health care (UHC) aims to provide equitable access to healthcare services and protection from financial risk for all Filipinos. The Philippine Primary Care Studies (PPCS) evaluated the impact of interventions to improve primary care in an urban, rural, and remote area in the country, which represented communities with higher, lower, and least baseline resources for health care, respectively. We previously measured healthcare utilization and change in out-of-pocket (OOP) expenses for outpatient services from baseline to one year after implementation of interventions.

Objective. This is a follow-up study that measured the same outcomes until funding for the interventions was depleted.

Methods. The interventions to strengthen the primary care system included equal per capita health financing in all three areas, establishment of an electronic health record system, healthcare worker training, and early community engagement. Other context-specific interventions were also implemented in the rural and remote sites. We evaluated healthcare utilization (measured as the total number of ambulatory consultations per month) and OOP expenses (estimated through community surveys performed at baseline and yearly thereafter). These outcomes were measured at baseline prior to implementation of interventions, during the first year of implementation when full funding was available, in the second year of implementation when partial funding was available, and at the third or fourth year of implementation when funding ended.

Results. Improvements in primary care had the most impact on the rural site, having the highest number of cumulative ambulatory consults and the lowest out-of-pocket expenses per study year. It had the least impact on the urban site, while the remote site generally had modest improvements.

Conclusion. Policies and interventions to improve primary care may inadvertently aggravate existing inequities, especially in remote areas. Rather than equal distribution, funding must be allocated according to need, and interventions must be contextualized to local settings, if UHC is to successfully reduce inequities in healthcare access in the country.

Keywords: health equity, health services research, health impact assessment, health policy

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INTRODUCTION

Health inequity is a prevailing issue in the Philippines.[1] Socioeconomic and spatial differences result in varied health care utilization and health outcomes. For example, infant mortality rates decline with increasing household wealth, while prevalence of stunting among preschoolers, school-age children, and adolescents is higher in urban than rural areas.[2,3] Incidence of households with catastrophic health expenditure in 2015 is estimated at 6.3%, translating to 1.4 million Filipinos who experienced poverty due to health spending. Out-of-pocket (OOP) spending in health currently constitutes the majority of the country's total health expenditure.[4]

Signed in 2019, the Universal Health Care (UHC) Law aims to address these inequities and mitigate financial hardship.[5] However, almost a year after its signing, the COVID-19 pandemic hit health systems across the globe. Almost all essential services were affected. Public health priorities were shifted, causing the majority of health care workers to be reassigned to roles related to the COVID-19 pandemic. Supply-chain issues led to stock-outs of some essential medications. Access to ambulatory services was restricted, with some needing total closure. Government or public transport lockdowns limited mobility of patients to seek care.[6] Patients were also hesitant to visit health facilities due to fear of being exposed to COVID-19 infection and belief that all health facilities manage patients with COVID-19.[7] Locally, the number of ambulatory consults in rural health units and the number of in-patient admissions across all specialties declined.[8]

To address these worsened health inequities, access to health care services must be improved and OOP spending must be reduced. Using the primary health care approach, UHC aims for all Filipinos to have equitable access to quality and affordable health care services and protection from financial risk. Everyone will be automatically covered by PhilHealth, the country's national health insurance.[9,10] In a framework by Levesque et al., access is defined as the opportunity for a patient to identify needs and to seek, reach, and use health care services answering those needs; health care utilization is often used as a proxy for measuring access.[11] Meanwhile, OOP spending is a parameter used to assess public financing schemes.[12] Therefore, health care utilization and OOP spending are relevant measures to evaluate implementation of UHC in the country.

The Philippine Primary Care Studies (PPCS) program aimed to strengthen primary care systems in the Philippines. The study introduced primary care interventions across representative areas in urban (University of the Philippines Health Service, Diliman, Quezon City), rural (Municipality of Samal, Province of Bataan), and remote (Municipality of Bulusan, Province of Sorsogon) settings. Results of this study are intended to inform policy-making relevant to UHC implementation in the Philippines.

We previously measured health care utilization and change in OOP expenses from baseline to one year after implementation of interventions.[13] This follow-up study evaluated the effect of primary care health system interventions on health care utilization and estimated OOP expenses in representative settings in the Philippines until funding for the interventions was depleted. Specifically, the study described the change in health care utilization and estimated OOP expenses from baseline to the first year of implementation when full funding was available, in the second year of implementation when partial funding was available, and in the third year of implementation when no funding was available in an urban, rural, and remote site in the Philippines.

METHODS

Study Sites

The study sites were chosen based on the willingness and responsiveness of the key implementers of the local health system to collaborate with the PPCS team.

The urban site was a 25-bed outpatient health facility within a university in Metro Manila. It served a population of 31,000 university-based students, faculty, employees, and residents. It operated from 8 a.m. to 5 p.m. during weekdays and was staffed by 12 full-time physicians. The facility was affiliated with diagnostic centers and pharmacies within the university system, where most referrals were directly fulfilled. Outside of the facility, patients also had immediate access to alternative primary care providers within the area.

The rural site was a fourth-class municipality (i.e., municipalities with an average annual income of USD 60,000 - 100,000) composed of 14 *barangays* (administrative districts) with a total resident population of 35,298. It has one rural health unit (RHU) with a three-bed lying-in maternity unit and one barangay health station (BHS) per barangay. Overall, they are run by one municipal health officer, 16 nurses, one medical technologist, 20 midwives, and 100 barangay health workers (BHWs) as of 2015. There are no private clinics within the municipality.

The remote site was also a fourth-class municipality classified as a geographically isolated and disadvantaged area with 22,884 residents across 24 *barangays*. It has one RHU with a five-bed lying-in maternity unit and only seven BHSs. Overall, they are run by one municipal health officer, 21 nurses, one medical technologist, one dentist, 13 midwives, and 126 barangay health workers as of 2015. Although there are two private clinics within the municipality, most of the health services are delivered by the RHU. Due to its mountainous geography, transportation and Internet connectivity were challenges for this site.[14]

Multiple public facilities, such as the RHU and BHS, were available for residents of the rural and remote sites. They operated from 8 a.m. to 5 p.m. during weekdays with limited diagnostic and pharmacy services. The RHU was

supervised by a physician, while the BHS was staffed by BHWs. Outside these facilities in rural and remote sites, patients had limited access to other health care providers.

Primary Care Interventions

PPCS introduced interventions intended to strengthen the primary care system in the mentioned sites. Details on how these interventions were developed and implemented are found in a separate publication.[15] These interventions included health financing for ambulatory services, an electronic health record system, health care worker training, and community engagement. These were implemented in the urban site in 2016 and in the rural and remote sites in 2019. Context-specific interventions were also implemented to offset limitations in rural and remote sites.

In terms of health financing, the study introduced a primary care benefit package worth PhP 350 per capita, with a PhP 2,000 spending cap per patient over one year. In case patients had expenses over PhP 2,000, the excess amount was paid OOP. The primary care benefit package could be used for any condition, i.e., it was "disease-agnostic." It was also comprehensive, such that it could be used for consultation fees, cost of diagnostic tests, or prescribed medications. Prior registration at the primary care facilities was not required. Instead, patients were registered opportunistically at the point of care during their first consultation. An electronic health record (EHR) system was established to standardize patient records and centralize medical information. It electronically stored patient data, diagnostic test results, and drug prescriptions. Health care personnel utilized the system for triaging, facilitating referrals, processing laboratory requests, generating prescriptions, printing medical certificates, drug dispensing, releasing laboratory results, tracking finances, generating patient censuses, and managing records.

Technical training on the most common primary care conditions was organized for health care workers. They were informed of the recommendations of the latest clinical practice guidelines and were given free subscriptions and training on how to use UpToDate, a clinical decision support tool, to assist them in patient care.

Community engagement activities were conducted. Communication materials such as brochures, tarpaulins, and social media pages were created and disseminated to inform the community of the importance of primary care, availability of benefit packages, and concept of risk sharing. Town hall meetings and information campaigns were also conducted to manage community expectations on primary care and prevent misuse of benefits.

Context-specific interventions were implemented in rural and remote settings. Health care provider networks were expanded for both sites. Partnerships with private diagnostic centers and pharmacies were established to complement health care services delivered by public facilities. Additional physicians were hired due to a lack of physician staffing for both settings. If deemed necessary by health workers, transportation costs were subsidized to address the geographical barriers in the remote area.

Table 1. Timeline of Implementation

Site	Year of implementation		
	Year 1 (full funding)	Year 2 (partial funding)	Year 3 (no funding)
Urban	2016 - 2017	2020 - 2021	2021 – 2022
Remote	2019 - 2020	2020 - 2021	2021 - 2022
Rural	2019 - 2020	2020 - 2021	2021 - 2022

Interventions were fully funded only during Year 1 (2016 – 2017 for the urban site, 2019 – 2020 for the rural and remote sites). The urban site had a gap in implementation from 2017 to 2019 due to administrative issues. Interventions were resumed in 2019. During Year 2 of implementation (2020 for the urban site, 2020 – 2021 for rural and remote sites), only residual funding (i.e., 25% of the total budget) was available, which was eventually depleted by Year 3 (2021 for the urban site, 2021-2022 for the rural and remote sites).

Study Design and Implementation Timeline

This pre-post evaluation study evaluated the impact of the PPCS interventions on health care utilization and OOP expenses from baseline (i.e., prior to implementation of interventions) until Year 3 post-intervention (i.e., when funding was depleted).[16-18] Table 1 illustrates the corresponding years of implementation per site.

For the urban site, we started recruitment in October 2016, paused in September 2017, restarted again in April 2019, and ended in March 2022. The previous study measured health care utilization and OOP expenses at baseline in 2016, and again in 2017, which was one-year post-implementation of interventions (full funding).[13] This study measured health care utilization and OOP in 2021 and 2022, corresponding to Year 2 (partial funding) and Year 3 (no funding) post-implementation, respectively.

For the rural and remote sites, we started recruitment in April and May 2019 and ended in March and April 2022, respectively. The previous study measured health care utilization and OOP at baseline in 2019, and again in 2020, which was one-year post-implementation (full funding).[13] This study measured health care utilization and OOP in 2021 and 2022, corresponding to Year 2 (partial funding) and Year 3 (no funding) post-implementation, respectively.

Sampling and Sample Size

For the baseline survey to determine estimated OOP expenses, sample size for each site was computed based on the estimated utilization rate determined from a pilot sample. Simple random sampling was done for the urban site; stratified sampling was done for the rural and remote sites, where household heads were sampled from each barangay (stratum). The details of the sample size calculation are found in a previously published study.[14] For the follow-up

survey, the same respondents in the baseline survey were again invited to participate. In case of withdrawal of consent or inability to contact the respondents, replacement was done. The respondents for replacement were matched by employment category and department in the urban site, and by sex, age, and household site in the rural and remote sites. Replacements were analyzed as new respondents. Total enumeration was done to determine health care utilization, such that the total number of ambulatory consultations was reported.

Data Collection

Health care utilization was measured as the total number of ambulatory consultations recorded in the EHR system in each of the three sites. Consultations, whether conducted in person or through telemedicine, included both preventive and curative visits, and were summarized monthly. Each instance of consultation, including multiple visits by the same patient, was counted separately.

OOP expenses for ambulatory services (from the patients' perspective) were assessed using a validated questionnaire on health care utilization and financial risk protection, previously developed and pre-tested in an earlier study.[18] The instrument comprised five sections capturing demographics, ambulatory consultations and expenses, hospitalizations, and transportation costs. Data collection was conducted through interviewer-assisted surveys.

Data on ambulatory expenses were estimated based on recall and collected at baseline and at the end of each year of implementation. Participants were asked to estimate their actual expenses in Philippine pesos for ambulatory care, specifically consultations, diagnostic tests, and medicines. They were also requested to identify their financing sources, such as OOP, national health insurance (provided through the study), or other sources. To minimize recall bias, a recall period of three months was set. This was then annuitized to estimate yearly OOP expenses and was adjusted based on inflation rates.

Data Analysis

Health care utilization was measured by the number of ambulatory consultations in the EHR records across each site. The total number of monthly ambulatory consultations was collected for each site and was presented using bar graphs made through R.[19] The mean number and standard deviation (SD) of monthly ambulatory consultations per year, the percentage of the population seeking consult, and the percentage increase from baseline and the previous year for each site were determined to analyze the changes throughout the years of implementation. Meanwhile, estimated OOP ambulatory expenses were expressed as mean expense per capita in a year and SD. The data collected were encoded and processed using Microsoft Excel. Descriptive trend analysis was used for both health care utilization and OOP expenses.

Ethical Considerations

Ethical approval was granted by the University of the Philippines Manila Research Ethics Board under the performance indicators of the Philippine Primary Care Studies (UPMREB 2015-489-01). Written and verbal informed consent were secured from participants before data collection.

RESULTS

Health Care Utilization

Figures 1A, 1B, and 1C illustrate the number of ambulatory consults per setting from baseline to the end of the study.

During the first year with full funding, an increase in the number of monthly ambulatory consults in the rural and remote sites was observed. In the rural site, the mean monthly consult throughout the first year was 3,152 (SD 1,010.6), translating to a 116% increase from its baseline of 1,460. Meanwhile, in the remote site, the mean monthly consult was 865 (SD 443.8), corresponding to a 201% increase from a baseline of 287. The urban site had a fluctuating trend throughout the first year with full funding, with 604 monthly consults at baseline and a mean monthly consult of 498 (SD 168.6), a 17% decrease. Across the three sites, the rural site had the highest percentage of population seeking ambulatory consult at an average of 13.8%, followed by the remote and urban sites at 2.45% and 1.61%, respectively.

There was a decrease during the second year (partial funding) in the urban and rural areas, coinciding with the COVID-19 pandemic. The number of monthly ambulatory consults in the rural site decreased compared to the first year, with a mean monthly consult of 2,672 (SD 2,340.7), a 57% decrease. For the remote site, there was a 16% increase compared to the previous year, with a mean monthly consult of 1,006 (SD 324.3). For the urban site, the mean monthly consult was 213 (SD 66.8), a 57% decrease from the previous year. As seen in Figure 1B, the number of consults steeply increased in the rural and remote sites a few months into the pandemic because of the availability of telemedicine as a mode to seek consult. Across the three sites, the rural site still had the highest percentage of population seeking ambulatory consult at an average of 11.68%, followed by the remote and urban sites at 2.85% and 0.69%, respectively.

During the final year with no funding, the number of monthly ambulatory consults in the rural and remote sites went back to almost baseline, with a mean of 1,280 (SD 705) and 332 (SD 228.3) consults, respectively. These translate to a 52% and 67% decrease from the previous year in the rural and remote sites, respectively. For the urban site, the mean monthly consult was 288 (SD 147.3), a 35% increase from the previous year. Across the three sites, the rural site still had the highest percentage of population seeking ambulatory consult at an average of 5.59%, followed by the remote and urban sites at 0.94% and 0.93%, respectively.

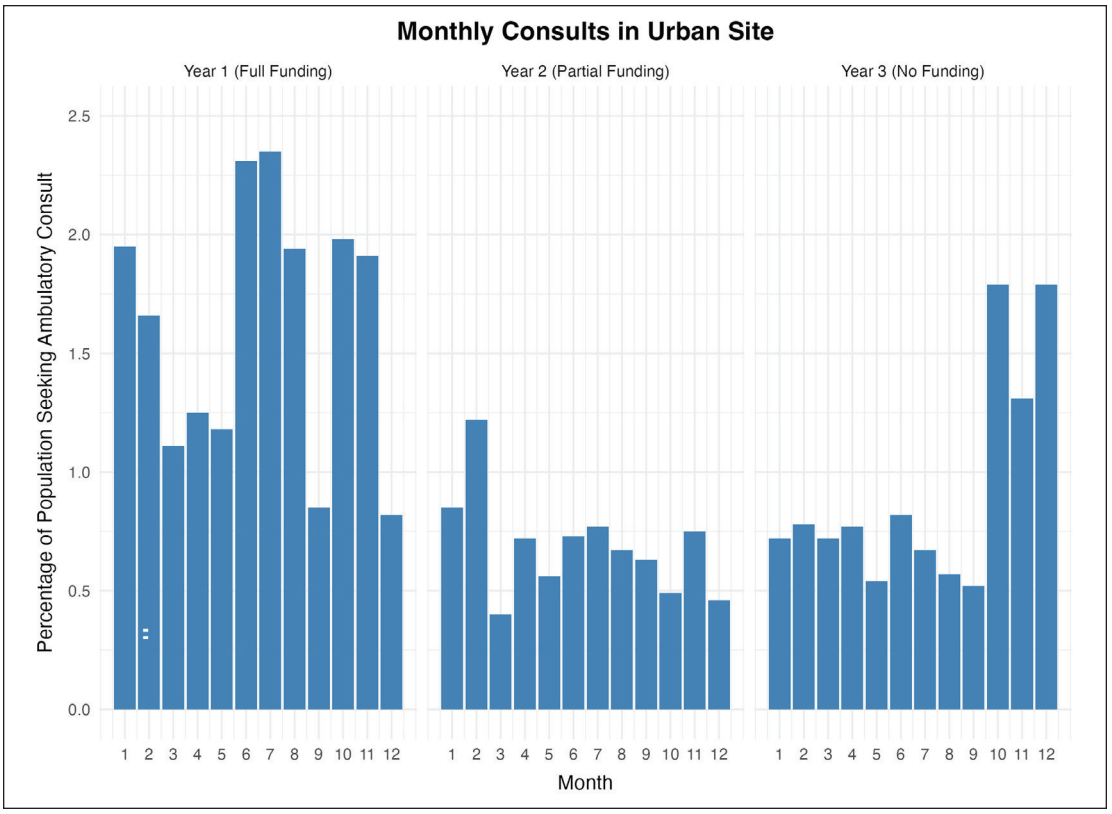

Figure 1A. Percentage of population seeking ambulatory consult per month in the urban site per year.

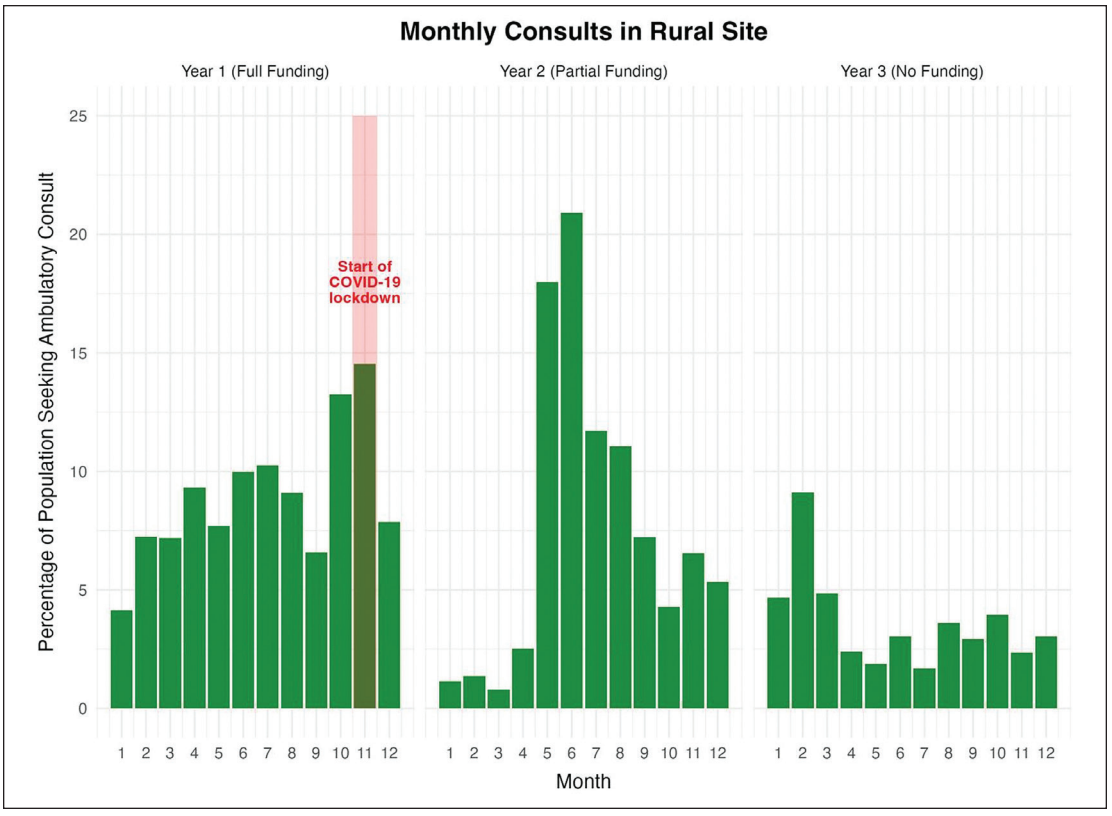

Figure 1B. Percentage of population seeking ambulatory consult per month in the rural site per year.

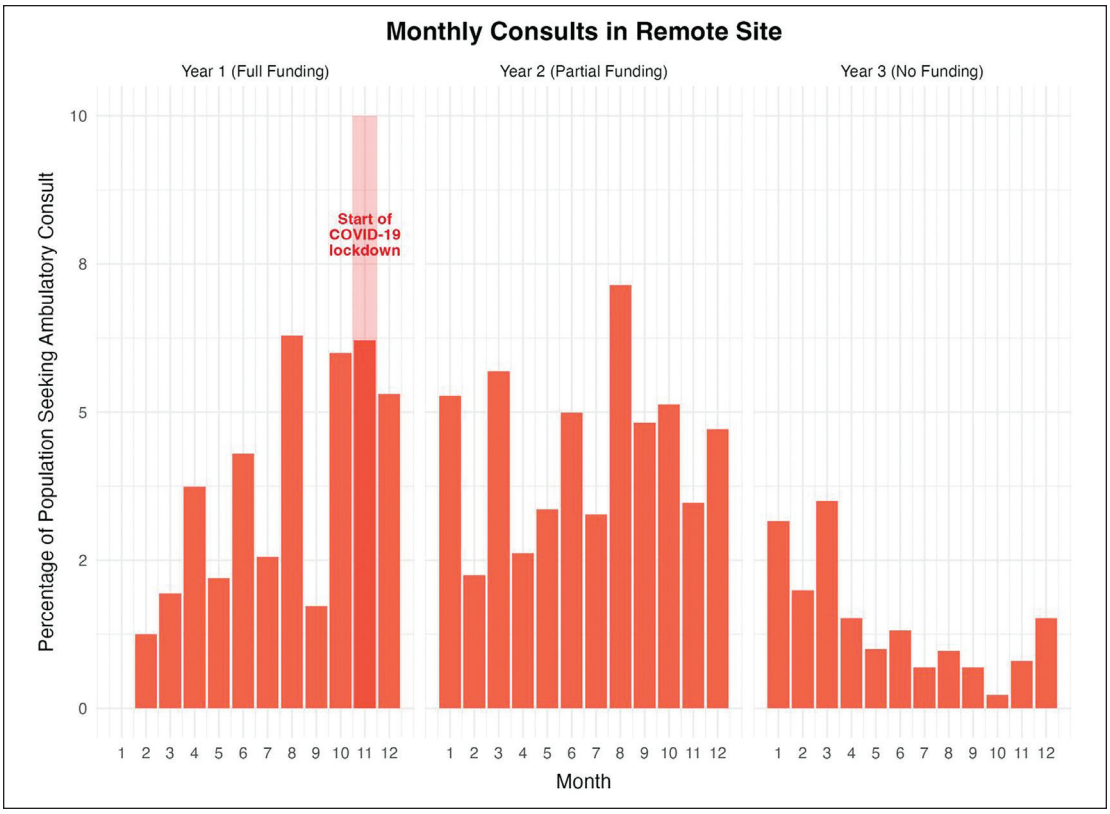

Figure 1C. Percentage of population seeking ambulatory consult per month in the remote site per year.

Estimated Out-of-pocket Expenses

The urban site respondents were faculty and employees of the university, while the rural and remote site respondents were heads of households included in the survey. The number of survey respondents is as follows: urban (n during baseline = 358, n during Year 1 = 202, n during Year 2 = 84, n during Year 3 = 164), rural (n = 228), remote (n = 202). The characteristics of the survey respondents are found in the Appendix.

In the first year post-implementation, 156 urban participants were lost to follow-up; in the second year, 274 were lost to follow-up, with unsuccessful attempts to replace the dropouts. At the end of the study, 164 survey respondents remained after replacing some dropouts. The rural and remote sites had the same number of respondents throughout the study, with dropouts successfully replaced.

Table 2 illustrates the estimated OOP expense for ambulatory services per capita from baseline to end of study in the three sites. In the urban site, ambulatory service OOP expenditure remained constant except during Year 2, where a rise was noted. The OOP expenses for ambulatory services in the rural and remote sites continued to decrease until the end of the study, despite cessation of funding. The urban site had the highest ambulatory service expenses through the years across all sites. The rural site had the lowest OOP expenses in all years.

DISCUSSION

The study showed the effect of primary care interventions, including provision of a comprehensive primary care benefit package, on health care utilization and estimated OOP expense from baseline until depletion of funding in three different settings. The rural site had the highest health care utilization and lowest OOP expenses through the years. As the funding declined, utilization also generally decreased across all sites, returning to near baseline values upon depletion of funds.

Rural Setting

The rural site had the highest mean monthly consult and percentage of population seeking consult per year and lowest OOP expenses throughout the years. Improvements in primary care may have contributed to improved access to health care services and decreased OOP expenditure, even beyond the funded period.

Looking at the dimensions of abilities and accessibility presented in the framework of Levesque et al., ability to perceive and engage and approachability were improved by community engagement activities such as information dissemination through communication materials and town hall meetings.[11] Meanwhile, availability was addressed by capacity building of health care workers through technical

Table 2. Out-of-pocket Expenses per Year and Site

Site	Time period	Mean OOP expenses (in PhP)	95% Confidence Intervals (in PhP)	Range of OOP expenses (in PhP)
Urban	Baseline	520.98	386.58, 655.38	15 - 50000
	Year 1	438.09	238.19, 636.62	50 - 59500
	Year 2	936.07	441.08, 1431.05	80 - 57000
	Year 3	372.65	170.27, 575.03	40 - 54000
Rural	Baseline	308.27	217.22, 398.80	20 - 25200
	Year 1	153.37	114.26, 192.48	1 - 12500
	Year 2	34.94	21.70, 48.19	100 - 4300
	Year 3	73.62	50.25, 97.00	30 - 8000
Remote	Baseline	554.76	420.41, 689.11	10 - 29750
	Year 1	370.84	272.34, 469.34	15 - 30000
	Year 2	287.20	180.75, 393.64	0 - 36000
	Year 3	86.93	58.92, 114.93	0 - 8000

training on the most common primary care conditions and subscription and training on UpToDate. Other interventions done were the addition of health care providers, implementation of an EHR system to improve workflow efficiency, maximization of barangay health stations which are situated deeper in the community, expansion of health care provider networks, and partnership with private diagnostic centers and pharmacies. Efficiency in service delivery was also improved by the EHR through features that enabled task shifting. For example, the EHR allowed BHS nurses and midwives to suggest antibiotics and other medications. Physicians could remotely approve these prescriptions through the EHR before implementation.

A decrease in the number of monthly consults starting Year 2 (partial funding) was observed, along with the gradual depletion of funding support for the PPCS interventions. Furthermore, the COVID-19 pandemic at the start of Year 2 (partial funding) negatively impacted the health care system and further decreased health care utilization in the outpatient setting. Lockdowns limited mobility of patients, and fear of acquiring COVID-19 from visiting health facilities discouraged them from seeking consultation.[7] The increase in the number of consults shortly after the declaration of the COVID-19 pandemic was made possible due to the Internet connectivity of health facilities. In fact, consults via telemedicine make up a significant portion of the total monthly consults when face-to-face interactions were limited during this period.

Although funding declined throughout the years of implementation, OOP expenses continued to be low. This pattern may reflect local efforts to sustain selected PPCS interventions (e.g., capacity building, retention of additional physicians, and continued use of UpToDate, EHR, telemedicine, and BHS), despite limited resources. However, partnerships with private diagnostic centers and pharmacies, as well as community engagement activities, were not maintained.

Remote Setting

The remote site sustained increases in the mean monthly consult compared to baseline and the previous year during the first two years of study implementation. However, the number of consults eventually went back to almost baseline numbers at the end of the study period. There was also a decrease in the OOP expenses.

The positive effect of the primary care enhancements on the remote setting can be explained similarly to that of the rural setting. However, the impact was of a smaller magnitude due to inherent structural barriers. To mitigate the effects of the inherent geographical barriers, a subsidy for transportation was provided as part of the primary care interventions specifically for this setting. This addressed availability and accommodation and augmented patients' ability to reach, as illustrated in the conceptual framework of Levesque.[11] Limited Internet connectivity, partly due to the mountainous terrain, constrained the implementation and full utilization of the EHR system in the RHU and BHS. There was limited interoperability among the BHS, with the EHR system successfully linked in only four out of 24 barangays. In contrast to the rural site, the remote site was not able to maximize telemedicine as an alternative means of consultation due to limited Internet connection. Partner pharmacies were inaccessible to most of the community members and lacked needed supplies and medications. Partner laboratories also had limited testing capacities. Finally, the additional human resources recruited for this setting were sustained only until Year 2 (partial funding) due to depletion of funds, thereby decreasing their capacity to deliver services.

The decrease in the OOP expenses was less than that of the rural setting in the years of full and partial funding. While partnerships with private laboratories and pharmacies were established, these partner enterprises were small and had insufficient capacity to address the increased demand. Some patients also exceeded the per capita benefit package, which would point towards more complex or severe disease conditions, thus increasing the OOP expense.

Urban Setting

The urban site experienced decreases in mean monthly ambulatory consults compared to baseline and previous years, with that of Year 3 lower than baseline. It also had the lowest percentage of population seeking consult per year and the highest OOP expenses compared to the other sites.

This finding is expected and may be explained by several reasons. First, the baseline values measured may already be the optimal number of monthly ambulatory consults for this site. As an urban primary care facility located inside a university, it may already be adequately serving its target population. Second, people in the urban site had access to alternative sources for primary care, laboratory tests, and medications, such as other private or public health care facilities. The addition of ambulatory services may not have been sufficient to incentivize people in the urban site to increase the utilization of the services of the site facility. Third, people in the urban setting are more likely to be able to afford the consultation fees and the costs of laboratory tests and medications in other facilities, as evidenced by the higher average household income as described in the Appendix. This is also supported by the high OOP expenses, which reflect the underutilization of the primary care benefit package of PhP 2,000 per capita.

Policy Implications

This study demonstrates that different settings have different levels of preparedness for UHC. Health care utilization should be encouraged through demand-side interventions such as community engagement and information dissemination on benefit packages. These should be done early before implementation of primary care interventions, so that people understand the principles of risk sharing and primary care. This will minimize the unnecessary use of available benefits.

As demonstrated by the representative study sites, communities differ in terms of resources for health care (i.e., urban areas with the most and remote areas with the least). Supply-side factors such as human resources, facilities, commodities, and medications should be made adequate and responsive. When a locality is still lacking in infrastructure (e.g., laboratories, pharmacies, Internet connectivity), these issues should be addressed first because these would affect accessibility of health care.

A contextualized approach should be planned, rather than a one-size-fits-all set of interventions. More funding and support are needed in disadvantaged areas. For example, areas with difficult topography should be supported with transportation subsidies. These policy recommendations should be considered especially in implementing UHC. Resources should be allocated equitably, not equally. Taking into consideration local needs and context will prevent aggravating the already wide gap among local health systems.

Limitations

This research has several limitations. First, it was conducted only in the outpatient setting. Future studies can explore the impact of benefit packages in the inpatient setting. Second, for the urban setting, the study was done in a primary care facility inside a university. Similar to the rural and remote site, a local health unit situated in an urban poor area can be selected in future research to evaluate the impact of primary care interventions in this setting. Third, ambulatory and OOP expenses were determined through a survey. Respondents may have inaccurately estimated their actual expenses because of recall bias. Third, other factors impacting health care utilization and OOP spending were not investigated. Collecting socioeconomic data and conducting qualitative studies through interviews with patients and health care workers may help explore these factors. Fourth, funding for the interventions lasted only for approximately two years. Fifth, this study focused on the outcomes of health care utilization and expenses. Other health outcomes such as mortality, morbidity, number of deliveries attended by skilled health personnel, stunting, and vaccination rate may be measured in future studies with longer follow-up duration. The COVID-19 pandemic most likely affected health care utilization and OOP expenses from the last month of Year 1 until the end of the follow-up period in the sites. Other limitations are attrition bias and selection bias, especially in the urban site, due to difficulty in recruiting survey respondents. Furthermore, it is important to consider the depletion of funds over the study period and the varying timelines per site when analyzing temporal trends of the outcomes. This study highlights the unique contextual factors of each site, emphasizing the importance of health equity. The sites are not comparable and context-specific interventions are necessary to avoid inadvertently aggravating health inequity.

CONCLUSION

The study demonstrated the impact of interventions to improve primary care in a rural, remote, and urban setting in the Philippines by measuring health care utilization and OOP expenses from baseline until depletion of funding. The rural site had the highest health care utilization and the lowest OOP expenses. The interventions addressed the domains of approachability and availability and augmented patients' abilities to perceive, engage, and pay. The remote site only had a modest decrease in OOP expenses. The impact of interventions could not be maximized due to inherent geographic and infrastructure limitations on this site. Finally, there was minimal impact in the urban setting as patients had alternative sources of health care. Overall, contextualized interventions and adequate funding are needed for the equitable implementation of UHC in the Philippines.

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Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

All authors declared no conflicts of interest.

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APPENDIX

Characteristics of Study Respondents

	Urban Site				Rural Site				Remote Site			
	Baseline n = 358	Year 1 n = 202	Year 2 n = 84	Year 3 n = 164	Baseline n =228	Year 1 n = 228	Year 2 n = 228	Year 3 n = 228	Baseline n = 202	Year 1 n = 202	Year 2 n = 202	Year 3 n = 202
Mean age, in years (range)	*	*	42 (23-66)	43 23-66	54 27-88	56 29-88	56 28-90	55 29-90	54 20-93	56 23-92	57 25-96	58 26-93
Male (%)	*	*	32 (38%)	54 (49%)	146 (64%)	146 (64%)	118 (53%)	115 (52%)	152 (75%)	150 (74%)	149 (74%)	150 (74%)
Mean household income, in PhP (range)	*	*	69204 (11000-250000)	77968 (6200-400000)	9581 (300-100000)	8205 (300-30000)	8942 (100-120000)	10880 (600-100000)	5314 (300-55000)	5750 (500-50000)	6302 (300-80000)	6319 (300-80000)

**Data not recorded*