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Attracting Poor People to public health facilities to access free health care: an assessment of the Integrated Social Health Protection Scheme

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SUMMARY

Cambodia introduced user fees in the public health sector in the late 1990s. Contrary to experiences in other countries this introduction of user fees was followed by an increase in utilisation of curative public health services due to various factors, including improved interpersonal skill by staff members. With this move from free health care to client paid care, poor people saw their financial access decrease as exemption mechanisms failed due to reluctance of staff members to forego potential revenue and vague regulations concerning whom to exempt. To retain the positive effects of user fees on staff performance while ensuring access to health care for the poor, policymakers developed Health Equity Funds (HEF). These are third-party arrangements that pay public health providers user fees on behalf of eligible poor. The HEF also provides food allowances for hospitalised patients and a caretaker and pays transport costs to the hospital for referrals, emergencies, and deliveries. The poor are nationwide identified regularly using pre-determined eligibility criteria.

Health equity funds operate only at public health facilities and HEF coverage has expanded over time since their initiation in 2000; currently it includes all public health facilities in the country and serves about 3 million beneficiaries (HEFB). Despite their entitlement to free health care at the point of delivery at public health facilities, a substantial proportion, up to 70% of the HEFBs, still initiate healthcare seeking at private health providers whereby they incur considerable out-of-pocket expenses, further depleting their already scarce resources. As such HEFB continue to resort to coping practices to pay off medical bills, including borrowing at exorbitant interest rates and/or selling productive assets. The ubiquity of the private health sector explains in part HEFB's use of such services. The private health sector has expanded disproportionally over the past 20 years; however, it has highly variable quality and services. The private sector consists of unqualified providers such as traditional healers and market vendors selling medicine amongst their wares as well qualified providers working from health facilities or conducting home visits, often under dual practice. Private sector providers are geographically very accessible.

To enable access to health care at minimal costs for these pre-identified poor HEFB it is important to have them initiate care seeking at public health facilities. As per HEF's procedures, HEFBs should initially consult the nearest primary-level public health care facility, the health centre, and should only go to the hospital upon referral by health centre staff. If they do not follow this referral system their transport costs to the hospital are not reimbursed. Prior to nationwide rollout of the HEF in 2015, many geographical areas had HEF arrangements that only covered hospital services and thus did not cover health centre services, and thus no compulsory referral system.

In the rural province of Kampong Thom, in central Cambodia, the Ministry of Health with support of the Cambodian-German Social Health Protection Programme, piloted the Integrated Social Health Protection Scheme (iSHPS). The iSHPS commenced in 2011 and opened the HEF program to voluntary enrolment of non-HEFB community members. At the same time, vouchers were used to promote uptake of a selected set of underutilised maternal and child health services. Health centres were reimbursed for services delivered under the iSHPS on a pay-for-performance basis that combined output payments adjusted by objective quality and client satisfaction scores. These scores were based on annual targets set in consultation with the facilities, and evolved over time. The iSHPS area also benefited from interventions that aimed at increasing health providers' degree of accountability and responsiveness. Investments were also made in technical and structural quality of health services.

In this paper, we report on the ability of the iSHPS to attract eligible poor HEFB to initiate care seeking at public health facilities as well as their degree of financial risk protection. We assess these

effects by comparing care seeking and out-of-pocket expenditures for the illness episode of HEFB in iSHPS areas with HEFB from other provinces where the HEF covered only hospital services or where HEF covered health centre and hospital services. For this assessment, data were collected from 1,636 matched HEFB households in two health districts with iSHPS and two other health districts without iSHPS between October 2013 and February 2014. In the two latter districts, some health centres were not covered by the HEF while other health centres were included, allowing additional comparison to assess the effect of health centre inclusion on care seeking by HEFB. Apart from HEF, these control districts did not have any notable interventions aimed at enabling financial access to public health care services for HEFB. Only illness episodes during the month preceding interview were considered. Costs involved only direct medical and non-medical out-of-pocket expenses related to care seeking for the concerned illness episode.

The findings indicated that the proportion of HEFB consulting first public health providers in iSHPS areas was 55.7%, significantly higher than the 39.5% at HEF with health centres and 13.4% at HEF with hospital services only. The overall costs (out-of-pocket expenses and transport) associated with the illness episode were lowest for cases residing within iSHPS sites, US$10.3, and highest in areas where health centres were not included in the package, US$20.7. Such costs were US$18.6 at HEF with health centres.

The findings suggest that the iSHPS scheme with additional interventions like pay-for-performance, vouchers for underutilised services, quality improvement and focus on improved governance, are better than stand-alone HEF in attracting sick HEFB to public health facilities and lowering direct costs associated with health care seeking. Compared to other HEF arrangements, iSHPS saw 56% of HEFB initiate care seeking at public health facilities, more than 13-40% at control sites. Inclusion of health centres in HEF arrangements appears instrumental to improve care seeking at all levels of public health facilities. The overall costs associated with care seeking at iSHPS sites were 81% to 101% lower than such costs observed at control sites. Driving factors for these lower costs appeared to be the high use of primary health care facilities, lower user fees at public health facilities as well as at private facilities, and reduced tendency to seek care at non-medical providers.

INTRODUCTION

Over the last decade, more evidence has demonstrated that the cost of health care constitutes a major barrier to timely access services, especially for poor people and vulnerable populations, and represents a key barrier to address if progress is to be made moving toward universal health coverage (Masiye et al 2016, Meessen et al. 2011a). In response, many governments of low-income countries have abolished user fees for all public health services or key health services such as tuberculosis treatment and institutional deliveries while also creating exemptions for specific population groups such as poor people, children and pregnant women (Yates 2009, Meessen et al. 2011a, Dzakpasu et al. 2014).

Results of such initiatives to enable free health care at the point of delivery to date are mixed. In Uganda, where user fees were abolished for public health services, the private sector remained the main source of curative care with consequent increased out-of-pocket expenses for health (Pariyo et al. 2009, Nabyonga-Orem et al. 2011). In Zambia, catastrophic health expenses remained high amongst poor people despite entitlements for free health care (Masiye et al. 2016). In other countries, user fee abolition or provision of subsidised access led to an initial increase in utilisation of public health services though the growth rate was not sustained (Lagarde and Palmer 2008, Maini et al. 2014). One study that employed control sites found no increase in utilisation amongst poor people following their entitlement to free care (Atchessi et al. 2016).

The counterintuitive failure of user fee abolition initiatives to universally improve uptake of public health services and reduce out-of-pocket expenses amongst intended beneficiaries has been ascribed to week policy design and poor quality care (Hercot et al. 2011). As a result of this poor quality, households seek care in the private-for-profit sector (Nabyonga-Orem et al. 2011) where services are more expensive (Mills et al. 2002, Morgan et al. 2016).

Cambodia introduced user fees in the public health sector in the late 1990s as a means to collect more revenue and to stimulate delivery of services by staff members. Unlike experiences from other countries, utilisation of public sector health services increased although the poor saw their financial access decreased (Jacobs and Price 2004, James et al. 2006). In order to safeguard the positive effects of user fees on staff performance while ensuring access to health care for the poor, so called Health Equity Funds (HEF) were established. Health Equity Funds are third-party arrangements that pay public health facilities the user fees for services rendered to eligible poor (Hardeman et al. 2004). Eligibility for benefiting from HEF is assessed through a nationwide community-based exercise, the IDPoor Programme, conducted every 3 years, using proxy means testing, under the Ministry of Planning. Those missed during this targeting exercise can be considered for fee waivers when reporting at the hospital during the so-called post-identification exercise.

Health equity fund coverage has expanded over time and evidence suggests that, on average, beneficiary household reduce their out-of-pocket spending on healthcare and seek care less frequently in the private sector. However, a substantial proportion of HEF beneficiaries still initiate healthcare seeking at private health providers where they incur considerable out-of-pocket expenses (World Bank 2014, Jacobs et al. 2007). One study found that HEF decreased out-of-pocket expenses for health amongst the entitled poor people but did not increase their utilisation of public health services (Flores et al. 2013). More recently a study comparing health care utilisation and out-of-pocket expenses for health amongst poor people with and without entitlements for HEF benefits (IDPoor card) found that HEF did increase utilisation of public health facilities: 25% of HEF beneficiaries consulted public health facilities compared with 10% of those not entitled for HEF benefits. Still, 75% of HEF beneficiaries (HEFB) with IDPoor card did not make use of their ability to free care. Such

HEFB spent US$17 per outpatient consultation and US$190 per hospitalisation while those who used their IDPoor card to access public health services during their illness spent US$4 and US$17 respectively (World Bank 2016).

To reduce the financial hardship due to health expenses, it is thus important to that HEFB initiate care seeking at public health facilities, so they will presumable spend less money. Here we report on the effects of three HEF configurations on financial access to public health facilities by HEF beneficiaries.

Integrated social health protection scheme (iSHPS)

Health Equity Funds emerged in the early 2000s as a pragmatic response to balance positive and negative effects associated with user fees in the public health sector. Initially a variety of approaches existed (Noirhomme et al. 2007). With increased donor and government interest and consequent bigger external funding, management of the HEF became increasingly institutionalised (Ir et al. 2010). Geographical expansion of HEF occurred incrementally and by the end of 2015 enrolled all public health facilities in the country. In many places, HEF co-existed with other health financing interventions aiming at improving access to (selected) health care services such as contractual arrangements, performance-based financing, and voucher schemes (Jacobs et al. 2012).

To improve service delivery and utilisation at public health facilities, the Ministry of Health piloted the Integrated Social Health Protection Scheme (iSHPS) in the rural province of Kampong Thom, central Cambodia, with support of the Cambodian-German Social Health Protection Programme (SHPP). The scheme combined HEF with the ability for non-holders of ID-Poor cards to enrol by paying a small financial contribution that entitled them to access the same medical services as the HEF eligible poor people for free at the point of delivery. The inclusion of non-HEFB in iSHPS and the rebranding of the HEF scheme to iSHPS aimed at destigmatising holders of IDPoor cards. The implementation of this strategy was accompanied by awareness raising activities to stimulate voluntary enrolment in the iSHPS by non-holders of IDPoor cards.

A selected set of underutilised maternal and child health services were promoted amongst the population and reimbursed through vouchers. Health centres were reimbursed for services delivered under the iSHPS on a pay-for-performance basis that combined output payments based on annually negotiated targets and adjusted by objective quality and client satisfaction scores. Targets were set for each health centre using achievements of previous years as benchmark. The iSHPS intervention area also benefited from a limited set of interventions under the SHPP that aimed at improving health systems governance structures to increase health providers' degree of accountability and responsiveness. Investments were also made in technical and structural quality of health services.

This paper reports results of a post-intervention evaluation of the iSHPS, which examines its effectiveness to attract eligible poor beneficiaries to the public health sector to receive free care as well as their degree of financial risk protection compared to alternative configurations of the HEF that were implemented in Cambodia. Specific attention is paid to the initiation of care seeking and associated costs in the public sector among three different configurations of HEF:

1. *iSHPS* that also expands HEF coverage to households not identified as poor by the IDPoor programme for a small membership fee;
2. *Standard HEF* where HEF coverage is only available at a hospital to eligible poor households (henceforth abbreviated HoHEF); and
3. *Comprehensive HEF* where HEF coverage is available at both the health centre level and the hospital level to eligible poor households (henceforth abbreviated CHEF).

In doing so, the study examines the additional benefits of the add-on interventions of the iSHPS in stimulating care seeking at public health facilities among the eligible poor compared to existing stand-alone HEF scenarios.

METHODS

Study Design and Data

This study utilizes data from a cross-sectional household survey and employs a post-intervention evaluation design with control groups to evaluate the impact of the iSHPS on healthcare seeking and related out-of-pocket expenditures among eligible poor compared to stand-alone HEF configurations operating in Cambodia.

Data were collected from four operational health districts (OD) between October 2013 and February 2014. Two ODs, Kampong Thom and Stong in Kampong Thom province, where the iSHPS pilot had been implemented, were selected as intervention areas. Similarly, two ODs where the HEF scheme had been implemented without participation in the pilot iSHPS were chosen as control areas, Maung Russey OD, Battambang province, and Chamka Leu OD, Kampong Cham, based on their similarity to the intervention ODs along the following parameters: geographical location, population density, percent of the population eligible for HEF. The two control ODs also were chosen to represent two distinct configurations of HEF implementation. Maung Russey OD has a Comprehensive HEF (CHEF) with coverage at all of its health centers. In Chamka Leu OD, many health centers had not been covered by HEF at the time of the survey, representing a Hospital Only HEF (HoHEF) configuration with coverage only at the hospital level.

The study respondents comprised a sample of men and women aged between 18 and 59 years. Respondents were interviewed on their health seeking behavior and health-related and socio-demographic characteristics. To achieve a sufficient sample size, an appropriately powered minimum detectable sample size calculation was performed allowing for non-response and refusal. Using the *Open Epi* calculator, the number of respondents aged 18-59 years old needed in the intervention site was calculated to be 434 per OD and thus 868 in two ODs. Intervention and control respondents were recruited 1:1 with a total of 868 intervention and control respondents to be recruited in each domain.

The final analytical sample collected for the study included a total of 1636 respondents, which included 767 respondents from iSHPS areas and 869 respondents from control ODs.

Tools

The survey implemented two tools. The first tool, a household roster, asked questions on key demographic variables for every member of the household. This questionnaire was answered by an adult member of the household, preferably female aged 18-59 years, recruited as the main respondent for the study and concerned issues related to socio-economic status. The second tool was an individual questionnaire that was administered to the same respondent. This questionnaire covered topics about their perceived health status, utilization and source of healthcare services for all household members and related healthcare expenditures.

Statistical analysis

Respondents and sick household members were stratified according to HEF configuration and analysed regarding the relationship between HEF configurations and kind of providers consulted for the concerned illness episode and associated OOP spending. Health providers were differentiated as public (health centre or hospital), private qualified (pharmacies, private clinics) and non-qualified informal providers (drug shops, traditional healers, and market vendors hereinafter termed non-medical providers). Only illness episodes during the month preceding interview were considered. Costs involved only direct medical and non-medical out-of-pocket expenses related to care seeking for the concerned illness episode. Payments in Khmer Riels (KHR) were converted to US$ at KHR4,000 to one US$.

Differences in the distribution of different variables between the different HEF configurations were calculated and Chi square tests were conducted to examine statistical

significance, determined at 5% level ($p<0.05$).

Definitions used	
Direct medical costs	Out-of-pocket payments for health services
Direct non-medical cost	Out-of-pocket payments for transport
Total cost per treatment	Sum of direct medical and non-medical cost for concerned treatment
Overall cost:	Sum of total cost for first treatment and second treatment

Ethical considerations

This research was approved by two Ethical Review Boards: the Population Council Institutional Review Board, New York, and the Cambodian National Ethics Review Committee for Health Research (NECHR). All interviewees were read the consent statement and requested to sign or thumbprint when agreeing with the interview.

RESULTS

Sample characteristics

A total of 1,636 households were approached and had one adult member interviewed (Table 1). There was a considerable difference for the gender of these respondents with men representing between from 14.6% at iSHPS to 28.6% at HoHEF sites. The proportion of households with at least one sick household member was especially low for the CHEF at 57.6% versus 82-84% for the other configurations. The gender of sick persons tended to correlate with that of interviewees whereby sick persons were far more likely to be male at HoHEF, 29.7%, double the proportion found at iSHPS, 14%. While nearly all sick cases reportedly sought health care, the lowest figure was reported for CHEF, 92%. The average age of sick cases seeking health care was lowest at iSHPS and highest for CHEF. Children made up 22.6% of those seeking care at iSHPS, more than 5 percentage points higher than at control sites. The proportion of sick women of reproductive age making up the sample of care seekers was highest for CHEF and lowest for HoHEF.

Table 1: Main characteristics of the respondents for the HEF configurations

	HEF configuration			
	HoHEF N (%)	**CHEF N (%)**	**iSHPS N (%)**	**p-value (df = 2)**
Number of health centres	4	9	27	
Number of respondents	262	607	767	
Gender respondent				
Male	75 (28.6)	127 (20.9)	113 (14.7)	<0.001
Female	187 (71.4)	480 (79.1)	654 (85.3)	
Had ≥ 1 sick member	215 (82.1)	349 (57.6)	643(84.5)	<0.001
Total sick persons	414	486	1182	
Gender of sick person				
Male	123(29.7)	90 (18.5)	167 (14.1)	<0.001
Female	291 (70.3)	396 (81.5)	1015 (85.9)	
Was sick and sought care	411 (99.3)	448 (92.2)	1148 (97.1)	<0.001
Mean age of sick seeking care in years	26.3	29.0	22.8	
Of which				
children aged ≤ 5 yrs	71 (17.2)	76 (17.0)	259 (22.6)	<0.001
women of reproductive age	65 (15.8)	95 (21.2)	211 (18.4)	<0.001

HoHEF = hospital only HEF; **CHEF** = comprehensive HEF; **iSHPS** = integrated social health protection scheme

First treatment

When sick and seeking care, half the cases of iSHPS reportedly did so at health centres, considerably higher than the proportions observed at CHEF, 29%, and especially HoHEF, 8.3% (Table 2). The difference between initiating care seeking at health centres between iSHPS and CHEF patients was highly significant (p<0.001). The respective difference for care seeking at public hospitals was small, 7% and 10.5%, but still significant (p=0.02). This was not the case for the difference between HoHEF and iSHPS. The total proportion consulting first public health providers in iSHPS areas was 55.7% significantly higher (p<0.001) than the 39.5% observed at CHEF and 13.4% at HoHEF

(p<0.001 for comparison with iSHPS).

Sick cases from CHEF areas consulting public providers were significantly more likely to use their IDPoor card entitlements, 84.7%, than their iSHPS counterparts, 72.9% (p<0.001). The lowest use of IDPoor Card was at HoHEF, 50.9%. All those using their IDPoor card when consulting public health providers did not pay for their health care. On average CHEF cases resided the furthest from the health providers they consulted, 8.6km versus 4.1km at the other sites. This was especially the case for distance to the public hospital, private facilities and non-medical providers.

Table 2: Care seeking and associated costs at first provider (those who were sick)

	HoHEF N (%)	CHEF N (%)	iSHPS N (%)
Sought care at			
Health centre	34 (8.3)	130 (29.0)	559 (48.7)
Public hospital	21 (5.1)	47 (10.5)	80 (7.0)
Private facility	209 (50.8)	161 (36.0)	337 (29.3)
Non-medical	147 (35.8)	110 (24.6)	172 (15.0)
Total who went public	*55 (13.4)*	*177 (39.5)*	*639 (55.7)*
Use of IDPoor card			
Health centre	19 (55.8)	121 (93.0)	422 (75.4)
Hospital	9 (42.8)	29 (61.7)	40 (50.0)
Public facility	*28 (50.9)*	*150 (84.7)*	*466 (72.9)*
Distance to provider in km			
Health centre	1.7	2.9	3.1
Public hospital	18.5	30.2	16.4
Private facility	6.1	13	5.3
Non-medical	1.4	3.8	1.7
Average per facility	*4.2*	*8.6*	*4.1*
Direct medical cost in US$			
Health centre	1.7	0.5	0.08
Public hospital	27.4	25.0	16.7
Private facility	32.1	30.4	20.5
Non-medical	3.3	6.4	3.4
Average per patient	*19.1*	*15.1*	*7.7*
Direct non-medical cost in US$			
Health centre	0.3	0.9	0.3
Public hospital	4.7	11.1	5.4
Private facility	0.6	2.6	1.1
Non-medical	0.14	1.1	0.14
Average per patient	*0.6*	*2.6*	*0.9*
Average total cost in US$	**19.7**	**17.7**	**8.6**
Initiates care at public facilities	13.4	10.6	3.1
Initiates care at private facilities	20.6	22.5	15.5

The average direct medical cost for first treatment was lowest for those under the iSHPS, about half the amount observed at CHEF, and two and a half times less than at HoHEF. This low cost for iSHPS cases appears partly due to lower charges at public health facilities as well as at private facilities compared to control sites. The median direct medical cost for paying patients was US$0.25 at health centres in iSHPS sites versus US$0.5 in control sites. There were also considerable differences in such median costs for those

paying at hospitals: US$15 for such cases at iSHPS, compared with US$50 for CHEF and US$75 for HoHEF (data not shown).

Because of the longer distances to travel, direct non-medical costs for CHEF cases was considerable more, US$2.6, than for other HEF configurations, US$0.6-0.9.

The total cost for the first treatment amounted to US$8.6 for iSHPS cases, about half the amount spent at CHEF and much less than at HoHEF. Those initiating care seeking at public health providers spent less than the ones doing so in the private sector. The respective figure, however, was by far the lowest in the iSHPS sites, up to a third and a quarter of the amounts observed at other sites.

Table 3: Second treatment and associated costs

	HoHEF N (%)	CHEF N (%)	iSHPS N (%)
Went for 2nd treatment	**51 (12.4)**	**66 (14.7)**	**248 (21.6)**
Those who initiated care at public facility	7 (12.7)	32 (18.1)	146 (22.8)
at private provider	29 (13.9)	14 (8.7)	74 (22.0)
at non-medical provider	15 (10.2)	20 (18.2)	28 (16.3)
Sought care for 2nd treatment at			
Health centre	3 (5.9%)	15 (22.7)	72 (29.0)
Public hospital	6 (11.8)	9 (13.6)	28 (11.3)
Private facility	23 (45.1)	19 (28.8)	116 (46.8)
Non-Medical	19 (37.3)	23 (34.8)	32 (12.9)
Proportion going to a public facility	*(17.6)*	*(36.4)*	*(40.3)*
Direct medical cost in US$			
Health centre	0.50	0.01	0.23
Public hospital	16.9	9.5	3.6
Private facility	9.2	10.4	13.3
Non-Medical	2.7	1.8	3.3
Average per patient who sought 2nd treatment	*7.2*	*4.9*	*7.2*
Direct non-medical costs in US$			
Health centre	0.3	0.8	0.3
Public hospital	3.6	4.6	4.3
Private facility	0.9	1.2	1.0
Non-Medical	0.3	0.0	0.5
Average per patient who sought second treatment	*1.0*	*1.1*	*1.0*
Total cost 2nd treatment per patient who sought care in US$	8.2	6.0	8.2
Overall cost per patient who sought care in US$	**20.7**	**18.6**	**10.3**
Of which treatment costs (% of total)	19.9 (96.4)	15.9 (85.1)	9.3 (89.6)
Of which transport costs (% of total)	0.7 (3.6)	2.8 (14.9)	1.1 (10.4)

Second treatment

As seen in Table 3, 21.6% of iSHPS patients reportedly went for a second treatment compared to <15% of cases from the control sites (df = 2, p<0.001). Many of the iSHPS and CHEF went to public health providers, although at HoHEF and iSHPS sites most went to private qualified providers while at CHEF sites a considerable proportion went to non-medical providers.

Direct medical costs for the second treatment were lowest at CHEF sites, $4.9, while such

costs were similar at iSHPS and HoHEF, US$7.2. With similar amounts for average transport costs at the three sites, the average total costs for cases who sought a second treatment was lowest at CHEF sites, US$6.0, compared to US$8.2 at the other sites.

Overall costs

Overall costs associated with the illness episode were lowest for cases residing within iSHPS sites, US$10.3, and highest in areas where health centres were not included in the package, US$20.7. Such costs were US$18.0 at CHEF. For the latter, direct non-medical costs made up 14.9% of overall costs while this was only 3.6% for HoHEF. At iSHPS sites transport costs made up 10.4%.

DISCUSSION

It has been argued previously that multiple interventions may be required to improve access to health care because of the numerous barriers that poor patients encounter (Jacobs et al. 2012). As such, each additional intervention may assist in overcoming a specific access barrier. This argument appears reinforced by findings from this study, which indicated that 57% of HEFB residing in districts with iSHPS initiated care at public health facilities, higher than the 40% observed at Comprehensive HEF and much higher than the 13% for Hospital Only HEF. Care seeking for HEFB under the iSHPS was also associated with the lowest direct costs, the main objective of health equity funds.

Inclusion of health centres as primary-level health care facilities contributed greatly to initiating care seeking at public health facilities. This is shown by the fact that only 8% of sick cases in HoHEF initiated care at health centres compared with 29% at CHEF sites and 49% for iSHPS. The difference in care seeking at health centres between the latter two HEF configurations suggests that factors in addition to health centre inclusion are at play since the reported distance to the concerned facilities was similar at both sites and IDPoor card use was highest at CHEF health centres. Knowledge about entitlements associated with HEF was identified as an important factor to have beneficiaries effectively using associated services while the probability of consulting health centres has previously been found to be inversely correlated with distance (World Bank 2016, Jacobs and Price 2006).

It is likely that additional interventions in the iSHPS area contributed to the observed differences. The governance aspects of the SHPP focussed on increasing accountability of health providers towards the public through their direct engagement using existing structures such as Commune Councils and Health Centre Managements Committees. Because of these governance activities, health providers increasingly interact with the public and are thus better known to them. While Health Centre Management Committees should have been established at all such facilities in the country, external support likely improved their functioning as observed elsewhere (Ui et al. 2010). Such community engagement also aids in improving quality and delivery of health services (Molyneux et al. 2012, Berlan and Shiffman 2011). However, the governance interventions were only implemented at about two thirds of health centres suggesting that additional factors influenced the findings.

At iSHPS sites, the activities were also complemented by pay-for-performance and a voucher scheme to stimulate delivery of – mainly preventive- health services. As such primary-level health care facility staff were paid quarterly bonuses based on community feedback through quarterly client satisfaction surveys as well as service delivery frequency, which improved interaction of the health care providers with the community. This is important as preventive health services are largely delivered during outreach sessions, thereby bringing the health providers to the villages and requiring collaboration of community representatives with organising delivery of these services. While outreach sessions occur nationwide, the pay-for-performance scheme may have improved such collaboration to increase coverage of target populations. Hence these activities may have induced an additional degree of accountability amongst public health providers as well as increased familiarity amongst community members. Children were more represented amongst iSHPS cases seeking care than at control sites, which suggests increased familiarity. It is likely that the voucher scheme that targeted mothers and children also contributed to increased interactions between these population groups and public health care providers.

The fact that significantly more cases in CHEF areas initiated care at the public hospital compared with iSHPS cases suggest that perceived quality of care may also affect choice of public health provider. This is underscored

by the fact that cases in CHEF areas travelled nearly double the distance, 30.2km, than those residing in iSHPS, 16.4km, and paid more for the travel: US$11.1 versus US$5.4 respectively. It is the more remarkable as transport is not reimbursed for HEF beneficiaries who bypass the health centre. Contrary, quality of care at iSHPS health centres may have been perceived as good.

Excluding health centres from the HEF benefit package may have wider ramifications on use of hospital services as indicated by the fact that only 5% of beneficiaries from such areas initiated care at the hospital even though the facility represented the only source of free care. Unlike health centres, contact with the hospital and its staff members is rare due to the low incidence of hospitalisation whereby HEF beneficiaries may refrain from accessing such facilities due to unfamiliarity with staff members. It is, however, commendable to see that at HoHEF areas 56% of cases consulting health centres received fee waivers despite the fact that the facility is not reimbursed by the HEF. The tendency of health centres to provide such fee waivers, contrary to the practices by public hospitals, has been documented earlier (Wilkinson et al. 2001).

Initiating care at public health facilities greatly reduced the total cost for the first treatment, in line with the HEF objectives. Those consulting public health providers for the first treatment spent on average US$3.1 (vs. US$15.5 at private providers) under the iSPHS, US$10.6 (vs. US$22.50) with CHEF and US$13.4 (vs. US$20.6) for HoHEF. iSHPS cases tended to initiate care seeking at health centres but a quarter of them did not use their IDPoor while only half of them consulting hospitals did so, significantly fewer than CHEF cases. User fees at iSHPS facilities, however, appeared much lower than at control sites. It could be_that public health facility fees were lower at iSHPS because of the higher proportion of children for whom fees are set at rates lower than for adults. The average age of patients was also lowest at iSHPS sites. Cambodian women are more likely to go for cheaper treatment options than men (Jacobs et al. 2016) and they were also significantly more represented in the iSHPS sample suggesting that the user fees at iSHPS facilities may have influenced care seeking decisions.

The fees charged by qualified private providers were also lowest at iSHPS but cases initiating care in the private sector had five times more total costs than their counterparts who went to public providers. This magnitude was less for such cases in control sites although their total cost for the first treatment was on average more than US$20. The lower prices observed at iSHPS sites amongst private providers may result from the governance activities of the iSHPS as “dual practice” is common amongst public health providers (Meessen et al. 2011b) and because of increased exposure to the community it is likely that they are more inclined to align their fees with those prevailing at the public sector. It has been observed earlier (Jacobs and Price 2004) that the private health sector in rural areas tend to adjust their fees to the prices at the public sector so low fees in the public sector may benefit the wider population.

A substantial proportion of iSHPS cases, 21.6%, went for a second treatment for the concerned illness episode, significantly more than patients from the control sites. This may be due to several factors. First, since they mainly consulted health centres, quality of care at such facilities may be lower than at other facilities. However, a similar proportion of iSHPS cases, 22%, who initially consulted private providers went also for a second treatment. Another explanation may be that people residing in iSHPS areas have a better health literacy than those from control sites due to better health education programmes in that area and seek a second treatment when symptoms persist. It may also be that iSHPS patients were more able to afford a second treatment because they spent much less during initial treatment than their counterparts at control sites.

The majority of patients at all sites went to private providers for their second treatment. At

control sites, more than a third went to non-medical providers. Far fewer non-medical providers were consulted at iSHPS sites, also during first treatment. Many patients from iSHPS and CHEF sites who went for a second treatment did so at public providers, 36-40%, compared to 18% only for cases of HoHEF. In addition to the remark above, these figures suggest that inclusion of health centres in the HEF package may be necessary to stimulate health care seeking at all levels of public health providers.

Total cost for the second treatment ranged from US$6.0 to US$8.2 per patient and was cheapest at CHEF sites. Due to the relatively low proportion of patients who went for a second treatment at control sites combined with high total costs for the initial treatment, the incurred total costs of the second treatment did not contribute much to their overall costs for the concerned illness episode, about US$1.0. In contrast, total cost for the second treatment added 20% to the overall costs for patients at iSHPS sites.

Patients of the iSHPS incurred the lowest overall costs, US$10.3; 81% and 101% lower than the amounts observed at CHEF and HoHEF sites respectively. Direct medical costs made up the largest part of these amounts, ranging from 85% at CHEF to 96% at HoHEF. The low expenses on transport by the latter may suggest that their health seeking may also have been influenced by the cost of transport whereby they sought mainly care nearby as a cost saving measure (Jacobs and Price 2004).

The iSHPS arrangements clearly have most favourable results in terms of care seeking and OOPE for HEFB. The iSHPS emphasis on governance and quality improvement are in line with national policies, although its use of pay-for-performance and vouchers for underused services do add to programmatic costs. An economic evaluation of the iSHPS compared to stand-alone HEF would therefore add valuable information concerning the approach's financial feasibility.

Limitations

The study found interesting associations between the iSHPS approach, health seeking behaviour outcomes and associated costs, but it is not able to determine whether iSHPS caused these changes since it concerns a cross-sectional survey. A randomized cluster controlled study, supported by qualitative research, would provide stronger evidence. Respondent characteristics across the sites were not homogeneous. For example, there were more men in the control samples than in iSHPS sample. While it has been found earlier that women may opt for cheaper treatment (Jacobs et al. 2016), women of reproductive age were more represented at CHEF. Distances to health providers for cases from CHEF sites differed from those at other sites, which may have influenced care seeking although distance to health centres was similar for CHEF and iSHPS. Finally, we did not account for differences in case mix whereby disease patterns amongst concerned patients of the three groups may have differed.

In summary

Arrangements to supplement HEF such as the iSHPS scheme under the SHPP that employ additional interventions like pay-for-performance, vouchers for underutilised services, quality improvement and focus on improved governance, appear to be better than stand-alone HEF in attracting sick HEFB to public health facilities and lowering their direct costs associated with health care seeking. Compared to other HEF arrangements, iSHPS saw 56% of HEFB initiate care seeking at public health facilities, much more than 13-40% at control sites. Inclusion of health centres in HEF arrangements appears instrumental to improve care seeking at all levels of public health facilities by HEFB. For unknown reasons, significantly more iSHPS cases went for a second treatment than at control sites. The overall costs associated with care seeking at iSHPS sites was US$10.3; 81% to 101% lower than such costs observed at control sites. Driving factors for these lower costs in comparison with control sites appeared the high use of primary health care facilities, lower user

fees at public health facilities as well as at private facilities, and reduced tendency to seek care at non-medical providers.

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