

**Public & Non-profit Partnership for Universal Health Coverage in Rural Nepal:
Assessment of Dhulikhel Hospital Outreach Centers**

Roshan Khatri

A thesis

submitted in partial fulfilment of the
requirements for the degree of

Master of Public Health

University of Washington

2019

Committee:

Stephen Gloyd

James Pfeiffer

Hao Li

Roshan Mahato

Program Authorized to Offer Degree:

Global Health

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Roshan Khatri

University of Washington

Abstract

Public & Non-profit Partnership for Universal Health Coverage in Rural Nepal: Assessment of Dhulikhel Hospital Outreach Centers

Roshan Khatri

Chair of the Supervisory Committee:

Stephen Gloyd

Department of Global Health

The Government of Nepal aims to achieve its targets of Universal Health Coverage and Primary Health Care through the engagement of public and private health sectors. The private sector occupies a major share of the country's health care, but its contributions has not been fully analyzed. A mixed methods study to analyze Dhulikhel hospital out-reach centers, a not-for-profit private health care provider and their collaboration with the Primary Health Care Centers of the public sector was performed in rural Nepal. The study showed that these outreach centers are contributing to improve access to quality care for the rural population but are underutilized. The patient's preference of a particular service center, private or public, was not determined by the cost and they perceived quality of care at both centers. The existing level of communication and collaboration between these sectors were inadequate demonstrating gaps between policies and practices. Platforms for better communication and coordination of services need to be established. Private sector should focus on complementing and filling these gaps, while public sector formulates and implement practical policies to diversify resources to serve the population in need.

Introduction

The constitution of Nepal ensures every citizen's right to quality health care and its national health policies aim towards achieving UHC and PHC through engagements of public and private health sectors.

Nepal has made substantial improvements in health care in recent decades. The average life expectancy has risen to more than 70 years from 54 in last 25 years (1). Nepal has been able to eliminate maternal and neonatal tetanus, remain polio free and be the first country in South-East Asia Region to eliminate trachoma as a public health problem (2–4). Provisions for primary health care, advanced diagnostic and therapeutic services have been more accessible evident from 86 percentage Antenatal Care (ANC) coverage (at least one visit) in 2016 and 90 percentage Diphtheria Tetanus and Polio three (DTP3) coverage in 2017(5,6). These achievements, however, are still far from adequate.

In spite of these achievements, more than one-third of children under five in Nepal, mostly rural, suffer from chronic malnutrition (7). Out-of-pocket payment still continues to be more than 60 percent of expenditure on health which forced 3 million people (almost 10% of total population) to catastrophic health related expenditure in 2014-15 alone (8). The Nepal government's National Health Insurance Plan in its third year, is yet to provide a nationwide coverage and has failed to gain people's trust (9–11).

The private health sector in Nepal has been a booming industry, which ranges from major private hospitals, private clinics, to private shops, including not-for-profit centers run by Non-Governmental Organizations (NGOs), community, cooperatives, and philanthropic organizations (5,12). There is limited published information on Nepal's private health sector, and many private actors operate outside the national regulatory framework, often on an informal basis (13–15).

According to the Department of Health Services (DoHS) annual report 2016/17, the private sector operated two thirds of hospital beds and employed 60 percentage of all doctors in Nepal (5). Most health care center visits occurred at private clinics and drug shops. Over 63% of people with acute illness in 2010 visited a private institution, out of which 27% of consultations were at private clinic and 25% at the drug store (16).

Dhulikhel Hospital (DH) an independent, not-for-profit, non-government health service provider operates 21 Out Reach Centers (ORCs) through its Department of Community programs to provide round the clock health services in rural Nepal. Their aim is to address public health issues with holistic and innovative health interventions and conduct community programs, through partnership with other health facilities in their region (17). To assess the contribution of these ORCs, we compared them with their public health sectors counterpart PHCCs.

There are two hundred Primary Health Care Centers (PHCCs)/Health centers between the health posts and district level hospitals in the public health care hierarchy and are the first point of contact between a Medical Officer and patients in public sector (5).

The PHCCs have been providing all preventative services, delivery care, curative services and essential drugs for free since the nationwide implementation of Free Health Care Policy in 2009 (18). 7.8% of all institutional deliveries in 2015/16 were conducted at the PHCCs (5).

In this study we aimed to assess the extent to which DH-ORCs contribute to overall primary health care in the regions in which it operates- as a basis to design an implementation strategy for future collaboration.

Methodology

Study Design and Setting

A mixed methods study using semi-structured interviews and quantitative observational data, institutional and national reports was conducted. Because of the resource constraints we performed a purposeful sampling to identify five ORCs and corresponding five nearest PHCCs via standard travel based on the feasibility of access, availability of participants for interview and organizational data for analysis. Table 1. Lists the study sites for both Dhulikhel Hospital ORCs and the Ministry of Health PHCCs

Table 1- Study sites.

District	ORCs	PHCCs
Kavrepalanchowk District	Baluwa	Panchkhal PHC
	Dhungkharkha	Khopashi PHC
Sindhupalchok District	Manekharka	Melamchi PHC
	Hindi	Barabise PHC
Dhading District	Dhading	Gajuri PHC

We collected primary data from our visits to the ORCs and PHCCs using a pre-designed checklist, questionnaire survey and on-site patient registries. In addition, compiled annual data for individual ORCs from ORCs central data base was made available by the Department of Community Programs at DH. Individual PHCC facility level data was not available from the MOH. Various district and national level data of a year between April 2017 till April 2018 (coinciding with the first and last day of official Nepali *Vikram Samvat* calendar) were obtained from the DoHS data base (19).

During the site visits, we conducted 30 semi-structured interviews with health care providers (medical officer and senior most staff) and patients. Ten health care providers who had worked for at least a year at the center were included in the interview. Hindi ORC did not have a medical officer, so instead two health care providers were included in the interview. In case the medical officer were the senior staff, the next most senior staff were included in the interview. The first patient to arrive at the center for the day was interviewed totaling ten patients interviewed. Additional four interviews were conducted with two leadership personnel based on their familiarity with operation modality of ORCs and PHCCS and their decision-making capacities. ORC leaderships were interviewed in DH, while PHCC leadership were interviewed at District health office of Dhulikhel and Namobuddha municipality in Kavre district. Table 2 summarizes

the respondents. Altogether four Ethical approvals were obtained from IRB committees in Dhulikhel Hospital and University of Washington.

Table 2: Selection of interview participants.

Group	Characteristics	ORCs	PHCCs
Health Care Providers (HCP)	Medical officer and the senior staff	10	10
Patients	First patient who received medical care at the center that day	5	5
Leadership	Decision making role, knowledge about ORCs and PHCCs	2	2

Separate questionnaires were designed for each group (see Appendix). The piloting of the questionnaire and feasibility of the study design was conducted at Bahunepati ORC and Melamchi PHCC in July 2018. Themes of the interviews included access to care, public health issues, services provided, quality of care, cost of care, and communication and collaborations. After modifications, final interviews were conducted by three interviewers between January to March of 2019. Five interviews were conducted in English, twenty-eight in Nepali and for one interview the respondent did not consent to speak on record hence notes were taken. Each interview lasted from 30 minutes to an hour.

Data analysis

The interviews were translated to English and transcribed verbatim. The transcribed interviews were imported to ATLAS.ti software and was analyzed based on content, categories were developed by thematic coding framework. Codes were generated from the repeated data, and emerging concepts and norms from the codes were noted. Quantitative data was uploaded via Excel spreadsheet and analyzed.

Results

The authors present the quantitative findings followed by respondents' perceptions of the same theme, with occasional illustrative quotes.

Access to care

Access to care was measured by estimated hours of travel from homes to the ORCs or PHCCs and next nearest health facility. We also calculated the distance between these centers and to DH for access to referral.

Leadership at the ORCs mentioned that the establishment of ORCs were made on-demand basis after the leadership had established the needs. Efforts were made to establish the outreach clinics

at places far from the preexisting public and other health centers to avoid duplication and maximize spread of services.

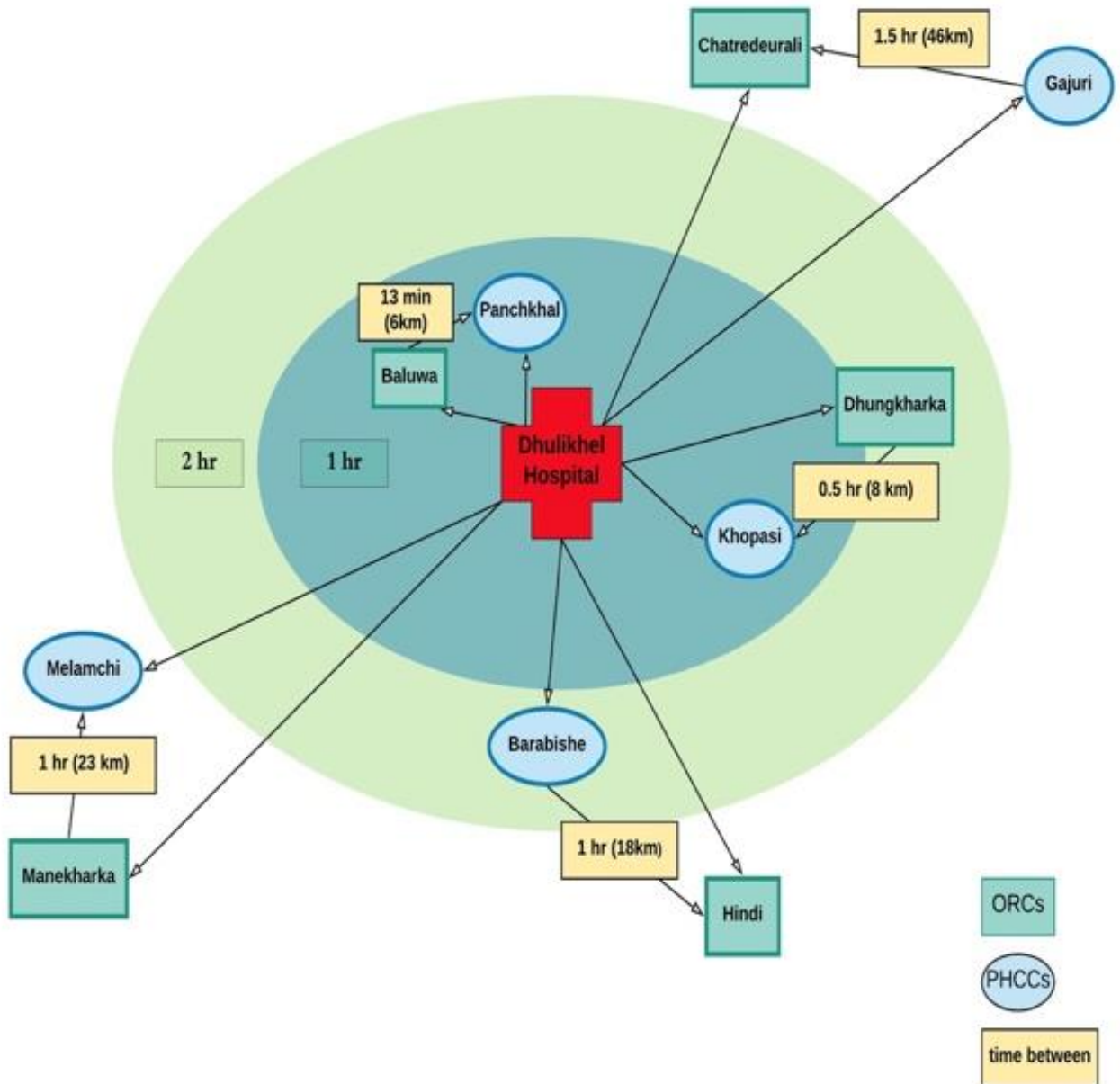


Diagram 1: Estimated time and distances between the study sites and DH.

All distances and times are estimates of most preferred road via standard means of travel, derived from Google maps, 2019.

Four out of five patients interviewed at ORCs said that they live within a 15 minutes walking distance from the center while the fifth patient said it took two hours walk to the ORC. The patients interviewed at PHCCs said that they on an average had walked at least 45 minutes to reach the center. All ten patients at ORCs and PHCCs stated that the next nearest health facility was at least an hour away.

For the access to referral the sites averaged 1.5hrs (40-50 kms) drive away from DH and were at average of 45 minutes distance from each other. Baluwa ORC and Panchkhal PHCC, the closest sites were 13 minutes apart and Chatreaurali ORC and Gajuri PHC, the furthest were and 1.5hrs (46 km) apart from each other.

Both leaderships and health care providers in ORCs and PHCCs noted that limited road connections and bad transportation services were major barriers to access health care in these regions.

Staffing

On an average, five staff operated individual ORCs while PHCCs had 16 staff per center. Concern over inadequate manpower was raised in only Manekharka ORC among all ORCs and PHCCs. Substantial variability was observed at both the ORCs and PHCCs in staffing. Each ORC had one medical officer on annual contract except Hindi ORC. All five PHCCs had one permanent doctor each and 12 additional contract doctors (under compulsory two years placement for medical education under government quota).

All three service providers and patient interviewed at Manekharka ORC stated that number of service providers were inadequate compared to their workload. The patient stated:

"I work in a nearby school. I feel I work hard, but looking at the staff of this hospital and the work they do, sometimes I pity them. They have to provide service at odd hours and are always busy. There is only one doctor, and when he goes on leave, there is no doctor. I am confident that the service will be even better if there will be additional staff.-ORC_Patient_3

Services Provided

Outpatient department (OPD) and emergency services

All ten ORCs and PHCCs provided outpatient services seven hours a day and six days a week and 24-hour emergency services. Table 3 illustrates the number of total patients who visited the ORCs in the study year, along with the total number of patients in their districts. A total of 16,246 patients attended the five ORCs in the year 2016/17, with average of 13 patients per day (range of 2 - 40) and among them 604 patients were of emergency cases.

Manekharka and Hindi ORCs in Sindupalchowk district served three percentage of total OPD patients of the district while other centers had less than one percentage share of the districts total OPD visits. These numbers are very less compared to the estimated share of 12, 14 and 10 percent of OPD patients by the DH hospital management in Kavrepalanchowk, Sindhupalchok

and Dhading districts respectively. The DH leadership was aware of the low volume of patients attending some of the outreach clinics as illustrated by a leader of DH:

“...it may be expensive to support 4 staff and only see 5 to 10 patients per day but 5-10 of them are receiving care- it is significant- DH_Leadership_1

Table 3: ORCs catchment population and estimated share in total OPD patients in the district (2016/17)

ORCs	District	Total OPD patients		ORCs share (%)	ORCs estimated share (%***)
		District*	ORCs**		
Baluwa	Kavrepalanchowk	546,271	2,665	<1%	12
Dhungkharka			1,888		
Manekharka	Sindupalchowk	278,682	9,195	3%	14
Hindi			407		
Dhading	Dhading	267,589	2,091	<1%	10

* DoHS 2016/17 *** ORC 2016/17 ***See Table 1 appendix 1 for calculation

Disease patterns seen at sample ORCs

Respiratory tract illnesses, problems of ear, nose and throat, other communicable illness, skin diseases and fall injuries/fractures, in descending order accounted for top five causes of OPD visits in the ORCs. The five patients interviewed at the ORCs had received treatment for common cold (two), gastritis, PV discharge and a follow-up case on medication. The service providers at the PHCC reported of similar pattern of illness seen at the PHCCs, while written records of the illness were not available. The PHCC patients interviewed were there for anti-rabies vaccination, post abortion care, ANC checkup, blood pressure evaluation and wound dressing. The health care providers of both ORCs and PHCCs, mentioned the rise in number non-communicable chronic illness, like hypertension and diabetes in recent years. They were the eighth common cause of OPD visit at the ORCs.

ANC and Delivery

All four ORCs had rare ANC and delivery cases except Manekharka with 388 cases of ANC visits with 30 deliveries in the study year. Pregnant mothers had to pay for ANC and delivery services in all ORCs as government's conditional cash transfer policies were not available. Health care providers at Manekharka ORC mentioned that attempts to get Manekharka ORC accredited as a birthing center with provisions of free ANC and cash incentives for institutional deliveries had been made:

“We have not yet received permission for birthing center though we have asked the district health office many times.”- Manekharka_ORC_HCP_2

Medicines

All ORCs and PHCCS had pharmacy units. All five ORCs had more than 400 drugs for purchase while the PHCCs, except for Khopasi had only 70 essential drugs for free distribution supplied by government. The ORC's inventory was restocked on need basis by DH central supply while Khopasi PHCC maintained their additional subset of drugs (for purchase) by the PHCC management committee.

The service providers in ORCs reported that they were satisfied with both variety and supply mechanism of their pharmacy, while eight out of ten service providers in PHCCs mentioned that lack of wider range of drugs was a major issue. No pharmacists were working in both ORCs and PHCCs, so the nursing or medical staff had to dispense medications themselves.

Six out of ten patients in both ORCs and PHCCs had or were visiting ORCs to purchase medicines, while four of them had never received any kind of free medications from PHCCs. One patient illustrated the perceived advantage of the ORC pharmacy:

“Today, I came here just to buy medicines. I have come here many times because I have problems with my kidneys and have to take medicines regularly. This hospital has brought medicines regularly- even only for me.”- ORC_Patient_2

Specialty Camps and Physician visits

As stated by DH leadership, DH organized “regular” and “on-demand” specialty camps and physician visits in their ORCs. The number of patients attending ORCs were higher during camps with average of 88 patients per specialty camp (range 5-184) and 17 patients per physician's visit.

The PHCC leadership and health care providers mentioned that camps of similar nature were organized at the PHCCS, and often in collaboration with DH. The camps were not in any particular schedule, organized in collaboration with multiple different partners and no further accounts on number of patients, types or specialty of camps were available. The PHCC leadership on importance of these camps:

“In those remote areas, where there is no direct and everyday access to health organization, we have to take mobile clinics and immunization clinic. These camps have given them some relief but still not 100%.”- PHCC_Leadership_2

Other services

Four of five ORCs (except Hindi) and all PHCCs provided basic laboratory services. A total of 559 patients received laboratory services from the four ORCs in the study year. None of the ten centers had dentist or dental assistants. Manekharka and Baluwa ORCs had dental setup and one health care provider in Baluwa ORC had been trained to provide basic dental care. These ORCs also conducted community engagement programs including community health programs, educational programs, school health programs and microfinance schemes.

Sixteen out of total 30 patients and health care providers raised concerns on the unavailability of X-ray services. Only two PHCCs had a functional X-ray service, despite the machines being available in all ten ORCs and PHCCs. As a result, the majority of trauma cases, including fall injuries, had to be referred for diagnostic X-rays to other centers.

The service providers at ORCs indicated lack of proper power supply and transmitter was preventing them from using their X-ray machines while PHCC blamed it for the unavailability of X-ray technicians. None of the five ORCs had ambulance services and only two PHCCs, Gajuri and Melamchi did. 14 out of 30 patients and health care providers expressed the need of an in-house ambulance for patient referral. One patient at an ORC expressed the need of ambulance as:

“There is no ambulance in our whole village. We have to rely on private vehicles, we sometimes use local tipper (dump trucks). Sometimes they are taken from here to highway even in stretcher, and families carry them on their back.” - ORC_patient_5

Quality of Care

All patients, service providers and leadership interviewed agreed that ORCs were contributing towards access of quality care to the public.

The health care providers at ORCs and PHCCs were asked to reflect on the service they were providing at a scale of 1-10, 1 being the worst. The ORC health care workers averaged their service at a score of eight (range 6-9) while the PHCC health care workers averaged at six (range 5-10).

Patients at both ORCs and PHCCs indicated satisfaction with services they received. They were comfortable with the waiting times (<10 minutes), time given and behavior of the service providers and overall quality of care. There was no substantial difference in the waiting times and time spent with the service provider in both ORCs and PHCCs.

DH leadership mentioned that they have ORC evaluation committee, which evaluates ORC's performance annually, though we were not able to access their reports. They also mentioned that even though the number of patients attending the clinics is important evaluation parameter but based on the numerous requests they receive to establish new ORCs at newer locations, their DH's ORC model of rural health care has been successful.

DH leadership identified their smaller size provided them for better and regular supervision and management meanwhile, retaining their technical manpower, sustainability and upgrading the services of the ORCs were their biggest challenges.

Cost of care

The patients interviewed at the ORCs reported that they had spent on an average of NRs 115.00 or 1 USD (1 USD = NRs 110.00) for medical care and medicine purchase while the patients at PHCCs stated that they did not have to pay anything for the services. All of the ten patients in both centers mentioned that the cost incurred at these centers, on that day nor in the past has been a hindrance for them to access care.

The five ORCs generated an approximate income of 37,200 USD in 2016/17 while the expenditures were 173,000USD. DH on an average spent 11USD per year to provide service to one patient in these five ORCs, while it generated an average income of 2USD per patient per year. (Total patients in 2016/17- 16,246).

The top three sources of income in descending order were sales of medicine, laboratory charges, and patient registration while expenditures, were salary of staff, visit day expenses and miscellaneous. These estimates do not include any donations/contributions received or expenses of major maintenance and construction.

DH leadership and ORC health care providers stated that they provided charity service and free medicines to the patients unable to pay. Charity amounts of 6 and 4USD were observed in 2016/17 at Hindi and Dhungharka ORC respectively. No charity amount was identified by the authors in other ORCs.

Reported Communication and Collaboration between ORCs and PHCCs

The leadership and health care providers in both ORCs and PHCCs identified inconsistent and non-uniform communication and collaboration. They agreed that the current level of information exchange was insufficient compared to the necessity. Table 4 summarizes the response of service providers when asked about the corresponding centers.

Table 4: Service providers when asked about other corresponding center.

	ORCs	PHCCs
Know someone	6	0
Interacted in professional capacity	5	2
Collaborated in any crisis/emergency situation	3	1
Aware of medicines available	7	0
Participated in any joint training/program	4	3

The reported collaborations were in form of reporting, monitoring and technical exchange. For example, DH provided technical assistance in monthly mental health camp in Melamchi PHCC while experts from public sector conducted national programs of immunization through camps at Chatreaurali and Manekharka ORC. Family planning services, contraceptive devices were supplied by the government and distributed by ORCs. One service provider in a PHCC mentioned about their limited exchange of communication as:

“We do refer our cases to DH and though we do not have direct communication, but we know about them through Facebook and social media. We interact with them via our ambulance driver or patient’s families.”-PHCC_HCP_3

All four DH and public sector leaders agreed that district health offices, were not included in the decision making for establishment nor were involved in later performance evaluations. They also agreed the communication, if any, is limited to occasional informal talks.

None of the public health leadership interviewed had ever visited any of the ORCs, none of the health care providers in PHCC were aware of medicines distributed by the ORCs.

Referrals and cross-referrals

Referrals were noted to be an important aspect of the overall health system for both ORCs and PHCCs. All ORCs had a uniform copied referral form and a total of 156 patients were referred from the five ORCs in 2016/17. PHCCs did not have any separate form or uniform documentation.

Cross referrals between ORCs and PHCCs occurred under special circumstances such as ORCs sent patients requiring anti-rabies vaccination or tuberculosis patients to PHCCs for diagnosis and free medication.

DH was the nearest tertiary center and the first option for the three ORCs (Baluwa, Hindi and Manekharka) and three PHCCs (Panchkhal, Barabishe and Melamchi). Health care providers of these three PHCCs stated that they would benefit from coordination in referral and they have contacted someone in DH on personal basis to inquire and facilitate their referred cases in the past.

Discussion

Our evaluation found that both the ORC and the PHCCs were contributing towards improved access to and quality of care. Rates of service utilization rates at the ORCs were lower than in PHCCs, and utilization was reported to be determined by physical access to care and the scope of services provided. Most respondents reported limited exchange of communication and coordination between ORCs and PHCCs.

The average time travelled by the patients at PHCCs of 45 minutes, nearly three times more than of ORCs in our study might be attributed to the specificity of the services sought- ANC care,

anti-rabies vaccination at the PHCC. A study among women in rural India showed that their willingness to travel to a particular service center was determined by their faith in the efficacy of the treatment and academic qualification of the service provider working there, which was not applicable in our study because of the equivalent levels of academic qualification of service providers in both centers (20).

A limiting factor for service center preference was reported as availability of services in those centers. Since only two PHCCs in our study had a functional X-ray service, trauma patients requiring a diagnostic X-ray had to be referred or self-referred themselves to other centers. The specific number of patients who had X-rays taken or difference the availabilities made in the number of patients visiting the center could not be ascertained. Very ill patients or patients with perception of being too ill said they chose to jump the ORCs or PHCCs for tertiary centers like DH or other hospitals in Kathmandu. Availability of free or services with incentives like vaccination, ANC care, delivery services, and free family planning services also appeared to influence the choice of facility. Our patient sample was aware of which centers, all PHCCs and two ORCs, that provided free family planning services on a particular day of the month and visited those centers.

Access to higher levels of medical care, availability of specialty drugs, and ambulance availability for transportation to a referral hospital were considered important variables for overall health care by the respondents. Nepal's difficult terrain and lack of transportation still serves as a challenge.

Studies done on preference of health care facility in Nepal have shown financial and physical accessibility, adequacy of resources/services and health-care delivery to determine the people's choice of service center. (16,21) The same studies also show that rural and poor population, residing in mountain or hilly regions seek health care services in public health care centers or private pharmacies while the urban population are more likely to seek services in hospitals and private clinics.

In our study, patients said they preferred the nearest service providers for primary health care irrespective of the costs. There was no evidence pointing towards preference of private or non-private to one another. Out-of-pocket costs incurred for care in these primary level care centers did not appear to be significant in decision-making. The out-of-pocket cost incurred by an average patient per visit at the ORC in our study was lower than the WHO estimate of 6.83 USD unit cost for patient services (95%) at health center level in Nepal (22). Comparative studies done in Vietnam and India have also shown that the cost incurred at these centers were not the major determinants of choice of a service center. These studies also show that there is no difference in cost of care neither the superiority of service provided or perceived quality of care between private and public health sectors (20,23–25).

Our study also identified irregular, infrequent levels of exchange of communication and coordination between both service providers and leadership of ORCs and PHCCs. Seventy percent of all respondent health care workers denied of knowing or having worked with health care provider in other sector. Government MOH leadership identified lack collaborative programs, instructive policies and budget as the barrier for collaboration and communication.

This signifies a gap between existing policies and practice. The importance of private sector to achieve health for all has been realized in all national health policies since 1990 and all health sector strategies formulated since then urge for collaborative efforts. However, service providers and leadership at district and implementation level reported of not having definitive programs to do so. The need of a regular and constantly evolving partnership based on transparent exchanges of communication for successful public and private partnership in Nepal, has been highlighted by Citrin et al(13).

The respondents identified frequent changes in personnel working at the public sector at both central and grass root levels, difference in operating system of the two sectors, difference in how they collected their data, and their different reporting systems, as other major causes of the observed gap in communication and collaboration.

The authors were not able to find any comparative studies of similar nature in health sector of Nepal. It has been universally realized that private sector plays a significant role in health care system, and health care goals will be difficult to achieve without their active engagement (26–28).

The role of private sector in Nepal will likely increase as more and more population climb out of poverty to higher incomes and education level continues to improve(29). The steep rise in internal migration in major cities like Kathmandu, Pokhara and Chitwan have paved for development of private sector as large number of poor cumulate to provide sufficient market.

Nepal still has a limited supply of technical manpower, most of which are concentrated in the major cities. This vacuum is often filled by informal practitioners, traditional healers and over the counter sales of medicines by untrained or poorly trained medical store personnel.

However, the importance of public sector will always remain for services of public health nature like immunization, family planning. Study done on provision of government services to the poor of Nepal and Bangladesh showed that public provision of delivery services protected poor against increased wealth-related inequity in service use (30).

The challenge of maximizing coverage and quality while minimizing the risks associated with these two sectors, often with competing goals is colossal for Nepal, and requires effective planning and interactions between leaderships at all levels.

This study comes when the changes from central to the three tiered federal system, local governance and budgetary allocation is ongoing in Nepal. Timely intervention and active participation by both DH-ORC and PHCC leadership in policy making, designing of programs and allocation of budget at local level is not only feasible but could be an example for all other regions of the country.

Limitations:

Purposeful sampling was done which limits the representativeness of our study sites. We were not able to obtain individual organizational level data from the PHCCs for better comparison. Instead we had to use the district level or national data. The small sample size of patients interviewed, limited variables used for comparison and reliance on self-reporting for some data

also limit our study. Interviewees when interviewed at the premises of a particular service center might have been reluctant on their negative responses towards that center. Limitation of not-for-profit private sector to DH-ORC model might not be the large heterogeneous private sectors in Nepal and beyond.

Recommendation

DH-ORCs and similar private sectors should focus more on complementing, filling the gaps in public health sector rather than trying to compete for the same market. The strength of the public sector is determined by the extensiveness of its care package and in case of Nepal, free medical care at PHCCs, free supply of essential drugs, ANC and delivery care with cash incentives, free immunization services, and now the national health insurance policies will see of more expansion to the array of services (31).

ORCs and not-for-profits have important advantage in terms of its small size, flexibility, accountability, motivation, better ability to record, provide better incentives for staff, and in some settings, managerial capacity (32). The ORCs model of pharmacy which improved people's access to more than 400 drugs even though they were for purchase, complemented the 70 free drugs at public sectors, and was highly regarded by the public and service providers alike.

The small fee for service model of DH-ORC relies on external funding and support from central DH to survive. This reliance reduces their further expansion, or major improvements. Though not demonstrated in our study these costs can be a potential source of barrier for the very poor population.

ORCs can also increase efforts towards building up communication with other nearby health centers through their regular specialty camps, consultant physician visits. Sharing of calendars about such camps with PHCCs could allow for pooling of cases from the PHCCs and referring them on particular dates. The central DH can also act as a center for experts and resources to all centers in its vicinity. DH can also extend its referral mechanisms to include the PHCCs, which will not only facilitate the patients transfer, ease of follow-up but create a hierarchy reducing the trend of patients to self-refer to the tertiary higher care centers. This reduction will allow DH to invest more time and resources in specialized care, while primary care services are dealt at ORC or PHCC levels.

It is the public health sectors responsibility to gather and organize a cumulative effort towards primary health care. The public sector and its leadership has to realize private sector as a diverse complementary group, often guided by market forces, incentives, political and economic leverage therefore, the public sector should take the lead with their wider range of policy levers at their disposal.

The PHCCs should create platforms for better communication and coordination of services. This allows to avoid duplications, better monitoring and equitable distribution of limited resources. Many possibilities to enhance the existing communication and coordination were suggested by

the respondents in this study like joint monitoring, exchange of technical expertise, recording and reporting.

Manekharaka ORC was exception to all generalization of the ORCs. It had the highest rates of service utilization in the OPD, during specialty camps. This can be partially attributed, if not all, to the location of ORC and its distance from other centers. Therefore, selection of sites is an important consideration in establishment of new centers. Manekharka ORC also had exceptional number of ANC and delivery cases even though the patients had to pay for the service which otherwise is provided with conditional cash incentives at the public sector. DH and public leadership should take a note of the high number of patients and should work towards certifying this center as a birthing center and include in national incentive programs.

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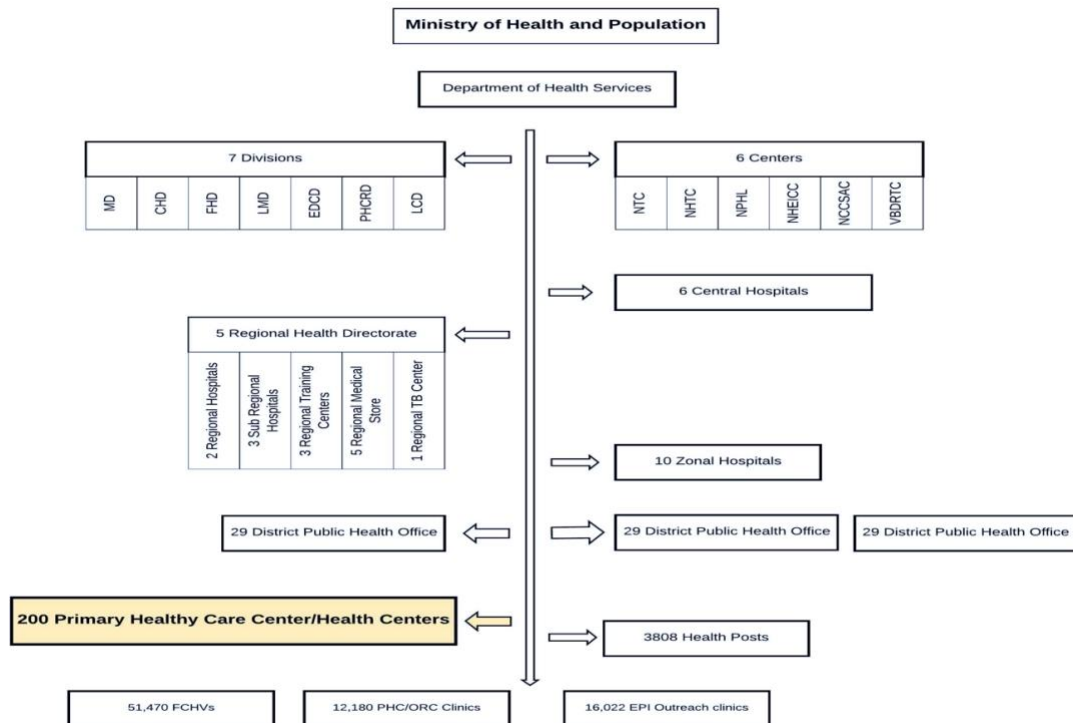
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Appendix



Source: DoHS 2017/18

Diagram 1- Organogram of Department of Health Services of Nepal

District	ORCs	ORCs Catchment Population	Total	District Population	ORCs identified share %
Kavre	Baluwa	33,745	49,242	397,518	12
	Dhungkharka	15,497			
Sindupalchowk	Manekharka	17,309	41,680	293,180	14
	Hindi	24,371			

Dhading	Chatredeurali	33,693	33,693	349,827	10
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Table 1. **ORCs estimated catchment population identified by DH 2016/17**