HNP DISCUSSION PAPER

Contracting and Providing Basic Health Care Services in Honduras: A Comparison of Traditional and Alternative Service Delivery Models

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Health Nutrition and Population (HNP) Discussion Paper

Contracting and Providing Basic Health Care Services in Honduras: A Comparison of Traditional and Alternative Service Delivery Models

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Abstract: This study uses data from health facility and patient exit surveys carried out in 2006 in Honduras to examine the characteristics of two basic health care provision models: a traditional Ministry of Health (MOH) public health care one versus a community based one also known as "alternative" or "public-social". We compare these models based on access, quality, costs, productivity, and management autonomy. Employing non-parametric tests as well as a probit model, we find that there are significant differences between these two models in terms of quality, management autonomy, and patient's willingness to return, in favor of the alternative model. While the alternative model has higher unit costs for drugs, it also has higher labor productivity. The fact that alternative providers are held accountable through performance-based contracts and that their personnel are hired on a contractual basis and can be demoted or even fired may account for their stronger performance relative to traditional providers whose personnel are centrally hired civil service staff. Our findings support the alternative model as a viable option to expand services to other areas of Honduras that lack health services, compensating for the MOH's insufficient capacity to deliver and manage health care services in poor and remote areas. Some elements of this model such as performance-based agreements and other incentives can be also incorporated in the management and implementation of the traditional MOH health units in order to improve their performance. As the alternative models increase in number, it would be important to continue to evaluate their performance and to also analyze whether facility performance differs based on type of management (for example, whether the facility is managed by a municipality or an association of municipalities, a non-government organization, or community based organization).

Keywords: community-based health services, contracting health services, Honduras, performance-based contracts, primary health care

Disclaimer: The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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1. INTRODUCTION

Governments in developing countries are seeking ways to deliver health care services effectively and efficiently to populations with inadequate access to care. One of the main ways in which they are doing this is through the introduction of contracts with public or private providers (Palmer, 2000, Lavadenz, 2001, Soeters and Griffiths, 2003 and Mills et al, 2004). Many developing countries contract basic health and nutrition services through nongovernmental organizations (NGOs) because of the difficulties faced by public providers in reaching out to the poorest communities. However, despite the limitations of public providers, there are also reasons to strengthen their presence and role. First, unlike in many European countries, contracting out primary health care services in developing countries has not yet achieved societal, political and financial stability, making this strategy more vulnerable to lack of funding or political support. Second, there is no conclusive evidence on the advantages of contracting private providers versus public providers.

Early reviews of contracting-out initiatives had mixed results, i.e. in some cases (e.g. Zimbabwe and South Africa) contracted providers provided services of the same or better quality at lower costs than public providers while in other cases (e.g. Ghana and Tanzania), contracted and public providers did not differ significantly in terms of performance (Mills and Broomberg 1998). More recent evaluations present more results in favor of private provision. In particular, Loevisohn and Harding's (2004) review of six studies that compared public providers to contracted providers find that the latter achieved better results in terms of quality of care and service coverage. Better results were observed for parameters that are easier to change (i.e., immunization and antenatal coverage rates) compared to smaller changes in parameters that require behavioral changes, such as family planning and institutional delivery.

Liu et al.'s 2008 comprehensive review of contracting out primary health care services in 16 low and middle income countries concludes that contracting-out has, in many cases, significantly improved access to and utilization of services. Nevertheless its effects on equity, quality and efficiency are unknown or cannot be generalized because of the limited number of studies that have analyzed these performance parameters. Their review also states that although contracting-out can potentially lower production costs, it remains unclear whether it lowers total health service delivery costs when expenses for contract management and monitoring and evaluation are included

Several Central American countries have also been implementing strategies to expand basic health services to remote and poor rural areas by contracting nongovernmental organizations and other non public entities to manage or deliver health services. Available evaluations in Central America show favorable results for contracting out experiences (Danel and La Forgia, 2005; Ministry of Health in El Salvador, 2008), particularly in the delivery of the basic health package and in terms of quality.

While Danel and La Forgia (2005) find that public providers seem to perform better in terms of costs, they conclude that once costs are adjusted for other differences such as team composition and unaccounted costs, then the mixed model's (i.e. public health care centers managed by private NGOs) unit costs closely approach those of public providers. Moreover, once their higher production is taken into account, they find that alternative providers give "more value for money" than traditional providers.

Similar to Guatemala and El Salvador, the Ministry of Health (MOH) in Honduras has been implementing different strategies since 2001 to extend basic health services to the country's poorest

and most remote areas. While Honduras has also contracted NGOs, it developed an innovative health extension strategy based on the implementation of community-based models (known as "alternative" or "public-social" or decentralized models), using mainly public-public contracting of health services.

The MOH is interested in expanding the alternative models but prior to this study there had been no formal evaluation or comparative empirical analysis of these pilot initiatives relative to the traditional MOH model.

This study compares the accessibility, quality, costs, efficiency, and the institutional arrangements of the piloted alternative models with the traditional MOH models. It also provides some lessons for other developing countries that are interested in extending health care services to poor and rural populations using a similar approach.

The report is organized as follows: Section 2 presents an analytical framework to study the two service delivery models. Section 3 describes the sample and the methodology. Section 4 discusses the main results from the demand and supply analyses while Section 5 discusses the cost and productivity analysis. Section 6 presents our conclusions and policy recommendations.

2. AN ANALYTICAL FRAMEWORK TO STUDY BOTH SERVICE DELIVERY MODELS

Health systems have multiple objectives although their primary goal is to improve the health of the population. Equity concerns, i.e. improving the health of the worst-off and providing access to care to disadvantaged groups, have contributed to the dominant role played by the public sector as a way to respond to the failures of private markets (such as those resulting from incomplete information and imperfect capital markets) in health care. However, in some regions of the world such as Latin America, a wide gap in health status remains between the poorest, rural and wealthiest, urban dwellers. This has brought into question the ability of public services to reach the poorest segments of the population. The principal reasons for the limited success of public services in addressing the health needs of the poor include: a lack of government incentives for public health staff to stay in remote areas or to travel to remote communities; inadequate budget to finance transportation costs; language and cultural barriers faced by public professionals working in remote, rural areas; governance problems due to poorly defined objectives, weak or absent supervisory structures, political interference, and absence of management autonomy and flexibility. As a result, contracts with public or nonprofit private providers are being employed to improve the performance of health systems in low and middle income countries. These contracts involve the separation of financing and provision of health services; focusing on performance; and promoting managerial flexibility, public accountability, and systems evaluation (WB 2007).

Honduras is implementing an alternative or public-social model that is implemented mainly through public-public contracts, involving communities and local authorities. This implies a different organizational and financial arrangement relative to the traditional MOH model of service delivery, allowing for autonomous management and contributing to a performance-based institutional environment that relies on community participation.

The alternative centers are managed by community entities or, in some cases, by civil associations (through the association of local mayors, for instance), or, in other cases, by NGOs or private nonprofit foundations. The MOH contracts these civil associations or NGOs based on the existing

legal framework (the Budget Law or *Ley del Presupuesto* and the State Contracting Law or *Ley Estatal de Contratación*). These entities are self-governing. In principle, managers have full control over the inputs needed to provide services, with the exception of vaccines (provided by the MOH) and the initial stocks of some drugs (provided by the MOH). Managers also have flexibility in how they manage human resources. Some health centers directly contract their staff while others have subcontracting agreements with medical service providers. Final hiring requires MOH approval to ensure compliance with its standards.

There are two different types of civil associations: (1) smaller ones composed of community members who are represented by a community elected committee. This committee has a president who usually also manages the health care centers within the community. In some cases, the committee hires a manager who is a community resident and an acknowledged community leader to oversee the health care units. All managers receive management training; and (2) larger ones that are composed of local mayors who agree to establish a *mancomunidad* or an association of municipalities. Compared with the smaller associations, the larger associations generally have greater negotiating power with the MOH because they have more institutional capacity, such as more highly-educated technical committee members. They also have a "technical unit" that is responsible for developing strategic health plans. A manager, who is generally hired through a competitive process, oversees the technical unit. This manager works with a coordinator who is also hired competitively; s/he is responsible for coordinating the health care units within the *mancomunidad.* Both types of civil associations are required to have some form of legal identity for performance contracts (known as *convenios de gestión*) to be signed between their management agencies and the MOH. Obtaining legal identity requires a lawyer as well as support from a central level representative in the Ministry of Interior in Tegucigalpa. Given these requirements, it is generally easier for a *mancomunidad* than for a small civil association to obtain legal identity.

The MOH has also signed agreements with some NGOs. NGOs have legal identity and they have managers responsible for running the health units.

Given that the alternative model aims to promote the creation of civil associations, the MOH contracts NGOs to provide services in rural and dispersed areas only when qualified and interested civil associations are not available. While the contracting process for selecting an NGO is competitive, it is not the case for selecting civil associations.

Financing comes mostly from the MOH, using performance-based contracts that stipulate production and quality targets such as number of institutional deliveries within a period of time. The MOH pays after it confirms that services have been provided. Full payment depends on reaching established goals and on complying with MOH norms. At the end of the year, the MOH may withhold up to 10 percent of the full payment depending on its evaluation results. Per capita payment ranges from $15 to $18 across the alternative health care centers, depending also on population dispersion and other geographical characteristics. The MOH regional monitoring team monitors contracts every quarter while the MOH central level monitors contracts twice a year. Supervision varies across facilities. In some cases, supervision is external, i.e. Departmental headquarters is responsible while, in other cases, a supervisor who works in the health facility is in-charge. Managers are hired for a few years on a fixed salary. They have to provide reports on their achievements twice a year. They can be demoted based on their performance. Managers are generally strongly motivated to perform well because they are part of the community that is receiving the health care services.

MOH financing is complemented by other funding sources. Health facilities may charge a small co-payment (Lps 5 or $0.27), receive contributions from the municipalities, or collect small donations from individuals and NGOs. Some of them have a community pre-payment system involving no more

than Lps 300 ($16) per family; this functions as a form of community health care insurance. This additional income is used to fund special tests not included in the MOH-financed health package as well as emergency transportation to hospitals. Some communities also have a system of collecting funds from its members to cover transportation expenses or to pay for institutional deliveries in birthing centers.

In contrast, the traditional MOH model has limited management flexibility because the MOH manages its centers. The central level hires their personnel and purchases their inputs and medicines. The MOH finances most of these facilities' expenses through historical budgets, although these facilities also receive funds from co-payments, NGO contributions or from the *alcaldía* or mayoralty. Financing is not linked to their performance. Their personnel are mostly civil servants, who earn a monthly salary that is not contingent on their work performance. Supervision mechanisms at the health care facilities are absent or weak; sanctions are rarely applied for poor performance. In most cases, the regional health department is responsible for supervising these facilities

Table 1 compares the two models based on five key elements that are generally assumed to influence health facility performance (Shaw, 2004).

Table 1: Comparison of Traditional and Alternative Public-Social Models

	Traditional	**Alternative**
Governance arrangement	Public: vast majority under hierarchical control of central government (MOH)	Self-managed; Legal personality
Allocation of decision rights	Very limited	Possess decision making authority on human resources, inputs purchase.
Market exposure	Financed mainly through historical budget with some allowance for inflation. Lack of competition among facilities	Financed mainly by the public sector but also receives community contributions. They can sell services to third parties and private individuals. In case of bad performance, they may lose 10% of the agreed budget. Lack of competition among facilities.
Residual claimant (authority to keep institutional savings/extra income)	Very limited	Retain all unspent revenues or savings
Incentives	Absence of incentives	Performance incentives for the facility (health care personnel indirectly benefit through better facilities and working conditions) and, in the case of birthing centers, demand incentives for pregnant female

	Traditional	Alternative
		users and incentives for midwives to refer pregnant women to the facility

Based on the above framework which takes into account the differences and similarities between both types of health facilities, we assess the performance of the alternative or public-social model relative to that of the traditional MOH model based on access to health care, provision of quality services, and efficient use of resources.

3. SAMPLE AND METHODOLOGY

3.1. Sample facilities

We analyzed a sample of 20 centers (10 alternative and 10 MOH units). Based on a list of the 25 alternative units functioning during the time that the surveys were carried out in 2006, we selected 10 facilities that have certain characteristics that distinguish them from the other facilities: they are mainly financed by the MOH through performance based contracts[1] and not via historical budgets, they are MOH-supervised, and they are locally managed. We selected the same number of traditional facilities that match the alternative units in terms of catchment area population, rurality (percentage of rural population), access, number of personnel, and type of services provided.

Table 2 shows that selected MOH and alternative facilities face similar conditions. The population within the catchment area of all surveyed facilities is poor, according to the Government's Poverty Reduction Strategy (*Estrategia de Reduccion de la Pobreza* or ERP).

Table 2: Comparability of Traditional and Alternative Facilities in the Sample

Comparability of two samples Variables	**Mean**		**t-test**	
	Alternative Model	Traditional Model	p-value	t-value
Population	15838.3	20272.3	0.6719	-0.4306
Rural %	84.8	73.7	0.0962*	1.7551
Dispersion	1.3	1.5	0.4697	-0.7385
Poverty rate	74.0	81.3	0.1411	-1.5396
Number of health care personnel	5.1	4.4	0.5885	0.5509
* significant at 10% interval of confidence				

Source: Authors' calculations

[1] There are also other alternative units that do not have the MOH as their main financing source; these units were not selected for this study.

Facilities included in the sample provide primary health care. Fourteen of them are CESAMOs (health centers with a doctor and a dentist, or, in Spanish, *Centro de Salud con médico y odontólogo*), and the rest are birthing centers (CMIs or *clinicas materno infantiles*). We included birthing centers because they pioneered the implementation of the alternative model and they provide essential primary health care services.

Annex 1 presents information regarding the sample facilities, their location, and the socioeconomic status of their catchment area. Annex 2 lists the services they provide. Annexes 3.a and 3.b summarize the main characteristics of these alternative and traditional facilities, respectively.

3.2. User and provider surveys[2]

The exit survey covered 200 persons at the facility sites (100 for each type of facility). Users of the facilities are mostly women. The user profile according to age varies per facility type: 21 percent of traditional facility users are 15-24 years old while 32 percent of the alternative facility users are children under 5 years old. In the traditional health centers, only 19 percent of users are children below 5 years.

Around 50 percent of the users are housewives. Most of the users have not completed primary education and they come from large households (6 to 9 members, on average). Sixty percent of users belong to households where no member has a stable and remunerated job. Most of them live on agriculture and earn an average monthly income of less than Lps 500 ($26), which amounts to less than $1 per day.

We also carried out a facility survey based on structured questionnaires to health care providers to collect information on different aspects of health care provision, including costs and production.

3.3. Methodology

The study design is non-experimental because implementation of the alternative models has been underway since 2004 and, unfortunately, lacks a reliable baseline. Moreover, due to the small number of alternative facilities at the time when the surveys were undertaken, random assignment between the experimental (alternative model) and control groups (traditional model) was not possible. In addition, the small size of the sample did not allow us to investigate which governance/management arrangement of the alternative models performs better. Thus, as discussed in section 3.1 above, this study compares alternative and traditional health facilities that match based on certain criteria.

We ran nonparametric tests to check the significance of the differences between the two models. We also used a probit model to identify which factors determine whether a patient will return to the same health care facility.

[2] Due to budget constraints we could not carry out a household survey which would have allowed us to explore coverage as well as collect information on health outcome indicators of the population in each facility's catchment area.

4. HEALTH CARE SUPPLY AND DEMAND

4.1. Access

Physical access

Sixty percent of interviewed users chose the closest facility, whereas the rest selected the facility based on its quality of care or due to someone's advice. Table 3 shows the lack of significant differences in terms of access (measured by distance or time) between both types of facilities[3]. One third of the users live close to the health care unit (less than one km. away) while 22 percent of users live farther than 10 km. Almost half of the respondents (45%) walk to the facility while the rest use some form of transport: bus (20%), private car (12%), animals (5%), or bicycle (2%).

Table 3: Access Variables

Variables	Test conducted	Traditional Unit	Alternative Unit	t-value	z-value	p-value
Distance to consultation facility (km)	t-test	5.38	5.84	-0.469		0.63
	Wilcoxon-Mann-Whitney test	9849.5	9851.5		-0.254	0.79
Distance to consultation facility (min)	t-test	11.65	13.12	-0.796		0.42
	Wilcoxon-Mann-Whitney test	9543	10158		-1.037	0.29
Number of days open in a week	t-test	5.6	6.2	-1.64		0.12
Number of hours open for external consultation	t-test	25.6	35.1	-0.51		0.62

Source: Author's calculations

Operating hours

Alternative facilities tend to be open slightly longer but, as Table 3 indicates, this difference is not statistically significant. Alternative birthing centers or CMIs are open on more days of the week (6

[3]This is not surprising because selection of the sample of traditional facilities and alternative facilities were matched in terms of distance, rurality, population dispersion, and poverty. There are other traditional facilities that are farther away from communities but these were not included in the sample.

days) compared to traditional ones. Both types of CMI have similar opening hours, i.e. from 7 am to 3:30 pm or from 8am to 4 pm, operating just one shift.

Community work is affecting hours of operation: 60 percent of the traditional units and 20 percent of the alternative ones are closed when their staff do community work. This is a common and known problem in Honduras where facilities usually close when their personnel visit rural areas to provide outreach services. In some cases, lack of personnel is a factor for facility closures but this is not the case for the surveyed health units. The survey shows that there are enough personnel to go to the field and to also have someone remain in the facility to provide health care. There are also more personnel involved in field visits in the traditional units than in the alternative ones. However, personnel in the latter type of facility travel more often (up to five times a week) while those in traditional facilities travel two or three times a month.

Financial access

In Honduras, the MOH has given autonomy to communities to operate and control a "volunteer" user fee system. The manager of the community center decides the type and amount of copayment. The MOH approves the copayment and includes it in the management agreement.

The health supply survey shows that 90 percent of traditional units and 70 percent of alternative units request co-payments. The demand survey findings confirm this, indicating that majority of users paid for their consultation (88% in the traditional centers versus 60% in the alternative ones). However, patients paid more in the alternative units [41% of patients paid between Lps 11 ($0.58) and Lps 99 ($5.2)], compared to only 8 percent of patients in traditional units who paid an amount within that range. The copayments at the traditional units ranged from Lps 2 ($0.11) to Lps 5 ($0.26).

There is no policy that sets uniform prices across facilities. In the birthing centers, all the traditional units charge between Lps 30 ($1.57) and Lps 100 ($5.26) for a delivery while alternative units do not charge for this service. Alternative birthing centers are paid based on their production. Thus, they have a reason not to charge for a delivery to motivate women to go to them.

Although alternative facilities have higher copayments, patients pay more times in the traditional units even if these payments are smaller than in the alternative ones. Approximately 36 percent of the patients who used traditional units paid between Lps 2 ($0.11) and Lps 5 ($0.26) for additional services such as test results. Fifty percent of traditional units charge for test result visits compared to only 20 percent of the alternative units. More than 85 percent of patients know in advance how much they have to pay, although only 1.5 percent had seen the facility's list of prices. The supply survey reveals that only one of the traditional health units and two of the alternative health units show their price list to users. More than 66 percent of surveyed patients paid their expected price, and the rest stated that they paid less than expected.

Referral system to access hospitals or other facilities

All the surveyed units belong to the MOH public network and are integrated in the referral system. The survey shows that referral to a hospital or to another health care center takes at least two hours of travel time for 60 percent of patients visiting the traditional units compared to only 20 percent of patients visiting alternative units. Our findings indicate that the alternative units are more closely located to their referral facilities; they also have more functioning vehicles compared to traditional units. However, 60 percent of both types of facilities do not have a reliable means of transporting referred patients.

4.2. Quality

The user survey results (Figure 1) indicate that health facilities are providing acceptable services, although they can still be improved. While 93 percent of the surveyed users were satisfied with the service they received, only 75 percent stated that they would return to the same facility. Of the 25 percent who would go to another facility for their next treatment, 15 percent of them would go to another public facility while the remaining 10 percent would go to a private one. Satisfaction with the care received is slightly better for users of alternative facilities but this difference is not statistically significant (Table 4). However, it is well known that patients have difficulties in assessing the technical quality of the care they receive because they tend to focus on the attentiveness of the health care provider and the comfort of the facility. This explains why patient perception of quality is not generally employed as a proxy for the quality of care provided unless it is accompanied by other quality measures (Donabedian, 1980).

Table 4: Quality Variables

Variables	Test conducted	Traditional Unit	Alternative Unit	t-value	z-value	p-value
Waiting time at the consultation facility	t-test	1.68	1.29	1.97		0.06**
	Wilcoxon-Mann-Whitney test	10883	8818		2.32	0.02**
Waiting time is acceptable	Chi-square test					0.01***
Cleanliness of waiting area	Chi-square test					0.53
Cleanliness of consultation room	Chi-square test					0.14
Cleanliness of bathroom	Chi-square test					0.01***
Satisfied with treatment received	Chi-square test					0.58

* Significant at 5% level; *** significant at 1% level

Source: Authors' calculations

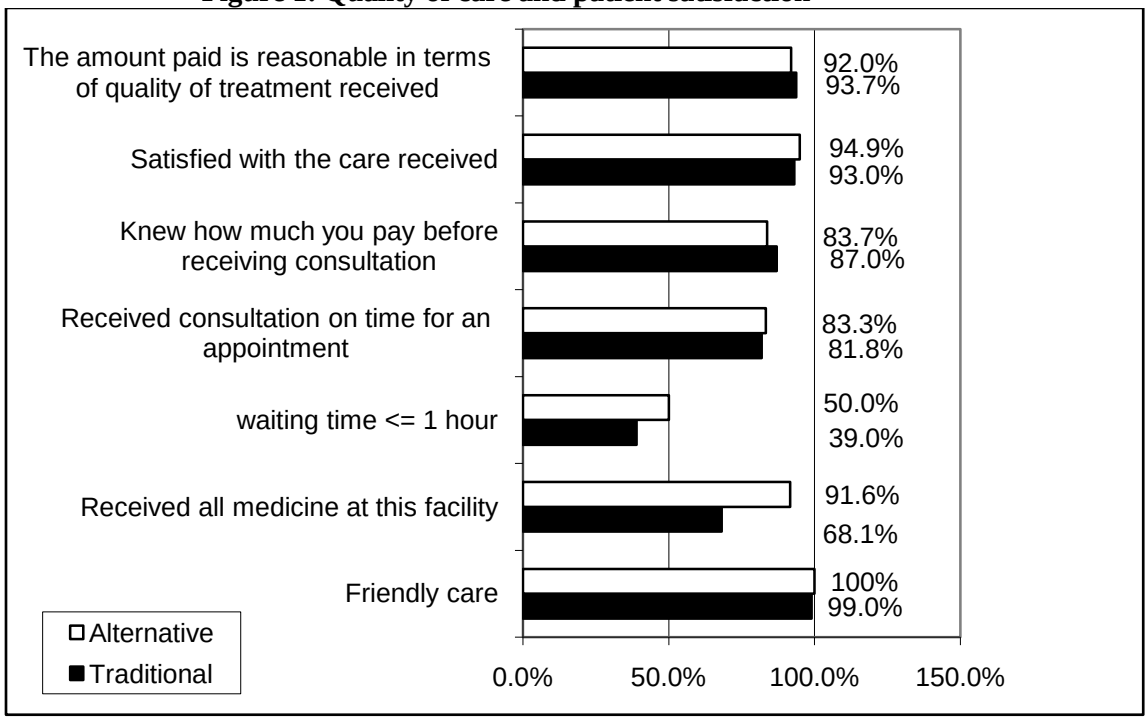
Waiting time

More patients using alternative units were satisfied (87%) with their waiting time compared to those using traditional units (66%). The demand survey shows that although facilities have an appointment system, they generally attend to patients based on their arrival time and, sometimes, based on the severity of their patients' illness. Less than 10 percent of all surveyed patients made an appointment in advance.

Most patients (82%) who had appointments were attended to at the agreed time in both kinds of facilities. Forty-four percent of the total users had to wait for less than an hour to be seen by health staff while the rest (56%) waited for more than one hour; 22 percent of them waited for more than 3

hours. Waiting time is less (at the 5 percent level of significance) for patients of alternative units (see Table 4).

Figure 1: Quality of care and patient satisfaction



Source: Patient Exit Survey from Corrales (2007)

Cleanliness and maintenance

Overall, alternative units were found to be cleaner and better maintained. Surveyed patients found most common areas to be clean except for bathrooms: only 64 percent of them considered bathrooms to be clean. Bathrooms in traditional facilities are worse than those in alternative facilities (20 percent of patient report that the former are dirty compared to only 2 percent of the latter). This difference is statistically significant (Table 4).

Supply analysis confirms the perception of the interviewed patients, as 50 percent of the bathrooms in the alternative units were classified as clean compared to none in the traditional units. Bathrooms also function better in the alternative units. Alternative units are also better-equipped than traditional facilities: 83 percent of their medical equipment work very well compared to only 55 percent of the equipment in the traditional units. The alternative units also have more vehicles; they also have fewer vehicles with functional problems compared to traditional facilities where none of the vehicles were rated as functioning well.

Access to medicines

We find that when medicines were available at the health facilities, almost all of the patients (97%) did not have to pay for them. The few who paid for medicines had used alternative units; they each paid a maximum of Lps 60 ($3.16)

Access to medicines is more limited for patients who use traditional centers. Only 68 percent of patients in traditional centers obtained their medicines on-site compared to 92 percent of the patients in the alternative centers. Table 5 shows that this difference is statistically significant at the 1% level of confidence. None of the surveyed traditional units reported that they have 80-100 percent of their required supply of drugs, while only 60 percent of them have between 60-79 percent of their required stock. In contrast, the surveyed alternative units have better drug availability compared to traditional units. Table 5 shows that this difference is statistically significant at the 10 percent level. However, some alternative facilities also face drug shortages: only 40 percent have 80 to 100 percent of their required medicines while 50 percent have 60 to 79 percent of their required stock.

When medicines are not available in the facilities, patients have to purchase them somewhere else. Only 60 percent of the surveyed health units have a nearby pharmacy.

Table 5: Access to Medicines

Variables	Test conducted	Traditional Unit	Alternative Unit	t-value	p-value
There is a pharmacy near the facility	Fisher's Exact test				0.65
Patient received prescribed medicine at the health unit	Chi-square test				0.001***
% of medicine available at the health unit	t-test	56.86	73.85	-2.90	0.009***

***significant at 10 percent level

Source: Authors' calculation

Our findings show that alternative health facilities are also better stocked with other supplies compared to traditional facilities. However there is room for improvement because only 30 percent of the alternative units said that patients receive everything they need while the rest of the alternative units provide everything needed only "whenever it is possible".

Human resources

The 10 traditional facilities in our sample have 70 staff members, in total. Many of them lack promoters or other community workers. On average, they have only one promoter per 10,000 inhabitants, a very low ratio in order to perform adequate community work. Only one of the surveyed traditional birthing centers (known as *clínicas materno-infantiles* or CMIs) has a physician.

In contrast, the alternative facilities have 79 staff in total, with a higher proportion of administrative staff, promoters (one promoter per 2,000 inhabitants), and auxiliary personnel than the traditional MOH facilities. All of the alternative CMIs have physicians. In addition, the surveyed alternative units provide their staff with more training. Seventy percent of their personnel have been trained compared to only 40 percent of all personnel in the surveyed traditional facilities

4.3. Management Autonomy

Alternative facilities have more management autonomy then traditional ones and this difference is statistically significant (Table 6).

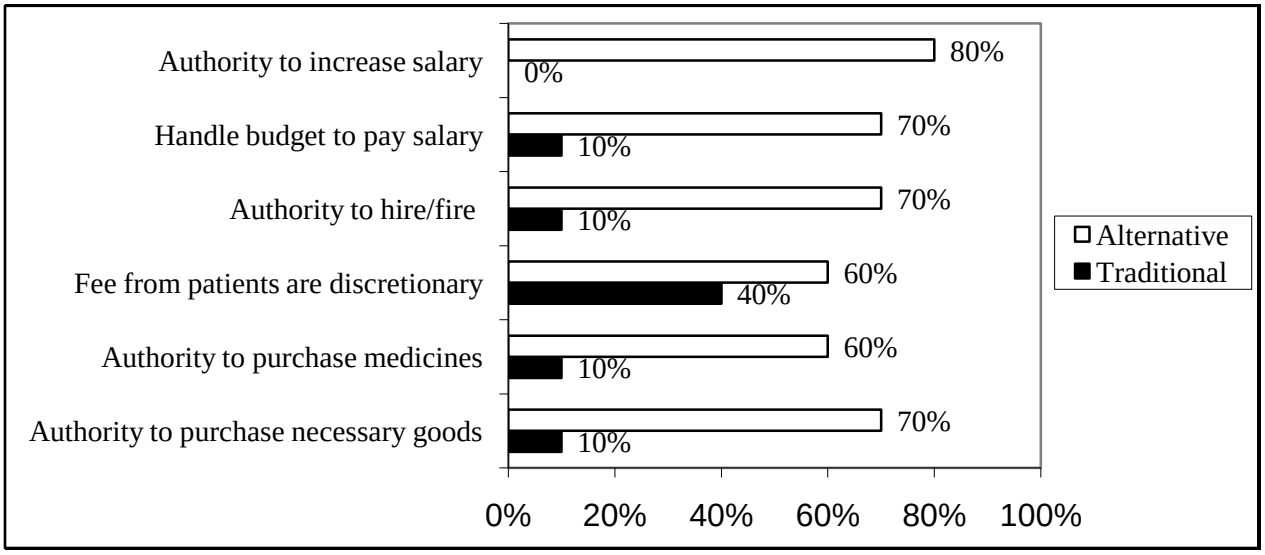
Table 6: Differences in Management Autonomy between Traditional and Alternative Facilities

Variables	Test conducted	p-value
Have authority to purchase necessary medicine and other materials	Fisher's Exact test	0.050**
The health unit has authority to hire and fire personnel	Fisher's Exact test	0.02**
The health unit handles the budget to pay salary	Fisher's Exact test	0.02**
The health unit has authority to increase salary	Fisher's Exact test	0.001***

** Significant at 5%; *** significant at 1 percent
Source: Authors' calculations

However, not all alternative facilities enjoy the same level of management autonomy. For example, Figure 2 shows that only 70 percent of the surveyed alternative centers can purchase goods and supplies, hire/fire personnel, and pay salaries while only 60 percent can establish user fees or purchase medicines. Moreover not all of the surveyed traditional centers lack managerial autonomy: 40 percent have established user fees while 10 percent have the authority to purchase goods and medicines, as well as to hire/fire personnel and to handle their salaries.

Figure 2: Management Autonomy by Facility Type



Source: Data from 2006 Honduras Supply Survey by Corrales (2007).

4.4. Determinants of Utilization of Health Care Facilities

We use a probit model to analyze the factors that significantly influence the decision of patients to return to the same health care facility (Table 7). Our findings indicate that, as expected, the more satisfied patients are with the treatment they received, the higher the probability that they will use the same facility again. Also, patients are 19 percent more likely to use the same facility again if its bathroom is clean. They are also 16 percent more likely to use the same facility again if they receive all their prescribed medicines on-site. However, if the waiting time is more than one hour, patients are 17 percent less likely to return. At the 10 percent level of significance, patients are 17 percent more likely to return to the same facility if it is an alternative one.

Table 7: Factors influencing the Willingness to Return to the Same Facility

Determinants of Utilization of Health Care Service	**Model 1 Probit**	**Model 2 Marginal Probit**
Satisfied with the treatment received	0.965	0.307
	[0.040]**	[0.040]**
The amount paid matches the quality of treatment received	0.499	0.131
	[0.252]	[0.252]
Monthly household income (in Lps)	0	0
	[0.865]	[0.865]
The household owns any land	0.11	0.025
	[0.687]	[0.687]
Any of household members have paid job	0.321	0.073
	[0.256]	[0.256]
Size of household	-0.05	-0.011
	[0.341]	[0.341]
The facility has a pay exemption policy	-0.033	-0.007
	[0.737]	[0.737]
Age	0.006	0.001
	[0.368]	[0.368]
Cleanliness of waiting area	0.479	0.109
	[0.242]	[0.242]
Cleanliness of consultation room	-0.531	-0.121
	[0.323]	[0.323]
Cleanliness of bathroom	1.09	0.195
	[0.003]***	[0.003]***
paid the amount less than expected or as expected	-0.32	-0.067
	[0.523]	[0.523]
Female	-0.187	-0.04
	[0.537]	[0.537]
Received all the medicine at the facility	0.592	0.151
	[0.027]**	[0.027]**
Waiting time >= one hour	-0.767	-0.167
	[0.024]**	[0.024]**
Distance to get the facility (in km)	0.002	0

Determinants of Utilization of Health Care Service	Model 1 Probit	Model 2 Marginal Probit
	[0.936]	[0.936]
The facility opens 5 days a week	0.523	0.113
	[0.238]	[0.238]
The facility opens 6 days a week	-0.558	-0.142
	[0.338]	[0.338]
The facility has emergency care service	-0.458	-0.106
	[0.268]	[0.268]
The facility is an alternative unit	0.743	0.168
	[0.098]*	[0.098]*
Constant	-0.135	
	[0.922]	
Observations	198	198

Note: willing to go back to the same health facility is used as dependent variable. p values in brackets
* significant at 10% ; ** significant at 5% ; *** significant at 1%
Source: Authors' calculations

5. COST AND PRODUCTIVITY ANALYSIS

5.1. Costs

Alternative facilities have more complete administrative information than the traditional ones. For the latter, some information tends to be centralized at the MOH level and not all data are disaggregated. Moreover other costs such as laboratory expenses are not directly incurred by the traditional centers and, as a result, are recorded as zero at the facility level.

Given the data availability challenges we encountered in obtaining and calculating total costs and average unit costs per type of facility, we focused on two key budget items (medicines and personnel) for which we have adequate information.

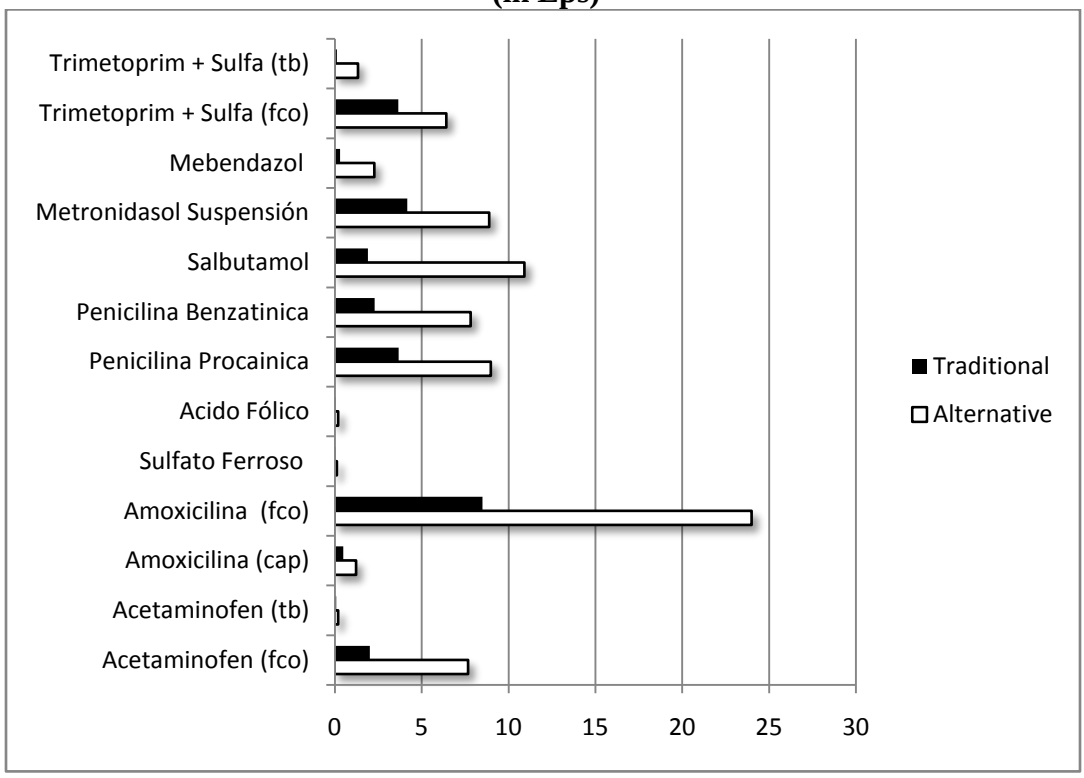
Medicines

On average, our findings indicate that alternative facilities pay approximately 40 percent more for the basic stock of medicines than traditional ones. Figure 3 illustrates this finding for 13 essential drugs.

Alternative units purchase medicines at the local level, bought from national drug providers. This allows for prompt delivery of medicines to the health care facilities but they do not benefit from bulk purchases and lower unit costs.

Alternative units also do not have uniform medicine prices. Each center purchases its own medicines, with prices based on its management's negotiating power. In contrast, the MOH purchases medicines in bulk, on behalf of the traditional facilities that benefit from lower prices. However, these facilities usually experience delays in receiving their medicines because of highly centralized and poorly managed distribution systems. Hence, many traditional centers face drug shortages and many of their patients have to obtain their medicines from other places.

Figure 3: Average Unit Price per Type of Drug: Traditional and Alternative Units (in Lps)



Source: Aguilar, 2007.

Personnel

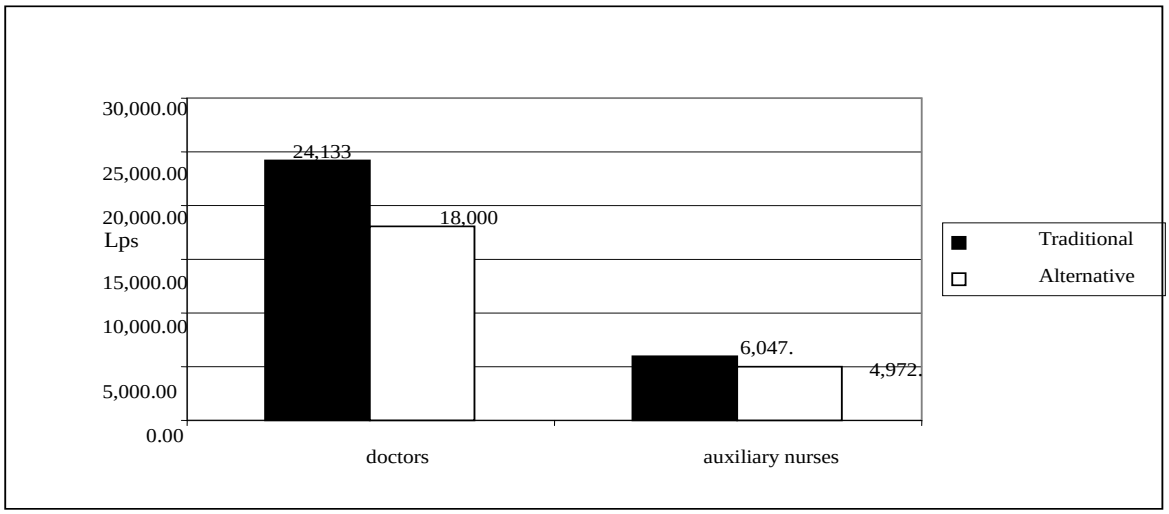
Table 9 shows that traditional facilities have a higher average personnel unit cost of Lps 75.7 ($3.9) compared to alternative facilities (Lps 55 or $2.9). The following factors may explain why traditional health care facilities have higher personnel expenditures: First, most of their personnel time is allocated to direct health care provision or outpatient services (85%) as presented in Table 8. Hours devoted to direct provision of care are more expensive than those devoted to administrative tasks or community work. Second, alternative centers have more administrative personnel and community workers and these types of staff are less expensive than doctors or nurses, whereas traditional centers lack administrative and community work staff.

Table 8: Allocation of Personnel Hours by Type of Model

Facility	Hours Allocated (%)*				
	Direct provision of care	Training	Community work	Administrative tasks	Total
Traditional	85.4	2.6	5.9	6.1	100
Alternative	33.0	1.7	27.3	38.0	100
Source: Calculations from administrative data analysis by Aguilar (2007).					

Third, salaries are higher in the traditional facilities than in the alternative ones. Figure 4 shows that doctors and auxiliary nurses working in traditional facilities earn 25 percent and 19 percent more, respectively, relative to those working in alternative facilities.

Figure 4: Average Monthly Salaries of Doctors and Auxiliary Nurses by Facility Type



Source: Administrative data collected from health care centers by Aguilar (2007)

Table 9: Personnel Unit Costs and Productivity per Hour

Facility	Personnel spending by direct health care provision (in Lps)	Total production (direct services provided)	Available hours	Unit personnel cost by direct service (in Lps)*	Personnel expenditure (%)**	No. of Services provided per hour
Traditional						
Total (health centers and CMIs)	1,065,376	14,071	22,028	75.7	81.14	
Average health centers						1.5
Average birthing centers (CMIs)						0.3
Alternative						
Total (health centers and CMIs)	1,130,225	20,532	13,309	55.0	58.7	
Average health centers						2.5
Average birthing centers (CMIs)						0.6

Source: Calculations from administrative data by Aguilar (2007)
*Personnel expenditure in direct provision of care/ total direct services.
** Total direct services/ available hours

5.2. Productivity

Table 9 shows that productivity per hour is higher in the alternative health centers (2.5 services per hour) relative to the traditional centers (1.5 services provided per hour). Nonetheless both values are very low compared to (1) the adjusted standard of four services per hour that was recommended as "realistic" by health care professionals surveyed for this study and (2) the MOH standard of 6 services per hour.

Alternative birthing centers or CMIs are twice as productive (0.6 services per hour) as the traditional ones (0.33 services per hour). This may be partly because alternative CMIs have a production based payment system, creating an incentive for them to boost demand from pregnant women while the traditional birthing centers lack similar incentives.

Table 10 presents the potential production and the observed production in both types of health centers. We calculated potential production based on the adjusted standard of 24 consultations per day or four patients per hour instead of the MOH standard of 36 consultations per doctor per day or 6 patients per hour. Only health centers were analyzed because there are no MOH production standards for deliveries in CMIs. We could have estimated expected deliveries and compared them with the deliveries attended by each CMI but, at the time of the survey, data on CMI catchment area population tended to be generally unreliable.

Table 10: Production Differentials, Potential vs. Actual by Type of Model

Model Type		**Available hours**	**Services expected per hour**	**Potential production***	**Observed Production**	**Services not provided****
Traditional health centers	Total	7,280	4	29,120	9,327	19,793
Alternative health centers	Total	7,526	4	30,104	17,560	12,544

* Available hours x expected services per hour based on adjusted standard of 4 services/hour;
** Potential production minus Observed production
Source: Authors' calculations based on administrative data collected by Aguilar (2007).

According to Table 10, alternative and traditional health centers have a fairly similar number of available personnel hours. However, traditional health centers' observed production is much lower, indicating that they have much more excess capacity than alternative facilities that are also under-producing.

Table 11 shows that traditional health centers have observed direct care personnel unit costs that are slightly more than three times their adjusted direct care unit personnel costs. This ratio is much higher than the ratio for alternative health centers which have observed direct care personnel unit costs that are 1.7 times their adjusted direct care personnel unit costs.

Table 11: Direct Care Personnel Unit Costs: Adjusted vs. Observed by Type of Model

Type of Model	Personnel Costs of Direct Care Provided (Total)	Production		Unit Costs (in Lps)	
		Potential	Observed	Adjusted*	Observed**
Traditional health centers	322,173	29,120	9,327	11.06	34.9
Alternative health center	579,125	30,104	17,560	19.23	32.9

Source: Authors' calculations from administrative data collected by Aguilar (2007).
* Direct Personnel Care Costs/Potential Production (based on adjusted standard of 4 services/hour)
** Direct Personnel Care Costs/Observed Production

6. CONCLUSION AND POLICY DISCUSSION

Our findings indicate that alternative facilities perform better than traditional facilities in terms of quality of care and access. In particular, alternative facilities have shorter waiting times for patients; have a more adequate stock of medicines and other key supplies, equipment, and vehicles; and have generally cleaner facilities. They are also located closer to higher level facilities for referrals, and they provide their personnel with more training. Moreover results from the probit model analysis indicate that patients are 17 percent more likely to return to a health care facility if it is an alternative one.

Alternative facilities also have higher labor productivity than the traditional units. However, similar to previous studies (Danel and La Forgia, 2005; Liu et al, 2008), economic efficiency results are mixed. Alternative models have significantly higher average drug costs than their traditional counterparts because they purchase medicines directly from suppliers and are unable to benefit from bulk procurement in the public sector. However, they have lower personnel costs even though they have an adequate number of personnel based on MOH standards.

More of the surveyed alternative facilities said that they have the authority to purchase goods and supplies, hire/fire personnel, pay salaries, establish user fees, and purchase medicines compared to significantly fewer of the surveyed traditional health facilities.

When the surveys were conducted, alternative facilities also had more readily available administrative information than traditional facilities whose administrative data tended to be centralized, less complete, and not disaggregated.

Our findings suggest that accountability in the form of performance-based contracts appears to be a major factor in explaining the difference in performance between alternative and traditional health

facilities. Alternative facilities are financed based on contracts that offer them incentives to meet performance targets. These facilities hire trained health care personnel on a contractual basis and, therefore, motivate them to perform well relative to traditional facility staff who are centrally hired as civil service personnel. Managers of alternative facilities can be demoted based on their facility's performance. They are also generally motivated to perform well because they are hired from the same communities where the facilities they manage operate.

Based on our findings, alternative models appear to be viable options especially in areas of Honduras that lack health services, compensating for the MOH's limited capacity to deliver and manage health care services in poor and remote areas. As these models increase in number, it would be important to continue to evaluate their performance and to also analyze, to what extent, facility performance differs among management types (for example, whether the facility is managed by a municipality or an association of municipalities, a non-governmental organization, or community based organization).

The MOH established the Health Coverage Extension and Financing Unit (*Unidad de Extensión de Cobertura y Financiamiento* or UECF*)* in order to strengthen the supervision and monitoring of performance contracts and coordinate health service extension strategies. Strengthening the UECF so that it can successfully fulfill its official mandate and improving its coordination with the Planning and Management Evaluation Unit (UPEG) within the MOH will be essential for scaling up the alternative models. MOH stewardship will be also crucial for the integration of these new models in the public health network and for their sustainability. In addition, empowering local communities will be important because some local authorities have been reluctant to implement the alternative models, mainly because they did not feel ready to assume the responsibility.

The MOH is also interested in improving the performance of the traditional models. Since transforming traditional health facilities into public-social facilities could be very difficult because of the challenges associated with civil service reform, the MOH is considering the possibility of introducing management agreements (*compromisos de gestión)* with the traditional health facilities. These agreements do not require a legal identity from the contracted institution and create incentives for better facility performance.

Other countries such as Costa Rica have had successful experiences after the implementation of management agreements (Arocena and Garcia Prado, 2007). However, individual incentives are often not included in these agreements. Even if it is not common, it is possible for these agreements to include individual incentives. For example, in Catalonia, Spain, public service staff have the option to be paid based on their performance. Individual indicators are included in the management agreements with each health center. Many public physicians have chosen to be hired on this basis, but they also have the option to go back to their previous civil servant contracts. This type of individual contracting might be difficult to implement in Honduras because of the presence of powerful health unions. However, introducing other elements of the alternative model such as performance-based agreements, more community involvement, and some degree of management autonomy could help improve the traditional models' performance. This strategy could be a more viable alternative not only for Honduras but also for those countries reluctant to implement a pure public-private contracting model but who still need to reform their public health facilities.

Finally, our findings indicate the following areas for improvement that pertain to both models:

(i) Employing resources more efficiently. Although alternative facilities are more productive than traditional ones, both types of facilities can still produce more outpatient services with the same

number of personnel. Boosting demand through strategic communication strategies and improving outreach services through regular visits by mobile teams (composed of personnel of the health care unit) to remote communities in their respective catchment areas may help improve their productivity.

(ii) Improving the availability, procurement, and distribution of medicines. Both types of facilities face drug shortages although this issue appears to be more serious in traditional facilities. This problem can be partly addressed through enhancing control and rational use of resources, together with better mechanisms to deliver supplies to the health facilities. In other Latin American countries, there have also been some initiatives to avoid drug distribution delays while also benefiting from better pharmaceutical prices (World Bank 2007). For example, the MOH orders the pharmaceuticals and negotiates the prices with its providers, but the local health care centers decide the amount and kind of medicines they need, buying directly from the provider of their choice based on the negotiated prices between the MOH and providers.

(iii) Establishing a transparent standardized user fee policy. Standardize user fees charged for different health services based on (a) patient's ability to pay, as well as (b) regional differences in terms of income and cost of living. Ensure that there is a list of prices that patients can easily see and refer to during consultations.

(iv) Enhancing information systems and use of data as a management tool. Improvements in the availability, reliability, organization, and use of disaggregated facility level data, especially in the case of traditional units, are needed for planning, decision-making, and monitoring and evaluating facility performance and resource use.

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Annex 1. Sample of alternative and traditional models and the socioeconomic status of the catchment area

Alternative model	Population	Rural (%)	Dispersion[a]	Poverty (%)	Extreme poverty[b] %)	Traditional model	Population	Rural	Dispersion	Poverty (%)	Extreme poverty (%)
El Guante, Cedros, Francisco Morazan*	3,834	94.0	High	53.0	41.5	Cedros, Cedros, Francisco.Morazan *	2,545	58.0	High	881.1	56.1
Suyatal, Cedros, Francisco.Morazan *	2,566	88.0	High	54.0	41.5	Trinidad de Quebrada, Cedros, Francisco.Morazan *	3,727	62.0	High	81.1	56.1
Arenales, Río Coco, El Paraíso*	6,790	95.0	High	85.7	51.2	Trojes, Trojes, El Paraíso*	13,941	64.0	High	885.5	59.6
La Flecha, Macuelizo, Santa Bárbara*	4,621	53.0	Mid-High	74.4	51.3	San Jeronimo, San Jerónimo, Copán*	11,000	76.0	High	884.3	58.6
Río Amarillo, Santa Rita, Copán*	5,893	96.0	High	76.4	52.6	Cabañas,Cabañas, Copán*	5,645	72.0	Mid-High	990.2	90.2
Río Negro, Cabañas, Copan*	3,428	97.0	High	90.2	66.4	Nueva Armenia, Copán Ruinas, Copán*	9,256	100.0	High	889.0	89.0
Jardines, Taulabé, Comayagua*	9,536	85.0	High	71.9	50.0	San José, San José, Comayagua*	4,185	80.0	High	885.5	58.9
Taulabé, Comayagua	28,777	63.0	Mid-high	66.8	46.3	El Paraíso, El Paraíso	52,813	60.0	Mid	663.3	42.7
San Manuel de Colohete, Lempira	23,705	93.0	High	82.8	58.3	Candelaria, Lempira	22,124	85.0	Mid-High	880.00	56.5
Santa Rita, Copán	69,233	84.0	Mid-high	84.3	59.2	Marcala, La Paz	77, 487	80.0	Mid-high	773.17	51.57

High Dispersion: Catchment area density < 50 inhabitants/m2; Mid- High dispersion: Catchment area density 50-100 inhabitants/m2

Mid dispersion: Catchment area density 100-250 inhab/m2; Low dispersion: Catchment area density <100 inhab/m2

[b]The percentage of the catchment area population living in extreme poverty.

* These three names indicate the name of the facility or village where the facility is located, the municipality and the department, respectively.

ANNEX 2. Services Provided in Each type of Health Care Facility

Types of services provided	
Traditional Model and Alternative Models	
CESAMOs	Prevention, Promotion and Curative services: • Integral women care • Atención Integral a la Ninez (AIN-C) • ETS-VIH/SIDA, • Reproductive Health and family planning • Inmunization • Vaccine anti-rabies • Prenatal care • Cronic diseases • Community work
Birthing centers (CMIs)	• Childbirth care • Prenatal care • Puerperal care • Emergencies • Cytology • Lab exams • VIH/SIDA tests • Family planning • Maternal home

ANNEX 3.A. Traditional Facilities: Main Characteristics

	Managing Agency	Type of Health Unit	Personnel	Sources of Financing	Supervision System[a,b]	Quality Improvement[c]	Organization Chart & Operation Handbook
Cedros	MOH	CESAMO	1doctor, 1auxiliary nurse, 1 promoter	MOH (98%) Voluntary co-payment (2%)	Yes, local authority	No	No
Trinidad de Quebrada, Cedros, F.M.	MOH	CESAMO	1 doctor, 1 auxiliary nurse	MOH(95%) Voluntary co-payment (5%)	Yes, local authority	No	Yes, but no operation handbook
Trojes, El Paraíso	MOH	CESAMO	3 doctors, 1 nurse, 2 auxiliary nurses, 1 promoter	MOH (93%), Alcaldia or mayoralty(4%) Voluntary co-payment (2%) NGOs (1%)	Yes	Yes	Yes, but no operation handbook
San Jerónimo, Copán	MOH	CESAMO	1resident, 1 auxiliary nurse, 1promoter	MOH (100%)	Yes, local authority	Yes	No
Cabañas, Copán	MOH	CESAMO	1 doctor, 1 auxiliary nurse	MOH(97%); Voluntary co-payment (2%) NGOs (1%)	No	No	No

Nueva Armenia, Copán	MOH	CESAMO	1 doctor, 1auxiliary nurse	MOH (98%); Voluntary co-payment (2%)	Yes, through the health center (Copan Ruinas)	No	No
San José, Comayagua	MOH	CESAMO	1 doctor 1 auxiliary nurse	MOH (94%); Voluntary co-payment, mayoralty and NGOs (6%)	Yes, local authority	Yes	Yes, but no handbook
El Paraíso, El Paraíso	MOH	Birthing center	1 nurse, 6 auxiliary nurses covering different shifts	MOH(97%), mayoralty and payments per birth (3%)	Yes	Yes	Yes, but no handbook
Candelaria, Lempira	MOH	Birthing center	1 resident, 1 auxiliary nurse	MOH (97%), Payments per birth (2%), Mayoralty (1%)	Yes, very good	Yes	No
Marcala, La Paz	MOH	Birthing center	8 doctors in different shifts, 5 nurses to cover the five shifts	MOH (95%), mayoralty (2%), Payment for birth (2%), Voluntary co-payment (1%)	Yes, very good	Yes	Yes

ANNEX 3.B. Alternative Facilities: Main Characteristics

	Managing Agency	Type of Managing Agency	Type of Health Unit	Personnel	Financing Sources	Supervision system[a,b]	Quality improvement system[c]	Organization chart and operation handbook
El Guante, Cedros	Patronato (La Caridad)	Foundation	CESAMO	1 doctor, 1 nurse, 2 auxiliary nurses, 2 promoters	MOH(80%), Honduras Lemar (10%), community pre-payment (10%)	Yes	Yes	Yes
Suyatal, Cedros, F.M.	Foundation (La Caridad)	Foundation	CESAMO	1 doctor, 1nurse, 1 promoter	MOH(80%), Honduras Lemar (10%), community pre-payment (10%)	Yes, by local authority	No	Yes, but no operation handbook
Arenales-Río Coco, El Paraíso	Amigos de las Americas	International NGO	CESAMO	1 doctor, 3auxiliary nurses, 3 health promoters	MOH (95%) and voluntary co-payments	Yes, by the local authority	Yes	Yes
La Flecha, Santa Bárbara	Internacional Aid	Internacional NGO	CESAMO	1 doctor, 1 nurse, 1 auxiliary nurse, 3 health promoters	MOH (76%), NGO (23%), copayment (1%)	Yes	No	Yes

Taulabé, Jardines	Madre Feliz	Foundation	CESAMO	1 doctor, 3 auxiliary nurses, 4 health promoters	MOH(80%), Alcaldía or mayoralty (10%) voluntary copayments(5%) NGO (5%)	Yes	Yes	Yes
Río Amarillo, Copán	Mancorsaric	Association of municipalities	CESAMO	1 doctor, 2 auxiliary nurses, 2 health promoters	MOH(85%) mayoralty (10%) , voluntary copayments (1%) NGO (4%)	Yes,	Yes	No
Río Negro, Copán	Mancorsaric	Association of municipalities	CESAMO	1 doctor, 2 auxiliary nurses, 2 health promoters	MOH(85%), International organizations (10%), voluntary copayments(1%) , NGO (4%)	Yes	No	No
Taulabé, Comayagua	Madre Feliz	Foundation	Birthing center	1 doctor from the adjacent CESAMO, 2 doctors on call, 3 auxiliary nurses	MOH(94%), mayoralty (5%), NGO (1%)	Yes	Yes	Yes

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