Research

Contracting for health services: effects of utilization and quality on the costs of the Basic Package of Health Services in Afghanistan

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Objective To research the effects of changes in health service utilization and quality on the costs of the Basic Package of Health Services (BPHS) in 13 provinces of Afghanistan.

Methods The study grouped data from 355 health facilities and more than 4000 health posts into 21 data points that represented 21 different nongovernmental organization contracts for service delivery between April 2006 and March 2007. Data were pooled from five data sets on expenditure, service utilization, quality (i.e. client satisfaction and the availability of essential medicines and female health-care providers), pharmaceuticals, and security and remoteness scores. Pearson's partial correlation and multiple linear regression models were used to examine correlations between expenditure and other study variables.

Findings Fixed costs were found to comprise most of the cost of BPHS contracts. There was no correlation between cost and utilization rate or security. The distance to the health facility was negatively correlated with costs ($R^2 = 0.855$, F-significance < 0.001). The presence of female health workers, indicative of good quality in this cultural context, was negatively correlated with security ($r = -0.70$; $P < 0.001$). There was a significant correlation between the use of curative services and client satisfaction but not between the use of preventive services and client satisfaction ($R^2 = 0.389$ and 0.272 for two types of health facilities studied).

Conclusion Access to health services can be extended through contracting mechanisms in a post-conflict state even in the presence of security problems. Service characteristics, geographical distance and the security situation failed to consistently explain, alone or in combination, the observed variations in per capita costs or visits. Therefore, using these parameters as the basis for planning does not necessarily lead to better resource allocation.

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Une traduction en français de ce résumé figure à la fin de l'article. Al final del artículo se facilita una traducción al español. الترجمة العربية لهذه الخلاصة في نهاية النص الكامل لهذه المقالة.

Introduction

The desire to extend access to basic health services to as much of the population as possible is shared by many post-conflict countries, where morbidity and mortality are often high. While controlling disease outbreaks and reducing mortality must be the immediate focus in many post-conflict states, it is also imperative to plan for the longer-term development of the health system and to help restore civil society and the legitimacy of the government by providing basic services, including health services.[1] This often involves developing the health system so that it can provide basic services to many more people.[2] In Afghanistan, for instance, less than 10% of the population had access to basic health services in 2003, according to government estimates.[3]

After the fall of the Taliban in 2001, Afghanistan had some of the worst health indicators ever recorded in the world. In 2002 the maternal mortality rate exceeded 1600 per 100 000 live births, reaching 2200 per 100 000 in some parts of the country.[4] The infant mortality rate was estimated to be 165 per 1000 live births, and 257 children per 1000, more than one in four, died before the age of 5 years.[5] Health facilities had been damaged or destroyed during the years of fighting and, in many rural areas, neither facilities nor trained health workers were available.[6]

To improve the health situation rapidly, the Ministry of Public Health (MOPH) of Afghanistan developed the Basic Package of Health Services (BPHS) to deal with those areas in which the country faced its most pressing health-related problems: maternal and neonatal health, child health and immunization, nutrition, communicable diseases, mental health, disabilities and the regular supply of essential medicines. The package reflected priorities for promoting health and rebuilding the health system. A central principle of the BPHS was equity, meaning that the BPHS would be extended to as many people as possible throughout the country.

Because of high maternal, infant and child mortality rates and lack of access to basic services, the MOPH and major donors in the health sector – the

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United States Agency for International Development (USAID), the European Commission and The World Bank – were most interested in helping to extend access to primary health care, especially for women and children. The BPHS was viewed as the best way to achieve this in a planned and co-ordinated manner that would address the major health problems faced by Afghanistan. At the MOPH's direction, the donors took responsibility for funding health services and development activities in different provinces, thereby covering the entire country. The MOPH remained the steward and overseer of the health system and directed efforts to improve it.

When donors were considering funding for this major undertaking, they needed an estimate of costs to determine the feasibility of extending access to the BPHS. In 2002, despite a paucity of data, a cost analysis was conducted to determine how much funding the donors would need to provide. Newbrander et al. estimated the cost of the BPHS to be 4.50 US dollars (US$) per capita,[7] which the donors considered reasonable.

In USAID-funded provinces, the non-profit international health organization Management Sciences for Health (MSH) worked with the MOPH and USAID to help establish the BPHS through contracting with national and international nongovernmental organizations (NGOs). Liu et al. found that contracting out has enabled various countries, including post-conflict states, to improve access to health services.[8] They concluded, however, that the information available on the performance and universality of access under such contracts was inadequate for evaluating the effectiveness of contracting. Loevinsohn & Harding found, on the other hand, that contracting out health services in developing countries had positive results, including the expansion of access.[9]

By 2007, there was enough detailed historical information on the costs and impact of the health service coverage provided by NGOs in the USAID-funded provinces of Afghanistan to undertake a data analysis. We were interested in seeing if there were any predictors of the relative cost, utilization and quality of services at the supported facilities, which provided nearly universal access in these provinces, as

preparations began for renewing contracts with NGOs in 2008.

This research reflects a priority policy issue for the Afghan health system. The optimal cost of implementing the BPHS is unknown and has been disputed since the programme began in 2003. In addition, little information is available about how expenditure on the BPHS is affected by environmental factors and various aspects of health-care provision (e.g. inputs, outputs and quality).

Methods

This study involved 355 health facilities comprising 203 basic health centres (BHCs), 134 comprehensive health centres (CHCs) and 18 district hospitals, as well as the records of more than 4000 health posts. All such facilities provide the BPHS in 13 USAID-funded provinces through 21 contracts with NGOs for the provision of services. The provinces covered – Badakhshan, Baghlan, Bamian, Faryab, Ghazni, Herat, Jowzjan, Kabul, Kandahar, Khowst, Paktia, Paktika and Takhar – represent a cross-section of the country, both geographically and in terms of the level of security. Security in the provinces is compromised by the presence of active conflict, other antigovernment activities and criminal actions. Health facilities are sometimes the targets of violence, which can result in health centres being closed for several days or having supplies or equipment stolen. The level of insecurity varies widely, so difficulties at one health centre will have minimal impact on the operation of other facilities in that district and throughout the province.

The main study questions were:
- How can NGO expenditure on the BPHS be explained by health service delivery inputs?
- How do the local security situation and the geographical remoteness of the health facilities in the contract area of operation affect NGO expenditure?
- What factors are related to patient satisfaction?
- What does the evidence tell us about service delivery contracts with NGOs?

We pooled data for the period April 2006 to March 2007 on the main variables used in this research from

a number of data sets: the Afghan National Health Management Information System (for data on curative and preventive service utilization, the type of health facilities and the availability of female staff); the National Monitoring Checklist database (for data on the availability of pharmaceuticals); the 2006 National Health Services Performance Assessment survey by the MOPH and Johns Hopkins University (for data on client satisfaction);[10] MSH's pharmaceutical distribution database (for data on pharmaceutical costs); and the financial records on performance-based contracts funded by USAID (for data on expenditure). It was possible to link the data sets because the MOPH enforces strict data integrity standards for most national data collection systems, including the use of unique identifiers for administrative divisions of the country and health facilities.

The records of the 355 health facilities were summarized, using means and standard deviations, as 21 data points that represented the 21 NGO contracts. Our goal in summarizing the raw data was to increase the strength of the correlations. The key variables used in the research were: (i) the annual NGO contract expenditure; (ii) the cost per capita and the cost per patient-visit; (iii) the utilization of curative, preventive and community-based services in terms of the average number of clients served per month (in each type of health facility and for each contract); (iv) the number and type of funded health facilities; (v) the availability of essential medicines at the health facilities, (vi) the availability of female health workers at health facilities; (vii) a contract security score; (viii) a contract remoteness score; and (ix) a client satisfaction score.

The quality of health services was based on client satisfaction, the availability of female health personnel and the availability of essential BPHS medicines at the health facilities. The level of client satisfaction was extracted and compiled from client exit interviews carried out in the 2006 National Health System Performance Assessment survey by Johns Hopkins University and the Afghan Ministry of Public Health. The presence of female staff was an important variable, since in many areas of Afghanistan, for cultural reasons, women cannot use health services unless they are provided by a female health-care provider. The availability of medicines

Fig. 1. **Cost per capita of the Basic Package of Health Services in USAID-funded provinces in Afghanistan, by district, April 2006–March 2007**
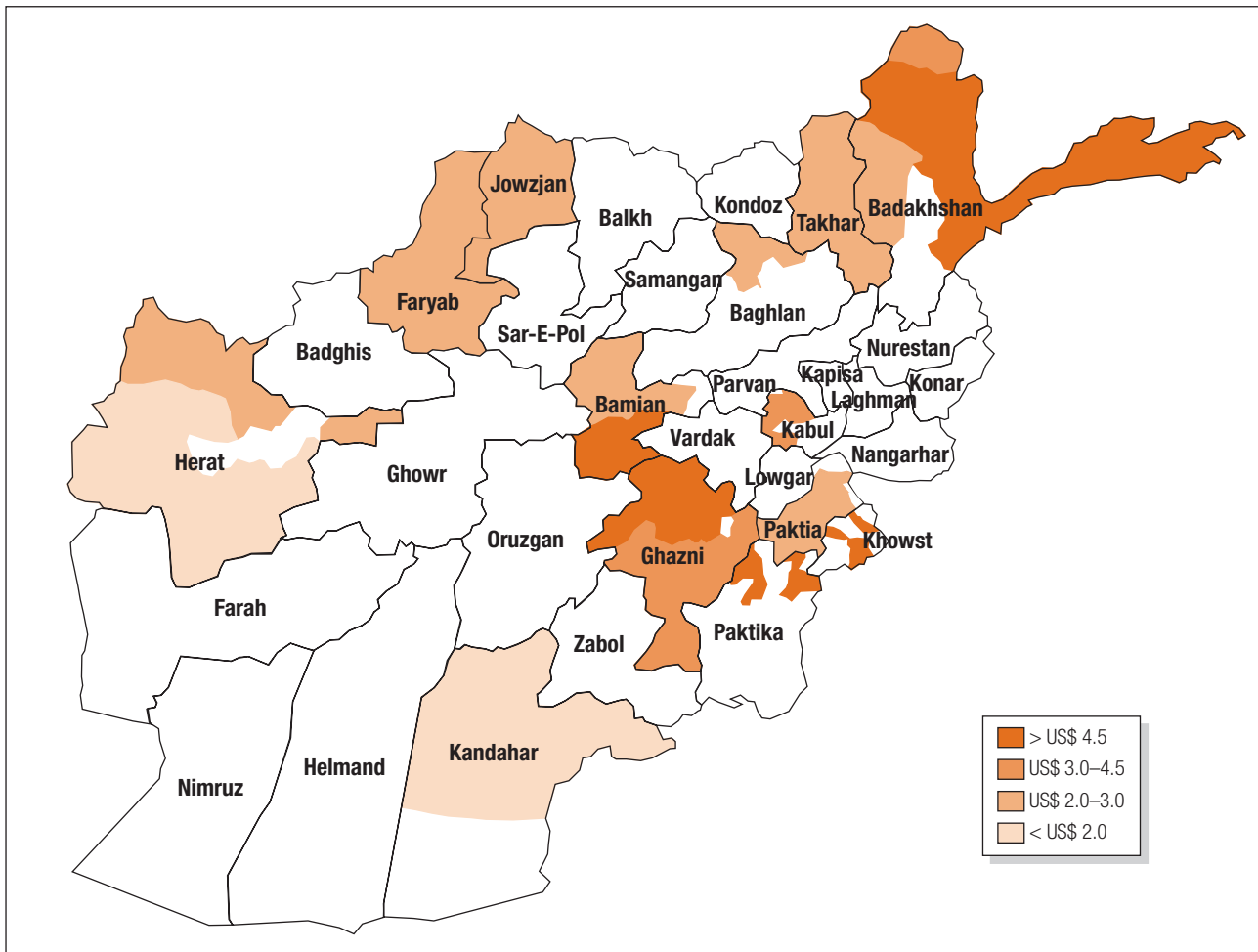
Data obtained from the Grants and Contracts Management Unit of the Ministry of Public Health from various unpublished sources and reports.

for completing treatment is often used as a proxy for quality of care.

Security and remoteness scores were calculated using two available categorizations of Afghanistan's districts. The United Nations classifies each district in one of four categories, ranging from relative safety to active conflict. Consequently, we graded each district from 1 to 4, with 1 being the first United Nations category, which was the safest for reconstruction work; 2, medium risk and unstable; 3, high risk and volatile; and 4, extreme risk and hostile environment. For remoteness, the Afghan Central Statistics Office classifies areas into five categories based on the time required to travel from a district to the province's centre using conventional means of transportation. Remoteness was graded from 1 to 5, with 1 being the least remote (e.g. 1: 0–3 hours' travel time; 2: 3–6 hours' or half a

day; 3: 6–12 hours' or 1 day; 4: 12–24 hours' or 2 days'; and 5: 2–8 days'). The final security and remoteness scores were weighted averages of the above-mentioned scores for all funded health facilities in each district managed by an NGO. Pearson's partial correlation and multiple linear regression models were used to examine the correlation between contract expenditure and the other variables used in the study. Data were analysed using SPSS 14.0 for Windows (SPSS Inc., Chicago, IL, United States of America) and Microsoft Excel (Microsoft, Redmond, WA, USA).

Results

Fig. 1 depicts the geographical distribution of the per capita cost for providing the BPHS to each district in USAID-funded provinces.

Table 1 summarizes the main dependent cost variables and the security and remoteness scores for all 21 contracts combined. Initially, security and remoteness were considered important determinants of a contract's cost because we expected it to be more costly to provide services in less secure and more remote areas and because key contract inputs (i.e. independent variables), such as the number of health facilities and the number of staff, were assumed to be lower in these locations.

There was less variability in the cost per visit than in the cost per capita, with a range of US$ 1.48–5.36 for the former compared with a range of US$ 1.60–10.55 for the latter. The average total cost of each visit was US$ 3.57, with pharmaceuticals accounting for 8.5%.

Fitting a linear model that could explain the relationship between costs

Table 1. **Mean and median total costs, drug costs and health facility remoteness scores for 21 contracts for the Basic Package of Health Services in Afghanistan, April 2006–March 2007**

	Mean	Standard deviation	Median	Range
Annual total cost[a]	975 710	469 553	921 147	150 140–2 150 071
Annual cost per visit[a]	3.27	1.23	2.99	1.48–5.36
Annual drug cost per visit[a,b]	0.3	0.096	0.28	0.14–0.54
Annual cost per capita[a]	3.78	1.89	3.19	1.60–10.55
Annual drug cost per capita[a]	0.65	0.33	0.57	0.21–1.66
Contract weighted security score (1–4)[c]	1.62	0.82	1.23	1.0–3.6
Contract weighted remoteness score (1–5)[d]	1.7	0.97	1.49	1.0–5.0

[a] Costs in US dollars.
[b] Drug costs include pharmaceuticals and contraceptives.
[c] 1 represents the most secure district and 4, the least secure.
[d] 1 represents the least remote district and 5, the most remote.

and the main contract inputs was not as straightforward as expected. We did not use the cost per capita or the cost per visit in the linear regression model because neither of these variables could be predicted using any combination of the study's contract inputs (i.e. independent variables such as security and remoteness scores, the number of health facilities supported, service utilization at a health facility and the availability of female staff). Instead, we used the total annual cost in the model.

We studied the correlation between the total annual costs and seven contract inputs (i.e. independent variables) (Table 2). Using Pearson's partial correlation test, statistically significant correlations were found only between the total cost and the remoteness of the NGO's area of operation and between the total cost and the number of health facilities supported, whether BHCs or CHCs. There was no significant cor-

relation between the total annual cost and either service utilization at health facilities, the availability of female staff or the security score. The existence or absence of a correlation was unaffected by controlling for the availability of female staff.

On the basis of the results of the partial correlation test, the best-fit linear regression model was (see Fig. 2):

total annual cost (US$) = $516\,377.9 + 35\,786.6*N_{CHC} + 42\,545.9*N_{BHC} - 102\,497.6*S_{remoteness}$ ($R^2 = 0.855$, F-significance < 0.001)

Where:
N_{CHC} is the number of CHCs supported by a contract
N_{BHC} is the number of BHCs supported by a contract
$S_{remoteness}$ is the weighted remoteness score of a contract (minimum 1, maximum 5).

There was a negative correlation between the remoteness score and the total annual costs, as demonstrated by both the linear regression model and a Pearson's correlation coefficient of −0.45 ($P < 0.05$). This suggests that among contracts with similar numbers and types of health facilities, the more remote actually cost less.

In this study, there was no statistically significant correlation between security score and the cost in total, per capita, or per visit. We also found that there was no correlation between the weighted security score of a USAID-funded BPHS contract and the cost either per capita or per visit. Poor security did not explain a higher cost per capita or a higher cost per visit.

The variation in the cost per capita and the cost per visit was highly unpredictable, as shown by the range of correlation coefficients obtained and the failure to establish a significant

Table 2. **Correlations between the annual cost for the Basic Package of Health Services and service delivery variables[a]**

Annual cost	Health service delivery variable						
	Contract weighted security score	Contract weighted remoteness score	Number of CHCs	Number of BHCs	Average utilization at BHCs	Average utilization at CHCs	Presence of at least one female staff member
NC female staff[b]	NSC	**r = −0.465 Negative correlation***	**r = 0.764 Positive correlation***	**r = 0.842 Positive correlation***	NSC	NSC	NSC
C female staff[c]	NSC	**r = −0.453 Negative correlation***	**r = 0.761 Positive correlation***	**r = 0.839 Positive correlation***	NSC	NSC	NA

*$P < 0.05$. BHC, basic health centres; CHC, comprehensive health centres; NA, not applicable; NSC, no significant correlation; r, Pearson's correlation coefficient.
[a] Bold typeface indicates statistically significant correlations between the variables.
[b] Not controlled for the presence of female staff.
[c] Controlled for the presence of female staff.

Table 3. **Correlation of cost per capita and cost per visit to a health facility with health service delivery variables,[a] Afghanistan, April 2006–March 2007**

	Health service delivery variable						
	Contract weighted security score	**Contract weighted remoteness score**	**Number of CHCs**	**Number of BHCs**	**Average utilization at BHCs**	**Average utilization at CHCs**	**Presence of at least one female staff member**
Cost per capita							
NC female staff[b]	$r = -0.265$ NSC	$r = 0.120$ NSC	$r = -0.592$ **Negative correlation***	$r = -0.408$ NSC	$r = 0.467$ **Positive correlation***	$r = 0.114$ NSC	$r = 0.168$ NSC
C female staff[c]	$r = -0.210$ NSC	$r = 0.096$ NSC	$r = -0.586$ **Negative correlation****	$r = -0.393$ NSC	$r = 0.479$ **Positive correlation***	$r = 0.098$ NSC	NA
Cost per visit							
NC female staff[b]	$r = 0.186$ NSC	$r = -0.142$ NSC	$r = -0.261$ NSC	$r = -0.397$ NSC	NA	NA	$r = -0.227$ NSC
C female staff[c]	$r = 0.186$ NSC	$r = -0.111$ NSC	$r = -0.294$ NSC	$r = -0.447$ **Negative correlation***	NA	NA	NA

*$P < 0.05$; **$P < 0.01$. BHC, basic health centres; CHC, comprehensive health centres; NA, not applicable; NSC, no significant correlation; r, Pearson's correlation coefficient.
[a] Bold typeface indicates statistically significant correlations.
[b] Not controlled for the presence of female staff.
[c] Controlled for the presence of female staff.

correlation between either of these variables and the contract inputs (Table 3). The data demonstrate that neither the security nor the remoteness score of the BPHS contracts can explain even partially the variations in the cost per capita or the cost per visit. In exceptional cases where a statistically significant correlation was detected, such as the negative correlation between the cost per capita and the number of CHCs, the finding is to some extent counterintuitive. This suggests that neither the cost per capita nor the cost per visit is a suitable variable for predicting the cost of a BPHS contract. The negative correlation between the cost per capita and the number of health facilities may indicate that overhead costs play a greater role in determining an NGO's expenditure.

There was a significant positive correlation between the average utilization of services at BHCs and the cost per capita (Table 3) but not the total costs. This is an isolated correlation that is difficult to explain. In summary, it seems that fixed costs are the dominant component of the cost of a BPHS contract, as demonstrated by the lack of a significant correlation between the total annual cost and the utilization of services (Table 2), which is the main

determinant of the variable cost of delivering BPHS services.

We also studied underspending on NGO contracts (i.e. the difference between actual expenditure and budgeted costs, as a percentage of the total budgeted costs) as a function of contractors' geographical remoteness and the local security situation. The MOPH and donors assumed that underspending would occur if a clinic was closed because of poor security and that costs would decrease in proportion to the number of closed facilities and duration of closure. Similarly, they assumed that the more remote the clinic, the greater the operational challenges involved in delivering full services, thereby leading to the possibility of underspending. Contrary to these expectations, we found that contract underspending was unaffected by either security or remoteness, as demonstrated by the lack of any significant correlation between underspending on individual contracts and these two variables.

The presence of female staff is considered a major determinant of the quality of basic health care in Afghanistan. In this study, there was a negative correlation between this variable and security (Pearson's correlation coefficient, $r = -0.70$; $P < 0.001$). How-

ever, the negative correlation remained strong ($r = -0.69$; $P = 0.001$) when the remoteness score of the contract was controlled for. This finding may indicate that NGOs' efforts to make female staff available in remote areas have been relatively successful, since increased remoteness did not result in significantly lower availability of female staff.

The study found a significant positive correlation between client satisfaction and the utilization of curative services at both BHCs and CHCs (regression $R^2 = 0.389$ and 0.272 for BHCs and CHCs, respectively). In other words, health facilities linked to a contract with a high client satisfaction score (on a scale of 0 to 1) had significantly more client visits than facilities with lower scores. Almost one-third of the difference could be explained by a linear regression model.

Client satisfaction cannot be fully explained, however, by either the availability of pharmaceuticals or the presence of female staff. The data did not show any significant correlation between these two variables and client satisfaction. However, the lack of a significant correlation between the presence of female staff and client satisfaction might be due to the small number of data points or to a few outliers; the scatter

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plot indicates a positive correlation for contracts with high service utilization rates. These observations suggest that in this study the quality of the interaction between the health-care provider and clients played a more important role in client satisfaction than the availability of medicine or female staff.

The positive correlation between client satisfaction and the utilization of services becomes blurred for preventive services. Neither Pearson's partial correlation test nor linear regression analysis could establish a statistically significant correlation between client satisfaction and the average number of child vaccinations (i.e. for diphtheria, pertussis and tetanus) at health facilities (regression R^2 = 0.003, not significant). Similar results were obtained for the number of antenatal care visits (R^2 = 0.019, not significant). These findings suggest that utilization of preventive services does not necessarily increase as a result of increased client satisfaction and that client satisfaction does not guarantee better utilization of most preventive services. Targeted education of the public will be needed to increase utilization of preventive services. The exception to this conclusion was family-planning visits to BHCs, with client satisfaction having been a statistically significant but weak predictor of utilization (regression R^2 = 0.062; F-significance = 0.01).

Discussion

The use of contracts to extend access to basic health services in post-conflict countries is not unique to Afghanistan. A review of the experience of other countries, however, has shown that the level of support given by, and the co-ordination between, donors and the MOPH in Afghanistan were strong factors contributing to increased access. Liberia, for example, faced a severe gap in funding for the transition between the emergency and rehabilitation phases of the country's health system.[11] In Afghanistan, the commitment of donors to the long-term development of the health system and their support for a package of basic health services at its core explain why progress was made and why this costing study was possible.

The study's principal findings were:
- There was no correlation between the cost of the BPHS contract and the health service utilization rate.

Fig. 2. **Correlation between actual total annual cost and total annual cost predicted by the linear regression model, Afghanistan, April 2006–March 2007**
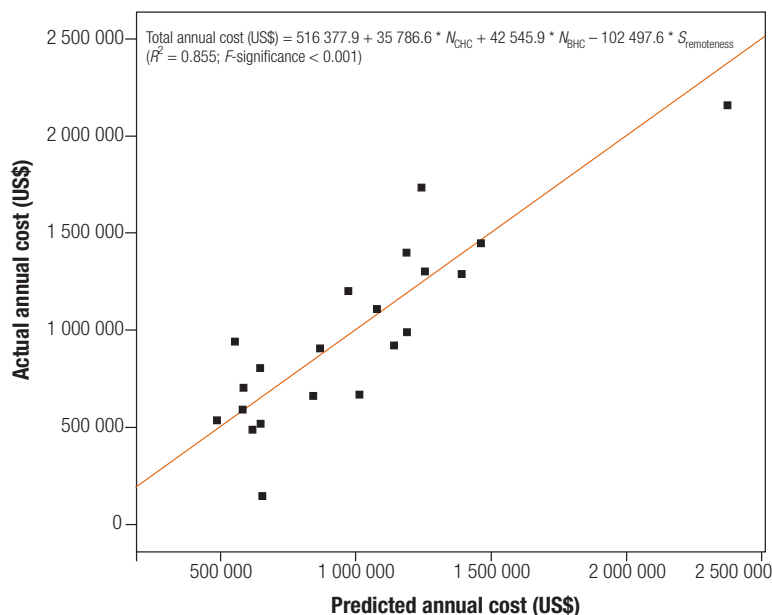
N_{CHC}, number of CHCs supported by a contract; N_{BHC}, number of BHCs supported by a contract; $S_{remoteness}$, weighted remoteness score of a contract (minimum 1, maximum 5).

- There was a negative correlation between the remoteness of health facilities and the total annual cost.
- There was no correlation between the security level and costs.
- Fixed costs were the dominant element of the cost of a BPHS contract.
- The presence of female health workers at a clinic was considered a quality factor and was negatively correlated with security.
- Degradation of security has adversely affected the quality of health services.
- There was a strong correlation between the use of curative services and client satisfaction.
- There was no clear correlation between patient satisfaction and utilization of preventive services.

Some of the study's findings run against conventional wisdom about the factors that affect costs and the elements that may result in underspending. For instance, there is no clear relationship between underspending and the security situation or remoteness of health facilities. The analysis did not provide evidence to support the hypothesis that NGOs in more remote or insecure areas underspent their contract budgets more than others.

While this study did review issues related to the various costs of the contracts, it did not include the indirect costs of administering NGO contracts, such as good management, monitoring, supervision, oversight and training of NGO staff by the MOPH. Palmer et al. note that building local capacity in a fragile state reduces these costs over time.[12] However, some additional costs will still be incurred by a well-functioning contract system. There are positive signs in Afghanistan: the governments of Afghanistan and the United States of America signed a letter of intent on 16 July 2008 that will funnel US$ 218 million for BPHS contracts with NGOs directly to the Afghan Ministry of Finance rather than through an intermediary.[13] This is significant because the Afghan MOPH and Ministry of Finance had to follow a strict certification process established by USAID for this planned shift to direct funding of the Afghan Government to support BPHS contracts. In addition, USAID will continue to provide technical and financial assistance to the MOPH as it develops its capacities. These are additional costs for developing the system that were not addressed in this study and have not been quantified. Determining the extent of these management costs is essential in the future.

Statistical modelling does have a place in planning and monitoring. Fig. 2 shows a reasonable correlation between the predicted total annual cost, as defined by the regression model and supported by Pearson's partial correlation test, and the actual total annual cost. Such a good fit bodes well for modelling. Although many of the variables used in this study lacked predictive power, the research has helped clarify what the more significant cost-drivers may be in this context. We believe this research will be most useful if similar studies are conducted to enable comparisons among the contracts of the three major donors that are funding the contracting of basic health services in Afghanistan.

This basic research on the effect of various factors on the cost of contracted health services in a post-conflict country was possible because the Afghan MOPH had developed a strong health management information system and because detailed cost information was available. In 2002, however, such cost and health service information was nonexistent. While the study's findings indicate that the per capita cost is not a good predictor of actual costs, a pragmatic approach based on a per capita cost may be required when starting to contract for services in a post-conflict country. In many instances, this might be the only available alternative at the start-up phase of reconstructive efforts due to lack of more accurate models for estimating costs. In the case of Afghanistan, the estimated per capita cost of providing the BPHS[7] supplied the initial information that donors needed to move forward to fund basic health services.

Conclusion

The available data indicate that it is possible to extend access to health services through contracting mechanisms in a post-conflict state despite security issues. A large portion of the cost of a contract appears to be fixed because a minimum cost of operation exists regardless of the level of utilization. The lower costs observed in some remote areas may be due to lower utilization than in less remote areas because the population is more dispersed and there are geographical and seasonal difficulties in seeking care. For example, in some provinces in Afghanistan, heavy snow makes it nearly impossible for many people to reach health services during the winter. Expenditure on contract management, such as supervision visits, may have also been less in more remote areas.

Countries that are in conflict or are emerging from conflict could learn four lessons from the Afghan experience. First, the cost per capita of a basic health service package is not a robust planning parameter. It may mask a complex cost structure involving too many variables that affect the operation of the NGOs contracted to provide services. For example, cultural factors can vary within a province as well as throughout the country and can have a significant influence on delivery. In the early stages of reconstruction in a post-conflict country, however, the lack of current data may make it necessary to take a pragmatic approach based on per capita costs until a better health management information system and better cost information are available.

Second, there may be opportunities for cost-saving through the standardization of fixed-cost elements since these costs were dominant. This would be true where there is a common, if not precisely uniform, approach among donors to contracting for services. Contract management costs could be reduced if the variability among donors' approaches – and the resultant management and monitoring costs of doing things in different ways – were reduced.

Third, where the utilization rate is low, this study suggests that targeting patient satisfaction offers an opportunity to increase utilization. Finally, the Afghan MOPH's strategy of deploying female health workers to remote areas to help increase acceptance as well as utilization among a key target group (i.e. women) is working quite well in secure areas. This finding might be instructive to policy-makers in helping select strategies to support key government policies.

The implication of this study for increasing access, especially for areas with limited or no access at present, is the need for a substantial investment and commitment of money to provide health services universally in post-conflict countries. The cost will not be significantly affected by factors such as security. Furthermore, neither the per capita cost nor the number of health facility visits per capita will be a good predictor of the cost of covering different population groups and geographical areas. Until better predictors of cost variables are developed, countries and donors will need to commit lump sums for extending access and should not expect to see wide variations across different areas of the country. ■

Résumé

Sous-traitance des services de santé : effets de l'utilisation et de la qualité de ces services sur les coûts du kit de services sanitaires de base en Afghanistan

Objectif Etudier les effets des évolutions dans l'utilisation et la qualité des services de santé sur les coûts du kit de services sanitaires de base dans 13 provinces d'Afghanistan.

Méthodes L'étude a rassemblé des données provenant de 355 établissements de soins et de plus de 4000 postes de santé, sous forme de 21 points de données représentant 21 contrats de services différents avec des organisations non gouvernementales pour la période avril 2006 - mars 2007. Des données ont été regroupées à partir de cinq jeux de données sur les dépenses, le recours aux services, la qualité (c'est-à-dire la satisfaction du client, ainsi que la disponibilité de médicaments essentiels et de prestateurs de soins de santé féminins), les produits pharmaceutiques, ainsi que

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sur les évaluations de la sécurité et de l'éloignement. Des modèles de régression partielle de Pearson et de régression linaire multiple ont été utilisés pour examiner les corrélations entre les dépenses et d'autres variables étudiées.

Résultats On a constaté que les coûts fixes intégraient la plus grande part des coûts contractuels relatifs aux kits sanitaires de base. On n'a pas trouvé de corrélation entre les coûts et le taux d'utilisation ou la sécurité. La distance à l'établissement de soins était corrélée négativement avec les coûts (R² = 0,855, significativité du F < 0,001). La présence d'agents de santé féminins, paramètre indicateur d'une bonne qualité des services dans ce contexte culturel, était corrélée négativement avec la sécurité (r= -0,70 ; p < 0,001). On a relevé une corrélation

significative entre le recours aux services curatifs et la satisfaction du client, sans qu'il soit de même entre le recours aux services préventifs et la satisfaction du client (R² = 0,389 et 0,272 pour les deux types d'établissement de soins étudiés).

Conclusion Même en présence de problèmes de sécurité, l'accès aux services de santé peut être étendu par des mécanismes de sous-traitance dans une situation post conflictuelle. Les caractéristiques des services, les distances géographiques et la situation en termes de sécurité ne suffisent pas à expliquer, isolément ou de manière combinée, les variations observées des coûts ou du nombre de visites par habitant. L'utilisation de ces paramètres comme base de la planification ne conduira donc pas nécessairement à une meilleure allocation des ressources.

Resumen

Contratación de servicios de salud: efectos de la utilización y la calidad en los costos del Paquete Básico de Servicios de Salud en el Afganistán

Objetivo Investigar los efectos de los cambios en la utilización y la calidad de los servicios de salud sobre los costos del Paquete Básico de Servicios de Salud (PBSS) en 13 provincias del Afganistán.

Métodos Entre abril de 2006 y marzo de 2007 se agruparon datos de 355 establecimientos de salud y más de 4000 puestos de salud en 21 puntos de datos correspondientes a 21 contratos con organizaciones no gubernamentales para la prestación de servicios. Se combinaron los datos de cinco conjuntos de datos sobre gastos, utilización de servicios, calidad (esto es, satisfacción de los usuarios y disponibilidad de medicamentos esenciales y de personal sanitario femenino), productos farmacéuticos, y puntuaciones de la seguridad y la lejanía de los servicios. Para analizar la correlación entre el gasto y otras variables estudiadas se emplearon la correlación parcial de Pearson y modelos de regresión lineal múltiple.

Resultados Los costos fijos comprendían la mayor parte del costo de los contratos relacionados con el PBSS. No había ninguna correlación entre el costo y la tasa de utilización o la seguridad. La distancia al establecimiento de salud estaba negativamente correlacionada con

los costos ($R^2 = 0,855$, $F < 0,001$). La presencia de trabajadoras sanitarias, indicativa de buena calidad en este contexto cultural, estaba negativamente correlacionada con la seguridad ($r = -0,70$; $p < 0,001$). Había una correlación importante entre la utilización de los servicios curativos y la satisfacción de los usuarios, pero no así entre la utilización de los servicios preventivos y la satisfacción de los usuarios ($R^2 = 0,389$ y $0,272$ para los dos tipos de centros de salud estudiados).

Conclusión El acceso a los servicios de salud puede ampliarse a través de mecanismos de contratación en una situación de posconflicto incluso aunque haya problemas de seguridad. Las características de los servicios, la distancia geográfica y la situación en lo concerniente a la seguridad no permitieron explicar de forma coherente, ni por separado ni conjuntamente, las variaciones observadas en los costos por habitante y las visitas. Así pues, el uso de esos parámetros como base de la planificación no conduce necesariamente a una mejor asignación de los recursos.

ملخص

التعاقد على الخدمات الصحية: تأثيرات الانتفاع والجودة على تكاليف الحزمة الأساسية من الخدمات الصحية في أفغانستان

الهدف: أجري البحث حول تأثير التغيرات في الانتفاع بالخدمات الصحية وفي الجودة على تكاليف الحزمة الأساسية من الخدمات الصحية في 13 ولاية في أفغانستان.

الطريقة: جمعت في الدراسة معطيات من 355 مرفقاً صحياً ومن أكثر من 4000 نقطة صحية، وشكلت 21 نقطة معطيات تمثل 21 عقداً للمنظمات غير الحكومية المختلفة لإيتاء الخدمات في المدة بين نيسان/ابريل 2006 وآذار/مارس 2007. وقد جمعت المعطيات من خمس مجموعات للمعطيات لأحراز الإنفاق، والانتفاع بالخدمات، والجودة (وهذا يعني رضا الزبائن وتوافر الأدوية الأساسية ومن يقوم على أداء الخدمات الصحية من النساء)، والمستحضرات الصيدلانية والأمان ومدى البُعْد عن الخدمات الصحية. وقد استخدم الباحثون كلاً من نموذج الارتباط الجزئي لبيرسون والتحوُّف الخطِّي المتعدّد لدراسة العلاقات بين الإنفاق وبين المتغيرات الأخرى في الدراسة.

الموجودات: لقد اتضح أن التكاليف الثابتة تشكل القسم الأعظم من تكاليف عقود الحزمة الأساسية من الخدمات الصحية، وأنه لا يوجد ترابط بين

التكاليف ومعدَّل الانتفاع أو الأمن. أما البُعْد عن المرفق الصحي فيرتبط ارتباطاً سلبياً بالتكاليف ($R^2 = 0.855$، الاعتداد F يقل عن 0.001). كما أن وجود عاملات صحيات، وهو مؤشر على جودة رفيعة في هذا السياق الثقافي، كان يرتبط ارتباطاً سلبياً بالأمن ($R = 0.70$، p. أقل من 0.001). وكان هناك ارتباط يعتد به إحصائياً بين الانتفاع بالخدمات الوقائية وبين رضا الزبائن ($R^2 = 0.389$ و0.272 لنمطين من المرافق الصحية التي درست).

الاستنتاج: يمكن التوسُّع في إتاحة الخدمات الصحية من خلال آليات التعاقد في حالات ما بعد النزاع، حتى في حالة وجود مشكلات أمنية. ولم تفلح خصائص الخدمة، ولا المسافة الجغرافية، ولا الأوضاع الأمنية، سواء لوحدها أو مؤتلفة، في تقديم تفسير متسق لسبب الاختلاف الملاحظ في نصيب الفرد من التكاليف أو من عدد الزيارات. لذلك، فإن استخدام هذه المتثابتات كأساس للتخطيط لا يؤدي بالضرورة إلى تخصيص أفضل للموارد.

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