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Administrative reform and pay-for-performance methods of primary health service delivery: a comparison of three health districts in Cambodia, 2006-2012

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Keovathanak Khim was the main author; he carried out all of the data collection and analysis, prepared several initial drafts of this paper and finalised the submitted version.

Rohan Jayasuria co-supervised the first author's doctoral research; he provided extensive input, advice and guidance on the quantitative methods and the analysis of results in this paper; he participated fully in the preparation of various drafts and assured quality of the final paper.

Peter Leslie Annear was the supervisor for the first author's doctoral study, supervised and guided the study and the preparation of this paper, and prepared the final edited draft for publication.

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Abstract

Since 1999, performance-based financing (PBF) or pay-for-performance (P4P) methods have been piloted in the Cambodian public health sector, first as one part of external contracting approaches with International Non-Government Organisations and from 2009 as a part of internal contracting arrangements between units within the Ministry of Health under a wider public sector administrative reform. This study analyses these reforms and compares outcomes in three health districts. The study analysed routine quantitative data for primary care service delivery using the interrupted time series (ITS) method. Qualitative data was collected from key informant interviews. Both the level and the trend line of key service delivery indicators during earlier contracting/P4P models were at least maintained and in most cases increased with the move to internal contracting. The results of the ITS analysis were mixed, mainly due to contextual issues. Qualitative results indicated an increased sense of local ownership and financial sustainability. Despite the gains, the management of personnel and the implementation and the integrity of contract monitoring were found to be compromised in this case. To be fully effective, contracting and P4P approaches must be accompanied by changes in the structure and culture of government administration.

Introduction

Cambodia is passing through a period of public sector administrative reform in which the Ministry of Health (MOH) has been identified as a pilot ministry.[1,2] With the aim of increasing the efficiency and effectiveness of public sector services, the government has initiated a process that provides increased autonomy and a more direct line of funding for government service delivery units.[3] Under the reform plan, these service delivery units, such as health districts and provincial hospitals, are termed Special Operating Agencies (SOAs).[4] In place of the hierarchical line management structure of the MOH, each SOA operates under an internal contract with higher levels of the Ministry supported by direct performance-based payments and staff incentives (funding for which comes from Service Delivery Grants (SDGs), a block grant provided to SOAs from a joint donor-government pooled fund.[5] SOA directors are given increased autonomy in using the SDG. This arrangement is consistent with performance-based financing or pay-for-performance approaches used in other countries, such as Afghanistan, Bangladesh, India and Pakistan[6,7] but is based more firmly on the use of the 'internal contracting' approach within a broader government administration reform.

Performance-based financing (PBF) or pay-for-performance (P4P) is a supply-side intervention that frequently involves 'contracting-out' with an external party (also called 'external contracting') in which the purchaser-provider split and the separation of functions is explicit. It may also take an 'internal-contracting' form within an agency through a 'relational' contract built on flexibility in negotiations and trust between parties.[8] These P4P-contracting approaches are often implemented within government services with a view to improving allocative and technical efficiency. Musgrove[11] defines PBF/P4P as a cash payment or non-monetary transfer made to a national or sub-national government, manager, provider, payer or consumer of health services after predefined results have been attained and verified. It is characterised by: (i) commonly, a split in functions between purchaser and provider (with independent verification of performance); (ii) incentive payments to providers (facilities and/or personnel); and (iii) provider payment based on a contract and linked to outputs.[12]

Among its various mandates, the Cambodian SOA reform was intended to encourage a more motivated, loyal and professional civil service and to improve responsiveness and transparency in public service delivery.[13] In the health sector, this new model was seen as a means to satisfy a felt need for greater national ownership of service delivery in contrast to the earlier contracting of service delivery to international non-government organizations (NGOs), to reduce the cost and increase the sustainability of the contracting model, and to prepare for possible national coverage of the SOA approach in conditions where the number of competent NGOs was limited.[14]

In a 2015 article, Van de Poel and colleagues[15] used data from Cambodian Demographic and Health Surveys in 2000, 2005 and 2010 to investigate the effect on service delivery due to contracting of any type. They found that the probability of a child being born in a public facility was on average about 25% greater as a result of PBF-contracting. They found, however, no consistent, significant effect on two other incentivized services – antenatal care and child vaccination.

In Khim and Annear (2013)[16] we assessed the SOA internal contracting approach as a means for improving the management of district health services and strengthening service delivery in Cambodia. In that study, we described the SOA internal contracting approach and identified the constraints and lessons learnt in implementation of the SOA pilot. In this paper we extend our analysis to take into account two forms of contracting that preceded the SOA, compare the trends in primary health service outputs over a longer period of time (2006 to 2012) and analyse differences between the *de facto* implementation of SOA arrangements with the *de jure* design. Our aim was to compare the experience in three SOA health districts to investigate the process and outcomes of SOA design and implementation and to identify both lessons learned and areas for policy improvement.

Methods

We conducted a documentary analysis of routine reports from official government sources, including the MOH, donor agencies, and the contracted NGOs to identify the *de jure* characteristics of the SOA internal contracting model along with materials on the background

and context of the reform to establish a baseline account of the conditions in which earlier forms of contracting where implemented.

Three operational health districts – Cheungprey, Chamkaleu and Memot – were chosen principally as districts that had a longer history of implementing the contracting approach through its various stages and began as SOAs in the first round of reform during 2009-2010 (see Table 1 for more detail). By selecting districts under the same Provincial Health Department (PHD) in Kampong Cham province we removed confounders that could be associated with differences in PHD contract management capacity. The concentration on a single province also permitted a more detailed investigation of the 'inside' story of the reform implementation under common leadership. The three districts differed in one important respect. While they all had a prior history of contracting (making them appropriate for comparison pre- and post- the introduction of the SOA), during 2004-2009 two of the districts (Chamkaleu, and Cheungprey) had implemented a PHD-managed internal contracting model with support from Belgian Technical Cooperation (BTC) and one (Memot) had implemented the previous 'hybrid contracting' model through Save the Children Australia (SCA), an external contracting model that combined the features of earlier contracting-in and contracting-out approaches (described more fully below).

To obtain objective information on changes in service delivery, data for 2006-2012 were extracted from the MOH Health Management Information System (HMIS) database for the three health districts (reliable data was not available prior to 2006). The HMIS monthly data were verified both by internal SOA monitoring teams and central MOH monitoring teams. It was reported that the upgrading of the HMIS had resulted in data reliability within a margin of error of 5%.[17] Four primary care indicators were selected to measure outcomes in monthly service delivery:

- for outpatient consultation, the monthly number of new cases in primary healthcare facilities;
- for immunization, the monthly number of children under one year old immunized;
- for newborn delivery, the monthly number of deliveries by trained professionals;

– for antenatal care (ANC), the proportion of pregnant women who made a second ANC visit (among the total number of expected pregnancies in the district).

We used the Interrupted Time Series (ITS) method to analyse the quantitative data. A segmented linear regression model was used to estimate changes following the implementation of SOAs. For each indicator, the model estimated the pre-SOA trend (month-to-month change in service level or baseline slope term β_1) and level (immediate change after intervention β_2) and the post-SOA trend (month-to-month change terms β_3). We estimated changes in the level and slope of the outcome, controlling for pre-SOA level and trend as well as for autocorrelation (including cyclical effects). Confidence intervals (95%) for the coefficients were computed. Autocorrelation and serial correlation, which are likely to cause an under-estimation of standard errors and overestimation of statistical significance of intervention effects, were corrected using Prais-Wisten transformation.[18]

We adhered to the quality criteria for ITS design provided by Ramsay et al.[19] and the guide by Shardell et al.[20] The data fulfilled the following criteria: (i) the definition and measurement of the service indicator remained the same throughout the study period; (ii) all facilities in the four districts reported the indicator in a uniform format with participation of 100% of all the health facilities; (iii) the sample size of 72 data points with a minimum of 24 data points for each period (pre- and post-intervention) was adequate for examination of cyclical (seasonal) effects and to establish trends in the pre- and post-intervention periods.

To understand both the process of change and differences in service delivery between the selected districts we collected qualitative data on both the *de jure* and *de facto* changes as defined by Ssengoobe and colleagues.[21] We interviewed 20 officials with experience in the implementation of SOA-contracting at the central, provincial and health district levels. The interviews, conducted in November and December 2011, collected data on issues in contract management, contract and performance monitoring, financial management, service organisation, personnel management and community involvement. The interviews were recorded and transcribed and summarised using content analysis.

The study received ethical approval from the University of Melbourne and the National Ethics Committee for Health Research of the MOH in Cambodia.

[Insert Table 1 here] Table 1: Location and characteristics of the three study districts

Results

All three study districts were in a rural area dominated by rice and rubber cultivation, with a similar level of population, similar fertility rates, and with easy access to the capital, Phnom Penh. Memot was furthest from Phnom Penh, at about 200 kilometres. Memot achieved SOA in July 2009 and Cheungprey and Chamkaleu in January 2010. With the largest population among the three districts, Cheungprey had roughly twice the number of health centres and an additional referral hospital, though only marginally more health staff. With fewer health centres, patients in Memot relied more heavily on its referral hospital. Chamkaleu received the least amount of MOH budget funding as well as drugs and supplies (which together were the largest source of funds in all three districts). All three districts received equivalent per capita amounts as Service Delivery Grants (SDGs), the direct funding associated with SOA-contracting All three districts benefited in roughly equal proportion from user-fee revenues and receipts from the Health Equity Fund (HEF, which operated in each district); all three had a voucher scheme for maternal care.

The different structures of the various contracting methods during 2004-2009 and 2009-2012 (ongoing) are illustrated in Figure 1. During 2004-2009 the SCA hybrid model was funded through the national donor-government Health Sector Support Project (HSSP) with district management provided by SCA. In the same period, BTC designed and funded an internal contracting model but cooperated with the HSSP project office; under this model, the Kampong Cham PHD was the principal in contracts signed with district offices and management and the health facilities, and the contracts provided that the PHD would supervise service delivery. From 2009 onward, these earlier models of contracting were replaced in all three districts by internal contracting arrangement in which SOAs were

contracted by the PHD, which in turn was contracted by the HSSP secretariat representing the MOH. The SOA held contracts with the health facilities.

Memot health district had, prior to 2009, implemented the hybrid form of contracting through SCA and had earlier, from 1999 to 2002, implemented the contracting-out model under SCA. During the contracting-out pilot, SCA had full autonomy over the management of the health district, including procurement and human resources management. 'Hybrid' contracting between the central MOH and SCA left the MOH staff in charge of the health district and all facilities while providing a greater level of autonomy and leaving SCA with the decision making power. Chamkaleu and Cheungprey both had implemented a pilot form of internal contracting through the PHD with BTC supervision and support (and, at times, direct intervention). In the BTC districts, the PHD was the principal in contracts signed with the health district and its facilities acting as agents; in Memot, SCA was the principal and the PHD played no role in the contract. In Chamkaleu and Cheungprey, BTC assisted (in principle) in building contract-management capacity at the PHD; this was not a feature of the SCA hybrid model. SCA performed the contract monitoring function and set more specific performance targets for health staff, while in the BTC districts performance targets were set for facilities but not staff, and monitoring was performed by the PHD. Further detail is provided in Table 2.

[Insert Figure 1 here] Figure 1. Hybrid, Internal and SOA contracting, 2003-2012

[Insert Table 2 here] Table 2. Characteristics of the hybrid and internal contracting models: prior to the 2009 SOA reform

Levels and trends in health service outputs

As the largest district by population, Cheungprey consistently had the highest annual numbers for outpatient consultations, immunization and newborn deliveries during 2006-2012 (Figure 2). The absolute level of output for second ANC visits (ANC2) was closer during this period across all three districts. These numbers do not yet reveal any causation of increased outputs. For outpatient consultations, all three districts increased strongly in

subsequent years under the internal contracting arrangement. The number of newborn deliveries also increased strongly, perhaps in most part due to the national midwife bonus. The overall results for ANC2 visits were less clear.

[Insert Figure 2 here] Figure 2: Four primary healthcare services in three SOA districts, Cambodia 2006-2011

Monthly variation of service data is often the norm in primary care services. However, certain trends were discernible in the ITS results (the full results of the regression analysis and accompanying graphs are available in the electronic Annex). With regard to outpatient consultations, a clear and significant rise in the level following SOA was evident in all three districts. The post-SOA increase in trend was most clearly in Cheungprey (Figure 3A) and Memot. A major improvement in level was evident too in Chamkaleu but with an unexplained plunge in the result during the month of SOA introduction.

The general improvement in outpatient service delivery and other indicators across the whole period – though not the upturn following SOA introduction – may be associated with the increased resources available to the district managers through the SDGs compared to routine MOH budget (though less than previous contracting models). According to one official (KI#7), "We should be content that these [additional SDG] resources have been used to benefit people and indeed contributed to increased health services. The earlier contracting approach had more resources [than the SOA but] was much more expensive [for the MOH]."

[Insert Figure 3 here] Figure 3. Monthly level and trend of service-delivery: four primary care indicators, Cambodia 2006-2012

Immunization levels have a strong cyclical component, dependent on the conduct of immunization campaigns by the health centre. A consistent decline in the level and trend of childhood immunization in Memot district appears to have been halted and reversed at the time of the SOA intervention (Figure 3B), while in Cheungprey the increasing trend pre-SOA stabilized at a higher level. The trend in immunization results was steady in Chamkaleu pre-

SOA, with a plunge in the month of SOA introduction (and recovery the month after) and another unexplained plunge in month 63.Overall, the level and trend in immunizations rose in all three districts in the post-SOA period.

The trend line for ante-natal care second visit (ANC2) turned upwards in Memot following SOA introduction. The trend was significantly stronger post-SOA in Chamkaleu, indicating a consistent increase in monthly levels (Figure 3C). However, a large drop in ANC2 numbers during the month of SOA implementation in two districts (Chamkeleu and Cheungprey) , and falls in the final months of the period of analysis , in all three districts, may illustrate a concern.

In Memot district, the monthly level of newborn deliveries rose and the trend line steepened following SOA introduction. In Chamkaleu, a steady rise in the monthly trend pre-SOA continued post-SOA apart from a sharp plunge during the month of SOA implementation and a precipitate rise in the month following (in the absence of which the strong monthly trend pre-SOA continued post-SOA). However, a sharp fall in the trend line for deliveries (which turned downwards) was evident in Cheungprey, though some recovery was evident at the end of the period (Figure 3D).

A possible explanation of the better performance on newborn deliveries and other indicators may be an increasing trust among service users. Many officials believed that people were more aware of service availability, were more familiar with the health facilities, and had increasingly used the services. Users' exposure to a service can influence others in the uptake depending on their experience with service provision. One district official (KI#4) said, "… anyone who uses the service here is a messenger".

There were differences in both the level and the trend in service delivery indicators between the three districts. Wide variation in monthly raw numbers makes visualization of the data more complex. Even so, there is reason to believe that the move to local ownership with the SOA approach reinforced earlier improvements in service delivery. One MOH official (KI#11) argued that, because the SOA was government-owned, with strengthened internal control mechanisms and accountability, a number of improvements were possible as

implementation proceeded: fund disbursement and accountability mechanisms could be strengthened; implementation capacity, particularly for the SDG grants and the Performance Management and Accountability System (PMAS – a government uniform system for staff performance management) could be strengthened; variation in indicators could be reduced if leadership and management capacity were strengthened.

Consistent improvement was strongest in Memot, where all four indicators showed a stronger upward trend following SOA introduction: outpatient visits increased at a faster rate; declines in immunization were reversed; and the results for ANC2 and deliveries were steady at a higher level. Memot had benefited, in fact, from many years of effective and consistent assistance and capacity building from SCA, beginning in the 1990s and continuing through the contracting phases. Cheungprey too had benefited from SCA support prior to the contracting pilots and then became a BTC-supported district with the introduction of BTC's internal contracting model. Chamkaleu, perhaps the most inconsistent of the three districts, was much less a recipient of international support over the longer period. The results suggest a hypothesis that the strengthening of management functions within the districts was one of the main factors contributing to consistently better performance. It appears that the SOA initiative was able to build on these management gains.

Most officials interviewed for this research agreed that, in general, primary health care delivery had strengthened post-SOA and that the wide fluctuations in service delivery indicators were normal. The officials also conveyed an improved sense of ownership over their responsibilities, saying that the increased autonomy for local SOA managers was helpful and that the stronger recognition by the government of local management capacity had reduced costs of human resources. These officials pointed to more regular monitoring of performance, periodic spot-checks, routine review of service performance and linking incentive payment to performance as positive changes, although they also admitted that these were not always fully implemented. Stronger leadership and management were cited as reasons for improved service provision. One development-partner official (KI#12) cited Memot as a good example where performance contracts were implemented more objectively

compared to other districts, with the result that "[the district manager] was able to enforce performance and objectively apply performance monitoring."

The impact of performance incentives

Our review of both SOA and staff-performance contracts indicated that the payment of performance incentives was not entirely linked to delivery of results: more than 70% of performance incentives were already allocated for incentive payment and only small fractions were subject to performance scores based on monitoring. District health officials raised a number of issues – related to delayed monitoring and incentive payments, pre-occupation with other activities and seasonal migration of population – as constraints on better performance:

- some staff still did not take their jobs seriously and were absent, despite regular monitoring. One official (KI#1) said that, "Even if the OD monitoring team tried to enforce the performance contract, only some heeded the warning, others asked why they needed to be so strict with their own colleagues, while a few cared little about the monitoring";
- dual practice was cited as a factor interfering with staff job performance. A district official (KI#2)explained that enforcing working hours was very difficult as staff members said the incentives were sufficient to "completely replace income from other sources";
- seasonal out-migration sometimes seriously affected service outputs as younger family members moved to look for jobs in urban areas or in other countries (especially after rice trans-plantation). A district official (KI#5) reasoned that, "Almost all the services are increasing or at least being maintained at a high level; drops were temporary and often affected by migration … as many people are farmers and move to urban areas for work";
- some district officials complained about having inadequate funds to hire capable staff, delays in funding and inadequate explanation of SDG expense rules.

De jure and de facto changes

Our research indicated that there was variation between the *de jure* and the *de facto* outcomes of SOA implementation. We detail these differences in the electronic Annex; the main concerns can be summarised as follows:

- full implementation of the SOA-contracting model in these districts was limited and the purchaser-provider split was weak;
- the setting of performance targets for contract monitoring was sometimes inaccurate;
- monitoring by district SOA teams was regular, but was much less so at the level of the PHD and HSSP;
- the greater part of the staff incentive payment was guaranteed (regardless of performance) and only a small proportion was contingent upon performance;
- the SDG payment was insufficient to meet contracting requirements to hire capable staff, to pay reasonable salaries to non-MOH hired staff, and to pay adequate incentives; there were frequent delays in disbursement of the SDGs;
- the autonomy of SOA managers was constrained and the application of SOA guidelines was in many cases incomplete; many of the centrally-imposed rules remained and local initiative was often constrained; this was perhaps because limits to fiduciary procedures allowed room for excessive risk but more likely because of the inexperience of SOA managers and the still limited trust between contracting parties;
- the PMAS was initiated to assist manager but was only partially implemented and was thought to interfere with working time and add more paperwork; disciplining government health staff was difficult because of the complicated civil service regulations
- community-involvement mechanisms like the scheduled monthly Health Centre Management Committee meetings were irregular and inconsistent and the Village Health Support Groups generally were called on only at specific times.

Discussion and conclusions

The eighteen years that have elapsed since the introduction of the first contracting pilots were initiated have provided a rich body of data and information on the experience of the contracting and P4P/PBF approaches in strengthening health service management and

delivery of primary care services in Cambodia. The SOA model was implemented as part of a wider public sector reform, and accompanied a period of rising population expectations. Our study did not attempt to evaluate the impact of the internal contracting approach implemented through the SOA structure but rather set out to compare the experience in three SOA health districts to understand the lessons learned and to look for potential improvements in the design and implementation of the SOA model. While there was earlier an intense debate about the government's intent to move from external contracting with INGOs to internal contracting through the MOH, our results suggest that the improved performance of these districts achieved through earlier external contracting arrangements of different sorts was at the very least maintained following the introduction of the SOAs. Our ITS results indicate that there was in fact – with some notable exceptions – a significant improvement in service delivery in these districts for three important primary care indicators following SOA introduction.

These results must be interpreted as being associated with a broader public administration reform in the health sector focussing particularly on the management of provincial and district health service delivery and not simply as a P4P or PBF intervention. Nonetheless, salary supplements and/or performance-based incentives played a significant role in the SOA-contracting outcomes. The structural changes to district health administration through the SOAs have occurred over a longer period (from 2003 and ongoing). Now, the Ministry of Health has incorporated scaling up of the SOA initiative in its Health Strategic Plan 2017-2020 and aims to apply the internal contracting approach within its district health administration structure nationally. Lessons learned from our study may be of assistance in further policy making.

Cambodia was the first low-income country to experiment with the PBF-contracting of public health care. Van de Poel and colleagues[22] found that maintaining management within the public sector while specifying service targets for facilities was more effective than contracting-out management to an NGO. Our results confirm this finding and provide additional information on the delivery of antenatal care and child vaccination. Noting that it was difficult to obtain data through experimental studies given the complexity and scale of

PBF interventions, Van de Poel et al. also suggested that there was relatively little evidence on the effectiveness of PBF-contracting in low-resource settings and argued that evidence on the effectiveness of design of contractual arrangements and the structure of incentives was lacking. The results of our research may partially assist to fill this gap.

We conclude that much of the improvement in service delivery outcomes was not the result of the P4P-contracting intervention alone but was also influenced by context and circumstances nationally and in the three study districts. It is important to remember that wholesale changes in management structures are in and of themselves disruptive, particularly at the district level where capacity is limited. This goes some way towards explaining sudden dips in performance at the time of SOA introduction and suggests that a more well-developed change management process should accompany the further scaling up of the SOA arrangements.

An explanation for the consistently stronger improvements in service delivery post-SOA in Memot – where no dip in performance was evident during the first month of SOA introduction – may indicate the effect of stronger leadership and management capacity in the district. Memot worked consistently well also during the hybrid-contracting period, with the same channel of funding and a local management team primed to replace SCA following SOA introduction.[23] In both Chamkaleu and Cheungprey, the transition from direct to indirect support by BTC under the SOA arrangement with a different funding channel may have created uncertainties and extenuated delays. In addition to routine monthly fluctuations, interruption in critical management functions (local and provincial) may possibly be the cause of an otherwise unusual drop in service delivery in many cases during the inaugural month of SOA implementation in 2009 (outpatient consultations, immunization and ANC in Chamkaleu, ANC and newborn deliveries in Cheungprey). A critical element of success is the ability to manage contracts internally, as was evident also in the case of Afghanistan, for example.[24]

While it was difficult to attribute these declines to a particular cause, a combination of factors may have contributed. Objectivity in the monitoring process was one crucial factor. In the earlier contracting models, a big portion of incentives were linked to performance while under the SOA only a small portion (~30%) of the incentive payment was linked to staff performance. We found there was inadequate support and monitoring by the central MOH and the PHD during SOA implementation; incentives for providers were not made entirely conditional on performance; incentives were not large

enough to replace other income streams;[25] the mismatch between local capacity and the complexity of financial rules resulted in delayed reporting; and the top-down manner of introducing the SOA reform slowed district implementation in the first year.

Best practice in contracting requires that monitoring be implemented by an independent agent,[26] but under the SOA reform all three monitoring teams (central MOH, PHD and SOA) were internal to the MOH and there is evidence of partisan behaviour and inherent difficulties in applying penalties for poor performance within the bureaucratic system and a lack of autonomy of district officials.[27]

Questions have been raised about the efficiency of involving an additional administrative layer, the PHDs, in the SOA arrangement. As well, a closer examination of SOA implementation shows a lack of clarity in administrative systems, tools and methods related particularly to contract monitoring, resource governance, management of human resources and procurement. In practice, SOA directors appeared to be constrained by an excessive array of financial rules and regulations while having to manage a budget deemed sufficient.[28]

The internal contracting model appears to have strengthened the sense of national ownership within the health system and the capacity of local managers. By 2013, the number of SOAs had risen from 11 to 36 out of a total of approximately 75 health districts and the government had raised its own contribution to 40% of total funding for SOAs via the HSSP. Contextual factors, such as public sector governance and regulation, are integral to success of the reform. The SOA model of internal contracting could be further strengthened by improved monitoring, linking incentive payment to performance, improving the governance arrangements, and providing a clearer purchaser-provider split under the MOH. A clear dichotomy is in achieving a more effective balance between the involvement of non-state actors in service provision and the long-term sustainability of national health-system administration. Future evaluations using a consistent longitudinal method may provide stronger evidence on SOA implementation and support further reform initiatives.

Our findings need to be interpreted with certain limitations in mind. In our complex assessment, it was not possible to use the ITS analysis to test single outcomes and with controls, as is more common. Our extensive data set was collected retrospectively from the

routine HMIS; comparable data for earlier periods of contracting (prior to 2006) were not available. The findings are indicative of the SOA experience but cannot be taken as representative of all SOA districts. The data for deliveries by trained staff was complex, as it measured both access to services and utilization of services, it involved deliveries in hospitals as well as in health centres, and it was affected by the nationwide midwife bonus[29] as well as positive changes in community attitudes toward facility-based birthing.[30] Even so, we have shown that the continued use of performance incentives under the SOA added to improved service provision at district level in Cambodia.

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Table 1: Location and characteristics of the three study districts

SOA District	**Memot**	**Chamkaleu**	**Cheungprey**
Province	**Kampong Cham**	**Kampong Cham**	**Kampong Cham**
Geographical location	200 Km East of Phnom Penh, good road connection	150 Km North-east of Phnom Penh, good road connection	50 Km North-east of Phnom Penh, good road connection
Population characteristics	Mostly farmers & rubber plantation workers	Mostly farmers & rubber plantation workers	Mostly farmers
Population	137,141	164,561	200,675
Women in Reproductive Age*	19,200	23,039	28,095
Expected pregnancy*	3,840	4,608	5,619
Children under one*	3,566	4,279	5,218
Date established as SOA	1st July 2009	1st January 2010	1st January 2010
Contracting experience and supporting NGO	1999-2002 & 2004-2008 by SCA	2004-2008 by BTC	2004-2008 by BTC
Services			
MPA facilities (health centres)	10	14	22
Referral hospital facilities	1	1	2**
CPA level of referral hospital	CPA 2	CPA 1	CPA 1
Personnel: total	140	169	174
SOA management	15	18	16
Referral hospital	57	39	49
Health centre	68	103	109
Budget (4100 Riel =US $1)			
Total (US$)* **	1,308,187	760,384	1,631,945
Health Equity Fund	73,619	77,300	90,146
Community based health insurance	No	No	No
Maternal health voucher	Yes	Yes	Yes
Service delivery grant	177,793	200,000	237,500
Per Capita SDG allocation	1.24	1.24	1.18
Government (drugs & supplies)	815,942	409,913	1,086,073
User fees	67,232	73,171	86,855
Other sources (NGO)	173,601	--	131,371

-- data not available

MPA: Minimum Package of Activities (primary health care services); CPA: Complementary Package of Activities (hospital services); SDG: Service Delivery Grant

* estimation based on population census data of 2008: women in reproductive age at 14% of the population, children under one at 2.6% of the population, and expected pregnancy at 2.8%

** upgrading of one of the two referral hospitals to CPA1 was not complete in 2011

*** amounts from different sources do not add up

Source: Service Delivery agreement of the four SOAs for 2011

Table 2. Characteristics of the hybrid and internal contracting models prior to the SOA reform

SCA hybrid model of contracting	BTC internal contracting model
Governance and contract management	
The MOH provided funding through the HSSP; at district level, SCA was both the fund holder and the purchaser of health services from the facilities.	The PHD was both the fund-holder and the purchaser.
SCA was agent on behalf of the MOH (principal) and it was principal in relation to the district facilities (agents). SCA played a central role in: (i) setting targets and indicators; (ii) managing the SOA contract; and (iii) monitoring the contract.	The PHD played a more significant role as principal to the contract (with the OD as agent) while BTC played a support role.
No incentives were paid to PHD staff.	Key PHD staff received incentive payments (e.g. $600 per month to the director and $100 per month to the monitoring team).
Financial Management	
Contract financing came from the HSSP secretariat, where funds from the major Development Partners were pooled (see Figure 2 above).	BTC directly financed contracts with health facilities, coordinated with HSSP for financial reporting.
The funds were transferred on a quarterly basis directly to SCA, which then made payment to the health facilities and the management team based on performance	BTC worked to support the management of the PHD and ODs and transferred funds directly to contracted health facilities based on the results of contract monitoring (funding to health facilities was based on an annual package detailed in the contract along with agreed service delivery performance indicators).
For individual incentive payment, an incentive distribution was applied taking into account performance score determined by monitoring.	In the health facilities, managers had discretion in distributing incentives among staff, usually under a formula suggested by BTC.
Personnel management	
SCA had the right to apply performance standards, pay incentives and enforce penalties in the management of their MOH staff.	PHD staff were responsible for both staff supervision and contract monitoring.
Performance monitoring	
Contract monitoring was conducted principally by SCA; from 2005 monitoring by the central MOH authorities had decreased substantially except for periodic visits; strict enforcement of staff performance by SCA continued.	The occurrence of planned monthly visits by the PHD to facilities in the two districts and the verification of staff performance declined over time (and BTC local advisors had, moreover, to lead the PHD team in carrying out even the reduced activities).
Performance contract for individual staff was used with specific target set; meeting targets was the basis of getting paid the incentive. Slack performance had decreased.	Because contract performance indicators were defined at the facility level, poorly performing staff were not identified and continued to receive benefits similar to more active staff.
Feedback to staff members was provided from monitoring teams at the end of monitoring visit.	Staff members received feedback on their performance as part of monitoring visits.
SCA was involved very closely with monitoring activities and was found to be the source of robustness – more objective assessment of indicators of performance.	Nine of the 11 performance criteria allowed for subjective evaluation and poorly implemented; the ODs routinely received 85-90% of the maximum OD funding allocation. In the case of HCs too, only one

	of the five performance targets was based on meeting service delivery targets and most HCs routinely received 70-90% of the contract allocation.

Source: the authors

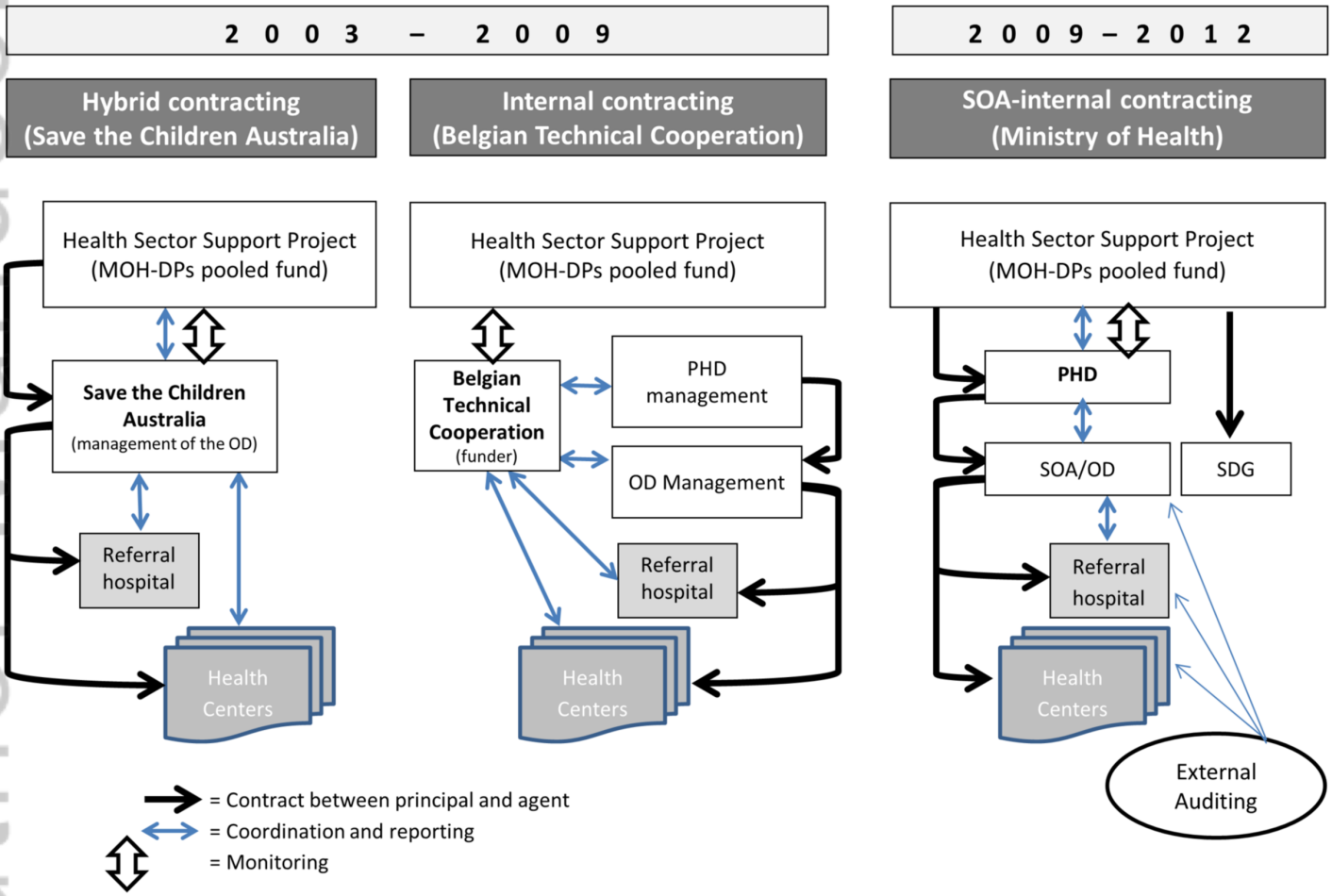
Table 3: Analysis of internal contracting (SOAs) in Kampong Cham province, 2009-2012.

Planned (de jure) arrangements	Actual (de facto) outcomes
Governance and regulation	
1. Contracting model design	**1. Contracting model was established but limited**
Contracts were established in three tiers: - between the MOH and PHDs, called 'performance agreements' – between PHD and SOAs, called the 'Service delivery agreement' – between the Director of SOA and heads of facilities (referral hospital and primary health centres) and individual staff members	Contract enforcement was weak: – The institutional design did not draw a clear line between purchaser and provider. – The OD manager acted as provider and as purchaser in the contract with facility managers and staff members. – Enforcement was made more difficult by the hierarchical nature of the MOH in which contracted units and personnel at lower levels were constrained in identifying non-compliance by those at higher levels.
At PHD level, officials were nominated to the newly created posts and received a performance incentive.	The posts created to support SOA at PHD level were functional for about eight months and then became dysfunctional due to lack of budgetary support.
2. Contract monitoring	**2. Monitoring functioned poorly**
Monitoring had several layers and was conducted both internally and externally:	New monitoring systems did not function well and were less transparent compared to NGO monitoring:
Contract targets were negotiated and agreed in a workshop, with the MOH suggesting targets and methods of measurement.	Targets and indicators had some undesirable and unacceptable characteristics: the number of indicators included in the SOA contract increased two-fold in comparison with the earlier hybrid and BTC arrangements.
At central MOH level, five Service Delivery Monitoring Groups (SDMGs) were established in late 2009 through the HSSP secretariat and the MOH; monitoring teams were tasked with making visits to all PHDs and ODs, including SOAs, scheduled on a quarterly basis.	Monitoring by the central MOH teams did occur, but less than half of planned monitoring visits were carried out; the lack of budget support, lack of transportation and preoccupation with other tasks were the main causes.
The PHD-based monitoring team was required to monitor the implementation of Service Delivery Agreement on a bi-monthly basis.	Contract monitoring by provincial monitoring teams was carried out but less frequently than planned and often in the form of supervision visits.
The SOA-based monitoring team comprised officials of the district management team and were required to conduct monitoring on a monthly basis.	Monitoring was carried out by the district teams but over time was less effective because strictly enforced monitoring activities was perceived as unfriendly and caused bad relationships with frontline staff.
External auditing of programmatic and financial management was intended to check the validity of the implementation data.	External auditing by an independent entity was carried out with a sample of SOAs.
3. Performance monitoring	**3. Performance monitoring was weak**
There was no single model for paying staff; staff performance measures were listed in the contract (i.e. position, qualification and job specification, e.g., report to work on time)	Most staff members received monthly incentives regardless of performance, although they often came late and did not meet performance standards.
The incentive payment was based on a fixed amount according to the provider's qualification and role and a variable amount based on work attendance and job	Reductions in incentives were occasionally imposed and caused friction between monitoring teams and staff members.

performance.	
Financial management	
Funding for SOA districts came from: (i) regular government budget for staff salaries, operating costs and administration; (ii) the Service Delivery Grant (a discretionary fund paid (80%) in advance, of which up to 80% could be used as staff incentives).	SOA officials commonly claimed the SDG was critically needed even though it was not large.
Fifteen per cent of the total SDG was retained at the central MOH level and was to be released as a bonus for those SOAs achieving high monitoring scores or as a fund for making improvement.	SOAs were eager to receive the bonus funds but only received it in late 2013 due to delayed resolution regarding their distribution.
The allocation of SDG funding to SOA districts was based on a formula which accounted for population size, remoteness of the districts and disease burden.	For the first two years, the SDG formula was applied but later was adjusted down.
The funding allocation to each SOA was based on a set of activities consistent with the OD's routine Annual Operational Plan.	Some issues with the over use of discretionary funds for incentives were reported in one of the selected SOAs.
Funds were transferred to SOA districts on a quarterly basis according to requested amounts and only after the expenditure of fund allocated in the previous quarter.	Delays in disbursement were frequent from the beginning of SOA implementation; this was worse particularly for districts that were weak in submitting financial reports.
Organization (management of services)	
Adequate guidelines and rules were deemed necessary for consistent implementation; an SOA manual and SDG guidelines were written and distributed to SOAs.	The ability to apply the guidelines varied across districts and misinterpretation of the guidelines was common; the proportion of the SDG used for staff incentive or support for operation varied ; mistakes in financial reports were frequent.
It was intended that organization for service delivery at primary care level follow the government guidelines for the Minimum Package of Activities (MPA).	The MPA requirements were followed in principle but the extent of implemented varied across facilities depending on staff availability, staff performance and infrastructure.
It was intended that the SDG be used at the discretion of the SOA and as an additional source of funds to pay staff incentives, hire additional staff and procure medical supplies and equipment.	In each of the selected SOAs, additional professional and non-professional staff were hired; the funding through the SDG was insufficient and could provide only a minimum level of staff incentive and to pay only modest salaries for new recruits; SOAs were unable to attract high-calibre candidates.
Personnel management	
The national statute for the employment of civil servants was adopted as the basic regulation for personnel management.	There were only few cases where the statute of civil servants was applied and the staff were reshuffled. Despite the new system, it was always difficult to regulate government health staff because enforcing contract creates conflict and the disciplinary procedure is lengthy.
A Performance Management and Accountability System was introduced to orient staff about their roles and responsibilities and to serve as tool to assist in contract management.	While not all SOAs had implemented a PMAS, the three districts in this study had. For the first two years, staff seemed to be present at the facility and attentive to their jobs, but then work discipline seemed to worsen. It was argued that while the PMAS was helpful to reorient staff to their jobs it also created more paper work for monitoring.

Community Participation	
Health Centre Management Committees (HCMCs) established in every health district in Cambodia were to be incorporated under the SOAs, included in the Annual Operational Plan and funded.	HCMC meeting took place but not at the required frequency but it was often integrated with the meeting of the district health financing committee so the work of the HCMC was not fully carried out and the community members did not fully participate.
Two indicators tracked community participation: (i) the number of HCs with an operational HCMC; (ii) the proportion of clients who expressed satisfaction with HC services received.	Indicators were poorly monitored; HCMC meetings were often perceived to be dominated by the HC staff and consequently the quality of discussions at the meetings was frequently compromised.

Source: authors



DP Development Partner; OD Operational District; PHD Provincial Health Dept; SDG Service Delivery Grant;

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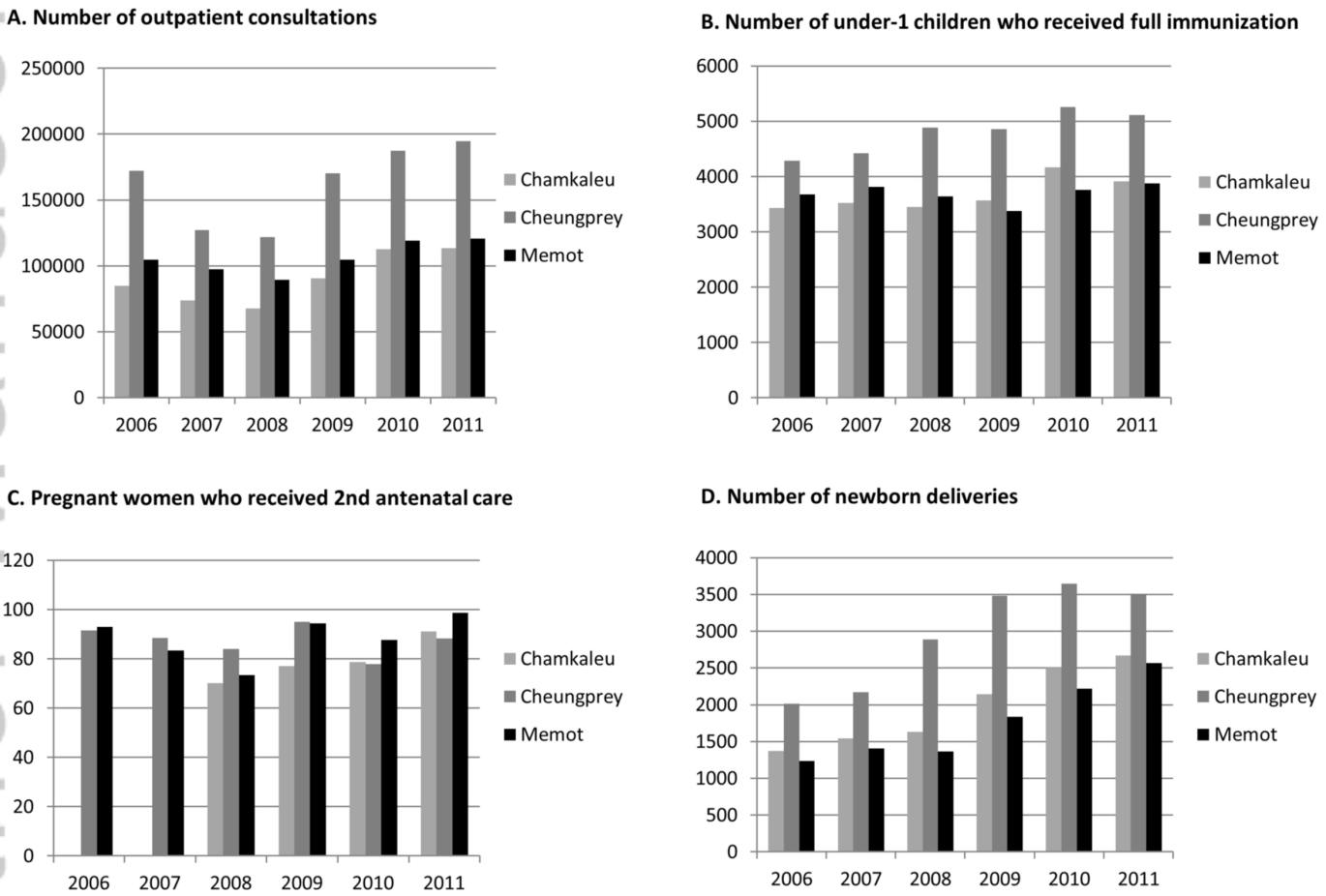
Figure 2: Bar graphs of four primary healthcare services in three SOA districts



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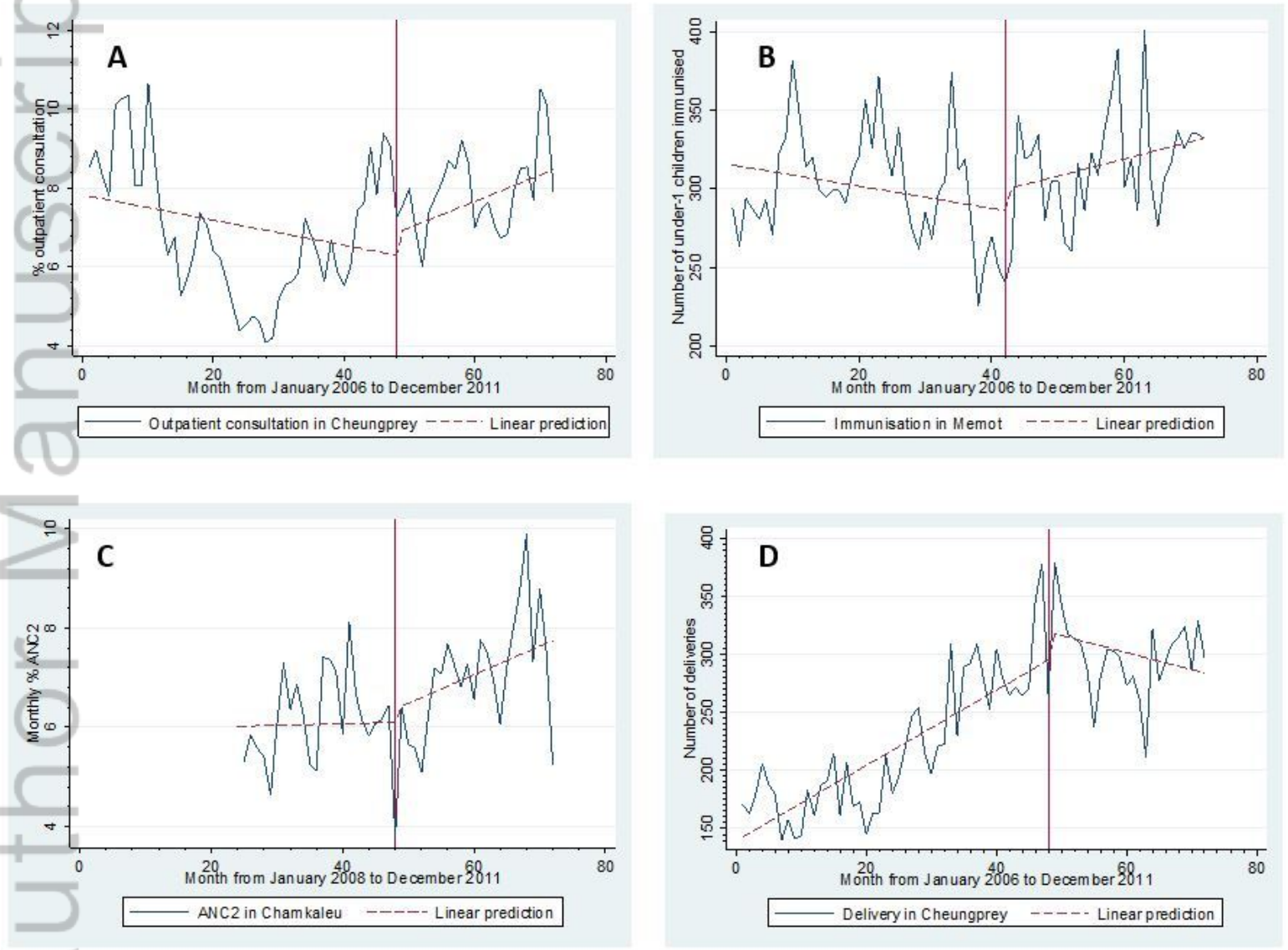

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