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Assessing the Financial Impact of HIS on the Ministry of Health

PALESTINIAN HEALTH SECTOR REFORM AND DEVELOPMENT PROJECT

SHORT-TERM TECHNICAL ASSISTANCE REPORT

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ACRONYMS

ADP	Agence Française de Développement
EDL	Essential Drugs List
ER	Emergency Room
FWC	Fraud, waste, corruption
GCC	Government Computing Center
GD	General Directorate
HIS	Health Information System
MOF	Ministry of Finance
MOH	Ministry of Health
M&E	Monitoring and Evaluation
PHC	Primary Healthcare Center
PHIC	Palestine Health Information Center
PMC	Palestine Medical Complex
SME	Subject Matter Expert
SOW	Scope of Work
STTA	Short-Term Technical Assistance
USAID	United States Agency for International Development

ABSTRACT

The introduction of a Health Information System (HIS) to the Palestinian Ministry of Health (MOH) is creating unprecedented data on patient activity and facility performance. For the first time, the MOH has the opportunity to move away from central planning methods to use real-time user data to improve its forecasting and planning as part of an overall strategy of improved management. The successful adoption of HIS will require long-term commitment by the MOH to financially support running costs, but which should translate into significantly higher cost savings in the long-run. Given the limitations of existing record keeping and the challenges of the current fiscal environment, estimates of the financial impact of HIS are difficult to measure accurately. However, there are key structural and institutional deficiencies in exiting MOH planning and procedures that must first be addressed before HIS can be expected to have any significant positive financial impact.

SUMMARY OF RECOMMENDATIONS

Within the next month:

- Conduct further HIS introductory workshops for MOH officials across facilities, geographies and specializations to enhance awareness of HIS potential and increase management buy-in to support continued implementation.
- Follow up with MOH finance department to ensure budgetary support for 2013 HIS supplies, as well as secure (tentative) administrative approval for direct procurement of supplies by MOH HIS team.

Within the next six months:

- Urge MOH to augment internal HIS team with additional technical and administrative staff.
- Work with MOH procurement teams to develop improved forecasting methodologies and standardized guidelines.
- Study warehousing to rationalize distribution of supplies and work to eliminate bottlenecks and other disruptions that jeopardize the long-term sustainability of HIS.

Within the next year:

- Train the MOH finance team on conducting site visits or building ideal consumption models in order to build a 2014 HIS running costs and equipment replacement budget.
- Select and coordinate with critical general directorates (GDs) to understand their research needs, and develop tailored training on how HIS data can be incorporated into those processes.
- Encourage the development of a monitoring and evaluation (M&E) mechanism within the MOH to ensure supervision of HIS data entry and standard processes to guarantee quality control.

SECTION I: INTRODUCTION

The Palestinian Health Sector Reform and Development Project (the Project) is a five-year initiative funded by the U.S. Agency for International Development (USAID), designed and implemented in close collaboration with the Palestinian Ministry of Health (MOH). The Project's main objective is to support the MOH, selected non-governmental organizations, and selected educational and professional institutions in strengthening their institutional capacities and performance to support a functional and democratic Palestinian health sector able to meet its priority public health needs. The Flagship Project works to achieve this goal through three components: (1) supporting health sector reform and management, (2) strengthening clinical and community-based health, and (3) supporting procurement of health and humanitarian assistance commodities.

The MOH is facing critical finance management challenges including weak financial planning capacity, a lack of budgetary authority, rigid governmental and administrative structures within the MOH and the Ministry of Finance (MOF), a lack of effective mechanisms for monitoring and controlling costs, and ineffective management infrastructure.

The MOH, with the Project's financial and technical assistance, is in the process of implementing a Health Information System (HIS) in various health facilities including hospitals, clinics, and directorates. HIS aids in establishing the creation of a nationalized system which will give all those involved the tools to integrate health record systems, improve governance and planning, administration and management, develop a health care database, and improve the overall efficiency of health service delivery.

However, sustaining HIS requires a gradual transfer of financial and administrative responsibility from the Project to the MOH. The first significant challenge to long-term sustainability arose in the difficulties faced by the MOH in creating a budget forecast to account for the supplies and other running costs needed to keep HIS running through 2013. The primary objective of this consultancy was to provide technical assistance to the MOH with a financial analysis of HIS—its cost and potential savings for the MOH—as well as an assessment of other structural or institutional challenges to the long-term sustainability of the system.

SECTION II: ACTIVITIES CONDUCTED

The consultant's engagement was essentially divided into three phases. Although there was significant overlap in activities and research areas, each phase laid the foundation for its successor. The initial scope of the consultancy was to estimate running costs and demand levels of required supplies (paper, printer toner, barcode labels and printer ribbons) at those facilities running HIS following initial implementation. The goal was to produce a budget forecast covering these supplies used by HIS facilities for 2-3 years. The expectation of the consultant was that the initial assessment of MOH facilities and personnel required to produce such a budget would suggest further areas for study to enhance implementation, reduce inefficiencies, and ultimately strengthen the role of HIS within the MOH.

Phase I

Although the Project staff within the HIS implementation team were well acquainted with MOH personnel at the various hospitals, clinics and administrative departments, the consultant required a period of personal introductions in order to understand MOH institutional structure, identify key stakeholders, and understand the quality of existing data collection on HIS performance.

The consultant conducted an initial introductory meeting with the Minister of Health Dr. Hani Abdeen, who outlined his reform agenda and emphasized the difficult financial constraints facing the ministry. The consequent "shortages environment," in which Dr. Abdeen "has to choose between printer toner and cancer medication" provided a thematic focus for the consultancy: assessing the net financial impact of HIS on MOH facilities in order to contextualize the required expenditure on supplies. These financial constraints translated directly into poor administrative outcomes—such as distribution bottlenecks and disruptions of critical supplies—that directly and negatively impacted HIS implementation and performance [see Findings below].

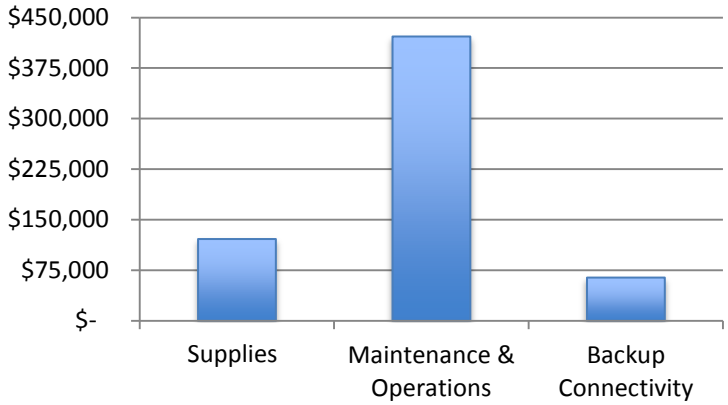
The consultant conducted introductory interviews with medical and administrative staff at the four major hospitals (Rafidia in Nablus, Alia in Hebron, Darwish Nazzal in Qalqiya, and the Palestine Medical Complex (PMC) in Ramallah) running or adopting HIS. Additionally, the consultant met with MOH administrative staff in numerous departments or Directors General offices in Nablus and Ramallah: IT, central stores/warehousing/pharmaceutical stores, secondary healthcare, financial affairs, and planning, among others [see Appendix 2 for a detailed schedule]. Included also were various back office and technical staff from the Project subcontractors, *Dimensions* and *Coolnet*.

All interviewees were asked for their assessment of HIS implementation, and in particular the impact of HIS on the work processes and performance of MOH facilities and personnel. The interviews also sought to build a clearer understanding of the institutional structure within the MOH—in particular, the relationship between the "central" administrative offices and the "peripheral" facilities running HIS. An additional key concern was identifying the source of disruptions in distribution of the supplies required by HIS, as well as assessing the quality of existing cost estimates and/or budgets, and the capability of MOH staff to generate such data.

Phase 2

Having acquired demand estimates from the facilities running HIS, the consultant determined that the quality of existing data was insufficiently reliable. To compensate for this, the consultant built a consumption model based on an ideal-scenario needs assessment. Using information acquired during the initial interviews, and supplemented by follow-on work with Dimensions staff, the consultant determined the (ideal) average per-patient consumption rates of critical supplies at hospitals, PHCs and clinics. These rates were then benchmarked against existing HIS data on patient load, and patient load growth patterns, in order to produce a 2013 HIS supplies budget estimate [see Annex E]. The budget estimate also included the cost of continued maintenance support provided by Dimensions, along with backup microwave connectivity provided by Coolnet:

Figure 1. Breakdown of HIS Costs for 2013 (Total $607,000)



The HIS budget estimate of US$607,000 (approximately 2.3 million NIS) was submitted to the MOH Financial and Administrative General Directorate for inclusion in the MOH 2013 budget request. The consultant and Project staff conducted an afternoon training session with MOH Finance Department staff in Ramallah to explain the estimates and the methodology behind them.

The consultant had a follow-up meeting with MOH Minister Dr. Abdeen to present the 2013 budget request, along with an initial assessment of HIS implementation. The consultant emphasized the relative size of the budget request against anecdotal claims by MOH staff that HIS facilities were saving 20%+ in pharmaceuticals and medical disposables expenditure (among other consumables) thanks to better inventory controls. The consultant also emphasized improvements in patient care and other efficiency gains reported by MOH staff at HIS facilities. The operating thesis presented to the minister was that cost savings should more than offset the 2013 budget, but that further detailed research was required to more accurately estimate total savings.

Phase 3

After review with the minister and Project staff, the consultant initiated a deep-dive investigation of the cost savings thesis—with a particular focus on pharmaceuticals procurement and expenditure—in order to more accurately quantify the net impact of HIS. This process involved a follow-on series of interviews with pharmacists at Rafidia, Darwish Nazzal and Alia hospitals, along with procurement and secondary healthcare officials in

Nablus and Ramallah. Again, the overarching goal was to assess existing processes; distribution of pharmaceuticals from the central warehouses to facilities, and from facilities to patients; as well as the MOH annual pharmaceutical procurement process.

Following an initial assessment of the quality of facility-level pharmaceutical demand/usage data, the deep-dive was narrowed in scope. Given idiosyncratic changes in work process at Darwish Nazzal as a result of significant expansion of the facility since the introduction of HIS, as well as the relatively short data sample size at Alia, Rafidia hospital was selected as the key case study. The consultant worked with the chief pharmacist there to better understand dispensation policies, inventory controls, record keeping, and coordination with the pharmaceutical stores at the central warehouses. Additionally, the consultant met with officials in the Secondary Healthcare GD and Pharmaceutical Stores to understand how and when the annual pharmaceutical tenders are prepared, and to what extent they use facility-level demand data.

The consultant received both demand (i.e., usage) and supply data (i.e., what was distributed from the central pharmaceutical stores) from the MOH, which were analyzed in order to identify differences in consumption patterns, both among facilities (HIS and non-HIS) and at individual facilities over time. In addition, the consultant studied the methodology used by resident pharmacists at HIS facilities (and Rafidia in particular) in order to develop their annual requests, which since 2012 have been incorporated into the overall MOH procurement process. This work was done in close consultation with the resident pharmacist at Rafidia hospital (now the Director of the Drug Information Department in the Pharmaceuticals General Directorate), who assisted in clarifying the effect of pharmaceutical shortages on usage patterns and demand data.

Concurrently, bureaucratic developments within the MOH required the consultant and Project staff to liaise closely with the Finance and Administrative GD in order to ensure that at least the supplies portion of the HIS budget estimate (approximately $64,000) in addition to Nablus and Qalqilya maintenance contract fees (approximately $150,000) was guaranteed for FY2013. The tentative outcome was an agreement by the MOH to earmark this amount for HIS within the MOF BISAN accounting system. There were also initial suggestions that this would allow the MOH HIS administrative team to procure supplies directly, avoiding potential bottlenecks at the central warehouses.

Following this, and based on assessments made during interviews with central ministry staff, the consultant and Project staff hosted a daylong workshop at Rafidia hospital to secure greater MOH management buy-in, and provide staff from non-HIS facilities a better understanding of the system, its technical composition and requirements, and potential impact. The workshop was designed to generate interest among MOH staff and serve as a catalyst for internal MOH discussions about the future of HIS and its prospects as a management and planning tool.

Based on over 40 interviews in total conducted across the MOH system, as well as the results of the procurement process study, the Rafidia workshop and the 2013 budget process, the consultant developed a series of recommendations on how the Project can provide additional capacity building and support to rationalize procurement and distribution in light of newly available HIS data on facility-level patient demand. These recommendations

address key institutional deficiencies—in areas such as analytical capacity and supply chain management—that ultimately prevent the MOH from capturing the full benefits of HIS.

SECTION III: FINDINGS, CHALLENGES, RECOMMENDATIONS, AND NEXT STEPS

A. Findings

HIS has improved patient care at every level; from patient registration to treatment to hospital administration. Despite the inconveniences posed by implementation to doctors and nurses, HIS is generally well received by hospital staff, but especially by senior managers and administrators.

Key to this attitude is the fact that before HIS, facility-level data on patient load and consumption of resources were very poor, not centralized and difficult to access—if not non-existent. The inefficiency and inherent inaccuracy of manual record keeping, as well as an endemic culture of distortion or exaggeration (thanks chiefly to the shortages environment in which all actors feel they are competing for resources), means HIS contains uniquely reliable and accurate data on MOH facility performance.

For the first time, MOH administrators have access to real-time data on distribution and demand for resources to the patient level, and across facilities. Within facilities, administrators and supervisors have greater inventory controls, oversight of personnel, time management capabilities, etc. The speed at which administrative tasks can be completed has increased drastically. Under an ideal scenario, therefore, HIS allows for more efficient distribution of resources across the MOH system.

Before MOH administrators have even begun to adjust their planning, however, it is clear that work processes within MOH facilities have already been positively altered. There is less crowding as a result of more efficient patient registration, and this improved ease of access also means a lot of pressure has been taken off Emergency Rooms (ERs). Fewer patients in the ER means more patients are being seen by generalists or specialists who can afford more time, and that hospitals can track costs more closely (as opposed to slapping patients with a lump-sum ER fee).

While examining the effect of HIS on pharmaceutical distribution, the consultant heard from MOH pharmacists that HIS inventory controls and pre-programmed selections were nudging physicians to prescribe generics instead of brand name medicines. HIS also forces doctors to learn and use international standards for diagnoses and orders that are programmed into the system. Supervising pharmacists also believe that patient safety has increased because doctor handwriting is eliminated, and pharmacists have direct access to patient records to see gender, age, allergies, etc., in order to confirm prescriptions and calculate dosages.

The elimination of pre-printed forms thanks to HIS, improved billing and patient-debt tracking, and the reassignment of former clerical/archival staff all contribute to a positive financial impact of HIS. Hospital administrators at Rafidia told the consultant that HIS has resulted in immediate savings of US$10,000 (39,000 NIS) per year simply from the elimination of pre-printed forms and stationary, compared to an estimated US$18,000 (68,000 NIS) budget for HIS supplies for Rafidia hospital. Increased revenue and reduced waste are also contributing to a healthier bottom line.

Looking at the overall MOH budget, the major variable portion and the likeliest source of major cost savings from HIS is consumables — which includes pharmaceuticals (≈ 80%), medical disposables, lab reagents and other procured items. The 2013 MOH budget allocated approximately US$75 million (281.7 million NIS) to this portion of the budget, although a significant portion of that will go towards paying off US$200+ million in arrears. In any event, based on the HIS supplies budget produced by the consultant, HIS would need to achieve savings of just 0.81% of the 2013 consumables budget in order to achieve cost neutrality.

Given the anecdotal assertions by pharmacists at Alia, Rafidia and Darwish Nazzal that they were saving 20-30% in pharmaceuticals thanks to HIS, the required savings of 0.81% seem easily achievable. Following the second round of detailed interviews with the pharmacists, the consultant and Project staff identified four areas in which HIS was helping correct previous deficiencies, which should yield cost savings:

1. Better inventory controls allow pharmacies to push medicines that are close to expiring, reducing waste due to expiration.
2. Doctors can no longer write prescriptions without recorded diagnoses, reducing fake or frivolous prescriptions from outpatient wards (for relatives or as favors, etc.).
3. Patients can no longer refill prescriptions repeatedly or at multiple locations, particularly for chronic conditions that should be handled by PHCs.
4. Better inventory controls mean less stealing, less waste, more accuracy in dosages, and fewer "leaks" from inpatient wards.

However, as detailed in the following section, while HIS is certainly having a positive impact on cost savings overall, the size of that impact is difficult to measure accurately. Most importantly, closer study revealed that the MOH does not currently incorporate HIS data (or arguably any other facility-level data) into its existing MOH budgeting process. Consequently, major savings cannot be expected until the data supplied by HIS is more directly incorporated into MOH administrative and planning processes (especially pharmaceutical procurement).

B. Challenges

The consultant faced several challenges while attempting to quantify the financial impact of HIS on MOH cost savings. More broadly, there are numerous challenges facing the Project and the implementation of HIS, which ultimately inhibit the MOH from capturing the full benefits of HIS. During interviews with MOH staff and a close study of MOH processes, the consultant identified institutional deficiencies, skill shortages and other organizational shortfalls that potentially threaten the long-term sustainability of the system. These challenges are identified below thematically, and are not presented in any particular order:

- *Limited data sample size.* The relatively short history of HIS means that datasets extend back a maximum of two years. Additionally, data during the first months of these series are also not necessarily reliable because not all departments joined the system simultaneously, MOH staff were still being trained in correct work processes,

bugs were being worked out, etc. Consequently, long-term trend analysis for planning (for now) needs to compare HIS data to poor data or no data. Where comparison is possible, in most facilities this means finding and accessing manual records; Alia hospital was unable to access its pharmacy records during one site visit because the storage room was locked and no one had the key. In general, however, there is no way to gauge the accuracy of pre-HIS data, and barring other computerized systems (such as the central drug stores data) or highly scrutinized record keeping (such as revenue receipts from cashiers), most data must be treated as spotty and unreliable.

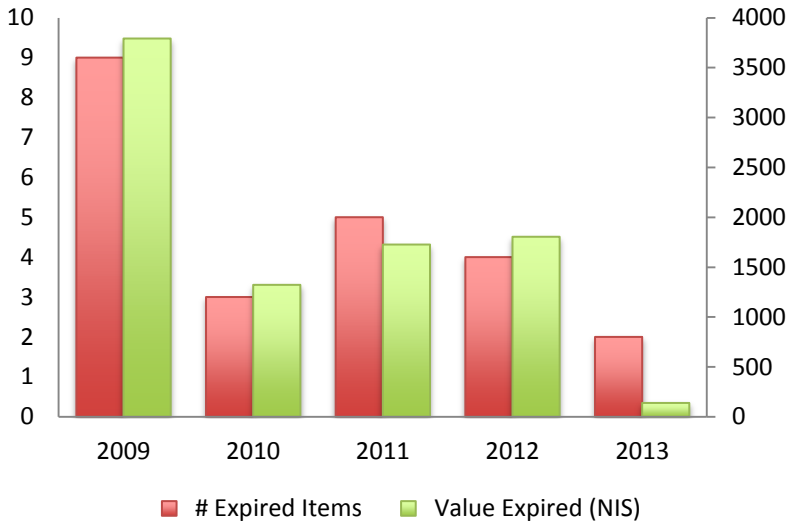
- *Ongoing and partial implementation of HIS.* In a similar vein, the ongoing implementation of HIS also limits the size and reliability of data. Most directly, it means that time series are staggered across facilities, with Nablus and Qalqilya having the longest time series. Continued technical challenges (such as connectivity issues or incomplete training of MOH staff) call into question the accuracy of data—particularly in cases where slow or no connection to central servers has forced some MOH staff to temporarily resort to manual record keeping. While these technical issues are being addressed by Project staff, and are to be expected in any such endeavor, they bear closer scrutiny when examining HIS data.

  Most critically, however, the partial implementation of HIS across the MOH system means that ministry-wide analysis of trends is difficult (if not impossible) because of the challenges in comparing different datasets of varying quality. Although the consultant was able to use data from the central drug stores during the study of pharmaceutical expenditure, this apples-and-oranges approach will always be inferior.

  For now, there remain critical gaps in demand and performance data, which have major consequences for budgets and planning. Without expansion of HIS across all MOH facilities (or at least across the major hospitals and other major cost centers) analysis will be limited to only a small portion of MOH activity—geographically, functionally, etc.

- *Shortages environment.* The dire financial situation of the MOH (and the resulting severe and widespread shortages of consumables) has caused major shifts in facility behavior that are difficult to isolate from the effects of HIS. At Rafidia between 2009 and 2012 annual patient admissions increased 27.4% while the annual budget decreased 17.1%. In effect, the average cost per patient dropped 35%. However, when the consultant investigated these budget dynamics in detail, it was hard to separate forced austerity through shortages from other variables, including management policies [see below]. A detailed look at Rafidia's budgets revealed a steep drop in cost at the outpatient clinics from 2011 to 2012. The drop in fact was the result of a conscious decision by hospital administrators to respond to the shortages of pharmaceutical and medical consumables by diverting supplies to the inpatient wards.

Figure 2. Decline in Expired Medicines at Rafidia (2009–2012)



Another clear example of how the shortages environment frustrates the analysis of HIS impact is shown in Figure 2 above. While testing the thesis that HIS lowers waste of medicine due to expiration, it emerged that waste dropped sharply in 2009-2010 and 2012-2013. However, the first period occurred before HIS implementation was final and stabilized, and the second coincided with a period of extreme shortages. While examining the 2012 Essential Drugs List (EDL) at Rafidia, there were only a handful of the more than 600 items on the list that were not in shortage.

At an analytical level, the supply shortages have effectively distorted MOH facility performance by deviating from optimal demand patterns. This further undermines the value of existing HIS data for long-term planning purposes.

More broadly, however, the shortages environment creates a strong sense of competition among facilities for scarce resources. This nurtures a culture of exaggeration in which MOH administrators feel the need to overestimate their requirements in the hope that what eventually is delivered will be sufficient. There is also a deep reluctance on the part of MOH management to fund new expenditures. The Finance and Administration GD in particular is operating under a mandate from Dr. Abdeen to cut consumables expenses by a reported 20%, and so has been reluctant to support the 2013 HIS supplies budget.

- *Differences in management and management policies.* As referenced earlier, the lack of uniform management policies across MOH facilities results in different performance outcomes, as well as discrepancies in HIS data. Some hospitals benefit from better administration. Rafidia keeps close track of expenses and can produce annual budgets as well as historical data on expenses. Administrators at Alia hospital have not produced an annual budget since 2006.

  Furthermore, when the consultant was investigating alternative theories of pharmaceutical savings, it emerged that policies vary widely among facilities.

Although some patients at Alia had been "double dipping" by filling prescriptions for chronic medication at both the hospital and the PHC, this was reportedly not an issue at Rafidia—because the pharmacist there had imposed a much more restrictive policy on dispensing chronic medications at the hospital. Likewise, in Qalqilya, only specialists are now allowed to prescribe critical antibiotics that previously were available to general practitioners (GPs), and that pharmacist there insists on approving all prescriptions before patients pay the copay.

Some of these differences in management are the result of inevitable differences in size, specialization (surgical vs. internal medicine, etc.) that alter behavior and consumption patterns. However, these differences must be understood and accounted for in any future system-wide analysis because they would be reflected in HIS data. Alternatively, the MOH could work to eliminate these differences in policies by enforcing management guidelines and stricter standards on work processes.

- *MOH system is constantly changing or evolving.* Another similar challenge is that the MOH system, particularly at the facility level, is constantly changing. The consultant eventually eliminated Darwish Nazzal from any analysis of cost savings because the hospital had grown so significantly since HIS implementation began. Likewise, the new minister Dr. Abdeen has initiated a period of reform that is characterized by significant reshuffling of senior administrators and directors general. While this helps stimulate reform, it undermines institutional knowledge and requires the Project to introduce HIS to administrators that have rotated in from non-HIS facilities. (Although conversely it has the benefit of cycling MOH staff familiar with HIS to other departments, creating greater demand for it across the system).

- *Inadequate HIS team within MOH.* Although there now exists an HIS department within the MOH, it remains largely dependent on Project staff to coordinate implementation, address technical problems, and respond to managerial issues. While this is acceptable during continued implementation of HIS across the system, there has been little capacity building beyond appointing the senior administrator (Ali el Helou) and a handful of IT staff who have been assigned to him. Whether or not the MOH chooses to significantly expand the HIS team in the future in order to accommodate other administrative functions, there needs to be some modest expansion of staff within the next year in order to ensure long-term sustainability following the completion of the Project.

- *Structural problems in existing budget and procurement processes.* This was the core issue to emerge from the consultant's detailed investigation into pharmaceutical cost savings. In the broadest sense, it is clear that the current annual budget process employed by the MOH does not truly involve inputs from the facility level. Rather, nearly all departments recycle budgets from year to year, increasing top-line requests by up to 15%. In structural terms, there exist very few coordination mechanisms between the central administration and the peripheral facilities (indeed, there is also limited communication between GDs). Tellingly, the two months of strikes in early 2013 did not apparently delay the budget or procurement process. Although this is a general challenge for MOH management, for the purposes of HIS, the bigger issue is that a centrally-planned ministry now has the opportunity to use

facility-generated data for the first time, and so the existing processes must be adapted to use it.

When the consultant examined closely the 2013 pharmaceutical procurement, it became clear that the existing process is not designed in such a way as to take full advantage of HIS. Although the central drug stores have since 2012 asked hospital pharmacists to submit a "wish list" based on the EDL, annual procurement is still controlled largely by the records of what was distributed to hospitals by the central drug stores (a "push list"). This "push list" does not have as much detail as HIS- particularly as regards patient demand, substitutions of medicines made by pharmacists to compensate for shortages, direct/local procurement, donations, and other adjustments.

The desire to control budgets and distribution is a natural reaction to the shortages environment, as most facilities and departments have been chronically underfunded, and they know their chances of receiving adequate funding are low, and so they exaggerate demand to maximize their share. However, HIS allows administrators to verify the basis of facility-level demands, and so overcome this dichotomy.

- *Lack of analytical capacity and methodology in budgets, procurement and planning.* The same pharmaceutical cost study also revealed the limitations of MOH staff to generate meaningful projections or forecasts using HIS data. A close look at the "wish list" clearly showed that different pharmacists were using inconsistent or disparate methodologies to calculate their demand. The pharmacists have not been trained in adequate forecasting techniques that would allow them to use the full potential of HIS. Although HIS has allowed pharmacists to speed up their "wish list" creation by generating records instantly, time constraints force them to use rough estimates of demand rather than carefully calculating projections based on patient demand, shortages, substitutions, expectations of patient load growth, etc.

  As noted above, this is primarily an issue of needing to create a system where before there was none. It is conceivable that the central drug stores can bypass the "wish list" by accessing HIS data directly, or the Palestine Health Information Center (PHIC) or planning department can be incorporated, etc. The MOH may choose to structure its HIS data-based forecasting in any number of ways, but without specific methodologies and guidelines on how to use that data, potential savings will be lost in the existing institutional process. Furthermore, the existing system is based solely on only data collection, and there is very little capacity for data analysis or quality control. As HIS data becomes more important to MOH management, the requirements for M&E functions will also grow in importance.

- *MOH internal politics.* Because the chief function of HIS is to create transparency and accountability, there will invariably be resistance by some within the MOH who currently benefit from existing opacity. HIS offers the potential to restructure departments or shift resources among them, and this may jeopardize the power of some administrators. For example, the shortages environment and opacity around inventories means the administrators in charge of distribution have power to distribute supplies as they see fit. Greater transparency thanks to HIS will undermine this, and thus trigger their resistance. This is true of senior

administrators, but also of doctors, nurses or administrators at the facility-level who may resent greater scrutiny of their behavior.

- *MOH external politics.* Finally, the consultant found that the attitudes of MOH staff towards donor aid also complicates HIS implementation. Cynicism about warnings that future funding could be withheld or eliminated means the Project has little leverage to motivate MOH staff to change behavior. Confidence that alternative sources of foreign aid are available also encourages MOH administrators to keep HIS "off the balance sheet," rather than incorporate it as a routine line item.

  The lack of coordination of donor aid more broadly also complicates Project efforts, as other projects (such as the ADP project to move the central warehouses from Ramallah to Nablus) compete for the time and energy of MOH staff, and complicate further implementation of HIS (e.g., putting additional demands on fiber-optic bandwidth before existing requirements are secured).

C. Recommendations

Looking ahead to 2014 – 2015, perhaps nothing will do more to ensure long-term sustainability of HIS than continued implementation through the major administrative and cost centers of the MOH system. Most importantly, HIS must be expanded to include the central ministry offices in Ramallah and Nablus to allow senior managers and administrators access to the data being generated by HIS.

Not only does continued implementation of HIS help resolve the limited data issue by capturing most MOH activity, but it also helps to stimulate broader interest in the system. Currently, the strongest interest in retaining and/or supporting HIS is at Rafidia and Darwish Nazzal, where the system has been successfully implemented and staff there have adapted to its use, whereas most MOH administrators have heard of HIS, but very few have actually used the system, or been given a detailed tutorial on its workings and benefits, and so they see it as merely another cost-driver. Thus the need to create greater management buy-in is paramount, and was a major motivation for the consultant and Project staff to host an HIS workshop at Rafidia in February 2013. However, this management buy-in will also be generated organically if administrative departments are given access to HIS, as well as training on how the system can be employed to improve their work. Particularly for those departments who employ data-heavy processes, such as pharmaceutical procurement or supply distribution through the central warehouses, the interest in HIS should be especially strong.

Likewise, the Project does not need to develop specific guidelines for how each MOH department should use HIS or HIS data, but simply giving departments access to the system and initial training will enable them to discover how best to adopt the data to their needs. This is especially true of the finance department, who currently have very little visibility over facility-level expenditures, and who are extremely eager to gain access to HIS.

However, aside from simply expanding HIS and access to HIS, there are certain areas in which the Project can take an active role in promoting the system's use. Exactly because the MOH until now has had such limited use of data, more work can be done to build data

analysis capacity of MOH staff. All aspects of planning, but particularly procurement and budgeting, would benefit from exposure to specialists and the introduction of standard forecasting methodologies tailored to suit MOH requirements. As HIS data become more important or more central to the MOH, more work will be required in M&E to ensure data quality and uniform standards.

In the short-term, HIS will require continued and forceful lobbying on the part of Project staff to ensure that the finance department abides by its commitment to support the 2013 HIS supplies budget. Additionally, Project staff were able to secure a tentative agreement that the MOH HIS team would be able to procure required supplies directly-bypassing the central warehouses and any potential bottlenecks there. This is relatively unprecedented for the MOH, and so will require legal and bureaucratic clarification.

Finally, more work must be done to refocus the management responsibility for HIS away from the Project and towards the MOH. As noted above, this will require first and foremost increased staff for the MOH HIS team, who can handle both technical issues at the facility level, as well as financial and bureaucratic issues at the central level. The consultant recommends an initial focus on increasing administrative support staff who can coordinate project management duties, as well as liaise with facility administrators who raise technical issues.

D. Next Steps

Aside from continuing implementation, the consultant recommends the following series of steps to ensuring the long-run sustainability of HIS. While some of the scope of this work can be accomplished by Project staff, as well as internally by MOH staff with the correct guidance, it is likely that future STTAs will be required to more closely examine data, processes, regulations, etc., to develop further recommendations on methodology and reform.

- *Conduct follow-on workshops to build awareness and support for HIS.* Given the success and positive feedback from the initial workshop, it is highly recommended that the Project host further sessions to raise awareness about the potential of HIS and increase management buy-in. Lessons learned from the Rafidia session should be adopted, including focusing on mid-level management and incorporating more hands on training. Future sessions could focus on PHCs and clinics, or areas of specialization, such as pharmacies, labs, etc. Stimulating dialogue between staff across MOH facilities is also likely to yield interesting ideas about how to tailor future implementation.

- *Preparing MOH facilities for pre- and post-HIS impact analysis.* Given the difficulties in measuring the effect of HIS on current system users like Rafidia and Alia, it is recommended that the next set of 'implementees' (such as Beit Jala or Jenin) be prepped for future analysis through an initial set of data collection. Focusing on pharmaceutical distribution, patient load numbers, and other performance indicators would provide easier and more accurate measuring of post-HIS outcomes. However, given the various challenges listed above (especially the shortages environment and constant changes of MOH system) there will always be limitations to the accuracy of such impact assessments.

- *MOH HIS team- and capacity building.* As noted earlier, the priority is boosting staff, with a focus on managers or administrative staff who can support the work of the team director. There may also be scope for improving the political standing of the HIS team (and its director) by the creation of a review committee for higher-level political access and approval. However, such a committee has been tried (unsuccessfully) in the past, and for now the most pressing deficiencies of the MOH team are administrative. Along these lines, more work needs to be done to open up feedback mechanisms or lines of communication from HIS facilities to the MOH HIS team—rather than to Flagship Project staff. In particular, facility complaints about technical issues or equipment/supplies needs should be communicated internally to the MOH HIS team.

- *Short-term capacity building of MOH finance and administration staff.* Similarly, the motivating factor for the consultant's engagement was the need for an HIS cost assessment to be included in the 2013 MOH budget. There is no reason why the same exercise should not be conducted internally by the MOH finance team for the 2014 budget cycle. However, currently the finance team has no experience generating budgets or budget requests based on field research. Recreating the process used by the consultant (visiting the major HIS facilities and assessing their needs directly, or building a cost estimate used on ideal demand models) is perfectly achievable by MOH staff, but may require some limited training and support by the Project staff. Given the limitations of the existing MOH HIS team, it is therefore important that the finance team becomes the advocate for continued funding of the HIS program, and handing over responsibilities for formulating the 2014 budget would be an excellent encouragement. The ability of the MOH finance team to conduct this kind of field research will also grow in importance as the financial requirements of HIS grow through 2014 when running costs and equipment replacement rates increase. More broadly and immediately, this capacity building exercise will also work to ensure the finance department's continued support of the 2013 HIS supplies budget and the possibility of direct procurement.

- *Reforming central warehouse(s) processes.* If HIS is ever to be truly effective in improving MOH management, and particularly in reducing costs and improving efficiency, staff at the central warehouses will require assistance in improving their planning, procurement processes, and distribution methods. While offering access to HIS data will be a major step in the right direction, the deficiencies in existing forecasting methodologies suggest that MOH staff would benefit from external support and exposure to international best practices.

  In particular, it is clear from the consultant's close study of the central drug store's forecasting methodology that the MOH would benefit from improved forecasting methodologies given the complexities of the shortages environment, as well as the introduction of standardized guidelines for pharmacists. It is likely that closer examination by procurement and/or pharmaceutical specialists would also reveal further areas for improvement with regard to how medical decisions are taken in paring down the EDL "wish list."

On the distribution side, there are also certainly areas for improvement in process (although no doubt also strong resistance to change-see above). Aside from the obvious shortcomings of relying on faxes and handwritten requests, the current distribution of supplies during the shortages environment seems arbitrary, and is almost certainly not based on financial or medical prioritization. An overall rationalization of supplies distribution, including incorporation of supply chain methodologies, would certainly pay dividends to the MOH and help HIS in the long-term by stabilizing the supply of necessarily supplies.

- *Working with General Directorates to integrate HIS data into existing processes.* As with the warehouses, the long-term goal for HIS must be the incorporation of the system and its data into existing MOH processes. As such, Project staff should coordinate with the various GDs as HIS is implemented at the central level in order to understand the various current research needs and processes, and to develop methodologies using HIS data to accommodate these requirements. This would also likely involve tailored training of administrative staff.

  It may also be advisable that this process begin with focused work on selected case studies (based on financial or administrative priorities, as opposed to all GDs) such as secondary healthcare, PHIC or the financial and planning departments. The consistent theme of this effort however should be connecting the central ministry to the facilities-using HIS data to reform and improve existing management practices.

- *Development of quality control, M&E, and internal audit functions.* Finally, as noted above, as the Project works to incorporate HIS data into existing MOH processes, the need for quality control of data entry will increase drastically. There are currently no systems in place to ensure such quality control. The PHIC, which collects manually recorded data in order to publish its annual MOH report, is simply that-a data collection instrument, and engages in no verification of the data it is sent. Simply transferring the responsibility for M&E to an existing agency like PHIC is, therefore, insufficient and inadvisable. Whether or not a new department must be created, or whether the mandate of an existing department like PHIC or the MOH internal audit team can be expanded needs to be determined. What is clear is that some mechanism must be created. There must be a core focus on ensuring universal standards of data entry among doctors, pharmacists and other MOH staff to ensure uniform work processes. There must also be active policing of the data, to ensure that potential weaknesses or discrepancies are addressed before they are allowed to compromise the data quality, and jeopardize the ability of the MOH to conduct accurate planning and forecasting. Fear of accountability will be the best motivation, so HIS users must believe that their entries will be routinely checked and that there will be consequences for errors or laxness.

ANNEX A: SCOPE OF WORK

SOW Title: Analyzing Ministry of Health Budget and Finances
Work Plan No: Cross Cutting Tech , Choose a Focus Area Choose Activity No.

SOW Date: 7/4/2012
SOW Status: DRAFT
Consultant Name: Nicholas Skibiak
Job Classification: Short-Term US Expatriate Consultant)
Reporting to: Kirk Ellis, Chief of Party

I. Project Objective

The Project is a five-year initiative funded by the U.S. Agency of International Development (USAID), and designed in close collaboration with the Palestinian Ministry of Health (MOH). The Project's main objective is to support the MOH, select non-governmental organizations, and select educational and professional institutions in strengthening their institutional capacities and performance to support a functional, democratic Palestinian health sector able to meet its priority public health needs. The project works to achieve this goal through three components: (1) supporting health sector reform and management, (2) strengthening clinical and community-based health, and (3) supporting procurement of health and humanitarian assistance commodities.

The Project supports the MOH in implementing health sector reforms needed for quality, sustainability, and equity in the health sector. By addressing key issues in governance, health finance, human resources, health service delivery, pharmaceutical management, and health information systems, the MOH will strengthen its dual role as a regulator and main health service provider. The Project also focuses on improving the health status of Palestinians in priority areas to the MOH and public, including mother and child health, chronic diseases, injury prevention, safe hygiene and water use, and breast cancer screening for women.

II. Specific Challenges to Be Addressed by this Consultancy

The MOH is facing critical finance management challenges including weak finance planning capacity, a lack of budgetary authority, rigid governmental and administrative structures within the MOH and the Ministry of Finance (MOF), a lack of effective mechanisms for monitoring and controlling costs, and ineffective management infra-structures.

The MOH, with Project financial and technical assistance, is in the process of implementing a Health Information System (HIS) in various health facilities including hospitals, clinics, and directorates. Sustaining the HIS will be a challenge without a HIS Annual Budget Forecast. This Forecast should take into consideration hardware/equipment replacement and depreciation, as well as the running cost of supplies and staff to sustain the system.

HIS aids in establishing the creation of a nationalized system which will give all those involved the tools to integrate health record systems, improve governance and planning, administration and management, develop a health care database, and improve the overall

efficiency of health service delivery. Currently, HIS is being implemented in two MOH hospitals (Rafidia and Qalqilya hospitals) and three MOH primary healthcare (PHC) facilities; and in the process of implementation in an additional seven MOH facilities, including The Palestine Medical Complex, Alia Hospital and five more PHC centers.

III. Objective and Result of this Consultancy

The objective of this consultancy is to provide technical assistance to the MOH with a budget and financial analysis for the HIS to ensure sustainability of the system. This consultancy will provide an assessment of the budget for the HIS program in the MOH by conducting interviews with all counterparts and preparing an analysis of existing institutional budget process and a HIS Annual Budget Forecast containing data and estimates. The consultant will include a relevant timeline for budget/cost estimates and a budgeting programming process, while selecting a preferred accounting methodology based on HIS program needs and MOH/MOF standards. By the end of the consultancy, clarification of "sustainability" for the HIS should be defined and the future role of Dimensions and Datasel.

IV. Specific Tasks of the Consultant

Under this Scope of Work, the Consultant shall perform, but not be limited to, the specific tasks specified under the following categories:

A. **Background Reading Related to Understanding the Work and Its Context**. The Consultant shall read, but is not limited to, the following materials related to fully understanding the work specified under this consultancy:

- Work Plans for Year 4
- MOH National Strategic Health Plan
- STTA Report - Rafidia Hospital Costing Plan
- STTA Report - Financial Capacity Strengthening Program
- STTA Report - Providers Payment Mechanism Training
- Dimensions Contract

B. **Background Interviews Related to Understanding the Work and Its Context**. The Consultant shall interview, but is not limited to, the following individuals or groups of individuals in order to fully understand the work specified under this consultancy:

- Kirk Ellis, Chief of Party and Acting HIS Director
- Dr. Jihad Mashal, Deputy Chief of Party –Technical Programs
- Andrea Uribe, Deputy Chief of Party –Operations
- HIS Team
- MOF
- MOH Counterparts

C. **Tasks Related to Accomplishing the Consultancy's Objectives**. The Consultant shall use his/her education, considerable experience and additional understanding gleaned from the tasks specified in A. and B. above to:

Phase 1

- Conduct interviews to clarify organizational and cost structure of HIS with Project staff, MOH HIS and IT Departments, Dimensions, Datasel and relevant MOH and MOF counterparts in order to identify existing data on costs, and eventually gather records and price estimates.
- Create an Organizational Map of key MOH and MOF counterparts to be interviewed and surveyed
- Conduct interviews based on the Organizational Map in order to acquire existing cost estimates and any existing operations and maintenance budgets, and/or other data

Phase 2

- Using the Organizational Map and recommendations from Phase1 analysis, conduct further interviews
- Prepare forecasts and consolidate
- Implement Management Guidelines, including disbursements and financial control
- Evaluate efficiency of budget process
- Create Budget Process Flowchart
- Create Analysis of Existing Institutional Budget Process, identifying gaps, priorities areas for reform, and other major concerns

Phase 3

- Evaluate impact/efficiency of HIS and suggested reforms toward long-term sustainability by evaluating cost savings of HIS comparing existing budget data and forecasts with historical expenditures
- Evaluate staffing and identifying skill shortages or organizational shortfalls, as well as potential long-term need.
- Identify remaining gaps and address them through subsequent engagements
- In the event that new priority tasks are introduced during the consultancy, the consultant will work with the Project staff to revise the tasks and expected products to accommodate for the new priorities.
- In addition to the above-listed tasks, the Project welcomes additional contributions and creative ideas in support of the Project objectives.
- The consultant is encouraged to support the identification of additional STTA and scopes of work to help accomplish Project goals and objective where possible.

V. Expected Products.

Within three days of the consultant's first day of work (unless otherwise specified), the consultant should provide the methodology for successfully completing the work. The substance of, findings on and recommendations with respect to the above-mentioned task shall be delivered by the Consultant in a written report, policy statement, strategy, action plan, etc. for submission to USAID using a Project provided STTA report template. A draft of this report is due no later than 3 business days prior to the consultant's last day of work (unless otherwise specified) and final no later than 7 business days after the consultant's last day of work. Please note that USAID requires a debrief to be scheduled prior to your last day.

Deliverable	Estimated Date of Delivery
Organizational Map	
Draft HIS Annual Budget Forecast	
Final HIS Annual Budget Forecast and Analysis	
Implementation of Management Guidelines	
Budget Process Flowchart	
Existing Institutional Budget Process Analysis	
STTA Report	

VI. Timeframe for the Consultancy.

The timeframe for this consultancy is on or about 8/1/2011 and will conclude on or about 12/31/2011.

VII. LOE for the Consultancy.

The days of level of effort are estimated to be **up to** 90 days for work in West Bank. Unless otherwise specified, up to two (2) days may be allocated for preparation of the work and up to two (2) days upon conclusion of work in West Bank to complete the assignment.

VIII. Consultant Qualifications.

The Consultant shall have the following minimum qualifications to be considered for this consultancy:

Educational Qualifications

- Master's degree in Business, Finance, Economics or related field or equivalent in experience

Work Experience Qualifications

- Experience in investment and financial analysis and program development and implementation
- Experience in designing, managing and implementing technical assistance

programs in the areas of capacity building and institutional reform
- At least 8 years of experience in the field of financial development
- Experience with international standards development
- Familiarity with USAID and international experience

VII. Other Provisions.

This Scope of Work document may be revised prior to or during the course of the assignment to reflect current project needs and strategies.

ANNEX B: ASSIGNMENT SCHEDULE

The consultant should include a list of meetings held and main agenda items which occurred during the short-term assignment.

- August 13: Meeting with the Minister of Health, Dr. Hani Abdeen
- August 27: Visit to Rafidia Hospital, Nablus. Meeting with Usama Melhis (Director), Samer Awartani (Finance Director), Durgham Yasin (Lab Director), Mohammad Sartawi (Supporting Services Manager – pathology, lab, radiology), Shaher Abu Rajab (warehouse manager).
- August 28, 2012: Visit to PMC Ramallah to view implementation and different wings. Visit with Suleiman Samara, Admin Director for non-communicable diseases ward.
- August 28, 2012: Meeting with Ali el Helou (HIS counterpart, IT)
- August 28, 2012: Visit to Dimensions Offices, with Hassan G. Mahmood, Professional Services Manager and Rasem Suwan, Information and Communication Infrastructure Manager.
- August 28, 2012: Meeting with Saleh Thawabteh, DG of Warehousing, and his deputy, Yousif Qassem, the director of the central stores.
- September 3, 2012: Meeting with Acting Director General of Pharmaceutical Stores, Shatha Shreim.
- September 4, 2012: Meeting with the deputy of the head of Registration and Accounting at Hebron Alia, Mohammed
- September 4, 2012: Meeting with head of pharmacy at Hebron Alia, Samer Badr
- September 4, 2012: Meeting with HIS committee director at Hebron Alia, Diab Mahariq hospital director Walid Zalloun (who is new and a brother in law to the minister), the Finance and Admin director (Ismail Atawneh). Zalloun was the director of surgical in Hebron before.
- September 11, 2012: Meeting with Sultan Rimawi the administrative director, General Directorate of Financial Affairs, Martin Johnson (Ernst & Young and the Palestinian Governance Initiative), as well as Nayef Okal and Rania Shaheen (accountants), and Samer Jaber from the Planning Department.
- September 12, 2012: Meeting with Hassan G. Mahmood from Dimensions.
- September 12, 2012: Meeting with Dergham Yasin, Head of Labs at Rafidia.

- September 25, 2012: Meeting with Abdelkareem Hamadneh, MoH Director of Finance (meeting included Rafidia manager Imm Mohammed, and finance staff accountants Rania Shaheen and Nayef Okal).

- September 25, 2012: Meeting with Dr. Wa'el Sadiqah, DG of Hospitals.

- September 30, 2012: Meeting with Garrett Doer and Iyad at PACE.

- October 2, 2012: Meeting at Dimesions with Hassan G. Mahmood and Coolnet CEO Hani Al Alami

- October 3, 2012. Meeting with Nayef Okal, Finance Department Nablus.

- October 3, 2012. Meeting with Umm Ayya Abu Shanub, Head of IT Department, Nablus.

- October 3, 2012: Meeting with Samer Awatani (Finance Director) Rafidia

- October 3, 2012: Meeting with IT team (Ahmad and Nour), Rafidia

- October 3, 2012: Meeting with Tahani Fattouh, head of pharmacy @ Rafidia

- October 8, 2012: Meeting at Darwish Nazzal with Emyassar Mansour, Khalil the Pharmacist, Sayib the accountant.

- October 11, 2012: Meeting with Nayef and Rania in Ramallah to explain present consumables budget for FY2013

- Nov 8, 2012: Meeting with Ali el Helou

- November 12, 2012: Presentation to the Minister Hani Abdeen.

- November 13-14: Jericho Price Committee Meeting

- December 3, 2012: Meeting with Darwish Nazzal Pharmacist and Abdel Latif Abu Mariam (Hospital Administrator)

- December 4, 2012: Meeting with Alia Pharmacist, Sameer Badr.

- December 5, 2012: Meeting with Rafidia Pharmacist, Tahani Fattouh, and Samer Awartani (Hospital Administrator)

- December 13, 2012: Meeting with Ikhlas Samarro, Director of Pharmacy of Hospitals

- December 13, 2012: Meeting with Mohammed Baniode from Dimensions

- December 17, 2012: Meeting with the Central Drug Store Director Naddal al-Jabbari , Shatha Shreim (his deputy and former acting head of CDS), and Mirvat Ismail, IT programmer

- December 18, 2012: Meeting with Rafidia Pharmacist, Tahani Fattouh

- December 18, 2012: Meeting with Wael Sadaqah, Secondary Healthcare GD

- December 31, 2012: Meeting with Finance Department in Nablus, Abdulkarim (Abu Ahmad) Hmadneh, Nayef Okal

- January 13, 2013: Meeting with Rafidia Pharmacist, Tahani Fattouh

- January 24, 2013: Meeting with Rafidia Pharmacist, Tahani Fattouh

- February 15, 2013: Workshop at Rafidia Hospital

- March 3, 2013: Meeting with Saleh Thawabteh, Ali el Helou

- March 4, 2013: Meeting with Tahani Fattouh, Rezek Othman, Director of Pharmaceuticals Policy Dept.

- March 4, 2013: Meeting with Rania Shaheen, Finance Dept. Manager

- March 4, 2013: Meeting with Dr. Jiwad Bitar, Director of Palestine Heath Information Center (PHIC)

ANNEX C: CONSULTANT CV

NICHOLAS SKIBIAK

1.202.709.6510 | nicholas.skibiak@gmail.com

Dunia Frontier Consultants — Jerusalem
Director — 2010-2012

- Supervised six-member Iraq research team (across four countries) and local subcontractors for clients in oil and gas, heavy industry, housing, telecommunications, consumer goods, pharmaceuticals, and agriculture.
- Research products included market sizing and segmentation surveys, stakeholder influence mapping and engagement strategies, PESTEL analysis, scenario planning, and FCPA compliance assessments.
- Doubled revenue from 2009 to 2011 by diversifying revenue streams and developing new business with investors and multinationals (including multiple Fortune 500 firms) in Levant and Gulf region.
- Overhauled firm's marketing, brand identity and web presence.

Senior Associate — Washington, DC | 2009-2010

- Performed investment due diligence in MENA, including market entry strategies, asset valuation, risk analysis, local partner/vendor vetting, competitive landscaping, and brand strategy.

Emerging Markets Private Equity Association — Washington, DC
Research Consultant — 2009

- Analyzed sector and geographic trends in global private equity and venture capital transactions.
- Refined appearance and functionality of FundLink, a proprietary online database for subscription members.

U.S. Treasury Department — Washington, DC
Desk Economist, East and Central Africa — 2008

- Monitored macroeconomic and monetary policy developments in thirteen countries in East Africa.
- Prepared policy briefings and memoranda for senior Treasury staff, alerting them to key developments.

Deloitte [formerly BearingPoint] — McLean, VA
Management Analyst, Trade & Investment — 2004-2005

- Managed technical assistance programs on trade policy, trade capacity building, legal and institutional reform, and commercial policy development in MENA and sub-Saharan Africa.

EDUCATION

Johns Hopkins University – SAIS — Washington, DC
M.A. International Relations & International Economics — 2007-2009

- Graduated with distinction; 3.71 GPA

Yale University — New Haven, CT
B.A. Philosophy (*magna cum laude*) — 1999-2003

- Graduated with honors in major; Phi Beta Kappa; 3.83 GPA

SKILLS

Languages	German (C2)	|	Spanish (B2)	| Levantine Arabic (B1)

ANNEX D: BIBLIOGRAPHY OF DOCUMENTS COLLECTED AND REVIEWED

- HEALTH FINANCING IN GAZA AND THE WEST BANK, APRIL 2010
- MOH PROPOSED NATIONAL HEALTH INSURANCE PROGRAM, 2010
- MOH MID YEAR REPORT 2011
- MOH ANNUAL REPORT 2011
- NATIONAL STRATEGIC PLAN FOR HEALTH 2008
- SEHA BUSINESS PROCESS MODELS (X5)
- ORIGINAL FLAGSHIP FIXED PRICE SUBCONTRACT AND MODIFICATIONS 1-8
- STTA REPORT: MATERIALS DEVELOPMENT FOR THE HEALTH SECTOR FINANCIAL CAPACITY STRENGTHENING PROGRAM (FCSP) AND NGO FINANCE MANAGEMENT TRAINING
- STTA REPORT: BUILDING CAPACITY FOR DECENTRALIZATION: A PILOT FACILITY
- STTA REPORT: FINANCIAL CAPACITY STRENGTHENING PROGRAM
- STTA REPORT: FINANCIAL CAPACITY STRENGTHENING PROGRAM TRAINING – PHASE II
- STTA REPORT: PROVIDERS PAYMENT MECHANISMS TRAINING
- STTA REPORT: STRENGTHENING MOH CAPACITY IN HEALTH FINANCIAL MANAGEMENT & ADMINISTRATION

ANNEX E: LIST AND COPY OF MATERIALS DEVELOPED AND/OR UTILIZED DURING ASSIGNMENT

- 2013 HIS SUPPLIES BUDGET ESTIMATE
- OCT 2012 PRESENTATION AND PROGRESS REPORT
- ANALYSIS OF PHARMACEUTICAL DATA
- MAR 2013 PRESENTATION AND PROGRESS REPORT