HST 184- Health Information Systems to Improve Quality of Care in Resource Poor Settings

Impact of US Federal Funding on Global e-Health Initiatives in Developing Countries

5/13/2011

| Patrick Pascal Saint-Firmin |Anonymous Student| Olateju Sarafadeen |Ikenna Momah|
| Arjuna Premachandra |

Advisors
|Hamish Fraser |Evan Pankey|

Table of Contents

INTRODUCTION

Improving health in developing countries has been the global battle for decades, when major financial resources in the form of foreign aid have been transferred from wealthy to poor countries. With the active involvement of politicians and civil society foreign aid specifically for health has increased spectacularly in harmony with the worldwide commitment to achieve the Millennium Development Goals.

The total flow of Official Development Assistance (ODA) has increased from $US 59.8bn in 2000 to $US 119.83bn in 2006. (Stevens, 2008) However a meta-analysis performed by Doucouliagos and Paldam in 2005 of 97 studies, showed only a small positive but insignificant impact of aid on growth. (Doucouliagosa & Paldam, 2008) In the field of healthcare, the efficacy of aid is very hard to measure, because of the difficulty of attributing clinical outcomes, such as a reduction in maternal mortality, to a number of dollars of aid. In developing countries the inability to track resources enhances the fungibility of foreign aid, making it ineffective despite being earmarked. (Bourguignon & Sundberg, 2007) According to a study carried out by the Center for Global Development, poor resource tracking and irrelevant data within health systems of developing countries hamper sound decision making, advocacy efforts and efficiency of donor funds. (Rannan-Eliya, 2009) Lack of information and evidence represent major constraints in the management of Health systems.

PROBLEM SUMMARY

Stanford Medical Informatics defines e-Health as the "scientific field that deals with biomedical information, data, and knowledge - their storage, retrieval, and optimal use for

problem solving and decision making. It accordingly touches on all basic and applied fields in biomedical science and is closely tied to modern information technologies, notably in the areas of computing and communication". Currently there is little information surrounding the level and impact of US Federal spending on e-Health system interventions in resource poor settings. Our project was formed with the aim of filling this void, by studying and evaluating US federal funding on global e-Health initiatives in developing countries.

With the ongoing economic downturn the government is forced to prioritize spending. The recent budget of the federal government saw significant cuts in funding for foreign aid and international affairs programs by $6.5bn. This slashing of US federal aid affects nearly all program areas covered by the international affairs budget, including those related to health assistance. With a limited budget, it is important to apportion resources to the most efficient programs that produce the best outcomes. By evaluating programs and their outcomes the federal government can ensure the most efficient allocation of its finite resources.

OUR APPROACH

In order to begin the process of assessing the impact of US federal funding on e-Health initiatives the following questions were formulated:

1. How much spending has been earmarked for e-Health initiatives in the last five years?
2. How much of that allocated has been disbursed?
3. How much is spent on each activity within the umbrella of e-Health?
4. How many countries have been covered?
5. What systems have been used/ created, for what purposes?
6. What evidence is there that the systems are operational and being used?

7. What software has been created? Are these tools available for others?
8. What were the outcomes of the projects?

To identify federal grant allocations we began by an online search and identified three main sources that listed government grants: CFDA, grants.gov, and RePORTER. The Catalog of Federal Domestic Assistance (CFDA), where almost all federal grants are listed was fully explored. The CFDA codes are searchable by keywords like USAID, CDC, and PEPFAR, which were three main government entities we chose to focus on. We also looked at the information portal Grants.gov, which lists almost all federal grants announcements available for application as well as most closed and archived grant announcements. During our information gathering phase we also looked at the RePORTER website, which lists grants funded under various bodies associated with the National Institute of Health (NIH).

Further, we explored the websites of USAID, PEPFAR, and CDC, and after exhaustive online searches, we contacted them directly. We also contacted the World Bank as well as the Health Metrics Network. Not only did our research look into the funding bodies that disbursed US federal grants, but it also identified and contacted organizations that implemented projects. The following non-government organizations were contacted in our search for financial data regarding US federal funding as well as data measuring the impact and outcomes of programs funded by US tax payers.

1. John Snow Inc.
2. Management Sciences for Health Inc.
3. Abt Associates Inc.
4. Voxiva Inc.

Additionally, we researched websites of Ministries of Health that had e-Health programs implemented in their respective countries that were funded by US federal funds. We hoped

to extract financial information as well as their health statistics that might help evaluate the impact of e-Health initiatives.

FINDINGS

The goal of this project was to evaluate the impact of US federal funding on global e-Health interventions in developing countries. In order to increase transparency of the impact US tax payer money has on government initiatives, most federal financial information has been "made accessible" in the public domain. After tedious research we concluded that this was not the case.

After extensive research we came to the understanding that there was little or no information that could be used to evaluate the impact of e-Health initiatives funded by the US government on developing nations.

The Global Health Information Forum Report of 2010 identifies the current levels of external funding around the world for e-Health initiatives as US$295 million: This was further broken down as follows:

·   WB (US$103 million)
·   PEPFAR (US$100 million)
·   GF (US$73 million)
·   GAVI (US$12 million)
·   HMN (US$7 million)

This lump sum of US$295 million was further divided into 85 countries. However we realized that there was an uneven distribution of these funds, where 2 countries received US$116 million, while the rest of the 83 countries averaged $2.1 million each (39 countries

less than $500 thousand and one country $25,000). The accuracy of these figures is questionable, as we gathered data from other sources that conflicted with these numbers.

The challenges and constraints we faced while looking for data to support our project are outlined below.

· In theory there is much transparency with regards to federal funding. However we found no annual or quarterly reports that were specifically broken down by activity for USAID, PEPFAR, or CDC.
· National Health Account is a tool to track money flow for Health systems but has no data on e-Health initiatives.
· OECD_STAT is one of the biggest databases for tracking Organization for Economic Co-operation and Development (OECD) funds. This database tracks OECD funds using 17 health components, but nothing related specifically to e-Health.
· Even within these OECD health components, substantial amounts of funds that have a donor project ID and a specific disbursement amount have no channel of delivery (implementing agency or organization) code and name.

After finding that there was insufficient information on all US federally funded e-Health initiatives to evaluate its impact, we decided to reduce the scope of our topic and focus on the countries that already had HIS strategic plans. We identified: Afghanistan, Kenya, Uganda, Sierra Leone, Cambodia, Ethiopia and Rwanda. The following set of criteria was used as a reference to start our evaluation:

· Identify principal donors of the country's e-Health Strategic Plan and how much they contribute.
· Find financial information for Health Information Systems (e.g.- Budgets, actual spending)
· Articulate a listing of e-Health deliverables.

Within this group of countries, we selected Afghanistan and Rwanda based on our contacts that were willing to share information.

Rwanda

Rwanda is a country with approximately 10 million people, and is the most densely populated country in the African continent. It is a poor rural country with about 90% of the population engaged in (mainly subsistence) agriculture and some mineral and agro-processing. (Central Intelligence Agency, 2010) The war and genocide of 1994 left much of the country destroyed and more than 1,000,000 dead. This caused a mass exodus from the country, instigating a shortage of human resources in all sectors, including the health sector.

Since the Rwandan genocide there have been some significant improvements in the health sector. The most notable success is the government campaign against HIV/AIDS which drove down prevalence of the disease to 3%. (WHO, 2010) It can be argued that the TRACnet (Center for Treatment and Research on AIDS) program, an e-Health initiative played an important role in achieving this success.

The Rwandan TRACnet System is a national central database of HIV and AIDS-program information. It is intended to deliver real-time HIV information to decision-makers to help them assess challenges and provide targeted responses to improve availability and quality of care and treatment.

After extensive research we were able to identify the total funding provided by PEPFAR for the year 2010. PEPFAR reports indicate that they funded US$ 6,575,622 for all e-Health initiatives in Rwanda. The information from PEPFAR went as far as breaking down the total

funding by allocation to the implementing organization (see Appendix 1). The accuracy of this figure is questionable as information released by the Global Fund shows that the amount of US funding was larger. The breakdown of the funding as well as outcomes of the program or project is crucial in order to carry out an impact analysis. Such information was unavailable. Many of the implementing organizations were unwilling to provide this information as they were "privately held institutions". Reporting standards for privately held institutions are lax, as they are not governed by the same legal framework as public institutions.

We were able to access information on e-Health initiatives implemented in Rwanda through contacts in the Ministry of Health (MOH) as well as in organizations implementing e-Health projects. We were able to access information on the outcomes of the TRACplus program   through the Rwandan MOH. However these benefits were not broken down further to show the direct impact of the TRACnet program, which was an e-Health project.

Afghanistan

The Islamic Republic of Afghanistan is a country weakened by decades of conflict, with a population of approximately 29,835,392 people. (Central Intelligence Agency, 2010) Afghanistan is severely impoverished, and has been ranked 173rd out of 183 countries based on GDP (PPP) per capita. (International Monetary Fund, 2010) Agriculture is the primary source of employment in the country, providing a livelihood for roughly 75% of the population. Roughly 36% of its citizens live below the poverty line, while 42 % of the population live on less than $1 a day, according. (Central Intelligence Agency, 2010) The country is heavily dependent on foreign aid.

In the case of Afghanistan we were able to identify principal donors of the country's e-Health initiatives and how much they contributed. Appendix 2 presents the budget under broad categories and the unfunded amount under each category. We identified some of the main donors: USAID through Management Sciences for Health (MSH), World Bank through John Hopkins University (JHU), European Commission through EPOS Health Management, Global Fund, Basic Package of Health Services donors (USAID, EC, and WB), GAVI and some others. However, we could not carry out a thorough analysis as program evaluation data and health outcomes were not available in the public domain. Information systems development is usually incorporated into the broader category of service or program development, making it difficult to tease it out. Also, since a project is usually funded by more than one donor, differentiating funding sources is usually complicated. In the case of Afghanistan we were provided with financial information that was broadly categorized by activities. The information could have been broken down by activity, donor, and cost to make it more useful for our impact study.

RECOMMENDATIONS

In order to increase efficient and transparent spending of US federal funds, especially on e-Health initiatives, there is an urgent need to gather information and increase the use of performance and outcome assessments. In general, there's a need to adopt one standard e-Health resource reporting system across agencies and one standard definition for e-Health. It may be ideal to begin this process by working with organizations that focus primarily on the development and implementation of e-Health projects. Tracking US federal funding and analyzing outcomes of e-Health projects being implemented would help form a framework

that may be used to track such funding. It is also recommended that a database that tracks all funding related to e-Health initiatives is created. After creating such a platform it is crucial to build the capacity of staff to appropriately use it.

For resource tracking search engines

It is essential to create a universally accepted form of reporting. Grant.gov, is the governments' data portal to grant information that is accessible by the public, it might be ideal to classify e-Health as a project title, separating it from the general category of health. With the adoption of the HIS classification system designed by Health Metrics, it may be easier to generate specific funding numbers linking the funds to the e-Health. The form of reporting should be accepted and adopted by all resource tracking search engines (e.g. OECD) making comparison of data and information seamless.

At the country leve

Create a National Health Accounts subaccount for e-Health which will enable countries to report their e-Health expenditures on:

· Financial source- Financial-agent matrix
· Financial agent- provider matrix
· Financial agent- function matrix
· Provider-function matrix

Financing and implementing agencie

Financing and project implementing agencies should report their expenditure by descriptive activities, enabling the easier measurement of outcomes. It is essential that all agencies agree to universal standards of reporting. Donor agencies should also require

implementers to provide information on outcomes and finances to the general public, when tax payer dollars are used for a project.

THE FUTURE OF US FEDERAL FUNDING ON E-HEALTH INITIATIVES

We realize that there is not much focus on assessing performance or impact. There are no process indicators, structural indicators, or outcome indicators that have been made public, which can be used to assess the impact of e-Health initiatives; and there are very few countries that have successfully implemented e-Health initiatives.

Many donors, specifically the US who gives the largest ODA, understand the importance of improving health information systems, which in turn can affect the outputs of all the other building blocks of any health system. Unfortunately, even the foreign aid agencies of the richest and most powerful country in the world don't efficiently track the resources invested in e-Health initiatives. There are no standardized processes of data collection at a country and agency level for Health Information systems funding, which makes available data scattered and harder to interpret. The importance of measuring the effectiveness of aid programs, especially those that are publicly funded, makes it imperative that significant data is collected. Our findings explicitly identified that there is little data published, which suggests that the data gathered is underutilized, and at the very least that transparency is lacking.

In the wake of the economic crisis, US foreign aid is threatened as domestic initiatives trump international ones. Within this context, it is critical for the foreign aid agencies to assess the impact of US federal funds on interventions by linking investment to results, if they want alleviate both the probability and the proportion of possible budget reductions.

As mentioned in the report, Development assistance for health: trends and prospects by Murray et al, growth in global health spending will probably slow and might contract in 2011 and competition will intensify for resources to address the many important global health priorities. It is recommended that program implementers provide compelling evidence that past and continuing investments have significant impact; while highlighting that resources devoted to health programs are an effective means to advance health and broader development goals. In order to provide real evidence of success and help sustain global e-Health financing in coming years it is important to track financial data as well as program outcomes.

APPENDIX

Appendix 1: PEPFAR Funding for e-Health Initiatives in Rwanda

RWANDA	
PEPFAR (2010)	
Organisation	**Amount (US$)**
Treatment and Research AIDS Center	$ 1,527,831.00
Voxiva Inc.	$ 990,000.00
Management Sciences for Health	$ 695,591.00
Ministry of Health, Rwanda	$ 550,440.00
Treatment and Research AIDS Center	$ 510,736.00
Ministry of Health, Rwanda	$ 350,000.00
Management Sciences for Health	$ 297,383.00
Association of Public Health Laboratories	$ 222,750.00
Partnership for Supply Chain Management	$ 201,045.00
MACRO INTERNATIONAL	$ 200,000.00
Social and Scientific Systems	$ 198,000.00
University of North Carolina	$ 187,100.00
National AIDS Control Commission (CNLS)	$ 178,200.00
Association of Public Health Laboratories	$ 125,000.00
Drew University	$ 25,000.00
Drew University	$ 24,750.00
US Agency for International Development	$ 19,960.00
Strategic Information Total	*$ 6,575,622.00*

Source: PEPFAR

Appendix 2: Total Funding for e-Health Initiatives in Afghanistan

Components	Development (US$)	Recurrent (US$)	Funded (US$)	Unfunded (US$)	Total (US$)
Legislation, Coordination, and Data Sharing	757,918	0.00	739,918	18,000	757,918
Surveillance and Data Use	5,791,932	0.00	4,746,445	1,045,487	5,791,932
Data Quality and M&E	2,102,830	4,748,660	344,196	6,507,294	6,851,490
Capacity Development	6,026,419	864,000	6,717,813	172,606	6,890,419
Admin Data and RBF	991,552	0.00	888,647	102,905	991,552
Quality of Care and Hospital Service Monitoring	402,980	0.00	0.00	402,980	402,980
Total	16,073,631	5,612,660	13,437,019	8,249,272	21,686,291

Source: John Snow Inc.

Works Cited

Bourguignon, F., & Sundberg, M. (2007). Aid Effectiveness: Opening the Black Box. *The American Economic Review*, 316-321.

Central Intelligence Agency. (2010). *The World Factbook.* Washington, DC: CIA.

Doucouliagosa, H., & Paldam, M. (2008). Aid effectiveness on growth: A meta study. *European Journal of Political Economy*, 1-24.

International Monetary Fund. (2010). *International Monetary Fund.* Washington, D.C: International Monetary Fund.

Murray J L, C., Anderson, B., Burstein, R., Leach-Kemon, K., Schneider, M., Tardif, A., et al. (2011). *Development assistance for health: trends and prospects.* Institute for Health Metrics and Evaluation.

Rannan-Eliya, R. (2009). *Strengthening Health Financing in Partner Developing Countries.* WHO.

Roman, D. (2011). *The Coming Crisis in U.S Foreign Aid: Policy Options for the 21st Century.*

Stevens, P. (2008). *Foreign Aid: Moving Beyond Government.* International Policy Network.

The World Bank Group. (2010). *Data.* Retrieved May 5, 2011, from The World Bank Group: http://data.worldbank.org/indicator/SP.POP.TOTL?cid=GPD_1

WHO. (2010). *National Health Data*. Retrieved 2010, from WHO: http://www.who.int/countries/

HST.S14 Health Information Systems to Improve Quality of Care in Resource-Poor Settings
Spring 2012