THE HUMAN SERVICE FELLOWSHIP

EXECUTIVE SUMMARY AND SOCIAL IMPACT ANALYSIS

Mobilizing skilled health labor to fight the HIV/AIDS crisis in Sub-Saharan Africa

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I. EXECUTIVE SUMMARY – HUMAN SERVICE FELLOWSHIP

The need: Funding for HIV treatment in Sub-Saharan Africa is growing at a staggering pace in response to the largest human crisis of our time. More than twenty-five million Africans are infected with HIV. Nearly ten-thousand people die every day. Tsunami-level death occurs here every two weeks.

As the cost of treatment has plummeted and as funding has grown faster than 50% per year, financing has become less critical to addressing this need. Rather – as recognized by every major HIV organization, from the Kaiser, Rockefeller, and Gates Foundations to the World Health Organization, to the Organization of African Unity – the lack of skilled health labor is the number one impediment to meeting the humanitarian crisis in Sub-Saharan Africa. For example, mother-to-child transmission of HIV can be prevented with two oral doses of drug, yet due to the lack of HIV-trained health labor to deliver this simple therapy, seven hundred thousand babies were born with HIV last year and will die before reaching adulthood.

Health organizations are starting to import American, HIV-experienced clinicians for short fellowship periods, to train local staff in HIV care. American clinicians have had experience with HIV for two decades, and have the technical depth required to train others in the treatment of this complex disease. Yet this labor market operates with "mind-boggling" inefficiency. Recruiting and screening Americans is simply not the core competency of African health organizations. Currently, organizations are separately trying to build awareness, collect applications, and interview a handful of candidates over the phone, all from thousands of miles away.

Our solution: The mission of the Human Service Fellowship is to make it as simple as possible to hire a skilled HIV worker to go to Sub-Saharan Africa. By specializing in the recruiting and screening of HIV-specific labor with a minimum of 3-5 years of experience, we can offer an outstanding value proposition for both the African health organization and the HIV worker, far beyond that offered by the current competition.

Our six-month Human Service Fellowship offers health organizations a relatively inexpensive, skilled health worker who has been properly screened with an in-person interview. For example, an African health organization could "order" a pharmacist with 5 years of HIV experience, review a short-list of candidates in one-month's time, and have one arrive three months later. The advertising, head-hunting, and screening process currently conducted separately by dozens of organizations is simply done better by one organization specializing in HIV. Given that the recruitment and employment cost of a typical worker is currently $20,000 - $40,000, we believe we can offer excellent value.

Social and financial value proposition: There is both a compelling financial and social value proposition. Funding for HIV work continues to grow unabated (it is indeed one of the fastest growing "industries" in the world), and the HIV problem is virtually boundless. As our business grows we will earn $500,000 in net income annually, at $1,000 in profit per Fellow. This will be re-invested in the program's growth to support our compelling human impact. Each Human Service Fellow has the potential to train a minimum of twelve health workers in basic HIV care – each of these workers will go on to treat hundreds of patients per year.

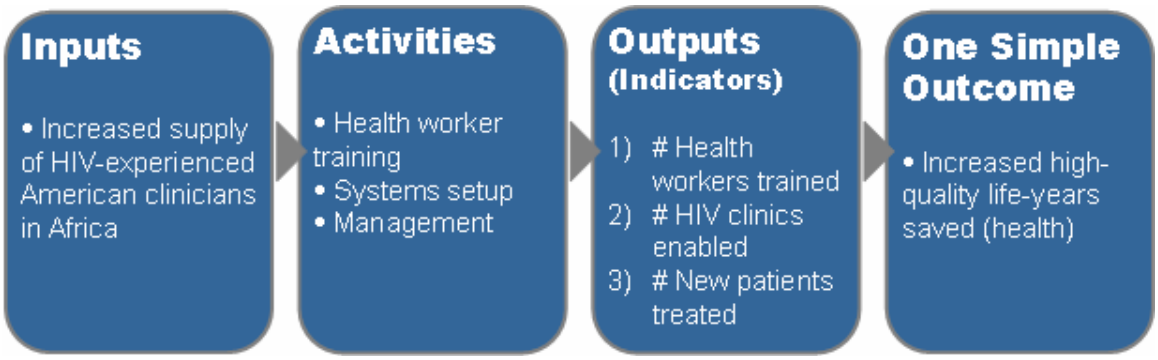
VIII. SOCIAL IMPACT ANALYSIS

1. (Upper, left) “Lumpai Sirattanan in Thailand holds her emaciated husband during his final hours. He was once a Thai boxing champion. Lumpai has also tested positive.” 2. (Upper, right) “Danusor celebrates his birthday in Thailand. He is three years old and is HIV positive. His nickname is ‘Dinosaur’.” 3. (Lower, left) “Andrew with his partner Angela outside a hospital in Australia after another attack of HIV-induced pneumonia.” 4. (Lower, right) “Samkelisiwe embraces her mother in the TB ward of Ngwelezane Hospital, Natal, South Africa.” Samkelisiwe is HIV positive, and is unable to support her mother, child, and children of her deceased sister. Source: Positive Lives.

HIV/AIDS is killing people all over the globe. In Sub-Saharan Africa, HIV/AIDS threatens the entire economic fabric of society, by aggressively attacking the most productive people at the prime of their lives. 25 million people are infected. The resources to fix the problem are becoming increasingly available; the people to deliver them are not.

Our venture is no more than a drop in the bucket. But every drop is human life.

SROI Methodology



Theory of Change

Our venture seeks to increase the supply of skilled labor used in HIV/AIDS treatment – this is our "raw material," or **input.** These HIV-trained healthcare professionals will engage in **activities** such as training local health workers. Their **output** will directly measurable in terms of number of health workers trained, number of clinics enabled, and number of new patients under treatment. Our venture will require regular reporting from Fellows on these outputs. From this information, we can measure the ultimate **outcome:** increased number of high-quality life-years.[1]

Monetization of Outcome

We anticipate that each clinician will be able to train approximately 12 local healthcare workers in HIV care, enabling those healthcare workers to extend the lives of hundreds of patients, the desired outcome. We want to measure and **monetize** the value of this outcome.

It is helpful to go through a simple example first. The example records the social impact of the work of **one Fellow** over the course of six months. We will later adjust the social impact estimate downward, by subtracting the **status quo case** later on – what would have happened without our Fellow. The example uses the specific example of Botswana, based on conversations with the oldest HIV treatment program in Africa, the African Comprehensive HIV/AIDS Partnership (ACHAP). We attempt to monetize the impact of placing one pharmacist with ACHAP.[2]

Simple example

In Botswana, life-saving HIV drugs can currently be prescribed to patients at hospitals, but not at the satellite clinics around the hospital. This limits the number of patients that can be treated. However in the upcoming year, the government of Botswana will extend service to the clinics, which will require training nurses at these clinics to prescribe drugs for simple cases. Suppose that our service is able to find, screen, and deploy one American pharmacist with 5 years of HIV experience, to train these nurses.

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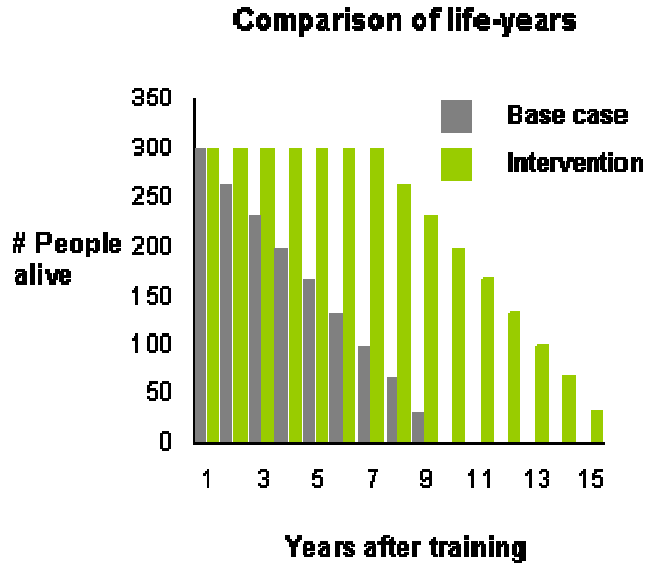
[1] It helps to think about the outcome first – what is the intrinsically valuable goal of the organization? Common outcomes might include saved life years, food for poor people, or a better environment. These are things that are intrinsically valuable, and the benefit that we are trying to monetize in the analysis. In contrast, the outputs are the operational metrics that can be measured to chart an organization's progress over time. This might include things like workers trained to provide healthcare, acres of farmland cultivated, or number of cars converted to natural gas, for example.

[2] It is helpful to use a representative, yet specific example of your theory of change, which allows for greater depth of analysis and less reliance on unknown assumptions.

This pharmacist could work with the satellite clinics at three hospitals, over the course of six months. This means that she would train nurses at twelve clinics in the proper handling of HIV drugs, enabling these clinics to provide HIV treatment.[3] The outputs that she produces (nurses trained, programs enabled) will be measurable in our ongoing operations. However, training people and setting up clinics are just operational measures, and not intrinsically valuable. We want to be able to monetize the outcome: how many life-years does she save?

The first question to ask is: how many patients will be affected? ACHAP's average patient load per hospital is currently 1,000 patients (there are 32 hospitals total). Therefore, the existing patient base at the three hospitals reached by the pharmacist is 3,000. By extending treatment to the clinics, we will conservatively achieve 10% growth in patients[4], leading to 300 additional patients in the first year after the Fellow departs.

These HIV patients are at various stages of infection. On average, these patients will live as short as one year (HIV is just about to develop into AIDS), or as long as nine years (recently infected with HIV).[5] With HIV treatment, we expect that these 300 patients will be able to live a minimum of six additional *healthy* years, conservatively speaking.[6] Therefore, the patients will now live an average of seven to fifteen years. This allows us to compare the life-years lived without intervention, and with our intervention:



[3] Figure is based *highly conservatively* on current training rates for ACHAP physicians and nurses, who on average partially train one hundred workers over a six-month period.
[4] The current hospital infrastructure is being 100% utilized, with considerable lines of patients that await treatment throughout the day. Even the largest hospital only has five physicians. Enabling clinics to offer treatment will increase the number of practitioners by significantly more than 10%, but we conservatively estimate that the number of patients increases by only 10%.
[5] 'The duration from HIV-1 infection to AIDS and death … was based on previous estimates for sub-Saharan Africa. We assumed that adult elapsed time from HIV-1 infection to AIDS was normally distributed, with a median of 8.0 years … as was the duration from AIDS to death, with a median of 1 year.' From "Extent to Which Low-Level Use of Antiretroviral Treatment Could Curb the AIDS Epidemic in Sub-Saharan Africa." The Lancet 2000, 2095-100.
[6] "Cost Effectiveness of HIV/AIDS Interventions in Africa: a Systematic Review of the Evidence," Andrew Creese et al, The Lancet, May 11, 2002. Although HIV treatment can extend life well beyond six years, these figures are based on actual treatment conditions in South Africa. Note that incremental years will be *healthy* – during HIV treatment, viral load diminishes to non-measurable levels, and there are no disease symptoms.

The difference between the two bars in any given year represents the incremental life-years that the Fellow has enabled.

Now we need to appropriately monetize and discount the value of this life. Attaching an economic value to a life-year is very difficult, and fraught with ethical problems. Although numerous studies attempt to do this, we believe that it is impossible to quantify the true economic and emotional value of life.

Therefore, we will stay with the most conservative estimate, which is the GDP per capita of Botswana, $8,568 per person[7]. Using a measure of the economic productivity of a person is an extraordinarily conservative estimate of the value of one year of their life. The value of the work output of a person does not take into account various economic costs of death, such as lost employer profit, the orphaning of a patient's children, and of course, the unquantifiable moral value of human life.[8] Therefore, we conservatively measure only the economic value of the person's work output.

From this value however, we must subtract the additional economic cost of HIV treatment in the future. Our pharmacist has enabled treatment of patients, but of course this treatment will require additional drugs and nursing resources going forward. Based on a comprehensive review of HIV treatment expenses published in The Lancet, we liberally estimate this cost to be $2,000 per year, although it is likely to be much lower in the future, improving our SROI.[9] Thus, taking the economic value of the saved human life, and subtracting the incremental cost of HIV treatment, we obtain a net social value created over time, by the one pharmacist.

	Year	1	2	3	4	5	...	15
1. No Action	No intervention: life-years	300	264	231	198	165	...	-
2. Our Intervention	Life-years (with intervention)	300	300	300	300	300	...	33
	Incremental life-years	-	36	69	102	135	...	33
	Monetized value of incremental life years	$0k	$308k	$591k	$874k	$1,157k	...	$286k
	Less treatment cost	($600k)	($600k)	($600k)	($600k)	($600k)	...	($67k)
	Net	($600k)	($292k)	($9k)	$274k	$557k	...	$219k

Truly incremental lives

Note however, that the simple case overstates our social impact – it ignores the fact that there are other good organizations out there working towards a similar goal. Some of these patients might have been saved by these organizations, even without our particular pharmacist's intervention.

[7] Nationmaster.com, from the CIA World Factbook, 2003.

[8] By focusing only on a measure of economic productivity, the unfortunate implication is that a person in a richer nation is more valuable than that in a poorer nation. This is not our intention – we just consider it too difficult to quantify the moral value of life.

[9] "Cost Effectiveness of HIV/AIDS Interventions in Africa: a Systematic Review of the Evidence," Andrew Creese et al, The Lancet, May 11, 2002. $2,000 per year is the expense for South Africa, which has a similar GDP per capita to Botswana. Note that this treatment expense is likely to be half of this in the near future, with the FDA-approval of a generic triple-drug therapy for use in humanitarian work (footnote 7).

Without our intervention, we assume that ACHAP would have been able to provide a pharmacist in the next year. 36 patients will die as a result of the delay in service, but the new "hypothetical" pharmacist will be able to serve the rest.

Conducting a similar calculation as above, we thus obtain a second net value scenario: the value of intervention, delayed by one year, in absence of our Fellow.

	Year	1	2	3	4	5	...	15
1. No Action	No intervention: life-years	300	264	231	198	165	...	-
3. Status Quo: Delayed Intervention	Life-years (later intervention)	300	264	264	264	264	...	29
	Incremental life-years (vs. #1)	-	-	33	66	99	...	29
	Monetized value	$0k	$0k	$283k	$565k	$848k	...	$251k
	Less treatment cost	$0k	($528k)	($528k)	($528k)	($528k)	...	($59k)
	Net	$0k	($528k)	($245k)	$37k	$320k	...	$193k
	Difference (#2 ours vs. #3 status quo)	**($600k)**	**$236k**	**$236k**	**$236k**	**$236k**	**...**	**$26k**

The difference in monetized value between our intervention and the delayed intervention is the truly incremental social impact of our operations.

Since we have limited our analysis to pure economic value, we can use a financial discount rate to calculate present value. We use the interest rate of the Bank of Botswana, which is 12.5%, reflecting the cost of capital in Botswana.[10] The NPV of the two intervention scenarios are: $2.8m for intervention, and $2.2m for a one-year delayed intervention. Therefore, each Fellow saves life-years that are worth $600,000 of truly incremental present value.

Year	1	2	3	4	5	...	15
Difference (#2 ours vs. #3 status quo)	**($600k)**	**$236k**	**$236k**	**$236k**	**$236k**	**...**	**$26k**
Present-day dollars	**($536k)**	**$188k**	**$168k**	**$150k**	**$134k**	**...**	**$5k**
Total PV of one Fellow	**$633k**						
Expense of Fellow (Housing assumed to be $2,000)	**$16k**						
Present Value: Benefit / Cost	**39.5**						

Discussion of results and scalability of SROI

$600,000 of social impact per Fellow may sound high. However, we consider this estimate to be extremely conservative. We have assumed that the service provided by our Fellows will be provided anyways, one year later – we only record the incremental benefit from intervening faster by one year. We have also assumed the value of a life-year to be only the value of worker productivity, ignoring the significantly larger moral value of human life.

[10] Bank of Botswana, 1/20/2005 short-term bond interest rate. The financial discount rate is used here, because we limit our analysis to the financial value of life-years saved (the economic productivity of a life-year). This financial value can be discounted over time using the cost of capital.

Furthermore, our results will hold for a large number of Fellows. As our program expands, Fellows are likely to work in a variety of related HIV contexts, for example in prevention of mother-to-child transmission (PMTCT), Voluntary Counseling and Testing (VCT), and general prevention activity. These activities have consistently been shown to have larger present value than HIV treatment interventions alone.

Aggregating these results together and multiplying by the number of Fellows placed per year, we obtain the present-value monetized social impact generated by each year of operations. This ranges from $2.4 million in the pilot year, and $168 million in the fifth year.

Year	1	2	3	4	5
Fellows placed per year	4	25	75	150	280
PV social impact per year of operation	$2,400k	$15,000k	$45,000k	$90,000k	$168,000k
Social IRR on $100k seed investment	2850%				