Proactive, Targeted Preventative Healthcare Delivery

The challenge

In Kenya, most people in low-income areas only access healthcare when they have an acute illness. **Preventative healthcare provides the highest return on investment of healthcare interventions, yet currently only 1% of healthcare visits in Kenya are for preventative care.**

Unfortunately, this leads to a vast underutilisation of proven, cost-efficient and highly effective preventative health interventions such as cervical cancer screening, childhood vaccination programs, and family planning services – interventions that save lives on the population level. Globally and in Kenya, there has been heavy investment in public health and preventative care, which deserves credit for meaningfully improving life expectancy in our communities.

To date, **these efforts are delivered using a highly expensive, inefficient 'shotgun' awareness approach** – awareness and education campaigns by setting up billboards, distributing pamphlets, and broadcasting radio messages. Despite being expensive and inefficient, they are still an effective and important investment.

However, Penda Health wants to take a new, innovative approach – leveraging the high return on investment (ROI) of preventative care, but delivering this to people with a dramatically lower cost approach.

Background on Penda Health

Penda Health is an **award-winning social enterprise revolutionising healthcare delivery for low-income families in Africa**. We are at the forefront of providing primary care to low- and middle-income Kenyans – quickly having become a trusted health provider with 14 medical centres, 320 employees and over 200,000 patient visits per year.

Our solution: proven public health interventions delivered in a targeted way

By proactively reaching out to patients who already trust Penda Health, and offering already proven high-impact services in a targeted way, we believe we can deliver a model for **one of the world's highest-impact preventative health interventions.** Owing to our advanced internal systems, highly effective electronic medical record (EMR) system, and qualified, empathetic medical providers, we are able to accurately identify, reach out to, and recommend preventative healthcare services to the groups of patients who would actually benefit from them.

To do so, we envisage creating a large database of demographic and health metrics collected during acute care visits – data that we already collect during each visit. When this database is created, we can then deploy demographic, geographic and disease-specific filters designed by local population health experts to identify the patients who would benefit from preventative health interventions – and then proactively encourage them to access those services. For example, we would recommend cervical cancer screening to Kenyan women aged 30 - 60 who have never been screened before (all data we already collect). Next, we would personally reach out to these patients using one of a variety of simple modalities (SMS, phone call from an employee, or phone call from a clinician) and encourage them to return for the intervention – in this case cervical cancer screening. We would use this same process across 9 highly significant preventative health interventions.

Why this solution is revolutionary

Using this targeted approach to preventative healthcare is a revolutionary concept for three reasons:

1. We would be the first primary care clinic to treat low-income Kenyans as **whole persons**, rather than as individual urgent care visits.

2. While current efforts to address preventative healthcare use a 'shotgun' approach of applying a single intervention to entire populations, we would **target our interventions** to specific people who are most likely to benefit from a specific intervention. With this targeted approach, patients would be more likely to access the intervention, therefore increasing the health impact and using limited health resources more effectively.
3. We would **adapt our simple existing technologies** in a creative way to reach our patients. By coupling database queries to outreach systems such as Telerivet that allow mass SMSs or simple phone calls, we can efficiently and cost-efficiently reach our target population.

Plan for execution

We will pilot this targeted outreach in the form of a randomised trial, so we can collect objective data on the percentage of our population who access the recommended interventions, depending on the type of outreach (SMS, phone call from a Penda employee, or phone call from clinician) versus no outreach at all. **Our hypothesis is that the group of patients receiving one of the targeted outreach methods will access recommended interventions at a higher rate than patients who did not receive targeted outreach, leading to an *extremely* high health ROI per dollar.** We assume that this will be possible using only data that we already collect, and that simple SMSs and phone calls will be effective without larger efforts or expenses to make recommendations to patients.

In our **planning phase** (3 months), we will:

- Meet local and international experts to develop appropriate guidelines and decision tools for each of the 9 interventions
- Seek feedback from our patients on how to best recommend interventions based on the existing data we collect
- Select the consultant to build our population management registry (PMR)
- Build the PMR and populate it with data we have already collected.

In the **execution stage** (6 months), we will:

- Filter a subset of our population and randomise patients to either receive targeted outreach or to receive standard care
- Make recommendations to our patients for targeted preventative healthcare services
- Test different ways to make the recommendations and iterate our approach
- Collect and compile all data (every 6 months) to ascertain if our hypotheses were correct
- Share lessons learned and next steps.

In the **roll-out stage** (12 months), we will take the best method and roll it out to all our patients and branches. In short, this program will continue beyond the immediate funding stage. Services will be paid for through patient revenue, and if Penda receives enough visits, then revenue will cover support costs (see five-year budget below).

Measuring impact

Currently, Penda treats over 200,000 patients a year, with an increase to 600,000 projected over the next 2 years. Within the current patient population, we estimate that 390,000 (**65% of patients**) could be reached with one or more of the 9 proven preventative healthcare services that Penda currently offers. In addition, while currently 20% of all patient visits are for preventative healthcare, our aim is to reach **28%**.

In order to test our hypothesis and maximise learning, we would **measure**:

- # of patients whose data was recorded
- # of patients who qualified for each preventative healthcare intervention
- # of recommendations we made for each preventative healthcare intervention
- # (and %) of people we made recommendations to, who accessed the intervention
- # (and %) of patients who accessed one or more of Penda's preventative healthcare interventions.

Execution phase outcomes:

- Of the outreach intervention groups, reaching at least **20% more patients** who accessed one or more of Penda's preventative healthcare interventions, compared with the control
- **Reports shared** with external audiences including findings and recommendations.

Roll-out phase outcomes:

- **92,000 preventative healthcare services** delivered
- **28% of patient visits** for preventative healthcare
- **Sharing our findings** with a small dissemination plan, including sharing with the Ministry of Health.

From these data, we can prove or disprove our hypothesis and generate important data on which interventions people are most likely to access, which methods of targeted outreach were most effective, the estimated cost-efficiency, and which interventions need more development. If our hypothesis is supported, we will approach EMR vendors with this project and propose an upgrade to our existing system. This will allow us to update the relevant registry data in real time, filter and present recommendations in an automated fashion, and automate our outreach via SMS and other technologies. We will add a much wider range of interventions and patients, form partnerships to assist in execution, and make improvements to our outreach methods based on patient feedback. We also plan to share our findings with wider audiences so that this model can be replicated by other healthcare providers.

Long-term financing for the project

We aim to make this program financially sustainable and to continue running without outside financial support. To achieve this the key ratio required: 0.66 preventative services taken up for every $1 of spending. If the program's effectiveness is .66 or higher, it will be financially sustainable and become a core, standard part of Penda's operating model. In year 3 onwards, the program will have been designed, tested and rolled out to all branches.

-The ongoing costs of the program at that point are projected at ~$26,000 per year.

-Each *extra* visit generated by the program, at our current prices, generates an estimated $.75 of revenue + an estimated $1 in increased visits from the increased loyalty over the next year.

-If we generate 15,000 or more additional visits from $26,000 ongoing costs, the program can become standard Penda operations without side funding. If the program's results are below that level, Penda will need to re-visit and tweak the program, or consider outside funding to continue it.