Project Sowa: Optimization of Healthcare Delivery in Pemagatshel, Bhutan

Vision
To facilitate timely, efficient, and equitable access to healthcare in rural areas.

Mission
To enable Pemagatshel District Hospital (PDH), Bhutan, to serve its rural community members better.

Project Goal, Location, and Collaborators
This project will implement and analyze the efficiency of a pilot program for a healthcare delivery vehicle to improve access to healthcare in Pemagatshel, Bhutan.

Community Need
Only one centralized hospital with four physicians and 28 nurses serves the people of Pemagatshel district (National Statistics Bureau [NSB], 2022). There are also some rudimentary health centers managed by unlicensed healthcare workers, who can only provide very basic, non-invasive care; all emergent cases and higher acuity patients are referred to the main hospital (G. Ratna, personal communication, December 28, 2022). Only the hospital is advanced medical equipment, services, and licensed providers such as, ultrasound, x-ray, physiotherapy, dentist, and dietician.

Getting to the hospital is a challenge for people of Pemagatshel because of limited public transportation infrastructure and significant disparities in resource availability between the rural and urban Bhutan. Although, over the last decade, there have been improvements in the construction of roads, many are unpaved and access to basic needs, such as healthcare continues to be a challenge for those residing in rural and remote villages. There is no public transportation and only one main paved road and even the unpaved ones are often closed because of the rainy climate. Moreover, most of the rural residents don’t own vehicles, so their only options are paying someone else to take them, which can cost up to 20 times the average daily wage, or they can walk 10 to 20 miles, which may not be possible depending on their health condition (Ministry of Industry Commerce and Employment, 2022; M. Maya, personal communication, December 29, 2022).

Therefore, it is geographically and economically challenging - or even impossible - for the majority of the people in Pemagatshel to access healthcare resources and services. Furthermore, it is especially difficult for those who require regular and frequent healthcare visits, such as pregnant women needing prenatal care, and individuals with chronic health conditions requiring intensive management and follow-up care. Failure to access necessary follow-up healthcare visits results in poor patient outcomes, increasing morbidity and mortality (McQueenie et al., 2019). It is critical that the people of Pemagatshel have access to needed, reliable, affordable, and timely healthcare.

A Sustainable Solution
In thorough qualitative interviews with the leadership team at Pemagatshel District Hospital in December 2022, it became clear that their biggest need is a utility vehicle that will facilitate the provision of healthcare to individuals in these rural villages. This would enable them to provide the following:

1. affordable transportation of non-critical patients to and from the main hospital
2. mobile healthcare and screening to treat and prevent disease
3. outreach and health education to promote patient self-efficacy

Similar initiatives in rural areas in Southeast Asia and other parts of the world had measurable success, suggesting this could be adapted to Bhutan as well. Check Vinacapital foundation rural outreach clinics and Mobile clinic mammography in remote communities of the West Bank.

This project will support Pemagatshel District Hospital’s immediate need for a utility vehicle and help them facilitate its most effective use, benefitting over 23,799 residents (NSB, 2022). Moreover, it will act as a pilot program to analyze the efficacy of such a program. The project plans to pilot identified and evidence-based ways of improving healthcare in Pemagatshel and explicate efficiency of the identified three provisions in partnership with the district hospital. The hospital will provide the
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equipment and advanced healthcare providers for the vehicle. Hospital will also bear the cost of operation, fuel, and maintenance during the pilot project and will take over entirely after summer to continue the utilization. If successful, this program could be extended beyond Pemagatshel to other communities in Bhutan. As part of the investigative application of this project, evaluations will be completed on the effectiveness of the three identified uses of the utility vehicle and then subsequent generalizability to similar communities.

Background

Project Inspiration, Scope, and Sustainable Peace
I grew up in rural Pemagatshel but moved to urban Bhutan and abroad in pursuit for higher education and better opportunities. It is my dream to go back and serve the community with the perspective, knowledge, and skills I have and will from the privilege of being able to have access to higher education and the world beyond the mountains of my little village. This winter, I went back to my village after about four years with the intention to reconnect with the community and understand the current issues and needs at the grassroot level that are in my capacity to respond. With my background in healthcare and nursing, the trip would not have been complete without a visit to Pemagatshel district hospital, where I secured a 3-day observational visit at the hospital. During this time, I had the opportunity to witness and experience the healthcare delivery system of Pemagatshel. I also had the opportunity to have in-depth conversations with the administration and healthcare workers about the community and challenges they face in healthcare delivery. At the end of the experience, I developed a relationship with the hospital that will serve as my reentrance into the community now and in the future. The idea for this project was born through this partnership.

I believe that peace is an ease of mind that comes from within. Such peace of mind is hard to attain especially with the knowledge and awareness of inequalities and distress people around me endure. Similarly, it is difficult to attain peace of mind when faced with constant challenges and burdens of fulfilling basic needs like healthcare service. This project is a pursuit of both personal and external peace.

Implementation

Majority of the funding obtained will go towards the utility vehicle. Specific details of the vehicle purchase will be done with close deliberation with the leadership team at the hospital prior to the summer. Cost, durability, and road compatibility are some of the factors that will be taken into consideration. With the availability of US$10,000, we will be able to afford a used pickup truck that are reliably used in the roads of Pemagatshel. However, I would like to aim for a brand-new vehicle by partnering with potential vendors for a subsidized price, health ministry, and other Bhutanese and international organizations in support of the mission. Anticipated additional cost of operation and maintenance was also thoroughly discussed with the leadership team of the hospital. The hospital has vehicle operators who are often underutilized and budgets for fuels and maintenance that can be utilized (G. Rana, personal communication, December 28, 2022). The project will be implemented in partnership with the hospital general medical officer (GMO), Dr. Gautam Rana and Ms. Mon Maya with my continuous logistical support and consultation. Planning and preparations will include crowd sourcing, applying, and partnering for additional funds, informing targeted public about the service, drawing optimal routes, and drafting schedule and triaging process for the services. The project would not be successful if there is no engagement from the public; continuous marketing and information flow will be conducted through public meetings in collaboration with local leaders and through social media platforms, such as WeChat and Facebook in local languages.

Phases of Project Execution (See Figure 1 in Appendix)
Phase I (March 2023): Planning and obtaining of resources and equipment (additional funds, vehicle, marketing, medical equipment)
Phase II (April 2023): Baseline data gathering in collaboration with the hospital (patient population and outcomes, healthcare workers’ time spent providing care per day, patient’s feasibility to receive or attend scheduled visits)
Phase III (May): Initial marketing and community awareness through public meetings and social media.
Phase IV (May-June 2023): Pilot implementation and data Collection
Phase V (June-July) 2023: Data analysis and report presentation to relevant individuals and organizations. Identify and develop a system to effectively utilize community engaged health care delivery with the hospital.
Phase VI (July 2023- June 2024): Implement with periodic evaluation
Phase VII (June 2024): Evaluation and evidence measurement. Identify another hospital with similar population size and topography to compare the results.
Phase VIII (July 2024): Analyze and report findings
Phase IX: Apply for additional grants for expansion and propose for duplication of the model if successful

Anticipated Results
This project will explore the optimum guidelines and solution to ensure easy and timely access to healthcare in the district in collaboration with the healthcare workers at the district hospital.

Short-Term
- Secure a utility vehicle able to safely navigate the unpaved roads of Pemagatshel providing equitable and reliable accessibility to necessary healthcare services.
- Investigate and identify ways to enhance access to healthcare for rural and remote communities like Pemagatshel, examining aspects of patient involvement in their own care and availability of services.

Long-Term
- Draft a framework and guidelines optimizing the use and distribution of healthcare resources to increase access and timeliness of care within the context of rural Pemagatshel.
- Collaborate with the Ministry of Health of Bhutan and the World Health Organization (WHO) to implement strategies that will improve access to healthcare for Pemagatshel, and other like communities.
- Develop a module-based curriculum for public and disease-specific health education based on any identified educational needs to increase self-efficacy.
References


Appendix

Figure 1

Implementation Plan

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<th>2023 Mar</th>
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Utilization rate (Market penetration) 25%(1%) 50%(2%) 100%(4%)