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CASE 3

Providing Continuing Professional Development in a Developing Country – The One Health Initiative

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“One Health” is a multidisciplinary initiative to improve the collective health of humans, animals, and the environment. Physicians, health professionals, veterinarians, scientists, researchers, economists, and international organizations are some of the many stakeholders who are working towards the common goal of achieving optimal health of all living things. The initiative is extensive yet, at the same time, rather simple: humans and animals are reliant on our physical environment, and our physical environment is reliant on us – and the health of each counterpart is inextricably linked to the others.

The One Health Initiative requires a holistic understanding of the ecology of our planet and its dynamic relationships (Centers for Disease Control and Prevention [CDC], 2016). It takes into account innumerable factors, such as emerging infectious diseases from the increasing contact between humans and animals; the spread of these diseases due to climate change, globalization, and urbanization; and, the links between deforestation and agriculture with the spread of zoonotic diseases.

This area of study is becoming increasingly popular due to (1) the emergence of many infectious diseases affecting humans, such as Zika and Ebola, and (2) the increasing investment of individuals passionate about the threats to wildlife – particularly those animals that are endangered. The spread of various human-disease strains pose a great danger to these fragile populations, with some infections, such as tuberculosis, having the potential to be the demise of an endangered species (Gorilla Doctors, 2016). By taking a One Health approach, threats to the environment, humans, and wildlife can be analyzed and approached from various perspectives, ensuring that action will not only benefit the subject of interest, but countless other species within its network.

BACKGROUND

At the Gorilla Doctors’ headquarters in Musanze, Rwanda (Exhibit 1), a team is working tirelessly to protect and conserve the endangered mountain gorillas and their natural habitat within the Virunga Massif. The team of veterinarians, trackers, and support staff take on this duty through a variety of channels, including medical interventions, research, disease prevention, community outreach, and anti-poaching initiatives. Although their primary concern is for the health and well-being of the gorilla population, they see first-hand how important a One Health approach is to fulfilling their objectives (Gorilla Doctors, 2016).

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Along the borders of the Volcanoes National Park, there are villages and agriculture within close proximity to where various groups of gorillas live. Although the park is protected and patrolled, the mountainous nature of the gorillas' natural habitat precludes the construction of an effective physical barrier that would prevent the intermingling of domestic animals, wildlife, and the local human population. This increases the exposure level of humans, livestock, and other animals to the gorillas, putting them at risk of contracting various diseases, including many strains of human disease due to the similarity of their genetic make-up (Gorilla Doctors, 2017).

Dr. Mike Cranfield, co-director of Gorilla Doctors, works directly with the wildlife in the park, as well as with the local hospital in Musanze. Noticing the emergence and increase in certain illnesses in the gorilla populations, Dr. Cranfield saw a great need for community initiatives to educate and provide health care to residents living in the area.

The Gorilla Doctors' Employee Health Program ensures all those working directly and indirectly with the gorillas receive routine health screenings, follow-up care, and health education. Gorilla Doctors has also created a rabies vaccination program for dogs and cats, as well as pet care education for their owners, with an aim of decreasing potential spread of the illnesses to other wildlife. Community education initiatives, such as educating on healthy lifestyles, sanitation, and disease prevention, are also extremely important components for the health of the people living around the park. Gorilla Doctors collaborates with local professionals and students working in veterinary science and wildlife conservation, as well as international medical, veterinary, public health, and PhD students who can use their skills and knowledge to contribute to the One Health mission (Gorilla Doctors, 2016).

SUPPORTING CONTINUING PROFESSIONAL DEVELOPMENT IN HEALTH CARE

In 2012, Dr. Cranfield recruited one of his veterinary colleagues, Dr. Rick Quinn, to assist the Gorilla Doctors with training local veterinarians in eye care best practices. Dr. Quinn, a skilled veterinary ophthalmologist from Canada, was happy to travel to Rwanda to help a cause he was personally very passionate about. The experience left a large impression on him, learning a lot about Rwandan culture and meeting many amazing people with a strong will to learn. After spending some time with Dr. Cranfield and learning more about the One Health initiatives, he felt compelled to continue giving his support in any way he could.

Seeing a great potential for further development in health care in the area, as well as being inspired to protect the endangered gorillas, Dr. Quinn returned to Canada and began his own non-profit organization "Docs4GreatApes". He formed this organization with a vision to create "a world community that is passionate about improving the health of Great Ape populations, the communities that surround them, and the ecosystem that we share," fully embracing the One Health initiative (Docs4GreatApes, 2013). Dr. Quinn continued to collaborate closely with Dr. Cranfield and asked what he thought he could do to make a real difference in the area. After speaking with local leaders in Rwanda and doing some of their own research, the pair began to see a great need and desire for professional education in the community health centres.

During the tragic Rwandan genocide in 1994, many of the doctors and health care professionals lost their lives. The country has made tremendous strides in the past two decades, but gaps are being seen in the health sector, where knowledge and experience should have been passed on from older generations (Grundman, 2016). In 2010, several Western University faculty collaborated with the Rwandan Ministry of Health to assess the quality of health care in Rwanda. They interviewed over 1400 local health care professionals across the country to identify the needs of the front-line workers in order to build capacity and enable them to deliver improved health care to the people. One of the significant deficiencies found was the lack of

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opportunities for continuing professional development (CPD), particularly in psychiatry, emergency care, obstetrical emergencies, and ophthalmology. In these areas, a lack of knowledge and experience was leading to insufficient care of patients, causing health problems to go unnoticed or be treated inaccurately. Already dealing with limited resources, misdiagnoses and unnecessary referrals were adding to the burden on the health care system and the few physicians and specialists in the region.

After many meetings, interviews, and brainstorming sessions, the VirungaOne initiative was born.

The aim of VirungaOne was to provide CPD to frontline health care workers in remote village health centres in the Virunga Massif, with the goal of creating healthier communities. Founders of the initiative believed that, by working at the grassroots level to educate health care providers, a more sustainable conduit for development and change would be opened. The hope was that health education would result in better health care delivery, creating healthier communities that would also be more willing and better prepared to recognize the value of conservation. Not only would a healthier population decrease the risk of certain disease transmissions between humans and wildlife, it could potentially open doors for opportunity and economic development of the area.

With growing gaps in knowledge, came a critical need for further training, and Dr. Quinn knew he needed to quickly and efficiently set his vision in motion. With eye care being identified as an area of need, Dr. Quinn decided that this would be the most practical area to begin developing the programs as he could utilize his expertise in the subject. With the help of his organization, educators, nurses, and fellow ophthalmologists, educational information was gathered and a learning module began to be developed. The plan was to integrate a primary eye care module, along with the future development of other desired CPD topics, into existing primary health care structures in clinics around the Volcanoes National Park. Dr. Quinn hoped that this education could provide the opportunity to increase responsibilities of health care workers and was optimistic that increasing the capacity in the community clinics would start to close knowledge gaps and provide the people with more comprehensive care.

THE CHALLENGES OF IMPLEMENTATION – HOW IS THIS GOING TO WORK?

With a team in place and CPD module development underway, Dr. Quinn began to realize that critical pieces of information were missing: he didn't know how the training was going to be delivered in rural Rwanda and who exactly would be receiving the training. With no previous experience in program development, especially in an area of limited resources, he didn't know where to begin or what best practices should be followed.

As he began to do some research and look into similar initiatives, Dr. Quinn started to identify different factors and concerns he would need to address to ensure that the VirungaOne initiative would be properly implemented and efficaciously delivered.

The first concern was ensuring that everyone who needed to be involved for the program to be successful was on board. How could his team gain the trust of the local health care workers and the directors of the clinics and hospitals? Dr. Quinn was aware of the difficulties that can arise when foreigners try to do research or development work in a developing country, especially with Rwanda having such a turbulent past. Understandably, walls are often built up due to mistrust and reservation. Local authorities need to ensure that the parties involved are committed and accountable for what they are promising.

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The second concern was how to best design the modules to reach the needs of the health care providers and communities. Dr. Quinn knew he must shift his perspective to a more local context and design the modules at the appropriate educational level for the nurses. He began to see the importance of bringing a local doctor or ophthalmologist on board to identify the most common eye cases in the area and design the educational materials around those topics accordingly. He wanted the material to be applicable and valuable in order to build the capacity to improve the treatment and triaging of patients.

The third concern was the logistics of the implementation phase, which required an understanding of the local infrastructure and resources. How many clinics and health care workers were there in the region? How far were these clinics from one another? What format would be most appropriate and what method of delivery should be used? How reliable was their electricity and would they have internet access? Should the training be voluntary or mandatory for all? Should the nurses receive some sort of compensation or recognition? How can the program be designed sustainably to deliver multiple modules over time with limited resources and international involvement?

These questions were running through Dr. Quinn's mind, and although he had an idea of how he envisioned the program, he wanted to make sure he was making informed and culturally appropriate decisions that would render the initiative a success.

THE ACTION PLAN – SETTING THE STAGE

Dr. Quinn and his colleagues devised an action plan to establish the development and implementation of their CPD training. He decided that the best way to gather the most relevant and appropriate information would be in the field. He learnt that the Rwandan people prefer to meet in person to build a relationship, rather than speaking via telephone or e-mail. Although it would be more time consuming, Dr. Quinn knew that this would be the best way to build trust and obtain buy-in from the clinics.

He also reached out to some local contacts to determine how the clinics were run and who the target population would be for training. He learnt that each health centre employs around ten nurses who are the frontline workers. The clinics are supervised by a "titulaire", or a head nurse, who would be vital to have on board and ensure the training is designed to suit their needs and the needs of their clinic. Dr. Quinn decided that it would be best to visit each clinic and meet with the head nurse to personally introduce himself and the project, as well as gather information that would help shape the development of the project.

By speaking with Dr. Cranfield and his contacts at the Musanze Hospital, Dr. Quinn established that there were fourteen clinics that surround the Volcanoes National Park (Exhibit 2). The clinics belonged to four different districts – Musanze, Burera, Rubavu, and Nyabihu – and were all rather diverse. Some clinics were currently employing as little as seven nurses while others had as many as eighteen; some were within larger towns and villages and others were in rural and remote areas.

With such diversity, distance, and varying levels of development, creating a program to suit the needs of all clinics seemed daunting. Dr. Quinn found himself at a crossroad, not knowing how to move forward with the project until he was able to gain more information. He hoped that through discussion with each titulaire, and collaboration with local physicians and ophthalmologists, his next steps would become clearer.

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THE PRIMARY PROJECT OUTCOMES

Fortunately, Dr. Quinn was right. After getting approval from the Rwandan Ministry of Health and meeting with the directors of the district hospitals to inform them of the VirungaOne initiative, his vision started to come to life. The fourteen clinics were mapped out and interviews were conducted with each of the head nurses. A set of questions and a rating scale were developed to guide the interview process and explore different possibilities for the program, such as location, group size, recognition, and clinic infrastructure and resources (Exhibit 3). The nurses were extremely receptive to the initiative and were able to provide a great deal of constructive feedback. They had a thirst for knowledge that left Dr. Quinn more motivated than ever.

The clinics spanned anywhere from a 30 minute to two hour drive from the Gorilla Doctors' headquarters in Musanze. Despite many differences in infrastructure and location, there was a consensus among most of the clinics on how training would be most practical and effective.

The clinics had little-to-no internet access, as it was often unreliable and very expensive. Electricity also posed an issue for some clinics that did not have back-up generators, as power went out multiple times per week. Dr. Quinn had previously thought that the modules could be downloaded through the internet, but he realized that would no longer be the best option. He also learnt that very few nurses had sufficient computer skills, as it was very rare to have a computer in the home and clinic computers were often only used by the administration. Therefore, having a hard copy of the educational materials for nurses to use and an electronic copy to keep on file in case the hard copy was lost or ruined, was very important to the head nurses.

Initially, Dr. Quinn and his team thought that bringing the training directly to the clinics would be the most convenient and effective way. However, thirteen of the fourteen clinics preferred that the nurses be trained in collaboration with other clinics at a separate venue. The head nurses explained that there would be too many distractions and interruptions for the nurses on site, and that they participated in other types of training where small groups of nurses would gather in Musanze. Creating an open dialogue and involving these leaders in the decision making process shed light on what worked best for the nurses and would give the initiative the community-based support it needed.

Dr. Quinn discovered many other useful findings from these informal interviews: a certificate of recognition should be given to the nurses for completing the training that could be kept on file at each of the district hospitals; training should be mandatory for all nurses as issues often arise with shifting of responsibilities when only two or three nurses are trained on a particular subject; and, training by an external facilitator using a PowerPoint presentation paired with informational booklets for the nurses would be the most effective.

With local ophthalmologists on board to guide content development, support from the Ministry of Health, and new partnerships with each of the clinics, the VirungaOne initiative was in motion. While everything seemed to be running well, the work was really just getting started. Next, Dr. Quinn and his team would need to begin planning for the follow-up and evaluation of the modules. Monitoring the quality and delivery of the training was going to be essential. What would be the best way to evaluate the success and effectiveness of the modules? How would the team be able to collect this information in an efficient and culturally-appropriate way? How would they maintain the much needed support of the various stakeholders?

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With optimism and confidence in his team, Dr. Quinn looked forward to resolving these questions and challenges on the horizon and was excited for the future of VirungaOne.

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EXHIBIT 1

Map of Africa Continent: Rwanda and the Volcanoes National Park Headquarters (Majority of Mountain Gorilla Families)

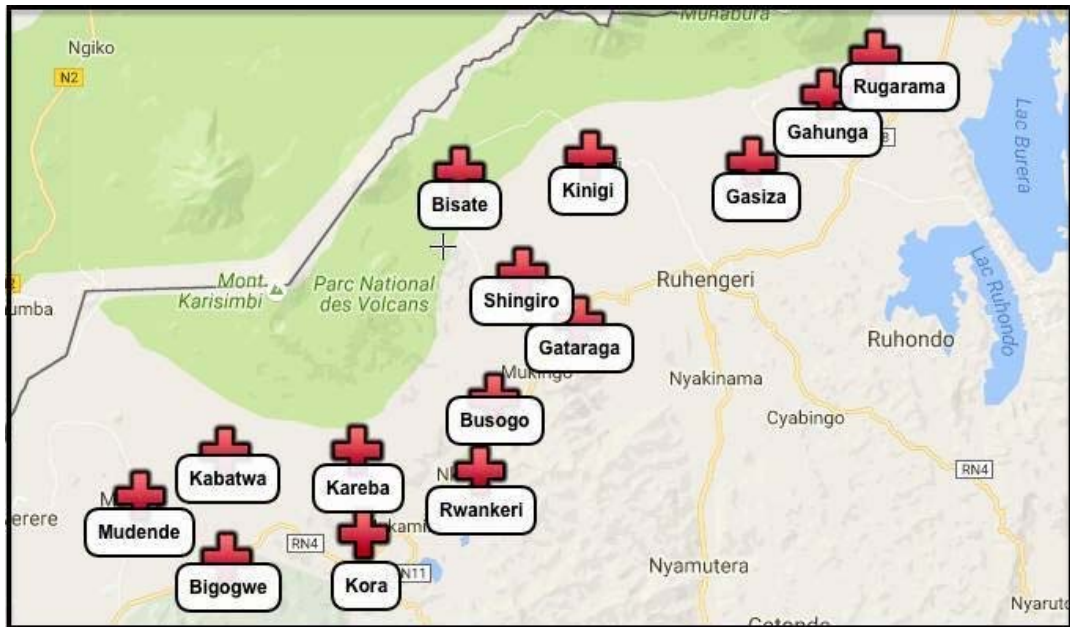


Source: Created by authors.

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EXHIBIT 2

Map of the Fourteen Health Centres and Proximity to the Volcanoes National Park



Source: Created by authors.

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**EXHIBIT 3
Titulaire Interview Form
(Clinic's Infrastructure and CPD Program Preferences)**

<u>General Clinic Information</u>	
# nurses on staff:	
# nurses per shift:	
Electricity:	
Generator:	
Computers on site:	
Computers at home:	
Comfort level using computers:	
Would they want user training:	
Available internet:	
• Unlimited or Pay-per-use:	
• Wi-Fi:	
Projector on site:	
Office space for training:	
<u>CPD Training</u>	
Format:	
• Hardcopy/Print:	
• Electronic:	
○ Electronic PowerPoint:	
○ Electronic document/PDF:	
○ Videos:	
○ Flash drive or downloadable from internet:	
Method of training:	
• Taught by facilitator:	
○ External facilitator:	
○ Train an internal trainer:	
• Learn independently (iPad or booklet):	
Location of training:	
• At the clinic:	
• At home:	
• At separate venue (school or centre):	
Group size:	
• Independently:	
• Small groups within clinic:	
• Entire clinic at once:	
• Clinic clusters:	
Recognition:	
• Certificate:	
• Exam passing note:	
• Where does recognition go?	
Nature:	
• Voluntary:	
• Mandatory:	

Source: Created by authors.

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INSTRUCTOR GUIDANCE

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BACKGROUND

In Musanze, Rwanda, two NGOs, Gorilla Doctors and Docs4GreatApes, are working on the One Health Initiative to indirectly protect the endangered mountain gorillas. They aim to build capacity and strengthen the public health care of the people who live in close proximity to the gorillas' habitat. By creating healthier human populations, there will be less risk of disease transmission, such as TB or parasites, to the gorillas, and the overall well-being and development of the area will be improved.

An unpublished study by Western University in 2010 identified areas in the public health system in Rwanda that health care professionals felt were lacking necessary knowledge and experience. The goal of the "VirungaOne" initiative is to develop and deliver continuing professional development (CPD) modules to train the nurses who work in the local health centres.

This case focuses on the issues Dr. Rick Quinn, the founding director of Docs4GreatApes, faced in discovering the most culturally appropriate and efficacious way to design and deliver the CPD training in a resource-poor setting. It centers around health promotion through education, while incorporating aspects of social determinants of health, environmental health, community health assessment and program evaluation, and aboriginal health.

OBJECTIVES

1. Explore similarities and differences between a developed and developing country in regards to program development.
2. Use different frameworks and models to analyze and design a CPD training program.
3. Identify key factors in creating a successful initiative for health education.

DISCUSSION QUESTIONS

1. How could Dr. Quinn's team gain the trust of the local nurses and the directors of the clinics and hospitals?
2. How could he ensure that the modules were relevant and appropriate?
3. What types of barriers or facilitators could you see in the implementation phases of the modules?
4. What similarities and differences can you draw between this context and the Canadian context? Particularly in Northern or Indigenous communities?

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5. What do you think is the best way to design the modules and the training sessions for the nurses?
6. How should the programs be monitored and evaluated in a culturally appropriate way?

KEYWORDS

One Health; program development; continuing professional development; education; promotion; capacity building.