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EnGENDERing One Health and addressing gender gaps in Infectious disease control and response: Developing a Gender, One Health and Emerging Pandemics threat short course for the public health workforce in Africa.

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ABSTRACT

Most capacity building efforts to investigate and counter emerging infectious diseases have focused on supporting public health agencies. However, to improve the understanding of the epidemiology, and outcome of diseases, aid in their detection and treatment and increase public participation in prevention and control, gender roles must be considered. Gender plays a significant role in shaping infectious disease response. In the most recent Ebola Outbreak in the West African region, glaring gender disparities were apparent as Ebola spread through nations decimating families. Policy implementers, practitioners and researchers were slow to recognize the gender implications, ask why, and build responses accordingly. A report that examined the avian influenza crisis in South East Asia in 2008 concluded that women were clearly in the frontline defense against the disease both as caretakers of the poultry and the families, and yet strategies to combat avian influenza did not consider their roles and potential contribution to the prevention and response. Makerere University, Uganda with the support of Tufts University developed a Gender, One Health and Infectious Disease short course that allows public health specialists to address gender gaps, and explore how gender, the realm of emerging pandemic threats and One Health intersect and how policies can be developed and/or implemented to address those gaps. The week long short course targets in service personnel in multiple disciplines, the private sector, faculty and students from OHCEA institutions and Africa. The course themes apply gender analysis tools to disease surveillance, response, and control and address gender sensitive emergency response planning.

Key words: Gender, One Health, Infectious Disease, Zoonosis, Emerging pandemics

INTRODUCTION

Infectious diseases of grave concern to human health are emerging from wildlife and livestock populations in regions of the world where boundaries between human, wildlife and livestock populations are undergoing rapid change. This occurs with greater frequency in tropical regions, areas with limited resources for disease prevention and control. It is estimated that 70% of the known human and animal pathogens reside in Sub Saharan Africa, specifically in East and Central Africa where they affect education, community health, global trade and national security. The substantial economic loss and social disruption that follows a major outbreak far surpasses and outlives the actual epidemic (1). Among recent examples, avian influenza may have posed the greatest threat to public health, but the most recent Ebola outbreak in West Africa, previous hemorrhagic fever outbreaks in Uganda and DRC, monkey pox in Nigeria, plague in Madagascar, and Nipah virus outbreaks in Southeast Asia are an indication that these are of global importance.

Most capacity building efforts to identify, investigate and respond to emerging infectious diseases have focused on supporting public health agencies. However, responding effectively to these diseases requires engagement of and coordination with a diversity of professions and stakeholders in both human and animal health, as well as social and environmental sciences. The gendered, social cultural and economic determinants of human lives and the society they live in and their ability to respond and act affect the health seeking behavior as well as preventive and response measures (2). In the same vein, organizations and their programs are often microcosmic representations of the society in which they are located and reflect gender and other norms inherent in them. Gender inequality is embedded in many institutions in society, including human and animal health institutions of higher learning (3,4). In the last Ebola outbreak in Uganda, October 2012, most casualties in the outbreak were health care providers who ended up being women. In zoonotic diseases such as tuberculosis and brucellosis, gender roles, distribution of labor and resources play an important role in the control and prevention, and therefore gender issues need to be addressed to appreciate the risks and develop adequate prevention strategies. Often gender based inequalities are at the origin of many risk factors (5,6).

Many planners and implementers of infectious disease response programs lack the perception and recognition of the differences of vulnerabilities between men and women in terms of loss of livelihoods/income, risks to infection based on their traditional roles, responsibilities in house hold care and management, the variations in health seeking behaviors, their varying abilities to respond to risks and their positions in the household and the community (7,8).

Higher institutions of learning can and must play a key role in transforming and shifting the response and control of emerging pandemics towards a gender sensitive One Health approach. As we consider reinforcing and supporting existing public health and veterinary services by developing the skills of a wide range of professionals with multidisciplinary applied training and experience in animal, human and environmental health threats, one of the major areas of focus needs to be gender and its relation to zoonosis and emerging pandemics. Furthermore, there is a lack of data or any evidence relating to gender issues in emerging pandemic threats and One Health. Gender roles, the distribution of labor, access and control over resources play an important part in the biosecurity, control, prevention and response to infectious diseases and emerging pandemics, delivery of veterinary services, and improvement in animal production. These factors have a great influence on causes, consequences and management of diseases and eco-health and on the efficacy of health promotion policies and programs.

In 2002, the World Health Organization adopted a gender policy and made a commitment to promote women's human rights in health and to re-examine health inequities resulting from gender roles and unequal gender-relations in society (9). Similarly, USAID recognizes that "Gender issues are central to the achievement of strategic plans, and strives to promote gender equality, in which both men and women have equal opportunity to benefit from and contribute to economic, social, cultural and political development; enjoy socially valued resources and rewards; and realize their human rights (10).

Institutions of higher learning play a pivotal role and are strategically placed to influence and transform the generation that will be in leadership tomorrow and can work in a multidisciplinary fashion with gender sensitivity. There is a clear need to mainstream gender in veterinary and public health curriculum in our higher education institutions even though within development the idea of mainstreaming and integrating gender has had prominence for several decades now.

One Health Central and Eastern Africa (OHCEA) is a network of universities in Central and Eastern Africa which are collaborating to build One Health capacity and academic partnerships between the member institutions in the region. OHCEA membership includes 26 Central and Eastern and West African Schools of Public Health and Schools of Veterinary Medicine ; and US partner institutions ; The University of Minnesota (UMN) and Tufts University (11) . OHCEA was formed from members of HEALTH Alliance, an existing network of six schools of public health from six countries in central and eastern Africa namely DRC, Ethiopia, Kenya, Uganda, Tanzania and Rwanda working to strengthen public health education and systems, including emergency preparedness and response.

The OHCEA networks vision is to be a global leader in One Health, promoting sustainable health for prosperous communities, productive animals and balanced ecosystems. OHCEA seeks to expand the human resource base needed to detect and respond to potential pandemic disease outbreaks, and increase integration of animal, wildlife and human disease surveillance and outbreak response systems. The overall goal of this collaboration is to enhance One Health policy formation and implementation, to contribute to improved capacity of public health in the region. OHCEA is identifying opportunities for faculty and student development and institutional strengthening that meet the network's goals of strengthening OH capacity in OHCEA countries. The OHCEA network recognizes that gender equity and empowerment must be considered in all stages of any program design, and are committed to ensuring that social and gender integration is identified as a high priority by the networks and their stakeholders. (One Health Central and East Africa network (OHCEA) strategic plan and vision, 2010) (12).

The gender differential (biological, social, economic) poses unique health risks for men and women during their life cycle. The diverse roles played by men and women create different exposure mechanisms to domestic animals, wildlife and the environment. As well, gender inequalities interact with other inequalities such as ethnicity, socio-economics class and age. Therefore, gender differences need to be addressed to better understand the risks, to help develop effective control and response strategies and to achieve a better impact.

Makerere University started the process of gender mainstreaming in all its faculties, schools and institutes. After realization of the gender gaps in the universities' veterinary curriculum, the vet school performed a baseline survey with the support of FAO and developed a course through collaborative efforts of stakeholders. It currently offers a course on socio-economics and gender studies as part of its veterinary curriculum and has a supporting manual that

contains training materials and guidelines. With the realization that emerging pandemic threats that are of zoonotic origin are becoming more frequent and that gender issues in this area have not been addressed, Makerere university gender experts working with faculty from Tufts university and TRG, with financial support from OHCEA through the USAID RESPOND project, set out to revise its curriculum as well as develop a gender one health and emerging pandemics short course.

The weeklong short course targeting students, faculty as well as in service field based personnel allows participants to develop critical analysis as they explore how gender, the realm of emerging pandemics threat and one health intersect and how policies can be developed and/or implemented to address it. The course focuses on gender and emerging pandemics, zoonosis and its impacts on the social, cultural and political dimensions on households and communities, and use of participatory approaches in handling gender related issues in pandemic threats. Participants are challenged to consider the implications of a critical gender analysis and a one health approach in responding to emerging pandemic threats. They are encouraged to develop interventions that can be applied and translated into changing livelihoods and improving ecosystem health. Training through this course serves as an extremely effective mechanism to integrate perspectives and gender analysis into the operations of institutions and organizations.

The approach

With the recognition that competence development on gender should be established, and with the aim of enhancing awareness, knowledge, commitment, and capacity necessary to incorporate a gender perspective in infectious disease prevention and control strategies and One Health programs, a team of gender experts supported by OHCEA from Makerere university, Tufts university and Training Resource Group (TRG) met first in Kampala Uganda, and then later on in Addis Ababa, Ethiopia to come up with goals, competencies, objectives and instructional methodologies for delivery of the short course and then used email communication and long distance conference calls to further develop content and resource materials. The face to face meetings were week-long meetings. The team of five was led by Professor Anthony Mugisha, Veterinarian, Gender and social economics expert, Dean, school of Veterinary Medicine, Makerere Uganda, with the participation of Dr. Elizabeth Kyewalabye, Gender expert from Makerere university, Professor Brigitte Bagnol, an anthropologist and Gender expert from University of Cape town and Tufts university, Professor Hellen Amuguni, An Infectious disease and gender expert from Tufts University, and Roberta Talmage, an engineer and instructional design expert from TRG. The teams vision was to promote a gender inclusive approach in training of public health professionals. The team focused on developing a course that would mainstream and entrench gender in the expanded public health workforce base engaged in human, animal, and environmental resource development and infectious disease detection and response. The course would include a facilitator guide that could be used by trainers or facilitators and a student guide for the participants engaged in the course. The process was also intended to support the OHCEA network to build capacity in gender and social analysis so that women and marginalized groups have a stronger voice and become a central focus of positive change in their institutions.

Target audience and goals of the course

The unpredictable events that characterize infectious diseases and the culturally determined roles and responsibilities of men and women contribute a lot in the design of response programs and necessitate a course that allows participants to strategically determine the importance of gender mainstreaming. The short course targets were students and faculty from the OHCEA institutions in the eight OHCEA countries as well as multi-sectoral public health

professionals from multiple ministries including health, veterinary, wildlife, environment in the public sector, private sector stakeholders including nongovernmental organizations, community based organizations and industry. Since no similar course had been developed for Africa, the eventual plan was to develop a course that would be used across Africa and across the world. The course improved the skills of the participants to recognize the different vulnerabilities of men and women in infectious disease outbreaks and increased focus on gender analysis (6,7, 13,14).The first activity of the team was to develop the goals of the course based on needs previously identified. These were defined as follows:

- Participants become more effective in their disciplines by being aware of gender dynamics and applying gender sensitive approaches to emerging pandemic prevention, disease control, surveillance and response.
- Participants have the skills and knowledge to be effective agents of gender responsive One Health approaches.
- Participants become transformative agents by promoting gender equality and equity in all aspects of their work.

The scope of the course was broadened to include: One Health approach (including impact on human life, i.e. nutrition, etc.), emerging pandemic threats and infectious disease, Zoonosis, epidemiology and disease surveillance, and changing attitudes by demonstrating relevance of gender studies to One Health. Interactive teaching methodologies, participatory multidisciplinary One Health approaches, and tools for active learning such as videos, problem based learning case studies were used in the instructional methodology.

Course Outline

Following the development of the goals, learning objectives were identified, and instructional methodologies defined. The course was developed to be delivered over a five-day period covering key gender One Health and Emerging Pandemic Threat (EPT) concepts and focusing on applying gender analysis tools to identify gender gaps in infectious disease detection, surveillance, prevention and response. The training evaluated the participants ability to use gender analysis tools to inform infectious disease preparedness and response, use gender tools and approaches to map the gender differentiated disease risks, identify what kind of gender technical support was needed to monitor threats to susceptible and vulnerable groups and what kind of technical support public health professionals can provide to gain gender differentiated insights into the capacities and vulnerabilities of communities affected by infectious disease outbreaks. The course also included information gathering, sharing communication and resource mobilization with a gender lens. This guaranteed that at the planning stage, outbreak response prioritization was based on gender analysis, gender was mainstreamed in pandemic preparedness and gender needs were reflected in resource mobilization process to ensure that vulnerable groups were included.

The intention was to use this course as an initial step in creating a gender integrated training curriculum that weaves and fully integrates the key principles of gender equality and gender analysis throughout the OHCEA institutions.

Design principles of the course and learning objectives

The design principle that guided course development was that the concepts of gender, One Health and emerging pandemic prevention, disease control, surveillance and response would be developed in an integrated fashion and participatory instructional methodologies would be used. The training ensured that there was a defined component that addressed gender issues in Infectious disease management and response programs and that national plans and

programs on pandemic preparedness would include a gender perspective both as a strategic concept and a tool for analysis. The course provided skills to participants to recognize gender as an analytical and planning tool in case of any infectious disease outbreak, and provided a systematic and credible analysis on the gender implications of any disease scenario in different socio- economic and cultural contexts. Participants would become conversant with appropriate indicators that can capture information on gender differentials and change which in turn contribute to gender responsive plans and actions. The essential learning objectives of the course were:

1. The participants identify basic gender principles and related concepts
2. Participants define and explain One Health concepts and illustrate the value of interdisciplinary (multidisciplinary approach).
3. Participants define and explain infectious disease epidemiology and transmission process and gain competence in basic concepts, theory and methods for surveillance, prevention, control and response to emerging pandemic threats
4. The participants recognize gender gaps in One Health and emerging pandemics threat and identify resources to address those gaps
5. Participants analyze how gender impacts and is impacted by emerging pandemics processes
6. Participants develop gender-sensitive emergency response plans.
7. Using gender analysis tools and skills, participants will be able to develop an advocacy plan for engendering one health and emerging pandemics programs
8. Participants can relate and assess how gender intersects with One Health and emerging pandemics, describe the global problem of emerging zoonotic diseases and the importance of an engendered One Health approach

Infectious diseases to be used as case studies

Since emerging pandemics and One Health were key components of this gender and emerging pandemics threat course, diseases were identified that would be used as case studies within the course. The criteria used to select the diseases were that some of them would be of zoonotic origin- transmitted across multiple species between humans and animals, relevant to Africa, be either pandemic, epidemic, local, Outbreak, Emerging, re-emerging, common, neglected and some would have vectors, hosts and reservoirs. This provided a wide view of multiple diseases across wildlife, domestic animals, and humans and included environmental factors, as well as social cultural and social determinants that affect disease transmission. The diseases selected were:

- Ebola – emerging, outbreak, life cycle, virus, host, monkey, human/animal/wildlife, Africa
- Tuberculosis– zoonosis, re-emerging, Africa, pandemic, resistance, in human can be transmitted to animals and wildlife and vice versa,
- Brucellosis – zoonosis, human/animal/wildlife, neglected, life cycle, raw milk and livestock products (cheaper to treat in animals and human beings), Africa
- Rift Valley Fever-Zoonosis and relevant because of the environmental and climatic relations. Affecting mostly pastoralist communities that have a very gendered role in relation to livestock management

Other diseases that would be referenced and linked to resources in the short-course included:

- HPAI (Avian Influenza) – pandemic (outbreak), life cycle, virus, contagious, response was not adapted to gender, gave birth to One Health approach, mostly in South East Asia and not Africa
- Anthrax – endemic, zoonosis, ecosystem patterns, culture, Africa, gender
- Rabies – neglected, zoonosis, gender, affects people/animals/wildlife, Africa
- Trypanosomiasis – re-emerging, zoonosis, people/animals/wildlife, Africa, economic impacts, gender, vector (tsetse fly).

Across the East African countries, the diseases listed above were also identified as priority zoonotic diseases in the region, and so focusing on them ensured gender issues could be addressed from a local perspective.

Defining knowledge skills and content for the learning objectives

Based on the learning objectives, minimum skills and competencies were identified with the aim of changing awareness, and imparting knowledge, skills and behavior in relation to gender, One Health and infectious diseases. With the knowledge that gender training works best if there is a strong element of awareness raising as well as skill building, the topics were constructed to include both gender awareness, and gender analysis tools as well as specific skills that relate to infectious disease detection prevention and response. The content topics for each learning objective were defined as shown in the table I below**.** The course would take advantage of the multidisciplinary nature of One Health to address complex health challenges.

Table I: Knowledge skills and Content for each Learning Objective

1. The participants will be able to identify basic gender principles and related concepts • Gender concepts and principles: awareness, blindness, definitions, needs, gaps, analysis, roles, planning, sensitivity, mainstreaming, strategic needs, practical needs • Social, cultural and political effects of EPT • Gender roles in emerging pandemics • Equity, gender and participation • History of how gender concepts and principles evolved • Global and local perspectives on gender and emerging zoonotic diseases	2. Participants will be able to define and explain One Health concepts and illustrate the value of interdisciplinary (multidisciplinary approach). • Definition of One Health and gender • Challenges of One Health and gender • Examples of One Health and gender • Definition of international context of One Health in Africa • One Health principles, concepts and applications – human, animal, wildlife, ecosystem health; interdisciplinary approach • One Health Mapping
3. Participants will be able to define and explain infectious disease epidemiology and transmission process and gain competence in basic concepts, theory and methods for surveillance, prevention, control and response to emerging pandemic threats • Prevention and gender • Surveillance and gender • Control and gender • Response and gender • Disease life cycles • Occurrence of diseases • Distributions of diseases • Basic methods in disease control – local, domestic, national, international approaches • Different roles played by men and women in disease control • Epidemiology of infectious diseases • Drivers of disease occurrence and remerging and emerging • Overview of emerging zoonotic disease (framing the problem) • Basic principles of ecological monitoring and gender • Infectious disease agent groups (will use 3 examples which can be localized) • Global and local perspectives on gender and emerging zoonotic diseases • Global health ecosystems – animals and people • Rational approach to pathogen protection in wildlife, animal and human health • Ecosystem approach to surveillance, prevention and control • Trans boundary, interface, contingency planning	4. The participants will be able to recognize gender gaps in One Health and emerging pandemics threat and identify resources to address those gaps • Tools ○ Tools for participatory gender-sensitive epidemiology, surveillance and response ○ Gender analysis tools ○ Social network analysis ○ Asset mapping • Give examples gaps • Knowledge and skills of gender analysis • Knowledge of life cycles of pandemic diseases • Knowledge of how to identify local resources through community dialogue approach (CD) • Ability to integrate One Health approach, gender and community dialogue • Use of GIS and cell phones for gender communication ❖ 5. Participants will synthesize new and existing knowledge by examining ways to undertake academic research in gender and One Health. ❖ • Identify gender possibilities/gaps appropriate for research. • Critique research publications and reports regarding gender. • Critique methods of disease control, surveillance and response from a gender perspective. • Design and conduct [create] academic qualitative and/or quantitative research

	using gender-sensitive data collection and analysis and ensuring that data is disaggregated by gender.
6. Participants will be able to analyze how gender impacts and is impacted by emerging pandemics processes • Tools for participatory gender-sensitive epidemiology, surveillance and response • Participatory epidemiology tool • Gender analysis knowledge skills • Knowledge of life cycles of emerging pandemics • Knowledge of men and women disease control intra-house • Knowledge of men and women roles in medical care locally, regionally and nationally • Impact of gender on EPT surveillance, response and control	7. Participants will be able to develop gender-sensitive emergency response plans. • Plan their own activity in a gender-sensitive way • Tools for participatory gender-sensitive epidemiology, surveillance and response • Gender mainstreaming skills • Gender analytical skills • Make a disease control plan at domestic level, national level, international level • Emergency response plans o analyze and ensure that plans are gender-sensitive plans o designing, planning and implementing an engendered emergency response plan • Outbreak/emergency/crisis mapping. • Participatory risk analysis and assessment • Gender sensitive assessment and management of outbreak
8. Using gender analysis tools and skills, participants will be able to develop an advocacy plan for engendering one health and emerging pandemics programs • Develop a gender-sensitive advocacy plan • Basic advocacy tools • Participatory epidemiology and gender • Gender analysis tools • Administration of One Health and EPT programs • Communication • Leadership and management • Gender vulnerability in disease control, response and treatment	9. Participants will be able to relate and assess how gender intersects with One Health and emerging pandemics, describe the global problem of emerging zoonotic diseases and the importance of an engendered One Health approach • Team building • Developing communication strategies

Development of content and training materials and activities

Content for the course was developed over a period of three months by the core team, and reviewed and revised by multiple external reviewers. A workplan and template was developed and used by the team to ensure timelines were met and followed (Table II). Content for the course was developed to be interactive and to foster critical thinking skills among the participants. Participatory methodologies were fundamental since they are most appropriate for adult learning, most effective and enjoyable. Course developers utilized experiences gained in the field to develop case studies, and scenarios that were practical, could be adopted to any situation, allowed for creativity, and provided for opportunities to apply theory and analysis to real situations. Role plays, drawings, songs, games and visual aids were built into the training

methodology. Developers took into consideration, social economic and cultural determinants that affect health seeking behaviors. Throughout the development of the content, the target was to ensure that effective and sustainable skills were linked across gender, One Health and infectious diseases, no matter which concept was being discussed. The content was developed to suit different levels of participants and to stimulate and sustain motivation and interest. The five domains of gender analysis were intertwined with discussions on emerging pandemics and human animal and environmental interactions to create practical training materials. Considering technological advances allowed the developers to utilize social media and videos in developing content. Throughout the process emphasis was placed on whether activities allowed the participants to identity gender blindness, become gender aware, identify processes that were transformative and develop strategies to address gender gaps observed during the cases or scenarios presented. Even though the course was developed to be covered over a weeklong period, any section of the course could be used as a stand-alone module allowing trainers and faculty who desire to use sections of the module to be able to do that and to adapt it to their own course.

Table II: Timeline and activities for course development

Category	Activity
Goals	Defining course goals based on identified need
Competencies	Defining course competencies
Objectives	Developing Learning Objectives
method	Identification of Instructional methodologies and tools
Content	Development of course content
Content	Revision of Content
Content	Creation of power point materials
Resources	Creation of resources folder
Content	Creation of Facilitator Guide
Content	Creation of Participant Guide
Reviews	Review of facilitator and participant Guides
Reviews	Internal and External review of course module
Pilot	Pilot of course
Pilot	**Revision of course after piloting**
Pilot	Revision of course materials based on pilot results.
Content	Preparation of final materials

Program for delivery and topics

A tentative program was developed to deliver the course in five days- approximately 40 hours. This would be the standard time taken for a short course running for 4 and half to 5 days. The program was intended to cover all the key elements and topics listed in the learning objectives in an interactive and participatory manner. The table III below shows the program outline.

Table III: program for the course

Short course program	Day One	Day Two	Day Three	Day Four	Day Five
Morning	Discovering basic gender, One Health, EPT terms and concepts	Gender and One Health (Identifying gender gaps	Gender Frame works and Gender analysis tools	Gender-sensitive emergency response planning	Simulation (putting it all together)
Afternoon	Focus on gender concepts and policy	Infectious diseases, epidemiology and Gender	Applying gender analysis tools to disease surveillance, response, prevention and control	Advocacy Gender Case study development Preparation of simulation	Evaluation of simulation Evaluation of course

Piloting of the course

The Gender, Infectious Disease and One Health course was piloted twice. The purpose of the pilot was to pre-test the course before it was finalized so that any changes could be made based on real life scenarios and experiences. This course was constructed to meet students learning needs, allowing the students to flawlessly progress from one learning stage to another. The piloting therefore provided critical feedback of the course from the facilitator perspective as well as the student angle. Key areas to be assessed during piloting included content delivery, time allocation for each section, smooth integration of gender content into Infectious disease and One Health topics, and level of knowledge provided in the course. It was piloted with a team of faculty from different disciplines and with a team of veterinary students in their first and second year of veterinary school. 12 students from the Tufts Veterinary school graduate program were also enrolled into the course as an elective. The pilot training was held over 4 and a half days for each set of people, allowing the facilitators opportunity to deliver the whole course. Entry and exit surveys were developed for participants to use during the piloting process to provide feedback on its effectiveness. The participants were expected to analyze the course based on issues such as whether it was engaging, related to their learning needs, encouraged interaction and thinking processes, was sufficiently authentic, successfully incorporated One Health principles and human-animal-environmental interactions, explored gender core competencies and concepts, and recognized the role of gender in different disciplines and different public health scenarios. Based on comments received, changes were made to the course including addition of locally prepared case studies, reduction in the number of gender analysis tools discussed, and review of times allocated to each section.

CONCLUSION

OHCEA aims to establish a gender competence development program that enhances awareness, commitment and builds the capacity necessary to incorporate gender perspectives in all its programs, strategies and actions. The network recognizes that gender equality, equity and empowerment must be considered in all stages of any program design, and is committed to ensuring that social and gender integration is identified as a high priority at institutional, country and regional levels. Addressing gender issues is urgent and critical to understanding and stemming the spread of any infectious disease. In Liberia, the government reported that

within the first three months of the epidemic, 75% of the victims were women. When women are the primary victims of an epidemic, policy implementers, practitioners and researchers are slow to recognize that this is the case, ask why, and build responses accordingly. Indeed, too little is being done to put even the small amount that is known about gender differences and infectious diseases into practice - to determine in advance of outbreaks, for instance, how understanding gender roles might help in the development of a containment or prevention strategy.

This short course developed meets a crucial need in training public health practitioners on the role of gender in Infectious disease management and in One Health. It provides an opportunity to begin to collect gender disaggregated data relating to infectious disease outbreaks and to do research to understand how infectious diseases affect the sexes differently on a biological level. Differences in exposure between male and female have been shown to be key factors in transmission of Ebola. This does not just apply to Ebola but to other emerging infectious disease such as tuberculosis, brucellosis, and monkey pox.

There is an urgent need to increase public participation in prevention and control to stem the current or any future outbreaks. Gender is a highly relevant factor and can significantly improve the effectiveness and sustainability of prevention and control mechanisms and programs. Gender roles, the distribution of labor, access and control over resources are playing a central role in the biosecurity, control, prevention and response to Infectious diseases. Training provided will equip participants with skills and knowledge to urgently address gender roles to better understand the risks, to consciously evaluate what happens in an outbreak, or in any health crisis through a gender lens, to tackle systemic problems such as women's unequal access to adequate health care or the finances they might require for treatment and to challenge fundamental and dangerous disparities to develop effective control and response strategies. The training will produce trainers who can assess existing gender related knowledge and practices about response to infectious disease outbreaks amongst specific communities allowing for the design and development of a response plan adjusted to people’s needs. The short course will equip trainees with the skills to develop and offer community focused educational training sessions for both men and women to help create awareness of gender roles and identify ways in which these can be used in the prevention, control and management of an ongoing/ future outbreaks for both the community members and the public health workers.

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CONFLICT OF INTEREST

There is no conflict of interest

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