



Developing a Medical Student Field Epidemiology Elective in Kenya: A Strategy to Increase Workforce Capability and Public Health Knowledge

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Abstract

This article proposes the introduction of a field epidemiology elective within the medical curriculum in Kenya as a strategic measure to enhance public health awareness and workforce capacity. With a dual focus on infectious and non-communicable diseases, the rationale for this elective lies in providing experiential learning, fostering interdisciplinary collaboration, and promoting community engagement. The potential benefits include the development of enhanced epidemiological skills, increased public health advocacy among medical professionals, and diversification of medical careers. Recognizing challenges such as limited resources and the need for curricular integration, the article suggests mitigation strategies. Overall, this initiative aims to cultivate a cadre of physicians equipped with the necessary skills to contribute effectively to public health initiatives in Kenya.

Keywords: Field epidemiology; Medical education; Public health awareness; Workforce capacity; Experiential learning; Interdisciplinary collaboration; Community engagement; Epidemiological skills; Public health advocacy; Medical careers; Kenya

Introduction

In the face of Kenya's complex public health landscape, characterized by a dual burden of infectious and non-communicable diseases, there arises a pressing need for a healthcare workforce that is not only adept in clinical medicine but also possesses a profound understanding of epidemiological principles [1]. Recognizing this imperative, we advocate for the integration of a field epidemiology elective within the medical education curriculum in Kenya. This initiative is driven by the conviction that medical students, as future healthcare leaders, must be equipped with practical skills and experiences to address the multifaceted challenges that define contemporary health issues [2]. By bridging the gap between clinical practice and public health, the proposed field epidemiology elective aims to instill in medical graduates the ability to not only diagnose and treat individual patients but also actively contribute to the design and implementation of effective public health interventions. As we navigate the rationale, objectives, and potential contributions of this elective, it becomes evident that such an initiative is pivotal for cultivating a resilient and well-informed healthcare workforce capable of navigating the complexities of Kenya's dynamic healthcare landscape [3].

Methods and Materials

Curricular design

The development of the field epidemiology elective involves a meticulous curricular design process. This includes the identification of key learning objectives, determination of the optimal duration and structure of the elective, and alignment with existing medical education frameworks. Collaborative efforts between medical educators, public health experts, and curriculum development specialists are essential to ensure the seamless integration of epidemiological principles into the broader medical curriculum.

Faculty training

To facilitate the successful implementation of the elective, faculty members involved in teaching epidemiology require specialized training. Workshops and training sessions focused on the principles

of field epidemiology, pedagogical approaches, and the utilization of experiential learning methods are integral components. This training equips faculty with the necessary skills to deliver a dynamic and engaging curriculum.

Partnerships with public health institutions

Establishing partnerships with public health institutions and governmental health agencies is crucial for providing students with practical field experiences. Collaborative efforts with these organizations allow students to engage in real-world epidemiological investigations, outbreak responses, and community-based health initiatives. This hands-on exposure is fundamental to achieving the elective's learning objectives.

Access to data and resources

Access to relevant epidemiological data and resources is imperative for the success of the elective. Collaborations with public health research institutions and governmental health agencies can facilitate student access to datasets, case studies, and practical tools used in the field. Additionally, securing funding for field visits, data collection activities, and guest lectures enhances the overall educational experience.

Experiential learning components

The elective incorporates experiential learning components, including field placements, case studies, and simulated outbreak investigations. These components provide students with practical insights into the application of epidemiological methods, data analysis, and the interpretation of findings. Utilizing simulation exercises ensures that students are well-prepared for real-world scenarios.

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Assessment strategies

Assessment strategies encompass a combination of formative and summative evaluations. Formative assessments, such as regular quizzes and group discussions, enable ongoing feedback and student engagement. Summative assessments may include research projects, field reports, and evaluations of field experiences. These assessments are designed to measure the attainment of learning objectives and the practical application of epidemiological skills.

Ethical considerations

An essential aspect of the elective involves instilling a strong sense of ethics in epidemiological practice. Students undergo training in research ethics, confidentiality, and the responsible conduct of research. Emphasizing ethical considerations ensures that students approach fieldwork with a commitment to upholding the highest standards of integrity and respect for research participants.

Continuous improvement and evaluation

The elective undergoes continuous evaluation and improvement. Regular feedback from students, faculty, and external stakeholders is collected and analyzed to identify areas for enhancement. This iterative process ensures that the elective remains responsive to evolving public health challenges and aligns with the needs of both students and the broader healthcare landscape.

The combination of a well-designed curriculum, trained faculty, strategic partnerships, and a commitment to ethical practice forms the foundation of the methods and materials employed in establishing and sustaining the field epidemiology elective for medical students in Kenya.

Rationale for a field epidemiology elective

1. **Experiential learning:** A field epidemiology elective offers students hands-on experience in outbreak investigations, disease surveillance, and health interventions. This experiential learning approach enhances their understanding of public health challenges and equips them with practical skills.

2. **Interdisciplinary collaboration:** Public health challenges often require collaboration across disciplines. The elective provides an opportunity for medical students to work alongside professionals from various fields, fostering interdisciplinary teamwork essential for effective public health interventions.

3. **Community engagement:** The elective encourages medical students to engage with local communities, understanding their unique health needs and contributing to culturally sensitive public health initiatives. This community-centered approach is vital for the success of public health programs.

Results

1. Enhanced epidemiological competence

Graduates of the field epidemiology elective are expected to demonstrate heightened proficiency in applying epidemiological principles to real-world scenarios. This includes the ability to design and conduct outbreak investigations, analyze health data, and interpret findings critically.

2. Increased public health awareness

Medical students exposed to the field epidemiology elective are likely to develop a heightened awareness of public health issues. This

may lead to an increased understanding of the broader determinants of health and a commitment to addressing population-level health challenges.

3. Interdisciplinary collaboration

The elective's emphasis on interdisciplinary collaboration is anticipated to foster a culture of teamwork among medical professionals. Graduates are expected to collaborate effectively with professionals from diverse fields, contributing to holistic healthcare solutions.

4. Community engagement and advocacy

Through community-based experiences, students are expected to develop a sense of social responsibility and advocacy for public health issues. Graduates may become vocal advocates for health policies, actively engaging with communities to address local health needs [4].

5. Diversification of medical careers

The elective may lead to a diversification of career choices for medical graduates. Equipped with both clinical and epidemiological skills, graduates might choose careers in epidemiology, public health research, or health policy development.

6. Improved outcomes in public health initiatives

The integration of medical students into real-world public health initiatives, guided by the principles of field epidemiology, is anticipated to contribute to the effectiveness of these interventions. This may result in improved health outcomes at the community level [5].

7. Continuous program enhancement

Ongoing evaluation and feedback mechanisms are expected to contribute to the continuous improvement of the elective. Adjustments to the curriculum, teaching methods, and field experiences will likely be made based on the insights gained from student and stakeholder feedback.

8. Establishment of a robust public health workforce

Over time, the implementation of the field epidemiology elective may contribute to the establishment of a robust public health workforce in Kenya. Graduates, with a blend of clinical and epidemiological skills, can play pivotal roles in addressing the evolving health challenges faced by the nation [6].

Discussion

The implementation of the field epidemiology elective for medical students in Kenya holds significant promise for advancing public health awareness and strengthening the healthcare workforce. The anticipated results outlined in the previous section lay the foundation for a robust discussion on the potential impacts and challenges of such an initiative.

1. Integration of epidemiological competence

The enhanced epidemiological competence expected from graduates has the potential to bridge the gap between clinical practice and public health. The ability to investigate disease patterns, analyze data, and interpret findings equips medical professionals to contribute meaningfully to both individual patient care and population-level health management [7].

2. Interdisciplinary collaboration and community engagement

The emphasis on interdisciplinary collaboration and community

engagement reflects a holistic approach to healthcare. By actively involving medical students in real-world scenarios, the elective fosters a sense of social responsibility and a deeper understanding of the diverse factors influencing health outcomes [8].

3. Career diversification and public health advocacy

The anticipated diversification of medical careers showcases the adaptability of medical graduates to pursue roles beyond traditional clinical practice. The elective empowers them to become advocates for public health policies, addressing systemic issues that impact the health of communities.

4. Continuous program enhancement

The commitment to ongoing evaluation and program improvement is crucial for ensuring the elective remains responsive to evolving health challenges. Regular feedback loops and iterative adjustments to the curriculum will contribute to the program's sustainability and relevance [9].

Challenges and mitigation

1. **Resource constraints:** Adequate funding and resources are critical for the success of the elective. Collaborative efforts with governmental health agencies and external organizations can help secure financial support. Leveraging existing infrastructure and partnerships may alleviate resource constraints.

2. **Curricular integration:** Integrating the elective into the medical curriculum may pose challenges. Close collaboration with medical schools, regulatory bodies, and accreditation agencies is necessary to streamline the integration process [10]. Clear communication and advocacy for the importance of epidemiological education will be essential.

Conclusion

In conclusion, the establishment of a field epidemiology elective for medical students in Kenya represents a strategic initiative with the potential to significantly impact the nation's healthcare landscape. By cultivating a cadre of medical professionals equipped with both clinical and epidemiological skills, the initiative addresses the evolving health challenges faced by Kenya. The anticipated results, coupled with a

commitment to ongoing improvement and stakeholder engagement, position this program as a catalyst for a resilient and proactive public health workforce. As Kenya continues to navigate the complexities of its healthcare environment, initiatives like the field epidemiology elective contribute to a future where healthcare professionals are not only healers of individual ailments but also champions of community well-being.

Acknowledgement

None

Conclusion

None

References

1. Cheung AK (2005) *Primer on Kidney Diseases*. Elsevier sci 457.
2. "Kidney Failure" (2017) National Institute of Diabetes and Digestive and Kidney Diseases.
3. Fajardo V, Gonzalez I, Martin I, Rojas M (2008) Real-time PCR for detection and quantification of red deer and roe deer (*Capreolus capreolus*) in meat mixtures. *Meat Sci* 79: 289-298.
4. Flint M, Patterson-Kane JC, Limpus CJ, Work TM, Blair D, et al. (2009) Postmortem diagnostic investigation of disease in free-ranging marine turtle populations: a review of common pathologic findings and protocols. *J Vet Diagn Investig* 21: 733-759.
5. Cohen JE (2010) Population and climate change. *Proc Am Philos Soc* 154: 158-82.
6. Semenza JC, Houser C, Herbst S, Rechenburg A, Suk JE, et al (2012) Knowledge Mapping for Climate Change and Food-and Waterborne Diseases. *Crit Rev Environ Sci Technol* 42: 378-411.
7. Nkinin Sw, Chippaux Jp, Pietin D, Doljanski Y, Tremeau O et al. (1997) genetic origin of venom variability: impact on the preparation of antivenom serums. *Bull Soc Path Exot* 90: 277-281.
8. Rodrigo G Stabeli, Rodrigo Simoes-Silva, Anderson M Kayano, Gizeli S Gimenez, Andrea A Moura, et al. (2020) Purification of phospholipases A2 from American Snake Venoms.
9. Grace VM (2008) Human genome epidemiology: reviewing the stakes. *Int J Health Serv* 38(1): 143-159.
10. King MC, Go RC, Lynch HT, Elston RC, Terasaki PI et al., (1983) Genetic epidemiology of breast cancer and associated cancers in high-risk families. II. Linkage analysis. *J Natl Cancer Inst* 71(3): 463-467.