

Role of Medical Education in Pandemic Preparedness

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ABSTRACT

Every pandemic that has been reported to date has impacted different domains of human life and civilization. The training imparted to medical students during their medical education is expected to enhance their competence and deal with the potential challenges that every pandemic places on human mankind. Medical education is expected to influence our pandemic preparedness in a multiple number of ways and it becomes our responsibility to expose medical students to different aspects during their training period in an incremental manner. Considering the wide extent to which pandemics can account for the loss of lives, human suffering, impairment of different sectors, and the potential that medical education can bridge the existing gap, there is an immense need to integrate topics pertaining to the pandemic and their preparedness in the medical curriculum. In conclusion, there is an immense need to ensure pandemic preparedness in medical education to produce resilient and adaptable health professionals. The need of the hour is to adopt a curriculum that has components of pandemic-related topics in a structured and systematic manner. This calls for the need to adopt a flexible curriculum and expose students to a structured training program, and effective communication skills.

Keywords: Pandemic preparedness, Curriculum, Medical education

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INTRODUCTION

Every pandemic that has been reported to date has impacted different domains of human life and civilization.¹ Owing to the massive caseload, millions of people have lost their lives and have reported impairment in their quality of life due to the associated sufferings.^{2,3} Considering the fact that healthcare professionals are the ones that eventually become the barrier between infectious diseases and the number of lives lost, it becomes quite essential that we train medical students regarding different aspects of infection prevention and control measures.¹⁻³ The training imparted to medical students during their medical education is expected to enhance their competence and deal with the potential challenges that every pandemic places on human mankind.⁴

Medical education and pandemic preparedness

Medical education is expected to influence our pandemic preparedness in a multiple number of ways and it becomes our responsibility to expose medical students to different aspects during their training period in an incremental manner.⁴ To begin with, medical education exposes students to the basics of microbiology, epidemiology, and infection prevention and control measures, which enables them to have a better understanding of different infectious diseases.^{4,5} Students realize the significance of public health measures in promoting early detection and rapid containment of the spread of infectious diseases within the affected population and across borders.⁶ Medical students also receive training in risk assessment that can help them ascertain the potential risks and encourage them to critically think about the measures that can be planned to facilitate early detection and effectively respond to potential pandemics.^{3,5}

During the clinical training, community exposures, and attitude, ethics, and communication module (AETCOM) sessions, students gradually learn the art and master the skills of effective communication.⁷ These communication skills become crucial to clearly communicate with members of the health team and convey specific messages to the community members to minimize panic and dispel the myths and misconceptions linked with the pandemic.⁷ Further, as a part of community-based and hospital-based education, medical students are trained to collaborate with professionals from other disciplines, which becomes extremely crucial to mount a coordinated response to arrest the rise in a number of cases.⁸ In continuation, as part of early community exposure and periodic interactions with communities in the field practice areas of the medical college, students develop good relationships and this can be utilized to enhance community engagement and promote adherence to infection prevention and control

measures.⁹ At Datta Meghe Medical College, Nagpur, the Off-Campus of Datta Meghe Institute of Higher Education and Research, Deemed-to-be University, Sawangi, Wardha, Maharashtra, medical students are trained in pandemic module in a structured way based on the recommendations given by the regulatory body.

Training imparted to medical students during their under-graduation period helps students to realize the significance of mental health in maintaining overall well-being.¹⁰ This awareness about mental health becomes extremely vital in mitigating the psychological impact of pandemics by extending mental health support to both patients and health professionals.¹¹ Further, ethics is an integral part of practicing medicine and as students are exposed to various principles of ethics in their training, they can implement similar principles during pandemics to streamline the task of efficient and equitable allocation of available resources, triage, and patient care.^{12,13} In continuation, medical students also learn about the legal and regulatory frameworks pertaining to pandemics, which can be efficiently used to ensure an organized response.¹⁴ Owing to the wide range of teaching-learning activities, medical students become self-directed learners and in order to stay abreast with recent developments, they become lifelong learners.¹⁵ This trait of continuous learning has a vital role in improving the pandemic preparedness among medical students.^{15,16}

Using simulation exercises, medical students can be exposed to pandemic scenarios, that can gradually empower healthcare professionals to practice response strategies, refine skills, and augment overall coordination.¹⁷ Similarly, students can also be exposed to digital health tools, telemedicine, etc., that can ensure the provision of effective care and ensure delivery of easily accessible and affordable healthcare services during tough times.¹⁸ Medical education exposes students to research skills, and this knowledge and exposure can be cashed in for strengthening the domains of surveillance, monitoring, and analyzing the trends and distribution of a number of cases to enable practicing evidence-based medicine and timely implementation of prevention and control measures.¹⁹ In short, the training imparted to medical students exposes them to comprehensive knowledge, skills, and attitudes that are a must for mounting an effective pandemic preparedness and response.¹²⁻¹⁷ This training is crucial in preparing competent and resilient healthcare professionals who are capable and well-equipped to effectively respond to the challenges posed by infectious disease outbreaks.^{7-13,15,16}

Medical curriculum and pandemic preparedness

Considering the wide extent to which pandemics can account for the loss of lives, human suffering, im-

pairment of different sectors, and the potential that medical education can bridge the existing gap, there is an immense need to integrate topics pertaining to the pandemic and their preparedness in the medical curriculum.^{4,20} The regulatory body in India has introduced a pandemic module that has to be implemented across all professional years of undergraduate training with the intention to expose medical students to all essential aspects of pandemic, including their containment.²¹ This module ensures that medical students are exposed to structured and comprehensive education on recognition, management, and response to pandemics. We must supplement this pandemic-related content in the curriculum with appropriate assessment tools to measure the acquisition of knowledge and skills, and the learning progression.²¹

Adapt medical curriculum to evolving threats

The health sector is periodically plagued with emerging challenges and outbreaks of known, emerging, and re-emerging infectious diseases.⁴ We must realize that medical students cannot be trained using a rigid curriculum, rather there is an immense need to continuously update the curriculum to ensure that medical education remains relevant and responsive to recent developments, including evolving threats.^{22,23} Flexibility in the curriculum can be introduced by the initiation of new modules, innovative teaching-learning methods, and online teaching-learning methods.²³ It has to become a regular practice, wherein not only the content of the syllabus is revised but it should also be supplemented with findings from new research, technological developments, and lessons learned from managing previous pandemics. Once students become aware of these developments, they become empowered to tackle emerging challenges pertaining to novel infectious diseases.^{4,22}

CONCLUSION

In conclusion, there is an immense need to ensure pandemic preparedness in medical education to produce resilient and adaptable health professionals. The need of the hour is to adopt a curriculum that has components of pandemic-related topics in a structured and systematic manner. This calls for the need to adopt a flexible curriculum and expose students to a structured training program, and effective communication skills.

KEY INSIGHTS

As a part of medical education, medical students must be exposed to a structured and comprehensive

training in infection prevention and control measures

Medical students must be trained in effective communication skills within the health team and with the community for mounting an effective pandemic response

Incorporate mental health education into the curriculum to raise awareness about its significance in maintaining overall well-being.

The medical curriculum must be flexible to accommodate continuous adaptation in the curriculum to evolving threats

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