

New Subspecialty Proposal: “Health Security Fellowship”

Introduction:

Health Security is a subspecialty that focuses on healthcare and health system preparedness to all types of local, regional, national and global crises. This all-Hazards approach will focus on many of the current and potential future crises affecting our healthcare system ranging from: highly infectious disease outbreaks, emerging infectious diseases; natural disasters ranging from hurricanes, fires and flooding, ongoing armed conflicts; increased mass casualty shootings; and risks of chemical, biological, radiological, nuclear and explosives (CBRNE) exposure. Currently, there is no formal structured program to train health care professionals that are interested in this field of Medicine. While some specialties cover some of the aforementioned topics, this training is neither comprehensive nor structured and does not encompass preventive and preparedness strategies to improve patient care and promote safety of health professionals.

Given the potential for an increase in health crises at all levels and the need for healthcare professionals with expertise in health security, we propose the development of the new Health Security fellowship. Graduates of the following training programs (and likely others in the future) such as emergency medicine, critical care medicine, critical care anesthesia and infectious diseases may consider this additional training to become experts in the field of health security. Due to the pressing need and likely interest from multiple specialties, we present our proposal of a new Health Security fellowship to the ACGME for consideration of accreditation as a new subspecialty.

This proposal provides documentation of the professional and scientific merit/status of the new subspecialty for each of the criteria delineated in the ACGME Policies and Procedures Manual. Supporting documentation for each of these criteria along with letters of support for this new subspecialty fellowship from ACEP and ABEM are included as well.

- a) the clinical care and safety of patients will be improved through the recognition of the discipline

Over the last few decades, our global community has faced health emergencies of an unprecedented nature. This includes global disease outbreaks with the initial outbreak of SARS CoV in 2003, followed by MERS, Ebola, and Zika over the following decade. The entire world was struck by the global COVID-19 pandemic with a difficult path to recovery, which is still ongoing. From the current Monkeypox infections to the newest outbreak of Ebola in Sudan, we are witnessing a continuous trend of emerging infectious diseases adding much burden to healthcare professionals. In addition to the burden of emerging infectious diseases, we are witnessing a rise in natural calamities ranging from flooding, heat waves and the effects of global warming. Increasing economic and political instability is also contributing to conflicts with casualties on a mass scale that has added to the pre-existing casualties related to terrorism. Mass casualties associated with these health emergencies result in direct morbidity and mortality but also have an indirect effect through disruption of healthcare delivery, often affecting the most vulnerable members of our communities.

These calamities can have devastating effects not only on patients but also on healthcare professionals as witnessed during the COVID-19 pandemic. The detrimental and harmful impact on healthcare professionals during the early stages of the COVID-19 pandemic was unprecedented in scale and scope. Nearly 3,600 healthcare professionals succumbed to the SARS-CoV virus during the first year of the COVID-19 pandemic. In addition to the loss of life, the depletion of healthcare workforce due to quarantine and fear led to workforce shortages. These changes led to a severe compromise in the quality of patient care and an unnecessary increase in healthcare costs. All of these events added a severe strain on our health care system and healthcare professionals.

It has become amply clear from witnessing the recent calamitous events that our healthcare systems have repeatedly struggled to rise to the occasion and meet the challenges at the local, regional and national level. The goal of this Health Security fellowship is to train and prepare our healthcare professionals and the healthcare system respectively to address any such potential future crises. Graduates of this Health Security fellowship will become experts and leaders in handling any potential healthcare crises through multiple avenues. Health security experts will focus on many issues ranging from, preparedness, plan response strategies to match the crisis, guide leaders of health systems and elected officials to develop policies for better patient care, ensure health professional safety and streamline supply chain management, and help with preventive algorithms to address spread of disease in healthcare workers and the community.

The knowledge acquired during the fellowship can help with advancing national hospital readiness and developing the science and culture of health emergency resilience at the local, regional, national and international levels. Promoting this culture of awareness, readiness and resilience will allow healthcare systems to have safer conditions for healthcare providers, which ultimately will translate to better patient care. Patient care will be improved by the involvement of experts in health security, who can develop strategies to minimize the loss of healthcare workforce from illness or any other reason. Health security experts can also help to identify other known and unknown stress points and weak links in the healthcare supply chain that can guide the overall strategy of preparedness and response to any healthcare crisis. All of these strategies will contribute to improved patient care by minimizing uncertainty, enhancing preparedness and boosting safety and well-being of healthcare professionals.

- b) the existence of a body of scientific medical knowledge underlying the subspecialty or sub-specialty that is (i) clinically distinct from other areas in which accreditation is already offered, and (ii); sufficient for educating individuals in a clinical field, and not simply in one or more techniques

Health security is an emerging field of practice that combines clinical proficiency in disaster medicine with extensive additional skills from public health, emergency management, medical countermeasure research and development, organizational and decision sciences, and public policy. While there is a growing body of literature focusing on topics in health security, the current educational platforms are limited and focus mainly on the policy and scientific aspects of the field without providing a structured and integrated opportunity for clinicians in training or practice.

Currently, there is no structured training program at the national or international level that can train healthcare professional in all the required tenets of health security. The American College of Emergency Physicians (ACEP) supports a fellowship in Disaster Medicine which focuses on only

some overlapping areas with health security such as core skills in pre-hospital care, CBRNE response, and humanitarian operations. However, Disaster Medicine focuses more on building skills for an individual emergency medicine specialist within a focused scope of practice to take care of individual patients only with minimal emphasis on the other broader aspects of Health security.

In addition to the overlapping areas with Disaster Medicine, the specialty of Health security training will incorporate many other broader concepts that are essential to address healthcare crises. These include epidemic and pandemic science, expertise in public health, regulatory science, leadership skills (to interact with other healthcare leaders, elected officials at the local, regional and national levels and federal regulatory/healthcare bodies) and systems science.

Health security is intended to be a broader integrating specialty, focusing not only on the management of individual victims of health emergencies or health facility management but also on how the health system addresses preparedness and response at the local, regional, national and international levels. Although a small number of Universities in the USA advertise masters or doctorate programs in health security, these programs are designed for non-clinicians and focus more on policy, regulatory, or medical countermeasure development rather than a holistic systemic approach.

At the core of this new Health Security fellowship, healthcare professionals will be trained in the concepts of a systems approach to health emergency readiness and response. This systems approach should include: collaboration between national and international health security policy experts and organizations, research-driven national policy, integration with State and local public health offices and health system preparedness to current and future bedside and scene-side capabilities for care and risk management. Leaders in health security must also possess comprehensive knowledge of the technical, system, and human limitations that impact readiness and response.

This systems approach requires a broad set of skills and knowledge from many clinical and non-clinical fields and is beginning to be reflected in recent scholarly works in health security – particularly in lessons learned from the COVID-19 pandemic. Some of the recent examples include papers that explore the alignment of current International Health Regulations within the functions of health systems^[1], the role of health system strengthening and resilience in global health security^[2], the granular role of intensive care medicine in pandemic response^[3], and the need to integrate clinical research into health emergency response^[4]. As the specialized field of health security continues to evolve, we must provide training that begins to synthesize its multidisciplinary components into a defined set of skills and knowledge. In addition, clinically-oriented training will continue to expand the base of scientific and scholarly work that supports a systems approach tying patient care and health system operations into the broader field of national and international preparedness and response.

^[1] Kluge H, Martín-Moreno JM, Emiroglu N, Rodier G, Kelley E, Vujnovic M, Permanand G. Strengthening global health security by embedding the International Health Regulations requirements into national health systems. *BMJ Glob Health*. 2018 Jan 20;3(Suppl 1):e000656. doi: 10.1136/bmjgh-2017-000656. PMID: 29379650; PMCID: PMC5783036.

^[2] Brown GW, Bridge G, Martini J, Um J, Williams OD, Choupe LBT, Rhodes N, Ho ZJM, Chungong S, Kandel N. The role of health systems for health security: a scoping review revealing

the need for improved conceptual and practical linkages. *Global Health*. 2022 May 15;18(1):51. doi: 10.1186/s12992-022-00840-6. PMID: 35570269; PMCID: PMC9107590.

^[3] Jansson M, Liao X, Rello J. Strengthening ICU health security for a coronavirus epidemic. *Intensive Crit Care Nurs*. 2020 Apr;57:102812. doi: 10.1016/j.iccn.2020.102812. Epub 2020 Feb 7. PMID: 32044122; PMCID: PMC7135420.

^[4] Rojek AM, Horby PW. Modernising epidemic science: enabling patient-centred research during epidemics. *BMC Med*. 2016 Dec 19;14(1):212. doi: 10.1186/s12916-016-0760-x. PMID: 27989237; PMCID: PMC5165716.

- c) the existence of a sufficiently large group of physicians who concentrate their practice in the proposed subspecialty or sub-subspecialty

While this subspecialty is new in name, it has been created with support and guidance from the field of experts that have spent decades and careers developing the necessary knowledge and skillsets in many areas of health security. The aim of this new Health Security fellowship is to combine the skill sets of these experts from diverse fields into one specialty for training and practice.

The creation involved discussion with dozens of experts with experience working at community and academic hospitals, local and national Departments of Health and Human Services (DHHS), Office of the Assistant Secretary for Preparedness & Response (ASPR), Center for Disease Control (CDC), World Health Organization (WHO) and National Disaster Medical System (NDMS). These experts have been involved in the practice of some or many aspects of Health Security, despite the lack of a formal name or structured training and practice pathway in the past. These experts are funneled from a wide variety of training programs ranging from Critical Care Medicine, Disaster Medicine, Emergency Medicine, Emergency Medical Services, Epidemiology, Infectious Diseases, as well as many Public Health experts.

The National Emerging Special Pathogens Training and Education (NETEC) provides resources, training, consulting, and assessments on special pathogens preparedness and response across the health systems in the US. The NETEC provides support for biocontainment units that are critical to deal with emerging diseases and related epidemics/pandemics. The number of biocontainment units supported nationally by NETEC has continued to increase with 10 active regions (Region VII Emerging Special Pathogens Treatment Centers -REPECS) and 3 in process of being approved.

The need for these biocontainment units is only going to increase in the next few decades with the increase in the frequency of identification of new diseases, outbreaks and cross-national flow of pathogens. As a result, nearly all hospital systems have developed infection prevention strategies and disaster committee's that will benefit from health security experts. There will be a great need for healthcare professionals with expertise in health security to deal with these new healthcare crises and guide healthcare systems across the nation.

- d) the existence of national medical societies with a principal interest in the proposed subspecialty or sub-subspecialty

The American College of Emergency Physician (ACEP) has formally expressed a principal interest in the subspecialty of Health Security. Other national medical societies will likely be invested in this subspecialty as well, including Infectious Disease Society of America (IDSA), Society of Critical Care Medicine (SCCM), Society of Critical Care Anesthesiologists (SOCCA), American Health Emergency Preparedness (AHEP), World Association of Disaster and Emergency Medicine (WADEM) and Society of Academic Emergency Medicine (SAEM). Each of these medical societies will have overlapping interests and will want to engage in increasing the educational opportunities in health security to their trainees and physicians in practice. As a new field of medicine, it is likely that additional health security conferences/meetings will be held in the future. There have been several new conferences in the last few years related to emerging concerns for health security, including COVID-19 in the MENA region (<http://tip.gantep.edu.tr/upload/files/MENA%20Congress-Call%20for%20abstract.pdf>) and Global Health Security Conference (<https://www.ghsconf.com/event/ce6e8302-3682-4893-9a1f-26827766de77/summary>).

- e) the regular presence in academic units and health care organizations of educational programs, research activities, and clinical services such that the subspecialty or sub-subspecialty is broadly available nationally

This an emerging field with many educational gaps that has prompted emergent creation of ad hoc teaching material in real-time while dealing simultaneously with the emerging crises. As noted during the recent COVID-19 pandemic, nearly every medical specialty across the nation had to create educational material specific to pandemics, emerging infectious diseases and principles of safety for healthcare professionals. Education in these avenues had to evolve/advance on a rapid basis to deal with continually changing landscape of the COVID-19 pandemic and also the more recent Monkeypox infections.

All healthcare systems in the nation going forwards will have a dire need to be prepared for unprecedented healthcare crises of the future. These crises could range from natural disasters, complications of power outages, migration related health-crisis, climate related health-crisis, outbreaks of war, biochemical warfare, emerging infectious diseases, endemics and pandemics. Some aspects of the preparation encompass disaster planning and strategies for stockpiling, rationing and utilization of personal protective equipment (PPE).

Many healthcare systems are reliant on government recommendations and guidelines for delivering care during a healthcare crisis. In addition, some healthcare systems rely on treatment protocols/algorithms developed by major academic centers through rigorous research. Experts serving in governmental agencies and major academic centers were critical in providing guidance and developing guidelines for best practices in patient care and preparedness during the COVID-19 pandemic. Collaboration between these experts at the national and international level allowed for early exchange of best practices, prevention strategies and novel treatments during the recent pandemic. The presence of these experts with knowledge on health security nationally will be of critical importance to deal with future crises.

Currently there are no other similar fellowships nationally, however we have international partners that will be interested in engaging with us to promote the development of this area of medicine, given its international implications. There have been several new conferences regarding the importance of health security and the emerging need for experts in this field. This includes the COVID-19 in the MENA region (<http://tip.gantep.edu.tr/upload/files/MENA%20Congress-Call%20for%20abstract.pdf>)

and Global Health Security Conference (<https://www.ghsconf.com/event/ce6e8302-3682-4893-9a1f-26827766de77/summary>).

- f) a projected number of programs sufficient to ensure that ACGME accreditation is an effective method for quality evaluation, including current and projected numbers for each participating specialty if the subspecialty is multidisciplinary

There are currently 10 programs with biocontainment units that are certified Region VII Emerging Special Pathogens Treatment Centers (REPETCs) by the National Emerging Special Pathogens Training and Education Center (NETEC). NETEC is a partnership consisting of a variety of healthcare professionals from various campuses across the nation including University of Nebraska Medical Center, Bellevue Hospital in New York and Emory University in Georgia. Currently, NETEC is in the process of approving an additional 3 REPETCs sites. Nationwide, there are also several other biocontainment units that are not currently part of the REPETCs. We anticipate that several of these locations would likely start a similar fellowship in the next several years based on our frequent discussions with many participating members at academic institutes that are REPETC sites. At least 5 different programs have already expressed interest in replicating our fellowship in the upcoming years. As this area is new to medicine, it is likely that many other academic institutes would seek out engagement in the near future once they become aware of the new subspecialty to help them to tackle any future healthcare crisis.

- g) the duration of the subspecialty or sub-subspecialty program is at least one year beyond education in the primary (core) specialty

The duration of health security fellowship will be at least one year beyond completion of training in a primary (core) specialty or other post-residency fellowship training. There is potential for the fellowship to expand to 2 years with an option to complete a Master of Public Health degree. The existing requirement for fellowship accreditation states: "The educational program in health security must be 12 months in length."

- h) the educational program is primarily clinical

The educational program in health security is primarily clinical or will involve clinical simulation. This fellowship will include clinical rotations, as well as extensive opportunities for clinical simulation or experiences in disaster activations or major drills in response to simulated crises. Disease outbreaks, natural or man-made disasters cannot be formally planned in advance, which makes activation of the quarantine and/or biocontainment units unpredictable. Part of the fellowship will account for this unpredictable nature of healthcare crises. One month of the fellowship will be set aside for pursuing research. In addition, fellows will be given the opportunity to pursue rotations in specific areas of interest that fall within the tenets of health security.

Summary:

In summary, with the endorsement of the American College of Emergency Physicians and American Board of Emergency Medicine we request approval from the ACGME Board of Directors to accredit

a subspecialty fellowship in health security medicine under the parent specialty of emergency medicine. Health Security represents a distinct skillset beyond the training of any current program in place. While new, this area of medicine is likely to see rapid growth with several sites and programs ready to follow in our footsteps. Recent and ongoing global health crisis combined with the exponential growth of medical knowledge specific to managing healthcare crises, provides ample evidence for the need of the new subspecialty. This new subspecialty will help to improve patient care, ensure safety and well-being of healthcare workers and improve health system preparedness to any potential future healthcare crisis. It is our firm belief that clinical care and safety of both patients and healthcare workers will be improved through the recognition of this new fellowship in health security.