SHEA position statement on pandemic preparedness for policymakers

Summary of Policy Recommendations

Table 1. Challenges to building a strong and resilient healthcare workforce to respond to a pandemic and proposed recommendations	
Challenge	Recommendation (*examples*)
The healthcare workforce is highly specialized with limited capacity to adapt to changing healthcare needs in a pandemic to provide care to a surge of patients with infections while supporting ongoing care of all patients	• Expand the functionality of the existing healthcare workforce, with cross-training of healthcare personnel to adapt to changing needs during a pandemic ○ *Support necessary educational programs to train staff in emergency response and care provision that would be needed in an infectious disease pandemic or crisis*
Many members of the healthcare workforce are inadequately trained in fundamental infection control practices	• Provide tailored education to frontline HCP on infection prevention and specific roles and responsibilities during infectious diseases outbreaks with routine ongoing evaluation of competency ○ *Support programs led by experts in healthcare epidemiology and infection control (SHEA, APIC, state and federal public health agencies) to provide pathogen-specific and core infection prevention practices* ○ *Support research into best practices and strategies for sustaining knowledge obtained during trainings* ○ *Create standardized assessments of competency for core infection prevention interventions (e.g., hand hygiene, correct selection, donning, and doffing of PPE)*
In the setting of a pandemic there may be barriers to the provision of care using standard, generally in-person, care delivery modalities	• Support research on best practices for the implementation and assessment of telemedicine and the expansion of the workforce. • Create an evidence-informed framework for providing telemedicine both for diagnosis and treatment of potential pandemic agents and maintaining routine patient care during a pandemic or crisis. ○ *Evaluate strategies of healthcare provision using different modalities, such as telemedicine, that may be deployed in a pandemic and their short and long-term impact on patient care* ○ *Evaluate the sustainability of telemedicine as a modality for providing care* ○ *Evaluate impacts of short-term and long-term telemedicine programs on a variety of clinical outcomes* ○ *Explore the use of AI and robotics in supporting care that may reduce the demand on human resources*
During a pandemic, patient care needs and	• Support collaborations across scientific communities and health systems, to better understand and respond to threats to the healthcare workforce and infrastructure resilience in various settings

staffing shortages are dynamic and variable	○ *Elimination of administrative barriers to workforce mobility/deployment to areas of need, standardized emergency credentialing processes, international oversight and coordination of workforce supply* ○ *Create a national system for credentialling healthcare personnel and eliminate inter-state barriers to practice and movement* ○ *Develop models of current and future staffing needs to assist with deployment of human resources*
The clinical workforce is segregated from the public health workforce and infrastructure	• Strengthen relationships and collaboration between communities, state and local public health departments, and the healthcare settings they serve. • Support expansion of the local healthcare workforce to assist with pandemic preparedness and response activities, including strengthening ties with public healthcare personnel. These partnerships should include diversity, equity, and inclusion in the development of the healthcare workforce. ○ *Routine communication between public health departments and clinical leadership, recruitment and support of diversity in the clinical and public health workforce*
Expertise in healthcare epidemiology and infection prevention in acute, post-acute, and other healthcare settings is limited	• Recognize the expertise of healthcare epidemiologists and infection preventionists and provide dedicated time and resources to support their activities and roles in pandemic preparedness and response across healthcare facilities, including expansion of capacity, when needed ○ *Allocate resources to support time needed to dedicate in pandemic response, develop strategies to strengthen the infection prevention workforce during an infectious disease pandemic* ○ *Develop reimbursement frameworks for supporting infection prevention and healthcare epidemiology expertise*

Table 2. Communication Challenges and Recommended Solutions or Actions

Challenge	Recommendation *(examples)*
Ineffective communication during a time of rapid changes in public health guidance during a pandemic	• Endorse a communication standard developed by federal, state, and local public health, professional societies, and regulatory agencies to provide subject matter expertise in guidelines and policies, including timely communication of updates or changes. ○ *Target standards, which would facilitate bidirectional communication, to specific audiences, including clinicians and the general public.* ○ *Endorse the role of SHEA, as a professional society with epidemiologic expertise, as a lead partner in developing these standards* ○ *Recommend development of materials for rapidly educating healthcare personnel and the public about effective IPC practices during non-emergency periods.*
Lack of training in effective communication to diverse audiences, including communicating in traditional and non-traditional media and	• Fund formal training for healthcare epidemiologists and allied roles that amplify IPC expertise (e.g., emergency preparedness) in Crisis and Emergency Risk Communication (CERC) and effective use of traditional and social media. ○ *Develop accessible educational toolkits for training of healthcare epidemiologists in effective and clear messaging.*

countering mis/dis-Information	○ *Fund initiatives to assist with identification of mis and dis-information, and to develop effective communications strategies for addressing these challenges in the information age.* ○ *Support the advancement of research into effective health communications strategies and develop a toolkit for linking effective strategies with identified challenges.* ○ *Create certification for healthcare epidemiologists who complete training through the CDC CERC program; consider use of reimbursement premiums for healthcare epidemiologists who complete and maintain training.*
Need to support professional societies in providing infection prevention and control guidance	• Endorse the critical role of subject matter experts in healthcare epidemiology in partnering with diverse professional societies, which have an important and influential role in educating their specialty audiences, to ensure that their membership benefits from healthcare epidemiologist subject matter expertise ○ *Develop and implement new models for creating guidelines, including those tailored to specific audiences, moving toward a dynamic, rather than static approach to development and revision, including SHEA as a lead partner in contributing IPC expertise.* ○ *Before the next outbreak, develop toolkits for communicating about different types of infectious disease outbreaks* ○ *Before the next outbreak, create a national repository of IPC resources to improve data generation, analysis, and access.*
Inconsistent recommendations between public health and regulatory agencies and applications in community and healthcare settings	• Enable collaboration between professional societies with subject matter expertise in IPC with public health and regulatory agencies to ensure consistency in guidance and messages. ○ *Develop communications strategies that can clearly express uncertainty in a way that is understandable to a wide audience and does not undermine trust.* ○ *Ensure inclusion of SHEA as the lead partner with IPC expertise in forums with public health and regulatory agencies, including public comment, opportunities for public testimony, and other venues to highlight where discrepant recommendations exist and opportunities for resolution.* ○ *Endorse collaboration between healthcare epidemiologists and their state and local public health and regulatory agencies to ensure consistent recommendations.*

Table 3. Mitigation of Supply Chain Shortages: Challenges, Recommendations to Policymakers, and Examples

Challenge	Recommendations *(examples)*
Shortages of essential components of infection prevention and control during pandemic response: PPE, antiseptics and surface disinfectants	• Increase stockpile of PPE in U.S. National Strategic Stockpile • Increase transparency (i.e., central easily accessible list) of supplies including inventory and exact devices (to allow healthcare facilities to train healthcare personnel on use and for N95 respirators to perform fit testing) • Invoke the Defense Production Act at an early stage • Increase and incentivize U.S. production through federal action • Ensure minimum 6-month supply maintained by local healthcare facilities (with rotating use to avoid materials expiring) • Pre-pandemic guidance for reacting to a supply shortage

	• Prioritize management strategies for shortages of N95 respirators
	  ○ *Prioritize guidance based on risk of transmission (e.g., healthcare personnel performing aerosol generating procedures, rapid responders, key industries, persons at higher risk for severe/fatal outcomes, etc.)*
	  ○ *Extended use (based on time or number of uses)*
	  ○ *Disinfection (guidance on best method(s) and acceptable number of disinfection cycles for N95 respirators)*
	  ○ *Rapid review and authorization by FDA/EPA/OSHA of non-U.S. approved products, including quality assurance and checks of imported healthcare supplies*
	  ○ *Use of non-FDA/EPA approved products (e.g., K95)*
	  ○ *Use of single use N95 respirator alternatives: powered air purifying respirators (PAPR) and reusable N95 respirators (e.g., elastomeric respirators)*
	• Prioritize management strategies for shortages of single use gloves
	  ○ *Disinfection (e.g., alcohol-based hand rub) to disinfect gloves between uses*
	• Prioritize management strategies for shortages of disposable gowns
	  ○ *Cover gown with impermeable apron (disinfection between uses)*
	  ○ *Limited use of same disposable gown across patients*
	  ○ *Substitution of gowns that can be laundered*

Diagnostic test shortages	• Disseminate full viral genome for an emerging pathogen in a rapid approach • Provide federal incentives for developing, manufacturing and distributing diagnostic tests and materials • Develop a national database through the federal government accessible by all laboratories, to identify available equipment and ensure all resources are utilized • Require manufacturers to validate diagnostic products on at least two alternative devices

Medication Shortages (non-outbreak agent pharmaceuticals)	• Maintain a federal list of supply chain/shortages with information on severity of shortage (updated at least weekly)
	• Increase transparency of potential supply chain impacts/shortages
	  ○ *Shut down of a factory*
	• Rapid and early FDA action to allow importation and use of non-United States approved pharmaceuticals
	• Plans to maintain equal access across the United States
	• Prioritization of use based on degree of shortages and likely patient benefits and risk factors for severe disease (development by appropriate medical societies)
	  ○ *Stages of management: 1) warning to clinicians; 2) preference for substitutions when available; 3) limit use to only situations where no alternative exists; 4) limit use to only most critical situations*

Equipment Shortages (e.g., ventilators	• Increase stockpiles of key equipment in U.S National Strategic Stockpile • Increase transparency (i.e., central easily accessible list) of supplies including inventory and exact devices (to allow healthcare facilities to train healthcare personnel on use) • Maintained a federal list of supply chain/shortages with information on severity of shortage (updated at least weekly)

	• Ensure rapid and early FDA action to allow importation and use of non-U.S. approved devices • Release plans to maintain equitable access across the U. S. • Prioritize use based on degree of shortages and likely patient benefits plus risk factors for severe disease^ ○ *Development by appropriate medical societies*
Table 4. Pandemic Data Management: Challenges, Recommendations to Policymakers, and Examples	
Challenge	Recommendations (examples)

Variable data collection and harmonization	• Expand data collection to focus on gathering the widest variety of data elements from the widest variety of sources
	  ○ *Include qualitative and quantitative data elements*
	  ○ *Collect and organize data not traditionally included in organized data repositories, such as image data.*
	• Engage other sectors to develop data transfer and storage systems that are secure, with advanced mechanisms for storing and sharing data.
	• Explore secure cloud-based systems.

Variable data organization	• Develop and implement national standards for data organization, such as
	  ○ *Cross-referencing ontology, with clear maps detailing how different data elements relate to each other and how they are organized.*
	  ○ *Collecting at the smallest unit possible so that analyses not pre-specified in advance can be completed.*
	  ○ *Creating identifiers similar to county Federal Information Processing Standard (FIPS) codes that can be used for linkage and future analysis.*
	  ○ *Using a variety of different data elements, including qualitative and quantitative data elements.*

Limited data availability and sharing	• Provide public access for dataset download and analysis, while ensuring privacy protections for personal and healthcare system or facility-level identifiers • Ensure accessible and transparent data to those potentially impacted by it, with a mechanism for review and update to promote accuracy, accountability, and equity. • Allow sharing of locally developed policies and procedures that may be helpful for other healthcare systems to include in the repository and maximize access.
Difficulty in balancing speed of data availability, accuracy and reproducibility	• Integrate resiliency into the system, such that data scientists can pivot to pandemic responses and pandemic data management as needed. • Review necessary cleaning steps required for data release to reduce delays in data access and availability. • Ensure data elements such as facility and healthcare system procedures and protocols are available in a repository without a focus on cleaning or organization before release and accessibility.
Outdated data systems	• Pursue active data collection from healthcare systems and local / state public health to create a national data repository. • Ensure database adaptability to many common programming languages and in many common file formats.

	• Design data collection processes to gather the most amount of data possible, as we cannot always forecast what data will be needed to answer what questions in the future.
Limited data transparency	• Allow data access as widespread as possible to the extent feasible with HIPAA and privacy protection. • Code underlying database creation, linkage, and/or analysis for immediate public review and use.
Lack of sustainable funding	• Fund and support the creation of multi-disciplinary data management teams. • Fund and support improved interfaces with healthcare systems to ease data sharing and collection. • Fund and support ongoing updates and re-evaluations of data systems. • Integrate cross-training and resiliency into the system.

Table 5. Mitigating Emerging Infectious Threats: Challenges, Recommendations to Policymakers, and Examples

Challenge	Recommendation (*Examples*)

Multiple EID surveillance systems create a patchwork of networks with limited data coordination and uneven geographic distribution	• Fund linkages between disparate global and domestic surveillance/sentinel systems for early detection of EID.
	  ○ *Government entities (e.g. CDC Emerging Infections Program, NIH Centers for Research in EID Network)*
	  ○ *Non-governmental organizations*
	• Provide funding to establish or expand domestic EID surveillance systems to additional geographic areas

Limited coordination between public health agencies, NGOs and policymakers on EID preparation and management	• Increase policymaker engagement in EID preparedness activities between multiple agencies to improve coordination of EID mitigation plans. Agencies include:
	  ○ *Federal agencies (HHS, ASPR, CDC, DoD)*
	  ○ *State and local health departments*
	  ○ *Non-governmental organizations (CSTE, NACCHO, hospital preparedness programs)*

Lack of training for frontline providers to respond to EID	• Develop resources to educate providers and health systems to respond to EID. These include professionals within:
	  ○ *Academic, military, community centers*
	  ○ *Public health agencies*
	  ○ *Healthcare facilities*

Need to apply lessons from most recent pandemic to better respond to the next pandemic	• Support research for pandemic preparedness. Content areas include:
	  ○ *Vaccines and vaccine platforms*
	  ○ *Communication to combat antivaccine movement*
	  ○ *Interactions between humans, animals, and environment using the One Health Model*

Factors contributing to EID includes healthcare disparities and climate change	• Fund programs and create policies that address healthcare disparities, such as
	  ○ *Drivers of socioeconomic inequality*
	  ○ *Infectious and non-infectious factors*
	• Support healthcare- and non-healthcare-related efforts to reduce carbon emissions

*All strategies must provide equitable distribution and availability
^Prioritization committees at the national, local and institution levels must contain experts in diversity and ethics
EPA, U.S. Environmental Protection Agency; FDA, U.S. Food and Drug Administration; OSHA, Occupational Safety and Health Administration; PPE, personal protective equipment
Abbreviations: CDC- Centers for Disease Control & Prevention; HHS – Department of Health and Human Services; ASPR – Administration for Strategic Preparedness and Response; DoD – Department of Defense, CSTE – Council for State and Territorial Epidemiologists, NACCHO – National Association of City and County Health Organizations; EID – emerging infectious disease