

Outbreak Experience: Simulating an Infectious Disease Outbreak to Improve Interprofessional Collaboration, Health Equity, and Community Resilience

FACILITATOR GUIDE

Activity Learning Objectives

At the completion of this activity, learners will be able to:

1. Place the interests of patients and populations at the center of an interprofessional response to a disease outbreak, with the goal of promoting health, health equity and community resilience
2. Perform effectively on teams and in different team roles to plan, deliver and evaluate patient/population-centered care and population health programs and policies that are safe, timely, efficient, effective, and equitable
3. Maintain competence in one's own professional role appropriate to the scope of practice
4. Engage diverse professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific health and healthcare needs of patients and populations
5. Organize and communicate information with patients, families, community members, and health team members in a form that is understandable, avoiding discipline-specific terminology when possible
6. Incorporate an understanding of how structural bias and social inequities undermine health

Activity Overview

This educational activity places public health and health professions students in the role of interacting as a member of a multidisciplinary unified response team, requiring that they engage in effective teamwork as they collaborate in decision-making and communication in response to the rising threat of an infectious disease outbreak. The outbreak takes place in the Miami Valley region of Ohio, with the City of Dayton/Montgomery County at the center.

This outbreak activity enhances existing education in community resilience and preparedness, health equity and social justice in several ways:

1. Participants take on roles in the unified command response, rather than in patient triage and treatment, which is typical in most interprofessional (IPE) activities. This structure allows all students to have a better sense of the factors at play in strategic planning and decision-making in emergency preparedness and response.
2. This activity is designed so that the public health students take the lead on the team, which is typically the situation in emergency planning and response, but not typical in

other IPE activities where the medical students often take the lead. This aspect of the activity highlights the important role that public health professionals play in community health and wellbeing.

3. This activity includes students and faculty from clinical mental health counseling, to address the importance of community and healthcare worker resilience in public health emergencies. Community emergencies cause trauma to not only citizens, but also to the professionals who must respond to the emergency. Mental health professionals are often left out of the planning and response, and students in mental health counseling are rarely, if ever, included in emergency preparedness and response training.
4. This activity incorporates a health equity lens so that students can gain a better understanding of how community-level emergencies often affect citizens disproportionately, and how planning for equitable resource allocation can help address these disparities.

Facilitator Role

In this activity, the facilitators serve dual roles. First, they serve as a role model for their profession, and provide collaborative communication and guidance to the students as they progress through the scenario. During the activity, the facilitators are available to assist all team members, regardless of their profession, clarifying expectations and asking questions that guide the students to think critically about the situation.

Effective facilitators are prepared; they understand the purpose and flow of the activity and how the students will develop and unwrap the scenario. They pose thought-provoking questions and help keep communication flowing among team members. Effective facilitators recognize and validate the importance of the various disciplines participating in the activity, including validating the expertise of other facilitators.

Students enjoy hearing the facilitator experts share how they would respond in the situation. These discussions are typically well suited for the debrief at the end of the event but caution must be exercised so that one or two facilitators do not dominate the discussion. We have observed some instances where a facilitator will drive the entire thought process of a team. As such, we advise facilitators to nudge and provide comments that give more context or depth to the discussion.

Schedule

Ideally, a 2.5-3-hour event allows enough time for student discussion, presentations, and facilitator debriefing.

Master Schedule	
Time	Activity
15 - 30 minutes	Registration and Team Assignments
15 minutes	Welcome and Instructions
65 minutes 10 minutes 5 minutes 25 minutes 25 minutes	T2 Discussion T2 Case Part 1 (Intraprofessional) Change Intra- to Inter-professional groups/Icebreaker T2 Case Parts 2 - 3 (Interprofessional) Facilitator Debrief
10 minutes	BREAK
65 minutes 20 minutes 20 minutes 25 minutes	T3 Discussion T3 Case Part 1 (Interprofessional) T3 Case Parts 2 - 3 (Interprofessional) Presentations and Facilitator Debrief

Case Scenario

This activity is divided into three time periods that represent a 48-day period (August 15 - October 1).

- The first time period (T1) consists of 26-days (August 15 - September 8) during which a group traveled to and from Bangladesh and then started exhibiting symptoms. This information is given only to the MPH students, approximately one week prior to the event, as the local public health department would likely be aware of a potential outbreak before other healthcare professions in the community.
- The event begins with Time Period 2 (T2), during which the remaining students receive the scenario. T2 begins on September 9 with the death of a child and eight individuals presenting to a local clinic with similar symptoms. T2 encompasses the rapid increase in cases, hospitalizations and deaths over a 5-day period (September 9 - 13), the impact on schools, the initial identification of the pathogen, and the organization of a unified response team. T2 was originally developed to represent a severe influenza outbreak in a community.
- Time Period 3 (T3) portrays an 18-day period (September 14 - October 1) when an infectious disease outbreak reaches epidemic status, the healthcare system becomes strained and treatment options are scarce.

Team Member Roles

Public Health

WHO AM I?

You are the Assistant Health Commissioner of a large health department. Before you became the Assistant Health Commissioner, you were an epidemiologist at the same health department.

WHY AM I HERE?

Your health commissioner has put you in charge of leading the outbreak investigation in the community. Your goal will be to lead the outbreak investigation as well as provide your epidemiology perspective as needed. You will also be responsible for ensuring a health equity lens is used in the crisis response to emphasize the inclusion of minority and vulnerable community members and groups in the team's approach.

Clinical Mental Health Counseling

WHO AM I?

You are a Clinical Counselor and Supervisor (LPCC-S) at a local mental health agency. You are also on the Board of the Miami Valley Counseling Association.

WHY AM I HERE?

You have been contacted to serve on the unified response team as an advisor to issues related to mental health (specifically issues of managing stress, mental and emotional overload, and panic containment) as it relates to hospital staff, first responders, and the community. You also have the task of identifying and addressing contrasting mental health needs of minoritized population groups. In addition, you were contacted by the school counselor (who you knew from graduate school) asking if you could brainstorm on best ways to address issues with parents and students.

Medicine/Advanced Practice Nursing

WHO AM I?

You are a physician or advanced practice nurse at a primary care clinic in the Miami Valley. Your role is diagnosing and treating patients who come to your clinic for care, as well as providing health education and preventive health services to your patients.

WHY AM I HERE?

You have volunteered to serve as a representative on the unified response team because you have personally seen a number of recent patients with similar symptoms in your clinic. Your goal will be to provide a healthcare provider's perspective on how to help manage this potential outbreak. You will also provide the response team with insight regarding the disparate health coverage and medical service needs of different demographic and socioeconomic groups.

Pharmacy - Community

WHO AM I?

You are the manager of a community pharmacy for one of the major retail pharmacy chains located in Dayton, OH.

WHY AM I HERE?

You have been contacted by the local public health department to serve as a representative on the unified response team on recommendation of your district manager. Your goal will be to provide a pharmacist's perspective on how to help manage this potential outbreak, while also giving insight into common barriers to prescribed medication and vaccination among different demographic groups.

Pharmacy - Institutional

WHO AM I?

You are an emergency medicine pharmacist from a 900-bed teaching hospital located in downtown Dayton, OH. Outside of working in the emergency room, you are also a member of the hospital's Disaster Response and Preparedness Team. Earlier this morning, you saw a breaking news story concerning an 8-year old child who recently died from a possible infection. You are concerned, as you have personally seen several recent cases with similar presentations in your adult patient population.

WHY AM I HERE?

Your hospital has been contacted by the local public health department considering the growing concern of an outbreak. You have personally volunteered to serve as a representative on the unified response team. Your goal will be to provide a pharmacist's perspective on how to manage this potential outbreak, while also giving insight on the common barriers to prescribed medication and vaccination among different demographic groups.

Social Services (This role and the following discussion prompts are appropriate for public health or social work students)

WHO AM I?

You are the Assistant Director of Social Services at Montgomery County Job & Family Services. In your position, you serve as a connector between Children's Services, the Board of Developmental Disabilities, the Public Defender's Office, and other local social service organizations.

WHY AM I HERE?

At the request of the health commissioner, your supervising director has assigned you to serve on the unified response team. You will provide insight on some of the relevant cultural and socioeconomic factors that will need to be addressed to foster an equitable response approach. You will also contribute any potential community collaborations and partnerships that could be mobilized to increase response reach and impact.

Outbreak Scenario

T1 – PUBLIC HEALTH STUDENTS ONLY

T1 Facilitator Note

Public health students will be provided with this information in advance of the IPE event. They will also be asked to develop an epi curve and an initial case definition, which they will subsequently share with their team members at the beginning of T2.

T1 Case Details

August 15

A group of 40 US citizens from Dayton, Ohio departed on a medical mission trip to Bangladesh. The group was made up of college students, high school students, adult chaperones, and healthcare professionals (MDs, nurses, pharmacy). All pre-travel medical checks and vaccinations were completed for the group. They traveled within Bangladesh for two weeks.

August 29

The medical mission group begins two days of travel back to Dayton, Ohio.

August 31

The group arrives home in Dayton, Ohio. Group members disperse and go back to their homes, schools, families, workplaces, and medical practices, etc.

September 1

Upon returning home, 7 people in the group are feeling run down:

- Nurse, female, age 45
- MD, female, age 68
- High school vice-principal (chaperone), male, age 35
- College student, male, age 20
- College student, female, age 20
- High school student, female, age 16
- High school student, male, age 16

All 7 are experiencing small, persistent cough. The adults initially are taking it in stride. They attribute feeling poorly to travel fatigue.

September 2

All travelers go back to work & school. Seven with cough return to work and school with tissues, cough drops, vitamin C, etc.

September 3

The 4 students not feeling well stay in to rest after becoming fatigued from their first day back in school.

September 5

Two days later, the small cough progresses to include fever and chills. Ill travelers make doctor appointments, urgent care, and ER visits. First focus of diagnosis is in the area of respiratory infection, pneumonia, with treatment tending towards antibiotics (Z pack, etc.).

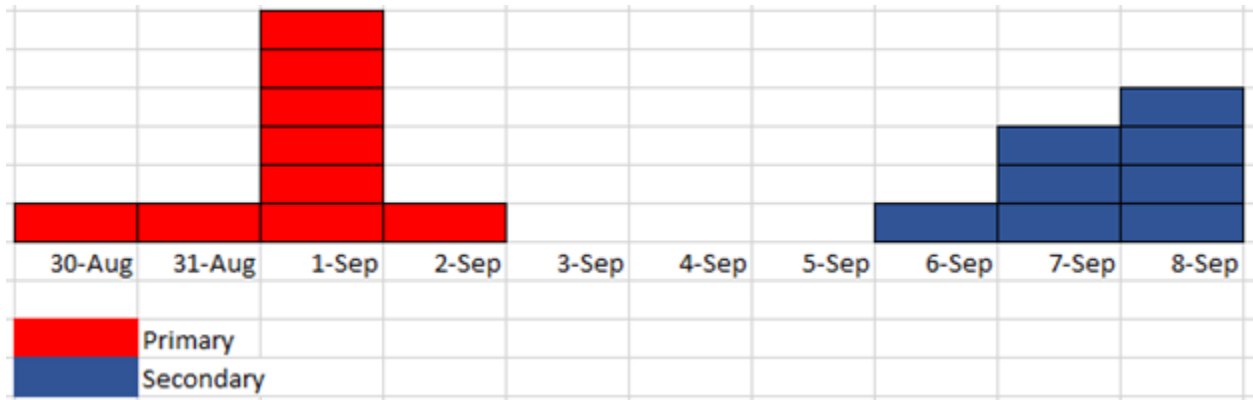
September 7

Some family, friends, and colleagues of ill travelers are now showing signs & symptoms of illness. This includes an 8-year-old elementary school student (3rd grade). The elementary student has high fever (103.3). Physician exam notes shortness of breath, diffuse rales, and bilateral rhonchi (lung sounds indicating fluid). 3rd grader receives pneumonia diagnosis. Soon after develops nausea and vomiting and is admitted to hospital.

Public Health Student Questions: (Desired student responses indicated in blue)

This is an Interprofessional Experience, so collaborating with other students is encouraged.

1. Create an Epi Curve.



2. Decide what is important to know from the primary and secondary cases and create descriptive figures/tables from the data of the 40 people who went on the trip and the friends and relatives who became ill. (Below are some examples that could be created).

	Total	Male (%)	Female (%)	Mean age in yrs (SD)	Age range (yrs)
Total mission group	40	17 (42.5)	23 (57.5)	27.5 (13.0)	16-68
Primary cases	7	3 (43)	4 (57)	31.4 (19.5)	16-68
Secondary cases	8	6 (75)	2 (25)	26.3 (20.8)	8-70 yrs
All cases	15	9(60)	6(40)	28.7 (19.6)	8-70 yrs

Role on Trip	Ill (n=7)	Total (n=40)	Attack Rate (%)
Chaperone	1	3	33.3
College Student	2	12	16.7
HS Student	2	12	16.7
MD	1	4	25
Nurse	1	4	25
Pharmacist	0	3	0
Professor	0	2	0

Table 3: Symptoms of Total Mission Group and Cases				
	Total mission group (n=40)	Primary Cases (n=7)	Secondary Cases (n=8)	All Cases (n=15)
Feeling Run Down	11 (27.5%)	7 (100%)	8 (100%)	15 (100%)
Fever	6 (15%)	6 (85.7%)	8 (100%)	14 (93.3%)
Cough	7 (17.5%)	7 (100%)	8 (100%)	15 (100%)
Vomiting	2 (5%)	2 (28.6%)	2 (25%)	4 (26.7%)
Nausea	1 (2.5%)	0 (0%)	4 (50%)	4 (26.7%)
Chills	6 (15%)	6 (85.7%)	7 (87.5%)	13 (86.7%)
Stomach cramps	3 (7.5%)	1 (14.3%)	0 (0)	1 (6.7%)

3. What steps should be taken in the health department at this time?

Persons who returned to Dayton OH on August 31, 2018 from medical mission trip in Bangladesh, or those epidemiologically linked to them, who are feeling run down with cough and symptoms of fever, chills, vomiting, nausea, and stomach cramps.

T2 PART 1 (INTRAPROFESSIONAL)

T2 Facilitator Note

Students will work in small groups with their own professions for Part 1. They will then reconvene as interprofessional groups for Part 2 and the remainder of the activity. Facilitators should encourage group members to interact with each other where necessary. Additional information about the case will slowly be unveiled throughout the activity.

T2 Part 1 Case Details

September 9: 9:00 A.M.

[Video] Breaking Story on local news: An 8-year old child with no underlying health conditions who was hospitalized with fever and shortness of breath has died less than 72-hours after admission. Local hospitals and clinics are reporting a dramatic increase in numbers of patients reporting similar symptoms and hospitalizations are increasing rapidly. The local public health department and the children's hospital announce they will hold a press conference this evening to discuss the situation.

September 9: Morning

Eight patients requesting same day appointments present to a local primary clinic within a one-hour period this morning, all complaining of similar symptoms. The patients all report that the symptoms began approximately 2-3 days prior, came on suddenly, and their condition rapidly deteriorated, despite at-home treatment with OTC analgesics, hydration, and rest.

- Patient 1: F (Age 12) - Fever (103°F), myalgia, cough, chills, shortness of breath
- Patient 2: M (Age 19) – Fever (101.5°F) myalgia, cough, headache
- Patient 3: M (Age 42) – Fever (101°F), cough, chills, shortness of breath
- Patient 4: M (Age 3) – Fever (104°F), myalgia, cough, lethargy, vomiting
- Patient 5: F (Age 72) – Fever (100.8°F), cough, headache, chills, shortness of breath
- Patient 6: F (Age 34) – Fever (102°F), myalgia, chills, headache
- Patient 7: F (Age 27 – 3 months pregnant) – Fever (101.2°F), cough, chills, shortness of breath
- Patient 8: F (Age 16) – Fever (101.5°F), cough, headache, shortness of breath

Five of the patients demonstrated signs and symptoms of respiratory distress – They were using accessory muscles of breathing, leaning forward, tachypneic (RR 20s-30s), O2 sat low 90s or high 80s on exam at rest on room air, and wheezing audible. Crackles were heard over specific lobes in all five patients, as well as increased fremitus over the same lung area as the crackles in two of the patients. Egophony was present in three of the patients. Because the clinic does not have x-ray facilities, all five patients were sent to the Emergency Department.

Discuss your discipline's perspective on this situation as indicated below:

Public Health

What is the public health role in the public health outbreak at this time? What should public health be doing to prepare? When and what do you communicate to the public?

Local public health should be working with the CDC to identify the novel Influenza A strain, continuing to refine the case definition and do case surveillance to collect, analyze, interpret, and disseminate accurate information about case numbers, hospitalizations, and deaths. Public health will be advising policy leaders and working with local healthcare systems in response planning. Education of other medical professionals and local leaders in business and education about the mechanism of spread and appropriate mitigation strategies is an ongoing public health role. Public messaging should be consistent, yet transparent that in an evolving situation, we often need to change recommendations as our understanding of the novel infection evolves. Public health should be doing contact tracing and recommending mitigation measures as appropriate.

Clinical Mental Health

What issues should be addressed with school counselors in the district?

School counselors are in a challenging position because they are the go to source for mental, emotional, social and vocational direction in the school setting. Furthermore, School counselors need to be preventative (as much as possible) with information on how to manage

the emotional challenges of an outbreak. This would include targeted info to students and their parents regarding ways to handle stress, social isolation from peers, changes in routine and personal safety. Students that become severely ill will have an impact on their peers. Therefore, grief counseling should be available. There should also be considerations for small group and individual counseling via telehealth platforms.

Physician / Advanced Practice Nurse

What is going on? What is your differential diagnosis in this situation? How will you know when a patient is considered high risk for this disease?

There appear to be a wide array of patients presenting with influenza-like symptoms. This could mean that there is an influenza outbreak that is occurring out of season, or it could mean an outbreak of other respiratory viruses (e.g., parainfluenza, RSV, SARS-CoV-2). It would be important to contrast these viral illnesses with other respiratory pathogens (e.g., *Legionella spp.*) that could be present at this time of year. Non-infectious exacerbations of other respiratory illnesses or cardiac conditions could be possible, but such an event across this array of people would be highly unlikely.

Patients older than 65 or those with chronic and severe asthma, COPD, heart failure, HIV / AIDS, cancer, CKD, uncontrolled diabetes, or a recent history of stroke are generally at a high risk for influenza complications. The very young (e.g., <3 months of age) are also at a higher risk.

Pharmacist

What is going on? What is your differential diagnosis in this situation? How will you know when a patient is considered high risk for this disease?

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Patients older than 65 or those with chronic and severe asthma, COPD, heart failure, HIV / AIDS, cancer, CKD, uncontrolled diabetes, or a recent history of stroke are generally at a high risk for influenza complications. The very young (e.g., <3 months of age) are also at a higher risk.

Social Services/Public Health

What service provisions need to be mobilized for the select group of community members that have fallen sick?

Individuals from under-resourced demographic groups may be more likely to work in occupations and conditions that increase their exposure to the virus, and therefore, may be more likely to become sick and more likely to lose their jobs if they are sick. The community members who have fallen sick may need additional services to address childcare, food insecurity, income and housing assistance. There should also be increased attention to mental

health and stress, and to finding ways to decrease inequities in access to medical and mental health care, if needed.

T2 PART 2 (INTERPROFESSIONAL)

T2 Part 2 Case Details

September 10: 6:00 P.M.

The Health Commissioner from the local public health department and an infectious diseases physician from the children's hospital hold a press conference about the situation. The health commissioner states that 173 new patients have been hospitalized with these symptoms.

The physician states that the deceased child did not have any known pre-existing conditions and died within 72-hours of admission. The child was up-to-date on routine immunizations. The hospital is taking steps to isolate any patients with similar symptoms in order to protect other patients and staff, and patient visitation will be restricted. The physician reminds parents to monitor children who begin experiencing fever, cough and headache and only bring them to the Emergency Department if the child experiences unusual or rapid breathing, develops a bluish color or fever with rash, has difficulty waking up, or is not drinking enough fluids. The health commissioner reminds the public that they need to increase hand washing and self-isolate if symptomatic.

September 11: 6:35 A.M.

The Public Health Department has put together a unified response team to develop solutions to the current infectious outbreak. They have convened the group together to present them with their findings.

Discuss your interprofessional team's response to this situation as indicated below:

Question 1: How should the health professionals in the community organize to address the issue? What role should primary care practices, pharmacies, and hospitals play in managing this outbreak?

The first priority should be to centralize public messaging around these cases as much as possible. Health professionals or their employers should maintain contact with the local public health department to help facilitate consistency in messaging. Moreover, healthcare providers

should remain vigilant, review current public health guidance, and openly share information with public health authorities.

In particular, primary care practices should report cases that meet the current case definition to public health authorities and be prepared for any “worried well” that may begin to present to their premises. If identified as such, referrals to licensed counselors should be made if symptoms warrant.

Community pharmacies should monitor any unusual influxes in prescriptions for therapeutics and work to secure all necessary therapeutics that are not currently stocked given the timeline of this epidemic. Community pharmacies will also likely be one of the first places to receive general questions from the public. Therefore, they should be prepared to triage these patients and their needs on a case-by-case basis.

Hospitals should report cases that meet the current case definition to public health authorities and be prepared to triage any “worried well” that may begin to present to the hospital. Identified patients should have an appropriate behavioral health consult/intervention. Administrators should distribute education to all healthcare providers and work to ensure that important supplies, such as PPE and medications, are in stock.

Question 2: Given this information, how should healthcare providers approach patients who present with influenza-like symptoms?

Healthcare providers should rule out all other possible causes of each patient’s presentation, triaging them to the most appropriate level of care. In particular, providers should be able to distinguish between typical bacterial and viral infection presentations. For example, symptoms that persist longer than 10 - 14 days may indicate the presence of a bacterial infection over a viral process. Moreover, healthcare providers should be able to recognize possible non-infectious causes of the patient’s presentation, such as heart failure, asthma, or COPD exacerbations. A thorough medical history along with appropriate point of care testing would be necessary to help rule in and out other causes of illness.

Question 3: What are indicators of stress or emotional instability that should be looked for in children, parents, first responders, and medical staff?

Stress and emotional instability can be identified by the individual experiencing the symptoms or by others. Indicators such as depression, anxiety, or anger are common. Specifically, you may notice a constant irritability, or feelings of hopelessness, inability to concentrate, or simply being unmotivated. Social isolation and oversleeping may also be present. Personality change and a decline in personal care may occur. Likewise, there may be racing thoughts, constant worry and trouble getting to sleep. Making irrational and bad decisions may also be noticed. It is important to note that people may experience and handle stress differently. The key is to be self-aware and to monitor family, friends, and coworkers. Have regular conversation and practice healthy habits during high stress periods.

Question 4: What is the role of antivirals, antibiotics and vaccinations in this situation? Who should receive these products first? Who should be turned away? Should patients presenting with these symptoms receive both antibiotics and antivirals?

Antivirals should be utilized for patients presenting with influenza-like symptoms when no other possible source of their symptomatology is attributed as the primary cause for their presentation. Antivirals should be given when symptoms have been present for <48 hours **OR** when no timeframe is readily identifiable for the onset of symptoms. In contrast to antivirals, antibiotics are unnecessary for most patients and should only be used when a provider cannot rule out a bacterial source of infection. In such cases, it is not unusual for antivirals, such as Tamiflu, and antibiotics, such as levofloxacin, to be administered together. One place this may commonly occur is when a patient first presents to an emergency department with influenza-like or pneumonia-like symptoms during flu season. Under these circumstances, information about patients is not always available, so more caution is sometimes necessary.

Question 5: Identify three distinct demographic descriptors (each pertaining in some way to the concept of social determinants of health) within the local community that will require special consideration in the unified response team's approach. Details must differ in categorical classification (e.g. cannot all be race-based or economically based). Feel free to be innovative in your identification; you are welcome to use resources such as Census Bureau data, density maps and opportunity indexes, or community health assessments. For example, Montgomery County 1) *is over 20% Black and African American*, 2) *has over 15% of the population without broadband internet connection*, and 3) *is home to various refugee resettlement and immigrant services programs*.

Examples will vary, the following is one example:

- Children- Although demographics of the cases are not given as the outbreak scales in magnitude, the indications from the media reports regarding the sudden death of one or more children and the closure of schools in the largest school district in the area give, at a minimum, a perception that children are being significantly affected. According to the Census Bureau, children < 18 years old represent 24.9% of Montgomery County's population.
- Poor- According to Census data, 25-30% of Dayton and Trotwood residents are in poverty. These individuals will have a harder time accessing care, maintaining distancing for isolation and quarantine, and sustaining food security and housing if income is not maintained due to illness or job reduction from economic factors caused by the outbreak.
- Congregate care residents- Montgomery County has 40 licensed nursing homes, with over 4500 beds (development.oh.gov) and a homeless population of over 4500 individuals (PHDMC CHA), many of whom are in and out of homeless shelters. We felt these and other congregate care facilities may become hotspots for spread of what appears to be a very communicable disease.

Question 6: What would be the role of the strategic national stockpile in responding to this outbreak?

The strategic national stockpile (SNS) could be deployed following a formal request by public health authorities and subsequent approval by the department of Health and Human Services. These requests may be made when there is a need to deliver critical medical resources to the site of a national emergency when local resources would likely be or have already been

overwhelmed by the magnitude of a medical emergency. In this particular outbreak, the SNS could be deployed to distribute 12-hour push packages that include broad-spectrum oral and intravenous antibiotics and antivirals, IV fluids, airway equipment, ventilators, vaccines, and PPE.

Question 7: What specific action will you take to make sure that children/youth in foster care or residing in shelters are also protected?

For children/youth in foster care or those residing in shelters, the social workers and/or facility staff assigned to them will play an important role in making sure they are protected and can also be the most reliable touchpoints in reaching these children/youth. These service professionals must be equipped and mobilized to take appropriate protective measures on behalf of these children/youth. They must also be prioritized in the dissemination of situational updates and educational resources that pertain to foster care and youth shelter institutions during this outbreak emergency.

Question 8: What actions could be taken to address barriers that may hinder the ability of symptomatic individuals to self-isolate?

Depending on day-to-day obligations and living situations, some socioeconomically disadvantaged individuals may be restricted in their ability to isolate whether symptomatic or asymptomatic. For example, these individuals may not be initially afforded opportunities to take time-off from work to self-isolate, or they may live in a crowded home where self-isolating from those they live with is near impossible. Potential actions to address such barriers could include; 1) health departments with jurisdiction in the local area putting mandates in place about mandatory isolation requirements, 2) making infection tests readily available and accessible to allow individuals to justify need for self-isolation, and/or 3) utilizing funds associated with crisis response to provide temporary housing for those unable to self-isolate at home.

T2 PART 3 (INTERPROFESSIONAL)

T2 Part 3 Case Details

September 13: 6:00 P.M.

On the local news, the superintendent of the largest school district in the metropolitan area reports that absentee rates are rapidly increasing across all schools in the district and are now averaging 42%. The superintendent announces that 3 elementary, 2 middle schools, and 2 high schools will be closed for the next week because absentee rates are above 50% and the district plans to clean and disinfect the buildings. Other school districts nearby are experiencing the same situation and closing schools.

Social media posts indicate that parents are worried about their children and are not only keeping symptomatic children home from school, but also asymptomatic children, in order to reduce the risk of exposure.

Analysis determines that the current illness is caused by influenza A, but confirmation of the exact strain will require further analysis by the CDC.

Medical clinics report that they are seeing an increase in patients asking about the availability of the seasonal influenza vaccine, but the vaccine has not yet been released. Clinics are also reporting that patients are requesting prophylactic Tamiflu®.

Since September 9, there have been 327 new hospitalizations and 5 more deaths of patients with the same disease locally.

Discuss your team's response to this situation as indicated below:

Question 1: What types of communications or alerts should be sent out at this time? What role should healthcare providers play in this process? Who would be the recipients of this information? What information would be included in these communications?

At this time, communications or alerts should focus on what is known and assuring the public that experts are committed to addressing the situation. This information should be communicated to the general public, but more specific information may need to be developed and disseminated to particular groups, such as the healthcare workforce.

Healthcare providers, as well as public health officials can provide expertise in this situation. They can explain the situation, the risk to individual and community health, provide reassurance that the situation is being addressed, and can communicate preventive actions that the public can take. Healthcare providers may be able to facilitate trust and provide credibility to the message.

Officials responding to an outbreak situation must be aware of and consider how the risk perceptions and beliefs of individuals in the community may influence how the communications are both developed and interpreted.

*Effective Messaging During Outbreak Responses (from *The CDC Field Epidemiology Manual*, pgs. 250-252)*

- Start with empathy, but do not over-reassure
- Identify and explain the public health threat
- Explain what is currently known and unknown; acknowledge uncertainty
- Explain what public health actions are being taken and why
- Emphasize a commitment to the situation
- Tell the audience what they can do

Question 2: How should local hospitals prepare for a possible influx of sick persons or the worried well? What protocols might your unified response team recommend to them at this time? How should your team intervene in the schools? How would you work with school nursing?

Hospitals should be prepared to triage patients to an appropriate level of care from the emergency department. They should be able to quickly rule out other possible causes of illness and turn away those who do not require a higher level of care. In some cases, hospitals may wish to develop pre-screening areas to help alleviate the burden that emergency departments may face. The team should encourage hospitals to provide education to their staff about hand hygiene and other infection prevention strategies.

Question 3: At this stage of the outbreak, how would the three demographic descriptors identified by your team contribute to your communication efforts and to the operational preparations of the local hospitals?

Examples will vary, but should follow unique themes depending on the demographic descriptors identified. For example; 1) any race- or ethnicity-based descriptors should point to the need for culturally competent communication efforts and healthcare service provisions, 2) any economic descriptors should address issues of under-resourced and poverty-stricken individuals in utilizing accessible communication methods and implementing equitable healthcare opportunities, or 3) age-based descriptors should focus on ensuring different age groups are approached in specific ways that cater to their individual lifestyles by using various communications platforms and targeted healthcare messaging.

T2 DEBRIEF -- FACILITATORS: IMPORTANT POINTS TO DISCUSS WITH STUDENTS

Question 1: How do you control miscommunication and misinformation in situations like this? The team should establish a social media surveillance center to monitor and respond to trends. The team should also work to identify medical experts who can communicate this information clearly while also maintaining knowledge about current misinformation. These experts would work closely with local, regional, and possibly national media outlets to share relevant information. Lastly, the team should also consider establishing virtual town halls to help provide a forum for the community to ask questions.

Question 2: How do you balance transparency of information with concerns about inducing panic?

When difficult information is given, it is important to be accurate as well as tactful. If sharing information verbally, one should consider tone, volume, and pacing of voice as a way to help manage others' emotions regarding how they are "hearing" the information. Likewise, an empathic approach is best to build trust and give others a chance to voice their concerns. Written communication can also present with a measured and calm tone if the information is clear, non-wordy, and professional. Additionally, there should be steps on how to manage the information to promote self-care, optimism, and connection with others. Lastly, there needs to be a way for others to reach out for further information if needed.

Question 3: How do you build trust with the community?

The team should be consistent with their messaging and work to establish two-way communication with community leaders. Moreover, the team should also consider establishing town halls or other public forums that allow community members to voice their concerns.

Question 4: How would you empower the healthcare professionals in the community in this situation?

The team should work with the local public health department to formulate an educational toolkit. This toolkit would provide both provider and patient-level educational materials that would help them to better understand the current state of this outbreak, disease information, and ways to mitigate the spread of this infection.

Question 5: What barriers do you think exist between healthcare professionals that may impact the ability to effectively respond to situations like this?

Examples: Limited time; lack of compensation structure for additional work; traditional “silos” of care may limit communication or trust; deficiencies in IT infrastructure may limit sharing of medical information; lack of training for managing outbreak scenarios individually or as a team

T3 PART 1 (INTERPROFESSIONAL)

T3 Facilitator Note

As part of each group’s T3 discussion, each unified response team will develop a 2-minute presentation about how they should best communicate their findings and recommendations with the public and healthcare personnel in the community. **Facilitators should instruct students to develop these presentations during T3.** Presentations will be delivered during the Debriefing time at the end of this period.

T3 Part 1 Case Details

September 14

Local school districts have decided to close given the lack of a vaccine and current no-show rate of students. Local, state, and national media are contacting public health and hospitals about the outbreak, and different information is being released by the different hospitals and public health, including false information.

Local hospitals are reporting extremely limited availability of hospital beds.

September 15

The CDC has finished analyzing the strain of influenza that has been affecting the public. According to their findings, this strain has been identified as HPAI, and there is not a vaccine that matches the genetics of this current strain of virus. The CDC has recommended that Tamiflu® be utilized for prophylaxis in all healthcare workers and individuals who have had close contact with patients.

September 18

A large volume of influenza cases has been identified in regions bordering the Miami Valley area, including Cincinnati and Columbus. In addition, there have been reports of small pockets of cases in 10 other states. The governor of Ohio has now declared a state of emergency. Healthcare organizations are reporting that a large number of employees are not coming to work.

Since September 13, there have been 581 new patients hospitalized and 22 new deaths from this disease.

September 19

Due to the timing of this outbreak, community pharmacies are not stocking Tamiflu® in sufficient quantities to address this crisis. As a result, the only Tamiflu® that is available comes directly from the Strategic National Stockpile.

Some morgues are reporting that they have no more capacity.

September 22

Rates of hospitalization related to influenza cases are significantly increasing, and local hospitals are scrambling to find room for patients. In many cases, they are being forced to turn patients away or to redirect them to outlying institutions.

Discuss your team's response to this situation as indicated below:

Question 1: What strategies could be implemented to improve work attendance? With the widespread closure of school districts, how could the inability of some parents/guardians to stay home from work to watch affect their children/youth?

Employers will need to assess the ability of their employees to work remotely or in a flexible way to accommodate the needs of employees with young children. This type of flexibility would encourage “attendance” and demonstrate an employer’s concern for the families and their profit margins.

Some childcare providers may be able to continue operations and may be able to accommodate school-age children for those individuals whose work requires onsite attendance.

Parents who are unable to work remotely will be challenged with the financial burden of childcare and/or the logistics of coordinating care with family members or others. This could place additional mental or emotional strain on the family. Children/youth will notice and may react to a parent’s stress in addition to their own fear and stress that they are feeling because of the situation.

Question 2: How should Tamiflu® be allocated if a shortage is experienced? Who should receive it as a priority? What are your other treatment options?

At minimum, the team should consider distribution based on their assessment of population risks. For example, healthcare providers and other frontline personnel should receive treatment first. Those who are of elderly status or who have significant chronic illnesses (e.g., COPD) would also be high priority recipients. Patients who are less likely to benefit as much from oseltamivir (Tamiflu®) should not be considered high priority recipients.

The following therapeutic alternatives are available for influenza management:

Zanamivir (Relenza®)	Oral inhalation powder approved for treating acute uncomplicated illness due to influenza A and B virus in adults and pediatric patients aged 7 years of age and older. Approved for prophylactic use in patients ages 5 and older.
Peramivir (Rapivab®)	Injectable antiviral drug approved for the treatment of acute uncomplicated influenza in patients 2 years of age and older. NOT approved for prophylactic use.
Baloxavir marboxil (Xofluza®)	Oral tablet approved for treating acute uncomplicated illness due to influenza A and B virus in patients ages 12 and older who are otherwise healthy or at risk of developing significant complications from influenza. Useful in treating more resistant strains of the flu. Approved for prophylactic use in patients ages 12 and older. <u>Expensive</u>

The choice of therapeutic alternatives should be based on product availability, cost efficacy, perceived use (e.g., prophylaxis vs. treatment), minimization of toxicities, and ease of use (e.g., an injectable is likely hard to use on a mass scale).

Question 3: How will outbreak information be communicated to the public so that information is clear and consistent?

Transparency is critical to developing trust. Do not give information that is speculative. Do not talk down to the audience. Be careful to clearly contextualize individual risk. Set realistic expectations. Be careful using medical jargon, or if it is required, spend time carefully explaining in both verbal and visual forms.

Effective Messaging During Outbreak Responses (from *The CDC Field Epidemiology Manual*, pgs. 250-252)

- Start with empathy, but don't over-reassure
- Identify and explain the public health threat
- Explain what is currently known and unknown; acknowledge uncertainty
- Explain what public health actions are being taken and why
- Emphasize a commitment to the situation
- Tell the audience what they can do

Question 4: What should be communicated to patients who are “worried well” and scheduling appointments?

One area that causes anxiety is isolation from others. Encourage patients to find new ways to connect with family and friends. Also, try to stay consistent with routines as they were when things seemed normal such as exercise programs (even if by video), walks outside, sleep and eating patterns, etc. Try to focus on what you can control vs. what you cannot. Also, try to practice self-compassion and be kind to yourself especially when related to things not in your control. Limit media exposure that focuses on problems or distressing topics. Try to accept that some anxiety is normal as it can keep us alert to changing situations.

Question 5: Given your knowledge of how anxiety and panic is influenced by uncertainty, how would you encourage communication with parents, children, and the community at this time?

Uncertainty is related to not knowing which can create anxiety... especially with people who view events through a pessimistic lens. It is therefore important to be factual and frequent with information along with strategies to stay healthy. Persons experiencing anxiety also want to be heard (not necessarily agreed with) so make sure to be empathic and reflect back what you hear them saying. Encourage communication by providing contact information such as accurate websites and organizations that are accessible and reliable for wellness tips.

Question 6: Since there is no effective vaccine for this strain of HPAI, are there other preventive care options for your patients?

According to the Centers for Disease Control and Prevention, common behaviors can help prevent or slow the spread of infectious respiratory diseases, such as influenza (<https://www.cdc.gov/flu/prevent/prevention.htm>). These include:

- Avoid close contact with individuals who are sick and avoid contact with others if you are sick
- Cover your mouth and nose with a tissue when you cough or sneeze, then throw the tissue in the trash after use
- Wash hands frequently and thoroughly with soap and water, or use hand sanitizer if soap and water are not available
- Avoid touching eyes, nose and mouth
- Clean and disinfect surfaces that may be contaminated with germs
- Stay at home for at least 24 hours after fever has subsided, except to receive medical care

Question 7: You recognize that pneumonia is a common complication that occurs for many patients who have had the flu. What would be the role of antibiotics in managing patients with bacterial pneumonia secondary to influenza?

Antibiotic use should be minimized to conserve antibiotics where possible, as national and even international drug shortages are not uncommon in the midst of an outbreak. In addition, use should be limited to prevent the spread of resistant organisms and minimize the complications of treatment.

A newly diagnosed patient with influenza is **NOT** likely to be co-infected with a bacterial organism when they present (i.e., they are **NOT** likely to have primary bacterial pneumonia). While still rare, secondary bacterial pneumonia can occur following the resolution of influenza. Given the severity of infection that is seen in these cases, antibiotics are often necessary. In general, antibiotics used during a flu outbreak should be prioritized for patients who are re-hospitalized following a recent influenza diagnosis **OR** in patients who present with a new case of influenza and atypical symptomatology. For patients with life-threatening influenza, it is also reasonable to start antibiotics on hospital admission and then remove them once bacterial infection can be ruled out via a thorough workup and diagnostic testing. In any of these cases, special attention should be paid to minimizing the unnecessary use of broad spectrum antibiotics, as they are unnecessary for the majority of patients (e.g., a patient admitted from a community setting with no prior history of hospitalization or IV antibiotic use should **NOT** receive antibiotics that cover most multidrug resistant organisms). Instead, antibiotic regimens for pneumonia in the setting of influenza should follow [national guidelines](#).

Question 8: What considerations would the team have regarding patient triage given the limitations of personnel and resources at this time?

The team should also advise hospitals to be prepared to erect medical shelters on hospital grounds if the outbreak continues to worsen. These shelters could be used to provide preliminary screening and triage of patients before they filter in through the emergency department. Where possible, patients should be funneled to community pharmacies to help triage cases via testing and symptomatic management. Hospitals may also wish to consider limiting the number of guests that are allowed throughout the facility. As things worsen, hospitals may also be instructed to consider cancelling elective procedures.

T3 PART 2 (INTERPROFESSIONAL)

T3 Part 2 Case Details

September 23

[VIDEO] *Breaking News: Two Miami Valley Hospital nurses who were infected with HPAI have died. One was admitted to the hospital three days ago, the other was admitted yesterday. The nurses worked on different inpatient floors and both were exposed to patients who were hospitalized with HPAI.*

FACILITATOR NOTE: At this time, students will be notified that several team members have been exposed to the virus. These students are now considered “dead” or otherwise incapacitated and may no longer speak as part of the group discussion. They will be able to participate again during the debrief period.

September 24

Recent reports from local hospitals within the region indicate that healthcare workers are refusing to show up to work, fearful of the recent deaths reported in the news as well as the reported rise of healthcare workers affected by influenza. Current rates of employee absenteeism range from 10 – 15%. Current projections estimate that this number may increase to as much as 20% by the end of the month.

Since September 18, locally there have been 804 new patients hospitalized and 47 deaths from this influenza outbreak. The Ohio Department of Health reports that in the Dayton/Cincinnati/Columbus region, 5329 people have been hospitalized and there have been 206 deaths.

Discuss your team’s response to this situation as indicated below:

Question 1: What support might the coalition offer to local healthcare institutions given the rising rates of employee absenteeism?

The team should provide an educational toolkit that will help employers to better inform their employees about who might be considered a high vs. low risk populations. In addition, the team should encourage institutions to allow for remote work opportunities where available. Moreover, the team should offer resources that help to educate employees about how they might help to create a culture of outbreak safety at their institution.

Question 2: With decreased staffing across many service organizations, what additional concerns will arise within disadvantaged and vulnerable families and households? What strategies can be used to address these service gaps?

Issues of decreased staffing will especially affect service organizations that specifically prioritize disadvantaged and vulnerable families and households because these entities are often already under-resourced and under-staffed to begin with. Fewer community members may have the opportunity to access the critical benefits that these service organizations provide, increasing their vulnerability to the impact of the outbreak emergency. Available emergency funds should be allocated to support struggling service organizations and protective/mitigative measures should be directed towards these entities as priority groups.

T3 PART 3 (INTERPROFESSIONAL)

T3 Part 3 Case Details

September 28

The FDA has reported growing concerns around the supply chain of antimicrobials. Several healthcare institutions have shared that they are experiencing increasing difficulty with receiving their allocations of antimicrobials as more and more agents are being hoarded or purchased by the so-called “gray market” for resale.

September 29

More cases of HPAI have been reported throughout the United States. In total, 23 states have now been affected. Tamiflu® has now been placed on national shortage, and SNS supplies are rapidly depleting. In the Miami Valley Region, there is almost no Tamiflu® available, and reallocation of additional Tamiflu® from other regions due to the outbreak progression is unlikely. In consultation with the CDC and the Surgeon General, the president of the United States has declared a national emergency.

September 30

News agencies are now reporting several deaths linked to the consumption of large amounts of antimicrobials that are normally utilized in pets. Public health authorities are tying these cases to a recent string of viral social media posts that have been circulating online.

October 1

Since this influenza outbreak began 1 month ago, there have been 75 deaths locally. In the state of Ohio, there have been 601 deaths and 17,397 hospitalizations. At the national level, 80,000 people have been hospitalized and 3468 have died.

Discuss your team's response to this situation as indicated below:

Question 1: With the lack of availability of Tamiflu® or an effective vaccine, there has been a rise in panic within the region. What strategies should your unified response team consider to mitigate public distress? What strategies should the team employ to protect healthcare assets and personnel?

The team should work with the local public health department to provide education to the public about who might benefit the most from Tamiflu or alternatives vs. who might benefit more from symptom management (e.g., acetaminophen, diphenhydramine, etc.).

Communication and education about behaviors that prevent the spread of infection should continue, as well as information about symptoms that indicate an increase in severity of disease that would warrant seeking healthcare services. When individuals are faced with uncertainty and distress, informing them about things they can do to address or reduce the situation is helpful.

Communication about how priorities for antiviral medications and ultimately vaccines are/were determined should be clear and consistent. The rationale for prioritization should include evidence of the risk of severe disease. Protecting healthcare assets means that healthcare providers and frontline personnel should be prioritized for treatment.

Question 2: How would the team determine who should receive Tamiflu® given the national shortage of this product? What alternative therapeutic options might be considered for prophylaxis and treatment of patients with HPAI?

At minimum, the team should consider distribution based on their assessment of population risks. For example, healthcare providers and other frontline personnel should receive treatment first. Those who are of elderly status or who have significant chronic illnesses (e.g., COPD) would also be high priority recipients. Patients who are less likely to benefit as much from oseltamivir (Tamiflu®) should not be considered high priority recipients.

The following therapeutic alternatives are available for influenza management:

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T3 DEBRIEF -- FACILITATORS: IMPORTANT POINTS TO DISCUSS WITH STUDENTS

Note: Student responses to the following questions will vary widely so examples, rather than desired responses, are below.

Question 1: If there have been this many hospitalizations and deaths at this point in the year, prior to the traditional influenza season, how should this inform your approach to the upcoming flu season?

Examples: There may be concerns about, and need for planning for surge capacity at hospitals. There may need to be more communication about the need for vaccinations for the seasonal influenza strains. There may be concerns about the lack of supply of antiviral medications. Effort should be made by health systems to secure any needed PPE, medications, and disinfectants in anticipation of a surge.

Question 2: What were the biggest interprofessional challenges to addressing this situation?

Examples: Lack of understanding or respect of different professional roles, lack of a clear leader, unprepared or disengaged team members

Question 3: Which social determinant of health created the greatest challenge for your team as you planned an equitable response? Why?

Examples: Poverty, age, education, immigration/refugee status, race, ethnicity, culture

Question 4: What techniques could be used to overcome communication barriers? How might this differ for communicating with healthcare professionals versus the public?

Example: My group focused on the importance of developing trusted relationships, both with providers and with patients and among professionals. Particularly in a crisis where there may be multiple and conflicting messages, people will turn to the person who has walked alongside them through other trials, be it a physician, nurse, pharmacist, mental health, or public health professional. In addition, people tend to trust people who are like them in some way, and some Black/African Americans for example, respond best to information from a Black/African American provider. A barrier to interprofessional communication may be arrogance, a tendency to narrow in on an approach based on experience, education, or age, without appreciating that the experiences of others may be different, but complementary in reaching good solutions to novel situations. It is important to approach people with humility and focus on common goals.

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