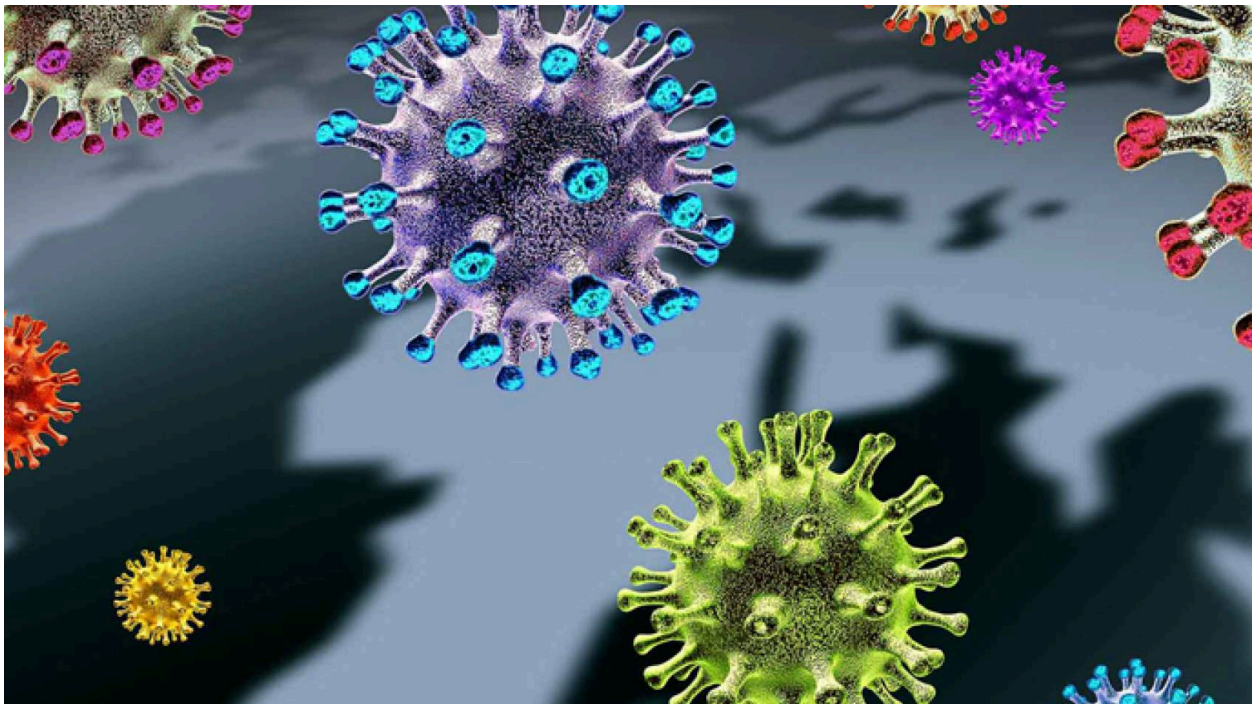
Utah Department of Health & Human Services

Pandemic respiratory disease response annex

2025



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Acknowledgements

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Acronym guide

ASPR	Administration for Strategic Preparedness and Response
OPR	Office of Preparedness and Response
OCD	Office of Communicable Diseases
CDC	Centers for Disease Control and Prevention
COOP	Continuity of operations plan
DPH	Division of Population Health
DEM	Division of Emergency Management
DOC	Department operations center
DOD	Department of Defense
DREAM	Disease Response, Evaluation, Analysis, and Monitoring
EIMS	Emergency Immunization Management System
EMS	Emergency medical services
EOC	Emergency operations center
EOP	Emergency operations plan
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
IAP	Incident action plan
ICS	Incident command system
IDER	Infectious disease emergency response
LHD	Local health department
MCM	Medical countermeasures
NIMS	National Incident Management System
NREVSS	National Respiratory and Enteric Virus Surveillance System
PAE	Public Affairs and Education
PPE	Personal protective equipment
RAT	Respiratory aerosol transmissible
SERT	State emergency response team
SME	Subject matter expert
SNS	Strategic national stockpile
DHHS	Utah Department of Health and Human Services
UPHL	Utah Public Health Laboratory
USIIS	Utah Statewide Immunization Information System
USVAC	Utah Scientific Vaccine Advisory Committee
VACMAN	Vaccine Management System
VTRAKS	Vaccine Tracking System

I. Pandemic respiratory disease overview

A pandemic can occur when a novel respiratory virus is easily able to infect people and spread from person to person in an efficient and sustained way. Pandemics can cause significant illness and death, overwhelm health infrastructure, and disrupt economic and community function. The emergence and subsequent spread of SARS-CoV-2 beginning in 2019 illustrated the ability of novel respiratory viruses to cause pandemics. Novel viruses pose additional challenges to public health, but many of the precautions to prevent the spread of any respiratory virus can be followed both on an individual and organizational level to minimize transmission. The two viruses we know of that pose the greatest threat are influenza and coronavirus.

Historically, influenza viruses have been responsible for various respiratory disease pandemics. Seasonal influenza viruses undergo gradual, continuous genetic changes, known as antigenic drift. These small genetic changes can accumulate over time and result in viruses that are antigenically different. When this happens, the body's immune system may not recognize those viruses. Immunity to influenza strains will vary depending on the specific virus, but most people should be considered susceptible for viruses with significant antigenic changes. Novel influenza viruses emerge when there is a major change in the influenza A viruses, resulting in new hemagglutinin (H) and/or new hemagglutinin and (N) neuraminidase proteins in influenza viruses that infect humans, known as antigenic shift. Influenza viruses are also able to infect and crossover among a wide host of warm-blooded animals. Of note, highly pathogenic avian influenza (HPAI) is a type of influenza A that commonly infects birds. Illness due to HPAI in humans has ranged in symptoms and severity, and human-to-human transmission has so far been rare. However, the risk of zoonosis from HPAI exists, which could result in a novel influenza virus outbreak among humans. The most recent circulating HPAI strain is H5N1, which has caused outbreaks among poultry, cattle, and sporadically among other wild mammals since January 2022.

Typical influenza manifestation			
Incubation	**Exposure**	**Etiology**	**Case exclusion**
1–4 days, typically 2 days	Droplet or aerosols	Viral	Voluntary

A more recent respiratory disease pandemic was caused by SARS-CoV-2, which was first identified in December 2019 in Wuhan, Hubei Province, China. In the years following, a series of variants have emerged, resulting in waning immunity over time even following vaccination, prior infection, or both. Viral mutations that evade population immunity have contributed to surges in COVID-19 illness and death in following years. Previous novel coronaviruses (MERS and SARS) have emerged prior to COVID-19. While none of the others had the same impact, they were severe and posed a localized threat. These repeated emergencies highlight the threat that coronaviruses can pose in the future.

Typical COVID-19 manifestation			
Incubation	**Exposure**	**Etiology**	**Case exclusion**
2–14 days, varies with dominant variant	Droplet or aerosols	Viral	Voluntary

To mitigate the worst outcomes of a pandemic, public health agencies, with local legislative approval, may determine which key interventions outlined below may be useful when a novel respiratory virus with pandemic potential is identified.

DHHS is the lead agency for coordination of any state-level health or medical emergency response. Under the Communicable Disease Control Act (Utah Code 26-6), DHHS has the authority to investigate and control the causes of epidemic infections and communicable disease within the state. In coordination with local health departments (LHDs), DHHS shall provide for the statewide detection, reporting, prevention, and control of communicable diseases, epidemic infections, or any other health hazard which may affect public health.

Public health interventions

The information in the graph below serves as a baseline for public health response, but should be adapted as new information from the pandemic strain emerges.

Active cases	Exposed contacts	Medical countermeasures	Non-pharmaceutical interventions
• Isolation for 7 days from onset of symptoms or 24 hours after fever subsides, whichever is longer (COVID-19 pandemic recommendations; may differ from pandemic to pandemic)	• Monitor symptoms • 10-day voluntary quarantine from exposure (COVID-19 pandemic recommendations—may differ from pandemic to pandemic)	• Vaccine • Antivirals • Monoclonal antibodies	• General hygiene messaging • Canceling mass gatherings and events • Promoting social distancing in the workplace • Dismissing students from school

This plan serves as an annex to the Utah Department of Health and Human Services (DHHS) Infectious Disease Emergency Response Plan (IDER Plan) to specifically address a pandemic respiratory viral disease. This plan highlights activities unique to pandemic respiratory viruses, such as influenza and COVID-19, and should be used in conjunction with the core IDER Plan, DHHS Emergency Operations Plan (EOP), Utah Zoonotic Influenza Interagency Response Plan, and other DHHS planning documents (Appendix A). While this document focuses on information gleaned from the COVID-19 pandemic and novel influenza activity, the response principles outlined in this plan apply to other respiratory transmissible pathogens that can cause significant illness and death, such as pneumonic plague, Middle East respiratory syndromes (MERS), severe acute respiratory syndrome (SARS), SARS-CoV-2 (COVID-19), highly pathogenic avian influenza (HPAI), and smallpox (Variola).

A. Leadership

Leadership for identified pandemic respiratory disease response will be provided by the IDER Command Section, pursuant to the Incident Command System (ICS) activation process.

B. Participating agencies

Pandemic response will require partners to work collaboratively. The core ICS structure outlined in the IDER plan consists of an incident manager and command staff as well as general staff made up of 4 sections: Finance, Logistics, Operations, and Planning. During this complex disease response, partners with key functional responsibilities include:

Utah Department of Health and Human Services

- Executive Director's Office
    - DHHS Office of AI/AN Health Affairs
    - Office of Public Affairs and Education
- Division of Population Health
    - Office of Communicable Diseases
    - Office of Preparedness and Response
    - Utah Public Health Laboratory
- Executive Medical Director
    - Office of the Medical Examiner

Partner agencies

- Utah Division of Emergency Management
- Utah Hospital Association
- Office of the Governor
- Healthcare systems
- American Red Cross
- Regional healthcare coalitions
- Federal agencies (CDC, FEMA, ASPR, DOD)
- Utah Department of Agriculture and Food (UDAF)
- Division of Wildlife Resources (DWR)
- Utah Veterinary Diagnostic Laboratory (UVDL)

Local public health jurisdictions

- Bear River Health Department
- Central Utah Public Health Department
- Davis County Health Department
- San Juan Public Health Department
- Salt Lake County Health Department
- Southeast Utah Health Department
- Southwest Utah Public Health Department
- Summit County Public Health Department
- Tooele County Health Department
- TriCounty Health Department
- Utah County Health Department
- Wasatch County Health Department
- Weber-Morgan Health Department

C. Planning assumptions

In the absence of known fact, planning assumptions represent information presumed to be true and are necessary in order to facilitate planning. Assumptions are a baseline set for planning purposes and do not take the place of specific activities or decision points that would occur during an incident. DHHS assumptions include:

Non-pharmaceutical interventions (NPI)

- A pandemic or outbreak can have varying severity, ranging from moderate to severe. NPIs should be proportionate to the projected severity of the pandemic or outbreak.
- Consistent implementation of NPIs across Utah will increase public understanding and promote adherence to the recommendations.
    - NPIs will not be able to stop the spread of the novel respiratory virus and other infectious agents, but may be able to slow transmission.
- Large scale interventions will require the participation of many public health resources as well as coordination across state and local level agencies.
- Effective communication plans will be essential to achieve compliance with these disease control strategies.
- NPIs can potentially raise many challenges (e.g., social, legal, financial, logistical, etc.) that should be considered and addressed.
- Regional planning should consider whether detection in a community of a neighboring state that is close to or has substantial interaction with a Utah community should prompt either earlier implementation in the Utah region nearest to that community (e.g., Grand Junction, Colorado; Las Vegas, Nevada; Evanston, Wyoming) or possibly earlier statewide Utah implementation.
- Policies and procedures to assure the care of protected health information shall apply when planning and implementing NPIs.

Medical countermeasures

- Vaccine(s) specific to the pandemic strain will likely be unavailable or in limited supply early in a response

II. Pandemic respiratory disease activation and notification

A. Plan activation

Activation of the pandemic respiratory plan annex follows the IDER plan activation process. Level and scope of the response is determined by DHHS leadership considering potential pandemic severity and level of community concern. Initial activation should be considered at World Health Organization (WHO) phase 4: increased human-to-human transmission. Activation of additional units will be considered at Utah pandemic response level A: widespread transmission in humans outside North America (Appendix B).

The identification and response to a novel respiratory virus or strain with pandemic potential may require activation of the state emergency operations center (EOC) to facilitate coordination between DHHS, and other response organizations like public safety and the National Guard. This structure would follow National Incident Management System (NIMS) and Division of Emergency Management (DEM) protocols, with DHHS designated as the state's lead Emergency Support Function (ESF) 8 agency. DHHS roles and responsibilities are defined in the DHHS EOP and the state EOP ESF-8 Annex.

B. Scale and scope of the response

The scale and scope of a response will depend on characteristics of the disease. Key factors that may increase the scale and scope of the response include:

- How long a person is infectious before symptoms begin
- A high basic reproduction number (mean number of secondary cases caused by a typical case)
- Minimal or no existing immunity in the population either due to lack of previous infection or vaccination
- Minimal or no availability of effective vaccine, post-exposure prophylaxis (PEP), and/or treatment
- Minimal or no availability of appropriate personal protective equipment (PPE)
- Significant illness and/or death
- Minimal or no availability of regional or federal mutual aid
- Burden on healthcare systems
- Level of concern in the community

The Centers for Disease Control and Prevention (CDC) provides risk and epidemiologic assessments of zoonotic and emerging viruses using the Influenza Risk Assessment Tool (IRAT). Appraisal for current and ongoing pandemic threats are located on CDC's website. Complete epidemiologic information and virus characteristics may not be available for novel strains of influenza.

C. Notification and activation

DHHS staff and partner organization notification

Upon IDER plan and this annex activation, the following DHHS staff and partners should be notified by the Incident manager.

- Executive Director's Office (EDO)
- Office of Public Affairs and Education (PAE)
- DHHS legal council
- Office of American Indian/Alaska Native Health and Family Services
- Division of Population Health (DPH)
    - State epidemiologist
    - Informatics program
    - Surveillance program
    - OCD
    - Office of Preparedness and Response (OPR)
    - Utah Public Health Laboratory
- Office of the Medical Examiner
- Office of Substance Use and Mental Health
- Utah local health departments
    - Health officers, local epidemiology contacts, and emergency response coordinators
    - Regional healthcare coalitions
- Utah Department of Public Safety (DPS)
    - Division of Emergency Management (DEM)
    - Bureau of Emergency Medical Services (BEMS)
- Utah Hospital Association
- Utah Healthcare Association
- Association for Utah Community Health
- Utah Association for Home Care
- Utah Hospice and Palliative Care Organization
- Utah Medical Association
- Utah Association for Local Health Departments (UALHD)

IDER command section notification and activation

Upon IDER plan and pandemic respiratory disease annex activation, the following command sections should be notified or activated. The table below specifies notification and activation timing for IDER command sections:

Table 1. Command section notification and activation

Job title	Notification	Activation
Command staff		
Incident manager	Immediately	Immediately
Medical officer	Immediately	Immediately
Public information officer	Immediately	Immediately
American Indian/Alaskan Native health liaison	Immediately	Consider at Utah level A
SERT liaison	Immediately	Consider when scale and scope of response will involve multiple state agencies
Local health dept. liaison	Immediately	Consider at Utah level A (appendix B)
Finance section	Immediately	Immediately
Logistics section	Immediately	Immediately
Resource monitoring	Consider at Utah level A	Consider at Utah level A
Employee support	Consider at Utah level A	Consider at Utah level A
Medical countermeasures (MCM) unit	Immediately	Activate when SNS/MCM resources like antivirals, respirators, and PPE are needed for pandemic response.
Planning section	**Immediately**	**Immediately**
Operations section	**Immediately**	**Immediately**
Healthcare operations branch	Immediately	Consider at Utah level A
Lab operations branch	Immediately	Immediately
Epidemiology operations branch	Immediately	Immediately
Investigation, monitoring, contact tracing group	Immediately	Immediately
Informatics group	Immediately	Immediately
Surveillance group	Immediately	Immediately
Immunization operations branch	Immediately	Immediately

III. Pandemic respiratory disease response implementation

In the case of a pandemic respiratory disease response, the DHHS EOP and IDER plan will be used for response with the following specifications.

A. Command staff

Public information officer

Transparent and effective public communications is crucial during all stages of activation. PAE will implement the DHHS all hazards and public communications plan and coordinate with the information management liaison in OCD to develop appropriate messaging. The assigned PIO will coordinate with OCD to determine if and when to activate the public health hotline.

The PIO, along with the OCD information management liaison, will determine a plan for regular updates to the media, including actions the public should take to prepare and to protect themselves, and informing them about planned community mitigation measures, changes in healthcare access, access to antiviral medications and vaccines, availability of support services, any travel advisories or restrictions, and other information as needed. Messages may include, but are not limited to:

- Situational awareness
- Personal preparedness
- Communications with providers
- Disease-specific information (factsheets, talking points, website, etc.)
- Mass prophylaxis (if applicable)
- Non-pharmacologic interventions (NPIs)
- General hygiene messaging
- Public guidance on prevention and when to seek healthcare
- Isolation and quarantine guidance
- Public health information hotlines (Poison Control, Health Resource Center, 411)

DHHS PIO will collaborate with the Office of Health Equity (OHE) to determine at-risk populations and tailor specific messaging for those groups.

State emergency response team (SERT) liaison

DHHS representation will be provided to state emergency management through the state EOC Emergency Support Function 8 (ESF-8) position. This position will be responsible for information sharing and requesting support from the state EOC. DHHS data and situational awareness information will be in high demand. The SERT liaison will coordinate with the operations section and DHHS PIO to communicate situational awareness to response partners like state DEM, federal HHS/ASPR Operations Center, and HHS regional emergency coordinators through the state EOC.

Informatics unit

Oversees the systems, applications, and databases that receive, standardize, process, manage, store, and make data available for analysis about the pandemic respiratory disease response used by the operations section to guide the selection of strategies used to contain the event.
Other duties include:

- Work with healthcare systems to electronically submit hospitalized cases and laboratory testing data.
- Create new EpiTrax forms in collaboration with investigation, active monitoring, and surveillance units.

B. Finance section

A pandemic respiratory disease response will likely last for months to years and be highly resource intensive. In addition to more general emergency funding outlined in the DHHS EOP, the incident manager should consider the following pandemic-specific funding sources:

- CDC Epidemiology and Laboratory Capacity (ELC) grant section E: Cross-Cutting Emerging Issues
- CDC Public Health Crisis Response Funding
- Resources that may be available through a state of Utah Emergency Declaration such as FEMA public assistance.

C. Logistics section

Resource monitoring

Pandemic respiratory diseases require rapidly assessing and augmenting response supplies. Adequate supplies for DHHS response may include:

- Personal protective equipment (PPE) for staff (masks, gloves, gowns, face shields, powered air purifying respirator (PAPRS)
- Laboratory testing supplies
- Medical countermeasures (vaccine, antivirals, and other materiels)
- Infection control supplies (soap, hand sanitizer, disinfectants)

Medical countermeasures (MCM) for staff

In the early stages of a response to a respiratory disease pandemic, stockpiled vaccines, antivirals like oseltamivir (Tamiflu), and adjuvants for similar strains of the pandemic virus, may be used as early vaccination efforts among people who are at increased risk of infection. This is helpful to protect individuals until a vaccine well-matched to the pandemic strain can be obtained. Those who may qualify for early vaccination (Appendix C) include the following:

- Individuals who play a critical role in the response
- Individuals who are critical to maintaining essential societal functions

Additionally, appropriate stockpiled antiviral medications (such as oseltamivir for influenza strains) may be given to responders who have been exposed to the pandemic strain.

MCM unit

The Administration for Strategic Preparedness and Response (ASPR) maintains the Strategic National Stockpile (SNS), which contains resources for pandemic response such as PPE, respirators, and antivirals. In accordance with the Utah SNS/MCM Plan, the SNS/MCM unit is responsible for planning, ordering, managing, and distributing SNS materials to response partners and LHDs. The SNS/MCM Unit will inventory all incoming products/material and manage equipment needing to be returned to ASPR (e.g., ventilators) after the pandemic has subsided. In severe pandemics, these resources may be insufficient to cover all response needs during peak transmission and will need to be prioritized based on the current epidemiology and guidance.

Resources managed by this unit will include:

- Antivirals: a pharmacological option to treat patients who have viral respiratory infections.
    - Antivirals approved for treating influenza include:
        - Oseltamivir (oral), Zanamivir (inhaled), Peramivir (intravenous), and Baloxivir (oral).
    - Antivirals approved for treating COVID-19 include:
        - Paxlovid (oral), Lagevrio (oral), and Veklury (intravenous).
    - Antiviral approved for treating RSV includes:
        - Ribavirin (inhalation), Nirsevimab (intramuscular injection) and Palivizumab (injection).
    - Antivirals are most effective when given within 48 hours of symptom onset.
    - When given appropriately, antivirals can avert hospitalizations and reduce clinical severity.
    - The Food and Drug Administration (FDA) has the authority to make promising new antiviral drugs available or allow unapproved uses of approved medication during an emergency. If supply is sufficient, antivirals should be made as widely available as possible.
    - To manage and distribute antivirals, the SMS/MCM unit will:
        - Collaborate with the public health guidance unit to monitor antiviral availability information from CDC, clinicians/pharmacies, and the commercial supply chain.
        - Coordinate with the surveillance unit, public health guidance unit, and LHDs to estimate antiviral needs by local health jurisdictions.
        - Assess antiviral stockpiles at DHHS and LHDs including consideration of current FDA policies for extended use after expiration dates on labels.
        - Request the use of antivirals from SNS/MCM through the DHHS state epidemiologist.
        - If supplies are insufficient to meet community needs, antiviral allocations for specific patient groups may be prioritized. Prioritization decisions will be made by the DHHS Executive Director Advisory Committee described in the immunizations unit section. Antiviral distribution should be prioritized based on the current epidemiology, high-risk groups for severe illness, and response personnel needed for effective response and societal functioning.
        - Enact LHD distribution procedures outlined in the SNS/MCM plan.

- Other resources managed by SNS/MCM Unit are listed below with some key considerations for ordering, distribution, and prioritizations. Generally, all SNS/MCM procedures should follow the SNS/MCM plan.
    - Respirators
        - SNS/MCM will coordinate with LHDs and the healthcare liaison to order and distribute respirators from SNS, if available. In a severe pandemic, the available supply of respirators will be below response and treatment needs. Crisis Standards of Care principles should be implemented broadly to determine most efficient and ethical respirator use.
- PPE such as masks, gowns, face-shields, and respirators
    - Available in limited supply from SNS.
    - Use of PPE is dependent on setting and should follow public health guidance unit and CDC recommendations.
- Antibiotics
    - Used to treat secondary bacterial infections due to influenza-like pneumonia.
    - Should be distributed based on current epidemiology, high-risk groups, and need in healthcare settings.

D. Planning section

For planning section details reference the DHHS EOP and IDER plan.

E. Operations section

Operations section will be responsible for:

- Monitoring the situation and implementing federal and state guidance
- Epidemiologic monitoring and defining susceptible populations
- Managing laboratory testing and surge capacity
- Conducting epidemiologic surveillance and coordinating investigations
- Recommending the implementation of disease control measures to prevent transmission to the Utah legislature for approval
- Recommending appropriate infection control actions and protective guidelines
- Recommending mass prophylaxis, vaccination, or treatment dispensing as necessary
- Healthcare treatment coordination
- Fatality management coordination

Healthcare operations branch

The healthcare operations branch will coordinate healthcare responses through EMS, hospital systems, treatment centers, long term care facilities, MOCC, fatality management, and designated healthcare coalition (HCC) points of contact. The HCCs are sub-state regions that have been established to coordinate preparedness and response for health and medical sector partners within defined geographic areas in Utah. During a pandemic, the healthcare infrastructure will be stressed and a role of public health is to support clinical partner response activities. The healthcare liaison unit is responsible for:

Information sharing

- Coordinate with LHDs, HCCs, and healthcare systems to make sure updated DHHS or CDC guidance on clinical practice and workforce protective actions are shared with health and medical partners across the state.
- Provide real-time information to health and medical partners through coordinated information sharing systems, including the Utah Notification and Information System (UNIS).
- In collaboration with HCCs and LHDs, make sure that "just-in-time" or other training is implemented to increase the capability of the healthcare workforce to respond.

Situational awareness

- Coordinate with SERT liaison, PIO, and operations section to convey healthcare system utilization and burden information for situational awareness.

Support medical surge/decompression

- Conduct needs assessment of private sector health and medical facilities to determine equipment and supply needs, including personal protective equipment.
- Coordinate with LHDs and healthcare systems to distribute PPE and other supplies received through the Strategic National Stockpile (SNS).
- Support HCC coordination with internal and external supply chain and vendor-provided inventory.
- Support activation and provision of medical care for alternate care and/or community disease screening sites.
- Coordinate with LHDs to ensure access to medical countermeasures and/or vaccines for public health, medical, and first responder workforce.

Policy and strategy coordination

- Coordinate guidance for uniform screening and visitor policies to minimize transmission in healthcare settings in collaboration with the LHDs, HCCs, operations section, medical officer, and legislative approval. Guidance may be adapted from prevention strategies for seasonal influenza in healthcare settings depending on virus biology and updated CDC and public health guidance team recommendations.
- Coordinate with partner agencies, including the National Guard and American Red Cross, regarding deployment of assets, personnel, or other support offered to public health and medical systems.
- Coordinate with DPS EMS medical director to develop and distribute triage, screening, and EMS protocols.
- Coordinate activities with regard to mass fatality operations and response between the Office of the Medical Examiner, mortuary services providers, and healthcare systems.
- Support activation of processes for regulatory relief, including Utah's Crisis Standards of Care Plan and federal 1135 Waiver process.

The public health guidance unit will coordinate with the CDC, healthcare liaison, immunization unit, surveillance unit, UPHL, and MCM/SNS unit to provide diagnostic and treatment guidance to healthcare providers and the public. Reducing healthcare associated infection transmission of respiratory viruses is important to slow the spread of respiratory viruses and reduce the burden on healthcare systems. The public health guidance unit, along with the healthcare liaison, HAI team, SERT liaison, and SNS/MCM unit, will aim to reduce healthcare-associated infections by assessing and developing guidance on healthcare transmission reduction measures. Resources to develop guidance include occupational safety and health administration pandemic influenza guidance or CDC seasonal influenza guidance.

Laboratory operations branch

Utah Public Health Laboratory (UPHL) will coordinate laboratory operations with other staff in the operations section. Responsibilities include:

- Perform testing on submitted specimens and transmit results to CDC to enhance the ability to rapidly respond to outbreaks of novel respiratory pathogens or other public health emergencies related to respiratory virus circulation.
- Perform the appropriate Nucleic Acid Amplification Test (NAAT) on respiratory viruses using FDA-approved methods or under Emergency Use Authorization (EUA)

and make sure all positive specimens are subtyped and/or genomically characterized. Novel respiratory pathogen testing could also involve antibody or antigen testing methods, referring to CDC guidelines.

- Transmit respiratory virus NAAT results to CDC within 24 hours of test completion.
- Coordinate with the logistics and finance sections to fund temporary staffing and extra equipment and supplies as needed.
- Monitor CDC guidance on most current testing protocols.
- Ensure rapid receipt of specimens for clinical rule-out.
- Implement new tests or augment testing capabilities per CDC guidance.
- Coordinate with the epidemiology operations unit to arrange specimen submission from providers and laboratories.
- Manage surge capacity. If testing demand is above available testing resources, consider:
    - Coordination with the logistics section to procure testing supplies, high throughput instrumentation, and additional personnel.
    - Bolster specimen receiving capacity by diverting technicians assigned to other testing areas to infectious diseases.
    - Assign all available NAAT instrumentation to testing of the novel respiratory virus.
    - Coordinate with the current UPHL courier to arrange pick-up and STAT delivery of critical specimens within 24 hours.
    - Coordinate with clinical labs across the state.
- If necessary, augment local testing sites through statewide testing sites.

Epidemiology operations branch

Investigation group

Early in a pandemic respiratory disease response, epidemiology operations will focus on risk assessment, disease monitoring, and case investigations. Investigation unit will be responsible for:

- Monitoring CDC investigation recommendations.
- Generating case definitions, or adopting and distributing CDC-generated case definitions statewide.
- Operationalize investigation protocols to collect laboratory confirmation, clinical characteristics, pathogen characteristics, and information about source, duration, and location of exposure as described in the Novel influenza disease plan.
- Providing antiviral prophylaxis guidance to exposed high-risk persons.

- Updating investigation protocols in consultation with the CDC and local public health investigators if the pandemic spreads widely, or as new information becomes available.
- Developing recommendations for situations requiring isolation and quarantine.
    - Isolation: Early in a suspected pandemic respiratory disease situation, it is important to identify and isolate cases as soon as possible. This unit will work with the LHD liaison to make sure local jurisdictions are prepared to implement isolation precautions.

Public health guidance unit

The public health guidance unit is responsible for assessing and coordinating with LHDs to recommend non-pharmaceutical interventions (NPIs) in conjunction with CDC guidance. The public health guidance unit should base NPIs on current CDC recommendations, Utah disease transmission information, and follow the DHHS NPI plan and the Community mitigation guidelines to prevent pandemic influenza. NPIs for pandemic respiratory viruses are generally most effective if implemented early, broadly (multiple or all NPIs implemented at once), and for a sufficient duration. DHHS and LHDs need legislative authority to implement NPIs statewide and in their jurisdiction respectively, pursuant to the Utah Health Code and Communicable Disease Rule. Normal operating procedure in Utah is for the LHDs to be the lead agency in determining and enforcing these interventions in coordination with DHHS and the legislature.

Surveillance group

The surveillance group is responsible for monitoring surveillance feeds and identifying at-risk communities and geographic areas. The unit will provide surveillance reports to the incident manager and the operations, planning, and logistics section chiefs so resources can be allocated according to impact and generate and update epidemic curves. Specific pandemic duties could include:

- Implement enhanced novel respiratory infection case ascertainment and death reporting. The Communicable Disease Rule mandates immediate reporting of novel influenza disease and other novel respiratory diseases that may be new, rare, or unusual to Utah.
- Generate and validate syndromic surveillance queries for monitoring respiratory illness.
- Monitor laboratory reports, UPHL, and National Respiratory and Enteric Virus Surveillance System (NREVSS) data to assess proportion of cases due to pandemic strain and other co-circulating respiratory disease strains.

- Perform geographical analysis to assess spread of the pandemic and jurisdictional level pandemic risk.
- Coordinate with UPHL and CDC to assess antiviral susceptibility (if available).
- Report and communicate hospitalized case(s), respiratory like illness, school absenteeism, mortality, and laboratory data to public health partners.
- Wastewater surveillance.
- Immunization data.
- Influenza specific:
    - Enroll new providers into ILInet to have the most comprehensive view of influenza activity possible. Special focus should be on providers in rural and underserved communities.
    - Establish standard ILI definition using CDC guidance and current season influenza reporting.
    - Assess at-risk populations from hospitalized cases, ILI, and morbidity data.
    - Monitor influenza among school-age children using hospitalized, ILI, and absenteeism data.
    - Leverage FluSurv-Net hospitalized case data to assess high-risk groups and clinical needs for severe influenza.

Active monitoring group

Active monitoring for every case will be important at the early stages of a pandemic response when cases are first identified to try to limit the spread of a novel respiratory virus detected in Utah. The active monitoring group will consult with the investigation group, medical officer, and CDC guidance to establish appropriateness and scope of active monitoring. If active monitoring is deemed necessary, the active monitoring unit will coordinate with LHDs to implement a standard active monitoring protocol. Active monitoring guidance can be found in the novel influenza disease plan. In a large-scale pandemic, active monitoring will become less feasible and effective as more people become ill. At this point, efforts should transition to MCMs and NPIs.

In the event that a person under active or passive monitoring fails to cooperate with the LHDs for daily check-ins, necessary medical evaluations, or voluntary restrictions issued, DHHS will work with the local health officer who has the authority to begin the process of involuntary quarantine and isolation (Q & I). Q & I actions are outlined in Utah's Code 26 Chapter 6-b, Communicable Diseases – Treatment, Isolation and Quarantine Procedures. This process will be initiated based on a case-by-case evaluation with collaboration between the LHD health officer, LHD county attorney, LHD nursing director, LHD communicable disease nurse, DHHS, and CDC, if needed. Legal enforcement may be

required to enforce involuntary isolation or quarantine (based on jurisdictional judgment) and should be coordinated through the Utah EOC with the SERT liaison. Both DHHS and LHDs have the authority to initiate involuntary isolation/quarantine pursuant to the Utah Code Section 26B-7-301. However, normal operating procedures in Utah is for the LHDs to be the lead agency in determining and enforcing these interventions in coordination with DHHS.

Work force surge

Pandemic respiratory diseases present a threat to employee and responder health through exposure to infectious agents, stress, and burnout. The Employee Support team will collaborate with the DHHS medical officer, safety and resiliency officer/OCD occupational health officer, and OPR to identify and reduce responder health risks. Employee support will register responders and assess the need for respiratory protection and other PPE. Responders will receive fit-testing and training for all recommended PPE before deployment. Employee support will work with the logistics section to secure adequate supplies of PPE for all DHHS responders throughout the duration of the response.

Immunization operations branch

Immunization operations will be responsible for planning, ordering, managing, and distributing pandemic vaccines to LHDs and other critical response partners. Vaccine operations will differ through different stages of a pandemic respiratory disease response.

- Pre-vaccine availability
    - Monitor vaccine information from CDC and manufacturers.
    - Coordinate with the Utah Scientific Vaccine Advisory Committee (USVAC) to assess pandemic vaccine policy issues, and standard operating procedures (SOPs).
    - Manage stockpiled pandemic respiratory vaccine(s) (if applicable) and follow the operating procedures for vaccine(s) manufactured after pandemic identification.
    - Coordinate with LHDs and other critical healthcare systems to update pandemic vaccination dispensing locations, including VFC providers, pharmacies, and clinics.
- Prioritization
    - Priority populations include those who are essential to the pandemic response and provide care for persons who are ill, those who maintain essential community services, workers who are at greater risk of infection

due to their job, pregnant women, children, and other high risk individuals (Table C). CDC guidance on vaccine allocation and targeting may be provided and is dependent upon the severity of the disease.

- If the vaccine is a scarce resource, DHHS, under the direction of the executive director or designee, will convene an advisory group with identified leadership and subject matter experts. The determination to use pandemic respiratory (pre-pandemic federal stockpile and/or novel strain pandemic vaccine) vaccines as available will be made by DHHS executive director in consultation with the governor's office, the state epidemiologist, and Utah Immunization program manager.
  - A scarce resource subcommittee should be formed in accordance with Utah rule 380-66-1.
- The scarce resource advisory committee would determine how the vaccine would be distributed and include plans that allow for appropriate flexibility at the state and local level depending on the severity of the pandemic, timing, risk groups, and vaccine supply.

- Ordering
  - Local health officers, tribal governments, facility medical directors, or their designees, have authority to request vaccine(s) from DHHS on behalf of their jurisdiction.
  - DHHS executive director, in consultation with the advisory committee described above, will determine vaccine allotments to LHDs, tribal governments, National Guard, Veterans Administration, and other state agencies (e.g., state correctional facilities) based on prioritization criteria and vaccine availability to Utah.
  - The immunizations branch will order vaccine(s) directly from CDC, using the federal VACMAN/VTrckS system which is directly part of the Vaccine Management Ordering System (VOMS).
- Receipt and distribution
  - All vaccine shipments must be shipped directly to the site intending to use the product to avoid issues with cold-chain and maintain product viability.
  - The immunization branch will work with LHDs and other response partners to allocate vaccine(s) directly to the site designated for distribution. Sites and staff will be inspected and certified for vaccine receipt and distribution

according to CDC Immunization Program guidelines that are directly related to the VFC program requirements.
    - Vaccine(s) and materials needed for vaccination clinics will be housed at the CDC's central distributor until the vaccine is shipped to the end user.
    - The immunization branch will provide guidance and support for documenting distribution using VACMAN/VTrackS S, Emergency Immunization Management System (EIMS), and the Counter Measure Response Administration (CRA) report.
- Administration
    - Individual vaccine doses will be documented in the Utah Statewide Immunization Information System (USIIS) and/or EIMS systems. The immunization branch will provide support to local jurisdictions to make each dose distributed is properly documented.
    - If second doses are needed, the immunization branch will make sure that vaccine procurement and distribution to vaccination sites accounts for the need to use portions of future shipments for second doses.
        - USIIS and/or EIMS or local EMR systems can be used for recall and reminder.
    - The immunization branch will be responsible for monitoring vaccine adverse events and submitting events to the Vaccine Adverse Event Reporting System (VAERS).
        - Collaborate with the surveillance group for enhanced adverse reaction surveillance.

IV. Resources

Appendix A. Pandemic influenza disease-specific documents

Items	Location
State EOP—Emergency support function (ESF) 8 annex	Office of Preparedness and Response
IDER plan	IDER plan
Pandemic vaccine distribution plan	Utah Immunizations program
Novel influenza disease plan	Utah novel (pandemic) influenza plan
Seasonal influenza disease plan	Utah seasonal influenza disease plan
DHHS continuity of operations plan	Office of Preparedness and Response
DHHS emergency operations plan	Office of Preparedness and Response
SNS/MCM plan	Office of Preparedness and Response
Non-pharmaceutical interventions plan	Office of Preparedness and Response
Crisis standards of care plan	Office of Preparedness and Response
Utah all hazards public and risk communication plan	Office of Public Affairs and Education
Utah Zoonotic Influenza Interagency Response Plan	Office of Communicable Diseases—One Health Team

Appendix B: WHO pandemic periods and phases, U.S. federal response stages, and Utah pandemic response levels

<table>
<tr><th></th><th>WHO phase</th><th>U.S. federal response stage</th><th>CDC interval</th><th>Utah pandemic response level</th></tr>
<tr><td rowspan="2">Interpandemic period</td><td>Phase 1—No new influenza viruses in humans</td><td rowspan="2">Stage 0—New domestic animal outbreak in at-risk country</td><td rowspan="3">Investigation</td><td rowspan="2">Use WHO periods</td></tr>
<tr><td>Phase 2—Circulating animal virus poses human risk</td></tr>
<tr><td rowspan="3">Pandemic alert period</td><td>Phase 3—Human disease, no or limited human-to-human transmission</td><td>Stage 1—Suspected human outbreak overseas</td><td rowspan="4">Use federal response stages</td></tr>
<tr><td>Phase 4—Increased human-to-human transmission</td><td rowspan="2">Stage 2—Confirmed human outbreak overseas</td><td rowspan="4">Recognition</td></tr>
<tr><td>Phase 5—Significant human-to-human transmission</td></tr>
<tr><td rowspan="5">Pandemic period</td><td rowspan="5">Phase 6—Increased and sustained transmission in general population</td><td>Stage 3—Widespread human outbreaks, multiple locations overseas</td><td>Level A—Widespread transmission in humans outside North America</td></tr>
<tr><td>Stage 4—First human case in North America</td><td>Initiation</td><td>Level B—Detection of human case(s) in North America, without detection in Utah</td></tr>
<tr><td rowspan="3">Stage 5—Spread throughout U.S.</td><td>Acceleration</td><td>Level C—Detection of human case(s) in Utah</td></tr>
<tr><td>Peak</td><td rowspan="2">Level D—Established epidemic(s) in Utah</td></tr>
<tr><td>Deceleration</td></tr>
<tr><td>Stage 6—Recovery/ preparation for subsequent waves</td><td>Resolution</td><td>Level E—Period after initial wave in Utah (prior to end of pandemic or a subsequent wave)</td></tr>
</table>

Appendix C: Category, vaccination population groups, estimated number in population group (Utah population), and tiers for low, moderate, and high/very high pandemic severity.

UN is defined as unknown

Tier 1 Tier 2 Tier 3 Tier 4 Tier 5 Not targeted

Category	Population group	Count	Low severity	Moderate severity	High/very high severity
Homeland and national security	Deployed & mission essential personnel	UN			
	Essential military support & sustainment personnel	UN			
	Intelligence services	UN			
	National guard personnel	UN			
	Other domestic national security personnel	UN			
	Other active duty military & essential support	UN			
Healthcare and community support services	Public health personnel	UN			
	Inpatient healthcare providers	35800			
	Outpatient & home health providers	8050			
	Healthcare providers in long-term care facilities	UN			
	Pharmacists & pharmacy technicians	2700			
	Community support & emergency management	UN			
	Mortuary services personnel	200			
	Other healthcare personnel	8100			
Other critical infrastructure	Emergency services & public safety sector personnel	18050			
	Manufacturers of pandemic vaccine & antivirals	UN			
	Communications/information technology (IT), electricity, nuclear, oil & gas, water sector personnel	UN			
	Critical government personnel—operational & regulatory functions	UN			
	Banking & finance, chemical, food & agriculture, pharmaceutical, postal & shipping, & transportation sector personnel	UN			
	Other critical government personnel	UN			
General population	Pregnant women	47700			
	Infants & toddlers 6–35 months old	178100			
	Children 3–18 years old with current health condition*	114924			
	Children 3–18 years old with special healthcare needs*	128058			
	Children 3–18 years old without high risk condition or special healthcare needs	577899			
	Adults 19–64 with:				
	Diabetes	139600			
	Asthma	282300			
	Skin cancer	136500			
	Other cancers	114800			
	COPD	96200			
	Kidney disease	65150			
	Stroke, angina/congenital heart disease, or myocardial infarction	99300			
	Disability	583150			
	Adults ≥ 65 years old	334998			
	Healthy adults 19–64 years old	2720350			