October 2026

Syndromic Surveillance

Surveillance and Operations Protocol

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I. ABOUT SYNDROMIC SURVEILLANCE

Syndromic surveillance is an early warning system used by public health officials to track patient symptoms and chief complaints such as fever, respiratory distress, or gastrointestinal issues in near real-time. By analyzing data patterns in patient visits, public health officials can rapidly detect, monitor, and respond to disease outbreaks or environmental threats before laboratory tests confirm a specific diagnosis. Syndromic surveillance involves collaboration between health care facilities (primarily hospitals with emergency departments), local health departments (LHDs), the state health department, the Centers for Disease Control and Prevention (CDC), and other public health or academic partners. Syndromic surveillance is an investigative tool rather than a diagnostic system and does not establish a confirmed case; it may require further epidemiological or clinical investigation. It complements reportable disease surveillance, laboratory surveillance, and outbreak investigations without replacing the procedures governing the reporting of reportable diseases, unusual health events, and disease clusters or outbreaks to the Bureau for Public Health (BPH), in accordance with reportable disease rule 64CSR7.

A. Public Health Significance

Syndromic surveillance serves to protect public health and safety by enabling the rapid identification of, and response to, emerging public health threats—such as disease outbreaks, severe weather events, or chemical hazard releases. This enhanced visibility provides public health authorities with improved situational awareness to monitor the magnitude, geographical distribution, and advancement of an incident, optimizing resource allocation and ultimately improving public health response. Syndromic surveillance can provide a more complete understanding of public health in our communities and support streamlined collaboration between public health agencies and healthcare groups to detect and respond to events of public health concern.

B. How does Syndromic Surveillance work?

Syndromic surveillance operates through a three-step process: data collection, transmission, and analysis.

- **Data Collection:** This includes an initial encounter as the healthcare facility gathers information the moment an individual seeks care. Personal details are removed from patient records to ensure the data is fully de-identified.
- **Data Transmission:** The de-identified patient data is sent from health information technology (IT) systems to the CDC or through the West Virginia Health Information Network (WVHIN) to the CDC BioSense platform. The data is securely stored on the CDC servers for the National Syndromic Surveillance Platform, Electronic Surveillance System for the Early Notification of Community-based Epidemics (NSSP ESSENCE) platform. Data is typically available within 24 hours from the patient visit.
- **Data Analysis:** ESSENCE system users query the platform utilizing keywords or codes to get a total volume of matching records returned by the system. The system uses algorithms to compare these matches to the last 90 days of data. Epidemiologists review data matches

to ensure alignment with the specific public health topic of interest and analyze final trends to detect unusual spikes or potential disease presence.

C. Use Cases for Syndromic Surveillance:

When a statistically significant signal is detected, epidemiologists determine whether it represents a meaningful public health event. Common use cases include healthcare utilization and surge monitoring, detection of unusual clusters, tracking emerging infectious diseases, monitoring population impacts during emergencies, and conducting targeted surveillance for specific populations or geographic areas when appropriate.

D. Promoting Interoperability

Syndromic surveillance serves as a core measure under the Public Health and Clinical Data Exchange objective in Centers for Medicare & Medicaid Services Promoting Interoperability requirements. It requires eligible hospitals and urgent care facilities to electronically share standardized patient symptom data with public health agencies, demonstrating that clinical and public health IT systems can seamlessly exchange data to track community health threats. Promoting interoperability has an operational impact on the syndromic surveillance program by:

- **Regulatory requirement:** Facilities must implement certified electronic health record technology (CEHRT).
- **Data standardization:** Requires facilities to use a standardized Health Level Seven (HL7) messaging guide aligned with the ESSENCE platform.
- **Data workflows:** Syndromic staff utilize the standardized HL7 guide for site onboarding, data troubleshooting, and inspecting messaging segments.
- **Public health access:** Vetted end users query the data format to monitor and track health threats.

II. AUTHORITY & SCOPE

A. Legal Authority

The syndromic surveillance program's legal authority is outlined in W. Va. Code §16-3-1. Pursuant to W. Va. Code §16-3-1, which commands the state of WV to track diseases, the State Director of Health and the State Board of Health are granted broad legal authority to investigate infectious diseases, manage epidemics or endemics, inspect property, and enforce quarantines. This statutory framework works together with W. Va. Code §64-7-12, which establishes the surveillance systems, such as syndromic surveillance, to support public health surveillance. These two state codes serve as the foundational legal backing for public health tracking, including the collection of syndromic and laboratory surveillance data (such as influenza and communicable disease reporting) across the state.

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B. Program Purpose and Scope

The purpose of the Syndromic Surveillance program is the early detection and monitoring of population-level disease patterns, public health emergencies, and the early identification of potential outbreaks. The scope of the syndromic surveillance program is defined through W. Va. Code §64-7-12, under the statutory mandate of W. Va. Code §16-3-1.

C. Facility Responsibilities

1. **Data Quality**

   Syndromic Surveillance program staff continuously monitor automated HL7 messages transmitted from reporting facilities. The CDC requires feeds to adhere strictly to the HL7 Implementation Guide for Syndromic Surveillance based on three core metrics:

   - **Completeness**: Facilities must maintain a target of >80% completeness for mandatory fields, including *Chief Complaint Text (C_Chief_Complaint)* and *Discharge Diagnosis* codes. The CDC requires >80% completeness of mandatory fields in the HL7 message segments. Should an onboarding facility fail to satisfy this standard, it will remain in the staging environment rather than being integrated into the active system.
     - Data completeness from reporting facilities should be as close to 100% as possible. The CDC allows for a minimum of 80% for onboarding. However, the goal is higher.
   - **Timeliness**: Data transmission is preferred within 24 hours of the patient encounter and must not exceed 48 hours.
   - **Validity**: Message syntax and structure must comply fully with national NSSP data standards.

2. **Representation/coverage**: Facility distribution is not uniform within the borders of the state, with some counties having several urgent care sites or hospitals within their county borders, while some counties have neither. All public hospitals with an emergency department in the state are reporting Syndromic Surveillance data. Syndromic Surveillance is constantly operationalized to expand data collection to also include other types of ambulatory healthcare visits. Some recent types of facilities onboarded include school-based healthcare (SBH) and federally qualified health centers (FQHC). Public hospitals with emergency departments and urgent care sites remain the priority for recruitment to onboard patient visit data.
   - For additional information on the location of emergency departments and urgent care facilities in West Virginia that are sending data to the NSSP and consequently to the Syndromic Surveillance program, please refer to the Syndromic Surveillance program website.

3. **Facility Onboarding**:

   Recruitment prioritizes hospital emergency departments and urgent care centers, followed by ambulatory sites, inpatient units, FQHCs, Rural Health Clinics (RHCs), and SBHs.

D. Local Health Responsibilities

1. **Regional epidemiologists** use syndromic surveillance to support routine situational awareness, investigation of unusual events, and local public health decision-making. Regional epidemiologists are responsible for acquiring access to the Syndromic Surveillance ESSENCE site and becoming new users.
2. **Local health departments** are encouraged to request syndromic surveillance access as needed. Local health may work with regional epidemiologists to request assistance on query building for public health diseases and public health-related interests or may work with state syndromic surveillance epidemiologists to build and test queries for community related needs.

E. State Health Responsibilities

1. **User Recruitment**
   - Staff actively onboard eligible public health personnel, including internal Department of Health (DH) staff, regional epidemiologists, local health departments, and vetted academic partners with legitimate public health use cases.
   - The Syndromic Surveillance user agreement form may be found on the Office of Epidemiology and Prevention Services website under "Syndromic Surveillance".

2. **Monitoring and Feed Review**
   Daily Monitoring: Each business day, staff::
   - Verify platform functionality
   - Process pending reporting queries
   - Identify suspect cases or visits of reportable diseases, conditions, or outbreaks.
   - Create standard queries with definitions for keywords and codes
   - Periodically review and validate queries and make updates when needed
   - Monitor significant signals and coordinate with program areas with escalation of information to the specific program based on their preferences
   - Review and retire outdated queries
   - Monitor system performance to detect system or feed outages
   - Data feeds are reviewed daily across both production and staging environments. This detects data anomalies such as offline feeds, low message volumes, and syntax errors in HL7 messages

3. **System Maintenance and Outages**
   - **Issue Resolution**: When data quality or connectivity issues arise, staff initiate technical tickets and coordinate remediation efforts alongside the reporting facility, IT vendors, the WVHIN, and the CDC.
   - **Infrastructure Outages**: If a CDC mainframe or system-wide outage occurs, OEPS leadership will be notified of the outage. During this time, saved queries may stop running, defects may be found, or an inability to log in or access the ESSENCE system.

- **Facility-Side Outages**: If a facility feed goes offline—including voluntary disconnections for data security— syndromic surveillance staff will contact the facility to restore the connection. These outages only affect data from the specific facility, not the broader ESSENCE system. Syndromic Surveillance staff may coordinate with the facility, WVHIN, or vendors to troubleshoot connectivity. All feed disruptions require an epidemiologist's review and potential CDC consultation. Users must immediately report any system defects to the syndromic surveillance epidemiologists by email at oepsdatasystems@wv.gov.

4. **Data Sharing and Publication**
   Epidemiologists may share syndromic surveillance results informally or formally, depending on departmental or research needs. Formal reports must include the following:
   - Problem statement: a description of the problem to be addressed
   - Introduction: query project name and detailed description of the project
   - Methods: the dates of the study including report date and time period covered
   - Methods: data source, geographic area and query details
   - Results: data findings, actions taken (including tables, charts, and relevant infographics)
   - Public Health Impact: how the study or research finding benefits public health.

III. USER MANAGEMENT, TRAINING, AND SECURITY

A. Account Provisioning

Access requires an established legal and operational necessity. The user assumes all responsibility for their access to the system. While the data is de-identified, compliance withHIPAA and all associated data use agreements is required. Applicants must complete all CDC-mandated user agreements. The West Virginia Syndromic Surveillance Program approves applications before final account creation with the CDC. User agreements for consideration of an account may be found on the OEPS Syndromic Surveillance webpage. Once accounts are created, the Syndromic Surveillance staff will review system access quarterly to remove inactive accounts in the system.

Access Control: Access to West Virginia data within the BioSense AMC (Access & Management Center) is restricted to personnel with public health authority. All users must utilize individual, secure credentials linked to multi-factor authentication.

Data Restrictions: While the platform contains de-identified data, patient-level details must never be shared externally, except as provided in Section III.C.

Offboarding: Supervisors must notify the Syndromic Surveillance Epidemiologists for the State of West Virginia/ NSSP Site Administrator within 24 hours of an employee's separation or role shift to revoke ESSENCE platform access privileges.

B. Skill Maintenance

Users are strongly encouraged to participate in the National Syndromic Surveillance Program Community of Practice (NSSP CoP) to stay up to date on newly validated free-text query

libraries and syndrome definitions. There are training and system examples that can be viewed or accessed for new users. Additionally, Syndromic Surveillance Epidemiologist staff may be able to offer training for specific topics of interest for users upon request.
Additional Training: System users may engage Syndromic Surveillance staff for training beyond the basic training provided at the time of account creation and CDC approval. Special sessions or training on topics may be arranged by request.

C. System Integrity

Users are strictly prohibited from taking screenshots or snapshots of the CDC ESSENCE system interface and must not share account credentials or passwords. Access is restricted to authorized credentials linked to multi-factor authentication (MFA), and the system must be used exclusively for explicit public health purposes in compliance with Data Use Agreements (DUAs) executed between the CDC, OEPS, and reporting healthcare systems. While patient-level data must never be shared externally or used to evaluate specific facilities, exceptions exist during public health emergencies with explicit authorization from the Syndromic Surveillance admin. For internal reporting or presentations, syndromic data must be recreated using external tools (such as Excel, Google Sheets, Tableau, or SAS) and shared only with individuals who have signed a user agreement, maintaining strict confidentiality. Requests for immediate action or information distribution for public health investigations must be submitted directly to syndromic surveillance staff.

Data Streams/Data Ingestion: The State of West Virginia does not maintain a local instance of ESSENCE. West Virginia relies on data to be sent from the facility or vendor directly to the CDC BioSense ESSENCE platform. CDC servers receive and process the data to make it available on their platform. When epidemiologists look at data from our state, they are using the national instance of ESSENCE to view it. This takes place via an online access portal. Data is uploaded from the CDC servers every two hours. Sometimes data sent from the facilities is delayed. Data streams from vendors or directly from hospital facilities may vary in the timeliness of the data submitted. The gold standard for visit data to be delivered into ESSENCE is within 24 hours of the visit. The CDC will accept visit data received between 24 and 48 hours after the visit. Visit data received after 48 hours and beyond is less than ideal, and the CDC may deny facilities trying to onboard for late data submissions.

IV. SYNDROMIC SURVEILLANCE INITIATION AND OUTBREAK RECOGNITION

A. Queries

The syndromic surveillance program develops and executes targeted data queries to support OEPS and Division of Surveillance and Informatics (DSI_ disease surveillance priorities. The syndromic surveillance program may receive additional requests to monitor or provide queries for unusual occurrences, epidemiologic outbreaks, mass gatherings, weather events, or disasters.

System users can access pre-developed CDC queries directly within ESSENCE or create custom queries to track specific incidents. General queries have most of these components:

- Purpose
- Definition
- Inclusion criteria (and sometimes exclusion criteria)
- Data fields searched
- Geographic scope (counties or state)

Depending on who is running the query, a query may be made and shared with a program. That program may modify the query which would remain unknown to the Syndromic Surveillance staff unless that program shared the query back with syndromic surveillance staff. Syndromic Surveillance staff may run these queries, which may contain the following components:

- Frequency for running the query
- Responsible program who receives query information
- Expected action when positive
- Creation date when applicable
- It is important to note that some programs may run their own queries or may have different protocols on what they want shared with them.

Syndromic surveillance epidemiologists are available to assist internal and external Department of Health staff with query development, troubleshooting, and navigation. Upon request, Syndromic surveillance epidemiologists can also help system users store or share queries within the ESSENCE Query Manager.

B. Algorithm Alerts and Interpretation

The ESSENCE platform utilizes statistical algorithms that color-code data changes (Red, Yellow, and Blue) and examine the last 90 days to determine the historical baseline. Alert levels do not inherently signify a public health emergency or mandate immediate public health action.

Interpretation Warning: An algorithm alert is a signal for epidemiologic review. The presence or absence of an alert does not independently determine whether a public health response is warranted.

Interpretation Warning Key:

Red Alert: a high statistical deviation from predicted baseline trends. The counts have exceeded expected baseline numbers.

Blue Alert: data falls within an expected baseline threshold.

Yellow Alert: a moderate deviation or a mild increase from historical trends.

Data Verification:
During an epidemiological review, key data elements should be systematically evaluated. These include historical data metrics—such as counts, percent changes, statistical significance, historically observed patterns, and seasonality—alongside geographic and facility distributions, demographic characteristics, and specific chief complaints or diagnostic details where applicable. Personnel must review granular data details within their specific queries to verify counts, rule out data artifacts, and confirm clinical relevance before drawing conclusions. Data should be examined by an epidemiologist or designee to determine whether inclusion or exclusion criteria have been met.

C. Initiation of Monitoring

Initiation of syndromic surveillance monitoring occurs when a real or potential threat to public health is recognized or there is a circumstance where local health systems may be impacted. Activation of syndromic surveillance monitoring prompts enhanced surveillance for above-baseline numbers of patient visits during disasters, inclement weather, large events or reportable diseases and conditions. Below please find tables of illustrative events. These events are updated annually, and do not depict all possible events monitored.

D. Surveillance Methods

The WV syndromic surveillance program conducts routine, enhanced, and event-based surveillance to monitor public health events to provide an all-hazards, near real-time early warning system. By tracking pre-diagnostic symptoms rather than waiting for lab confirmations, health authorities gain continuous baseline awareness, ramp up focus during specific threats, and protect public health at mass gatherings.

Event-Based Surveillance: Monitors data trends from large public gatherings, mass events, and crowded venues for unusual statistical anomalies and epidemiological patterns outside standard reporting channels. This proactive approach provides public health authorities with early warning alerts and real-time situational awareness for emerging or unexpected threats, enabling rapid response and resource allocation prior to formal clinical diagnosis or laboratory verification. **(See Tables 1-3. Mass Gatherings)**

Routine Surveillance: The ongoing, automated collection and analysis of pre-diagnostic health data—such as emergency room chief complaints, school absenteeism, or over-the-counter medication sales—to continuously monitor baseline population health trends and detect unusual disease clusters or anomalies early.

Enhanced Surveillance: Collects deeper patient-level data beyond standard or mandatory reporting requirements to investigate specific epidemiologic aspects of an existing disease, monitor severe clinical complications, or track precise demographic patterns during a localized

surge. By expanding the scope of data elements gathered—such as underlying health conditions, detailed exposure histories, and specific treatment responses—enhanced surveillance enables public health authorities to better characterize disease severity, evaluate targeted interventions, and allocate resources effectively during evolving public health incidents.

1. **Inclement Weather**

   Winter storms and cold weather create significant stress by causing power outages, dangerous travel conditions, and isolation, often leading to injury, anxiety, exhaustion, and, in severe cases, post-traumatic stress disorder-like symptoms. The goal of syndromic surveillance monitoring is to examine and identify emergency department visits statewide to evaluate public health impact due to inclement weather. Syndromic surveillance is used to detect emergency department (ED) visits related to injury caused by inclement weather including snow, ice, and related power outages. Syndromic surveillance monitoring during inclement weather is initiated when a winter storm warning including snow or ice has been issued. Monitoring begins at the start of the winter storm warning and concludes when related visits return to baseline levels. **(See Table 4. Enhanced Surveillance: Inclement Weather.)**

   Inclement Weather Warning Level Key:

   Weather *Watch* (Be Prepared): Issued when conditions are favorable for a hazardous event, but the exact timing or location is still uncertain. It covers a large area. You should review your safety plans.

   Weather *Advisory* (Be Aware): Issued for less severe conditions that cause major inconveniences. They can still threaten life and property if you do not use caution (such as a heavy frost or a general wind advisory).

   Weather *Warning* (Take Action): Issued when a severe weather event is occurring, imminent, or very likely. It poses a direct threat to life and property and covers a smaller area. You must seek shelter or take protective steps immediately.

   Temperature Warning Level Key:

   Heat Advisory: A heat advisory is issued by the National Weather Service when actual temperatures or "feels like" temperatures are expected to increase the chance of heat-related illnesses significantly if precautions are not taken.

   Extreme Cold Warning (Take Action): Issued when extremely dangerous cold conditions or wind chill values are expected or occurring. If you are in an area with an Extreme Cold Warning, avoid going outside. If you have to go outside, dress in layers, cover exposed skin, and make sure at least one other person knows your whereabouts.

2. **Disasters**

Disaster related events can occur at any time. Examples of these kinds of events include: fires, floods, chemical leaks, explosions, and acts of terrorism. During a disaster monitoring event, syndromic surveillance is utilized to support impact assessment and situational awareness. This helps in identifying changes in healthcare utilization and identifying potential geographic patterns associated with the event. This may help in the disaster response for resource allocation and provide situational awareness of the public health impact of the event on the community or communities affected. **(See Table 5. Enhanced Surveillance: Disasters)**

Disaster Activation Key:

Declaration of a State of Emergency: a temporary official status proclaimed by the Governor or by concurrent resolution of the Legislature under W. Va. Code §15-5-6that gives state and local agencies special powers to respond to disasters.

Weather Warning (Take Action): Issued when a severe weather event is occurring, imminent, or very likely. It poses a direct threat to life and property and covers a smaller area. You must seek shelter or take protective steps immediately.

3. **Nationwide Outbreaks/Recalls***

Recalls and outbreaks occur intermittently across the United States. One tool for these outbreaks is Syndromic Surveillance to assist in the identification of potential cases in West Virginia. Syndromic Surveillance staff may become familiar with a national outbreak via one of many avenues such as: manufacturer recalls, FDA or USDA recalls, or CDC health alerts.

West Virginia Syndromic Surveillance monitoring is warranted when the recall is implicated as being present in West Virginia via other outbreak investigation, West Virginia residents are potentially exposed, the implicated defective product was or is being distributed in West Virginia, a request was made from the CDC, FDA, or USDA, or the recall exhibits a standing need with a potential West Virginia healthcare impact. **(See Table 6. Enhanced Surveillance: Nationwide Outbreaks/Recalls)**

Nationwide Outbreak/Recall Activation Key:

CDC Health Alert: Conveys the highest level of importance about a public health incident and warrants immediate action or attention.

CDC Health Advisory: Provides important information about a specific public health incident or situation, but may not require immediate action.

FDA Recall: Action taken by a company to remove or correct a marketed product that violates U.S. laws and regulations enforced by the Food and Drug Administration.

USDA Recall: A voluntary or agency-requested action by a company to remove unsafe, contaminated, or mislabeled meat, poultry, and processed egg products from stores and supply chains.

Voluntary Manufacturer Recall: An action where a company chooses to fix, remove, or stop selling a defective or unsafe product before a government agency forces it to do so.

V. DISEASE SURVEILLANCE

A. Reportable Disease Alert Criteria Specifications

Per WV Code 16-3-1;64 select diseases of public health interest are required by law as reportable to public health officials. The syndromic surveillance program monitors ESSENCE data daily for patient visits with suspected diagnoses of a reportable disease or condition, as outlined and refined by OEPS program leads for program-level alerts within the ESSENCE system. Criteria may change at the discretion of each program lead and a catalogue of disease criteria will be maintained in the Reportable Disease alert criteria specifications catalogue.

B. Internal Escalation

Syndromic Surveillance conducts routine monitoring of keywords and diagnosis codes including those for reportable diseases, conditions and unusual clusters/events of public health interest. **(See Table 7. Routine Surveillance: Epidemiologic Review Criteria.)** Detection of specified disease terms, keywords, or illness codes may be cause for additional investigation. A Syndromic Surveillance finding is not a confirmed or probable case and does not replace required case reporting, laboratory testing, or investigation. Syndromic Surveillance epidemiologists will notify the respective program area of a potential finding for further investigation. The program area receiving the potential case(s) determines how the data is utilized and whether further action is required. Programs may opt to receive this data, or request to limit or restrict notifications. The following model illustrates the data flow from Syndromic Surveillance to relevant program areas for review and escalation determination. **(See Figure 1. Surveillance Escalation Protocol)**

C. Program Escalation

Individual programs are encouraged to work with Syndromic Surveillance to refine surveillance criteria. Results shared with disease programs are not meant to circumvent other reporting mechanisms but should be reconciled, when appropriate, with laboratory, case-based, hospitalization, mortality, and other available surveillance data.

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APPENDIX

A. Routine Surveillance - Reportable Disease Alert Criteria Specifications

The syndromic surveillance program monitors ESSENCE data daily for patient visits with suspected diagnoses of a reportable disease or condition, as outlined and refined by OEPS program leads for program-level alerts within the ESSENCE system. Criteria may change at the discretion of each program lead and an exhaustive catalogue of disease criteria will be maintained in the Reportable Disease alert criteria specifications catalogue.

CATEGORY I - IMMEDIATELY REPORTABLE

1. Anthrax

Clinical	Cutaneous Anthrax: Small, painless, pruritic papules on an exposed surface, which progresses through a vesicular stage into a depressed black eschar; the eschar is often surrounded by edema or erythema and may be accompanied by lymphadenopathy. Fever is also common. Injection Anthrax: Usually presents as a severe soft tissue infection manifested as edema or bruising after an injection. No eschar is apparent, and pain is often not described. Nonspecific symptoms such as fever, shortness of breath, or nausea are sometimes the first indication of illness. Can present with meningeal or abdominal involvement. Inhalation Anthrax: Early nonspecific symptoms of inhalation anthrax include fever and fatigue. Localized thoracic symptoms such as cough, chest pain, and shortness of breath follow, as may non-thoracic symptoms such as nausea, vomiting, abdominal pain, headache, diaphoresis, and altered mental status. Lung sounds are often abnormal, and imaging often shows pleural effusion or mediastinal widening. Gastrointestinal Anthrax: ● Oropharyngeal: Mucosal lesion may be observed in the oral cavity or oropharynx. Symptoms include sore throat, difficulty swallowing, and swelling of the neck. Less specific symptoms include fever, fatigue, shortness of breath, abdominal pain, and nausea/vomiting; the symptoms may resemble a viral respiratory illness. Cervical lymphadenopathy, ascites, and altered mental status may be observed.

	• Gastrointestinal: Symptoms include abdominal pain, nausea, vomiting or diarrhea (either of which may contain blood), and abdominal swelling. Less specific symptoms such as fever, fatigue, and headache are also common. Altered mental status and ascites may be observed. Welder's Anthrax: Pneumonia that may be accompanied by hemoptysis or pleural effusion. Nonspecific symptoms include fever or chills, dyspnea, and hemoptysis. Lung sounds are often abnormal.
Risk Factors	• Working in a laboratory that handles anthrax • Working with animals or handling animal products (such as veterinarians, farmers, livestock producers) • Traveling in certain parts of the world People can also be exposed to anthrax during a bioterrorism event, especially if they're handling mail, working for the military, or supporting emergency response activities.
ICD/SNOMED Codes	A22.0, A22.1, A22.2, A22.7, A22.8, A22.9, 409498004, 84980006, 111798006, 195902009, 21927003
Key Words	Anthrax
Frequency of Monitoring	Every business day
Monitor for Return Visits	No
Query Example	^anthrax^,OR,^;A22.0;^,OR,^;A22.1;^,OR,^;A22.2;^,OR,^;A22.7;^,OR,^;A22.8;^,OR,^;A22.9;^,OR,^409498004^,OR,^84980006^,OR,^111798006^,OR,^195902009^,OR,^21927003^ **Also Apply To:** Chief Complaint Combo Free Text, Clinical Impression, Triage Notes Orig

2. <u>Bioterrorism</u>

Clinical	Symptoms may include: flu-like symptoms, fever, chills, cough, shortness of breath, headache, body ache, weakness, nausea, vomiting, diarrhea, cyanosis.
Risk Factors	Varies by agent: Transmissibility, high mortality, person-to-person transmission, urban vulnerability.
ICD Codes	Y38.6
Key Words	Terrorism, bioterrorism, anthrax, smallpox, cholera.
Frequency of Monitoring	Every business day
Monitor for Return Visits	Only if clusters in a specific area or other patterns are visible.

Query Example	(,^Y38.6^,),OR,(,^cholera^,),OR,(,^anthrax^,),OR,(,^smallpox^,),OR,(,^small pox^,),OR,(,^terrorism^,),OR,(,^bioterrorism^,),OR,(,^attack^,),OR,(,^biowarfare^,),OR,(,^ shortness of breath^,),OR,(,^blue tint^,),OR,(,^blue tinted skin^,) Apply to: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

3. Botulism

Clinical	Foodborne, Inhalation, and Wound Botulism: Difficulty swallowing (dysphagia), muscle weakness, double vision (diplopia), ptosis (drooping eyelids), blurry vision, slurred speech (dysarthria), hoarseness (dysphonia), difficulty breathing, and difficulty moving the eyes. Foodborne botulism may also include vomiting, nausea, stomach pain, diarrhea, and paralysis. Infant Botulism: Constipation, poor feeding, ptosis (drooping eyelid), sluggish pupils, flattened facial expression, diminished suck and gag reflexes, weak and altered cry, respiratory difficulty and possibly respiratory arrest.
Risk Factors	Injecting illicit drugs, drinking pruno (homemade alcohol), eating contaminated food, and overdose of botulinum toxin injected for cosmetic or therapeutic purposes.
ICD/SNOMED Codes	A05.1, A48.51, A48.52, A48.5, 398523009, 414488002, 398530003, 409562009
Key Words	botulism
Frequency of Monitoring	Every business day
Monitor for Return Visits	No
Query Example	^botulism^,OR,^;A05.1;^,OR,^;A48.51;^,OR,^;A48.52;^,OR,^;A48.5;^,OR, ^398523009^,OR,^414488002^,OR,^398530003^,OR,^409562009^ Apply To : ddCombo,ccCombo,clinicalImpression,TriageNotesOrig

4. H5N1 (Bird Flu)

Clinical	Symptoms may include conjunctivitis, mild fever (fever may not be present), sore throat, cough, fatigue, muscle aches, headache, or runny nose.
Risk Factors	Close, prolonged, and unprotected contact with infected animals such as dairy cattle, poultry, and wild birds or their contaminated environments.
ICD Codes	U69.21
Key Words	H5N1, bird flu, bird, poultry, geese, chicken, avian, cow, farmer, dairy cattle, and fair

Frequency of Monitoring	Every Business Day
Monitor for Return Visits	Only if they currently have no symptoms but mention contact with animals that are at risk for contracting bird flu or have been confirmed to have bird flu.
Query Example	(,^H5N1^,or,^bird flu^,or,^bird^,or,^poultry^,or,^geese^,or,^chicken^,or,^avian^,or,^cow^,or,^farmer^,or,^dairy cattle^,or,^fair^,or,^U69.21^,),ANDNOT,(,^coworker^,or,^fairmont^,or,^fairlea^,or,^cowen^,or,^subclavian^,) Apply To: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

5. <u>Viral Hemorrhagic Fever (VHF)</u>

Clinical	Varies by agent: Fever (100.4°F/38.0°C) without use of antipyretics, severe headache, muscle and/or joint pain, weakness and fatigue, Cough, difficulty breathing, sore throat, loss of appetite, abdominal pain, diarrhea, and vomiting, Chest pain, encephalitis, acute hearing loss, unexplained bleeding or bruising, bleeding outside a normal menstrual cycle, red eyes, skin rash, hiccups, or a concerning constellation of other signs and symptoms.
Risk Factors	Traveling to endemic areas or areas with active outbreaks, direct contact with animals that may carry VHFs (bats, ticks, mosquitoes, rodents, etc.) by blood, saliva, nesting materials, urine and feces. Direct contact with infected fluids from a person with VHF, unprotected physical contact with a body or person with VHF, and unprotected healthcare professionals caring for VHF patients.
ICD/SNOMED Codes	A98.3, A98.4, B33.4, A96.2, A96.8, A95.0^A99.0, A98.0, A98.2, A98.1, A92.4, A90.0, A95.0, 16541001, 77503002, 85944001, 788952008, 716584007, 67633002, 359761005, 32137001, 716585008, 51439004, 28335002, 34348001, 26630006
Key Words	Marburg, Ebola, hemorrhagic, alkhurma, chapare, Crimean-Congo, hantavirus, kyasanur, lassa, lujo, Omsk, Rift Valley, Dengue, Bundibugyo, yellow fever
Frequency of Monitoring	Every business day
Monitor for Return Visits	Situation Dependent
Query Example	^Marburg^,or,^Ebola^,or^hemorrhagic^,or,^Alkhurma^,or,^Chapare^,or, ^Crimean-Congo^,or,^Hantavirus^,or,^Kyasanur^,or,^Lassa^,or,^Lujo^,or, ^Omsk^,or,^Rift valley^,or,^Dengue^,or,^Bundibugyo^,or,^Yellow fever^,or, ^A98.3^,or,^A98.4^,or,^B33.4^,or,^A96.2^,or,^A96.8^,or,^A95.0^A99.0^,or,

	^A98.0^,or,^A98.2^,or,^A98.1^,or,^A92.4^,or,^A90.0^,or,^A95.0^16541001^, or,^77503002^or,^85944001^,or,^788952008^,or,^716584007^,or, ^67633002^,or,^359761005^,or,^32137001^,or,^716585008^,or,^51439004^, or,^28335002^,or,^34348001^,or,^26630006^ **Also Apply To:** Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text, Clinical Impression

6. Measles

Clinical	● Prodromes: High fever, cough, runny nose, conjunctivitis/pink eye/ red or watery eyes. ● 2-3 days after symptoms begin: White spots (Koplik spots) may appear in the mouth. ● 3-5 days after symptoms begin: Rash that begins on the face and hairline and spreads down the body over time.
Risk Factors	Unvaccinated or incomplete vaccination status and coming in close contact with someone during their infectious period.
ICD/SNOMED Codes	B05.9, 1F03, B05.2, 111873003, 14189004, 186562009
Key Words	Rash, fever, measles, rubeola
Frequency of Monitoring	Every business day
Monitor for Return Visits	Yes
Query Example	(,^rash^,AND,^fever^,),OR,^measles^,OR,^B05.9 ^,OR,^1F03^,OR,^rubeola^,OR,^B05.2 ^,or,^111873003^,or,^14189004^,or,^186562009^ Apply To : TriageNotesOrig,dischargeDiagnosis,CCDDParsedFreeText,clinicalImpression

7. Middle East Respiratory Syndrome (MERS)

Clinical	Fever, cough, shortness of breath, pneumonia (common), diarrhea, and gastrointestinal symptoms (less common).
Risk Factors	Close, prolonged, physical contact with infected camels (including touching or grooming) or close contact and exposure to someone infected with MERS virus.
ICD Codes	B34.2 and B97.29
Key Words	MERS, Middle East Respiratory Syndrome, Camels, camel, dromedary camels, Arabian, Arabian camel.
Frequency of Monitoring	Every Business Day

Monitor for Return Visits	Only if they currently have no symptoms but mention contact with camels that have a potential for contracting MERS.
Query Example	^cough^,OR,(,^fever^,),OR,(,^shortness of breath^,),OR,(,^MERS^,),OR,(,^Middle Eastern Respiratory syndrome^,),OR,(,^camel^,),OR,(,^arabian camel^,),OR,(,^arabian^,),OR,(,^dromedary camel^,),OR,(,^B34.2^,),OR,(,^B97.29^,) Apply To: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

8. MPOX

Clinical	• Prodrome: Flu-like symptoms such as fever, chills, swollen lymph nodes, exhaustion, muscle aches, backache, headache, respiratory symptoms (sore throat, nasal congestion, cough). • 1 – 4 days after initial symptoms: Rash or lesions that progress through macules, papules, vesicles, and pustules to scabs. The rash can occur on the hands, feet, chest, face, mouth, penis, testicles, labia, vagina, or anus.
Risk Factors	Close skin-to-skin contact (kissing, cuddling, sex) with a person who has a rash or symptoms. Touching shared objects such as clothing, bedding, or towels that have been in contact with an infected person's sores or bodily fluids.
ICD/Procedure Codes	B04, LAB633, LAB633 MONKEYPOX VIRUS DNA QL RT-PCR (QUEST), LAB633 MONKEYPOX VIRUS DNA QL RT-PCR, LAB633 MONKEYPOX VIRUS
Key Words	Monkeypox, mpox, monkey pox
Frequency of Monitoring	Every Business Day
Monitor for Return Visits	No
Query Example	^monkeypox^,OR,^monkey pox^,OR,^mpox^,OR,^;B04;^,OR,^;LAB633;^,OR,^LAB633 Apply to: Discharge Diagnosis Combo Free Text, Chief Complaint Combo Free Text, Clinical Impression, Triage Notes Orig, Procedure Combo MONKEYPOX VIRUS DNA QL RT-PCR (QUEST)^,OR,^LAB633 MONKEYPOX VIRUS DNA QL RT-PCR^,OR,^LAB633 MONKEYPOX VIRUS^

9. Novel Influenza*

Clinical	Symptoms may include conjunctivitis, mild fever (fever may not be present), sore throat, cough, fatigue, muscle aches, headache, or runny nose.

Risk Factors	Close, prolonged contact with someone with confirmed novel influenza or exposure to droplets containing the virus.
ICD Codes	J09.X1, J09.X2, J09.X3, J09.X9
Key Words	Cough, fever, novel, novel flu, novel influenza.
Frequency of Monitoring	Every Business Day
Monitor for Return Visits	Only if they currently have no symptoms but mention contact with someone diagnosed with novel influenza.
Query Example	^cough^,OR,^fever^,OR,^novel^,OR,^novel flu^,OR,^novel influenza A^,OR,^J09^,OR,(,^J09.X1^,),OR,(,^J09.X2^,),OR,(,^J09.X3^,) Apply to: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

* May contain: Swine, Avian, or variant viruses; considered variant viral infections and not considered typical seasonal influenza.

10. Plague

Clinical	Sudden high fever, chills, weakness, fatigue, buboes, swollen lymph nodes, pus, tiredness, severe headache, muscle aches and pain.
Risk Factors	Recent outdoor activity, unprotected animal contact, or travel.
ICD Codes	A20 and A20.0
Key Words	Bubonic Plague, plague
Frequency of Monitoring	Every Business Day
Monitor for Return Visits	Only if they currently have no symptoms but mention contact with animals like rats, squirrels, or rabbits that have a potential for contracting the plague or have been in contact with a person(s) confirmed to have the plague.
Query Example	(^Bubonicplague^,OR,^plague^,OR,^A20^,OR,^A20.0^,OR,(,^buboes^,),OR,(,^lymph^,AND,(,^cough^,),AND,(,^chills^,),),OR,(,^lymph nodes^,),OR,(,^fever^,),OR,(,^weakness^,)Apply to: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

11. Rubella and Congenital Rubella

Clinical	Rubella in Children: Low-grade fever, headache, mild pink eye (redness or swelling of the white of the eye), general discomfort, swollen and enlarged lymph nodes, cough, runny nose, and a rash that can appear 1-5 days later.

	Rubella in Adults: Low-grade fever, sore throat, rash that starts on the face and spreads to the rest of the body. Some adults may also have a headache, pink eye, and general discomfort before the rash appears. Congenital Rubella Syndrome (CRS): Low birth weight, multiple blue or purple circle-shaped marks or bumps on their skin, purple, red or brown spots and patches on their skin (purpura), small head size (microcephaly). Other features of CRS that may become apparent after birth include: congenital cataracts and glaucoma, congenital heart disease, developmental delay, enlarged liver or spleen, hearing loss, hemolytic anemia, intellectual disability, meningoencephalitis, pigmentary retinopathy, bone disease, swollen lymph nodes. Babies born with CRS also have an increased risk of developing insulin-dependent diabetes and thyroid disease later in life.
Risk Factors	Unvaccinated status, pregnancy, and unborn children.
ICD/SNOMED Codes	B06.9, B06.00, B06.01, B06.02, B06.81, B06.82, B06.89, P35.0, 36653000, 5210005, 1857005
Key Words	Rubella, Congenital Rubella, German Measles
Frequency of Monitoring	Every business day
Monitor for Return Visits	Possibly
Query Example	^rubella^,OR,^congenital rubella^,OR,^german measles^,OR,^;B06.9;^,OR,^;B06.00;^,OR,^;B06.01;^,OR,^;B06.02;^,OR,^;B06.81;^,OR,^;B06.82;^,OR,^;B06.89;^,OR,^;P35.0;^,OR,^36653000^,OR,^5210005^,OR,^1857005^ **Also Apply To:** Discharge Diagnosis Combo Free Text, Chief Complaint Combo Free Text, Clinical Impression, Triage Notes Orig

12. <u>Smallpox</u>

Clinical	Initial Symptoms: High fever, head and body aches, vomiting. Early Rash: Red spots on tongue and throat that change into sores and spread. Rash starts on the skin and spreads from face down to feet. Pustular Rash and Scabs: Rash becomes raised pustules that then scab over.
Risk Factors	Typically those at high risk work in secure research laboratories that handle variola virus.

ICD/SNOMED Codes	B03, 67924001, 74724001, 86497005, 51423006, 409641002, 47452006
Key Words	Smallpox, Variola
Frequency of Monitoring	Every business day
Monitor for Return Visits	Possibly
Query Example	^smallpox^,OR,^small pox^,OR,^variola^,OR,^;B03;^,OR, ^67924001^,OR,^74724001^,OR,^86497005^,OR,^51423006^,OR, ^409641002^,OR,^47452006^ **Also Apply To:** Discharge Diagnosis Combo Free Text, Chief Complaint Combo Free Text, Clinical Impression, Triage Notes Orig

13. Severe Acute Respiratory Syndrome (SARS)

Clinical	Symptoms may include fever, cough, shortness of breath, chills, headaches, aches or pain in the muscles, weakness, poor appetite, and, less commonly nausea, vomiting, and diarrhea.
Risk Factors	Close, prolonged contact with someone with confirmed SARS or exposure to infected droplets.
ICD Codes	B97.21 and J12.81
Key Words	SARS, Severe Acute Respiratory Syndrome, fever, cough, myalgia, shortness of breath
Frequency of Monitoring	Every Business Day
Monitor for Return Visits	Only if they currently have no symptoms but mention contact with a confirmed SARS case.
Query Example	^SARS^,OR,^severe acute respiratory syndrome^,OR,^cough^,OR,^fever^,OR,^U04.9^,OR,^J12.81^,OR,^shortness of breath^,OR,^myalgia^ Apply to: Triage Notes Orig, Discharge Diagnosis, Chief Complaint Orig Free Text, Chief Complaint Combo Free Text

14. Tularemia

Clinical	Ulceroglandular: This is the most common form of tularemia and usually occurs following a tick or deer fly bite or after handling an infected animal. A skin ulcer appears at the site where the bacteria entered the body. The ulcer is accompanied by swelling of regional lymph glands, usually in the armpit or groin.

	Glandular: Similar to ulceroglandular tularemia but without an ulcer. Also generally acquired through the bite of an infected tick or deer fly or from handling sick or dead animals. Oculoglandular: This form occurs when the bacteria enter through the eye. This can occur when a person is butchering an infected animal and touches his or her eyes. Symptoms include irritation and inflammation of the eye and swelling of lymph glands in front of the ear. Oropharyngeal: This form results from eating or drinking contaminated food or water. Patients with oropharyngeal tularemia may have sore throat, mouth ulcers, tonsillitis, and swelling of lymph glands in the neck. Pneumonic: This is the most serious form of tularemia. Symptoms include cough, chest pain, and difficulty breathing. This form results from breathing dusts or aerosols containing the organism. It can also occur when other forms of tularemia (e.g. ulceroglandular) are left untreated and the bacteria spread through the bloodstream to the lungs. Typhoidal: This form is characterized by any combination of the general symptoms (without the localizing symptoms of other syndromes)
Risk Factors	Coming in contact with sick animals such as rabbits, hares, and rodents, tick and deer fly bites, skin contact with infected animals, drinking contaminated water, inhaling contaminated aerosols or agricultural and landscaping dust, occupational exposure, or bioterrorism.
ICD/SNOMED Codes	A21.0, A21.1, A21.2, A21.3, A21.7, A21.8, A21.9, 19265001, 21857006
Key Words	Tularemia
Frequency of Monitoring	Every business day
Monitor for Return Visits	Situation Dependent
Query Example	^tularemia^,OR,^;A21.0;^,OR,^;A21.1;^,OR,^;A21.2;^,OR,^;A21.3;^,OR, ^;A21.7;^,OR,^;A21.8;^,OR,^;A21.9;^,OR,^19265001^,OR,^21857006^ **Also Apply To:** Chief Complaint Combo Free Text, Clinical Impression, Triage Notes Orig

Syndromic Surveillance

Surveillance and Operations Protocol

Table 1. Mass Gatherings: National and World Scout Jamboree *

Mass Gatherings: National and World Scout Jamboree	
Event	The **National Scout Jamboree** is a massive, 10-day gathering of tens of thousands of members from Scouting America (formerly the Boy Scouts of America), typically held once every four years. The **World Scout Jamboree** is the largest regular international event organized by the World Organization of the Scout Movement (WOSM), gathering tens of thousands of young people from over 170 countries.
Surveillance Method	Event-based Surveillance
Personnel Authorized to Activate Monitoring	National Scout Jamboree Epidemiology Lead **and/or** World Scout Jamboree Epidemiology Lead
Monitored Syndromes	• Gastrointestinal Illness • Influenza-like Illness • Injury or trauma • Rash illness • Respiratory illness • Heat illness
Query Details	**Query:** ^BSA^,OR,^scout^,OR,^boy scout^,OR,^boyscout^,OR,^girl scout^,OR,^girlscout^,OR,^jamboree^,OR,^scout jamboree^,OR,^boy scout jamboree^,OR,^boyscout jamboree^,OR,^girl scout jamboree^,OR,^girlscout jamboree^,OR,^scout^,OR,^scout camp^,OR,^camp^,OR,^girl scout camp^,OR,^girlscout camp^,OR,^boy scout camp^,OR,^boyscout camp^

Syndromic Surveillance

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Mass Gatherings: National and World Scout Jamboree	
Geographic Area	• Fayette, WV • Raleigh, WV • Greenbrier, WV • Nicholas, WV
Frequency	Daily, reported to the site epidemiology lead by 10am daily during the event.
Baseline Period	Prior 90 days before initiation of the event.
Designated Recipients of Surveillance Reports	• National Scout Jamboree Epidemiology Lead • World Scout Jamboree Epidemiology Lead • Center for Threat Preparedness • Incident Command • OEPS Leadership • State Epidemiologist
Thresholds and Criteria for Escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation
Personnel Authorized to Deactivate Monitoring	**National Scout Jamboree** Epidemiology Lead **World Scout Jamboree** Epidemiology Lead

Syndromic Surveillance

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*Enhanced monitoring begins one week prior to the start of the event, concludes at the close of the event and includes a 90-day lookback to establish baseline data. Specific event dates will vary annually. National and World Scout Jamborees are historical examples and are not standing annual events.

Table 2. Mass Gatherings: Sporting Events

Mass Gatherings: Sporting Events			
Event	The **FIFA World Cup** is an international association football (soccer) tournament. The event is hosted every four years across several cities within the host county or countries.	**USA Cycling Pro Road National Championship** is USA Cycling's premier annual road event held in Charleston, WV.	The **Spartan Trifecta Race** is an annual premier obstacle course racing event held at the Summit Bechtel Reserve in Glen Jean, Fayette County.
Surveillance Method	Event-based Surveillance	Event-based Surveillance	Event-based Surveillance
Personnel Authorized to Activate Monitoring	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead
Monitored Syndromes	• Gastrointestinal Illness • Influenza-like Illness • Injury or trauma	• Gastrointestinal Illness • Influenza-like Illness • Injury or trauma	• Gastrointestinal Illness • Influenza-like Illness • Injury or trauma

Syndromic Surveillance

Surveillance and Operations Protocol

Mass Gatherings: Sporting Events			
	• Rash illness • Respiratory illness • Heat illness	• Rash illness • Respiratory illness • Heat illness	• Rash illness • Respiratory illness • Heat illness
Query Details	**Query:**^FIFA26^,OR,^soccer^,OR,^world cup^,OR,^world^,OR,^Iraq^,OR,^PUBH26^,or,^Y93.82^	**Query:** ^cycling^,OR,^cycling pro^,OR,^bike^,OR,^bicycle^,OR,^bike race^	**Query:** ^trifecta^,OR,^spartan race^,OR,^trifecta spartan race^,OR,^;race;^,OR,^beast^,OR,^spartan^,OR,^summit^,OR,^summit bechtel^,OR,^sprint^,OR,^obstacle course^,OR,^obstacle^,OR,^atlas^,OR,^spear^,OR,^javelin^,OR,^;run;^,OR,^;running;^,OR,^bike^,OR,^bicycle^
Geographic Area	• Greenbrier, WV • And/or all WV counties due to travel	• Kanawha, WV • And/or all WV counties due to travel	• Fayette, WV • And/or all WV counties due to travel
Frequency	Daily, reported to the state epidemiologist by 10am daily during the event.	Daily, reported to the state epidemiologist by 10am daily during the event.	Daily, reported to the state epidemiologist by 10am daily during the event.
Baseline Period	Prior 90 days before initiation of the event.	Prior 90 days before initiation of the event.	Prior 90 days before initiation of the event.

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Mass Gatherings: Sporting Events			
Designated Recipients of Surveillance Reports	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead	• State Epidemiologist • Surveillance/Informatics Lead	• State Epidemiologist • Surveillance/Informatics Lead
Thresholds and Criteria for Escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation
Personnel Authorized to Deactivate Monitoring	• State Epidemiologist • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Surveillance/Informatics Lead • Syndromic Surveillance Lead

*Enhanced monitoring begins one week prior to the start of the event, concludes at the close of the event and includes a 90-day lookback to establish baseline data. Specific event dates will vary annually. Sporting events described are historical examples and are not standing annual events.

Syndromic Surveillance

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Table 3. Mass Gatherings: Concerts, Fairs or Festivals

Mass Gatherings: Concerts, Fairs or Festivals				
Event	**Independence Day**, commonly known as the Fourth of July is a federal holiday in the US that commemorates the adoption of the Declaration of Independence on July 4, 1776. Communities gather for celebrations such as America250 (2026), Ripley 4th of July celebration, Wheeling Heritage Port or at State Parks/Regional events.	The **World Music Band Festival** is a major annual event held in Fayette County, West Virginia, that draws thousands of international musicians.	The **Sternwheel Regatta** is a four day summer festival held annually along the Kanawha River in downtown Charleston, West Virginia.	The **WV State Fair** is an annual 10-day summer exhibition celebrating the state's agriculture, education, and Appalachian traditions, held every August at the State Fair of West Virginia fairgrounds in Fairlea / Lewisburg, WV.
Surveillance Method	Event-based Surveillance	Event-based Surveillance	Event-based Surveillance	Event-based Surveillance
Personnel Authorized to Activate Monitoring	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead • Syndromic Surveillance Lead
Monitored	• Gastrointestinal Illness	• Gastrointestinal Illness	• Gastrointestinal Illness	• Gastrointestinal Illness

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Mass Gatherings: Concerts, Fairs or Festivals				
Syndromes	• Influenza-like Illness • Injury or trauma • Rash illness • Respiratory illness • Heat illness	• Influenza-like Illness • Injury or trauma • Rash illness • Respiratory illness • Heat illness	• Influenza-like Illness • Injury or trauma • Rash illness • Respiratory illness • Heat illness	• Influenza-like Illness • Injury or trauma • Rash illness • Respiratory illness • Heat illness
Query Details	**Query:** ^firework^,or,^fireworks^,or,^firecracker^,or,^fire cracker^,or,^bottle rocket^,or,^sparkler^,or,^W39^	**Query:** ^music^,AND,^music fest^,AND,^music festival^,AND,^band^,AND,^band festival^,AND,^marching^,AND,^marching band^,AND,^concert^,AND,^concert band^,AND,^field band^,AND,^World Band Festival^,AND,^World music^,AND,^world music festival^,AND,^show^,AND,^show band^,AND,^world association^,AND,^world association of marching show band^,AND,^world association of marching show bands^	**Query:** ^sternwheel^,or,^regatta^,or,^festival^,or,^concert^	**Query:** ^state fair^,OR,^fair^,OR,^Lewisburg^

Syndromic Surveillance

Surveillance and Operations Protocol

Mass Gatherings: Concerts, Fairs or Festivals				
Geographic Area	• All WV Counties	• Fayette, WV	• Kanawha, WV • And/or all WV counties due to travel	• Greenbrier, WV • And/or all WV counties due to travel
Frequency	Daily, reported to the state epidemiologist by 10am daily during the event.	Daily, reported to the state epidemiologist by 10am daily during the event.	Daily, reported to the state epidemiologist by 10am daily during the event.	Daily, reported to the state epidemiologist by 10am daily during the event.
Baseline Period	Prior 90 days before initiation of the event.	Prior 90 days before initiation of the event.	Prior 90 days before initiation of the event.	Prior 90 days before initiation of the event.
Designated Recipients of Surveillance Reports	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead	• State Epidemiologist • Outbreak Epidemiology Lead • Surveillance/Informatics Lead
Thresholds and Criteria for Escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation	90-day baseline compared to visits seen daily. Report sent to OEPS team daily for review and/or consideration for further escalation
Personnel Authorized to	• State Epidemiologist • Surveillance/Informatics	• State Epidemiologist • Surveillance/Informatics	• State Epidemiologist • Surveillance/Informatics	• State Epidemiologist • Surveillance/Informatics

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Mass Gatherings: Concerts, Fairs or Festivals				
Deactivate Monitoring	Lead • Syndromic Surveillance Lead	Lead • Syndromic Surveillance Lead	Lead • Syndromic Surveillance Lead	Lead • Syndromic Surveillance Lead

*Enhanced monitoring begins one week prior to the start of the event, concludes at the close of the event and includes a 90-day lookback to establish baseline data. Specific event dates will vary annually.

Table 4. Enhanced Surveillance: Inclement Weather

Enhanced Surveillance: Inclement Weather		
Event Type	**Related Injuries & Terms**	**Activation**
Heavy Rain	^rain^,OR^flood^,or,^downpour^,or,^torrential^,OR,^storm^,OR,^water^,OR,^heavyrain^	**Weather Warning**
Snow	^snow^,OR,^snowy^,ANDNOT,^snowboarding^	**Weather Watch**
High Winds	^wind^,OR,^highwind*,OR,^gust^,OR,^stormdamage^,OR,^tornado^,OR,^derecho^	**Weather Advisory**
Extreme Temperatures	**Extreme Heat:** ^HEAT,OR,^HEATCRAMP^,OR,^SUN	**Heat Advisory**

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Enhanced Surveillance: Inclement Weather		
	STROKE^,OR,^SUN-STR^,OR,^ TO HOT^,OR,^TOOHOT^	
	Extreme Cold: ^;ice;^,OR,^;icy;^,OR,^slide^,OR,^skate^,OR,^sleet^,OR,^frozen^,OR,^icebead^,OR,^frozenrain^,OR,^snow^,OR,^snowy^,ANDNOT,^snowboarding^,OR,^frigid^,OR,^hypothermia^	**Extreme Cold Warning**

*Enhanced monitoring begins at notice of imminent inclement weather. Specific monitoring dates will vary based on the timing and severity of the event. Monitoring ceases when visits return to baseline levels.

Table 5. Enhanced Surveillance: Disasters

Enhanced Surveillance: Disasters		
Event Type	**Related Injuries & Terms**	**Activation**
Floods	Rash, cuts, lacerations, crush injuries, wound infection, tetanus vaccination requests, drowning, punctures, sprains, strains, trauma, hypothermia, diarrhea, vomiting	**Weather Warning**
Fires/Wildfires	Burns, thermal burns, smoke inhalation, carbon monoxide (CO) poisoning, cuts, lacerations, broken bones, head injuries, trauma	**Upon notification or Declaration of a State of Emergency**

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Enhanced Surveillance: Disasters		
Hazardous Materials	Respiratory damage, chemical burns, thermal burns, organ failure, poisoning, vision loss, neurological damage, seizures, difficulty breathing, lung damage, airway irritation, unconsciousness	**Upon notification or Declaration of a State of Emergency**
Environmental Spills	Coughing, shortness of breath, difficulty breathing, headaches, fatigue, vertigo/dizziness, nausea, slips and falls	**Upon notification or Declaration of a State of Emergency**
Hurricane	Cuts, scrapes, lacerations, broken bones, sprained ankle, slips, falls, back pain, muscle strain, drowning, electrocution, infections	**Weather Warning**
Tornado	Impalement, eye injuries, cuts, lacerations, scrapes, broken bones, concussions, head injuries, gashes, trauma, chest injuries	**Weather Warning**

*Enhanced monitoring begins at activation. Monitoring ceases when disaster related visits return to baseline levels.

Table 6. Enhanced Surveillance: Nationwide Outbreaks/Recalls

Enhanced Surveillance: Nationwide Outbreaks/Recalls			
Event Type	**Description**	**Issuing Agency**	**Syndromic Staff Notification**

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Enhanced Surveillance: Nationwide Outbreaks/Recalls			
Food Recall	The voluntary or mandatory removal or correction of a food product from the market because it violates safety regulations or it poses a health risk to consumers	U.S. Food and Drug Administration (FDA) or the U.S. Department of Agriculture (USDA)	FDA recall, USDA recall, or CDC health alert
Food Outbreak	Epidemiological event defined by public health agencies when multiple people from separate households contract the same illness from a shared food source.	U.S. Food and Drug Administration (FDA) or the U.S. Department of Agriculture (USDA)	FDA recall, USDA recall, or CDC health alert
Product Recall	Action taken by a company or a government agency to remove, repair, or replace a defective and unsafe product from the market	Manufacturer, FDA, Consumer Product Safety Commission (CPSC), Environmental Protection Agency (EPA)	Voluntary manufacturer recall, USDA recall or CDC health alert
Contamination	The removal of an unsafe product from the market because it contains dangerous germs, harmful chemicals, or foreign objects	Manufacturer, FDA, Consumer Product Safety Commission (CPSC), Environmental Protection Agency (EPA)	Voluntary manufacturer recall, USDA recall or CDC health alert

*Enhanced monitoring begins at activation. Monitoring ceases when outbreak related visits return to baseline levels.

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Table 7. Routine Surveillance: Epidemiologic Review Criteria

Routine Surveillance: Epidemiologic Review Criteria			
Event Type	**Activation**	**Length of monitoring**	**Notification**
Foodborne Outbreak	**3 or more ill individuals with:** · Discharge diagnosis of the same foodborne pathogen · Similar geographic area · Report similar food/drink exposures **OR** **3 or more individuals with:** · GI illness chief complaints · Similar geographic area · Consumed same food/drink source /report similar exposures **OR** · **GI visits at 20% above baseline** · GI illness chief complaints noted · Similar geographic area	Monitoring will continue until no related visits are seen 1 week post activation. **OR** GI related visits in the geographic area return to baseline levels. (At least 1 week post activation)	1. Food and waterborne disease manager 2. Food and waterborne disease surveillance epidemiologist

Syndromic Surveillance

Surveillance and Operations Protocol

Routine Surveillance: Epidemiologic Review Criteria			
Respiratory Outbreak	**Individual Facilities:** Respiratory visits 20% above baseline. **County/Geographic Region:** Respiratory visits 20% above baseline.	Respiratory related visits in the geographic area return to baseline levels (At least 1 week post activation)	1. Respiratory Epidemiologist 2 2. Respiratory Epidemiologist 1
Rash Outbreak	**3 or more ill individuals with:** · Discharge diagnosis of the same pathogen · Similar geographic area · Report similar exposures **OR** **3 or more individuals with:** · Rash illness chief complaint · Similar geographic area · Report similar exposures **OR** · **Rash visits at 20% above baseline** · Rash illness chief complaint · Similar geographic area	Monitoring will continue until no related visits are seen 1 week post activation. **OR** Rash related visits in the geographic area return to baseline levels (At least 1 week post activation)	1. Surveillance Epidemiologist 2. Outbreak Epidemiologist Lead
Chemical Exposure	**3 or more individuals within 72 hours. who report:** ● Similar/related chemical exposures	Monitoring will continue until no related visits are seen 72 hours post activation. **OR**	1. Surveillance Epidemiologist 2. Outbreak Epidemiologist Lead

Syndromic Surveillance

Surveillance and Operations Protocol

Routine Surveillance: Epidemiologic Review Criteria			
	• Similar geographic area	Chemical exposure related visits in the geographic area return to baseline levels (< 3)	

Syndromic Surveillance

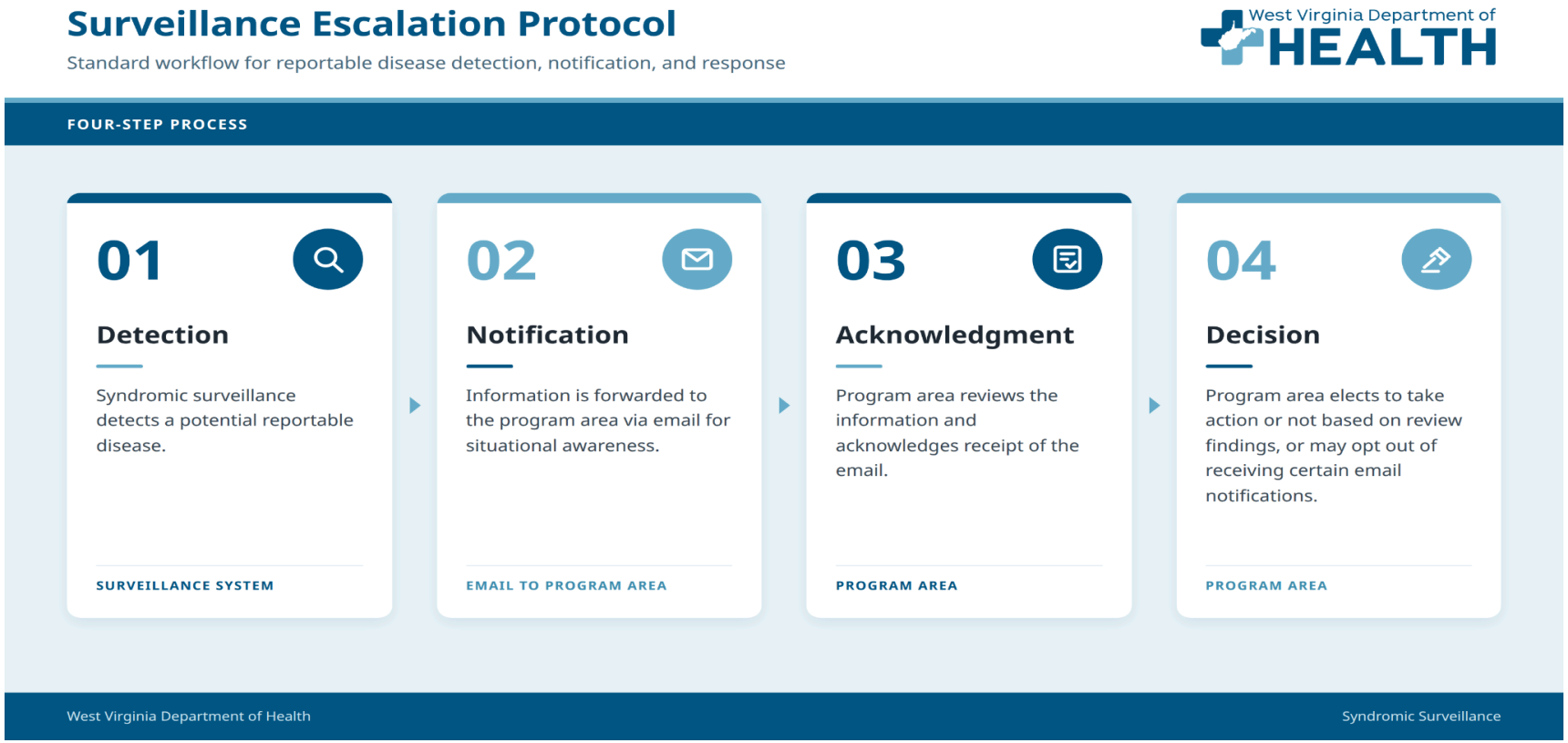
Surveillance and Operations Protocol

*Detection of the criteria above indicates a signal for epidemiologic review and notification will be provided to program area leads within 1 day of observation. The program-determined criteria establish whether it is a suspected outbreak. The program will decide the criteria and present that to the outbreak team. Program leads will determine whether to notify the respective local health department, regional epidemiologist or regional outbreak lead.

Syndromic Surveillance

Surveillance and Operations Protocol

Figure 1. Surveillance Escalation Protocol



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