



Virginia Beach EMS
Disease Outbreak Plan

1. PURPOSE & OBJECTIVES

The primary purpose of this plan is to enable the Virginia Beach Department of EMS to set expectations and guide actions for effective and efficient operations during an outbreak of infectious, water, or foodborne disease, such as a local epidemic or a pandemic.

Our priorities during an outbreak are to:

1. Minimize transmission of the disease among our members and partners.
2. Minimize transmission of the disease to any other unaffected individuals within the scope of our operations.
2. Treat and alleviate patient illness.
3. Maintain mission-critical operations and services.

2. SUPPORTING PLANS

This plan will be implemented in conjunction with coexisting plans from this or other organizations, as follows:

1. Virginia Beach Department of EMS (Pandemic Flu Plan, etc)
2. City of Virginia Beach (Exposure Control Plan and Emergency Operations Plan)
3. Virginia Beach Department of Public Health (Emergency Response Plan)
4. Virginia Department of Health
5. United States Centers for Disease Control and Prevention (CDC)

3. OVERVIEW & CONTEXT

3.1 OVERVIEW

In epidemiology, an outbreak is a sudden increase in occurrences of a disease in a particular time and place. It may affect a small and localized group or impact upon thousands of people across an entire continent. Outbreaks include epidemics, which normally involve infectious diseases, as well as diseases with an environmental origin, such as a water or foodborne disease. They may affect a region in a country or a group of countries. Pandemics are near-global disease outbreaks.

An outbreak has the potential to cause illness in a very large number of people, overwhelm the health care system, and jeopardize services by causing high levels of absenteeism in the workforce. Basic services, such as health care, law enforcement, fire, emergency response, communications, transportation, and utilities could be disrupted during an outbreak. Finally, the outbreak, unlike many other emergency events, could last many months and affect many areas throughout the world simultaneously.

In an outbreak situation, the goal is to slow the spread of disease to prevent illness. The most effective strategy to accomplish this for an infectious disease is through vaccination. However, it is likely that effective vaccines will not be available for many months following the outbreak's emergence. Existing treatments may also not be effective or available. Other infection control strategies such as social distancing, improved hygiene and respiratory etiquette, isolation, and quarantine may be used to control the spread of disease.

3.2 ROLE OF THE VIRGINIA BEACH DEPARTMENT OF PUBLIC HEALTH

The health department will be the lead agency in coordinating citywide public health and emergency medical response and will activate its Emergency Coordination Center (ECC) and request the activation of the citywide Emergency Operations Center (EOC) when a unified response is necessary.

The epidemiology of the pathogen and the current situation will influence the health department's response. Specific guidance and policies, based on up-to-date intelligence, will be provided throughout each alert stage. Table 1 outlines the stages of management strategy and *potential* activities, as adapted from the Virginia Beach Health Department's pandemic influenza plan.

Table 1. Virginia Beach Department of Public Health's Outbreak Management Overview

Alert Stage*		Virginia Beach Department of Public Health <i>Overview of Possible Activities</i>
Yellow = Prepare	1. No new human-to-human transmission	<ul style="list-style-type: none">• Establish city agency Outbreak Planning Committee• Finalize health department pandemic plan• Assist city agencies to develop outbreak plans• Enhance internal disease control surveillance

	2. Human-to-human transmission identified outside local area	<ul style="list-style-type: none"> Educate clinicians, businesses, organizations that serve populations with special needs, and the general public Send Health Advisory to clinicians Assist with training of city disaster service workers Stockpile materials and medications
Red = Respond	3. Few local cases	<ul style="list-style-type: none"> Initiate city emergency response system Share real-time accurate information with city agencies and public Send Health Alert with clinical care guidance to clinicians Carry out disease surveillance and control activities Provide infection control guidance (e.g. isolation, quarantine, social distancing) Coordinate distribution of medicines and/or vaccines as available
	4. Clusters of local case	
	5. Widespread Infection	
	6. Post-outbreak	
Green = Recover	6. Post-outbreak	<ul style="list-style-type: none"> Resume routine operation, as able based on staffing Assist employees and community in recovery Evaluate response and update plans

* Material resources required to carry out local operations could be limited at any stage due to international and national production shortages and disruptions in distribution systems (e.g. truck, train, aircraft).

3.3 ROLE OF THE VIRGINIA BEACH DEPARTMENT OF EMS

During an outbreak, the Virginia Beach Department of EMS will be responsible for maintaining essential community services in line with its mission and supporting, to the extent possible, the public health response. The Virginia Beach Department of EMS will communicate with or be present in the EOC upon activation. The Virginia Beach Department of EMS will maintain communications with the Virginia Beach Department of Public Health and will implement recommended procedures that promote the health and safety of employees and Virginia Beach’s residents and visitors. Table 2 details possible activities that the Virginia Beach Department of EMS will implement throughout the outbreak alert stages.

Table 2. Virginia Beach EMS Outbreak Management Overview

Alert Stage	<i>Overview of Possible Activities</i>
Yellow = Prepare	<ul style="list-style-type: none"> • Participate in Outbreak Planning Committee • Establish necessary policies • Finalize outbreak continuity of operations plan • Inform and train employees
Red = Respond	<ul style="list-style-type: none"> • Manage essential operations • Provide regular information updates to staff, partners, and clients/public • Activate increased infection control measures • Track EMS employees who report ill
Green = Recover	<ul style="list-style-type: none"> • Resume normal city services, as able based on staffing • Assist employees and community in recovery • Evaluate response and update plans

4. PLANNING ASSUMPTIONS

The following planning assumptions were used in the development of this Plan:

- Time period**
- There may be less than six weeks of warning from the time the outbreak is announced before it reaches Virginia Beach.
 - The time interval between alert stages may be rapid (ranging from days, to weeks, to months).
 - The outbreak may last as long as eighteen months in several waves with mortality and morbidity increasing and decreasing sporadically.
 - Waves of severe disease may last 1 to 4 months.
- Prevention & Treatment**
- A vaccine or treatment may not be available for at least 4 to 6 months after an outbreak begins and supplies may be limited.
 - Existing treatments may not alleviate or protect against the outbreak pathogen.
 - If effective, relevant medications may be in very limited supply and their distribution may occur in phases.
 - Infection control (e.g. respiratory etiquette, hand hygiene) strategies will be used to slow the spread of disease.
 - Social distancing strategies (e.g. postponing public gatherings) may be used to control the spread.
 - Isolation of ill people will be required.
 - Quarantine of people exposed to ill people may be implemented until it can be determined that they have not been infected.
- Staffing**
- Up to 20-40% absenteeism from work from staff, vendors, and services within the community *may* occur.
 - Absenteeism will be the result of workers becoming ill, staying home to care for children or family members, or refusing to go to work.
 - Every person who becomes ill is likely to miss a few days to many weeks of work.
 - In a severe pandemic 0.1% - 2.5% of workers who become ill may die.
- Vendors of Services/ Products**
- City services will be stressed, but will remain functional.
 - Critical goods and services provided by contractors, consultants and vendors may be erratic.
 - Virginia Beach may not be able to rely on mutual aid resources from state or federal agencies to support local response efforts.

5. EMS ACTIONS-PREPARATION STAGES

5.1 NO NEW HUMAN-TO-HUMAN TRANSMISSION

Monitoring

- A) Monitor for possibility of an epidemic or pandemic situation
- B) Participate in Communicable Disease Outbreak Planning Committee

Communication

- A) Establish and update necessary policies and plans
- B) Initial and ongoing training with members

Force Protection

- A) Prophylaxis
 - (1) All EMS personnel should receive vaccinations as recommended for healthcare workers by the Virginia Department of Health and the the CDC
 - (2) All EMS personnel should have current immunizations

5.2 HUMAN-TO-HUMAN TRANSMISSION IDENTIFIED OUTSIDE LOCAL AREA

Monitoring

- A) Infection Control Officer should monitor spread of virus via Virginia Department of Health, and the CDC

Communication

- A) Keep EMS personnel informed on latest information provided by Virginia Department of Health and the CDC via email, newsletter, websites and training
 - 1. Encourage members to review this plan
 - 2. Review roles and responsibilities
- B) Work with partner agencies to monitor current situation and update plans as appropriate

Force Protection

- A) Prophylaxis

- (1) If recommended by the Virginia Department of Health and the CDC, immediate family members (within the household) of all EMS personnel should receive vaccinations
- (2) Personnel should take extra caution to follow good hand hygiene and other techniques to reduce the spread of disease

5. RESPONSE STAGES

5.1 FEW LOCAL CASES, CLUSTERS OF LOCAL CASES, WIDESPREAD INFECTION

Monitoring

- A) Infection Control Officer will closely monitor spread of virus via Virginia Department of Health and the CDC

Communication

- A) Frequent status updates to OMD and Chief of EMS
- B) Keep EMS personnel informed on latest information provided by the City communications office , the Virginia Department of Health and the CDC via email, newsletter, websites, handouts and training
 - a. Advise EMS personnel of changes to procedures and protocols as they develop
- C) Frequent status updates/contact with partner agencies
 - a. Internal (fire, police, ECCS, Occupational Health, etc)
 - b. External (hospitals, TEMS, etc)
- D) Participate in EOC operations

Force Protection

A) Prophylaxis

- (1) All EMS personnel should receive the recommended vaccine as soon as locally available
 - (a) EMS personnel are Tier 1A for this vaccine per DHHS Pandemic Plan
 - (b) Follow recommended dosing for specific vaccine per FDA guidelines

- (c) Coordinate with Virginia Beach Public Health Department and Occupational Health to assure availability and priority in vaccination plan
- (2) Personnel should maintain a high level of cleanliness and frequently disinfect common surfaces both in the station and on the apparatus
- (3) If recommended by current CDC guidelines, all personnel engaged in operations should receive antivirals as available
 - (a) If limited availability, consider targeting the drugs to specialized outbreak response and outbreak recon units
 - (b) EMS personnel are Tier 2 for antivirals per the DHHS Pandemic plan
 - (c) Coordinate with Virginia Beach Public Health Department to ensure availability and priority in treatment plan
- (4) Immediate family members (household) of EMS personnel should receive the recommended vaccine as soon as locally available
 - (a) Follow recommend vaccination schedule per FDA and CDC guidelines
 - (b) Coordinate with Virginia Beach Public Health Department to assure availability and priority in vaccination plan

B) PPE and Infection Control Procedures

- (1) Follow most current CDC infection control and hand hygiene guidelines
 - (a) Continue to follow routine PPE and infection control procedures in addition
- (2) Identify PPE needs early(masks, gloves, gowns, etc)
 - (a) Estimate projected needs based on current pathogen
 - (b) Continuously monitor current stock
 - (c) Procure necessary items

C) EMS Force Protection Medical Officer

- 1) An officer may be designated as the EMS Force Protection Medical Officer and could be responsible for:
 - (a) Overseeing prophylaxis and treatment protocols
 - (b) Coordination with the EMS Nurse/Physician Advisor and the designated staffing desk

- (c) Establishing an Outbreak Support Team of EMS personnel to assist with and provide EMS personnel home care and evaluation as needed
- (d) Liaison with Hospitals
 - (i) Priority access for ill EMS personnel

Decontamination

- A)** Follow both routine and most current CDC decontamination guidelines
 - 1) Wear appropriate PPE when performing decontamination
 - 2) All single patient use (disposable) equipment shall be properly discarded and restocked with new replacements
 - 3) Metal laryngoscope blades should be autoclaved and NOT hand cleaned
 - 4) Consider leaving vehicle doors open when not occupied to “air out”

Sick EMS Employees

- A)** Personnel feeling ill and/or febrile are **NOT** to report to duty and must remain off duty until they meet the current CDC guidelines for return to work status
- B)** All EMS personnel will contact an EMS Field Supervisor or designated staffing desk via phone when they become ill
 - (1) If employee offers their symptoms, make a note. Otherwise, do not ask.
- C)** Career employees should follow standard administrative policies regarding sick leave use or revised policies specific to event if created
- D)** At the start of each shift a designated provider may conduct a symptom screening of all on duty EMS personnel
- E)** If the outbreak is respiratory in nature, personnel with clinical criteria for infection should don a standard mask and be sent home (or to an appropriate medical facility if needed)
- F)** An EMS Nurse or Physician Advisor may be established
 - (1) Ill members may be referred for return to work information
 - (2) May provide “Return to duty status” for other ailments if Occupational Health is overwhelmed
 - (3) Could be tasked to contact sick members for well checks

- (4) Can offer advice and treatment suggestions to ill EMS personnel over the telephone
 - (i) Coordinate with EMS Force Protection Medical Officer for referral to most appropriate facilities
- G)** EMS will maintain a database of:
 - (a) Personnel who are ill
 - (b) Personnel with at least one known exposure to the pathogen
- H)** If an EMS employee who is ill with the pathogen is being managed at home, family should follow the CDC's Home Care Infection Control Guidelines For Pandemic Influenza Patients and Household Members or similar guidelines
- I)** EMS Family Care
 - (a) If a EMS employee becomes ill with the pathogen, consider prophylaxis for household immediate family per recommendation of current CDC guidelines
 - (b) EMS personnel with ill household family member(s) can phone consult the EMS Nurse/Physician Advisor
 - (c) Can be placed at the EMS alternate care facility is established
 - (d) Career employees should follow standard Administrative policies regarding family sick leave use or revised policies specific to event if created

Dispatch and Response Alterations

- A)** 911 requests for transport may be delayed or significantly altered
 - (1) This decision will be based on a combination of factors such as call volume, available resources and turn-around times
 - (2) As per Chapter 2, Article XIX of the City Code of Virginia Beach, the director of EMS and/or the medical director hold the authority to alter responses to 911 calls for service including but not limited to refusal of response and refusal of transport
- B)** If alterations to dispatching, additional screening or call backs is necessary, an EMS provider will be assigned to ECCS to aid in coordination
- C)** It may be necessary to initiate an outbreak call screening protocol to identify potential cases and restrict unnecessary responses/exposures

- (1) Any changes to call screening protocols will be approved by the medical director
 - (2) If transport is refused or delayed, callers should be given referral information and information on when to call back
 - (3) Screening will be based on current CDC guidelines for symptomology
 - (4) See appendix 1 for examples
- D) Alternative strategies may be employed to triage cases and relieve the need for ambulance transport**
- (1) Fire apparatus dispatched to EMS cases could be altered and coordinated through an EMS Field Supervisor, the PSCC, or through the EMS member assigned to ECCS
 - (a) Work with fire department to limit unnecessary exposure and reduce need for response to best utilize resources
 - (2) Any changes to response will be approved by the Director of EMS
 - (a) Planned refusal of responses must be approved by the medical director
 - (3) Possible alternative transport may be established
 - (a) Any alternative transport options must be approved by the Director of EMS
 - (b) Outbreak Recon Unit could evaluate what further care is appropriate (home care or transport)
 - (c) Outbreak Transport Van could transport multiple BLS ambulatory patients
 - (d) Transport Van could transport multiple BLS ambulatory uninfected patients
 - (e) See Appendix 1 for examples

Medical Management and Transportation

A) Expanded scope of practice and altered standards of care

- (1) EMS personnel may need the capability to prescribe and administer medications and procedures outside of their normal scope of practice to treat patients at home and avoid transports or clinic/ED visits (See appendix 1)
- 2) Any alterations to the scope of practice or standards of care will be approved by the medical director and will be in conjunction with current CDC guidelines

- 3) If medication supplies become limited, the Medical Director may issue new protocols/guidelines for administration and dosing
- 4) Procedures that expose personnel to increased infection transmission risk might be avoided as much as possible and be performed only as indicated per the treatment guidelines

B) Transport protocols

- 1) Transport protocols could be changed based on available critical care, hospital, alternate care facility beds and current/projected patient load
- 2) The medical director can modify treatment/transport guidelines as alternatives to standard ER transports are established
- 3) Work with partner agencies to determine bed and resource availability
- 4) An EMS Field Supervisor, the PSCC or other designated person should determine hospital patient load and minimize overloading facilities

Staffing

A) Operations

- 1) Assume a 40% loss of personnel at outbreak peak
 - a) Utilize formulas based on current projections to determine staffing concerns
- 2) Constantly monitor staffing to determine when to shut down non-essential services
- 3) Reallocate personnel to essential services
- 4) Encourage reduced working hours, telecommuting, and other flexible options
- 5) Be dynamic in deploying units and personnel to maintain operational tempo
- 6) Consider alternate staffing options

B) Training/Admin

- 1) Tasks and current operations may be adjusted or shut down as employees are rolled into operations or secondary tasks

C) Mutual Aid

- 1) Consider sharing resources such as equipment, vehicles and/or personnel as shifts in the workforce occur since it is unlikely that surrounding cities will be any less taxed
- 2) Consider participating in regional EMS task forces to sustain operations

- 3) Work with the region to solve common issues

D) EMS reserve

- 1) Expediting current processes or incorporating non members will be approved by the director of EMS and/ the medical director
 - a) Consider using personnel from other departments to fill gaps in service or to support alternate units
 - b) Consider expediting the training process and release of members
 - c) Recruit, select, register and train (expedited process) medical personnel for alternate staffing
 - (a) Medical discipline students
 - (b) Released EMS providers not affiliated with Virginia Beach
 - (c) Inactive EMS providers
 - (d) Other non medical personnel who can drive
- 2) Training will be required and will depend on tasking
 - a) Field requirements at a minimum should include
 - (a) Infection control guidelines
 - (b) Orientation to the system including radios, responses, etc
 - (c) Roles and responsibilities

E) Security

- 1) It may be required to place EMS facilities on 24 hour lockdown
 - a) Any fixed EMS facility with large stocks of medications and supplies should have 24 hour security
 - b) Any mobile units with large stocks of medications should have security protection
- 2) Consider educating personnel in defensive considerations for force protection
- 3) Work with Law enforcement to ensure EMS personnel safety

F) Administration and Finance

- 1) Assure that administrative staff are covered by the force protection plan
- 2) Have contingency for training alternate personnel to perform administrative functions

- a) Plan to fill positions on an emergency basis with outside personnel
- 3) Work with city administration for emergency funding and purchasing authorization to sustain operations
- 4) Coordinate with Occupational Health to assure expedited coverage for ill and injured personnel
- 5) Maintain detailed records of staffing, overtime and expenditures

G) System Failure

- 1) If manpower falls below 50% or unable to staff 75% of non surge ambulances consider the following options to maintain operations
 - a) Utilize private permitted EMS agencies
 - b) Activate pre-event contracts
 - c) Utilize private non-permitted EMS Agencies
 - d) Discontinue alternative outbreak units
 - e) Discontinue response to all non-emergency calls
 - f) Discontinue responses to medical facilities (clinics, physician offices, nursing facilities)

H) Recovery

- 1) Prepare for subsequent pandemic waves
- 2) Reorganize the Department with remaining personnel and equipment to continue operations
- 3) Resume normal operations but maintain infection control precautions until discontinued as recommended by the CDC
- 4) Assure that personnel receive any new vaccines or recommended prophylaxis treatments
- 5) Resupply as needed
- 6) Conduct After Action Review and update/revise plan as needed

Appendix 1. Medical Screening, Triage, Treatment and Transport Example

EMS personnel evaluating patients should follow the most current CDC guidelines specific to the outbreak. Use age appropriate values for pediatrics.

<u>White</u>	
Dispatch Screening	*No clinical criteria for infection and not high risk
Response	*May not respond or may send alternative evaluation team *May simply refer to phone center or outbreak evaluation center
Medical Screening	*Fails clinical criteria-symptoms not associated with outbreak and no high risk criteria
Transport	*No transport required
Treatment	*No transport *Recommend over the counter medications as needed *Provide home care guidelines

<u>Green</u>	
Dispatch Screening	*Meets clinical criteria or high risk *No dyspnea
Response	*May not respond or may send alternative evaluation team *May simply refer to phone center or outbreak evaluation center
Medical Screening	*Stable vital signs, no dyspnea, lungs clear, no cough with productive colored sputum *No diarrhea or vomiting
Transport	*No transport may be required *May transport to alternative care site *May transport in alternative vehicle
Treatment	*If no transport required <ul style="list-style-type: none"> • Recommend or issue over the counter medications • Provide home care guidelines • Prescribe antivirals if indicated

<u>Yellow</u>	
Dispatch Screening	*Clinical criteria and high risk criteria *Clinical criteria and either vomiting or diarrhea for >24 hours or cough with productive colored sputum *No dyspnea
Response	*May triage response based on call screening *May send outbreak recon unit or BLS ambulance
Medical Screening	*Meets clinical criteria-symptoms and has high risk criteria *Or has clinical criteria with one of the following <ul style="list-style-type: none"> • Abnormal vital signs • Cough with productive colored sputum • Rales, rhonchi or wheezing • Diarrhea or vomiting
Transport	*If high risk, clinically dehydrated and/or coughing with productive colored sputum
Treatment	*Transport and treat per protocols *If no transport required <ul style="list-style-type: none"> • Provide home care guidelines • Prescribe or issue over the counter medications • Prescribe antibiotics as indicated • Prescribe bronchodilators as indicated • Prescribe antivirals as indicated

<u>Red</u>	
Dispatch Screening	*Clinical criteria with dyspnea or altered mental status
Response	*Send ALS ambulance
Medical Screening	*Meets clinical criteria with one of the following <ul style="list-style-type: none"> • Significantly abnormal vital signs • Significant dyspnea • Altered mental status • Dehydration
Transport	*Transport to appropriate facility based on current protocols
Treatment	*Transport and treat per protocols

Appendix 2. Outbreak specific supplies

Assume limited resupply and stock sufficient quantities to last through recommended surge period per CDC guidelines. The following supplies could have a high demand and use in an outbreak situation.

1) Airway and oxygenation supplies

- a) Oxygen
- b) Oxygen administration supplies (Masks, cannulas, nebulizers)
- c) BLS airway equipment (OP/NP airways, suction, suction tubing and catheters, BVMs)
- d) ALS airway equipment (ET tubes, laryngoscopes, tube holders, EtCO2 supplies)
- e) CPAP supplies

2) Outbreak medications

- a) Standard medications
 - i) Albuterol
 - ii) Atrovent
 - iii) IV fluids (Normal saline, Lactated Ringers)
 - iv) Dopamine
- b) IV supplies
- c) Over the counter / prescription medications
 - i) Fever/pain reducers (Ibuprofen or Acetaminophen)
 - ii) Imodium or other anti-diarrheals
 - iii) Phenergan or other anti-emetics
 - iv) Albuterol MDI inhaler

d) Vaccines

e) Antivirals

f) Antibiotics

3) PPE supplies

a) N-95 Masks

- i) (12/providers/shift = 24/unit/shift = 12unit/shift= 2shift/day= 576/day = 51,840 for three months)

ii) This is a high projection that allows for additional personnel and units

iii) Non field personnel $4/\text{shift} = 2\text{shifts}/\text{day} = 12\text{personnel} = 96/\text{day} = 8640$ for three months

b) Gloves

c) Gowns

d) Eye protection

e) Surgical masks

i) Could substitute for immediate family use, office personnel use and auxiliary personnel use.

Also use for reverse isolation

ii) $4/\text{person}/\text{day} \times 500 \text{ people} = 2000/\text{day} = 240,000$ for three months

iii) Reverse isolation = $12/\text{unit}/\text{shift} = 103,680$ for three months

4) Cleaning supplies

a) Hand sanitizer

b) Bleach disinfect wipes

c) Paper towels

d) Tissues

e) Spray disinfectant for station surfaces