

MDCHPC Infectious Disease Surge Annex

1. Introduction

1.1 Purpose:

At any moment, a patient with a highly infectious disease can present at an emergency department. The World Health Organization warns that infectious diseases are emerging at a rate that has never been seen before. High consequence infectious diseases (HCIDs) include hemorrhagic fever viruses (Ebola, Marburg, etc.) and other highly contagious diseases include MERS-CoV, SARS, COVID-19 and other pandemic strains of the influenza virus. Additionally, the potential exists for highly infectious diseases to emerge as a result of deliberate introduction into human, animal, or plant populations for terrorist purposes, such as anthrax, smallpox, and tularemia. The circumstances of infectious disease emergencies may vary by multiple factors, including type of biological agent, scale of exposure, mode of transmission and intentionality (bioterrorism), and many others. Public health measures to contain such outbreaks are especially important for diseases with high morbidity or mortality and limited medical prophylaxis and/or treatment.

The Miami-Dade County Health Care Preparedness Coalition (MDCHPC) is located entirely within the borders of Miami-Dade County in southeastern Florida. It is bordered to the South and West by Monroe County, to the North by Broward County, to the West by Collier County, and to the East by the Atlantic Ocean. Miami-Dade County is uniquely vulnerable to HCIDs or other infectious diseases. The July 2019 US Census estimates 2,716,940 people reside in Miami-Dade County and winter residents dramatically increase this population. In addition, domestic and international tourists flock to Miami-Dade County. Miami International Airport was the 14th busiest airport in the nation, but 3rd in total international passengers surpassed only by JFK (NYC) and LAX (Los Angeles). Approximately 60% of all international visitors to Florida come through Miami International Airport. Visitors also arrive in Miami via cruises at Port of Miami, the busiest cruise port in the world. All of these factors increase the potential for an outbreak in Miami-Dade County. During the COVID-19 pandemic, several cruise ships battling an outbreak of the COVID-19 virus docked at the Port of Miami seeking treatment for their passengers.

HCIDs, and other infectious diseases have the potential to significantly impact individual organization's operations, the healthcare system, and the health and safety of personnel and the general public. Many diseases could result in an epidemic and could lead to a pandemic (an epidemic that occurs on a worldwide scale).

The purpose of the Healthcare Coalition Infectious Disease Surge Annex is to guide the Miami-Dade County Healthcare Preparedness Coalition members in their ability to prepare for, respond to, and manage highly infectious patients that endanger the patients, visitors, staff, and family members of medical healthcare facilities within the region. This plan represents a collaborative effort with respect to preparedness for EIDs that pose a significant public health threat to Miami-Dade. The purpose of the plan is to assist Miami-Dade in containing an outbreak of diseases caused by an infectious agent or biological toxin, or response to other EID emergencies as defined in the overview of this plan. The plan identified key information that organizations should know when confronted with a high consequence disease or infectious disease epidemic or pandemic. It also describes how an organization may be affected, and what measures can be taken to mitigate those effects. In addition to education, this annex provides guidance on preparing and developing a course of action should an outbreak occur.

1.2 Scope:

The scope of this plan is to coordinate the coalition's response to an infectious disease outbreak. High-consequence infectious diseases (HCIDs) or highly pathogenic respiratory viral infection may pose a public health risk due to the epidemic potential and has the potential to cause a public health emergency for which there are no, or insufficient, countermeasures. The plan also addresses the response to a widespread outbreak or pandemic. The plan uses the World Health Organization (WHO) phases associated with pandemic influenza (1 through 6), and the Centers for Disease Control & Prevention (CDC) frontline hospital capabilities to identify, isolate, inform, and prepare for transport a patient suspected of having a highly infectious disease). This plan was designed to assist with public health, medical and emergency preparedness to respond to an occurrence, or threat of an occurrence, of pandemic influenza or an HCID and is not intended to apply to more routine infectious diseases (such as tuberculosis).

1.3 Overview/Background of HCC and Situation

The MDCHPC Infectious Disease Surge Annex was developed using member and subject matter expert support. This plan will be reviewed and updated annually by the MDCHPC. Lessons learned as they emerge from After Action Report/ Improvement Plans following real events or planned training exercises will be incorporated into the annex.

The Miami-Dade County Healthcare Preparedness Coalition membership includes hospitals and health systems, emergency management, public health, EMS providers, long-term care providers, behavioral and mental health providers, specialty service providers (dialysis, pediatrics, urgent care, district Medical Examiners, funeral directors, etc.), support service providers (laboratories, pharmacies, blood banks, poison control, etc.), primary care providers, community health providers, and other healthcare and response stakeholders. There are 32 acute care hospitals and 4 stand-alone emergency departments in Miami-Dade.

1.4 Assumptions:

This plan takes an all-hazards approach to infectious diseases, while using standard state and local planning scenarios for Miami-Dade. This plan is based on the following general assumptions:

For high consequence infectious diseases:

- A HCID (confirmed or suspected) patient has presented to a health care facility or the EMS within Miami-Dade and has impacted operations up to and including the need for a facility to evacuate or the World Health Organization has declared a pandemic, or the State of Florida has issued an Executive Order declaring a public health emergency.
- Impacted facilities have activated their emergency operations plan and staffing of their facility operations center.
- Local resources will be used first, and then State resources, followed by a Federal request as needed.
- The increased number of area residents and staff needing medical help may burden and/or overcome the health and medical infrastructure. This increase in demand may require a regional response and/or subsequent city, county, state, and/or federal level of assistance.
- Facilities will communicate their medical needs through ESF -8 protocols and non-medical needs to the jurisdictional emergency operations center.

- Healthcare organizations will report status on situational awareness but will manage the incident on their own as much as possible before requesting assistance.
- The ID Annex integrates the key elements of communicable disease control and prevention with emergency management concepts. A National Incident Management System (NIMS) compliant Incident Command System (ICS) organizational structure will be utilized to scale the response as needed to effectively manage and meet the incident objectives for the infectious disease emergency response.
- The regional resources will work in full cooperation with the appropriate Emergency Management Offices and Hospital Incident System-Command Teams in a Unified Command effort.
- Processes and procedures outlined in this response plan are designed to support and not supplant individual healthcare organization emergency response efforts.
- Full cooperation, collaboration, communication and coordination between the Miami-Dade County hospitals and the City and County Emergency Management Offices must be established in order to maximize the effectiveness of this plan.

The U.S. Department of Health and Human Services assumptions about pandemic disease along with real world experience and the MDCHPC After Action report following Covid-19 pandemic forged the following assumptions:

- Susceptibility to the pandemic influenza will be universal.
- The clinical disease attack rate will be 30 percent in the overall population. Illness rates will be highest among school-aged children (about 40 percent) and the elderly. Among working adults, an average of 20 percent could become ill during a community outbreak.
- Risk groups for severe and fatal infections cannot be predicted with certainty. During annual fall and winter influenza season, infants and the elderly, persons with chronic illness, and pregnant women are usually at higher risk of complications from influenza infections.
- The typical incubation period for influenza averages two to three days. COVID-19 demonstrated a fourteen-day incubation period for a novel strain transmitted between people by respiratory secretions.
- Persons who become ill may shed virus and can transmit infection for several days before the onset of illness. Viral shedding and the risk for transmission may be greatest during the first two days of illness.
- In an affected community, an outbreak will typically last about six to eight weeks. At least two pandemic disease waves are likely. Following the pandemic, the new viral subtype is likely to continue circulating and contribute to seasonal influenza.
- The seasonality of a pandemic cannot be predicted with certainty. The largest waves in the United States during 20th-century pandemics occurred in fall and winter.

1.6 Goals & Objectives:

The goals of the Infectious Disease Surge Annex are:

- To define key planning assumptions
- To outline the role and responsibilities of the MDCHPC
- To define concept of operations during a pandemic influenza outbreak
- To list the actions undertaken by the MDCHPC to prepare
- To improve our community's and our partner agencies preparedness for a pandemic.

Planning will help to reduce transmission of the pandemic virus strain, to decrease cases, hospitalizations and deaths, to maintain essential services and to reduce the economic and social impact of a pandemic. The objectives of the Infectious Disease Surge Annex are to:

- Assist all agencies that make up the coalition with preparing for and responding to a pandemic
- Standardize plans and protocols
- Provide training and equipment to healthcare partners to prepare for response
- Share best practices across the region

2. Concept of Operations

2.1 Triggers/Activation

County	Capabilities / Gaps	Triggers for Infectious Disease Outbreaks	Alerts/Notifications
Miami-Dade	<p>In the event of an Infectious disease outbreak, the county will activate its medical countermeasure (MCM) plan and points of dispensing will be opened to provide MCM to the population, including pediatrics.</p> <p>Some gaps could include transportation for elderly/disabled/socially and/or economically disadvantaged populations. Supply chain can also be disrupted depending on the scope and size of the infectious disease outbreak. Infectious Disease SMEs have been identified and could potentially be called upon to assist in education of POD staff.</p>	<p>The plan would be triggered by a declaration from the Florida Department of Health or Centers for Disease Control.</p>	<p>Action by HCC: Communication, information sharing, work with county Emergency Manager and ESF-8 to share information on resources, assist with connecting partners and resources.</p>

2.2 Notifications

Healthcare facilities will report patients under investigation (PUI) for an HCID to the local health department (LHD). The LHD will then contact the State Health Department. When appropriate, the state epidemiologist contacts the Bureau of Preparedness and Response to initiate transport of patient to the regional treatment center. By state policy, the State Surgeon General (or their designee), the State ESF 8 Emergency Coordinating Officer, or the State Epidemiologist shall authorize patient transport to the regional treatment center.

Pandemics are typically declared by the World Health Organization and in Florida are issued as public health executive orders issued by the Florida State Surgeon General.

2.3 Operational Mission Areas

2.3.1 Command and Coordination

ICS is a management system that is used to achieve optimal command and control within an organization as well as seamless inter-agency coordination during any type of emergency. It uses a clearly defined chain of command with a limited span of control

- **State Role:** The Florida Department of Health (FDOH) State Surgeon General is responsible for the overall direction, management and control of all Department personnel and resources committed to control of an influenza pandemic. Once the State Emergency Response Team (SERT) is activated this plan is incorporated into the established state emergency management structure.
- **Regional Role:** The State and local ICS structure will expand and contract as the pandemic situation warrants. If an area command or multi-agency coordination system (MAC) is used, it will follow Regional Domestic Security Taskforce (RDSTF) geographical boundaries.
- **Local Role:** The Health and Medical Emergency Support System (ESF - 8) will coordinate and manage the response to an influenza pandemic will utilize the incident command system (ICS).
- The overarching goal is to assist Emergency Management and Emergency Support Function 8 (ESF-8) with the National Preparedness Goals mission areas: Prevention, Protection, Mitigation, Response, and Recovery as it relates to healthcare disaster operations.
- **WEB-EOC:** Emergency Management utilizes WebEOC for event management mission requests and supplies. The Coalition members monitor this for all disasters and the MDCHPC shares relevant information. All relevant information is forwarded or included in the MDCHPC timely (daily) situation reports. County situation reports are reviewed for situational awareness.

2.3.2 Initial Outbreak

In an HCID, the initial outbreak focuses on the frontline hospital's capability to identify, isolate and inform. Hospitals within Miami-Dade have undergone a frontline hospital assessment and have identified areas for isolation both prior to and during the COVID-19 pandemic. Hospitals are required to report an HCID to the local health department.

In a pandemic, the Initial Outbreak encompasses WHO Phases 3, 4, 5 and early 6. The main objectives for the Initial Outbreak period are testing, contact tracing, and public information on mitigation measures.

2.3.3 Response Phase

The response phase activities in an HCID focus on the frontline hospital's capability to stabilize and prepare the patient for transport. Standardized protocols for donning and doffing have been developed and the MDCHPC has developed an Infectious Disease Best Practices document

(Appendix 1). Standardized protocols for managing an HCID patient until transport to a regional treatment facility have been established by member hospitals. Transport is through the Florida Infectious Disease Transportation Network (see attachment 1, D).

The response phase activities in a widespread epidemic or pandemic focus on community control measures, including isolation of symptomatic cases, quarantine of suspected cases, wide-spread infection control procedures and mitigation efforts and public information and education. Hospitals will focus on increase surge capacity to ensure appropriate treatment for the ill, managing staffing and equipment shortages, activating alternate care sites and managing large numbers of fatalities. Additional activities will include preparing for and conducting large-scale vaccination campaigns when a vaccine becomes available, and continuation of surveillance and tracking activities.

2.3.4 Surveillance

The Florida Department of Health (FDOH) has the lead responsibility for disease surveillance. The FDOH Bureau of Epidemiology conducts disease surveillance and investigates suspected occurrences of infectious diseases and conditions that are reported from physician's offices, hospitals, laboratories and other medical providers and community partners. Surveillance is primarily conducted through passive reporting from the medical community as required by Chapter 381.0031 (1,2), Florida Statutes. Data is collected and examined to determine the existence of trends. Syndromic surveillance was added to the disease reporting process as an active method of determining activities in the community that could be early indicators of outbreaks and bio- terrorism.

2.3.5 Data Reporting

The data relied upon during a pandemic is managed and reported by three state agencies, Division Emergency Management (DEM), FDOH, and the Agency for Health Care Administration (AHCA). FDOH oversees the Merlin disease reporting system. This includes case volume, positivity rate, case outcomes and other public health data. County reports and numbers are shared in the MDCHPC situation reports.

2.3.6 Safety and Infection Control and Prevention

Immediate isolation of potential HCID patient(s) wherever presented is needed to protect other patients, healthcare workers, and the general population until transportation to the nearest treatment facility is possible. In most HCID events, patients will likely be placed in isolation to prevent transmission of the infection to others. Isolation facilities will inevitably vary between healthcare entities.

All Miami-Dade County hospitals have established training in isolation procedures and infection control to enable them to safely place a patient in isolation. The length of isolation time that will be required will vary based on the disease, patient condition and symptomology, and the status of the Florida Infectious Disease Transportation Network (FIDTN), but all facilities need to be prepared to isolate a patient until transferred to a more capable facility.

In a pandemic, CDC provides guidance on safety and infection control and prevention measures which are updated as the pandemic unfolds.

2.3.7 Worker Safety

Healthcare facilities must have procedures in place to be able to monitor staff for signs and symptoms of infection after they have provided care or potentially had exposure to an HCID or other infectious disease patient.

Hospitals should have procedures to address the needs of staff. Staff may need non-congregate housing if they are exposed or assistance with childcare.

The MDCHPC includes information and sessions on responder resiliency for healthcare and emergency response personnel during the annual Miami-Dade County Healthcare Preparedness Coalition Symposium.

2.3.8 Non-Pharmaceutical Interventions

Even with the current technologies, it will take several months or more before vaccines based on a new influenza strain can be produced on a large scale. Prior to vaccine availability all agencies in the coalition should help promote the recommended CDC guidelines. During the COVID19 pandemic, these included:

- Clean your hands often - Wash your hands often with soap and water for at least 20 seconds or use alcohol-based hand rub especially after you have been in a public place, or after blowing your nose, coughing, or sneezing.
- Avoid close contact - Stay at least 6 feet (about 2 arms' length) from other people.
- Wear a well-fitting mask - Cover your mouth and nose with a cloth face cover (i.e. at least 2-ply cloth material that you cannot see through) when around others.
- Clean AND disinfect frequently touched surfaces daily. This includes tables, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets, and sinks.

Additional measures were needed to protect vulnerable populations. For example, early in the pandemic, hospitals and nursing homes restricted visitation. CFDMC

2.3.9 Alternate Care Sites

Alternate care sites may be identified by local emergency management, public health, or hospitals and may be used for testing, vaccinations, hospital ED triage, and treatment. Each county has an alternate care site plan and there several resources available in the OEM, MDFR, and strategically placed coalition cache upon request. During the initial surge in 2020, Coalition funded shelters were deployed to support a hospital system for triage and testing. 39 ventilators from the MDCHPC cache were also deployed at several hospitals in Miami-Dade County.

2.3.10 Supply Chain, Supplies, Personal Protective Equipment (PPE)

The Miami-Dade County Healthcare Preparedness Coalition create a Supply Chain Mitigation Strategy based off a Supply Chain Assessment. Information on the Draft document is included (Appendix 2)

2.3.11 Cities Readiness Initiative and Medical Countermeasures (MCM)

The Cities Readiness Initiative (CRI) is a federally funded program through the Centers for Disease Control and Prevention (CDC) designed to enhance preparedness in the nation's major metropolitan statistical areas. Through CRI, state and local public health departments have developed plans to quickly receive and distribute medicine and medical supplies from the Strategic National Stockpile (SNS) to local communities in response to a large-scale public health emergency. The goal of CRI is to provide prophylaxis to the affected population within 48 hours of the decision to do so.

Miami-Dade County is one of 13 CRI funded counties in Florida. The Florida Department of Health in Miami-Dade County (FDOH-Miami-Dade) works with the CDC, Florida Department of Health, the Regional Domestic Security Task Force, Miami-Dade County Office of Emergency Management, local law enforcement and fire/rescue agencies, and other community partners to develop, maintain, train and exercise response plans.

Points of Dispensing

To dispense the prophylactic medications, the DOH will open point of dispensing (POD) locations where healthy community members can come receive medications to protect themselves and family members following possible exposure, free of charge. During an activation, the locations of PODs will be made available through media, our website, and other avenues to ensure everyone knows where to go, what to bring, and what to expect.

In order to reach everyone who will potentially need to receive post-exposure prophylaxis, the DOH in Miami-Dade partners with private businesses and organizations that would like to support the overall effort. Closed PODs are intended solely to provide prophylaxis to the pre-identified employees, members, and households of the partner business or organization. Partner organizations receive planning support and training free of charge. By becoming closed PODs, organizations reduce the number of people seeking prophylaxis at public PODs resulting in shorter lines and faster care for everyone.

Who should partner with CRI?

By working together through public and private partnerships and with help from volunteers from the Miami-Dade Medical Reserve Corps (MRC), we are better prepared to respond to public health emergencies. We rely heavily on partnerships to ensure the best outcome for the community during times of emergencies.

Organizations with fixed populations or with large employee/member populations are eligible to become closed PODs. Medical expertise is not required and time commitments are flexible to meet the needs of the organization. Public, private, faith-based, and civic organizations are welcome and encouraged to participate.

2.3.12 Patient Transport

- The current state of EID disaster response for the State of Florida is a redundant transportation system that includes a plan to transport a patient with a highly infectious pathogen by air to a regional treatment center. If air transportation is not available, a ground transportation network has been developed that transports a patient across Florida to our nearest regional treatment center (Emory). The Florida Infectious Disease Transportation Network (FIDTN) has been exercised regionally and found to be a robust state-wide response capability, although capacity is very limited.
- The primary means of transportation of an EID patient will occur through the activation of the FIDTN. Transportation needs will be coordinated with the assistance of the emergency

operations (ESF 8 representative) as required.

- Intra-facility transport procedures. As part of the CDC frontline hospital criteria, each hospital is to map patient transport routes specific to the layout of their campus. Hospitals are to have transport routes that utilized less populated routes and or outdoor routes for transporting patients. Alternatively, hospitals are to have plans in place to be able to care for the patient in the emergency department.
- Prioritization, transfer locations and the movement of patients to other facilities or specialty transfers is done in accordance with the state of Florida patient movement plan. State ESF8 is prepared to coordinate resources to support the movement of persons with medical and functional needs in impacted areas where local health and medical systems are overwhelmed.
- Locally, all specialty patient transfers would be determined by Miami Dade Fire Rescue (lead) and other City Fire Rescue Agencies. MDRF is the contracted Region 7 entity that would transport HCID patients through the FIDTN.

2.3.13 Fatality Management

The Miami-Dade Medical Examiners' Office is a crucial partner in the Miami-Dade County Healthcare Preparedness Coalition. All just in time training, policy updates, and special procedures from the Miami-Dade ME are shared with Coalition membership.

2.3.14 Communications

Communication strategies are an important component in managing any infectious disease outbreak and are essential in the event of a pandemic. There will be an immediate and continuous demand from all segments of society for information on the actual and potential impact, magnitude, transmission, treatment, and recovery resulting from the pandemic. Information demands during a pandemic will be sustained over a long period and maintaining public confidence over many months will be based on consistency and credibility of messages. Accurate and timely information at all levels is critical in order to minimize unwanted and unforeseen social disruption and economic consequences and to maximize the effective outcome of the response. Public communications remain the responsibility of the local jurisdiction and individual agency or organization and may be coordinated through the state emergency management system. Joint information centers will be established to ensure consistent communications.

Upon notification of an HCID presenting at a healthcare facility in Miami-Dade County by the hospital, local health department, Office of Emergency Management, Local ESF-8, or other entity of authority, the MDCHPC will provide situational awareness to all HCC members through conference calls and email updates.

The Coalition has redundant communication capabilities with its members. The Coalition uses Constant Contact to share information on meetings, plans, trainings and exercises with its members. The Coalition uses the Everbridge health alert network to share information with members during an emergency. In an event, members receive a wealth of information from multiple mechanisms, including the news media and local emergency management. The Coalition's role in information sharing is to monitor information and share accordingly.

2.4 Training and Exercises

The following infectious disease trainings are suggested:

- Practice donning and doffing PPE
- Perform clinical skills check while wearing PPE (i.e., start IV, insert catheters, etc.)
- Participate in an Infectious Disease drill, tabletop, or functional based on organizational need
- Participate in patient movement training through the FIDTN exercise
- Ensure patient care teams are trained based on type of patients seen (i.e., OB, PEDS, etc.)

The Miami-Dade County Healthcare Preparedness Coalition will provide the following trainings/exercise opportunities or share opportunities as available:

- Communication drills
- Ongoing ICS and NIMS training
- Infectious Disease Surge Annex validation exercises
- MDCHPC and hospital/healthcare led infectious disease workshops, drills and exercises
- National Emerging Special Pathogen Training and Education Center (NETEC) trainings and exercises
- CDC trainings and exercises
- Assistant Secretary for Preparedness and Response (ASPR) trainings and exercise templates

2.5 Deactivation and Recovery

After an infectious disease outbreak is over, it can be expected that many people will be affected in a variety of ways. Many may have lost friends or relatives, suffer from fatigue or have financial losses as a result of the interruption of businesses and employment. Governments or other authorities should ensure that these concerns can be addressed and support the rebuilding of the society. If needed, organize training and education for personnel involved will be provided.

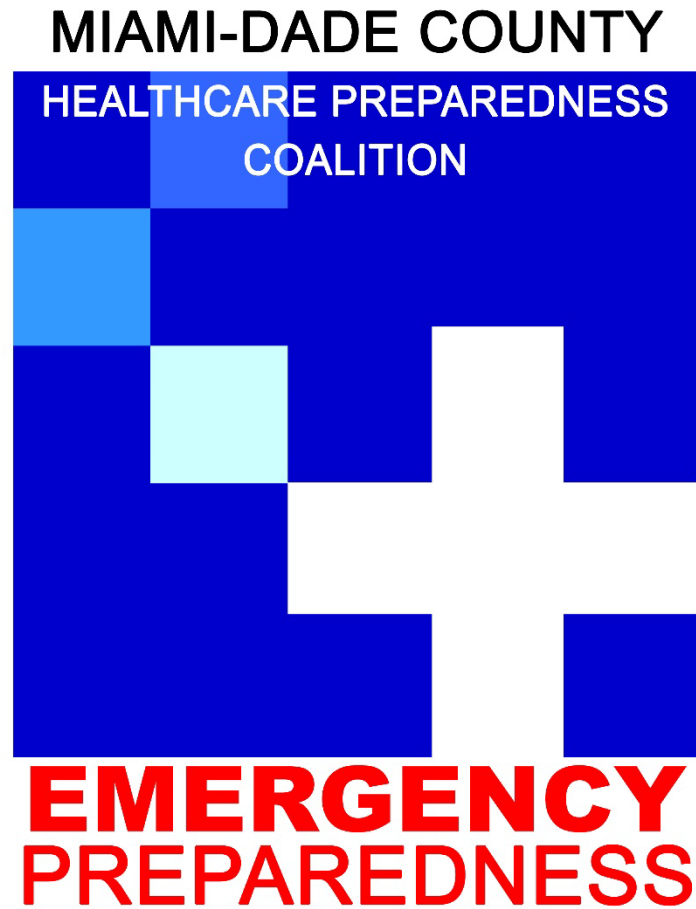
The Coalition will participate in local and regional after action reports and work with healthcare and emergency response partners to address improvement opportunities and test these improvements in future exercises.

3. MDCHPC Infection Control and Response Subject Matter Experts (SME)

Infection Control & Response SME	Contact Information	Associated Agency	Specialty
Dr. Jorge Murillo	786-261-4391 / jmurillo2406@gmail.com	Baptist Health South Florida	Infectious Disease
Dr. Carlos Torres Viera	786-266-0101 / cgtorresviera@gmail.com	Baptist Health South Florida	Infectious Disease
Dr. Reynald Jean	305-575-5402 / Reynald.Jean@flhealth.gov	Florida Department of Health	Epidemiology, Disease Control, Clinical Laboratory, Immunization Services & Public Health Preparedness
Terry Schenk	407-761-8939 / terry.schenk@flhealth.gov	Florida Department of Health	Florida Infectious Disease Transportation Network
Captain Michelle Steele	305-904-4610/Michelle.Steele@miamidade.gov	Miami-Dade Fire Rescue	Infection Control
Yvette Salas	570-401-8117/Yvette.Salas@encompasshealth.com	Encompass Health	Infection Control
Dr. Bhavarth Shukla	1-864-590-2695	UHealth	Infectious Disease
Miriam Levy	786-427-5018	UHealth	Infectious Disease
Darryl Pronty	(216) 973-8261	UHealth	Infectious Disease
Kathleen Sposato	518-929-0455	Jackson Health System	Infection Prevention
Adriana Jimenez	786-512-8524	Jackson Health System	Infection Prevention
Javier Cardozo	305-790-4564	Jackson Health System	Infection Prevention
Maribel Cruz	305-219-6123	Jackson Health System	Infection Prevention
Pablo Mora	954-857-1431	North Shore Medical Center	Infection Prevention
Lynn Granata	305-354-8800/ 305-878-9333/ lgranata@hcnursingcenter.com	Hampton Court Nursing Center	Infection Prevention
Sergio Alvarez	Sergio2.alvarez@enethealth.com	Coral Gables Hospital	Infection Control

4. Appendices

Appendix I: Infectious Disease Best Practices



Approved by the MDCHPC Board of Directors

Date: June 22, 2020

The Miami-Dade County Healthcare Preparedness Coalition holds bi-monthly meetings with its members as well as bi-monthly meetings for its committees. Our meetings include reporting from the Florida Department of Health in Miami-Dade County on health matters including infectious disease and rapidly evolving situations. The Coalition also has the capability and capacity to disseminate vital epidemiology information quickly instead of waiting until the monthly meeting.

The Coalition's hospital emergency departments also participate in the Florida Department of Health's Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) biosurveillance system. Both of these are best practices.

The Miami-Dade County Healthcare Preparedness Partners all participate in the Florida Infectious Disease Transportation Network (FIDTN) and Miami Dade Fire Rescue, our EMS partner, has been charged with the transportation in Region 7. In 2019, FIDTN conducted an exercise with Baptist Hospital to test out the process for receiving a suspected Ebola patient and preparing PUI for transport. As no hospital in Miami-Dade County has been designated as an Ebola treatment facility, all hospitals must be aware of the transportation process as well as Infectious Disease Best Practices.

Below you will find several infectious disease best practices.

A. PRECAUTIONS FOR ALL PATIENT CARE

1. Standard: based on the patient's symptoms and the clinical care rather than a specific suspected organism. The goal is to apply PPE as needed to prevent exposure to bodily fluids. Examples include routine use of hand hygiene, gloves for HIV, anthrax and botulism.
2. Contact: Provide impermeable barriers to infectious agents such as MRSA, norovirus and other suspected infectious diarrhea that can easily be contracted or spread through surface contact. Use gloves and disposable fluid-resistant gown that protects the provider's legs; consider disposable fluid-resistant coveralls.
3. Droplet: Prevents inhalation of larger infectious droplets during direct patient care activities. Use surgical mask or respirator, disposable gloves, eye protection, disposable fluid-resistant gown that protects the provider's legs; consider disposable fluid-resistant coveralls for disease such as SARS1, COVID-19, influenza, mumps, Neisseria Meningitidis
4. Airborne: Provide respiratory protection against inhalation of infectious aerosols (agents that remain infectious over long distances when suspended in the air) such as measles, TB, chickenpox. Use respirator, disposable gloves, eye protection and disposable fluid-resistant gown that protects the provider's legs; consider disposable fluid-resistant coveralls.

B. Using Personal Protective Equipment (PPE)

Donning:

1. Use a checklist and a trained observer.

2. Personal items (e.g., jewelry [including rings], watches, cell phones, pagers, pens) should be stowed. Long hair should be tied back. Eye glasses should be secured with a tie.
3. Visually inspect the PPE to ensure that it is not torn or ripped, all required PPE and supplies are available, and that the correct sizes are selected.
4. Perform Hand Hygiene: Perform hand hygiene with ABHR. When using ABHR, allow hands to dry before moving to next step.
5. Put on inner gloves.
6. Put on gown or coverall. Ensure gown or coverall is large enough to allow unrestricted movement. Ensure cuffs of inner gloves are tucked under the sleeve cuff.
7. Put on surgical mask.
8. Put on second pair of gloves (with extended cuffs). Ensure the cuffs are pulled over the sleeves of the gown or coverall.
9. Put on face shield: Put on full face shield over the surgical mask to protect the eyes, as well as the front and sides of the face. Consider use of a head cover.
10. Verify the integrity of the ensemble (e.g., there should be no cuts or tears in the PPE). The HCW should be comfortable and able to extend the arms, bend at the waist, and go through a range of motions while all areas of the body remain covered.

Doffing:

PPE should be doffed in a designated PPE removal area. Meticulous care should be taken during this process to avoid self-contamination as this is the major contributor to HCW disease. Place all PPE waste in a labeled leak-proof biohazard bag.

1. Use a checklist and a trained observer.
2. Inspect the PPE for visible contamination, cuts, or tears before starting to remove. If any visible contaminant, disinfect using an EPA-registered hospital disinfectant wipe.

3. Disinfect outer-gloved hands with either an EPA-registered hospital disinfectant wipe in accordance with manufacturer recommendations or ABHR (alcohol based rub). Remove and discard outer gloves, taking care not to contaminate inner gloves in the process. Dispose of outer into biohazard bag.

4. Inspect the inner glove outer surfaces for visible contamination, cuts, or tears.

- Visibly soiled, cut or tear – Disinfect the glove with EPA-registered hospital disinfectant wipe, remove inner gloves, and discard into biohazard bag, perform hand hygiene with ABHR on bare hands, don a new pair of gloves. For cut or tear, inspect skin injury and report potential exposure immediately to supervisor.
- No visible contamination and no cuts or tears – Disinfect the inner gloves with either an EPA-registered hospital disinfectant wipe or ABHR.

5. Remove gown or coverall and discard. (Note: Gown or coverall should be removed before face protection and respirator. If that is not possible due to the design of the PPE, remove the gown or coverall after face protection and respirator.)

- Gown: depending on gown design and location of fasteners, the HCW can either untie or gently break fasteners. Avoid contact with outer surface of gown during removal. Pull gown away from body, rolling inside out and touching only the inside of the gown.
- Coverall: tilt head back to reach zipper or fasteners. Unzip or unfasten completely before rolling down while turning inside out. Avoid contact with outer surface of coverall during removal, touching only the inside of the coverall.
- Dispose of gown or coverall into the biohazard bag.

6. Disinfect gloves with either an EPA-registered hospital disinfectant wipe or ABHR

7. Remove goggles or face shield (if used) sliding fingers under straps and sliding up and off away from face. Do not touch the front surface of the goggles/shield. Discard into biohazard bag. If re-using goggles must clean all surfaces with EPA-approved disinfecting wipes.

8. Disinfect gloves with either an EPA-registered hospital disinfectant wipe or ABHR

9. Remove surgical mask or respirator



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- N-95 Respirator: tip head slightly forward, remove by sliding fingers under the elastic straps and sliding them off the ears/head allowing the mask to fall away from the face being careful not to touch the front of the mask. Discard into the biohazard bag.

10. Disinfect inner-gloved hands with either an EPA-registered hospital disinfectant wipe or ABHR

- Remove and discard gloves, taking care not to contaminate bare hands during removal process. Dispose of inner gloves into the biohazard bag.

11. Perform hand hygiene

- Visibly dirty, contaminated, or soiled with blood or body fluids: Wash hands with soap and water, then perform hand hygiene with ABHR
- Not visibly soiled: perform hand hygiene with ABHR

12. Remove the face shield (and head cover/hood if used) by tilting the head slightly forward, grabbing the rear strap, and pulling it over the head, allowing the face shield to fall forward. Avoid touching the front surface of the face shield. Discard the face shield into the designated biohazard bag.

13. Disinfect inner gloves with either an EPA-registered hospital disinfectant wipe or ABHR.

C. Coronavirus (COVID-19) PRECAUTIONS

SPECIAL RESPIRATORY PRECAUTIONS: Provide respiratory protection against inhalation of infectious aerosols (infectious agents that remain infectious over long distances when suspended in the air) as well as impermeable barrier to reduce spread of this highly pathogenic viruses on surfaces and via fomites during direct patient care activities (standard + contact + airborne).

PATIENT CARE CONSIDERATIONS

- Ensure strict adherence with standard precautions (e.g., add gown or coverall for significant bodily fluid exposures and follow doffing for contact precautions).
- Ask the patient to wear a surgical mask if they are able to tolerate it.
- Provide tissues to patients for secretion control and encourage patient hand hygiene and cough etiquette practices.
- Avoid performing aerosol generating procedures such as endotracheal intubation and open suctioning of the respiratory tract and nebulization if possible.

D. Florida Infectious Disease Transportation Network (FIDTN)

As a result of the October 2014 Ebola (EVD) outbreak, the federal government coordinated with the states to identify and establish Regional Ebola and other Special Pathogen Treatment Centers (RTC) for highly infectious

diseases. These treatment centers utilize highly trained personnel and specialized facilities capable of providing care to highly infectious patients. The RTC for Health and Human Services (HHS) Region IV, which includes Florida, is *Emory University Hospital* in Atlanta, Georgia. Emory has also been designated as one of the *National Ebola Training and Education Centers*.

In the event that a patient with a highly infectious disease presents to a hospital or other medical facility in Florida, a decision may be made to transfer the patient to the RTC. To relocate the patient to the RTC, the federal government, through the U.S. Department of State, has developed a transportation plan that centers on the use of a private contractor, *Phoenix Air* (located in Cartersville, GA), to transport the patient. *Phoenix Air*, who maintains a fleet of Gulfstream G-III jets which utilize aeromedical biological containment systems, would fly to the closest viable airport, pick up the patient, and transport them to Atlanta. To move such a patient to the local airport or, in the event that all of the aircraft are committed, or weather minimums do not allow for air transport, each state must have a plan detailing how they would make a ground transport of the patient. Towards that end, in cooperation with fire and county EMS agencies in all seven Florida Domestic Security Task Force (RDSTF) regions, the Florida Department of Health has developed a ground transport capability that is now able to facilitate highly infectious disease patient transports.

The Florida Infectious Disease Transportation Network is an initiative developed by the Florida Department of Health's Bureau of Preparedness and Response to get highly infectious individuals to the regional treatment center in Atlanta, Georgia.

ALS outfitted EMS teams use a relay system to transfer patients care to other agencies outside of their regions. Since care providers cannot be expected to remain in protective gear for longer than a two to three-hour period, crew change-out procedures have been built into the Plan with pre-designated transfer points being identified around the State. Such transports would also involve meeting up with Georgia units and transfer of the patient to one of their ground transport vehicles for movement through Georgia to the RTC in Atlanta. Given the coordination needed for facilitating such transports, multiple response agencies will play a role. Included will be hospitals, emergency management agencies, fire/EMS agencies, law enforcement, and county health departments, among others. The *Florida Infectious Disease Transport Network* (FIDTN) is activated through county health departments.

Hazmat created barrier protection are used to prevent transmission. The plan that was developed for this new capability has patient and responder safety as its highest priority and will, thus, include the use of proper personal protective equipment and decontamination equipment/procedures. Education, training, and exercising has been and will continue to be a key aspect of the process.

The FIDTN plan has been developed and approved. It is available upon request.

For questions or additional information about the plan or process, please feel free to contact:

Terry L. Schenk
FIDTN Project Manager
Terry.Schenk@flhealth.gov
407.761.8939

E. Infectious Disease Resource Links

1. National Emerging Special Pathogen Training and Education Center (NETEC)

<https://netec.org/>

2. National Emerging Special Pathogen Training and Education Center (NETEC) – PPE 101: Transmission Based Precautions from First Point of Contact

<https://repository.netecweb.org/files/original/cbbdf99db5ef62736b6b79200214662f.pdf>

3. National Emerging Special Pathogen Training and Education Center (NETEC) – PPE 201: Critically Thinking About PPE

<https://repository.netecweb.org/files/original/9f0d2bea6fa4f89392f7d2319426a3e0.pdf>

4. National Emerging Special Pathogen Training and Education Center (NETEC) – Personal Protective Equipment: Developing a Train-The-Trainer Program

<https://repository.netecweb.org/files/original/8bb2bd8641e4d01fdcbc29c724fbe4e0.pdf>

5. Centers for Disease Control (CDC) - Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>

6. Centers for Disease Control (CDC) – Using Personal Protective Equipment (PPE)

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html>

7. Centers for Disease Control (CDC) – Hand Hygiene Recommendations

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/hand-hygiene.html>

8. Centers for Disease Control (CDC) – Considerations for Preventing Spread of COVID-19 in Assisted Living Facilities

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/assisted-living.html>

9. Centers for Disease Control (CDC) – Interim Additional Guidance for Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed COVID-19 in Outpatient Hemodialysis Facilities

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/dialysis.html>

10. Centers for Disease Control (CDC) – Preparing for COVID-19 in Nursing Homes

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html>

11. Centers for Disease Control (CDC) – COVID-19 Pandemic Planning Scenarios

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html>

12. National Emerging Special Pathogen Training and Education Center (NETEC) – Know Your PPE

<https://repository.netecweb.org/files/original/8a4e0ca69136f087ca297dafa15d1760.pdf>

13. Assistant Secretary for Preparedness and Response (ASPR) – EMS Infectious Disease Playbook

<https://asprtracie.s3.amazonaws.com/documents/aspr-tracie-transport-playbook-508.pdf>

14. Assistant Secretary for Preparedness and Response (ASPR) – Infectious Diseases Resource List

<https://asprtracie.hhs.gov/infectious-disease>

F. Infectious Disease Training & Exercise Links

1. National Emerging Special Pathogen Training and Education Center (NETEC)- ONLINE COURSE – Elements of Discussion-Based and Operations-Based Exercises Related to Ebola or Other Special Pathogens.

<https://repository.netecweb.org/items/show/554>

2. Assistant Secretary for Preparedness and Response (ASPR) - Healthcare System Readiness for Highly Pathogenic Infectious Diseases (Webinar).

<https://asprtracie.s3.amazonaws.com/documents/netec-aspr-tracie-highly-infectious-disease-webinar-12june2018-508.pdf>

3. National Emerging Special Pathogen Training and Education Center (NETEC) - EMS & Prehospital Biosafety Transport Operator Program (past In-Person Course)

<https://repository.netecweb.org/items/show/244>

4. National Emerging Special Pathogen Training and Education Center (NETEC) - Laboratory Considerations for Ebola Virus and other Special Pathogens

<https://repository.netecweb.org/items/show/240>

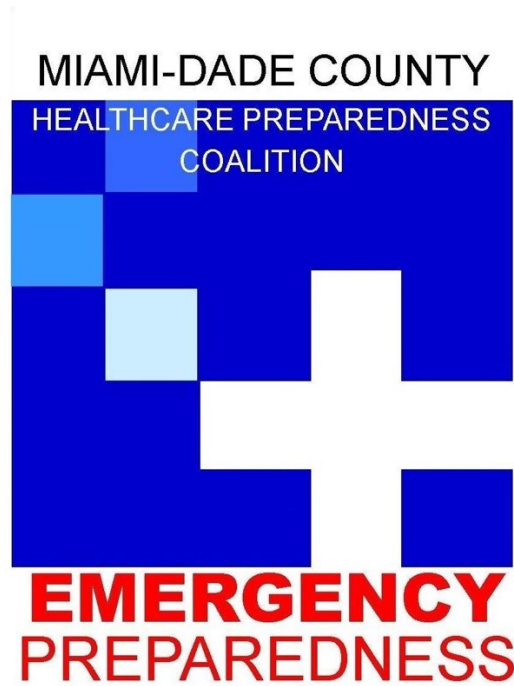
5. National Emerging Special Pathogen Training and Education Center (NETEC) – Pathogen Specific Strategies (Past In Person Course)

<https://repository.netecweb.org/items/show/237>

6. National Emerging Special Pathogen Training and Education Center (NETEC) - Assessment Hospital Ebola Drill, Functional & Full Scale Exercise Template.

<https://repository.netecweb.org/items/show/174>

Appendix II: Draft Supply Chain Mitigation Strategy



Miami-Dade County Healthcare Preparedness Coalition

DRAFT Supply Chain Mitigation Strategy

June 2021

Introduction

The healthcare supply chain is complex. It supports patient care on a daily basis by producing and delivering medications as well as products ranging from gloves and gowns to diagnostics, to pharmaceuticals and biomedical equipment, to surgical supplies. Around the world, the healthcare supply chain is confronted with countless challenges every day. During disasters or other catastrophic events, the healthcare supply chain can experience distinct strains depending on the nature of the event and the impact on surrounding infrastructure.

Purpose: This document is intended to provide an overview of the emergency planning and response considerations of healthcare supply chain owners, operators, and end users, as well as insights for The Miami-Dade County Healthcare Preparedness Coalition (MDCHPC) working with healthcare supply chain partners on preparedness, response, and recovery. It is not intended to be a comprehensive listing but aims to capture *key changes* during serious or catastrophic events, compared to normal supply chain operations, as well as planning and response contingencies.

The Miami-Dade County Healthcare Coalition Role in Supply Chain Operations

The Miami-Dade County Healthcare Preparedness Coalition (MDCHPC) plays a key role linking public sector response agencies, including emergency management agencies and public health departments, and private healthcare facilities that serve as points of service. MDCHPC is a key stakeholder and though not a direct component of the supply chain, they may be able to act as a coordination point between multiple vendors/suppliers and healthcare facilities to address supply disruptions. During normal operations, The MDCHPC plays an important role in working with members on supply chain readiness and response planning.

By serving as a coordination and information-sharing hub, The MDCHPC can: encourage best practices in communicating and engaging with supply chain components, standardize and provide guidance on activities that impact supply chain operations during emerging events, and provide opportunities for supply chain components and coalition members to train and exercise with one another. The MDCHPC can also play a role in helping healthcare facilities share information and coordinate strategies in their area to cope with specific supply (medication, equipment, dialysis solutions) shortages affecting their stakeholders.

The MDCHPC serves as a unifier of the healthcare preparedness and response activities across Miami-Dade County—working to link the disaster preparedness and response plans to provide care and protect public health in the area. The MDCHPC is an information-sharing hub for distributors and providers and has the ability to share product and delivery information and strategy. The MDCHPC monitors operational status and needs of healthcare facilities within the Miami-Dade County area. The MDCHPC collects information from partners and vendors and shares it as a resource when organizations need it during supply chain issues. The MDCHPC also maintains a limited cache of supplies in case coalition partners have a request. During COVID-19 there were significant supply chain issues, especially for PPE. The coalition maintained constant information sharing by providing a list of vendors with available supplies, as well as what coalition partners had in excess that they were willing to exchange for items that they need. These efforts were successful in addressing supply chain issues immediately and have proven to be useful for any potential future supply shortages.

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[Healthcare Supply Chain Operations](#)

The Miami-Dade County healthcare supply chain involves the flow of numerous product types from manufacturer to patient and requires the participation of various stakeholders who work in concert to achieve the goal of meeting patient care needs.

Healthcare supply chain stakeholders include:

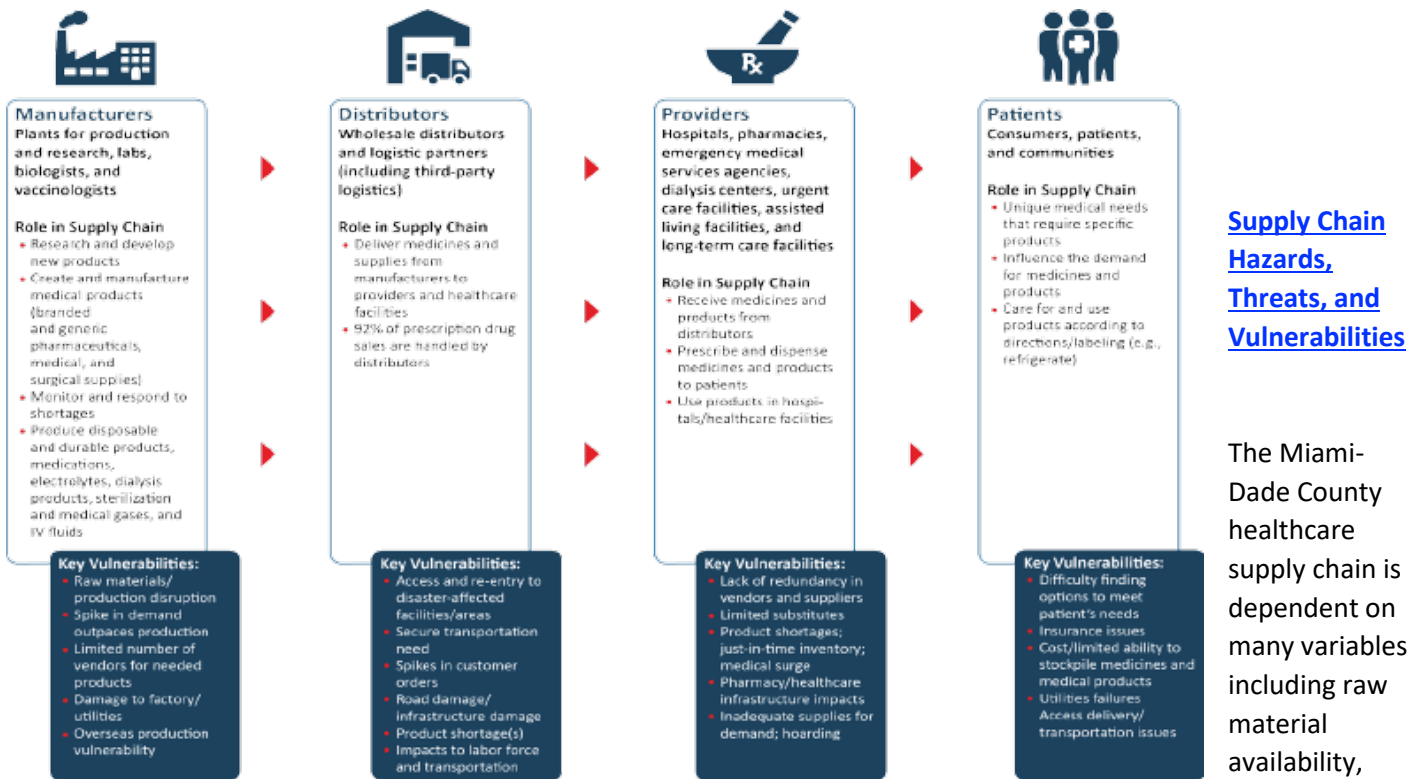
- Manufacturers
- Distributors
- Providers
- Patients
- Healthcare Coalitions
- Federal Programs

Descriptions of each stakeholder, their roles in the supply chain, and a few key vulnerabilities to plan for are included on the next few pages.

Under normal conditions, the complex processes that make up the supply chain are nearly invisible due to steady-state production and delivery of healthcare products. Healthcare supply chain stakeholders adhere to their daily roles and standard operating procedures.

The following infographic displays the normal operations and activities of healthcare supply chain stakeholders and key vulnerabilities for each stakeholder.

[Healthcare Supply Chain Under Normal Operations](#)



machinery and parts, workforce, standards compliance, delivery methods, contracts and regulatory requirements, and underlying critical infrastructure systems such as power, telecommunications systems, and transportation (including vehicle and roadway, airport, railroad, and port components). When one element is compromised there can be cascading effects up and down the supply chain. Disruptions to these systems can be caused by various hazards, underlying vulnerabilities, and threats that can directly impact every level of the supply chain. Examples include the following:

- **Natural Disasters** – While hazards vary from region to region, natural disasters have the potential to disrupt the healthcare supply chain in all parts of the world. Common hazards include hurricanes, snowstorms, tornadoes, flooding, wildfires, and earthquakes. All phases and components of the chain may be affected after events regardless of notice and may require assistance with response and recovery efforts.
- **Human-Caused Disasters** – These hazards also vary and can include cyber-attacks, acts of terrorism, and unintentional catastrophes like an oil spill, damage or impacts to goods during delivery accidents, or even unforeseen equipment breakdown.
- **Public Health Threats** – Biological threats can impact the healthcare supply chain by creating both dramatically increased and sustained demand for products, especially medical supplies. These events include disease outbreaks (of both commonly occurring and emerging diseases) and biological attacks.

Supply chain implications for public health-centric events differ from those of a natural hazard in that public sector partners – via public health officials (state, local, and federal, including the Strategic National Stockpile [SNS]) – can play a significant role in supply chain operations through activation of programs, language included in emergency declarations and public messaging, and more. Vendors for commonly needed products during these events, including vaccines and personal protective equipment (PPE), are often limited. Depending on the nature of the event, demand for these products can far exceed production capacity.

MDCHPC Supply Chain Challenges

Florida's health care coalitions worked together to develop a survey to assess supply chain integrity in each region. Inputs into this process included a review of literature regarding supply chain integrity and coalitions' HVAs and JRAs. The Healthcare Coalition Task Force shared the survey tool with all coalitions to ensure that results would provide both a regional and statewide view. In 2019, MDCHPC distributed the survey electronically through Survey Monkey.

Respondents reported that in recent events, vendors met their needs in a timely manner. The most significant supply chain challenges were fuel/gas, water, medical supplies and equipment. Respondents also noted there are current supply chain challenges for power and light due to severe weather. They also shed light on fuel shortages as a supply gap due to unreliable road conditions during and post natural disasters/severe weather. Other common items mentioned include IV solutions, emergency pharmaceuticals and medical supplies. Respondents felt all the issues seen in recent events would continue to pose challenges in future events and also agreed that advanced preparations will alleviate any potential supply issues.

Respondents reported a wide variety of communication equipment used such as satellite phones, ham radios, walkies, weather radios, GETS cards, WPS Pot, landlines, and ESS.

Respondents reported on vendors/contracts in place. There appears to be diverse vendors across the region for transportation services, medical gas suppliers, fuel suppliers, biomedical equipment suppliers, disposable supply distributors and PPE suppliers. Most respondents use one of three vendors for blood supplies, and most respondents use one of two vendors for waste management services.

Supply Challenges Cited:

- current supply chain challenges for power and light due to severe weather.
- fuel shortages as a supply gap due to unreliable road conditions during and post natural disasters/severe weather
- More items mentioned include IV solutions, emergency pharmaceuticals and medical supplies.
- All the issues seen in recent events would continue to pose challenges in future events and also agreed that advanced preparations will alleviate any potential supply issues.
- Medical supplies, food and water
- Backorders due to manufacturer short fall

Steady-State Supply Chain Challenges

To meet patient care demands, all stakeholders should focus on mitigating the supply chain hazards, threats, and vulnerabilities unique to their area while identifying key actions that will enhance resilience during incidents. Some impacts can be greatly reduced through integrated mitigation and planning. Working with providers in the community and distributors to forecast ordering for different scenarios, including emergencies, can help set use and delivery expectations and plans and highlight areas where back up options are required.

Usual system vulnerabilities (upstream and downstream) may include:

- Industrial and personnel – Work stoppages, fluctuating transportation costs or fuel supply issues, geopolitical events, sabotage, market forces, and technological failures may have negative effects impacts on components of the supply chain, especially those companies responsible for production and manufacturing.
- Operational – These can include production or supply problems such as lack of raw materials, lack of machine parts, regulatory actions (including product recalls), compressed manufacturing timeframes, product liability challenges, just-in-time ordering processes, disparate data systems, product cycles (obsolescence), and data silos between suppliers and providers.
- Just-in-time or low unit of measure programs – Healthcare providers often rely on these programs from their distributors. These programs keep costs down for providers and allow them to reduce labor costs, time, and space required to stock and rotate medical products. While these programs are efficient, they can also lead to fragile supply-demand relationships, especially during emergencies.
 - Just-in-time (JIT) inventory delivery means distributors are servicing provider customers almost daily in order to keep minimal stock (or” par” levels) at the facility.
 - In low-unit-of-measure (LUM) programs, distributors are the central source of product for facilities and will deliver to the specific departments on demand. In these programs, distributors “break down” product to the “each.” (The “each” is the unit that is used on the patient. For example, distributors may take a box of 100 individually packaged items, break it down, and deliver 5.)
 - Hospitals relying on JIT and LUM strategies can be vulnerable to both increased demand for supplies due to patient surges of patients and/or delayed delivery as a result of the effect of the disaster on distributors.
- Consumer or provider brand (or product) preference for usual medications, equipment, or consumer distrust of novel medications/vaccines.

Pre-Event, Response, and Recovery Considerations

The following sections provide pre-event, response, and recovery considerations for various components of the healthcare supply chain. High-level considerations for HCCs are captured at the end of each section as well as in a separate table in Appendix A.

COVID-19 Pandemic AAR Supply Issues

Strengths

Strength 1: The MDCHPC had stocked supplies to support the needs of Major Hospitals

Analysis: Prior to the events of COVID 19 the MDCHPC held a reserve of supplies in their storage facilities that included ventilators and tents to expand temporary infrastructure. Once resources became scarce, in accordance with element five of the Infectious Disease Annex, the coalition supplemented requests for equipment that were not fulfilled.

Strength 2: The communications facilitated through the MDCHPC allowed Major Hospitals to exchange and fulfill equipment needs.

Analysis: In addition to the previous strength, the fifth element of the Infectious Disease Annex was also implemented during briefings hosted by the MDCHPC. Through these meeting, hospitals reported the amounts

of resources they had on hand and identified their needs. Through these meetings, hospitals were able to identify where they could trade and balance out their resources to help ensure all partners were adequately equipped.

Strength 3: Situation reports provided by the MDCHPC allowed partner agencies to develop effective plans and procedures to manage COVID-19

Analysis: Due to the unprecedented difficulties faced during the COVID-19 response, agencies that would generally be responsible for providing up to date information to healthcare providers were unable to do so in an efficient manner. Meetings hosted by the MDCHPC served as a secondary form of communication that allowed each partner to share their own information. This allowed partners to overcome gaps in their awareness and adjust their response procedures accordingly. Additionally, the situation reports produced by the MDCHPC provided smaller organizations the knowledge to make sound decisions and develop an appropriate continuity plan to work around the issues they faced with staffing and equipment shortages.

Strength 4: Provided vendors information to assist partner agencies when the supply chain was compromised.

Analysis: When the supply chain became interrupted, partnering agencies needed to find alternate options to maintain their par level of equipment. Utilizing information provided by the Florida Department of Health and the Office of Emergency Management, the MDCHPC collected lists of alternate vendors and distributed them to partnering agencies

Areas for Improvement

The following areas require improvement to achieve the full capability level:

Area for Improvement 1: Development of a complete inventory of all supplies needed to support Miami Dade County's healthcare needs.

Analysis: One of the critical components of continuity planning is understanding the full scope of equipment and resources needed to effectively provide service. To assist in the development of a continuity plan, the MDCHPC should compile a comprehensive scope of the equipment and resources needed to ensure critical services are provided by all its partner agencies following a disruption to normal operations.

Area for Improvement 2: Expansion of MDCHPC's stock of supplies and equipment.

Analysis: Using the identified inventory from the previous item, the MDCHPC can strengthen the continuity of services for Miami Dade by expanding its inventory of supplies. Going through the comprehensive resource list, MDCHPC staff can identify items in low numbers, or will be of critical need in an emergency, and begin to stock appropriate amounts to mitigate the effects of disruption.

Roles & Responsibilities in Supply Chain Integrity:

Manufacturers

Manufacturers create products – including pharmaceuticals, medical, and surgical supplies – using raw materials on-site in manufacturing plants and labs. As a part of the manufacturing process, these companies identify and develop needed products, determine quantities necessary to meet demand, acquire raw materials, conduct safety trials and obtain regulatory approvals as required, and then make and package products for distribution. Manufacturing is a diverse and complex discipline, and the field is made up of countless different stakeholders, including brand and generic pharmaceutical manufacturers, medical supply and device manufacturers, and scores of others. International sources of

raw materials and manufacturing sites are common. The following considerations and mitigation and response strategies capture high-level themes common across the different types of manufacturers.

Stage	Considerations	Mitigation and Response Strategies
Pre-event	<ul style="list-style-type: none"> • Identify hazards, vulnerabilities, and threats – In particular, events that could result in potential shortages in critical supplies (e.g., PPE, medications, medical devices) or damage to a production facility. <ul style="list-style-type: none"> ▪ Raw materials disruptions – A variety of events, including natural hazards, can disrupt manufacturer access to quality raw materials. ▪ Production disruptions – These can include small-scale disruptions, such as a facility fire or machine breakdown, and larger-scale disruptions, such as a natural disaster in the area. This can also be due to staffing shortages after a disaster, work stoppage actions, or during an epidemic. ▪ Product shortages – Shortages in production can occur for a variety of reasons – availability of raw materials, demand outweighing supply, and more. ▪ Anticipate common supply needs – Sustained demand for select products is common during disease outbreaks. For example, during the H1N1 outbreak of 2009, demand for PPE, including N95 masks, increased drastically. Demand for PPE was also high during COVID-19 and supply was low and slow to meet the needs of the Miami-Dade County community. 	<ul style="list-style-type: none"> • Design business continuity and disaster recovery plans around hazards, vulnerabilities, and threats identified in hazard vulnerability analysis (HVAs) and risk assessments. • Ensure redundant production capacity or alternate vendors. • Ensure business continuity plans clearly identify alternate materials sources and delivery methods and routes based on predicted hazards when available. In addition, develop plans for redundant production capabilities (e.g., identification of plants and facilities that can scale production when needed). • Comply with U.S. Food and Drug Administration (FDA) requirements for product shortage notification. Verified information on shortages is publicly available on the FDA website. • Forecast product demand using historical events (e.g., past flu seasons) and reviewing/revising formularies with distributors and providers. Also determine when products with low production/use might be in high demand if primary products in the marketplace are in shortage.
Response	<ul style="list-style-type: none"> • Feasibility of surge production – Depending on the event, rapid surges in production may be required. • Damage assessment – Depending on the event, manufacturing may be compromised due to direct impact on the plant, loss of utilities, or impaired transportation. Determining the damage, systems affected, and assistance needed is critical to rapidly restore services. <p>Nursing homes and ALF’s in Miami-Dade County are still facing PPE shortages well into the COVID-19 pandemic. Not only is PPE supply an issue, but staffing shortages are a major problem as well.</p>	<ul style="list-style-type: none"> • Develop business continuity plans that identify and describe means for scaling production, such as reallocating material use and shifting production schedules for products with less demand, shift/workforce changes, raw materials available, machinery, scheduling, and re-tooling. • Identify other vendors for same/substitute product; ensure ability to coordinate with and refer to in an emergency. • For public health and natural hazard events, manufacturers can use models and experiences from previous events to try to anticipate demand, but production timelines and capacity can limit flexibility to increase production. • Expedite approvals from the FDA to import approved products from abroad. • Obtain assistance through insurance providers, local, state, and federal emergency management to restore utilities and essential services or other

		assistance needed to resume production. Work with emergency management to help communicate what the site produces and the consequences of interrupted production prior to an event and during the response phase.
Recovery	<ul style="list-style-type: none"> • Resume normal operations and, if needed, repair damage. • Assess the impact of the event to staff, products, etc. • Communicate resumption of normal allocation/delivery/activities. 	<ul style="list-style-type: none"> • Coordinate with distributors to resume normal delivery. • Coordinate, as appropriate, with partners on product availability if event caused a shortage.

Coalitions and Manufacturing

Manufacturing occurs “upstream” in the supply chain. Given HCCs’ key role in preparedness, response, and recovery coordination, which occurs further “downstream” in the supply chain, it is not common for HCCs to engage directly with manufacturers. HCCs can – and should – keep current and informed on significant impacts to manufacturing capabilities, such as drug or PPE shortages. HCCs should consider the need to share information and strategies for addressing the shortage between providers in their HCCs as well as potentially coordinate information exchange between distributors and providers.

Distributors

Distributors and logistics partners, including third-party logistics providers, acquire medical supplies from manufacturers and deliver them to providers and healthcare facilities. As part of this complex process, they may repackage, re-label, and ensure special handling for products, such as cold chain products requiring climate-controlled environments. A pharmaceutical distributor is more often referred to as “wholesaler,” whereas in the medical product supply chain, the term “distributor” is more often used. For purposes of this document, the term “distributor” is used throughout for consistency and clarity.

It is important to note that the primary pharmaceutical distributor for a healthcare facility will likely be different than the primary medical product distributor for the facility. Additionally, many distributors have a primary healthcare provider market, which means the primary distributor for the local hospital may not be the same as the one providing the same supplies for the nearby nursing home.

Providers have primary distributors for medical products and pharmaceuticals. However, they often have secondary distributors and specialty distributors that may focus on specific surgical procedures or equipment. It is important to understand those specialty products that are only available from a single source.

The pharmaceutical supply chain has three large national/multinational distribution companies that control 90% of the market. The companies, known as the “Big 3,” are McKesson, AmerisourceBergen, and Cardinal Health. There are also several regional companies that may be significant partners, especially in smaller, more rural communities.

The medical product supply chain is more varied with large national companies and regional companies for healthcare facility types or service lines (e.g., homecare). These distributors often have over 5,000 types of products on hand and depending on the product have approximately 20 to 30 days of inventory that reflects normal customer usage/consumption patterns. Most urban healthcare centers are within 50 miles of a distribution center and most distributors can deliver within 24 hours of an order.

Pharmaceutical and medical product supply chains may utilize the services of third-party logistic providers (3PLs) such as FedEx, UPS, and others depending on their business and service model. 3PLs can minimize costs and allow for local distribution through local companies familiar with the community. 3PLs can also enable more frequent deliveries from regional or local distribution centers (some facilities receive up to 4 deliveries per day.) MDCHPC has identified several distributors utilized by partners throughout Miami-Dade County. Below is a summary of the distributors organized by category.

Medical Gas Supplier Contracts/Agreements

- Matheson; Haber & Sons;
MTA
- Air Gas
- Liquid O2 Transfill, Inc.
- Air Gas
- LIQUID O2
- Matheson Tri-Gas
- Airgas, Nexair
- Matheson, Air Gas
- Airgas
- AirGas w/additional
emergency contract
- Matheson Gas

Fuel Supplier Contracts/Agreements

- Sunshine Gasoline; Clean Fuels
- PORT CONSOLIDATED, INC.
- Siegal Gas Company
- Port Consolidated
- FLORIDA DETROIT DIESEL
- Miami Dade County Contract with Sunshine Gasoline Distributors
- Petroliance
- Land and Sea Fuel
- BV Oil Company
- Pan Tropic
- N/A natural gas

- Sunshine Gasoline Distributors
- TECO Gas
- Urbieta Oils, Inc.
- Urbieta Oils, Inc.
- Employees fuel Neighborhood fuel agreement in place, Facility Generator Fuel Contract Land and Sea Petroleum
- Sunshine Gasoline Distributors, Inc.

Biomedical Equipment (e.g., monitors, ventilators) Contracts/Agreements

- Biomedical EAM
- GE Agility for rentals
- JKARE Respiratory Supplies, McKesson, Direct Supply,
- GE
- STAR MEDICAL
- Freedom Medical
- UHS, agility healthcare
- Desco
- Agility and US Med Equip
- Freedom Medical
- ANDA MEDS (for blood glucose monitors)
- N/A no vents
- McKesson, American Medical Depot
- Medline, Alimed, Direct Supply and Performance Health
- Medline, Alimed, Direct Supply and Performance Health
- Vizient GPO (Vyair), Phillips, and GE, Beckman Coulter, Fisher
- Phillips, KCI, Currie Medical, B. Braun Pumps, Smith's Medical, GE, Dragger, Arjo Hunthleigh, Ecolab, Covidien, Zoll, Ranger, ICU Medical, Vyair, Steris, etc.

PPE Distributors or Manufactures Contracts/Agreements

- Owens and Minor
- Miramar
- McKesson, Direct Supply, Veritid,
- Grainger/3M
- Resource
- Owens and Minor
- Medline
- Medline,3M
- Owen and Minor, Medline
- Grainger,3M
- McKesson
- Medline ad Alimed
- O&M (masks, chemo gowns), MedLine (exam gloves, gowns), Molnlycke (surgical gloves),
- Owens & Minor, Inc.; Halyard and Medichoice

Stage	Considerations	Mitigation and Response Strategies
<p>Pre-event</p>	<ul style="list-style-type: none"> • Determine and communicate product shortages – When caching is not an option, or when stockpiles are depleted, distributors work with suppliers and customers to communicate availability of product(s) and viable alternatives/substitutions. • Communicating to customers – Distributors often offer to provide inventory consultation to their customers, gauging their needs and allowing them to place advance orders to prepare for an event. • Pre-positioning supplies – Increasing product inventory in warehouses and onsite at customer facilities (par levels), when possible, is an important pre-event activity distributors and facilities should work together to execute. These may be permanent increases (e.g., for mass casualty events) or temporary (e.g., in anticipation of a hurricane or blizzard). Distributors will often pre-position trucks with supplies along highways to get into the disaster zone promptly after an event (e.g., nearby exits or in rest stops to be able to make local deliveries once roads re-open). • Anticipating common supply needs – Similar to manufacturers, distributors work to anticipate common supply needs and stock warehouses and customers accordingly. A spike in customer orders can be due to actual demand, anticipated demand, or multiple orders being placed with multiple vendors by the same entity in the hopes that one will get filled. • Access and Re-entry – Facility access may be a challenge for third-party logistics providers transporting supplies in unmarked vehicles that may need to cross police lines. After a criminal event such as a terrorist attack, additional precautions would need to be taken to verify the origin of delivery vehicles. 	<ul style="list-style-type: none"> • Develop critical supply lists based on potential events. MDCHPC will help facilities create distributor or facility-based caches or “push” lists to be delivered in case a disaster strikes and a request is received from the facility to activate their list. In some cases, distributors are included in healthcare facility disaster notifications and will automatically activate the distribution. • Agree to alternatives and substitutions ahead of time. Understand communications and establish alternate forms of communication if primary ordering systems are down. • MDCHPC communicates with providers to ensure understanding of specific delivery timeframes and vulnerabilities (e.g., if flooding closes a specific bridge, does this compromise delivery from a distributor, or does the distributor potentially need access to high clearance vehicles?) • Work with all stakeholders to understand true demand during an event. Providers placing multiple excessive orders with multiple distributors only exacerbates shortages and places additional strain on the supply chain. • Coordinate through Business Emergency Operations Centers (BEOCs), when applicable and available. • Develop priorities specific to community incidents that will result in common supply needs (e.g., earthquakes, hurricanes, pandemic, Ebola/VHF cases, mass violence incident based on geography and patient population) <ul style="list-style-type: none"> ▪ Annual influenza season is often used as a model to understand usage/consumption. • Collaborate with state and local authorities and private sector partners to develop a local program for pre-registration of supplier companies and personnel (include 3PLs, law enforcement, and other key stakeholders). <ul style="list-style-type: none"> ▪ Send delivery drivers letters of access on company letterhead or special “codes” or placards issued by law enforcement to expedite deliveries. ▪ Identify distributor as a key (known) vendor/partner. ▪ Develop coalition member agreements for storage and distribution of critical supplies as required.

		<ul style="list-style-type: none"> ▪ May include Disaster Response Centers where a large facility serves as the hub for storage and distribution to smaller facilities within a region. • Ensure distributors have a means of communicating with the Miami-Dade County Healthcare Preparedness Coalition and office of emergency management and understand how they receive assistance during a disaster that affects distributor operations.
Response	<ul style="list-style-type: none"> • Alternative ordering – During a response, customers often place larger orders than usual. In these instances, distributors will confirm an order that is out of the “norm” before processing. • Feasibility of Surge Deliveries – Depending on the event, expedited deliveries may be requested, as well as more frequent deliveries. Considerations for these surge deliveries include those noted below in this section, as well as staff and product availability. • Alternative transportation and routes – Identify navigable routes for delivery vehicles, and alternative delivery sites, as required. • Securely transport deliveries – Distributors may work closely with law enforcement to receive assistance (routes, escorts). This is especially important during events when road access is compromised. 	<ul style="list-style-type: none"> • Create a streamlined communication process for efficient ordering, confirmation, and work to pre-populate orders, including an alternate communications plan. Ensure that the facility is not placing duplicate orders for the same items with multiple vendors (a common situation that leads to significant miscalculation of actual need by distributors and manufacturers). • Provide customers with specific allocation limit amounts for operational planning at healthcare delivery sites. • Work with manufacturers and parent (corporate) healthcare systems to anticipate needs and move additional materials to the distribution centers ahead of the event or requests. • Be prepared to switch to alternative products when necessary and determine how deliveries will be prioritized if requests exceed inventory. Ensure providers understand how allocation and prioritization will work. • Climate-control technologies in delivery vehicles should be sufficient for prolonged delays in transport. • Source or create processes for obtaining specialty vehicles that may be needed (such as high-water vehicles, boats, and snowmobiles) as well as additional standard vehicles/drivers to meet increased delivery demands. • Establish relationships and contacts with local emergency management – these may be helpful in restoring services and access to the distribution center, securing specialized vehicles, and allowing access to secure or restricted areas as well as obtaining current information on road status and hazards. Emergency management often does not have awareness of the distributors in their area and the key role they play in disaster response.
Recovery	<ul style="list-style-type: none"> • Resume normal operations and communicate the resumption of normal allocation / delivery / activities. 	<ul style="list-style-type: none"> • Coordinate with local authorities on primary delivery route restoration if event caused the need for alternative routes.

	<ul style="list-style-type: none"> • Coordinate with manufacturers and providers as needed on product substitutions (which ideally should be identified and agreed to prior to an event) and transition back to primary product when available. • Distributors coordinate on substitutions of the same medical product (e.g., substituting the same generic medicine from a different manufacturer.) They are not involved in decisions regarding substitutions when there is a medical and patient care consideration. 	<ul style="list-style-type: none"> • Adjust delivery schedules as needed for facilities. • Communicate transition plan and timing back to primary products and normal supply and delivery process.
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Providers

Providers are a large and diverse group of facilities and professionals licensed to supply healthcare services and expertise, to include disbursing and dispensing medicines and products to patients. Key activities they undertake within the supply chain include submitting orders to distributors and providing data and information on healthcare services and needs that help identify shortages and potential distribution challenges. The considerations and mitigation and response strategies differ among provider groups considerably. The following table captures high-level considerations generally consistent across provider types but is not intended to be exhaustive.

Stage	Considerations	Mitigation and Response Strategies
Pre-event	<ul style="list-style-type: none"> • Identify hazards, vulnerabilities, and threats – Focus on events that could significantly disrupt supply delivery or compromise current supplies (e.g., by damage or consumption) and those that are most likely in specific regions. • Define triggers or thresholds for activation of emergency plans – Emergency plans should include policies and procedures for requesting supplies and managing disruptions in supply chains • Identify alternative mechanisms for ordering, receiving, and tracking supplies. • Identify multiple delivery locations – Depending on the situation, distributors may make deliveries to individual healthcare facilities/ alternate care facilities or a central warehouse where items will be later redistributed. • Stockpile non-medical product(s) – Not all supplies providers may need during an emergency are stocked in large quantities by suppliers (e.g., hazmat suits). These should be 	<ul style="list-style-type: none"> • Develop emergency response and business continuity plans informed by HVAs and risk assessment tools. • Based on HVA and other tools, anticipate commonly needed medications and supplies and consider caching or increasing par levels of those supplies at the facility (space and shelf-life permitting). This may include non-medical supplies such as cots and food or water. • Consider “push” lists of commonly needed medications and supplies to replenish or augment facility stock that the distributor can have available and establish policies on when to request these. • Scenario-based exercises should allow providers to identify thresholds for instituting substitution and conservation procedures and document the process through which this occurs. Exercises should be used to document and determine how these strategies and situational information are communicated to key partners including the coalition. • Implement pilot programs and training to integrate new products into electronic health

	<p>present on-site in adequate quantities to address expected scenarios.</p> <ul style="list-style-type: none"> • Define triggers and thresholds for changes to standards of care – While implementing crisis standards of care is a last resort, discussing and planning for a system and procedures for operating under these conditions is important, and can have implications on supply orders (e.g., implementing re-use of N95 masks). • Work with key stakeholders to establish Memoranda of Understanding (MOUs) or Memoranda of Agreement (MOA) – MOU/MOAs between The MDCHPC, providers, and other supply chain stakeholders can assist in managing expectations of additional support available during an emergency. 	<p>records and educate providers on labeling changes.</p> <ul style="list-style-type: none"> • The facility steady-state drug shortage processes may have applicability for developing disaster shortage policies. • Maintain communications with distributors to understand shortages and delivery issues. Establish alternate communications plan with major distributors in case primary means fail. • Establish an alternate distributors list for critical supplies as well as understand the location, transport time, and potential interruptions in delivery between the distributors and provider. • Identify alternate methods and routes for deliveries based on predicted hazards. • Determine the coalition’s role in planning, information sharing, indexing, and managing resource requests/brokering with distributors during an incident.
<p>Response</p>	<ul style="list-style-type: none"> • Forecasting needs – Ability to provide care hinges on having needed supplies on-site and a plan for replenishment. Anticipating supply needs, and capacity for receiving and storing them, are key activities for responses. • Supply chain support activities – Providers should alter their practices as appropriate (ideally without compromising quality of care) to decrease demand and increase the safety of substituted supplies. Examples include revising downtime procedures and refrigeration prioritization. • Coordinate with public sector responders – Public health and medical sector (ESF-8) typically receives information about supply needs from a facility, and mainly engage with distributors after healthcare facilities report an expected lag in availability of a needed product. • Partnerships across relevant supply chains – Relationships with all components of the healthcare supply chain (e.g., linen and blood) and other sector supply chains (e.g., fuel and food) may be leveraged for ad hoc solutions. • Mitigate or adjust to staff shortages – Staff absenteeism during events may occur, especially for downstream components (distributors, last mile, and healthcare facilities). This can be a challenge to maintaining healthcare operations during events, especially for healthcare facilities – including ancillary care. 	<ul style="list-style-type: none"> • Use models, especially those based on past events (e.g., recent catastrophic hurricanes, severe flu seasons) to help determine likely supply needs and quantities and proactively try to obtain them prior to shortage (also understand the potential to return items to the distributor) <ul style="list-style-type: none"> • Population health data for the surrounding area can inform forecasting efforts. • Work with the coalition to communicate and share strategies with other facilities, including developing guidance for adapting to crisis conditions when required. • Ensure a mechanism at the facility level for development of clinical recommendations for substitution, conservation, adaptation, re-use, and re-allocation of supplies to ensure consistency. • Contribute to supply chain efficiencies during crises by conserving and using substitute medical and non-medical supplies (e.g., pharmaceuticals, blood products, fuel, medical gases, refrigeration). • Maintain current ESF-8 contacts through trainings, exercises, and other methods. • Activate mutual aid agreements within your healthcare coalition or with facilities not impacted by the hazard.

		<ul style="list-style-type: none"> • Explore and look for options from parent or “sister” facilities for resources if usual methods are not an option or do not provide sufficient resources. • Ensure disaster augmentation plans for pharmacy and supply personnel. Plan for workforce shortages including information for other providers to fill supply/warehouse/distribution roles and explore and engage with medical volunteer programs including the Miami-Dade County Medical Reserve Corps (MRC) and Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP). • Ensure information sharing with patients regarding services provided, facility status, and any changes they should be aware of with pharmacy supplies and home delivery of medications and medical supplies (e.g., nutrition, oxygen).
Recovery	<ul style="list-style-type: none"> • Resume normal operations and communicate the resumption of normal allocation/delivery/ activities with distributors and coalition partners. • Communicate to patients and providers about resumption of normal activities/processes. • Manage transition back to daily operations/usual products and practices. 	<ul style="list-style-type: none"> • Disseminate supply chain disruption situation reports to local, regional, and state health authorities as requested. • Coordinate with distributors and others as needed on product substitutions and transitions back to primary product if event caused a shortage. • Share information on sustained supply chain impacts. • Work with distributors to resume normal operations, distribution volumes, and schedule.

Patients

Patients and their caregivers are the primary end-users in the supply chain and typically only engage with providers although certain materials (e.g., nutrition, home dialysis supplies) are sometimes directly delivered to patients by distributors. The diverse needs of patients – from acute care needs, to chronic conditions, to unique demands from different demographic groups like pediatric patients – contribute to the complexity of this aspect of the supply chain.

Stage	Considerations	Mitigation and Response Strategies
Pre-event	<ul style="list-style-type: none"> • Understand insurer limitations on filling prescriptions – Generally, insurance plans 	<ul style="list-style-type: none"> • “Refill too soon” overrides may be allowed through an emergency declaration or at

	<p>prevent patients from obtaining a prescription refill before their current supply is depleted or close to it. During a declared disaster, a no refill order may be lifted.</p> <ul style="list-style-type: none"> • Identify and plan for critical healthcare equipment delivery and maintenance – An important preparedness activity for patients is to ensure access to their homes for deliveries of critical supplies such as durable medical equipment (DME) and oxygen, and also to ensure proper refrigeration (if needed) of temperature sensitive medical products. 	<p>the discretion of insurance plans during emergencies. These overrides can allow patients to receive a 30-day supply of prescription medicines in advance of a forecasted event. As this is not always the case, it is important for patients to be educated on this issue and know what options they have.</p> <ul style="list-style-type: none"> • Follow instructions on labels or patient instructions given by providers to help make sure medical supplies are properly administered and maintained by patients. • Plan with distributors to ensure continued access during a disaster for home-delivered products and plan how the patient can communicate their new location to a distributor if the patient is forced to relocate during a disaster. • Plan alternate source of refrigeration, if needed (e.g., portable cooler, locations that may have back-up power near the patient).
<p>Response</p>	<ul style="list-style-type: none"> • Disseminate information on open facilities and how to access them – Evacuated patients may not be familiar with or know of nearby open facilities. • Knowledge of waivers and sources of information (e.g., insurance hotlines) – Coverage may change during an emergency due to waivers and other exemptions. 	<ul style="list-style-type: none"> • Plan with healthcare providers in advance of an event to identify back up facilities, particularly ones within the insurance network. • Use locator services like Rx Open to identify open pharmacy facilities. • Follow training and awareness campaigns and seek patient resources during emergencies. • Consult with a medical provider in advance if possible if a medication shortage or difficulty accessing medication ensues. An alternate strategy or medication may be temporarily needed (e.g., going to a clinic to receive insulin versus storing it at home). • Understand how health insurance benefits and restrictions may change during a disaster (e.g., in-network coverage changes)
<p>Recovery</p>	<ul style="list-style-type: none"> • Transition care and services to a new or temporary facility. 	<ul style="list-style-type: none"> • Develop continuity of care plans with care teams, including primary care providers, pharmacists, and insurance providers. • Understand timeline for restoration of services / deliveries. • Resume usual medications and schedules. • Plan for deliveries and supply chain needs if temporary healthcare facilities are used or patients relocated.

Coalitions

The Miami-Dade County Healthcare Preparedness Coalition (MDCHPC) serves as a unifier of healthcare preparedness, response, and recovery activities across Miami-Dade County – working to link the disaster partners and plans to provide care and protect public health in the area. The MDCHPC participates in several activities relating to supply chain mitigation. We facilitate tracking barriers to product delivery, resource request management and brokering, and monitoring operational status and needs of healthcare facilities that are our coalition partners. The MDCHPC also plays a key role in creating a liaison between public sector response agencies, including the office of emergency management in Miami-Dade, The Florida Department of Health, and private healthcare entities that serve as points of service.

Stage	Considerations	Mitigation and Response Strategies
<p>Pre-event</p>	<ul style="list-style-type: none"> • Reconcile and align private sector member business continuity plans and public sector member emergency response plans – With diverse members, the MDCHPC can help set emergency response priorities and translate resources, needs, and concerns across and between members. With healthcare owned and operated by the private sector but public sector agencies charged with responding, mediation and understanding before an event is essential. • Foster and forge relationships with supply chain components – The MDCHPC plays an important role in establishing key external relationships and fostering collaboration and partnerships during steady state. • Determine emergency protocols and procedures – The MDCHPC can provide guidance within their membership on how to conserve, substitute, adapt, re-use, and re-allocate supplies. • Establish information-sharing protocols and reporting flow – The MDCHPC determines how information about impacts to healthcare services and supply alternatives will be shared throughout the coalition. (e.g., through Situation Reports, coordinating conference calls, and event dashboards). • Include supply chain representatives, specifically distributors and potentially manufacturers, in coalition meetings and activities. 	<ul style="list-style-type: none"> • The MDCHPC will facilitate relationships through routine coalition interactions (e.g., inviting distributors to coalition meetings, trainings, and exercises). • Understand and document the major distributors in the area including key product lines, location(s), points of contact, and means of delivery. This may include distribution points owned and operated by major healthcare systems. • All resource requests are routed through the Miami-Dade County Office of Emergency Management using WebEOC. Many coalition partners have direct access to WebEOC and have the ability to submit their own request. If not, the department of health or the office of emergency management can facilitate the request. State and SNS resources are also processed through the county health department and office of emergency management. • Understand the role of the MDCHPC coalition in drug and supply shortages when emergency management is not activated (e.g., during steady state operations). • Review agreements, protocols and procedures of nearby or more mature HCCs to identify components that may work for your coalition. • Codify essential elements of information (EIs) relevant to supply chain in emergency operations plans as well as roles and responsibilities for compiling and disseminating information through Situation Reports and other mechanisms. • Ensure that the MDCHPC role in response is understood by both distributors and

		<p>providers and that the mechanisms for obtaining emergency management assistance are understood.</p> <ul style="list-style-type: none"> • MDCHPC conducts trainings to build capacity and identify key coordination points across coalition members. • Include supply chain objectives in community-wide exercises to improve engagement and understanding of key issues and solutions.
Response	<ul style="list-style-type: none"> • Coordinate response activities across members – Including through coordination calls, development, and dissemination of Situation Reports, dashboard updates (if applicable), liaising with ESF-8 and emergency management partners. • Collect and aggregate EEIs from members and provide this data to local, state, and federal partners. • Create and share common strategies for scarce resource management among members. • Broker or allocate resource requests (depending on the defined coalition role). 	<ul style="list-style-type: none"> • Establish coordination conference calls or use other information platforms to share information. • Establish communications with major distributors and share hazard/impact information relevant to supply deliveries and security concerns as well as anticipated needs. • Monitor and/or manage response requests, determine allocations and delivery and other operations according to the coalition role in the jurisdiction. • Coordinate guidance for local implementation of crisis recommendations during protracted events (in conjunction with state-level efforts and local subject matter experts). • Share identified EEIs with supply chain partners (e.g., distributors, 3PLs) to establish information-sharing expectations and requests.
Recovery	<ul style="list-style-type: none"> • Communicate transition from response to recovery – This might be signaled through emergency operation centers (EOCs) standing down and information sharing cadences slowing. • Facilitate resumption of normal supply delivery and clinical use. • After-action reports and identify lessons learned – Coordinate with stakeholders to identify opportunities for improvement. • Incorporate lessons learned – Integrating lessons learned and best practices into future supply chain integrity assessments as needed for HPP capability requirements. 	<ul style="list-style-type: none"> • Ensure consistency of delivery/care across region – moving from crisis to contingency and then conventional status for materials use. • Monitor situation and share information until conventional delivery and supply use is attained. • Share lessons learned with local, regional, and state health authorities.

Appendix A: MDCHPC Supply Chain Assessment Results

Florida’s health care coalitions worked together to develop a survey to assess supply chain integrity in each region. Inputs into this process included a review of literature regarding supply chain integrity and coalitions’ HVAs and JRAs. The Healthcare Coalition Task Force shared the survey tool with all coalitions to ensure that results would provide both a regional and statewide view. The MDCHPC distributed the survey in an electronic

survey via Survey Monkey. The survey was sent via email to the coalition partners and was available for the month of June 2019.

There was a total of 17 respondents, 8 were from hospitals and the rest were from long term care facilities, medical centers, skilled nursing facilities, residential services, and adult day centers. Unfortunately, we did not receive as many responses as we had hoped for to gather as much information as possible. This will be addressed by pushing future surveys through the local health department’s CEMP program, AHCA, and the local office of emergency management human services branch.

Respondents reported that in recent events, vendors met their needs in a timely manner. The most significant supply chain challenges were fuel/gas, water, medical supplies and equipment. Respondents also noted there are current supply chain challenges for power and light due to severe weather. They also shed light on fuel shortages as a supply gap due to unreliable road conditions during and post natural disasters/severe weather. Other common items mentioned include IV solutions, emergency pharmaceuticals and medical supplies. Respondents felt all the issues seen in recent events would continue to pose challenges in future events and also agreed that advanced preparations will alleviate any potential supply issues.

Respondents reported a wide variety of communication equipment used such as satellite phones, ham radios, walkies, weather radios, GETS cards, WPS Pot, landlines, and ESS.

Respondents reported on vendors/contracts in place. There appears to be diverse vendors across the region for transportation services, medical gas suppliers, fuel suppliers, biomedical equipment suppliers, disposable supply distributors and PPE suppliers. Most respondents use one of three vendors for blood supplies, and most respondents use one of two vendors for waste management services.

SUPPLY CHAIN EXPERIENCE/LESSONS LEARNED

Question (# Responses & %)	Yes	No	N/A	No Answer
Did your vendors meet your supply needs?	13	4		
What were your main supply challenges:				
<ul style="list-style-type: none"> • National water shortage • Propane • Linen • Fuel Shortages • Diesel Fuel • Finding supplies 				

- Having enough IV solutions
- Reaching vendors during emergency
- FP&L (FL Power and Light)
- Offline ordering, emergency stock storage, diversion plan/policy, satellite impact
- Last minute rush to obtain cots and additional patient monitors

With your experience, where do you see the next supply gap?

- Delivery of propane, linen, and oxygen.
- Fuel shortages will still be a challenge as it is dependent on road conditions
- Diesel Fuel
- IV solutions as they are in emergency cases the most sought-after supply
- Obtaining needed supplies in timely manner
- Lighting and power outages due to severe weather
- Emergency pharmaceutical management; vendor specialization/ERP solution integration; FEMA rebate protocol
- Advanced preparations will alleviate any supply issues

ASSESSMENT CATEGORIES

Communications				
Question (# Responses & %)	Yes	No	N/A	No Answer
Does your facility use Satellite/Radio/Phone	14	3	0	
Does your facility use Ham Radio	7	10	0	
Does your facility use 800mhz/700mhz/UHF	9	4		4
Does your facility use other communications (please list):				
<ul style="list-style-type: none"> • Everbridge • Aviation, GETS, WPS Pot 				

- cell phone, landline, Direct Connect, ESS
- 2 - way radio
- WALKIE TALKIE
- WhatsApp and Everbridge
- N/A
- 2 emergency cell phones and Weather radio
- GETS cards and starting to roll out FirstNet
- Cell Phones and Handheld Radios

Transportation Services Contracts/Agreements

- Transportation Services Contracts/Agreements. Please list your transportation evacuation companies:
 - Jackson Health System transportation; Miami-Dade Ambulance; American Ambulance
 - AMR
 - WE provide our own transportation
 - AMC Medical Transportation / American Ambulance Service
 - MCT, AMC
 - JHS Transportation
 - Miami Dade ambulance
 - NHT, Miami Dade Ambulance
 - AMR, other ambulance transportation companies
 - AMR,
 - MACtown company fleet of 25 passenger bus and vans
 - Jackson Transportation
 - None
 - AMR
 - AMR
 - Materiel supply: O&M; Linen: Goodwill; Personnel: self
 - American Ambulance and American Medical Response

Medical Gas Supplier Contracts/Agreements

- Matheson; Haber & Sons; MTA
- Air Gas
- Liquid O2 Transfill, Inc.
- Air Gas
- LIQUID O2

- Matheson Tri-Gas
- Airgas, Nexair
- Matheson, Air Gas
- Airgas
- AirGas w/additional emergency contract
- Matheson Gas

Fuel Supplier Contracts/Agreements

- Sunshine Gasoline; Clean Fuels
- PORT CONSOLIDATED, INC.
- Siegal Gas Company
- Port Consolidated
- FLORIDA DETROIT DIESEL
- Miami Dade County Contract with Sunshine Gasoline Distributors
- Petroliance
- Land and Sea Fuel
- BV Oil Company
- Pan Tropic
- N/A natural gas
- Sunshine Gasoline Distributors
- TECO Gas
- Urbietta Oils, Inc.
- Urbietta Oils, Inc.
- Employees fuel Neighborhood fuel agreement in place, Facility Generator Fuel Contract Land and Sea Petroleum
- Sunshine Gasoline Distributors, Inc.

Biomedical Equipment (e.g., monitors, ventilators) Contracts/Agreements

- Biomedical EAM
- GE Agility for rentals
- JKARE Respiratory Supplies, McKesson, Direct Supply,
- GE
- STAR MEDICAL
- Freedom Medical
- UHS, agility healthcare
- Desco
- Agility and US Med Equip
- Freedom Medical
- ANDA MEDS (for blood glucose monitors)

- N/A no vents
- McKesson, American Medical Depot
- Medline, Alimed, Direct Supply and Performance Health
- Medline, Alimed, Direct Supply and Performance Health
- Vizient GPO (Vyair), Phillips, and GE, Beckman Coulter, Fisher
- Phillips, KCI, Currie Medical, B. Braun Pumps, Smith's Medical, GE, Dragger, Arjo Hunthleigh, Ecolab, Covidien, Zoll, Ranger, ICU Medical, Vyair, Steris, etc.

PPE Distributors or Manufactures Contracts/Agreements

- Owens and Minor
- Miramar
- McKesson, Direct Supply, Veritid,
- Grainger/3M
- Resource
- Owens and Minor
- Medline
- Medline,3M
- Owen and Minor, Medline
- Grainger,3M
- McKesson
- Medline ad Alimed
- O&M (masks, chemo gowns), MedLine (exam gloves, gowns), Molnlycke (surgical gloves),
- Owens & Minor, Inc.; Halyard and Medichoice

Blood and Blood Products Contracts/Agreements

- One Blood
- Jackson Health System
- Ecco Lab
- Stericycle
- Finly Lab
- McKesson

Hazardous Waste Removal Services Contracts/Agreements

- Waste Management
- Stericycle
- Stri tech
- HES, LLC
- EH&S Vaughan Munro primary vendor is Triumvirate Environmental Inc. (TEI)

Appendix B: Disaster Supplies for Consideration

The lists provided in this appendix are intended to serve as a reference point only. HCCs are not expected to develop or maintain lists to this degree of specificity. Similar lists are available from partners in the field.

Pharmacies

Consider the use of the [ASPR TRACIE Hospital Pharmacy Disaster Calculator](#) for facility-level predictions. Note that this list does NOT include medications such as anti-hypertensive agents that may be needed to support patients with chronic conditions during a prolonged event or one that damages infrastructure.

Analgesia

- Narcotic- IV (e.g., Morphine)
- Narcotic- Oral (e.g., Oxycodone)
- Non-narcotic- Oral (e.g., Ibuprofen, Acetaminophen)

Anesthetic

- Local- Inject (e.g., Lidocaine, Bupivivaine)
- Local- Ocular (e.g., Proparacaine)
- General- IV (e.g., Propofol)

Antibiotic

- Narrow spectrum- IV (e.g., Cefazolin, Vancomycin)
- Broad spectrum- IV (e.g., Expanded Spectrum Penicillin, Carbapenem)
- Narrow spectrum- Oral (e.g., Cephalexin)
- Broad spectrum- Oral (e.g., Expanded Spectrum Penicillin, Quinolone)
- Broad spectrum- Topical (e.g., Bacitracin- particularly for burn patients)
- Broad spectrum- Ocular (e.g., Polymixin/Trimethoprim)

Antiemetic

- IV (e.g., Ondansetron)
- Oral (e.g., Ondansetron)

Antiepileptic

- IV (e.g., Ondansetron)
- Oral (e.g., Ondansetron)

Antipsychotic

- IV (e.g., Olanzapine, Haloperidol)
- Oral (e.g., Olanzapine, Haloperidol)

Anti-viral

- Oral (e.g., Oseltamivir)

Atropine

- IV/IM (e.g., Consider USP grade crystalline, autoinjectors in Chempack)

Bronchodilator

- Beta-agonist- Inhaled (e.g., Albuterol)

Buffer

- IV (e.g., Sodium Bicarbonate)

Calcium

- IV (e.g., Calcium Chloride, Calcium Gluconate)

Dextrose

- IV (e.g., D50)

Insulin

- Regular- IV/SQ (e.g., Aspart)
- Long-acting- SQ (e.g., Glargine)

IV Fluids

- Hypertonic- IV (e.g., 3%, 5%)
- Normal Saline- IV (e.g., 100mL, 1000mL) Lactated Ringers- IV (e.g., 1000mL)
- D5 1/2 NS- IV (e.g., 1000mL)

Paralytic

- IV (e.g., Rocuronium, Atracurium)

Pressor

- IV (e.g., Epinephrine, Norepinephrine, Vasopressin)

Sedative

- IV (e.g., Lorazepam, Midazolam, Ketamine) Oral (e.g., Lorazepam)

SSKI

- Oral

Steroid

- IV (e.g., Methylprednisolone, Dexamethasone)
- Oral (e.g., Prednisone, Dexamethasone)

Tetanus Vaccine

- IM (e.g., Tdap)

Tranexamic Acid

- IV

Medical Supplies

This list was assembled from a variety of sources (e.g., Subject Matter Experts, AHRMM, HIGPA, and the U.S. Department of Commerce). It is specific to critical equipment only and is not comprehensive, but provides a starting point. It is critical to also plan for pediatric patients (those eight years of age and younger will require dedicated sizes of equipment) in relation to community resources / hospital role in the community.

Medication and Fluid Administration

- IV start kits
- IV catheters – 24, 22, 20, 18, 16
- Intraosseous needles / connector sets / drill
- Needles – draw 18/21gauge
- Needle – blunt
- Needle – injection – 23/25/27gauge
- Syringe – saline 10mL preloaded
- Syringe – 1, 3, 10, 35, 60mL
- Insulin syringe with needle
- Piggyback IV set
- IV tubing microdrip
- IV tubing standard drip
- Blood tubing
- IV Pump sets
- Pressure bags
- Central line kits
- Buretol / syringe pumps (if used)
- Arm boards - pediatric

Airway / Breathing

- Laryngoscope / blades (ideally video with direct back up and multiple blades)
- Supraglottic airway (e.g. King, LMA) – pediatric to adult
- Surgical airway tray / supplies
- BVM – pediatric and adult sets
- Endotracheal tubes
- Tube holders / twill
- NG/OG tubes – pediatric to adult Nasal cannula
- Oxygen supply tubing
- Non-rebreather mask
- Nebulizer set / nebulizer masks
- Chest decompression needle (e.g. Cook, SPEAR)
- Suction tubing
- Flexible suction catheters
- Yankauer / large bore rigid suction tip
- Syringe cath tip 60mL
- Ventilators

Diagnostics

- BP cuffs pediatric to adult
- Oximetry Probes
- Arterial line kits and monitoring sets
- Electrodes (ECG leads)
- End-tidal capnography circuits

Laboratory

- Venous sample tubes (Vacutainer)
- Butterfly needles 21/23/25
- Luer to Vacutainer adapter

Urology / Gyn

- Foley catheters – pediatric and adult
- Collection bags

General patient care

- Pillowcases, sheets, blankets
- Gowns
- Towels, washcloths
- Soap
- Emesis bags
- Urinal
- Bedpans
- Facial tissues
- Disinfectant wipes
- Belongings bags
- Garbage bags – construction grade, opaque (for garbage, contaminated clothing, or temporary redress)

- Diapers
- Formula / nipples
- Oral hydration solution / packets

Surgical care

- Tourniquets – e.g. CAT
- Chest tube tray
- Chest tubes – 8-28 sizes
- Suture – per surgical preference
- Scalpels – particularly 11 and 25 blades
- Major procedure (laparotomy) tray (as applicable to facility)
- Vascular tray / bleeder tray (as applicable to facility)
- Trauma packs (prep, drape, cautery, other disposables to accompany trauma case) (as applicable to facility)
- Chest drainage set

Wound care

- Bandage scissor
- Sterile towels
- Roller gauze (e.g. Kerlix)
- Trauma shears
- Chlorhexidine prep
- Suture trays
- Suture – nylon (5-0 to 0)
- Suture – absorbable (5-0, 3-0)
- Irrigation fluid (may substitute clean tap water)
- 2x2 gauze
- 4x4 gauze
- Non-adherent dressing (e.g. Tegaderm, petrolatum gauze)

Orthopedic care

- Cervical collars (pediatric and universal)
- Slings
- Pre-formed splints
- Knee immobilizers
- Crutches
- Canes
- Walkers
- Walking boot (e.g. Cam walker)
- Fiberglass splinting rolls – various sizes
- Plaster splints – various sizes (but especially 5x30 inch and 4x15 inch)
- Plaster rolls – various sizes (but especially 4 inch)
- Webril / cotton batting – various sizes (but especially 4 inch)
- Elastic bandages – various sizes (but especially 4 inch) Coban – 3 inch

Burn care

- Petrolatum gauze 5x9
- Sterile sheets
- Silver-impregnated dressings
- Sterile sheets

(Note – large amounts of IV fluids and analgesia will be needed per patient – e.g. roughly 250mg equivalents of morphine/24h in addition to at minimum stretchable roller gauze (e.g. Kerlix) and petrolatum / bacitracin dressings)

Miscellaneous

- Tape – adhesive, foam, surgical, paper
- Restraints – foam and leather (or equivalent)
- Stuffed animals
- small dry erase boards and markers
- Large permanent markers

- Pediatric dosing guide (e.g. Handtevy, Broselow)
- Alcohol-based hand cleanser Liquid soap

Provider PPE

- Simple mask (fabric, flexible)
- N95 respirator
- PAPR (may be specific for infection control or combined HAZMAT/infection control)
- Waterproof suits for HAZMAT (may be used for EVD/VHF patient assessment/care)
- Isolation gowns (water resistant)
- Waterproof boots/booties
- Butyl gloves (overgloves for decontamination)
- Nitrile gloves (S-XL) for patient care
- Faceshields
- Headcovers (for EVD/VHF care as appropriate)

Scenarios to Consider (for facility and coalition supply planning)

Determine how many casualties is reasonable to plan for given the facility (and its role in the community – e.g., is it a pediatric center or trauma center), surrounding community hazards, and other healthcare resources available in the area:

1. Mass casualty incident – penetrating trauma/blast
 - Primary supply challenges – airway supplies, surgical supplies, blood products, medications (analgesia, sedation, intubation)
2. Mass casualty incident – pediatric
 - Primary supply challenges – age-appropriate intravenous supplies, airway supplies, medications may vary from adults
3. Mass burn incident
 - Primary supply challenges – analgesia, intravenous fluids, dressings, possibly airway supplies
4. HAZMAT – chlorine
 - Primary supply challenges – provider PPE, redress/gowns, possibly airway equipment
5. HAZMAT – organophosphate
 - Primary supply challenges – provider PPE, antidotes - atropine/pralidoxime, airway equipment, pharmaceuticals (e.g., benzodiazepines)
6. Pandemic

Primary supply challenges – provider PPE, critical care supplies and medications, antivirals, antibiotics, sedation/analgesia, airway supplies, general patient care supplies

7. Ebola Virus disease/VHF suspect case

- Primary supply challenges – specialty provider PPE, waste containment

Appendix C: Key Federal Programs and Agencies

Although the healthcare supply chain is largely owned and operated by the private sector, several federal offices and agencies have a role in supporting the continuity of supply chain operations during emergencies and events that could impact healthcare operations and have established partnerships with key components of the supply chain in order to accomplish this. Below is provided as a brief overview (not exhaustive) of some of the key federal partners involved in healthcare supply chain issues.

- The US Department of Health and Human Services (HHS), Office of the Assistant Secretary for Preparedness and Response (ASPR), Division of [Strategic National Stockpile \(SNS\)](#) partners with industry, particularly distributors, to ensure timely delivery of select medicines and medical products in the event of a large-scale public health emergency. The SNS works to quickly distribute and deliver assets in the stockpile by leveraging commercial supply chain operations in place through contracts and memoranda of understanding (MOUs). The SNS also works with manufacturers and distributors to understand additional capacity in the system and how that might be used during a disaster as well as anticipate and help mitigate barriers to rapid delivery that benefit all participants in the supply chain. For examples of SNS response activities, [click here](#).
- [ASPR's Division of Critical Infrastructure Protection \(CIP\)](#) engages national-level public and private sector partners to identify supply chain threats, and to collaborate on solutions. CIP facilitates the Healthcare and Public Health Sector on behalf of HHS as the lead agency responsible for the protection of our nation's health critical infrastructure. This includes convening forums to advance the sector's understanding of emergency-response supply chain concerns and how to proactively mitigate these issues. CIP works with an advisory group of federal and private sector representatives to advance bidirectional communication and problem-solving in steady state and response situations. CIP also works to identify potential and current threats to the supply chain in order to gather relevant information and determine approaches to reduce or eliminate the disaster's impact.
 - ASPR CIP also leads a public-private partnership, [the Healthcare and Public Health Sector Critical Infrastructure Security and Resilience Partnership](#). This partnership supports

information sharing and coordination during emergency events and is comprised of the Government Coordinating Council (GCC) and Sector Coordinating Council (SCC.) The GCC represents government interests and perspectives and includes ASPR, U.S. Department of Homeland Security, and the U.S. Food and Drug Administration in its membership. The SCC represents private sector interests and perspectives and includes supply chain trade associations and companies in its membership.

- [This blog](#) by ASPR CIP describes how gas manufacturers, healthcare facilities, and the federal and territorial government closely coordinated to help patients and manufacturers of critical medical devices receive the gas they needed after Hurricane Maria. They note four critical partners for facilities to be: local HCC, the healthcare and public health partnership, ASPR TRACIE, and the [FEMA National Business Emergency Operations Center \(NBEOC\)](#). During an incident, the NBEOC shares updates on interdependent lifeline sectors such as transportation, communication, water, and power outages and restoration.
- Sector-based [Information Sharing and Analysis Centers \(ISACs\)](#) collaborate and share information within and across the DHS-designated 16 critical infrastructure sectors. ISACs are trusted entities established by critical infrastructure owners and operators to foster information sharing and best practices about physical and cyber threats and mitigation. They provide incident response coordination and share information during emergency events. The Healthcare and Public Health Sector designated two organizations as the Sector's ISACs: Healthcare Ready and the Health ISAC, or H-ISAC.
- [ASPR's Hospital Preparedness Program](#) set forth [the 2017-2022 Health Care Preparedness and Response Capabilities](#) which outlines high-level objectives that the nation's health care delivery system, including HCC's and healthcare organizations, should undertake to prepare for, respond to, and recover from emergencies. Within the continuity of health service delivery capability objectives, healthcare organizations (with support from their local HCC's) are encouraged to identify essential functions for health care delivery, to include supply chain management and assess its supply chain vulnerabilities.
- [The Centers for Disease Control and Prevention \(CDC\)](#) outlines the [Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health](#) (2018) which outlines the capability for (and associated functions) for medical material management and distribution. CDC's Public Health Emergency Preparedness (PHEP) cooperative agreement program is administered by the Division of State and Local Readiness and provides eligible recipients guidance and funding to help build and operationalize public health response capability and consideration strategies. CDC also develops guidance and policies related to protective personal equipment (PPE) and outlines basic principles to help healthcare supply chain managers prepare for disasters by highlighting the advantages and ways to achieve a whole-community, coordinated effort.
- [The Food and Drug Administration \(FDA\)](#) is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices. FDA also plays a significant role in the Nation's counterterrorism capability. FDA fulfills this responsibility by ensuring the security of the food supply and by fostering development of medical products to respond to deliberate and naturally emerging public health threats.