

Chapter 11

Distributing SNS Assets

OVERVIEW

This chapter discusses the delivery of SNS assets from your receipt, store, and stage (RSS) facility to dispensing sites, treatment centers, and intermediate distribution points. We refer to this function as distribution and to the team that performs it as the SNS Distribution Team. In most cases, trucks will be the primary method you use to deliver SNS assets. Helicopters, boats, and rail/subway may also play a part to move resources around traffic congestion or other obstacles.



NETWORK DESIGN FACTORS

Your distribution network is the way that you will move SNS assets quickly from your state RSS facility to those who need it at points of dispensing (PODs), treatment centers, and intermediate distribution locations. The factors that determine the design of your network include:

- The number and locations of PODs, treatment centers, and other destinations that will receive SNS assets. These numbers and locations will vary with the scale of an emergency (e.g., 1000 vs. 1 million people affected), type of emergency (contagious or noncontagious threat), and location of the affected area (produced by plume dispersions, commuting patterns, etc.);
- The existence of large organizations, such as corporations and military installations, that have their own onsite healthcare facilities that may be able to dispense prophylactic medicines and vaccines to their employees;
- The presence or absence of methods for supporting people who cannot go to a POD, such as institutionalized seniors, the homebound, and prison inmates;
- The state transportation resources (e.g., delivery vehicles, drivers, helicopters) available to deliver SNS assets;
- The existence of local transportation resources;

- The speed with which a given amount of materiel moves to delivery sites (a tractor trailer will move a lot of SNS assets slowly; a helicopter will move a small amount quickly); and
- The existence of adequate security to protect vehicles and drivers while en route and to escort them through congestion.

DISTRIBUTION NETWORKS

Implement

Your distribution network describes the way that SNS assets flow from your state RSS facility to local PODs and treatment centers. Networks can be single level or multilevel, depending upon the number of stops the SNS assets make. A single-level network (Figure 9.1) moves SNS assets directly from the state’s RSS facility to local PODs and treatment centers. A two-level network (Figure 9.2) moves SNS assets to some intermediate distribution site, such as a county facility, and from there delivers it to local PODs and treatment centers. A three-level network (Figure 9.3) moves SNS assets from the state RSS facility to regional intermediate distribution sites, from there to county/local intermediate distribution sites, and then to PODs and treatment centers.

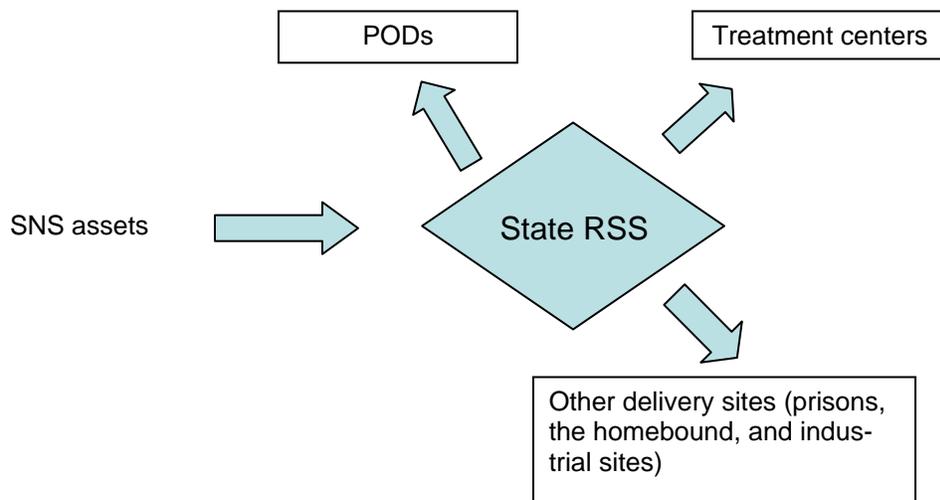


Figure 9.1. The single-level model.

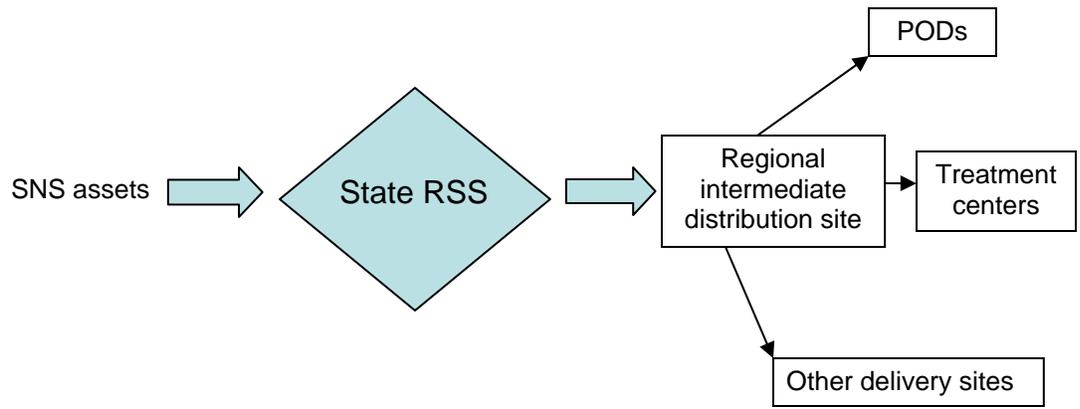


Figure 9.2. A two-level model.

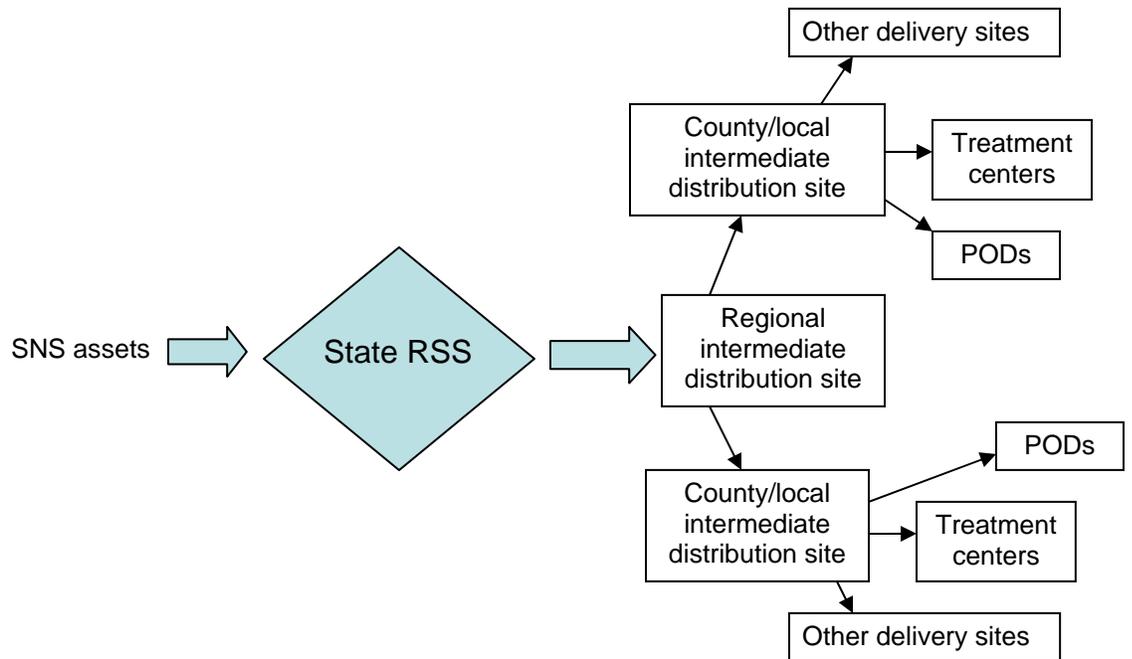


Figure 9.3. A three-level model.

Variants of two- and three-level models exist. To avoid delays, the state RSS facility or an intermediate distribution site may deliver directly to nearby PODs and treatment centers in the two- and three-level models.

It is beyond the scope of this Guide to explain how to optimize a distribution network for the fastest delivery of materiel with a fixed amount of transportation resources. We recommend that you talk with well-established trucking firms in your area to gain their insight and help in designing your distribution network. All will tell you the following general principles of network design:

- Goods that flow through multiple levels of distribution generally will arrive slower than goods that flow through fewer levels.
- Multiple levels of distribution generally will require more people and equipment to operate than will fewer levels.
- The more times a shipment is touched before delivery, the greater the chance that it will be delayed, damaged, lost, or stolen.

TRANSPORTATION REQUIREMENTS

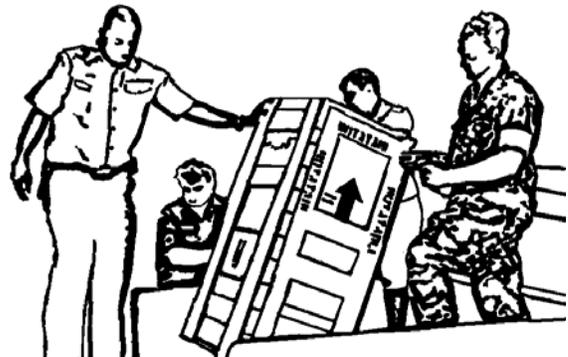
Your preparations should anticipate the following requirements for various transportation modes:

Implement

- All modes
 - The ability to maintain SNS assets at appropriate temperatures during transit to ensure its efficacy (see Chapters 8 and 12) upon arrival.
 - Fuel, repair, and recovery services 24 hours a day for the duration of the emergency. To avoid time wasted returning to a government source of fuel, drivers should have a credit card for the purchase of fuel at any commercial location.
 - Two-way communication with delivery vehicles at all times.

Implement

- Truck
 - Full-sized pickups or larger vehicles.
 - Restraining straps to keep loads from shifting.
 - Tarps to protect loads in open-bed trucks from the weather.
 - Hydraulic lifts on the back of trucks to



Implement

- eliminate the need for a forklift or an unloading dock at delivery locations.
- Helicopter
 - Helipads wherever you intend to pick up and drop off assets at PODs, treatment centers, and intermediate points.
 - Slings for carrying loaded SNS cargo containers.

Implement

- Ground-to-air communication with pilots.
- Charts that identify delivery locations.
- Rail (subway or railroad)
 - Rail sidings or elevated platforms.
 - Transfer docks and forklifts for loading/unloading cars.
 - Freight-elevator access to subway platforms.



Implement

- Water
 - Piers.
 - Forklifts or cranes to load and offload materiel.

TRANSPORTATION RESOURCES

Implement

The scope of an event will affect the amount of transportation resources that you need and the efficiency with which those transportation resources operate. In most cases, trucks will be your primary method of delivery, but if you do not have enough trucks or drivers, assets will arrive slower at PODs, treatment centers, and other locations.

Some cities have recognized the possibility that there may not be enough state transportation resources to support quickly enough the needs of their PODs and treatment centers. These communities intend to use their own transportation to pick up SNS assets from the state RSS facility or from an intermediate distribution site to which the state delivers.

Some cities have augmented their existing vehicle fleet by forming partnerships with commercial transportation firms, grocery-store chains, and pharmaceutical and medical-supply distribution firms to provide primary or redundant transportation for the SNS assets. You should investigate these options and establish contingency contracts or memoranda of understanding to provide additional transportation assets if and when you need them.

Even with sufficient trucks and drivers, traffic congestion will increase the time to deliver SNS assets. You need to plan methods of transport (such as subway/rail, helicopter, and boat) that will circumvent traffic by moving SNS assets around congestion to points where trucks can move more freely.

Your state's National Guard is an excellent transportation option if you can count on it. The Guard has vehicles and drivers. Some units have helicopters. Others have fixed-wing aircraft that might help supply remote areas. The Guard also has

a strong command and control structure, the ability to provide its own security, and excellent communication capabilities that could support all SNS teams. However, the Guard may be activated for other purposes during an event. Unless you can count on the Guard, you should use it only as one of several redundant transportation resources.

Implement

Here are other federal, state, and local agencies that you should consult to identify vehicles, helicopters, drivers, fuel, maintenance, security, and communication capabilities for your distribution network:

- S/L departments of transportation for air, ground, rail, and water traffic management;
- S/L and federal law-enforcement agencies for security (shipment protection and traffic control);
- S/L departments of public works for vehicles, drivers, fuel, and repair; and
- Other S/L departments that have fleets of vehicles and drivers, such as departments of parks and recreation and of education.

DISTRIBUTION TEAM COMPOSITION

Implement

Your SNS Distribution Team will be comprised of

- Vehicle drivers,
- Mechanics to keep vehicles running,
- Other personnel to fuel and recover broken vehicles,
- Dispatchers to assign deliveries to specific drivers and track the movement of vehicles to ensure they arrive at delivery points and return to the RSS facility as expected, and
- A supervisor to ensure the Distribution Team has adequate staff and support and that it operates effectively.



These personnel will work closely with members of the RSS and Security teams.

ACTIONS BEFORE AN EVENT

Implement

Before an event, you need to do the following:

- Test the recall of all team members to ensure you can contact them and that they will arrive promptly.

- To minimize the amount of time drivers take to make deliveries, create maps that identify each delivery location, the best method to get there, and the exact point where materiel is received. If you use helicopters, pilots will need charts to identify drop locations from the air. Maps and charts are particularly important to identify receipt points at treatment centers, which may have several buildings spread over a considerable area.
- Maintain fresh batteries in all radios and test the radios to make sure they work.
- Perform radio checks among your Operations Management Team, drivers, delivery locations, dispatch, inventory control, law enforcement, supporting organizations, and your jurisdiction's emergency operations center to confirm that your Distribution Team will be able to communicate with them. These communication checks should be one of the first actions that occur at the onset of an event.
- Badge drivers and identify vehicles so that they do not encounter problems from authorities as they deliver materiel. This is particularly important if you use a military installation for any part of your SNS distribution system (e.g., a landing field and the RSS facility) or if you must deliver to such an installation. During an event, these facilities will be closed to all but essential personnel. Similarly, you need to work with transportation authorities and law enforcement to ensure they recognize your vehicles and drivers as part of the emergency response. Otherwise, your Distribution Team will waste valuable time at the onset of an emergency getting clearance and recognition for its vehicles and drivers.
- Establish a process that complies with the Drug Enforcement Agency's procedures for handling and transporting controlled substances. Chapters 8 and 12 discuss these procedures. Your warehouse personnel that handle controlled substances and your drivers who deliver them are part of a chain of custody that you must maintain.

OPERATIONAL INFORMATION NEEDED DURING AN EVENT

Deploy

During an emergency, your Distribution Team must have the following information to deliver SNS assets:

- The locations of PODs, treatment centers, and other places that are active and need support;
- Maps and charts to each location with routes marked that avoid contaminated areas and significant congestion;
- How and with whom to communicate at each delivery location;
- Transportation resources:

- Number of available trucks and drivers,
- The locations of contaminated areas and major road, waterway, and bridge closures that may affect delivery routes,
- The locations of airports and the existence of any air-traffic-control problems that may impair the use of aircraft, and
- The occurrence of any subway or rail-system problems that may affect the use of those modes; and
- Communications:
 - Assigned radio frequencies for communications with vehicle dispatchers, delivery points, and security forces (the last is critical for the smooth operation of your distribution network because of the problems that crowds and traffic congestion may produce) and
 - Problems with various communication capabilities (phone, fax, cell phone, or e-mail) that may affect the use of those capabilities (for two hours after the attacks of September 11, 2001, telephones and cell phones in both New York City and Washington, D.C., were nearly inaccessible).

DISPATCHING VEHICLES

Implement

Vehicle Dispatch is the command center for your Distribution Team. It assigns deliveries to specific drivers, monitors each driver's progress, and reassigns deliveries based on problems drivers encounter. Dispatch needs a manual or automated system to keep track of

- Assets by customer for delivery at the RSS facility;
- Assets in transit by customer, including the location of the delivery vehicle;
- Preferred routes;
- Locations of problems, such as contaminated areas, congestion, closed roads, and downed bridges, that may require rerouting vehicles; and
- Drivers who need repair, security, relief, or other support.

Deploy

The least complicated dispatch system is a large wall chart that identifies all delivery locations and the preferred routes to those locations. Your dispatcher will indicate the location of each vehicle on that chart as it travels to customers with assets or returns to staging for additional pickups. The chart would identify the location of any problems and help incoming dispatchers understand the status of the delivery system as they relieve outgoing dispatchers.

PLANNING CONSIDERATIONS

Consideration	Responsibility		
	State	Regional	Local
Have you defined the network that you will use to get SNS assets to PODs, treatment centers, and other locations?			
What modes of transportation will you use, and what redundant backups will you use if they fail?			
What transportation resources will you use, including redundant capabilities if those resources fail?			
Have you created a manual or automated process for keeping track of each distribution vehicle and the status of each delivery?			
What actions does the Distribution Team need to take before and during an emergency to provide timely distribution of SNS assets?			
How will the Distribution Team work with SNS Operations, RSS, Security, Communications, and other teams during an emergency?			

Implementation Capabilities

Consideration	Responsibility		
	State	Regional	Local
Have you designed a distribution network so SNS assets can flow quickly from your RSS facility to local PODs and treatment centers?			
Can your transportation system maintain SNS assets at appropriate temperatures; provide fuel, repair, and recovery services; issue drivers a credit card for fuel; and assure two-way communications?			
Have you arranged for the use of full-sized pickups or larger vehicles with restraining straps, tarps, and hydraulic lifts?			
If needed, have you arranged for the use of			
<ul style="list-style-type: none"> • helicopters, helipads, cargo slings, ground-to-air communication, and charts? 			
<ul style="list-style-type: none"> • subway trains or railroads? 			
<ul style="list-style-type: none"> • water transport? 			
Have you enlisted enough vehicle operators to staff your delivery fleet 24 hours a day?			
Have you consulted with your state and local transportation, law enforcement, and public works agencies to identify transport personnel and resources?			
Does your Distribution Team include adequate numbers of drivers, mechanics, vehicle-recovery specialists, dispatchers, and supervisors?			

Consideration	Responsibility		
	State	Regional	Local
Have you tested the recall of all team members, identified and mapped all pick-up and drop-off locations, routes, maintained fresh radio batteries, and performed radio checks?			
Have you developed a vehicle-dispatch system to assign drivers, monitor progress, and reassign problem deliveries?			

Deployment Processes

Process	Responsibility		
	State	Regional	Local
Your Distribution Team must maintain all delivery point locations; maps; areas closed to traffic; contact information for each drop-off point; assigned radio frequencies; and information about problems with communications.			
Your dispatcher will need to track the movement of each vehicle, identify any problems, and inform relief dispatchers of the status of the delivery system.			