

WORKING P A P E R

New Tools for Assessing State and Local SNS Readiness

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WR-455-DHHS

February 2007

Prepared for the U.S. Department of Health and Human Services Office of the
Assistant Secretary for Preparedness and Response

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SUMMARY

State and local governments play the key role in receiving, distributing, and dispensing materiel from the Strategic National Stockpile (SNS). Assessing their capability to perform these functions is critical to the success of the SNS program.

The current system for assessing state and local SNS readiness – developed by the Centers for Disease Control and Prevention’s Division of the Strategic National Stockpile (CDC/DSNS) – draws primarily upon a written checklist tool (the “tool”) for evaluating SNS plans and related documents. The tool, administered by CDC/DSNS during one-day site visits, covers the functions and capabilities included in its main guidance document, *Receiving, Distributing, and Dispensing Strategic National Stockpile Assets* (Version 10.02). Items on the checklist are rolled up into an overall score that results in jurisdictions being rated on a 0-to-100 scale.

A growing consensus has emerged that the current checklist-based assessment approach needs to be supplemented to include assessments of jurisdictions’ ability to *implement* and *adapt* these plans in real-world situations. This report presents a set of operational drills designed to supplement the current checklist-based system.

Assessment Development Process Was Guided by Explicit Design Criteria

The assessment development process included extensive discussion with key stakeholders and end users, observation of SNS drills and exercises, and systematic process analysis. The assessments presented here seek to:

- Measure jurisdictions’ ability to implement and adapt preparedness plans
- Minimize assessment burdens
- Support both accountability and quality improvement.
- Cover a broad spectrum of jurisdictions.
- Be aligned with relevant guidance and doctrine

The report addresses the following issues:

- *What* SNS elements are most important to assess,
- *How* they should be assessed,
- *Who* should do the assessing
- How the assessments could be *rolled up* and *aggregated* into an overall evaluation of SNS readiness.

What SNS Elements Should Be Assessed?

Perhaps the best assessment of operational capability is a documented response to a real-life emergency or, short of that, a full-scale exercise that simulates the scale and stresses of real emergencies. However, large-scale emergencies are (fortunately) rare, and full-scale exercises impose heavy burdens on assessed jurisdictions and the CDC.

Focusing assessments around a small number of critical operational capabilities helps keep assessment burdens reasonable. We propose a capabilities-based approach to assessment as a complement to the capabilities-based planning philosophy articulated in Homeland Security Presidential Directive 8 (HSPD-8) and elsewhere. Instead of developing measures around specific response scenarios, the proposed assessment system focuses on “building block” capabilities that can be deployed, combined, and adapted in response to a broad spectrum of response scenarios.

In the absence of a rich empirical evidence base on the characteristics of effective SNS responses, we relied on engineering-style process analysis to identify the building blocks. The analysis (described in detail in Section 2 and Appendix A of the report) identified 14 candidate capabilities, some of which are specific to certain SNS functions (e.g., warehousing, distribution, dispensing) and others of which are applicable to a variety of SNS as well as other public health functions (e.g., staff call down, site activation).

We selected five building-block capabilities for initial assessment development:

- Staff call down
- Site activation
- Facility set up
- Pick-list generation
- Dispensing

Assessments for other capabilities could be readily added to the system.

How Should Key Capabilities Be Assessed?

We developed drill-based metrics around each of the building-block capabilities. The drills are summarized in Table S.1. Each drill has the following characteristics.

Small scale. The drills are small in scale, testing fairly narrow and specific processes. This allows the system to test important operational capabilities without imposing heavy burdens on state and local health departments. Small scale drills are also less likely to overwhelm state and local quality improvement efforts, thus increasing the likelihood that the assessments will be viewed as useful for internal as well as external accountability purposes.

Table S.1: Overview of Current Set of Operational Assessments

Assessment	Overview of Assessment Task	Metrics (required and optional)
Staff call down	Unannounced call down drill; respondents indicate ability to report, but no actual staff movement required (hypothetical assembly).	<p><u>Required:</u></p> <ul style="list-style-type: none"> ○ Calling completion time ○ Acknowledgement completion time ○ Contact rate ○ Assembly rate (hypothetical) <p><u>Optional:</u></p> <ul style="list-style-type: none"> ○ Actual assembly rate ○ More detailed information about assembly activities
Site activation	Unannounced calls placed to managers/owners of facilities used for SNS operations (e.g., warehouses, POD sites); respondents indicate availability of facility to be made ready for SNS use.	<p><u>Required:</u></p> <ul style="list-style-type: none"> ○ Calling completion time ○ Contact rate ○ Availability rate (hypothetical) <p><u>Optional:</u></p> <ul style="list-style-type: none"> ○ Actual activation time ○ More detailed information about key steps in activation process
Facility setup	Announced actual setup of a facility (e.g., RSS, POD).	<p><u>Required:</u></p> <ul style="list-style-type: none"> ○ Setup time ○ % items completed on jurisdiction-generated checklist <p><u>Optional:</u></p> <ul style="list-style-type: none"> ○ Time to complete critical subcomponents of setup process
Pick list generation (RSS)	Generate pick list in response to apportionment decision (pre-specified by jurisdiction), using CDC/DSNS inventory files.	<p><u>Required:</u></p> <ul style="list-style-type: none"> ○ Total elapsed time <p><u>Optional:</u></p> <ul style="list-style-type: none"> ○ Data importation time ○ Total time for managed inventory shipment
Dispensing (POD)	Run a set of 100 “express” (non-special-needs) patients through the POD.	<p><u>Required:</u></p> <ul style="list-style-type: none"> ○ Patient throughput (per hour) ○ Mean patient flow time ○ Dispensing accuracy <p><u>Optional:</u></p> <ul style="list-style-type: none"> ○ Throughput for multiple regimens ○ Throughput, flow time, and accuracy for special needs patients ○ Throughput using additional time posts ○ Station queue length ○ Diagnostic accuracy

Standardized metrics. Each drill includes standard metrics and provides enough standardization in the assessed tasks to ensure at least a modicum of comparability across jurisdictions and over time. Comparability is important for measures designed for accountability purposes and for attempts to track improvements over time.

Modularity, scalability, and extensibility. The drills can be run as standalone assessments or combined with other drills or assessment activities to form compound assessments. Thus, the assessment system can be adapted to meet state and local quality improvement needs without sacrificing policymakers' need for standardized – and therefore comparable – metrics that can provide an overall summary of performance. The drills are also extensible, allowing jurisdictions to add locally-relevant metrics to the standard set.

Embeddability. The drill-based assessments could also be embedded in more routine public health functions, thus reducing the need to assemble key staff solely for exercising. For example, jurisdictions might use annual refresher training for POD staff as an opportunity to assess the entire call down and assembly process.

Who Should Administer the Assessments?

The report presents options for who should administer the assessments, along with ideas for quality control.

Assessments Designed to Support Self-Assessment. Currently, CDC/DSNS administers SNS assessments to state health departments and CRI-related local health departments during site visits. However, increases in the number of CRI programs might increase the range of jurisdictions CDC/DSNS wishes to assess. Because current CDC/DSNS resource levels might not allow for site-visits to all CRI health departments, the operations manuals were designed to provide enough detailed guidance to support self-assessment.

Peer Jurisdictions Might Assess Each Other. As an alternative, assessments might be administered by other health departments, thus retaining some of the advantages of an external assessor while spreading the burdens beyond CDC/DSNS. Specifically, state health departments might be assessed by neighboring state health departments. LHDs could be assessed either by their state HD or by neighboring LHDs. Some attempt would have to be made to ensure that jurisdictions less adept at drilling and exercising are assessed by more adept jurisdictions.

Peer Jurisdiction Might Review Self-Administered Assessments. Given the present demands on health departments, however, asking them to conduct assessments on other jurisdictions may be unreasonable. A slightly less burdensome approach would be for jurisdictions to provide post hoc review of other departments' SNS self-assessments. Reviews might include interviews with key personnel and examination of documentation generated by the drills. This would also encourage the development of networks of health officials who could facilitate the diffusion of exemplary practices. These networks would also help foster coordination during real emergencies.

How Should the Assessments Be Rolled Up?

The report also discusses how the proposed assessments might be combined to generate an overall evaluation of state and local SNS readiness.

Conceptualizing “Levels of Preparedness.” The roll-up strategy is grounded in the following “levels of preparedness” construct:

- *Beginning.* The jurisdiction has acquired the *inputs* of preparedness (e.g., equipment, personnel) and has made satisfactory progress in implementing key preparedness *processes* (e.g., planning, training, exercising, organization/leadership), but has not demonstrated the ability to implement and adapt key capabilities in operational situations.
- *Developing.* The jurisdiction has acquired the necessary inputs and is engaging in adequate preparedness processes, *and* has demonstrated proficiency in performing separate tasks related to the building-block capabilities. However, the jurisdiction has *not* demonstrated an ability to execute core SNS functions *simultaneously*.
- *Secure.* The jurisdiction has demonstrated that it possesses adequate resources, is engaged in required preparedness processes, has demonstrated separate mastery of core capabilities, *and* has shown the ability to successfully *combine* crosscutting capabilities in the execution of the full spectrum core SNS functions.

Assessment Requirements Differ By Level and “Jurisdiction Tier.” Different combinations of assessments would be required for each preparedness level. Only the checklist tool would be required to attain the “Beginning” level. Separate administration of the capability-based assessments would be required to attain the “Developing” level. Finally, jurisdictions would be required to conduct full-scale exercises – what we call “compound drills” –to attain the “Secure” level.

We also recommend that assessment frequency vary by “jurisdiction tier.” Specifically, higher priority “Tier 1” jurisdictions could be assessed more frequently than other jurisdictions (see Table 4). We also suggest tier-related differences in who administers and reviews the assessments. For instance, while state and CRI-related LHDs might be required to complete their checklist assessments during CDC/DSNS site visits, Tier 2 and 3 jurisdictions might self-administer the checklist with peer review and random audits in order to ensure quality (see Section 5).

Combining Assessments Into An Overall Index. Finally, there must be a way to determine whether jurisdictions have performed adequately in all essential categories. The report provides two options:

- Set performance thresholds for each assessment and then determine the number of assessments that must be “passed” in order to achieve a given level of performance. CDC/DSNS would then determine what percentage of assessments must be passed to reach each level of preparedness.

- Use a mathematical algorithm (described in Appendix C) to combine metrics into a smaller set of time-based indexes that can be compared to the CRI 48-hour requirement.

How Could Assessments From Local Health Departments Be Aggregated Into Statewide Scores?

Finally, the report considers how (once each jurisdiction has completed its required assessments and the scores have been “rolled up” into an overall evaluation) jurisdiction-level evaluations could be combined into state-level ratings. The report considers both weighted and unweighted means as alternatives. However, both approaches assume that low scoring local health departments in a state are offset by high scoring departments, and vice-versa. Thus, the report also considers options that involve calculating the percentage of local health departments that exceeded a minimal performance threshold.

Next Steps

The proposed improvements to the SNS assessment system described above provide a roadmap. The report also describes a number of concrete steps that are required to move down that road, including:

- Field testing
- Initial rollout and ongoing evaluation
- Setting performance standards
- Developing assessments of additional capabilities
- Linking the assessments with quality improvement
- Assigning consequences to assessment results
- Improving the evidence base behind the assessments and standards
- Improving coordination between SNS and other assessment systems

The report provides a detailed description of key processes in each of the steps.