GUIDANCE FOR

Customizing the Surge Capacity Tabletop Exercise Template

August 2025

This publication was supported by Cooperative Agreement #NU60OE000104 with the US Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC.

Introduction

About Surge Capacity

Laboratory surge capacity, the ability to rapidly expand testing capabilities and resources in response to an increased demand for testing, is an essential function during public health emergencies such as disease outbreaks, natural disasters or bioterrorism events. During these emergencies, there is often a sudden increase in the demand for testing and analysis, requiring laboratories to quickly scale up their operations to meet the increased workload. Surge capacity allows public health laboratories to process a large volume of samples quickly and accurately, which is crucial for identifying and containing infectious disease outbreaks, monitoring trends in disease prevalence and informing public health decisions. Laboratories need to have the infrastructure, equipment, supplies, personnel and protocols in place to quickly scale up operations and process a large volume of samples efficiently, while maintaining the quality and accuracy of testing results. Beyond detection and diagnosis, laboratory testing provides essential data that helps officials assess the scope and severity of a crisis, allocate resources effectively and develop evidence-based interventions.

Tabletop Exercise Development

Public health laboratories are at different stages in developing surge plans, and the level of detail in their documented methods for expanding capacity—as well as the extent to which these methods have been tested—varies. The Association of Public Health Laboratories (APHL) contracted with RAND to develop an exercise template that public health laboratories can use to assess their surge capacity planning, identify gaps in staffing, equipment and space, and consider ways to maximize testing capacity.

To understand existing surge procedures and identify planning gaps to target in the exercise, RAND researchers reviewed a convenience sample of surge capacity plans from public health laboratories that indicated they had one in the 2023 APHL All-hazards Laboratory Preparedness survey. RAND selected a subset of elements to examine in the sample of plans, along with additional elements of interest:

- Procedures for sample triage and prioritization of testing
- Procedures for referral to external laboratories
- Procedures to secure, deploy and train additional personnel for short- and long-term response efforts
- Procedures to secure and deploy additional equipment and/or supplies for short- and long-term response efforts
- Designation of information technology (IT) personnel to provide laboratory information management system (LIMS) support and assist with any IT-related issues during a surge event
- Requirements for data management and results reporting
- Procedures to secure and deploy facility resources for short-term and long-term response efforts
- Procedures to develop a quality assurance (QA) plan to meet new/updated requirements for testing and reporting
- Type of plan
- Sections of plan and appendices
- Surge scenarios used
- Surge levels planned for
- Standing capacity and surge capacity
- Alternative/add-on testing techniques

After reviewing the plans, RAND conducted five semi-structured interviews with laboratory directors and staff to glean further insight into their laboratory's surge capacity planning and elicit input on what pathogen to use for the scenario. Discussions focused on the laboratory's experience with developing surge plans, agreements with other laboratories, testing platforms used, challenges with past incidents (including but not limited to COVID-19), types of incidents that laboratories found most concerning and scenario features that laboratories would find most valuable in a tabletop exercise.

Based on the findings from the plan review and interviews, RAND developed a list of discussion questions for the exercise to address. Topics included plan activation, equipment and space, personnel, sample testing, data and reporting, communication and coordination, quality assurance and biosafety, and evaluation and improvement. RAND then drafted an exercise scenario using a respiratory pathogen

RAND pilot-tested the tabletop exercise with four public health laboratories in different geographic regions within the United States. The laboratories varied in size, demographics of the population served and governance structure. Prior to each pilot test, RAND met with the laboratory director to ask about their specific testing capacity for the pathogen and then tailored the exercise scenario to the laboratory's geographic location, structure and testing capacity. After each pilot test, RAND sought feedback on the exercise and used the recommendations to improve the scenario and discussion questions to be relevant and useful for a range of laboratories.

TABLETOP EXERCISE OVERVIEW

Tabletop Exercise Scenario

A man and woman are exposed to a respiratory pathogen while traveling overseas. The couple show signs of illness upon their return to the US. The outbreak starts in a regional city near the laboratory and spreads to the laboratory's state via a shared connection flight with the initial cases.

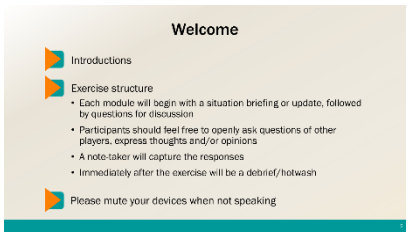
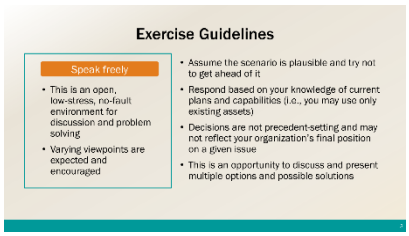
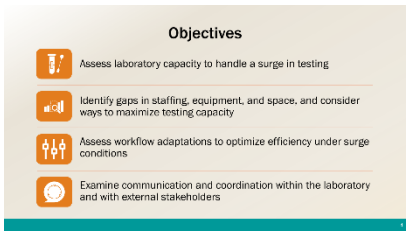
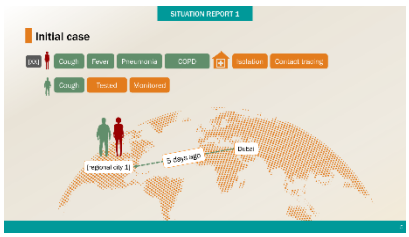
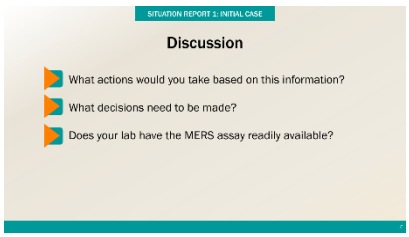
The tabletop exercise helps public health laboratories assess their surge capacity plans in response to an infectious disease outbreak that becomes a pandemic. The exercise focuses on examining and improving established policies and procedures to ensure laboratories can meet an increase in testing demand for a respiratory pathogen; it is not intended to be an operational exercise requiring actual laboratory testing and mobilization of resources. The MS PowerPoint template is customizable by laboratories to reflect their facility, geographic location, partnerships and response structure. Both the slides and the notes section contain placeholder text fields that can be edited to make the scenario relevant and realistic for the laboratory. The instructions in the next section provide guidance on customizing the slides and facilitator notes.

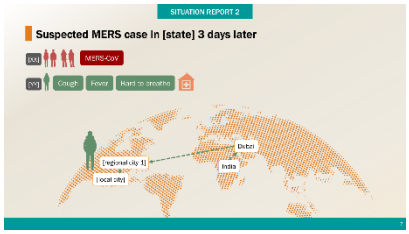
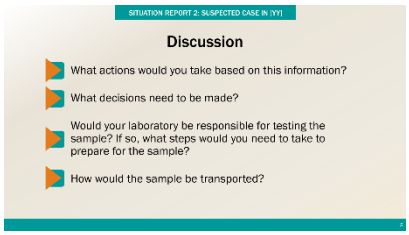
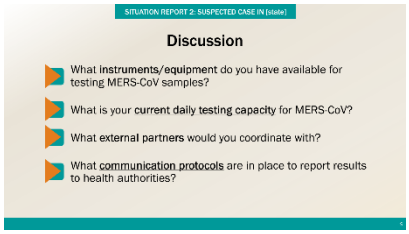
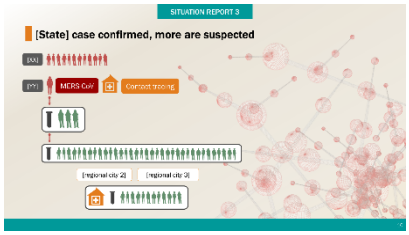
Exercise participants may vary but at a minimum should include the laboratory director and management staff; key leaders and staff from microbiology, molecular biology, virology and bioterrorism; and administrative staff with strong knowledge of shipping, receiving and procurement. A state epidemiologist or other representative from the health department may provide additional value. Pilot tests demonstrated that discussions were more robust when a range of laboratory positions participated.

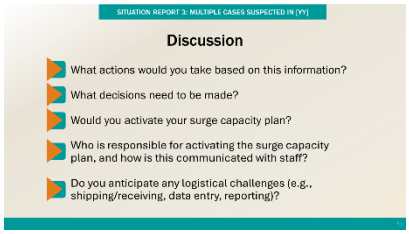
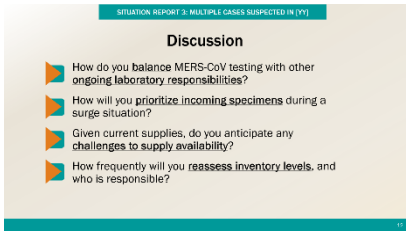
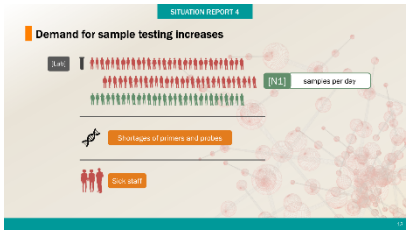
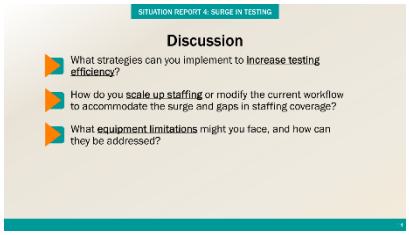
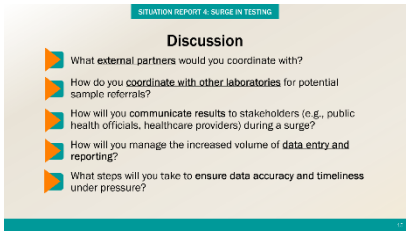
The exercise should be led by a facilitator and can be conducted using a virtual platform or in person. The role of the facilitator is to present the outbreak scenario described in the slides and lead participants in a discussion of their response using the questions and prompts provided in the template. Although RAND staff facilitated during the pilot-tests, the template is designed so that the exercise can be facilitated by a member of the laboratory staff, such as the laboratory director, or someone from an outside agency with knowledge of laboratory operations and emergency response.

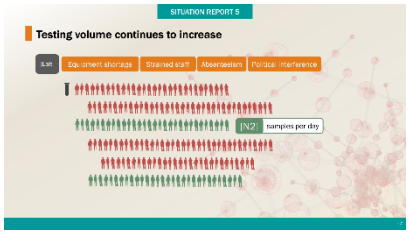
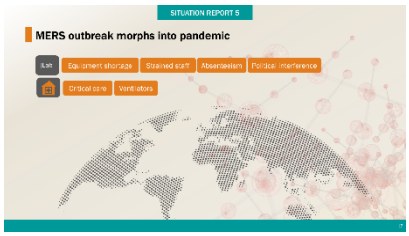
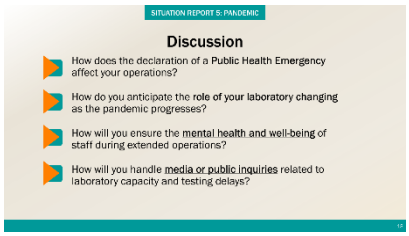
The initial slides of the template describe the exercise structure, objectives and guidelines for discussion. The guidelines reinforce that the tabletop exercise provides a low-stress environment for identifying, discussing and addressing gaps in surge planning. Facilitators can adapt these slides to meet the laboratory's needs or use them as is. It is up to the laboratory whether it wants to have a notetaker. After each of the five situation reports, the template has a list of suggested discussion questions. Depending on the flow of the discussion, the facilitator can choose to skip questions or ask additional prompts to probe further on topics not covered or ones that need more discussion. Following the exercise, the laboratory should hold a hotwash to discuss strengths and opportunities for improvement. Pilot tests of the exercise took approximately 3.5 hours including a 45-minute break after the fifth situation report prior to the hotwash.

Download the Tabletop Exercise Sides

Slides		Slide Customization	Facilitator Script Customization
1		• **Laboratory name**: The specific lab(s) participating in the exercise • **Date**: Date of exercise	•
2		Modify as needed	•
3		Modify as needed	•
4		Modify as needed	•
5		• **Regional city 1**: Major city with an airport that has international flights (e.g., LA, Denver, Miami, Boston, Dallas, NYC) • **XX**: Abbreviation for the state of the regional city with the initial case	• **Regional city 1**: Major city with an airport that has international flights (e.g., LA, Denver, Miami, Boston, Dallas, NYC)
6		Modify as needed	Additional prompts: • How would your lab find out about the initial case? • Would you engage with one of the Regional Emerging Special Treatment Pathogen Centers (RESPTCs)?

Slides		Slide Customization	Facilitator Script Customization
7		• **State**: The state in which the laboratory is located • **XX**: Abbreviation for the state of the regional city with the initial case • **YY**: Abbreviation for the laboratory's state • **Regional city 1**: Major city with an airport that has international flights (e.g., LA, Denver, Miami, Boston, Dallas, NYC) • **Local city**: City in the laboratory's state	• **Local hospital**: Hospital in the local city selected • **Local city:** City in the laboratory's state • **Regional city 1:** Major city with an airport that has international flights (e.g., LA, Denver, Miami, Boston, Dallas, NYC)
8		• **YY**: Abbreviation for the laboratory's state	Additional prompts: • Does your laboratory have the staff, space, and personnel to test for MERS? • What if the suspected case had come from a smaller community hospital? Would that change any of the actions?
9		• **YY**: Abbreviation for the laboratory's state	
10		• **State**: The state in which the laboratory is located • **XX**: Abbreviation for the state of the regional city with the initial case • **YY**: Abbreviation for the laboratory's state • **Regional city 2**: Major city with proximity to regional city 1 • **Regional city 3**: City with proximity to regional cities 1 and 2	• **Local city:** City in the laboratory's state • **Local hospital**: Hospital in the local city selected • **State**: The state in which the laboratory is located • **Regional city 2**: Major city with proximity to regional city 1 • **Regional city 3**: City with proximity to regional cities 1 and 2

Slides		Slide Customization	Facilitator Script Customization
11		• **YY**: Abbreviation for the laboratory's state	Additional prompts: • How many BSC do you have? How many BSC in BSL-3? • How many technicians can work simultaneously in BSL-3 BSC? • How many administrative, virology, and microbiology trained technicians do you have?
12		• **YY**: Abbreviation for the laboratory's state	
13		• **Lab**: Laboratory name • **N1**: Number of samples that would begin to stress the laboratory, but would be manageable with some minor tweaks to operating procedures	• **State of regional city 1:** State where regional city 1 is located • **State 2, 3**: Other states in region • **Region**: Region of the country where laboratory is located • **State 4, 5**: States outside the region
14		Modify as needed	Additional prompts: • Do you have the capability to reassign support staff to other administrative areas/functions? • What cross-training measures are in place to ensure adequate technical personnel? • What modifications can you make to work hours and shifts to ensure staffing coverage during surge operations?
15		Modify as needed	Additional prompts: • How will you ensure proper documentation and chain of custody for all samples?

Slides		Slide Customization	Facilitator Script Customization
16		• **Lab**: Laboratory name • **N2**: Number of samples that would overwhelm the laboratory and require changes to operating procedures	
17		• **Lab**: Laboratory name	
18		Modify as needed	Additional prompts: • Are there any additional measures you would take to increase testing capacity that have not already been discussed? • What quality assurance measures are in place to prevent errors in high-volume testing?
19		Modify as needed	
20	Credits	Must be included, do not edit.	N/A