NBS COOP Guidance

Hospital Newborn Screening Continuity of Operations Planning Guide

APHL ASSOCIATION OF PUBLIC HEALTH LABORATORIES®

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Purpose

The purpose of this document is to facilitate situational awareness and coordination among hospital staff and administration to ensure the continuation of newborn screening (NBS; includes **dried blood spot [DBS]**, **hearing** and **Critical Congenital Heart Disease [CCHD]**) during a hospital emergency/crisis through a comprehensive and uniform system.* Examples are provided for building and maintaining continuity of operations plan (COOP) components.

The NBS Contingency Plan (CONPLAN) is the formative reference for NBS COOP development; this guide serves as a companion reference for hospital-specific NBS contingency considerations.

Download an editable set of the example tables for use in your facility.

Contents

* Henceforth, "emergency" and "crisis" will be used interchangeably and may be defined as any event(s), thing(s), situation(s) or combination thereof that causes a disruption to normal operations of the hospital such that collection, drying, and/or shipment of specimens is significantly delayed or cannot be conducted as usual.

COOP Development

Below are essential components of a COOP and special considerations for hospitals.

Hospital Emergency NBS COOP Considerations

NBS is an essential public health service that must be maintained even during an emergency event or crisis.* Hospitals must create and maintain a plan to ensure that NBS can be completed for any baby born during an emergency. When developing the COOP for the hospital, there are many factors to consider:

- Consider the type of emergency event when determining whether part or all of the COOP should be activated.
- Identify the hospital area(s) or unit(s) affected (critical care, emergency department, surgery, etc.), or whether the emergency extends to all units.
- Identify the utilities or hospital functions affected or interrupted (electrical, water supply, computer system/database, equipment failure, ability to collect and/or send specimens, personnel, etc.).
- Determine whether and how staffing will be affected by the emergency (e.g., being utilized in other areas of the hospital, inability to get to the hospital).
- Identify and locate staff trained in carrying out the duties of NBS. Determine whether they are considered essential staff who should remain in the nursery, Mother-Baby Unit and Neonatal Intensive Care Unit (NICU) and not be reassigned to other units.
- Ensure that supplies are stocked to last for a minimum of a month of average births or identify where more supplies can be obtained (laboratory, other units, neighboring hospitals, local health departments, neighboring states, etc.).
- Ensure that a courier is available and able to transport DBS specimens to the designated NBS laboratory.
- Establish and activate a communication network to connect families, providers, birth facilities and the NBS laboratory.
- Establish a plan to communicate with the network in a crisis.
- Designate staff to enact the plan.
- Ensure multiple communication methods are available and able to be utilized.
- Educate families on the need for NBS, whether it has been completed or still needs to be completed, how to obtain results and with whom to follow up once results are available.

Emergencies that May Require COOP Activation

A hospital vulnerabilities analysis provides a list of threats that might disrupt normal functions, including NBS program operations. Such threats fall into but are not limited to the following general categories:

- Extreme weather conditions and natural disasters
- Civil disturbance
- Biological emergencies
- Terrorism emergencies
- Chemical emergencies
- Radiation emergencies
- Cyberthreats
- Network breach
- Pandemics/ epidemics
- Extensive building damage or compromised building utilities
- Failed communication and information technology systems
- Major equipment failure
- Prolonged personnel staffing issues
- Supply chain disruptions
- Any situation that prohibits NBS from being completed in a timely fashion.

* www.ncbi.nlm.nih.gov/books/NBK558983/

COOP Change Log

A COOP change log is a document that systematically tracks all major modifications to the hospital's COOP (**Table 1**). This log serves as a comprehensive record detailing the date of each change to the COOP, a description of the change, and other details and updates related to the continuation of NBS activities within the hospital. It also identifies the individuals or departments responsible for implementing these changes, ensuring accountability and transparency. The change log also helps to ensure staff are informed about current procedures and policies.

Table 1: Example COOP Change Log Template

Document any modifications to the COOP document with the changes made, when the change was made, specific section(s) that were changed, and any relevant notes as to why the changes were made so that the most updated version is available, and the version history is documented.

Changes Made By	Date	Section(s) Changed	Notes
John Smith	*January 1, 2025*	*Communications Procedures*	*Changes made to take into account new technology/process.*
Jane Baker	*February 1, 2025*	*Sample Intake*	*New courier service.*

Newborn Screening Program Contacts

Keep an updated contacts list as part of your COOP, such as in **Table 2**.

Table 2: Example of NBS Program Contacts List

NBS Program Contact (Hospital)		Phone	Email	Notes
NBS Laboratory	*Name*	*XXX.XXX.XXXX*	*name@lab.gov*	
NBS Follow-up Program	*Name*	*XXX.XXX.XXXX*	*name@lab.gov*	

Essential Functions to be Carried Out During an Emergency

There are certain functions that hospitals must maintain during emergencies to ensure the continuity of NBS. **Table 3** provides examples of essential functions, the time frames for implementation and the key and alternate staff members responsible for managing the tasks.

Table 3. Essential Emergency Functions

Time Frame	Essential Function	Key Position	Alternate
1 day	**DBS Collection:** • Infants 24–48 hours of age.* • Infants < 24 hours of age if going to be transfused, transferred or discharged.	Charge nurse	Designated trained staff
1 day	**CCHD Screening:** • Infants > 24 hours of age. • Infants < 24 hours of age if going to be transferred or discharged.	Charge nurse	Designated trained staff
1 day	**Hearing Screening:** • Infants > 12 hours of age. • Infants < 12 hours of age if going to be transferred or discharged. Confirm contact information of parents and primary care provider (PCP) to get screening before 30 days of life.	Charge nurse	Designated trained staff
1 day	**Patient Tracking** (physical documentation in case of network failure/IT breach): Documentation in medical record to be transferred with infant or communicated on discharge paperwork given to parents.	Charge nurse	Designated trained staff
1 day	**Specimen Packaging and Shipping:** Communicate and coordinate with designated NBS lab for transport of specimens and confirmation of receipt of each NBS screening sample.		Designated trained staff
1 day	**Result Reporting:** Communicate results or need for screening for CCHD and hearing screening to laboratory and follow-up staff.		
1 day – 1 week	**Follow-up:** • Ensure all infants are screened and reported; if missed, communicate with parents, PCP and NBS laboratory and follow-up staff. • Obtain results from NBS laboratory. • Ensure the family is notified of any results requiring follow-up.	Charge nurse	Designated trained staff
Ongoing	Communication with staff, hospital administration, families, providers and NBS personnel.	Nurse manager/ director	Charge nurse or designated trained staff

* CLSI. Dried Blood Spot Specimen Collection for Newborn Screening. 7th ed. CLSI standard NBS01. Clinical and Laboratory Standards Institute; 2021.

COOP Activation:
Phases of COOP Activation and Maintenance

Phase I: Activation & Relocation

Decision Process

Designate a responsible party/parties for initiating a COOP, the scale at which it should be implemented and general scope of how that decision will be made. For example:

> *The Chief Executive Officer (CEO)/Hospital Incident Command (HICS) will determine if a full or partial COOP should be initiated. This determination will be based on the severity of the event and the level of threat. In an ongoing emergency, the situation may remain dynamic and change as needed.*

Notification

Create a plan for how and when staff and other partners will be notified, should a COOP need to be activated. For example:

> *Upon activation of or notification to activate the hospital COOP, telephone, email and other methods of communication (e.g., public announcement system) will be used to notify staff (refer to disaster call list [example: Table 4]). In all situations creating a need for an alert of COOP activation, all staff members, County Emergency Management, the State Hospital Association, the State Department of Health and Environment, Regional Hospital Coordinators and other key partners will be notified.*

Table 4 provides an example notification list that identifies primary contacts; this list should be used to track when notifications were sent.

Table 4: Example Initial Alert Notification List of Primary Contacts

Contact Name	Phone	Email	Time of Notification
Name	*XXX.XXX.XXXX*	*name@lab.gov*	*12:00 pm ET*
Name	*XXX.XXX.XXXX*	*name@lab.gov*	*12:15 pm ET*

Relocation

Provide explicit information about relocation or evacuation procedures. For example:

> *Relocation and evacuation procedures for the hospital can be found in the hospital emergency operations plan (EOP).*

Phase II: Alternate Facility Operations

Interoperable Communications

Interoperable communications, or the ability of the hospital to communicate with individuals internal and external to the hospital network, is critical during emergencies. Designate in your plan how this will be achieved and where to find more information. For example:

> *Access to critical information systems that are used to accomplish essential functions during normal operations from the hospital should be assured at the alternate work site. Communication capabilities of the hospital can be found in the EOP.*

Table 5 provides an example rubric for tracking inventory across sites.

Table 5: Example Communication Inventory

Item	Brand/Model #	Location	Frequency

Vital Records and Databases

Vital records and databases identified as critical to supporting the essential functions, both paper and electronic, should be maintained and updated throughout an emergency. They should be maintained, updated and stored in secure locations designated by hospital COOP. In addition, procedures should be developed to ensure that records are maintained and updated regularly. If lost or damaged, replacement of these resources would be essential for the hospital's ability to carry out its essential functions. Procedures should also identify how emergency operating records will be made available to personnel and how to ensure backup for legal and financial records. The hospital's medical records require special consideration; the COOP should identify how the hospital will continue to maintain the safety and security of medical records. For example:

> *If relocation to an alternate work site is necessary, the Medical Records Director should ensure that needed equipment and records are transferred to the alternate work site. Additional support will be needed from the hospital's IT department to ensure secure transfer.*

Vital Systems and Equipment

Designate a responsible party for managing essential systems or equipment, and what aspects of the system(s) should be maintained during a COOP (**Table 6**). For example:

> *The hospital's Information Technology (IT) Department maintains the information systems and ensures that the systems are backed up on a daily basis. In addition, the IT Department ensures that connectivity exists at the alternate work site and will provide technical support during COOP activations. Vital systems and equipment identified as critical to supporting the essential functions have been identified and added to the Vital Systems and Equipment List. These systems and equipment will be maintained and tested regularly.*

Table 6: Example Vital Systems and Equipment List

Hospital specific information may vary.

Systems and Equipment	Description	Location	Responsible Staff Member / Vendor	Recovery Point Objective	Unique Risk	Maintenance	Recommendations for Additional Protection (if necessary)
Computers	Desktop computers (quantity)	Hospital departments, workstations	Director of nursing, nurse manager, equipment vendor	1 day	Unavailable during power outage.	As needed	Utilize generator power for computers that must be up and running in medical departments 24/7
Paper documentation forms, parent education materials	Paper forms for all necessary charting	Hospital departments, workstations	Nurse manager, charge nurse	1 day	Outdated, omitted sections.	As needed	Consistently update forms for latest version
DBS collection cards	State provided	Hospital departments, workstations	Nurse manager, charge nurse	1 day	Expire, supply depleted	Monthly	• Consistently check stock supply for expiration dates and count available • Maintain adequate supply for three months of births
DBS collection materials	Disinfectant swabs, cotton balls/gauze, band aids/coban lancets, heel warmers	Hospital departments, workstations	Nurse manager, charge nurse	1 day	Expire, supply depleted	Monthly	• Consistently check stock supply for expiration dates and count available • Maintain adequate supply for three months of births
Pulse oximetry device		Hospital departments, workstations	Nurse manager, charge nurse	1 day	Batteries expire	As needed	Maintain battery supply.
Pulse oximetry sensor *Reusable or disposable*		Hospital departments, workstations	Nurse manager, charge nurse	1 day	Supply depleted	As needed	• Consistently check stock supply for expiration dates and count available • Maintain adequate supply for one week of births.
Hearing screening equipment		Hospital departments, workstations	Nurse manager, charge nurse	30 days	Unavailable during power outage	As needed	Utilize generator power if available.
Transport materials for DBS cards	Envelopes, boxes, Courier labels, lab labels	Hospital departments, workstations	Nurse manager, charge Nurse	1 day	Outdated, stock depleted	Monthly	• Consistently check designated stock for updated versions and count • Maintain adequate supply for three months of births.

Phase III: Reconstitution and Recovery

Reconstitution

Reconstitution planning begins with COOP activation. The COOP implementers (e.g., CEO/HICS) and general staff should develop reconstitution plans and schedules to ensure an orderly transition of all hospital functions, personnel, equipment and records from COOP activation back to normal business operations. For example:

> *Once the CEO/HICS and general staff have determined that the emergency has ended and is unlikely to reoccur they will issue COOP termination. Any plans to salvage, restore and recover the impacted facility will be initiated upon approval from applicable local, state and federal law enforcement and emergency service authorities.*

Table 7: Examples of Functions to be Maintained

Essential Functions
• *DBS Collection*
• *CCHD Screening*
• *Hearing Screening*
• *Patient Tracking*
• *Specimen Packaging and Shipping*
• *Results Reporting*
• *Parent Education*

After-action Review and Remedial Action Plan

Designate a process for conducting an after-action review (AAR) and identify how that information should be used. For example:

> *Once the hospital has returned to full normal operations, an AAR must be conducted. The information will be developed into a COOP corrective action plan and recommendations will be incorporated into the COOP annual review process. The completed AAR and corrective action plan will be reviewed by the relevant leadership and department heads responsible for continuous quality improvement.*

Table 8: Example Resource Requirements List

Vital File, Record or Database	Form of Record (electronic or hard copy)	Date of Last Vital Record Update	Storage Location(s)
Patient records	*Electronic and hard copy*	*Documented*	*Online system, unit, medical records department*

Table 9: Example Communications Requirements List

Voice	Radio	Data	Video
• Telephone • Cell phone	800 MHz Radio	WebEOC (if available)	Television broadcast

Table 10: Example Activation and Termination Chart

Triggering Conditions	Notification Method	Termination
Hospital is destroyed	Phone, email, memorandum	Hospital is rebuilt
Hospital loses 40% or more staff in one or more critical areas	Phone, email, memorandum	Hospital staff numbers are restored
Hospital is deemed inoperable except for emergencies	Phone, email, memorandum	Hospital is back to full working capacity

COOP Maintenance: Training, Exercises and Evaluations

Ensure the hospital remains well stocked on essential items (**Table 11**) and maintains systems for tracking completion of NBS-related activities (**Table 12**). Identify how and when staff will receive training related to emergency preparedness. For example:

> *The hospital will participate in training, exercises and evaluations as required. Personnel have been assigned to lead, plan and oversee public health emergency preparedness training, exercise and evaluation. This plan will be reviewed annually. The hospital will ensure the training of all employees on the key aspects of this plan.*

Table 11: Example Checklist for Supplies to Keep on Hand for COOP

All necessary supplies need to be verified monthly. Verify quantity and expiration date. Replenish if necessary. *Month:* _____ Year: _____

Supply	Expiration Date	Date Checked	Replaced Y/N	Checked by
Lancets				
Disinfectant Swabs				
Cotton balls/gauze				
Band-Aids/Coban				
NBS DBS Cards				
Heel Warmers				
SpO2 Sensor				
Documentation Forms and Parent Education Materials				
Batteries				
Pulse oximetry Device				
Hearing Screening Equipment				
Transport Materials *Envelopes, box, lab labels, courier labels*				

Table 12: Example NBS Activities Performed Documentation Chart

Patient Name	DBS Completed, documented and prepared for transport; document when shipped and received by the state lab.	CCHD Screening Completed, documented and reported to NBS Program.	Hearing Screening Completed, documented and reported to NBS Program.	Parent Education Completed.	Follow-up Information obtained and documented (demographics, primary care physician after discharge, contact information for family).	Date Results Received	Date Results Reported
Name	☐	☐	☐	☐	☐	*MM/DD/YY*	*MM/DD/YY*
Name	☐	☐	☐	☐	☐	*MM/DD/YY*	*MM/DD/YY*

Association of Public Health Laboratories

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