1. **POLICY**
   1. General instructions for laboratory personnel during a scheduled or unscheduled downtime to allow for continued delivery of patient results.
   2. The following procedure will be followed in the event of downtime involving:
      1. LIS failure
         1. IHIS failure (IHIS and/or LIS DI middleware interfaces)
         2. WAM failure (Hematology LIS middleware interface)
      2. Instrument failure
      3. Power failure
      4. Water failure
      5. Bio-Rad Unity Software failure
      6. Any other testing delays
2. **PURPOSE OF DOCUMENT**
   1. To ensure reporting of patient results occurs in a prompt and efficient manner during partial or complete system downtime until recovery of the system.
3. **SCOPE OF DOCUMENT**
   1. This document applies to all personnel at SSCBC Laboratory.
4. **RESPONSIBILITY** 
   1. The lead/manager is responsible for maintaining the document and ensuring biennial review. The laboratory medical director is responsible for establishing and approving all changes before activating document and reviewing at least biennial.
5. **PROCESS**
   1. **Refer to Admin-148 Downtime Procedure**
      1. Locate downtime binder with downtime labels. Note: A limited number of Downtime Requisitions are kept in the manager’s office for emergency use. Requisitions can be purchased through RR Donnelley by the patient care unit/department.
   2. Document downtime on **SSCBC-F10 Instrument Downtime Form**.
   3. **Notification of Testing Delays:** The following process is used for any testing delays, including those due to unavailable reagents, extended instrument / equipment down times, or significant quality failures (e.g., proficiency testing, quality controls, calibrations).
      1. Testing personnel are responsible to notify Lead Technologist immediately when problems are identified which will delay testing beyond published turn-around time. In the absence of the Lead Technologist, notify the Manager or Administrative Director.
      2. Lead Technologist or designee is responsible to notify manager and division director(s) immediately when notification of delay by testing personnel is received. Also inform nurse managers and/or charge nurses in Chemo and MedOnc Clinics of downtime, potential delays and plan of action.
      3. Lead Technologist, Manager, and Division Director are responsible to:
         1. Determine corrective action to be taken.
         2. Hold specimens until testing is available again, OR
         3. Send specimens to another OSU laboratory.
         4. Determine whether medical staff (internal and external) should be notified.
   4. In the event of **LIS failure**, all stat reports will be generated from the instruments, properly labeled and delivered or faxed to the appropriate nursing stations.
      1. **Report IHIS failure to the Help Desk at 614-293-HELP (4357).**
         1. Forward Help Desk incident ticket to LIS email group [pathologyLIS@osumc.edu].
         2. If only live (production) IHIS is down, the Downtime (shadow) version of IHIS may be available. This is read only but allows searching and reviewing patient information similar to the live environment.
            1. IHIS Downtime can be accessed by clicking the Start Menu > All Programs > IHIS Downtime (folder) > IHIS Downtime. Log in with your IHIS username and password.
         3. **Complete IHIS failure:**
            1. At 30 minutes, fax all stat results.
            2. At 45 minutes, notify the laboratory manager, administrative director, and division(s) directors.
         4. **DI Middleware (interface) downtime:**
            1. At 30 minutes, begin manually entering results into IHIS.
            2. At 45 minutes, notify the laboratory manager, administrative director, and division(s) directors.
            3. Note: Specimens can still be received in IHIS, but analyzers will not recognize barcode information. All orders require manually programming on the analyzer using the master patient index (MPI). The MPI is a unique barcode number. Program the analyzer using two patient identifiers (patient legal name and MRN), the MPI, and each test requested.
      2. **Report WAM failure (Hematology LIS Middleware) to CCL Hematology at 293-3444.** 
         1. Refer to 5 L Heme-33 Hematology Downtime Policy.
         2. At 30 minutes, begin manually entering results into IHIS.
         3. At 45 minutes, notify the laboratory manager, administrative director, and division(s) directors.
      3. **Prepare all testing areas for downtime by setting analyzers to print all results**
         1. **Hematology – XN2000**
            1. Log-in as admin
            2. Menu>IPU setting>Auto Output
            3. Under “Auto Output Destination and Output Conditions”

☑ Check the small box to the left of GP

Note: When downtime resolves, uncheck small box to the left of GP. (The small box to the left of HC should be the only box checked.)

* + - * 1. Select Apply
        2. Select OK
      1. **Chemistry - DXC700AU**
         1. Must be in standby.
         2. From Menu, select Configuration Parameters
         3. Select Format
         4. Select List Format
         5. Select Edit (F1)
         6. Select Realtime List (F5)
         7. Under Patient select “Patient Report”, select OK

Note: When downtime resolves, choose “none” under Patient.

* + - * 1. Select Save (F1)
      1. **Coagulation - STA Compact MAX**
         1. Select SYSTEM>Select Online printing (verify check mark remains by Online printing)
         2. When downtime resolves, uncheck Online Printing
      2. **Urinalysis - Clinitek Status +**
         1. Home Screen>Instrument Setup>Instrument Settings> Printer Settings
         2. Scroll through screens to select Enabled>Next>Internal Printer>Done

Note: When downtime resolves, choose “External Printer”.

* + 1. During the downtime refer to **Admin-148 Downtime Procedure** for receiving, labeling, linking and test resulting based on the scenario of the downtime.
    2. Call critical results to the appropriate floor and write all necessary critical call information on the printout to document the call. The callback information must be entered into the LIS when the system is functional.
    3. Fax reports to the appropriate clinic as they are generated. Verify appropriate fax numbers each downtime.
  1. In the event of **instrument failure or water system failure**, which has been determined to exceed one hour, all stat specimens will be delivered, by courier, to another OSU laboratory, where they will be resulted into the LIS. The Lead, Manager or Director will determine which laboratory is most appropriate.
  2. In the event of **Bio-Rad QC Software failure,** refer to L:\Shared\Pathology\SSCBC\Downtime\_Unity QC Means and SD to compare QC results with current Unity Real Time Means/SD. Verify QC results fall within the acceptable 2SD/3SD range prior to performing patient testing.
  3. In the event of a **power outage** in the laboratory, a cease of operations takes place, and all specimens will be transported to another OSU laboratory. Emergency backup power is directed to the refrigerator and freezer to maintain specimen and reagent integrity. SSCBC patients will be rescheduled or redirected another OSU laboratory.
     1. Note: Extended power outage may require removal of on-board refrigerated reagents from the chemistry instruments. Reagents should be capped, and reagents wheels removed from the analyzer and placed into the refrigerators to maintain acceptable stability.
     2. **Recovering from a power outage:**
        1. Verify Medica water systems are on and running. If not, turn on and/or press Process button.
        2. Turn on all instruments.
           1. **XN2000**

Acknowledge any errors on the RU-20 if applicable.

Note: RU-20 may take longer to recovery from power failure.

* + - * 1. **DXC700AU**

If there is a power failure, the analyzer immediately stops operation. Power to the incubator and reagent refrigerator is also turned off.

Press the RESET button (white) to turn on the main power, and then wait 5 seconds.

Press the ON button (green). The lamp turns on and the software loads. The system displays a dialog to confirm retrieving the database.

The system is in WARM UP mode for 1.5 hours. After the required 20-minute lamp warm up time, wait until the temperature of the cuvette wheel is 37 °C, and then select MAINT. > Analyzer Maintenance > Maintenance. Select Standby [F4] to return to STANDBY mode.

Note: If the power failure occurred during patient testing you must perform a W1. Sample can remain in the sample probe, and reagents can remain in the cuvettes. Perform a W1 to clean the sample probe and cuvettes after you restart the system.

Verify the Home Analyzer Status screen is all green (acceptable limits)

Load reagent wheels if applicable.

Run QC to confirm the reagent integrity before resuming analysis.

* + - * 1. **STA Compact MAX**

Launch the program software.

* + - 1. Turn on all computer workstations
         1. Unity Real Time computer

Allow the Unity program to auto-launch completely after turning on, do not attempt to open Unity Connect first, then stop and start the data manager.

* + - 1. Restart the heat block by pressing the START button.
      2. Log into Isensix to review humidity and temperature sensors. Document all events.

1. **RELATED DOCUMENTS**
   1. Refer to QPulse System or Document Detail Report for related Laboratory Policies, Procedures, and Master Forms.