**PROCEDURE: DOWNTIME PROCEDURE**

1. **PRINCIPLE**

There are two computer systems involved in maintaining the functionality with the laboratory:

SCC Softlab - Laboratory Information System

LifeChart - Hospital Information System

LifeChart is the hospital/Lifespan wide system. This system is responsible for all registration, transfer, and discharge of patients. Through an ADT interface, the patient’s demographic information is electronically passed from LifeChart to Soft. In addition, laboratory orders and results are available on LifeChart. The two systems communicate via an interface engine, which controls the data transferring from one system to the other.

There are two different scenarios that can happen that will cause downtime. First, LifeChart can be down and this means that no patient registrations will be generated. The other scenario is when Soft is down. In this case, LifeChart registrations and orders can be generated and sent to Soft, but lab will not be able to access the patient record in Soft. When Soft is down, orders will cease in LifeChart. Only registrations will occur.

If one or more of the systems is down, laboratory operations will be affected. In downtime situations, the following procedures need to be followed to ensure patient specimens are processed and results are reported in a timely manner.

1. **PROCEDURE FOR SOFT DOWNTIME**
   1. **Backup Worklists**
      1. A nightly backup worklist is generated for all three Micro departments at all three Lifespan institutions. These worklists are generated every night by the print scheduler and sent as a saved file through an ftp process to a designated hard drive. In the event of a Soft downtime, this file can be opened, and the worklists can be printed.
      2. Each worklist will have all pending Micro Department orders along with the Workcard details including all test, media and isolate comments. This hard copy can be used during extended downtime to enable the Micro Department to continue with culture workup.
         1. Process for Printing Backup Worklists:

Computer Location: Specialist office APC 1150

Computer Name: RIAPC1150DEB

File Location: C drive

Folder: Micro Backup

Retrieving Files:

* + - * 1. There are 3 files per night that will encompass all of the worklists/benches.
        2. File names are formatted DDHHMMSS D=day of month, H=hour, M= minute, S=second)
        3. You will have to search for the correct files by “day”.
        4. Double click to open the file in Notepad format
        5. Check date of printing at top of page to ensure you have the correct file
        6. File 🡪 Page Setup 🡪 Make sure Left and Right margins are .25.
        7. Print to any printer.
  1. **Generating Downtime Labels**
     1. During downtime, each hospital laboratory will generate downtime labels through an external program set up at designated terminals within the laboratories. Labels will print on an Intermec printer. Each hospital site will generate labels that are a specific range of order numbers so as not to duplicate order numbers. From those site-specific labels, each department will be assigned a specific range of order numbers to use. The range of order numbers for the Microbiology Department are:

**RIH 75000 - 77999**

**TMH 85000 - 87999**

**NPH 95000 –97999**

Process for printing Downtime Labels:

**RIH - Program located on (RIAPC1136PC001) front desk #2**

Double-click on the icon ‘NEW DOWNTIME’ that is installed on your desktop. It will open a window and prompt you for the following:

* What printer? [Network]
* What hospital? {RIH}
* What lab? {MICRO}
* Date?
* Starting Label number? [leave the default]
* Number of labels? Refers to # of specimens/patients
* Only print 10 at a time.

**TMH – Program located on Null Terminal (TM2MICROLABPC)**

Double-click on the iron “Down Time Labels” installed on the desktop. It will open a window and prompt you for the following:

* What printer? [Network]
* What hospital? {TMH}
* What lab? {MICRO}
* Date?
* Starting Label number? [leave the default]
* Number of labels? Refers to # of specimens/patients
* Only print 10 at a time

These generated labels are what will be used as Soft order numbers and assigned to specimens as they arrive in the individual department. During downtime, it is essential that all departments try to help in taking their individual specimens and begin to process them.

* 1. **Labeling and Logging Specimens**
     1. There will be 5 labels generated for downtime:
        1. 1 requisition/patient demographic label (with barcode)
        2. 2 specimen labels (with barcode) – **Do not use for blood cultures**
        3. 2 blood culture labels with extensions X4 - **For blood cultures**
     2. Requisition Label – Attach to top copy of Downtime slip. This will be used later to wand and enter into OE.
     3. Re-write the order number on this top copy so it will transfer to any carbon copies attached - Keep top copy at front desk.
     4. Sort slips into different piles according to major benches.
     5. Specimen Labels with X4 Extensions – For use with blood culture bottles, one for each bottle loaded. Additional labels may also be used for routine cultures, if needed.
     6. Specimen labels (no Extensions) - Apply to specimen container/swab.
     7. Send labeled specimens and copy of slip to processing or appropriate bench.
     8. For split specimens, make as many photocopies as necessary so that there is a paper trail for each specimen with multiple orders.
  2. **Planting/Processing**
     1. During downtime, media, plates and smears will have to be labeled by hand with the generated downtime order number.
     2. Keep plates in order as planted by bench.
     3. Separate slips (in same order as planted) by benches so that they can document handwritten workups, if needed.
     4. After the specimen is processed, the slip needs to be put at the bench where the plates will be read. If multiple benches are involved for one specimen, copies should accompany the specimen to the different labs or benches to ensure that split specimens are handled correctly.
     5. Specimens with soft order numbers
        1. Rapid test results, gram stains and phone reports on these can be documented on *Appendix AP74 – Soft Order Number* Worksheets. This includes any positive bloods that come up during downtime.
     6. Specimens with downtime labels:
        1. Rapid test results, gram stains and phone reports on these can be documented on the downtime slip that corresponds to the culture or on *Appendix AP73 – Downtime Result Log*.
  3. **Blood Cultures**
     1. Place a specimen barcode label (with extension X4) on each bottle.
     2. Place a Requisition Label on downtime slip.
     3. Place a specimen barcode (without extension) on *Appendix AP75 – Blood Culture Downtime Log*.
     4. Wand the bottle as usual onto the Versatrek Instrument.
     5. Bottle will incubate and analyze even though interface is not up. Results will not post to patient record at Media level until downtime is over.
     6. Final Cultures – Finalized bottles can be removed from the Versatrek.
     7. When downtime is complete, bottle entries must be retransmitted through the interface. Refer to *Appendix AP76 – Download/Upload data after Downtime* for additional information.
  4. **Notification/Communication** 
     1. In the event of a downtime, communication with units and floors is essential for patient care.
     2. All critical values will be called back to the requesting unit when they are available.
     3. If a nursing unit needs to obtain results during a downtime, they will have to contact the lab.
     4. All STATS will be faxed or called back to the appropriate unit when available.
  5. **Routine Bacteriology/Fungal Cultures**
     1. **Old Work** - If downtime occurs for an extended period of time, culture workup and biochemicals will be set up and all work will be documented on the printed backup worklists for each bench. When downtime is over, these results and workups need to be entered into Soft to generate appropriate bills (media) and patient reports.
     2. **New Work** - Culture workups and biochemicals will be documented on the downtime slip that corresponds to the culture.
     3. Verbal reports of culture status may be given and must be documented on worklists to be entered when downtime is over.
  6. **AFB Cultures** 
     1. **New Work** - Media, bottles and smears will have to be labeled by hand with the generated downtime order number. Smear results, culture workups and biochemicals will be documented on the downtime slip that corresponds to the culture.
     2. **Loading Myco bottles onto Versatrek** - Bottles can be loaded onto Versatrek instruments during downtime. Order numbers can be manually entered into the Versatrek LCD display along with choosing the Myco bottle type.
     3. **Pending Cultures** - Culture workup and biochemicals will be set up and all work will be documented on the printed backup work lists. When downtime is over, patient records need to be updated with theses workups and results in order to generate appropriate bills (media) and reports.
     4. **Final Cultures** – Finalized bottles can be removed from the Versatrek. Hold all backup worklists until downtime is over and negative results can be updated in Soft.
     5. Verbal reports of culture status may be given and must be documented on worklists to be entered when downtime is over.
  7. **Vitek Bench**
     1. New isolates sent for Vitek will have to be manually keyed into the Smart Carrier. Vitek can then be set up as usual. Once downtime is over, results and patient info will be resent across the interface. Refer to *Appendix AP76 – Download/Upload data after Downtime* for additional information.
  8. **RIH Molecular**
     1. Interfaced assays for BDMax and Diasorin Integrated Cyclers require extensions for the interface to work.
     2. **New Orders** - In the event of a downtime, the interface will not be used if a new run is being set up using downtime labels. New runs will be created using downtime labels. Results can be entered manually into Soft when results are available, and downtime is complete. The department may deem it necessary to not set up any new runs until the downtime is over.
     3. **Existing Orders** -If a run has already been started and a downtime begins, results will not transmit through the interface into Soft until downtime is complete.

1. **PROCEDURE FOR DOWNTIME RECOVERY – DOWNTIME COMPLETE**
   1. **Logging in Orders**

In Order Entry:

* + 1. Search for patient by Medical Record Number and choose correct patient encounter.
    2. Choose New orders.
    3. On General tab, scan the Downtime barcode label into the Order number field.
    4. Enter Collection date and time on the General Tab.
    5. Place any orders on Orders tab on right hand side of screen.
    6. If only micro orders on the specimen, click on **Collect**, **Receive**, **Plate** when the Micro tab opens up. The collection date and time that you entered from the General tab will be the collection date and time generated in the field. Received and plated time default to real time.
    7. If there are lab specimens (molecular/STAT) go to the Specimens tab and Coll/Rec All. \*\*\***MAKE SURE DATES MATCH GENERAL TAB\*\*\***
    8. If a mixture of both micro and gen lab specimens, fill in Micro tab first, (site/source), COLL/REC/PLATED, then go to Specimen tab to Coll/Rec All.
    9. Generate Media labels and sequence numbers.
    10. Deliver media labels to the corresponding benches. Plates will need to be labeled by the tech at the bench.
    11. Any additional media labels from split specimens should be forwarded to those secondary benches and areas such as AFB, Mycology and Virology.
    12. Bench technologists will enter all previous workups that have been documented on the downtime slip. This includes stains, media workups, prelims and finals. If stains were done by another tech, this can be documented in test comment area as a “?” statement.
  1. **Interfaces**
     1. Once a downtime is complete, instrument interfaces should be checked in Soft to be sure they are back up and running.
     2. The following interfaces should be checked after a downtime in the Microbiology lab:

|  |  |  |
| --- | --- | --- |
| **Location** | **Interface Name** | **Instrument ID** |
| **RIH** | Versa trek Bloods | RVRS1 |
|  | Versa trek AFB | RVRS2 |
|  | Myla | RMYLA |
|  | TREK Mic | RARI1 |
|  | WASP Walkaway | RWASP |
|  | Cepheid Infinity | GENEX |
|  | Genmark ePlex | RPLEX |
|  | BD Max | RBDMX |
|  | BD Max 2 | RBDM2 |
|  | Biomerieux/Biofire | RBIOF |
|  | Focus Cycler | RFOCS |
|  | Mic Autoreporting | AUTOM |
|  | Autoreporting Mic | MAUTM |
|  | Autoreporting Mic | NAUTM |
|  | Outreach Micro Auto | OAUTM |
|  | Autoreporting Mic | RAUTM |
| **TMH** | Mic LabelServer | LMIC |
|  | Versa trek - TMH | MVERS |
|  | Genmark ePlex | MPLEX |
|  | GeneXpert Cepheid2 | MGENE |
|  | BD Max | MBDMX |

* + 1. To verify each Interface is Running:
       1. In Softlab 🡪 Main desktop
       2. Interface 🡪 Interface Setup
       3. Interface (top drop down) 🡪 All Interfaces 🡪 Status Screen
       4. Interface Setup Status window will open up
       5. Go down the menu and search for the Instruments by ID or Name
       6. There should be a time in the Start column.
       7. If the Start column says **NOT RUNNING**, the interface needs to be started
    2. To Restart an Interface
       1. Highlight the instrument you want to restart
       2. Click on the “Start” button at bottom
       3. Start time will change from **NOT RUNNING** to present time
       4. Close windows
  1. **Pending Logs**
     1. Be sure to monitor Collection and plating worklists after all downtime orders have been logged in. Also run a Pending Log report (Softlab) for all workstations
  2. **Micro Backup**
     1. The file should be checked to ensure it is running the next night after extended downtime.

1. **REVISIONS**
   1. January 29, 2020
      1. Updated downtime procedure and interfaces to include new instrumentation and Miriam Hospital instrumentation.