

**Beaumont Laboratory**  
**Clinical Pathology**  
**Royal Oak, MI 48073**

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## **LIS Downtime Plan – Automated Chemistry Core Lab**

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### **Principle**

The purpose of this document is to define laboratory protocol for times when the Network, OneChart/EPIC (HIS) or SOFT (LIS) is unavailable to process orders for Automated Chemistry Core Lab testing.

Stats will continue to be immediately processed for

- HBsAg (Mom)
- Outreach STATS received with downtime requisition
- IVF (In-Vitro Fertilization Clinics)

Should any downtimes for OneChart/EPIC or SOFT exceed two (2) hours, Automated Chemistry will limit additional analyses to test requests from

- ICU
- Nursing Homes

All other specimens will be centrifuged and held (refrigerated) until the LIS and/or OneChart /EPIC is available for order entry and analytical processing.

Should downtime exceed six (6) hours, the Automated Chemistry supervisor or designee will consult with Medical Director and Clinical Pathology Administration regarding subsequent options for Inpatient, Outpatient and Outreach specimens. Options may include:

- limit test requests for all patients to Stat procedures only
- test specimens with short stability
- process only basic chemistry panels
- process all Inpatient routines on the Chemistry Line
- continue to spin and hold specimens for Outpatient/Outreach routine requests until system recovery
- refer Outpatient/Outreach work externally

Automated Chemistry Supervisor or designee will maintain close communication with the LIS manager, Lab Administration, ICU Nursing Administration, Outreach Client Services and Specimen Processing throughout the downtime period.

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### **Definitions**

**LIS** - Laboratory Information System, currently SOFT

**HIS** – Hospital Information System, currently OneChart/EPIC

## LIS Downtime Plan – Automated Chemistry Core Lab

**Network, Core Lab Down** - there are communication problems in the Core Laboratory, which manifest as the inability to access e-mail or LIS. Stat Lab operations are unaffected. Toxicology and Sendout labs are unaffected.

**Network, Hospital Down** - there are communication problems in the hospital, which manifest as the inability to access e-mail or LIS in the Stat Lab. Nursing cannot order tests or access any results in One Chart/EPIC. Core Lab operations are not affected.

**Network, Completely Down** - there are communication problems, which affect both the Stat Lab (main hospital) and Core Lab (research building) operations.

**SOFT Down** - there is a problem with SOFT, either scheduled or unscheduled, whereby we cannot access the LIS to input/retrieve laboratory orders and results.

**SOFT ID Wireless Down** – Soft ID is the specimen collection system used by Nursing and Inpatient Phlebotomists. This module supports positive patient identification barcode technology (PPID). Collection labels cannot be printed for specimens ordered thru One Chart/EPIC when SOFT ID is down. Specimens must be collected/received in Soft Lab.

**One Chart/EPIC Down** - Order or result interfaces between One Chart/EPIC and SOFT or ADT (Admission/Discharge/Transfer) registration interfaces are down. There may be new patient registration problems that impact Emergency Center (EC), preOP and Outpatient Labs. EC and Nursing Units cannot order labs or review results. Documentation and delivery of lab STAT results on paper requisition or instrument printout is required.

**SOFT Downtime Label** - pre-printed generic specimen label with barcode downtime number (DT #) only. These labels are printed from SOFT. Each specimen type (e.g. SST, EDTA, UA) must receive its own downtime number to maintain ability for specimen tracking. The patient's name, MRN, and test(s) requested are handwritten prior to labeling the specimen. The downtime number (DT#) is also assigned to the requisition.

**Downtime (DT) requisition** - pre-printed requisition form used to order tests and report results. The DT requisition must accompany the specimen and be minimally complete with demographics of

- patient's name
- MRN
- location
- test(s) requested
- date/time of collection
- collector ID
- phone or p-Tube station number for returning results

When collection time is not provided, the requisition must be time-stamped or date/time of specimen receipt in the laboratory should be noted as "rcd\_\_\_\_\_".

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The DT requisition for Inpatients is carbon 4-ply for results to be separated into copies for requestor (white), shared samples (yellow and pink) and lab file (goldenrod). Outreach supplies their own downtime requisition form.

**“Go to Paper”** - process and report specimens received using downtime requisitions.

**Order/Collect/Receive/Print Label** - the processes used whenever orders must be placed and received in SOFT by the Laboratory.

Order/Collect in SOFT – there are four ways to order and collect tests in SOFT

- order in EPIC, collect in SOFT ID
- order in EPIC, collect in Soft Lab
- order in Soft Lab, collect in Soft Lab
- order in Soft Lab, collect in Soft ID

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### Specimen Collection and Handling

Specimens to be tested in the Core Lab must be labeled with either the LIS collection barcode label or a downtime label. They must be accompanied with a properly prepared downtime requisition slip.

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### Supplies

SOFT downtime labels  
Chemistry downtime requisitions  
Time Clock  
Printer paper for Chemistry Line analyzers  
Staplers  
Calculators  
Automated Chemistry Manual Calculations Worksheet  
Chemistry Reference Range and Critical Value Tables  
Racks to sort specimens  
File box w/ alphabetic folders for lab (goldenrod) downtime copies

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### Procedure

#### Determine what is “down”

1. Call Helpdesk (888-481-2448) to report problems.
2. Call Hotline (x1-3437) for periodic updates.

#### If only Core Lab Network down:

1. Nursing can order tests and review results from OneChart/EPIC. All Inpatient specimens will have SOFT collection labels.
2. *Receive* designated specimens (see list of tests/sites eligible for downtime testing) in Soft Lab and enter results from the Toxicology or Sendout Labs.
3. Spin and hold all other Core Lab Chemistry specimens. Wait to *Receive* in Soft Lab.

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4. Start SOFT interface batches for Chemistry Line from Toxicology Lab. *Receive* designated specimens (see list of tests/sites eligible for downtime testing) in Soft Lab and enter results from the Toxicology or Sendout Labs.

### If only Hospital Network down:

1. *Order/Collect/Receive* all HBsAg (Mom) and ICU specimens to generate SOFT collection labels.
2. Process all Stat HBsAg (Mom) and ICU specimens in SOFT.
3. Report Inpatient stats immediately “on paper”.
4. *Order/Collect/Receive* all other Inpatient specimens received in Core Lab via Soft Lab to generate any required SOFT collection labels.
5. Hold remaining Inpatient specimens (centrifuge and refrigerate).
6. Process NH/Outreach/OP in SOFT as usual.

### If entire Network or SOFT or OneChart/EPIC downtime exceeds two hours, we will process only those limited specimens as previously defined on page one.

1. NOTIFY ICU Administration and Outreach
2. Clinical Pathology Specimen Processing Clerks will:
  - a. Manually centrifuge all gold top specimens received.
  - b. Sort them into green wire racks for processing together with any downtime requisitions received.
    - ICU
    - Inpatients
    - Outpatients
    - HbsAg (Mom)
  - c. Prepare downtime requisitions and/or downtime barcode labels for defined tests (HBsAg (Mom) and ICU) as follows: **Do NOT prepare downtime paperwork/labels for other Inpatients or Outpatients at this time.**

IF sample arrives in Core Lab...	Then...
w/ SOFT label	Prepare DT requisition.
	Include full Name, MRN, Location.
	Write “ORD #_____” [i.e. SOFT assigned MMDDXXXX-YY] through all copies of requisition.
	Mark test(s) requested
w/ mylar label and DT requisition	Prepare one DT label for each specimen received.
	Include full Name, MRN, test(s).
	Write “DT #_____” through all copies of requisition.

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- d. Be sure collection date and time are legible on the DT requisition or write “rcd (date/time)” if information is missing. Press hard so information goes through all copies. Do NOT use a felt pen.
- e. Continue to sort/process all other incoming Inpatient and Outpatient work in Specimen Processing this way, but hold until further notice.

### 3. Outreach processing clerks will:

- a. Check that all gold top, red top and 16 x 100 specimens received are well-centrifuged.
- b. Deliver ONLY the following specimens together with downtime paperwork. Specimens must be labeled with downtime barcode labels
  - Nursing Home – to Line operator
  - Outreach STAT- to Line operator
  - Fertility (IVF) – to Line operator
  - HbsAg (Mom) to Line operator

HOLD all other OUTREACH specimens until SOFT is available for processing.

### 4. “Go to Paper” once SOFT is inaccessible as listed below:

Stat HBsAg (Mom)	immediate	
Outreach Stat	immediate	Must be received with downtime requisition
IVF (In-Vitro Fertility)	immediate	Must be received with downtime requisition
ICU	2 hour	Notify ICU Nursing Admin
Nursing Home	2 hours	Notify Outreach Specimen Processing

5. Instrument Manager (IM) Downtime Order Entry: SOFT downloads sample test orders into IM at the time of specimen collection. IM Manual Order Entry allows repeat test and orders using downtime style samples. Orders can be placed on a new barcode number or added to an existing barcode number.

#### To Add a test to a new downtime order in IM

- a. In IM, Open the Specimen Management window, Patient and Order Management
- b. Scan Barcode in Specimen Sample ID box
- c. Click the “Order Tests” button next to the Specimen ID box to add tests.
- d. Enter Patient MRN and Name. Demographic information entered will print on the IM downtime chart report.
- e. Click on the “Save” button once all tests have been selected for this ORDER# or DT#. DT# must have 9 numbers and added extension to transmit to DMS. (example 003233192-CH)

#### To Add a test to an existing order in IM:

- a. Open the Specimen Management window, on the toolbar.

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- b. Enter the ORDER# or DOWNTIME# for the specimen that needs additional testing and search.
- c. Sample will appear.
- d. Click Order Tests and the additional test(s) can be added in the same manner as manual order entry.

### **Alternate Option for Architect if IM is not functioning**

To manually order tests at the Architect:

- a. Manually program SOFT ORD # or DT#, Patient Name, MRN and tests using Orders – Patient Orders.
- b. Type in SID and select tests individually or use the “PANELS” key and choose the correct panel
- c. Select Sample Details and type in last name, first name, and PID
- d. Select Add order

### **6. Print a Patient Report from Instrument Manager**

- a. Turn on the printer. Select System on the tool bar. Click on Status. Locate IM Printer RO and select. Right click and choose Start Selected Connection.
- b. Find the sample using Specimen Management, Patient and Order Management.
- c. Select Print Specimen.
- d. IM Printer Driver Selection box appears. Select the IM Printer RO.
- e. The report appears on the screen. Click on Print.
- f. Print 2 copies of the report.

### **7. Retransmit Results from IM to SOFT**

- a. Find the sample in Patient and Order Management
- b. Select Send to Host

### **8. Process ICU specimens**

- a. If specimen has SOFT collection label and has been received, test orders are already in IM.
- b. If specimen has DT barcode number, program tests from DT requisition into IM.
- c. Deliver requisitions to LINE operator.
- d. Input demographics (Name, MRN, Room #) into IM from requisition slip.
- e. Specimens will be front-loaded on analyzers.
- f. Call and document any critical results onto IM printout.
- g. Print two reports from IM as each patient's results are completed
- h. Initial, date and time on bottom of DT requisition when testing complete.
- i. Check for clarity and completeness before separating copies.
- j. Staple IM printout to top white copy of requisition slip and deliver to unit.
- k. Staple 2nd IM copy to Lab's goldenrod copy of requisition slip.
- l. File lab goldenrod copies alphabetically.
- m. Refrigerate any off-line aliquots for later testing.

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9. Process **Outreach Nursing Home, STATS , Fertility Clinic IVF, and HBsAg (Mom)**- Outreach must label specimens with DT barcode and send two downtime requisitions for each patient.
- IF specimen has SOFT collection label and has been received, test orders are already in IM.
  - If specimen has DT barcode, program that number into IM and proceed under Order Entry.
  - Deliver requisitions to LINE operator.
  - Input demographics (Name, Client #, MRN) into IM from requisition slip.
  - Specimens will be front-loaded on analyzers.
  - Call and document any critical results onto IM printout.
  - Print two reports from IM as each patient's results are completed.
  - Initial, date and time bottom of DT requisition when testing complete.
  - Check for clarity and completeness before separating copies.
  - Staple IM printout to one Outreach requisition slip and deliver to Outreach.
  - Staple second IM copy to 2<sup>nd</sup> Outreach requisition slip.
  - File alphabetically in "Outreach" folder.
  - Refrigerate any off-line aliquots for later testing.
11. Call critical values during SOFT downtime.  
Document the following on DT requisition:
- "called critical (test) ", along with the date and time.
  - employee ID# of the phone recipient or beeper # for physician recipient (To:\_\_\_\_\_ By:\_\_\_\_\_)
  - employee ID# of caller of the results.
  - Note "readback received"
12. Deliver Reports:

IF...	THEN...
STAT HBsAg	Tube top white copy w/ i2000 results to Inpatient unit or deliver IM printout w/ Outreach downtime request
IVF	Deliver IM printout w/ Outreach downtime request
ICU	Tube top white copy w/ IM printout to ICU unit
Nursing Home	Deliver IM printout w/ Outreach downtime request

13. Retain ALL goldenrod and Outreach file copies for phone queries and lab recovery.
- File goldenrod lab copies alphabetically in file folder (A-Z) box.
  - File Outreach copies separately in "Outreach" folder by date.
14. Midnight shift will start a new dated set of file folders (A-Z) if downtime goes past midnight. Rubber band previous date set (A-Z) and place at back of box.
15. Continue to monitor downtime Status every ½ hour on the Information Hotline (ext 13437).
16. Note: Goldenrod copy follows primary tube. Recovery occurs at final destination of sample.
17. **ADD-ON requests will not be honored during SOFT downtimes.**

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18. Off-line aliquots prepared manually will be refrigerated until SOFT labeled specimens and assigned DT numbers are *Received* via the Recovery Process.
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### Attachments:

See Appendix A: Recovery Procedures

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### Authorized Viewers:

Section Medical or Technical Director

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## Appendix A

### Recovery Procedures

1. For ICU specimens that have been processed and tested, move through the A-Z folders (goldenrod lab copies) by DATE.
  - a. Receive specimens with SOFT collection number (ORDER #)
  - b. Order/Collect/Receive test requests with downtime barcode (DT#) numbers. (See below).
2. Use DT # for Order # where possible.
3. Reconcile existing orders - auto-assign the SOFT Order number. Be sure to attach the new SOFT label OR handwrite the new assigned number onto the goldenrod copy of the requisition.
4. Using goldenrod requisition copy, retransmit IM results one at a time across interface once all requisitions are Received (See below).
  - a. Accept results from SOFT instrument interface batches.
  - b. Replace any repeat values that were reported from another analyzer
  - c. Document critical calls with actual date/time, caller's ID# and recipient's employee ID # from goldenrod lab copy.
  - d. Document any other required comments.
5. Outreach will receive and enter Nursing Home results.
6. Start three (3) new file folders for each date  
(Label file folders as: Received, Resulted and Outreach to Result)
7. Retain goldenrod copies for a minimum of 2 years.
8. Recycle alphabetic folders.

### Order/Collect/Receive Downtime Requisitions in SOFT

1. Enter the actual time/date and collector information from the DT requisition.
2. Gather the SOFT collection labels that print.
3. Match collection label with DT requisition (patient name, time/date) and affix label to goldenrod copy of requisition.

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## Document Control

Master printed document stored in Core Lab General Policy and Procedure Manual

**Location of circulating Controlled Copies: NA**

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