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Kaiser Permanente Medical Center, San Francisco
Northern California Region
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Work Instruction

Title: ADMN - Operational procedure during lab information System Downtime	WI Number SFOWI-0020 Revision: 6

Department: Chemistry Coagulation Hematology Urinalysis Area: 2238 Geary Blvd SFO Clinical Lab 2238 Geary Blvd SFO POCT 2425 Geary Blvd SFO Hospital Lab 2425 Geary Blvd SFO POCT	*Approved & Released Work Instruction*	Implementation Date: 04/30/2018

Type of Document: Work Instruction	Review Period - 340 Days

PURPOSE:

To give guidelines to laboratory staff on how to continue processing specimens when lab information system (LIS) is not available.

POLICY:

Our LIS is Cerner Millennium. The term "Downtime" refers to the times when the computer system is unavailable. This downtime may be scheduled or unscheduled. Each unscheduled downtime episode should be evaluated as quickly as possible to determine what steps need to be taken to continue providing patient care services. Momentary system failures do not require changes to the existing procedures. On the other hand, prolonged system failures will require the laboratory to revert to a manual system of ordering and of communicating results back to the interested parties. When the system comes back up, all orders and all resulting that went on during the downtime must be recovered by placing them into the system.

SCHEDULED VS UNSCHEDULED DOWNTIME:

Scheduled Downtime	Unscheduled Downtime
1. For system maintenance, the Cerner Millennium is unavailable, a scheduled downtime will be announced ahead of time. 2. The Downtime Procedure is followed during Scheduled Downtimes (see below).	1. When the system becomes unavailable or response time is so slow as to impede the work flow, the System Coordinator must be notified either in person, by phone, or by beeper. 2. Call the Corona Help Desk at 8-330-1143 to initiate a problem report. They will issue a Trouble Ticket (TR) number. 3. Fill out the Unscheduled Downtime System Degradation Record . 4. Do not use the system until you are notified that the full system is available. 5. The Downtime or Extended Downtime Procedure is followed during Unscheduled Downtimes (see below).

PROCEDURE:

1. When the Unscheduled "Downtime" occurs, determine the expected time of recovery. If it is up to **30 minutes**, perform the necessary function for processing STAT tests only and call the results to a licensed personnel. Once the LIS is available, process all routine specimens as per routine operations.
2. **Kaiser Foundation Hospital - San Francisco Medical Center -Laboratory Downtime/Recovery Procedure** from Lab information system should be followed for all LIS related operations during extended downtime(>/= **30 minutes**)
3. Following guidelines for a better work flow can be used to minimize errors during downtime and recovery
4. During downtime, follow Appendix A, RILIS Downtime Workflow.
5. During recovery, follow Appendix B, RILIS Downtime Recovery Process.

GUIDELINES:

A. Operating supervisor or in-charge will arrange with lab staff to inform all floors regarding downtime. Information to be given:
1. extent of downtime
2. Specimen drawn by nurses must be labeled with a pre-downtime specimen barcode label or with generic label with initial, collection date and time.An order detail should come with all specimens.
3. Any specimen to be drawn on rounds, should have order details sent to Lab..
4. Results will be delayed.
5. Lab will make every effort to fax all results.

B. Operating supervisor/manager will be responsible in assigning staff to particular duties in an area. During off peak hours, help can be obtained from house supervisor.

LOGIN AREA:

A. Manual requisitions or KPHC order detail are acceptable form of requisition during downtime. Requisition should contain all the following information:
1. Room #
2. Name and MR#
3. Accession #
4. Test (s)
5. Priority
6. Collection date and time
7. Ordering Provider
8. Comments
9. Phone numbers to reach licensed personnel for drop off specimens
10. Make sure information is clear and legible

B. Use downtime accession numbers (DTAN) for all specimens except for Blood bank and Microbiology. (Use the same accession number per specimen type, per patient for all local testing. Same test on different type of specimen needs different accession number and specify the type of specimen on the requisition and report forms.).

C. Complete appropriate result forms with all the information on the requisition. Result forms should contain the following information:
1. Room #
2. Name and MR#
3. Accession #
4. Test (s)
5. Priority
6. Collection date and time
7. Ordering Provider
8. Comments
9. Phone numbers to reach licensed personnel for drop off specimens
10. Make sure information is clear and legible

D. Affix a DTAN label to requisition, each specimen and to each result form.

E. Deliver the specimens with completed Result Form to the appropriate area. Keep Requisitions in Login area, sorted by the last 2 digits of MRN..

F. Keep all downtime requisitions in separate file holder in log in area only and file under the last 2 digit of MRN.

G. Have separate racks for SFO, Regional Lab, and reference lab specimens.

PROCESSING AREA:

A. Regional Lab and Quest specimens will be processed after recovery is completed.

Make sure specimens are at the correct temperature. For example if a specimen needs to be frozen or refrigerated do not wait until recovery is completed.

B. For STAT specimens to regional, make a copy of the requisition and send copy and specimen to Regional. SFO must notify Regional Lab before sending specimens. Save the original requisition for order recovery later.

TECHNICAL AREA:

A. Process all specimens using DTAN on the instruments.

B. Review results and call any ME and critical values.

C. Document results and called in information on the result form.

D. Make 1 copy of result forms and give it to the front area, sorted by the last 2 digits of MRN. This copy is for designated staff to fax the results, use this file for answering phone calls and reconciling order after downtime.

E. Requisitions should be kept in separated file, sorted by the last 2 digits of MRN.

F. Original result form should be kept in a file near the instruments for recovery.

PHONE AREA:

A. Have a file box to hold a copy of results.

B. Technical area will hand 1 copy of each completed result form to the phone area.

C. File a copy by the last two digits of Medical Record Number (MRN).

D. Put the latest result in front.

E. Fax a copy to all nurses' stations within the hospital that has a fax. During scheduled downtime at night shift, also fax results to all units.

F. If the fax is down, a copy of the results needs to be delivered by the lab every hour until recovery is completed. During night shift, the frequency of delivery may be more than 1 hour, but Lab will make every effort to deliver the result forms to the floor ASAP.

ROUNDS:

A. Scheduled rounds will be kept by lab staff.

B. If list is not printed due to downtime, 30 minutes prior to schedule round time, phlebotomist/team will check with each nursing station for any draws.Order details are sent to Lab prior to "Round".

RECOVERY (Refer to Appendix B):

A. Orders:

A. All orders during downtime will be recovered as per " Kaiser Foundation Hospital - San Francisco Medical Center Laboratory Downtime/Recovery

Procedure" by LIS.

B. When all orders are reconciled, check collection pending inquiry to see if we are missing any orders.

C. Notify CLS supervisors when all downtime orders are reconciled.

B. Results:

1. For interfaced tests such as Access 2, DxH 800, AU680, ABL 825, Stago and AX retransmit results from the instruments to RILIS.
2. Retrieve result copies from file folder; go to ARE and change perform information and verify results in the usual manner. After verification, make a checkmark on the chart copy with a marking pen.
3. For manual or non retransmitable tests such as ESR/Man diff/HCTM/Body Fluids/other, manually enter these results in RILIS. **Always double check to make sure that the correct results are entered**! Also, mark each chart copy after verification.

C. When all results are verified:

1. Print PENDING report for each work bench, check that there are no more downtime accessions pending.
2. Put the result forms in order by the last two digits of the medical number.

D. Microbiology specimens:

If possible, hold specimens until RILIS is back in operation.

E. Stat gram stain:

1. Write results on requisition.
2. Phone report to MD/RN and document on requisition.
3. Save requisition for recovery later.

F. For micro specimens that must be sent to Regional Lab:

1. Use the **bacti** downtime accession labels.
2. Make a copy of each requisition and downtime STL worksheet.
3. Send the specimens/plates, copies of requisitions and copies of downtime STL worksheets to Regional Lab.
4. Save the original requisitions and downtime STL worksheets for recovery later.

AUDIT AND VALIDATION:

A. After all recovery is complete with ordering and resulting, do an audit to check for order accuracy (100%).

B. Data integrity validation pre downtime results in all technical area should also be completed by technical supervisors.

RILIS DOWNTIME for MOB:

1. MOB will **NOT** use RILIS downtime labels.
2. During registration, MOB will stamp downtime requisitions using patient's Kaiser card and make manual labels for specimens.
3. The patient will take the original ordering requisitions and specimens labels to the phlebotomy station.
4. After phlebotomy, specimens for the same patient will be kept together in one biohazard bag along with the original and downtime requisitions.
5. There will be four bins in each phlebotomy station:
    → a bin for pending UAs
    → a bin for Specials (viral load, frozens, etc.)
    → a bin for STATs or specimens for hospital lab (sendouts, shared specimens etc.)
    → A bin for Coag/ESR and other routines.
6. If patient has a UA, the patient's blood samples and requisitions will be placed in the "Pending UA" bin. When patient returns the urine to the phlebotomist will match up the urine with the correct biohazard bag in the bin.
7. Send STAT/ Coag /ESR/UA specimens to the hospital lab with requisitions on a regular basis
8. Hold routines in the MOB. Resume sending it to regional lab when system is up.
9. At the closing time of MOB and the system is not up, the MOB will send all specimens, and both STAT and routine, to the hospital (see extended downtime).

DATA VALIDATION AFTER DOWNTIME:

After scheduled and unscheduled downtimes, the Pathnet system must be evaluated for functionality, ensuring integrity of patient test data. Validations include verifying data in the pre-analytic, analytic and post-analytic phases, transmission of results within systems, and interface validation of selected analyzer(s) by running validation patients on the analyzer(s). Validation after downtime is assigned by RILIS Walnut Creek Data Center on a rotating basis to RILIS System Coordinators. RILIS Walnut Creek Data Center issues scripts to RILIS System Coordinators for function-specific validations. Results of validation are stored on RILIS Walnut Creek Data Center Shared Drive. Validation procedures may vary slightly depending on which system has been down, and what functionality is being validated. At San Francisco, interface validation is performed locally by staff working at the time of System Restore, following any scheduled or unscheduled downtimes. RILIS System Coordinator or designee retains results of validation in a binder.

A. Interface Validation following System Restore

1. During scheduled/unscheduled downtime, CLS staff can use Validation MRN supplied by RILIS System Coordinator to generate test labels. For scheduled downtime these labels can be pre printed. Alternatively, CLS can use the 1st patient accession number, or DTAN for interface validation. Refer to SFOWI-0460 for details.

   a. Select **Create New Encounter**- Populate all required fields.
   b. Click OK button to close PMCoreReg window and open **Order Entry** window
   c. Under **Orderable**, order the following or what needed (**NOTE:** Do not save on scratch pad. Submit one at a time for separate accession numbers):
      1) General Lab-Any instrument interfaced should have one test ordered for validation.
      2) BB test - Refer to BB Downtime SOP.
   d. Select the **Collection Priority: RI**
   e. Check the **Collected** box (yes collected)
   f. Enter the **Location Date and Time** (Today and Now)
   g. Under Specimen Receive Location- Select the <u>Correct</u> Lab Location (selecting an incorrect location will affect Work Routing for Collected Orders)
   h. Populate/Verify all remaining required fields, i.e., Ordering Physician, Specimen Received by ID.
   i. Do not save orders to scratch pad. Submit orders individually for separate accession numbers.

2. Give labels to CLS in lab department
3. CLS will run tests.
4. <u>VERIFY the results.</u>
5. Check if the 1st specimen from each instrument verified crossed over to other system correctly: generate an instrument printout, and make sure results match those in ORV, KPHC, and CIPS.
6. Put instrument printouts in RILIS System Coordinator's inbox.
7. Notify Lab supervisor/In-charge on duty when tests are complete and checked.

8. If results are NOT posting, notify In-charge/Supervisor on duty. He/She will contact On-call RILIS System Coordinator who will call in to Bridge.
9. If unable to contact RILIS System Coordinator, call NHD at 8-395-1143.
10. Report that **"Interface for _____ analyzer needs to be cycled, please assign to AD CDA LAB CN"**. AD CDA LAB CN is the group that will cycle the interface.
11. Test interface again, may need to order more tests on Validation MRN.
12. MDI (interface team) may also call lab within 1-2 hours of System Restore to verify that interfaces are functional.

REFERENCES:

    A. RILIS Walnut Creek Data Center protocols for validation after downtime.
    B. Kaiser Foundation Hospital - San Francisco Medical Center Laboratory
        Downtime/Recovery Procedure by NCAL LIS Coordinator for San Francisco
        (Angela W Lee)

Appendixes:

A	RILIS Downtime Workflow (PDF and Visio version)	Lab RILIS Downtime Work Flow.pdf Lab RILIS Downtime Work Flow.vsdx
B	RILIS Downtime Recovery Process (PDF and Visio version)	Downtime Recovery.pdf Downtime Recovery.vsd

Associated Documents:

External Documents

Associated Documents:

SFOWI-0460 -- LIS - Downtime Procedure
SFOFCD-0401 -- QS Downtime Requistions

Click to Open an Associated Document

Documents Generated:

Document Revision History:

Revision: 6	Date Created: 09/01/2005 Date of Last Revision: 04/30/2018	Last Approval Date: 04/30/2018
Document Author: Maureen R Fitzgibbons/CA/KAIPERM	**Document Manager:** Vaiju Ruikar/CA/KAIPERM	

Reason for Change:

Revision:	Sec/Para Changed	Change Made:	Date
1	N/A	Initial Issue of Document	12/2/2011
2	Procedure - Log in area Procedure -phone area Procedure -Technical area Data validation paragraph added	content for clarification Fax copy is accepted as a copy Night shift will fax results Fixed format. Changed dot bullets into letters/numbers for better reference.	1/10/2013
3	Data Validation Sec A	CLS staff will print validation labels for both scheduled and unscheduled down time	9/27/13
4	Recovery section and A1. NA	Updated instrument list from LH750 to DxH 800 Changed of Medical Laboratory Director from Dr. Fang to Dr. Suba.	6/2/2016

| 5 | Procedure
Appendixes | Clarified the contents.
Revised flow charts through UBT project and move them into Appendixes section.
Linked to SFOWI-0460. | 2/28/2018 |
| 6 | Area
Procedure
Appendix | Removed 2200 location
Reformatted to make it easier to read.
Revised procedure and workflow per staff feedback.
Linked to SFOFCD-0401 Downtime Requisitions. | 4/30/2018 |

Notification List:

Approvals:

First Approver's Signature

Name: Eric Suba/CA/KAIPERM   Apr 30, 2018 11:37:00 AM PDT - Approved by: Eric Suba/CA/KAIPERM
Title: Chief of Pathology; CLIA Director

Document History Section