

**POE DOWNTIME  
PROCEDURE MANUAL *for*  
NURSING**

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# THE UNIVERSITY OF CONNECTICUT HEALTH CENTER

Information Systems Security

*SYSTEM SECURITY MANUAL*

SECTION: Contingency Plan

SUBJECT: Nursing Business Continuity Plan

PURPOSE: This plan is intended to provide a procedure to respond to an emergency or other occurrence (for example: fire, vandalism, system failure or natural disaster) that can damage an information technology resource which contains electronic health information (ePHI). This plan specifically is designed to respond to failures of hardware, software, and associated utilities used to support the systems that the nursing units use at the University of Connecticut Health Center. This plan will encompass a data backup plan, emergency access procedures, disaster recovery procedures and departmental downtime procedures. The disaster recovery procedures will provide a process to restore any loss of data in the event of a disaster as well as a systematic recovery process once the system has been reinstated to ensure full data restoration. All failures should be reported to the Information Technology Help Desk at extension 4400 or 679-4400.

POLICY: UCHC HIPAA Security Information Systems Business Continuity and Disaster Recovery

PROCEDURE:

1. Response and Reporting Phase
  - a. Protect Lives
    - i. Refer to the Master Safety Plan for evacuation procedures.
  - b. Limit Damage
    - i. Interfaces should be shut down and queued on the interface engine.
    - ii. If there is limited availability of the system, print out critical operational reports.
  - c. Protect Information
    - i. A complete back up of the system should be done if possible.
    - ii. Verify the availability of the most recent back up tapes.
  - d. Report and service disruption or failure to the IT Help desk at X4400.
  - e. System downtime user notification will be done via
    - i. Overhead announcement within the appropriate ancillary departments
    - ii. E-mail any additional people as needed
    - iii. Recorded message on the help desk telephone line

2. Resumption Phase
  - a. For each identified risk displayed in the Attachment C details an impact analysis and an assigned scenario. Each scenario is linked to a specific procedure to follow during system downtime.
  - b. Attachment D details each scenario and the down time procedure to follow.
  
3. Recovery Phase
  - a. For the technical procedure for disaster recovery of the hardware and software see the procedure in the Disaster Recovery Section of this manual.
  - b. The technical recovery of the system will be managed by the technical staff, the vendor and/or the system administrator.
  - c. Once the system is repaired and available the technical staff supporting the affected system and the system administrator must first validate the system is working properly.
  - d. Once the system is available, the system administrator will be responsible for determining the restoration priorities which are included in Attachment D.
  - e. The system administrator will verify data integrity, and then all users will be allowed access.
  - f. All disabled interfaces must be restarted and validated by the source system and the receiving system staff.
  - g. Standard reports will be executed and assessed for readiness, found in Attachment E.
  - h. The system administrator will be responsible for assessing the completeness of data recovery and data quality before progressing to the restoration phase.
  - i. System status must be recorded and approved using Attachment F prior to “go live”.
  
4. Restoration Phase (Go-Live)
  - a. Occurs once the administrator determines that the system is stable, up-to-date and ready for a higher volume of users.
  - b. System restoration (Live Status) user notification will be done via the following:
    - i. Overhead announcement within the appropriate ancillary department
    - ii. E-mail sent to any additional people that must be notified.
    - iii. Recorded message on the help desk telephone line
  - c. Close monitoring of the system event and audit logs should be performed over the next 24 hours. Use event log reporting and review forms in the information systems activity review section of this manual.

5. This plan should be reviewed annually. All procedures should be reassessed, tested and, if appropriate, revised to reflect changes in hardware, software and personnel. This should be documented on Attachment H.

**Procedure Revision History**

<b>Change Requested by</b>	<b>Date of Request</b>	<b>Change Implemented On:</b>	<b>New Revision Number</b>

**Procedure Approvals**

<b>Revision</b>	<b>Approval Required</b>	<b>Printed Name</b>	<b>Signature</b>

## **I. DOWN TIME PROCEDURES**

- **Staffing Required for all Scenarios:**

- Help Desk ext. 4400
- Ancillary Department Administrator/Coordinator
  1. Radiology: ext. 2784 or 3634
  2. Laboratory: ext. 3601 or 8014
  3. Pharmacy: ext. 7943 or 2782 or 4921
- Other staff as required

- **Examples of Causes for all Scenarios:**

- Computer virus, Hardware or Software Failure, Power Surge or Loss

- **Notification for all Scenarios:**

- Once the situation is identified, the Ancillary Department will notify the System Administrator/Coordinator. The Administrator/Coordinator will then notify the Ancillary Department Manager, Director, and the Support Staff, Transcription Services as needed as well as the Lead Technologist Staff as needed.
- The Ancillary Department must also notify the Help Desk in the Information Technology Department (X4400). The Help Desk will contact the individuals responsible for the Ancillary Department System support as well as the Nursing Administrator on-call. The Nursing Administrator on call will notify the individual nursing units that Ancillary System is not operational and will continue to keep them updated as to the status of the system.

- **First Line of Defense:**

- An assessment of the situation, including approx. length of outage, will be required before following a specific procedure.
- For a Pharmacy System issue, a complete patient profile is run each shift (12am, 6am, 2pm) and stored on the pharmshare fs7000(z:) drive for retrieval by authorized personnel (see attachment for notification list). The Help Desk is to troubleshoot the issue for non-ancillary system related causes such as Network connectivity etc.
- Once it is determined that it is an Ancillary System related cause, the Help Desk will notify the appropriate system support.
- If the Administrator/Coordinator is not able to be reached, the Help Desk staff is to initiate the above process. The problem will be issued a ticket number for tracking purposes as well as a description of the problem will be recorded on the ticket.

- **Status Notification/Documentation:**

- Ancillary Department staff is to provide status updates to the Help Desk until the system is operational.
- For Radiology, downtime log sheets will be utilized by reception and technologist staff during downtime. Envelopes have been prepared for and are located in each Radiology Department.

\*Please note: Both scheduled and unscheduled downtimes are handled in the same manner.

## **ATTACHMENT D: DOWN TIME PROCEDURES**

### *Definitions:*

**Invision-** The overall system from Siemens that supports POE feeds Physician order entry information to all Ancillaries.

**POE-** Physician Order Entry

**MAK –** Medication Administration Checking

**IDX –** Patient Account Registration system

**Openlink-** Interface between Invision POE and the Siemens Pharmacy System

POLICY: The Disaster Recovery for Nursing Ancillary Systems

### **I. DOWN TIME PROCEDURE SCENARIOS FOR SIEMEN'S PHARMACY SYSTEM**

#### **1.1 Scenario #A: Siemens' Pharmacy is Functional, POE is Functional, POE Outbound Interface to Pharmacy is NOT functional (Orders are not received from POE to Pharmacy System)**

##### *Action:*

- Practitioners continue to enter all orders electronically into POE and an order session summary will print for all orders.
- HUC places second copy of order session summary that includes medication orders into Pharmacy basket and the original order session summary into the patients chart.
- The HUC/Nursing transcribes medications to the MAR and two nurses will sign and date MAR for all manually verified orders.
- Pharmacist will evaluate and validate new medication orders as well as triage the list for stat orders.
- Pharmacist will **EITHER** dispense the medication order directly from Pyxis **OR** write on the pharmacy copy of the order session summary "*to be sent*" from pharmacy.
- Pharmacy Administrator to determine if Pyxis Critical Override is necessary (only for unplanned, extended downtime).
- Pharmacist will fax or deliver to the pharmacy only those order session summaries dispensed from the Centralized Pharmacy marked with "*to be sent*".
- Centralized Pharmacy will only deliver those "*to be sent*" orders to the floor that are not available as floor stock in Pyxis.
- When all is functional, orders will pass to Siemens' Pharmacy. The Pharmacist will validate/verify all "passed" orders.
- Nursing/HUC will transcribe all validated orders onto the patient's MAR.
- HUC/Nursing will verify all manual/hand-written orders to the current orders display for discrepancies. If discrepancies are discovered, nursing will work in conjunction with the pharmacist to resolve.
- Pharmacist will review new medications on handwritten MAR and initial each medication.

**Scenario #B: Siemens' Pharmacy is Functional, POE is Functional, POE *Inbound Interface* from Pharmacy is NOT functional, (Order status updates or orders entered directly into Siemens' Pharmacy will not travel from Siemens' Pharmacy to POE)**

*Action:*

- Practitioners continue their normal workflow of entering orders, transcribing new medication orders to the MAR's, dispensing medications and resolving discrepancies:
  - All orders will be electronically entered into POE and order session summaries will print.
  - The Pharmacist will validate all orders in Siemens' Pharmacy.
  - MAR's will print at the regularly scheduled designated time.
- As the *inbound interface from Pharmacy to POE* is not functional, order status updates for medications will not appear on the current orders display. Thus, medications will remain in the REVIEWED status on the COD despite being VERIFIED by the Pharmacist.
- In addition, any medication orders/changes entered by the Pharmacist into Siemens Pharmacy (for example: pain scale medications from Pain Mngt order set) will not appear on the COD. The pharmacist will communicate to the nurse any changes that were made in Siemens' Pharmacy to orders entered in POE.
- The nurse/HUC will transcribe all new medications onto the handwritten MAR and initial the MAR, validating the accuracy of the transcription. A pharmacist must initial the transcribed order prior to the administration of the medication.
- Once the inbound interface is again functional, all order status updates and orders entered directly into Siemens' Pharmacy will appear on the current orders display.
- The nurse will review the handwritten MAR with the current orders display and update any orders as needed.
- The nurse will clarify any discrepancies found during that comparison with the Pharmacist *as needed*.

**Scenario #2: Siemens' Pharmacy System is Functional, POE System is NOT Functional**

*Action:*

- Practitioners are to revert to written orders, utilizing the carbonless 4 page Order Sheet. (Form # HCH121) which is found in the Downtime Bucket.
- HUC removes yellow copy of the written orders and places in Pharmacy basket at nursing station .
- Pharmacist will periodically pick up these written orders on their floors and will manually enter these written orders into the Siemens Pharmacy System.
- The orders entered in Siemens' Pharmacy will automatically be stored in a queue in Open link.

- Nursing/HUC will manually write all new medication orders onto the MAR. The pharmacist will verify all manual/hand-written orders and initial the MAR.
- No session summaries will be generated for med orders in this scenario during the downtime because they were already generated into Siemens pharmacy system.
- Once the POE System is again functional, the orders entered into Siemens' Pharmacy will be released from the queue in Open Link and appear on the current orders display.

### **Scenario #3: Siemens Pharmacy System Is NOT Functional, POE System is Functional**

#### *Action:*

- Because POE is functional, Practitioners will continue to enter orders into Invision and Order Session Prints will print at the Nursing Station. The Pharmacy Administrator will set Pyxis to Critical Override (only for *unplanned, extended* downtime and must be implemented by a Pharmacy Administrator).
- HUC will take the pharmacy duplicate copy of the Order Session print and stamp it with "Pharmacy Copy". The HUC will fax STAT orders to the pharmacy to be processed by the pharmacist. If "Pyxis Connect" is used, scan the order session prints into it as per current procedures.
- The HUC/Nursing will transcribe the medication to the computer generated MAR.
- A nurse must sign/initial the MAR validating the accuracy of the transcription. A pharmacist must initial the transcribed order prior to the administration of the medication.
- The original order session summary will be placed in the patients chart. The stamped "PHARMACY COPY" session summary will be placed into the pharmacy basket.
- The Pharmacist will pull and sign the summary, review for appropriate dispensing, approve the orders as needed and fax to Pharmacy for dispensing.
- During this time, "demand print" MAR's cannot be generated.
- Nursing must coordinate medication "times of administration" with the pharmacist as they will not be able to view occurrences on line.
- The orders entered in Siemens' POE will automatically be stored in a queue until Siemens' Pharmacy is functional..
- When the system is again functional, designated IT staff will coordinate the release of orders to the pharmacy printer. Upon receipt, the pharmacist will validate/verify all orders.
- Nursing will review the current Orders Display for pharmacist verification of the medication orders. If discrepancies are discovered, nursing will work in conjunction with the pharmacist to resolve.

#### **Scenario #4: Portion of the Network that Controls POE and Siemens Pharmacy is Down – Therefore, neither POE or Siemens Pharmacy is Available**

*Action:*

- Pharmacy Administrator to determine if Pyxis Critical Override is necessary (only for unplanned, extended downtime).
- Practitioners are to revert to written orders utilizing the carbonless 4 page Order Sheet. (Form # HCH121)
- HUC removes yellow copy of the written orders and places in Pharmacy basket at nursing station. The original copy is placed in the patients chart
- Nursing units will fax or call in STAT orders to the pharmacy.
- HUC/Nursing to transcribe each medication to a hand written MAR. Two nurses must sign/initial the MAR validating the accuracy of the transcription.
- Pharmacist will periodically pick up these written orders from the Pharmacy basket on each nursing unit and will validate/verify all orders by placing his initials on the hand-written MAR.
- Once the Pharmacy system is again functional, orders will be processed and the backlog will be entered into the pharmacy system.
- The orders will be stored in a queue in Openlink and then fed through Open link to update Invision. Once the medications are electronically validated by the Pharmacist, the order status of each medication will be updated on the current orders display.
- Nursing will verify all manual/hand-written orders to the orders on the current orders display for discrepancies. If discrepancies are discovered, nursing will work in conjunction with the pharmacist to resolve.

## **II. DOWN TIME PROCEDURE SCENARIOS FOR SIEMEN'S RADIOLOGY MNGT. SYSTEM**

### **2.1 Scenario #1: Radiology Management System is Down – POE/Invision is Up**

- All practitioners on POE live units are to continue to enter radiology orders into POE.
- After a radiology procedure is ordered and must be done immediately, the nurse can utilize the “reprint requisition” function to regenerate a “Radiology Down-time Req” (Check the “Yes” box next to the “Print Radiology Down-time Req?” prompt.) that will print on the radiology front desk printer.
- Downtime dictation of results will be done using the medical record number and modality of the patient. This number must be entered manually by the Physician into Powerscribe standalone mode.
- Downtime Transcription will be completed utilizing Powerscribe and reconciled by the System administrator when the order/accession number is available in RMS.  
All tests exam results with STAT priority or positive findings will be called to the ordering location.
- The caller will record the date and time of the call and to whom the information was given on the downtime notice or handwritten requisition.
- Each Radiology location must determine which orders were passed successfully and which orders were not by comparing the RMS generated requisitions against Invision generated “Downtime Notices” printed during downtime.
- Using manual downtime log sheets, the radiology staff will enter all examination and patient data into RMS after operations resume.
- RAD Techs will enter information in IDX scheduling as appropriate and admits/visits will be held in IDX interface until RMS is up.
- RAD techs will enter information into modality as appropriate.
- Exams can be backdated in IDX scheduling or as a walk in, to capture the correct date of service.
- When RMS is again functional, all orders entered into POE will be interfaced into RMS automatically, however, radiology techs are to track to “end procedure” all procedures completed from requisitions received during downtime.
- When RMS is again functional and orders have filed into RMS, RMS will forward orders to PACS and PACS Admin will resolve exceptions with corresponding accession number from RMS.

## 2.2 Scenario # 2: HIS/IDX/ADT (Hospital Info System) is Down and INVISION POE is Down – RMS Radiology is Up

- It may be possible that both Invision POE and IDX/ADT are down.
- If this occurs, some patient demographic data will be available (entered prior to the IDX/ADT downtime) for RAD techs to access for radiology POE orders.
- However, there will be those patients that arrive at UCHC after the IDX/ADT system goes down and therefore their demographic data will not be available for RMS technicians.
- Both these scenarios are listed below:

### 2.2a Scenario # 2A: ADMISSION INFORMATION IS AVAILABLE in the RMS database (i.e.: Inpatient or EMR.)

- POE practitioners are unable to place/track orders using Invision POE; therefore a paper requisition, stored in the downtime bucket, must be completed for each individual exam requested on the Nursing Unit.
- POE-live nursing units must call and notify Radiology X 2784/3634 and/or Nuclear Medicine X3120 of any imaging requests.
- The requisition must be faxed to Radiology/Nuclear Medicine and the original is sent, via transportation, to the Radiology department.
- All received paper requisitions for POE Radiology orders will be placed in RMS and will be resulted in LCR.
- Search the RMS using the Patient/Order Entry function by the patient *admit number* on the regenerated Siemens requisition to see if the patient registration information crossed into the RMS system from INVISION prior to the down time. If the patient information is in RMS, proceed with order entry. **DO NOT SEARCH BY MEDICAL RECORD NUMBER.**
- If a database exists for the patient base on a successful admission number search, an order requisition and accession number will be generated through the RMS Patient /Order Entry function.
- If no current admit information is found, **do not use** RMS for order entry. Patient must be entered onto downtime log sheet for entry when system comes up and then follow instructions for scenario #3 (below).

### 2.2b Scenario # 2B: ADMISSION INFORMATION IS NOT AVAILABLE in the RMS database (i.e.: Inpatient or EMR)

- If the admission information is **not available** (UCHC patient arrived after system went down) then downtime procedures for Scenario #3 should be followed.

### **2.3 Scenario #3: INVISION POE (Physician Order Entry) is Down – RMS is Down**

- POE practitioners and POE radiology techs are unable to place/track/receive/result orders using Invision POE or RMS; therefore a paper requisition, stored in the downtime bucket, must be completed for each individual exam requested on the Nursing Unit.
- POE-live nursing units must call and notify Radiology (X 2784/ X 3634) and/or Nuclear Medicine (X 3120) of any imaging requests.
- The requisition must be faxed to Radiology/Nuclear Medicine and the original is sent, via transportation, to the Radiology department.
- All tests exam results with STAT priority or positive findings will be called to the ordering location.
- Downtime Transcription will be completed utilizing Powerscribe and reconciled by the System administrator when the order/accession number is available from RMS.
- RAD techs will enter information into modality as appropriate.
- When RMS is again operational, Radiology staff will use the faxed paper requisition requests or manual log sheets, to enter all examination and patient data into RMS.
- When RMS is again operational and orders have filed into RMS, RMS will forward orders to PACS and PACS Admin will resolve exceptions in PACS with corresponding accession number from RMS.
  - Radiology techs are to track to “end procedure” all procedures completed from requisitions received during downtime.
  - When the INVISION system is again operational, the practitioners are not to use POE to reorder the exams for which paper requisitions were submitted. They can, however, enter all NEW orders into POE.
  - Even once POE is operational, the radiology techs will continue to enter all procedures from regenerated Siemens requisitions into RMS. When POE is again operational, the order and order status will be automatically sent to POE.
  - Once the HIS is operational, all updated ADT information will be sent to the RMS.
  - Information should be entered into IDX scheduling as appropriate and the “admits/visits” will be held in IDX interface until RMS is operational.
  - Exams can be backdated in IDX scheduling or as a walk in, to capture the correct date of service.

## **2.4 Scenario #4: INTERFACE ENGINES (between RMS and Invision) NOT OPERATIVE**

It may be possible that both POE/Invision and RMS are fully operational, but communication between the two systems, via the Interface Engines, is broken because the Outbound Interface (Invision to RMS) or the Inbound Interface (RMS to Invision) is not working.

### **2.4a Scenario #4A: OUTBOUND ORDERS INTERFACE (from Invision to RMS) NOT TRANSMITTING**

- Practitioners will continue to place orders into INVISION/POE, however because the interfaces are down, the orders are not received by RMS.
- The radiology coordinator will call/communicate with each nursing unit to request a printed Invision/POE downtime requisition so that the procedures can be performed.
- Practitioners will print a downtime requisition utilizing the “Reprint Req” function in Invision. (Check the “Yes” box next to the “Print Radiology Down-time Req?” prompt.)
- Once requested via the reprint req function, a requisition will print on the printer at the Radiology department front desk.
- Radiology staff will manually places Invision downtime orders into RMS .
- When the interfaces are restored, orders from Invision will cross into RMS and may cause duplicate orders to be generated. Any duplicate orders caused during this time will be cancelled by the radiology department.
- Each Radiology location must determine which orders were passed successfully and which orders were not by comparing the POE entered orders to the RMS entered orders.

### **2.4b Scenario #4B: INBOUND ORDERS INTERFACE (from RMS to Invision) NOT TRANSMITTING**

- A practitioner, looking for status updates on radiology orders in Invision may be the first one to discover that the inbound interfaces are down. This is because a practitioner will be able to place orders into Invision, but will be unable to see results in LCR.
- The orders will travel as usual, via outbound interface, from Invision to RMS and a RMS requisitions will print in the Radiology Department and the Radiology Department will perform the procedure and track it to “end procedure”. Because the inbound interface is not transmitting, the status updates will not be seen in Invision, however Radiology procedure results can be accessed in LCR during this time.
- When the inbound interface is up, “order status updates” will travel from RMS to Invision. This scenario will *not* result in duplicate orders.

### **III. DOWNTIME PROCEDURE SCENARIOS FOR LABORATORY**

#### **3.1 Scenario #1 LIS System is Down – POE/Invision is Operational**

- The lab personnel will notify the lab supervisors, the lab manager (X3601) and the Clinical Laboratory Director on call for the Core Lab (via the page operator) as indicated.
- The Laboratory Department must notify the Help Desk in the Information Technology Department (X4400) who will notify the Nursing Administrator on-call. The Nursing Administrator on-call will notify the individual nursing units that LIS is not operational and keep them up-to-date as to the status of LIS.
- The Help Desk must contact SCC Lab System support, who will issue a task number for tracking purposes. Once SCC is notified, an approximation of down time will be determined.
- Once LIS is non-functional, laboratory orders placed in POE will not be received by LIS and no accession numbers will be generated by the non-functioning LIS (thus no lab labels will print on the nursing unit).
- Invision/POE requisitions will continue to print on each nursing unit.
- Results will not transmit from the lab system to LCR until the LIS is functioning again.

#### **FOR ORDERS ENTERED INTO INVISION BEFORE LIS WENT DOWN**

- Orders from inpatient nursing units that were placed in Invision and have *crossed the interface* to the LIS *prior to* going down will have LIS accession numbers generated.
- Labels for these orders will print via the lab label printer on the nursing units (unless the tests are to be performed “in AM” or for a future day).
- The nursing unit staff will affix labels to the blood tubes and transport them to lab with a printed Invision/POE requisition.
- Lab staff will follow standard LIS down time procedures for processing and testing specimens (see *Down Time Procedure* in LIS Manual).
- If the specimens have bar coded labels that were generated by LIS, results will be stored in lab analyzers by the LIS accession number.
- All test results with STAT priority as well as those with critical values will be called to the ordering location.
- Once the LIS is functioning again, results will be electronically transmitted from lab analyzers to the LIS and from there to Invision.

## **FOR ORDERS PLACED IN INVISION AFTER LIS HAS GONE DOWN**

- Orders from inpatient nursing units that were entered into the Invision system *after* the lab system has shut down will not post in LIS. Therefore, labels from the lab label printer will not be generated when the order is entered into Invision.
- Invision/POE requisitions will print on the nursing unit when the order is placed in Invision.
- Specimens will be labeled on the nursing units with addressograph-generated labels and will be accompanied to the lab with Invision requisitions.
- When these specimens are received in the lab, they will be labeled with *down time accession numbers*, per LIS protocol.
- Once the test has been completed, the results will be stored in lab analyzers by the down time accession number.
- All test results with STAT priority as well as those with critical values will be called to the ordering location.
- When LIS is again functioning, orders will post from Invision to the LIS. Lab staff will cross-reference to the down time accession numbers and results will be transferred from the analyzers to the LIS per Down Time procedures.
- The nursing units will continue to enter LIS orders into POE. The lab will notify the Nursing Supervisor when LIS is again functional and results can be found in LCR.
- “Splash screens” with various messages instructing the user on the current status of the ancillary system will appear on the Invision/POE screen when the user logs onto the system.

### **3.2 Scenario #2: INVISION / POE is Down – LIS is Operational**

If Invision is non-functional, practitioners are unable to place orders (including lab orders) into Invision/POE. As the LIS is operational, electronic orders can be placed by lab staff into the LIS once specimens and requisitions are received. Results will continue to transmit from LIS to LCR (assuming LCR is functional).

- If Invision/POE is noted to be down (unable to write or view orders), the Help Desk in the Information Technology Department (x4400) must be notified. The Help Desk will notify the Nursing Administrator on call, who will in turn notify the nursing units and the appropriate ancillary areas affected by the downtime.
- The Help Desk will notify the appropriate IT personnel. They will also open a “ticket” with Siemens.
- The practitioner will follow the following steps:
  - If Invision/POE is down, the practitioner will be unable to place orders into the system.
  - The practitioner will write orders on a carbonless 4 page Order Sheet (Form # HCH121) which will be, after completed, kept in the patient’s chart.

- The nursing unit staff will transcribe the handwritten orders onto color coded paper requisitions (specific to different lab sections) as needed. The paper requisitions are stored in a “Down time bucket” on each nursing unit.
  - As there are no electronic orders being placed, no printed lab labels with accession numbers will print on the nursing units.
  - Specimens from inpatient nursing units will be labeled with addressograph-generated labels and will be accompanied by paper requisitions to the lab.
- Upon receipt of the specimen and the handwritten requisition, the lab personnel will enter the order into the LIS and accession numbers will be generated.
  - Once the tests are completed, test results will be transmitted to LCR.
  - When Invision/POE is again operational, the practitioners will resume placing orders into Invision/POE.
  - Paper orders that have been sent to Laboratory Medicine while Invision/POE was not functional **will not** be entered into Invision by nursing unit staff after it resumes function.
  - Once POE is operational. all orders (as well as order status updates) placed in the LIS during the downtime will travel the interface and post in Invision/POE..

### **3.3 Scenario #3: INVISION POE (Physician Order Entry) is Down – LIS is Down**

This is essentially a combination of the first two scenarios. Both Lab and Nursing staff will communicate with IT via the Help Desk (X4400). With Invision not working, orders for lab work will be hand written on the nursing units, and specimens will be labeled with addressograph-generated labels. Laboratory staff will perform all testing following established LIS down-time procedures. No test results will be sent to LCR while the LIS is non-functional. Recovery from the combined down times will depend on which system becomes operative first.

- If Invision/POE is noted to be down (unable to write or view orders), the Help Desk in the Information Technology Department (x4400) must be notified. The Help Desk will notify the Nursing Administrator on call, who will in turn notify the nursing units.
- The Help Desk will notify the appropriate IT personnel. They will also open a “ticket” with Siemens.
- The practitioner will follow the following steps:
  - If Invision/POE is down, the practitioner will be unable to place orders into the system.
  - The practitioner will write orders on a carbonless 4 page Order Sheet. (Form # HCH121)
  - The nursing unit staff will transcribe the handwritten orders onto color coded paper requisitions (specific to different lab sections) as needed. The paper requisitions will be stored in a “Down time bucket” on each nursing unit.

- As there are no electronic orders being placed, no printed lab labels with accession numbers will print on the nursing units.
- Specimens from inpatient nursing units will be labeled with addressograph-generated labels and will be accompanied by paper requisitions to the lab.
- Upon receipt of the specimen, the lab personnel will process specimens according to down-time procedure for Laboratory Medicine.
- Since LIS will also be down, the LIS administrator or designee must notify the Help Desk (x4400) that the LIS is down, according to the *Down Time Procedure* in the LIS Manual. The Help Desk will notify the Nursing Administrator on call, who will in turn notify all of the nursing units. Laboratory staff will then proceed as follows:
  - a. With both systems down, specimens received by the lab will be labeled with a laboratory down time accession number as per protocol. Lab staff will follow standard LIS down time procedures for processing and testing specimens (see *Down Time Procedure* in LIS manual).
  - b. If Invision becomes operative first, proceed as in scenario #1 above: (*LIS System is Down –POE/Invision is Operational*)
    - i. If the LIS becomes operative first, proceed as in scenario #2 above: (*INVISION / POE is Down – LIS is Operational*)
    - ii. If *both* systems become operational at approximately the same time:
      - The laboratory staff will enter into LIS all orders for which they have already received handwritten requisitions and tubes of blood during downtime.
      - On orders written during downtime that have not yet had requisitions, accompanied by tubes of blood, brought to the lab, the nursing staff will enter those remaining orders into Invision/POE.

### **3.4a Scenario #4: INTERFACE ENGINES (between LIS and Invision) NOT OPERATIVE**

It may be possible that both POE/Invision and LIS are fully functional, but communication between the two systems, via Interface Engines, is broken because the Outbound Interface (Invision to LIS) or the Inbound Interface (LIS to Invision) is not working. Both nursing and laboratory staff will need to be aware of this possibility, and communicate with each other as well as with the IT help desk.

#### **A. INBOUND ORDERS INTERFACE (from Invision to LIS) NOT TRANSMITTING ORDERS TO THE LAB**

- During this scenario, a practitioner will be able to place orders into Invision. An Invision/POE requisition will print on the nursing unit, however no order transaction will be sent to the LIS. Therefore, no LIS accession number will be generated by LIS and no LIS label will print on the nursing unit.
  - i. Noting that an expected lab label did not print on the nursing unit's network lab label printer after a lab order is placed, the nursing unit staff must verify that the printer is functioning correctly. The nursing unit will contact the Lab to

- verify, through the LIS, that the printer is in “*Ready state*”. If so, have the network printer name and serial number available when calling the Help Desk to report the problem.
  - ii. If there are no apparent issues with the printer, a call will be placed to the Help Desk (x4400) to determine if there is a recently reported network, LIS or interface problem. If so, the Help Desk will inform the LIS administrator of the problem.
- If it is determined that there is a problem with the “Inbound interface”, the nursing unit will send Invision/POE generated requisitions, accompanied with addressograph-labeled blood tubes, to the lab.
- Lab staff will accession these orders into the LIS, label the tubes and complete the tests as ordered.
- When the interfaces are restored, orders from Invision will cross into LIS and cause duplicate accession numbers to be generated. The nursing staff will discontinue, per the protocol pathway, all duplicate lab procedures in the patient’s electronic chart.

**B. OUTBOUND ORDERS INTERFACE (from LIS to Invision) NOT TRANSMITTING ORDER STATUS UPDATES TO POE**

- During this scenario, a practitioner will be able to place orders into Invision. An Invision/POE requisition will print on the nursing unit and an order transaction will be electronically transmitted to the LIS. An LIS accession number will be generated by LIS, but will not be transmitted back to Siemens, so no LIS label will print on the nursing unit.
  - i. Noting that an expected lab label did not print on the nursing unit’s network lab label printer after a lab order is placed, the nursing unit staff must verify that the printer is functioning correctly. The nursing unit will contact the Lab to verify, through the LIS, that the printer is in “*Ready state*”.
  - ii. If there are no apparent issues with the printer, a call will be placed to the Help Desk (x4400) to determine if there is a recently reported network, LIS or interface problem. The Help Desk will inform the LIS administrator of the problem.
- If it is determined that there is a problem with the “Outbound Orders Interface”, the nursing unit will send Invision/POE generated requisitions, accompanied with addressograph-labeled blood tubes, to the lab.
- The Lab staff will look into LIS to find the accession number that was generated when the order crossed the interface from Invision to LIS. Lab staff will print LIS labels, attach them to the blood tubes and proceed with the testing.
- When the interface is restored, the lab results will post automatically to LCR.

### **3.5 Scenario #5: Hospital Information Systems Down**

Either the IDX/ADT system or the LCR can have down times. If the IDX system is not functioning, the admitting department will generate manual admission numbers for new inpatients, the Emergency Department will generate manual admission numbers for ED patients, and the lab will follow their established procedure for processing outpatient specimens. If LCR is down, no results will be transmitted until it is again functioning. Lab results will transmit automatically to LCR once it is working again.

#### ***IDX/ADT System is Down***

- The ADT system has scheduled down times as well as unscheduled down times. Both of these situations are handled in the same manner.
- If this is an unscheduled situation, the lab personnel should first verify that the LIS server/interface is functioning. If the interface is down, the LIS Administrator or designee can restart the interface following the “Restart Interface” procedure in the Lab manual.
- If the problem is not solved with the restart of the LIS interface, contact the Help Desk and open a ticket with Interface team.
- If the ADT system is down, the Lab personnel should operate in a “Stand Alone” situation as documented in the Lab manual.
- If the ADT admission information is not available in the LIS database (ie: Outpatient or ED patient after system went down), the nursing unit or ED staff will note the manual admission numbers on requisitions sent to the lab with specimens. This information will be manually entered into LIS.
- Once the IDX/ADT system is operational, all updated ADT information will be sent to the LIS. Lab staff will amend their records according to established procedure.

#### ***Lifetime Clinical Record is Down***

- If LCR is not operational, it will be determined if the interface is down or the LCR is down.
- If the interface is down, the restart of the interface will be done by the LIS Administrator or designee.
- All LIS operations function normally and reports are held in the interface until LCR comes back up.
- The laboratory should anticipate an increase in telephone calls for results.
- Since the LIS is not down, all auto-reporting of final reports is operational.
- Preliminary results can be printed or faxed to requested doctors or locations.
- Once LCR is operational, results will be sent across the interface.

#### **IV. DOWN TIME PROCEDURES FOR IDX (NURSING UNITS)**

##### **4.1 Down time procedure for Nursing Units when IDX is noted to be unavailable.**

- The nursing units will be notified by the Nursing Office that IDX is not functional.
- Invision/GOLD is UP as well as Siemens Pharmacy, Radiology, LAB, IBEX, etc. are all functional.
- **The time should be “seamless” for the nursing unit staff EXCEPT the following:**
  - **BMS (Bed Management Systems – BED BOARD) will not be updated with admission, discharge, and transfer data.**
  - **All ADT activity should be called to X1031\*\*\*\*\***
  - **Patient Labels/bracelets will be produced in the ED and by Patient Flow during the downtime**

#### **V. DOWN TIME PROCEDURES FOR MAK (Medication Administration Checking)**

*MAK is an extension of the Siemens Pharmacy System*

##### **Scenario 5.1: Siemens Pharmacy is down therefore MAK is down**

###### *Action*

- Once a downtime has been declared (by Nursing Supervisor and staff pharmacist)
- The Pharmacist will need to request the downtime MARs for each MAK unit
- The downtime MAR is a back-up copy of the MAR that is sent to a server Q2 hours.
- The downtime MAR is sent via VPS from the pharmacy system to a non-pharmacy server with a formatting application.
- The pharmacist will contact the IT Pharmacist on call or follow the *Downtime MAR Print Instructions* located on the “T” drive.
- If the downtime MARs are unable to be printed then Nursing should use the blank MARs found in the downtime documents
- The Downtime MARs will print to unit location or the Nursing Staffing office
- Nursing Staffing Office will send via Transportation to the MAK units
- Nursing will compare the downtime MAR to the POE orders/Net Access MAR/Nursing Rounds report and recent order session prints for accuracy
- Nursing will transcribe any new orders or discontinued orders on to the downtime MAR
- Nursing and Respiratory Therapy will now document on the newly printed MAR

- At the end of downtime; the MAK administrator will enter the downtime period in MAK so that the users can back enter charted medications without receiving a “late entry” warning (off hours the IT builder on call will update the Med check Utility)
- Upon return of the system the current RN will then enter all medications recorded on the downtime MAR
- The appropriate scan override reason for the medication and patient wristband “Downtime charting”
- The nurse will be presented with the “downtime recovery” screen at this point enter in the documented date and time of the actual medication administration
- If you are not the person who actually administered the medication; select the charted list and revise the medication including the RN or RT’s name and title in to the revise reason field
- The Downtime MAR should then be placed into the patients chart as part of the permanent medical record

### **Scenario 5.2: MAK Cart Failure**

#### *Action*

- Contact the Helpdesk @ 4400, the Helpdesk will troubleshoot problems to determine if it is a mechanical, power or computer related
- If it is determined that the cart is unusable a loner cart can be obtained by notifying Clinical Engineering @ 2954
- The loaner MAK cart is fully equipped to be functional immediately
- During off hours please utilize functioning MAK carts on unit, notify Clinical Engineering next business day of cart failure

### **Scenario 5.3: MAK Scanner/Battery Failure**

#### *Action*

- Extra scanner located in medication room draw
- You may need to re-configure the scanner to UCHC MAK settings; configuration instructions located in MAK training manual on unit
- Extra batteries located in charger on top of Pyxis machine in med room
- Notify Nursing Informatics’ team during business hours of scanner failure