

CIS Downtime
PathNet Gen Lab,
Microbiology, and Blood
Bank Transfusion

Health PEI
CLINICAL INFORMATION SYSTEMS

PathNet GenLab, Microbiology and Blood Bank

Transfusion

CIS Downtime Procedures

Pre-downtime

- Notification of downtime will be received by PathNet users as per the Provincial Downtime Notification process and the Facility Notification process. Each facility has its own Notification process.
- Dependent upon the scheduled time of the downtime and the length of the downtime – Ops Jobs may need to be printed.
 - Blood Bank: Patient Result Activity Report – This is an Ops Job that prints daily (approximately at midnight) and is retained for reference for at least as long as the associated specimen is available for testing. This alphabetical-by-patient report displays all tests ordered and result details for those specimens.
 - In the event of a Scheduled downtime, a Blood Bank User will need to print this Patient Result Activity Report from the Blood Bank Report Selection application immediately prior to start of downtime to capture all patient result details since the last Patient Result Activity Ops Job report. (ie, current date 00:00 to current date: current time).
 - Refer to Blood Bank section of 'Downtime' below for Downtime procedures to follow after this point.
- Ensure all downtime documents as listed in this document are readily available. These are stored in a Downtime Kit.
- All staff must be aware of the location of the Downtime Kit on their unit.
- In accordance with facility notifications and/or on-screen alerts, log out from PathNet and any other CIS applications.
- NOTE: there are automated jobs that run custom reports of results, patient typing, work in progress to assist staff during the downtime period when this CIS data is not otherwise available. The reports are available on designated PCs and should be reviewed periodically to confirm access processes, content validation, and staff familiarization.

Overview by PathNet Solution:

Blood Bank

Follow GenLab Downtime basic phase structure, with the following exceptions:

- **Unscheduled Downtime:** Refer to Blood Bank Downtime Kit – contains the following:
 - Define Location of Downtime Kit
 - QEH: Per facility internal process.
 - PCH: Per facility internal process.
 - Downtime Procedure Instructions:
 - Patient Typings & Comments Spreadsheet –
 - This is automatically updated daily around 1525 on the designated terminals (Blood Bank Supervisor's/Chief Technologist office).
 - It contains all Blood Bank Patient Demographic information for patients that have Blood Bank data:
 - ABO Rh

- Antibodies
 - Transfusion Requirements
 - Patient Comments
 - The short-cut icon on designated terminals' desktops allows access to the password-protected spreadsheet. Ensure applicable staff are aware of password.
- Result Activity Report
 - Blood Bank: Patient Result Activity Report – This is generated by an Ops Job that prints daily (approximately at midnight) and is retained for reference for at least as long as the associated specimen is available for testing. This alphabetical-by-patient report displays all tests ordered and result details for those specimens.
 - In the event of a Scheduled downtime, a Blood Bank User will need to print this Patient Result Activity Report from the Blood Bank Report Selection application immediately prior to start of downtime to capture all patient result details since the last Patient Result Activity Ops Job report. (ie, current date 00:00 to current date: current time).
- Internal Testing Requisitions
 - BOTH Sites - Pre-Printed Blank Tags – Cross-match, Component, Emergency
 - BOTH Sites - Blood Transfusion Service Requisition (note: same manual form as used at Go Live for all Blood Transfusion Orders – will reside on all Units/Offices in PEI. Part of Blood Bank Downtime Kit in the event they need to be supplied to requesters.
 - QEH - Request for Blood Components Pre-transfusion Tests
 - QEH - Request for Pre and Postnatal Investigation
 - QEH – Issue Voucher for Blood Components
 - QEH – Request for Issue form
 - PCH – Blood Bank Manual Requisition
 - PCH – Blood Bank Issue Log
- No action for downtime less than 1 hour duration; exceptions would be determined by staff (ie; Stat requests).
- Downtime greater than 1 hour but less than 8 hours - Testing: Assign testing numbers in order received and proceed with testing.
 - (Note: use process with Downtime Specimen Labels, (see 'All Labs 1-8 hours section below), Blood Bank will follow same process. If NOT functional, track specimens and assign internal testing numbers in order of receipt, ie yyyy/mm/dd001 and so on. – Using 'Specimen Log Sheet').
- Requests will be processed based on priority determined by Manager/staff, (Stat, etc.). Search the downtime spreadsheet (BloodBank Report) Patient Result Activity Report as required. Patient information and test results must be transcribed on Internal Testing Requisition. (Note: Downtime greater than 8 hours basically same process, with the addition of processing prenatal testing)
 - Telephone stat results; photocopy Internal Testing Requisition and send to requesting Unit.
 - Note: Internal Testing Requisition will be placed on Patient Chart at requesting Unit. If blood products are requested, the Unit will document the check/sign on this Internal Testing Requisition (as current 'pink sheet).
 - Hold other results for entry into system following downtime.
- Requests for Blood and Blood Components
 - Refer to Result Activity Report to review current patient's test results (if required)
 - Perform confirmatory testing as required. Copy and send Internal Testing Requisition to Unit as required.
 - Complete blank component or crossmatch tag; photocopy & retain copy; hold copy for entry into system following downtime.

- Document information on QEH Manual Issue Voucher or PCH Issue Log.
- Inventory Receipt
 - QEH - Perform donor confirmation procedures on RBCs as required. (Note: PCH receives pre-tested donor units from QEH).
 - Segregate received products in separate storage areas for receipt into inventory and donor confirmation result entry following downtime.
- Final Disposition
 - Hold returned component/crossmatch tags for entry into system following downtime.
- Downtime greater than 8 hours will follow basically the same process for Blood Bank.

Gen Lab:

When the CIS Clinical Information System (CIS) is not available for an extended period of time (> than 1 hour) due to either software or hardware related issues the following plan will be initiated:

- No test ordering, creating worksheets and polling and verifying of results can occur when the system is “down”.
- During this time only STAT/time -sensitive patient laboratory orders will be analysed.
- All STAT/time -sensitive blood work will be analysed and the results phoned to the appropriate unit/location..
- In Biochemistry, manually transcribing of results is not recommended; rather, printed copies of results are to be generated at the instrument and attached to the requisition. Individual labs to develop their own process, in keeping with recommendations and quality standards.
- In Hematology, all routine coagulation work (APTT and PT request) and CBC requests will be analysed as specimens arrive in the laboratory. This is due to sample integrity issues: ie APTT testing must be completed within 4 hours of collection.
- All GenLab routine blood work will be sorted and made ready (ie centrifuged) for subsequent analysis.
- RECENT RESULTS LOOKUP: Should there be a need to lookup recent results on a particular patient, the OpenGenlab application that is daily updated on selected PCs in the lab areas, can be run to generate a report showing results from the past 48-72 hours. The short-cut icon on designated terminals’ desktops allows access to the password-protected spreadsheet. Ensure applicable staff are aware of password.

Microbiology:

- No action will be taken for downtimes less than 1 hour in duration, the exception would be for any STAT Gram stain requests/positive blood culture bottles. These can be done immediately and phoned with the results recorded on paper and entered into the system once functional.
- If downtime is greater than 1 hour, all blood cultures will be assigned numbers and entered into analyzer.
- All specimens can be sorted and stored at the proper temperature until system is operational.
- Sample Integrity.... As time moves ahead and there is no indication that the system will be up and functioning, all samples that require planting due to specimen age will be numbered and inoculated to the appropriate media. All STAT and Hospital requests will be planted by end of day, should the system still be down.
- NOTE: for any Scheduled downtimes that will exceed 1 hour, on particular PCs the OpenMicroLabinProgress application can be run which will generate a report showing all specimens in process and the past/current procedures underway. The short-cut icon on designated terminals’ desktops allows access to the password-protected spreadsheet. Ensure applicable staff are aware of password.
- The OpenMicroLab.exe can be executed to generate a PDF of recently completed orders should the lab receive requests for patient results

Downtime Phases - All Labs

Phase I (1- 8 hours)

If the CIS is not operational for more than an hour (>1 hours), the first phase of our computer emergency contingency plan will be initiated.

Please initiate the following processes:

- The requisition and lab specimens require sufficient patient data to properly identify the patient, time of collection, tests or procedures requested and ordering physician.
- Annually, pre-printed downtime specimen labels are to be generated at each lab location using the CIS “LabelPrePrint” application [Reference: Provincial Lab Document # : PRAOPE011 PRINTING DOWNTIME LABELS]. These labels use facility-specific blocks of accession numbers that would not be otherwise used (sequential number is greater than 2000) as follows:

QEH	:	yy-ddd-2001...	KCMH:	:	yy-ddd-6001...
PCH	:	yy-ddd-3001...	SH:	:	yy-ddd-7001...
WH	:	yy-ddd-4001...	CHO	:	yy-ddd-8001...

- Note the ability to assign specific “Collection Class” to downtime labels, corresponding to facility routing.
- Technologists will place a separate barcode label onto each specimen tube/container used for testing purposes. They will also place the duplicate label(s) onto the patient’s requisition form.

Note: This will mean that there may be multiple accession numbers for individual collections once the system become operable.

- In addition, during this time only verbal reports on current patient test results will be available.

Figure: Label PrePrint Application

PathNet Collections: Label PrePrint

Task Edit View Help

* Number of accessions:

* Starting accession number:

* Collection class:

* Number of labels per accession:

Free text comment:

* Label printer:

Print

Phase II (8- 24 hours)

If the CIS does not appear that it will be operational within a few hours (>8 hours), the second phase of our computer emergency contingency plan will be initiated.

Please initiate the following processes:

- Only patient requests originating from within each hospital (Inpatient and Outpatient) and any other STAT patient requests originating from any location will be processed immediately for testing. STAT results will be phoned to the appropriate Clinical Staff units or institution.
- All Coagulation results will be phoned to the appropriate Clinical Staff units or institution.
- Routine blood work that was completed but not yet polled and verified at the time of the network crash will remain resident on the instrument's hard drive for future retrieval. ***If at all possible do not delete results which are stored on any of the laboratory instruments.***
- Verbal reports will be available upon request depending on the test being completed.
- If a written report is desired by a physician then an instrument(s) printout of the results will be used for this purpose.

Phase III (Greater than 24 hours)

If the CIS is still not operational after 24 hours, (> 24 hours) the third phase of our computer emergency contingency plan will be initiated.

Please initiate the following processes:

- The Chief Technologist/Divisional Head/Lab Managers will assess what routine blood work needs to be processed. This will be based on sample integrity issues as well as workflow issues (ie glucose thyroid, lipid testing, Hgb A1C etc).
- Patient requests originating from within each hospital (Inpatient and Outpatient) and any other STAT patient requests originating from any location will continued to be processed immediately for testing. STAT results will be phoned to the appropriate Clinical Staff units or institution.
- All Coagulation results will be phoned to the appropriate Clinical Staff units or institution.
- Verbal reports will be available upon request depending on the test being completed.
- If a written report is desired by a physician then an instrument(s) printout of the results will be used for this purpose.

Recovery:

When CIS becomes operational initiate the following checks:

- **Integrity:** Perform an integrity check of the clinical information system (CIS):
 - Check previous results entered prior to the computer crash are present.
 - Check a few of the routine functions in the Cerner program (ie DOE, ORV, ARE) to ensure that the system is fully operational.
 - Perform a Pending Inquiry- To see the list of tests that have not yet been completed or verified.
 - Check out the connectivity of instrument interfaces, e.g., instrument acknowledges bar-code (order detail) and result post to ARE.
- **Peripherals:** Check to see that the peripherals are functioning properly - label printers, report printer bar code scanners.

Priority of Processing Patient Samples:

- **New Tests:** Begin to enter in the current blood work as it arrives in the laboratory. Assign a group of staff to complete these requests in the usual manner.
- **Downtime Tests:** Assign another group of staff the task of entering all of the requisitions that arrived in the laboratory during the downtime. ***Only when all of the orders from these requisitions have been entered into the system should results that were previously completed be polled and verified.*** Remember that these requisitions may have more than one accession number (ie multiple tubes per requisition)

It is important to note that test back-ordering needs to be performed at workstations that have been set to manually assign the accession numbers. This is done by configuring DOE at these workstations to a "Manual accession mode entry".

Inpatient/Ambulatory Requisitions with Downtime MRN Numbers. Facility Registration use a manual downtime process of assigning a 9-digit "downtime MRN" to any new patients who do not have a valid MRN (e.g., out of province) with a format like "917092201", i.e., always has "9" as the first digit and is nine digits long. Registration use a non-CIS application to print registration labels with these pseudo-MRN numbers for subsequent use on charts and on lab requisitions. On recovery in DOE after a downtime, for any requisitions with a downtime label, the pseudo-MRN and other demographics on the label can be used to complete the registration conversation. Merging with actually MRN will later occur via Registration staff.

- Any labels that print at nursing units immediately following system restoration, for collections during the downtime and for which paper requisitions have been raised, will be sent to the lab for reconciliation. The orders will be compared with the downtime orders and cancelled with a comment referencing the downtime where there is a match. Where there is no match, reconciliation will be done with the nurse unit to determine whether the order is to be collected and processed or cancelled.
- Perform a Pending inquiry after all of the results have been verified into the system to ensure the completeness of the recovery process.

Downtime Phase 1 – By Solution

Blood Bank (1-8hrs)

Pre CIS Downtime

1. For Scheduled downtime, Print the Patient Result Activity Report from Blood Bank Report Selection application to capture results since the report was last printed, last midnight.
2. Ensure all downtime documents as listed in this document are readily available. These are stored in the Downtime Kit.
3. All staff must be aware of the location of the Downtime Kit on their unit.
4. Log out from PathNet and any other application expecting downtime.

During CIS Downtime

1. Follow GenLab Downtime basic phase structure, with the following exceptions
2. For Unscheduled downtimes, access the Patient Typings and Comments file on the designated terminals (Blood Bank Supervisor's/Chief Technologist office). This spreadsheet contains all Blood Bank patient demographic comments and typing information for all patients that have had blood transfusion services testing.
3. Refer to the Result Activity Report printed daily at midnight.
4. Internal Testing Requisitions
 - BOTH Sites - Pre-Printed Blank Tags – Crossmatch, Component, Emergency
 - BOTH Sites - Blood Transfusion Service Requisition (QEH - Request for Blood Components Pretransfusion Tests
 - QEH - Request for Pre and Postnatal Investigation
 - QEH – Issue Voucher for Blood Components
 - QEH – Request for Issue form
 - PCH – Blood Bank Manual Requisition
 - PCH – Blood Bank Issue Log

5. No action for downtime less than 1 hour duration; exceptions would be determined by staff (ie; Stat requests).
6. Downtime greater than 1 hour but less than 8 hours - Testing: Assign testing numbers in order received and proceed with testing. Use GenLab Specimen labels if available or use format yyyy/mm/dd001 etc
7. Requests processed based on priority determined by Manager/staff, (Stat, etc.). Patient information and test results transcribed on Internal Testing Requisition.
8. Telephone stat results; photocopy Internal Testing Requisition and send to requesting Unit.
9. Hold other results for entry into system following downtime.
10. Requests for Blood and Blood Components – refer to Result Activity Report if required
11. Perform Confirmatory testing as required. Copy and send results documented on Internal Testing Requisition to Unit as required. Complete component or crossmatch tag; photocopy & retain copy; hold copy for entry into system following downtime. Document information on QEH Manual Issue Voucher or PCH Issue Log.
12. Inventory Receipt
 - QEH - Perform donor confirmation procedures on RBCs as required. (Note: PCH receives pre-tested donor units from QEH).
 - Segregate received products in separate storage areas for receipt into inventory and donor confirmation result entry following downtime.
13. Final Disposition
 - Hold returned component/crossmatch tags for entry into system following downtime

After CIS Downtime

1. Blood Bank users will receive notification that the system is back up.
2. Check previous results entered before Downtime
3. Check a few of the routine CIS functions in CIS
4. Perform a Pending Inquiry- To see the list of tests that have not yet been completed or verified.
5. Check to see that the peripherals are functioning properly - label printers, report printer bar code scanners.
6. Catch-up Order Entry must be performed at workstations set to manually assign the downtime accession numbers. The System Administrator will set this up.

Gen Lab (1-8hrs)

Pre CIS Downtime

1. All staff must be aware of the location of the Downtime Kit on their lab.
2. Upon facility notification, log out from PathNet and any other application.

Downtime

1. No test ordering, creating worksheets and polling and verifying of results can occur when the system is “down”.
2. Analyse STAT orders only and phone results to ordering location
3. Use Downtime labels with the following format;

QEH	yy-ddd-2001...	KCMH: :	yy-ddd-6001...
PCH :	yy-ddd-3001...	SH: :	yy-ddd-7001...
Western:	yy-ddd-4001...	CHO :	yy-ddd-8001...
SMHC:	yy-ddd-5001...		
4. Place one copy of downtime label on requisition, the other on the specimen tube.
5. Biochemistry, manually transcribing of results is not recommended; rather, printed copies of results are to be generated at the instrument and attached to the requisition.
6. Hematology, all routine coagulation work analysed as specimens arrive in the laboratory.
7. Biochemistry and Immunology: sort routines into specimen racks

After CIS Downtime

1. Blood Bank users will receive notification that the system is back up.
2. Check previous results entered before Downtime
3. Check a few of the routine CIS functions in CIS
4. Perform a Pending Inquiry- To see the list of tests that have not yet been completed or verified.
5. Check to see that the peripherals are functioning properly - label printers, report printer bar code scanners.
6. Check out the connectivity of the PSM and other instrument interfaces.
7. Test ordering must be performed at workstations set to manually assign the downtime accession numbers. The System Administrator will set this up.
8. Any barcode labels that print at nursing units need to be reconciled with the downtime orders and be cancelled/collected as applicable.

Microbiology (1-8 hrs)

Pre CIS Downtime

1. All staff must be aware of the location of the Downtime Kit on their unit.
2. Depending on timing of downtime, run ops jobs as needed (pending culture report, pending log-in reports.)
3. Log out from PathNet and any other application expecting downtime

CIS Downtime

1. Unless stat request or positive blood culture, if downtime expected to be less than one hour, wait until system is operational to process requests.
2. If downtime greater than 1 hour, assign blood cultures a number and enter in analyzer.
3. Sort other specimens and store at proper temperature until CIS operational
4. All stat and Hospital specimens will be planted before end of day even if CIS not yet operational.
5. Sample integrity....As time moves ahead and there is no indication that the system will be up and functioning, all samples that require planting due to specimen age will be numbered and inoculated to the appropriate media.

After CIS Downtime

1. Perform integrity check of CIS (check previous results entered prior to downtime; check some routine functions, perform a Pending inquiry)
2. Check that printers and bar code scanners working
3. Check connectivity of instruments
4. Begin to enter current specimens into system as they arrive in lab
5. Enter specimens that came in during downtime