

PROGRAM Standard Operating Procedure – Laboratory Services	
Title: MIC70100 – VITEK 2 Maintenance	Policy Number:
Program Name: Laboratory Services	
Applicable Domain: Lab, DI and Pharmacy Services	
Additional Domain(s): NA	
Effective Date:	Next Review Date:
Issuing Authority: Director, Laboratory and Diagnostic Imaging Services	Date Approved:
Accreditation Canada Applicable Standard: NA	

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GUIDING PRINCIPLE:

The VITEK 2 Instrument, personal computer (PC), VITEK DENSICHEK and saline dispensette are used with VITEK 2 identification and susceptibility cards to provide information to aid the clinician in the treatment of disease. Maintenance is performed to ensure accuracy and precision of the various components of the VITEK 2 Instrument.

PURPOSE/RATIONALE:

This standard operating procedure describes the daily, weekly, monthly and as-required maintenance requirements for the VITEK 2.

SCOPE/APPLICABILITY:

This procedure applies to Medical Laboratory Technologists (MLTs) processing specimens using the VITEK 2.

REAGENTS and/or MEDIA:

- 1 tube of Thioglycolate Broth
- VITEK DENSICHEK McFarland References

SUPPLIES:

- Pipettor/Diluter Accessory
- 0.45% saline bag
- 10% bleach solution
- Gauze squares
- Dish soap
- Saline dispensette
- Lens papers
- Alcohol swabs

EQUIPMENT

- VITEK 2 Instrument
- VITEK DENSICHEK

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SPECIAL SAFETY PRECAUTIONS:

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials or cultures:

- Ensure that appropriate hand hygiene practices be used
- Lab gown must be worn when performing activities with potential pathogens
- Gloves must be worn when direct skin contact with infected materials is unavoidable
- Eye protection must be used when there is a known or potential risk of exposure of splashes
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC)
- The use of needles, syringes and other sharp objects should be strictly limited

All patient specimens are assumed to be potentially infectious. Routine Practices must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

QUALITY CONTROL:

- Refer to MIC60030-VITEK 2 Quality Control for VITEK 2 QC procedures
- Record all VITEK 2 QC results on MIC60032-QC Results Record-VITEK 2
- Record all actions and results of maintenance checks on MIC70110-Maintenance Record-VITEK 2

PROCEDURE INSTRUCTIONS:

Step	Action
Daily VITEK 2 Maintenance	
1	<p>Empty waste trays:</p> <ul style="list-style-type: none"> • Open the waste collection station door • Place the index finger of one hand on the sliding retainer bar • Remove the waste collection tray from the station by lifting the front edge of the tray slightly up and then pulling it toward you • When the tray is clear of the station, allow the sliding retainer bar to slowly slide back into place • Dispose of the test cards in the tray in the biohazard garbage and replace the tray. Ensure the tray clicks closed
2	<p>Status Check:</p> <ul style="list-style-type: none"> • Ensure the status on the Status Screen is OK before using the instrument • If the Status is not OK, refer to VITEK 2 Instrument User Manual sections 8-2 to 8-12, for detailed information on other status notifications • Monitor the disposables. As the two disposables are used, the shaded portion of the graphs move to the left • Saline and tips are changed monthly or as required

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3	Zero DENSICHEK: <ul style="list-style-type: none"> Refer to MIC70600-VITEK DENSICHEK for DENSICHEK maintenance
4	Check printer paper: <ul style="list-style-type: none"> Refill paper as necessary

Step	Action
Weekly VITEK 2 Maintenance	
1	Check sterility of the VITEK 2 saline dispensette in use: <ul style="list-style-type: none"> Accession and process specimens as per MIC60050-Dispensette Sterility Test If the sterility test fails, dispensette will need to be autoclaved and saline discarded as per procedure

Step	Action
Monthly VITEK 2 Maintenance	
1	Perform monthly maintenance in the morning once all cards have been processed and before new cards are loaded. The maintenance is done in three parts. The first part is done with the instrument "ON," the second part is done with the instrument "OFF" and the third part is done with the instrument "ON."
2	First "INSTRUMENT ON" <ul style="list-style-type: none"> ➤ <u>Remove the carousels and boats:</u> Refer to VITEK 2 Instrument User Manual sections 6-18 to 6-21 and 6-26 to 6-27 ➤ After the carousels and boats have been removed, shut down the instrument using the interface screen and switch off the AC power switch. Refer to VITEK 2 Instrument User Manual section 5-2 NOTE: The instrument must be shut down and switched off before continuing
3	Second "INSTRUMENT OFF": <ul style="list-style-type: none"> ➤ <u>Clean the Optics:</u> Refer to VITEK 2 Instrument User Manual sections 6-32 to 6-35 ➤ <u>Clean the Test Card Collection Tray:</u> Refer to VITEK 2 Instrument User Manual section 6-36 ➤ <u>Clean the Vacuum Seal:</u> Refer to VITEK 2 Instrument User Manual sections 6-36 to 6-37 ➤ <u>Clean the Vacuum Chamber:</u> Refer to VITEK 2 Instrument User Manual sections 6-36 to 6-37 ➤ <u>Clean the Base Pan:</u> Refer to VITEK 2 Instrument User Manual sections 6-36 to 6-37 ➤ <u>Clean the Drip Pan:</u> Refer to VITEK 2 Instrument User Manual sections 6-37 to 6-38 After the interior components have been cleaned, turn the power to the analyzer back on using the AC power switch. The instrument will go through an initialization and/or warm up. When the instrument initialization is complete, it will ask you to replace the carousels NOTE: Do NOT clean any surfaces of the instrument with Accel TB wipes


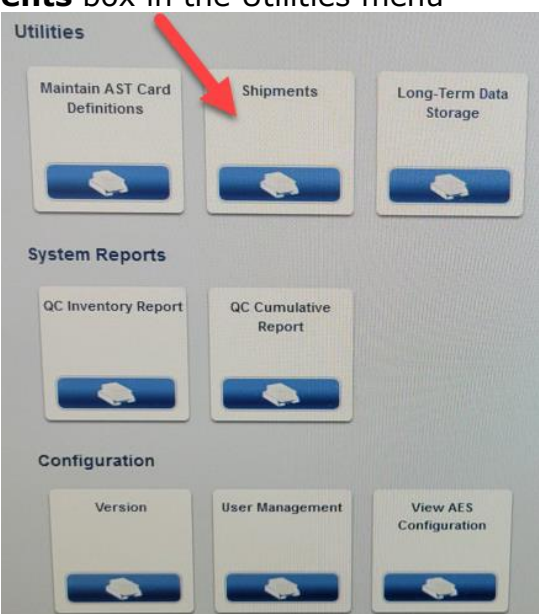
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5	<p>Third "Instrument On"</p> <ul style="list-style-type: none"> ➤ <u>Replace the Carousels</u>: Refer to VITEK 2 Instrument Manual sections 6-21 to 6-24. Use the clean set of carousels underneath the VITEK 2 instrument ➤ <u>Replace the Boats</u>: Refer to VITEK 2 Instrument User Manual sections 6-21 to 6-24. Use the clean set of boats underneath the VITEK 2 instrument ➤ <u>Perform the Optical Diagnostic Test</u>: Refer to VITEK 2 Instrument User Manual section 6-17 ➤ <u>Clean the exterior of the VITEK 2 Instrument</u>: Refer to VITEK 2 Instrument User Manual section 6-35 ➤ <u>Clean the VITEK 2 Computer and Keyboard</u>: Wipe the VITEK 2 computer and keyboard with the bleach/soap solution and rinse with a clean cloth soaked in water ➤ <u>Clean Cassettes</u>: Refer to VITEK 2 Instrument User Manual section 6-25. Replace with the clean cassettes underneath the VITEK 2 instrument <p>NOTE: Do NOT clean any surfaces of the instrument with Accel TB wipes</p>
6	<p>DENSICHEK:</p> <ul style="list-style-type: none"> • Refer to MIC70600-VITEK DENSICHEK for DENSICHEK monthly maintenance procedure
7	<p>Change pipette tips and saline bag:</p> <ul style="list-style-type: none"> • Refer to VITEK 2 Instrument User Manual sections 6-8 to 6-12 • After changing the tips and saline, the instrument will perform a pipettor self-test
8	<p>Dispenser/Pipettor Diagnostic Test:</p> <ul style="list-style-type: none"> • Perform a Dispenser/Pipettor Diagnostic Test after each replacement of saline and tips. Refer to VITEK 2 Instrument User Manual sections 6-14 to 6-15
9	<p>Once maintenance is complete and instrument is back into use, take the dirty carousels, boats and cassettes to MDR to be run in the dishwasher.</p>

Step	Action
As-Required VITEK 2 Maintenance	
1	<p>Change dispensette saline bottles:</p> <ul style="list-style-type: none"> • Continue to use the same dispensette as long as the weekly sterility checks show no growth • When saline dispensette sterility test fails, refer to MIC60050-Dispensette Sterility Test
2	<p>After installation of software updates:</p> <ul style="list-style-type: none"> • Perform quality control of Gram-negative and Gram-positive susceptibility cards • Refer to MIC60030-VITEK 2 Quality Control

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Step	Action
What to do if the Pipettor/Dilutor is DOWN:	
1	From the VITEK 2 Keypad and Screen, select the Previous Screen button to access the Main Menu .
2	From the Main Menu, select Utilities .
3	From the Utilities menu, select Cassette Setup .
4	From the Cassette Setup screen, select Change Dilution Mode .
5	When you select Change Dilution Mode, the dilution mode will be changed from Automatic to Pre-diluted.
6	Prepare organism suspensions within 0.5-0.63 McFarland range as usual.
7	If setting up ID and susceptibility cards, place the McFarland suspension in the cassette and leave the next slot empty. Prepare a second tube with the following dilutions using the VITEK pipettes: <ul style="list-style-type: none"> ➤ AST-GN: 3.0mL saline + 145µL of the 0.5-0.63 ID suspension ➤ AST-GP: 3.0mL saline + 280µL of the 0.5-0.63 ID suspension ➤ AST-ST03: 3.0mL saline + 280µL of the 0.5-0.63 ID suspension Place the dilution into the empty slot.
8	If setting up an ID card only, nothing different needs to be done.
9	If setting up a susceptibility card only, place the dilution only in the cassette. Do not place the McFarland suspension in the cassette.

Step	Action
How to import new cards into the VITEK 2:	
1	<ul style="list-style-type: none"> • From the Tools  menu • Click the Shipments box in the Utilities menu 

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- This will open the **Shipments** dialogue box:

Date Received	Lot Expiration	Quantity	Lot Number	Card Type	Certificate of Conformance	Receiver ID	Edit
3/29/2018	3/24/2007		326010000	AST-P566	<input type="checkbox"/>	Labadmin	
3/23/2018	3/24/2007	3	326010000	AST-P566	<input checked="" type="checkbox"/>	Labadmin	
12/29/2017	2/20/2025		2412643003	ON	<input type="checkbox"/>	LabSuper	

- Enter the lot number by manually entering or scanning the barcode number located on the box.
- Select the date the shipment was received and enter the quantity received.
- Click **Add Shipment**. The system software adds the shipment information.
- Click **OK** to exit the Shipment screen.

CROSS-REFERENCES:

- MIC60030-VITEK 2 Quality Control
- MIC60032-QC Results Record-VITEK 2
- MIC60050-Dispensette Sterility Test
- MIC70110-Maintenance Record-VITEK 2
- MIC70600-VITEK DENSICHEK

REFERENCES:

- bioMérieux. (2020-04). *VITEK 2 Instrument User Manual*, 041387-02
- bioMérieux. (2018-02). *VITEK FLEXPREP Software User Manual*, 048984-01
- bioMérieux. (2022-02). *VITEK DENSICHEK User Manual*, 048641-02

APPROVAL:

Date

Director, Laboratory and Diagnostic Imaging Services

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	17 Nov 17	Initial Release	L. Steven
2.0	04 Aug 21	Procedure reviewed and added to NTHSSA policy template	L. Steven
3.0	01 Oct 24	Procedure reviewed and updated to reflect the removal of the SCS	L. Steven

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