BacLink

Exporting data from Microscan



WHO Collaborating Centre for Surveillance of Antimicrobial Resistance

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BacLink Tutorial – Exporting data from Microscan LabPro

The instructions are divided into four parts:

- 1. Downloading and installing WHONET and BacLink
- 2. Exporting data from Microscan LabPro
- 3. Converting data with BacLink
- 4. Getting started with WHONET

The purpose of this document is to guide users of the Microscan LabPro identification ana susceptibility test instrument through the export of data to WHONET.

The frequency of data conversions depends on the local data analysis needs and interests. Many laboratories find that a weekly or monthly download is adequate for their infection control and quality assurance purposes, while less frequent analysis may be adequate if the principal use of the data is in following trends in resistance and guiding treatment recommendations. Automated daily downloads of data from Microscan LabPro into WHONET is also a possibility, and is described below.

Part 1. WHONET AND Microscan

The purpose of this document is to guide users of the Microscan 1 or Microscan 2 identification and susceptibility test instrument through the export of data to WHONET. The Microscan 2 Compact does not yet have a simple export utility, but the manufacturer is currently developing this as a new feature.

The instructions are divided into four parts:

- 1. Downloading and installing WHONET and BacLink
- 2. Exporting data from Microscan
- 3. Converting data with BacLink
- 4. Getting started with WHONET

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PART 2. EXPORTING DATA FROM MICROSCAN

Open Microscan and click on Reports.

🍓 Print Reports		_	
Patient QC Epidemiology			
Report Types C Chartable Reports Lab Reports Short Format Reports Query Summary Reports	Report Options Report Format Query Summary Report, Standard Format Include specimens already printed	Primary Sort Order Specimen # Secondary Sort Order Specimen #	J J
Search Type Collect Date Patient Query Rules Specimen # Test Group Status/Date	Test Group Status/Date Status Complete No Data D Hold MIC Hold	☐ ID/24 Hour Hold ☐ 24 Hour Hold ☐ Preliminary	
	From To Selected Test Group Status/Date Ranges Status From	To	T F
		Print Pre <u>v</u> iew Print	

Click on the "Epidemiology" tab on the top right.

Print Reports				<u>_ ×</u>
Epidemiology Reports Antimicrobic % Interpretive Report				
Include Antimicrobic % Sensitive	Segment	1		
🔲 Include Antimicrobic % Intermediate				
Include Antimicrobic % Resistant				
Cumulative % Inhibited by Antimicrobic Level R	eport			
Segment 1			Page Break None	-
Bacterial Incidence Report				
Segment 1 Segment 2	Segment 3		Page Break None	_
Cuery Summary Report	Report Format	Query Summary Rep	oort, Standard Format	-
Export To File	Export Configuration	WHONET Export		-
Data Selection Criteria	Echip	Programme and the second		
Report Name	Exclude Dup	olicate Isolates		
Stored Queries		Homulary Drugs		
	Use Epidem	ology urganism Groups		
	Prin	Segments 6	<u>xport</u>	Print

Click on "Export to File" Click on the small dot/triangle in the top right section of the "Export Configuration Tab"

🏶 Patient Query Rules	
Data	
+ 🚵 🗶 🖻 Lookup	
Code 👻 Description	▲
	•

Click on the + sign to create a new Configuration

Export Configurations - Add			X
Code	Description		
Available Data - Specimen Data - Patient Data - Isolate Data - Antimicrobial Data - Biochemical Data		Add>>> Hemove << Clear All	Selected Data
		Move Up Move Down	
			Columns selected 0
LabPro Data Format	Delimiter]	Text Qualifier
C Code C Description	Comma	🔘 Tab	<none></none>
Active	. <u> </u>		<u>S</u> ave Close

On the Top of the screen click on the Code field. Call it "WHONET E" Click on the Description Field Call it "WHONET Export"

Click on Specimen Data Click on "Add" in the middle of the screen. This should move all of the criteria over to the "Selected Data" column. Click on Patient Data

Click on "Add" in the middle of the screen. This should move all of the criteria over to the "Selected Data" column.

Click on Isolate Data. Click on "Add" in the middle of the screen. This should move all of the criteria over to the "Selected Data" column.

Export Configurations - Add Code WHONET E Description	
Available Data Specimen Data Patient Data Isolate Data Antimicrobial Data Formulary MIC MIC/Interpretation MIC/Interpretation MIC/Interpretation Amikacin Amp/Sulbactam Ampicillin-E Ampicillin-E Ampicillin-E Ampicillin-S Azithromycin Azteonam	Add >> Collect Date Bemove << Collect Date Clear All Requesting Physician Move Up Specimen Comments Specimen Status Date Specimen Tech Specimen Tech Ward of Isolation Admit Status Admit Status Admit Status Attending Physician Date Berlinen Comments Specimen Status Date Specimen Tech Ward of Isolation Admit Status Admit Status Attending Physician Date of Birth Discharge Date First Name Gender Institution T
LabPro Data Format Delimiter ○ Code ● Description ✓ Active	C Tab

Click on Antimicrobial Data

Click on MIC/Interpretation

Click on "Add" in the middle of the screen. This should move all of the criteria over to the "Selected Data" column.

On the selected data column remove the following fields (Click the field, then click remove in the middle of the screen) Patient Comments 1 Patient Comments 2 Patient Comments 3 Patient Comments 4 Patient Comments 5 Patient Free Text Specimen Comments 1 Specimen Comments 2 Specimen Comments 3 Specimen Comments 4 Specimen Comments 5 Specimen Free Text Isolate Comments 1 **Isolate Comments 2** Isolate Comments 3 Isolate Comments 4 **Isolate Comments 5** Isolate Free Text

Click on "Save"

Go back to the main Epidemiology screen.

Print Reports				
Report Types				
Antimicrobic % Interpretive Report Include Antimicrobic % Sensitive	Segment	1		
Include Antimicrobic % Intermediate Include Antimicrobic % Resistant	,			
Cumulative % Inhibited by Antimicrobic Level Rep Segment 1	ort		Page Break	2
Bacterial Incidence Report Segment 1 Segment 2	Segment 3	V	Page Break	2
Query Summary Report Export To File	Report Format Export Configuration	Query Summary Repor	t, Standard Format 🖉	
Data Selection Criteria Report Name Stored Queries	Exclude Dup	n <mark>icate Isolates</mark> Informulary Drugs		
	Print	Segments E <u>x</u> r	port E	Print

5) Click on the small dot/triangle in the top right section of the "Stored Queries Tab"

🏘 Patient Query Rules	
Data	
+ 🖄 🗶 🗈 Lookup 🛛 🗰 WHONET Q	
Code 👻 Description	▲
WHONET Q WHONET Query	
	-

Click on the + sign to create a new Query

🍓 Patient Query Rules - 🕯	Add				2
Data					
🖶 🗛 + 🌾 🗶					
Code		Description			
Active/Inactive Specimens Admission # Admit Date Admit Status Attending Physician Attending Physician Group Biochemicals Biotype Collect Date Discharge Date	Excluded from Epidemiology Gender Institution Institution Group Interpretation Isolate Comments Isolate Extra Tests Isolate Status/Date Isolate Tech MIC	Nosocomial Organism Group Patient Age Patient Age Patient Comments Patient Ward Patient Ward Patient Ward Group Received Date	Report Printed Request Date Requesting Physician Room Service Short Format Report Printed Source Group Specimen #	Specimen Comments Specimen Status/Date Specimen Tech Test Group Status/Date User-Defined Test Ward of Isolation Ward of Isolation Group	
To begin: drag a desire	ed parameter to this cell.				

Click on the Code Tab and call it WHONET Q Click on the Description Tab and call it WHONET Query Click on "Collect Date" and drag it down to the column below it.

🍓 Patient Query Rules -	Add				x
Data					
🖬 🗛 + 🍬 🗶					
Code		Description			
Active/Inactive Specimens Admission # Admit Date Admit Status Attending Physician Attending Physician Group Biochemicals Biotype Dollect Date Discharge Date	Excluded from Epidemiology Gender Institution Institution Group Interpretation Isolate Comments Isolate Extra Tests Isolate Status/Date Isolate Tech MIC	Nosocomial Organism Organism Group Patient Age Patient Age Patient Comments Patient ID Patient Ward Patient Ward Group Received Date	Report Printed Request Date Requesting Physician Reom Service Short Format Report Printed Source Source Group Specimen #	Specimen Comments Specimen Status/Date Specimen Tech Test Group Test Group Status/Date User-Defined Test Ward of Isolation Ward of Isolation Group	
To begin: drag a desire	ed parameter to this cell.				

🍓 Patient Query Rules -	Add					×
Data						
🔒 🐴 🕂 🔖 🗶						
Code		Description				
Active/Inactive Specimens Admit Date Admit Date Admit Status Attending Physician Attending Physician Group Biochemicals Biotype Collect Date Discharge Date	Excluded from Epidemiology Gender Institution Institution Group Interpretation Isolate Comments Isolate Extra Tests Isolate Status/Date Isolate Tech MIC	Nosocomial Organism Organism Gr Patient Patient Age Patient Com Patient ID Patient War Patient War Received D	roup iments id Group late	Report Printed Request Date Requesting Physician Room Service Short Format Report Printed Source Source Group Specimen #	Specimen Comments Specimen Status/Date Specimen Tech Test Group Test Group Status/Date User-Defined Test Ward of Isolation Ward of Isolation Group	
▶Collect Date			Collect Date From 1/1/2008	To [12/31/2008 Ik value	E	
			Selected Collec	t Date Ranges ⊺	0	A

On the right hand side change the dates to whatever dates you would like.



On the top left of the screen click on the icon shaped like a floppy disk, the first one on the left right below the word "Data" to save this query.

Go Back to the main Epidemiology screen

🏶 Print Reports			
Patient QC Epidemiology			
Report Types Epidemiology Reports Antimicrobic % Interpretive Report			
Include Antimicrobic % Sensitive Include Antimicrobic % Intermediate	Segment 1	_	
Include Antimicrobic % Resistant			
Cumulative % Inhibited by Antimicrobic Level Report Segment 1	:	Page B	Break.
Segment 1 Segment 2	Segment 3	Page B	Break.
🗖 Query Summary Report	Report Format	Query Summary Report, Standa	ard Format
Export To File	Export Configuration	WHONET Export	•
Data Selection Criteria Report Name Stored Queries WHONET Query	Exclude Dupli	c ate Isolates formulary Drugs logy Organism Groups	
	Print <u>s</u>	egments <u>Export</u>	<u>Erint</u>

Click on "Export" Save the file.

PART 3. CONVERTING THE FILE WITH BACLINK

Now that you have created a data file with the desired data, BacLink can be used to convert this export file to the WHONET file format. The below instructions are meant as a quick guide. Detailed instructions can be found in the BacLink manual, baclink2manual.doc, by default in the folder: c:\whonet5\docs.

Start the BacLink program by double-clicking on the BacLink shortcut icon installed on your desktop. The BacLink program screen appears.

BacLink 2		
Choose the name and for	mat of the original data file.	
Enter a name and format	for the new data file. Click on 'Begin conversion	n'.
If the format of your data	ile does not appear on the list, choose 'New for	mať.
Original data file		
- File format		<u>N</u> ew format
		<u>E</u> dit format
	1	<u>D</u> elete format
File name		Browse
Table name		•
New data file		
File name		Browse
Table name	For Access files only	
File format	WHONET 5 (dBASE)	_
Select Janguage	Begin conversion	n E <u>x</u> it

1. Configuring BacLink

The first time that you use BacLink, you will the tell the software what kind of data file you would like to import, as well as the name and a code for your laboratory.

Click on the New Format button. The File Format screen opens.

From the drop down box, select the Country: for example, United States.
Enter the Laboratory Name – the name of your laboratory, for example Boston General Hospital. If you will potentially import data from a number of different sources (LabPro, Cerner, Excel, etc.), you may wish to indicate this in the laboratory name, for example Boston General Hospital (LabPro).
Enter up to three characters for the Laboratory Code, for example BGH. The laboratory code that you indicate will be used by BacLink and WHONET as the default file extension for your WHONET data files.

Click on the **File Structure** button, and the below screen will appear. Set the selections as follows:

File Structure – Vitek (Export)

- File Location Indicate the folder where you plan to save your LabPro files. c:\whonet5\data is the default location suggested by BacLink, but any convenient location can be used. In many institutions, data files are placed in a folder on a central server.
- **File Name** If your downloaded data files will generally end in ".txt", then leave the default response as "*.txt". Otherwise, indicate an appropriate filter which will facilitate finding your data files, for example: "*.*", "*.csv", "micro*.*", *etc.* If

the name of the downloaded data file will not change over time, you may indicate the fixed name, for example: "download.txt" **File Origin** – Windows (ANSI)

Click on the **OK** button.

File structure	Cerner Classic		•	<u>0</u> K	
Field delimiter					
File location	C:\whonet5\Data	\	Browse		
File name	××		Browse		
Table name	For Access files or	nly 🔽			
File origin	DOS (ASCII)	-			
	Enter information about	t the antibiotics in your da	ta fila		
<u>A</u> ntibiotics	Enter information abou	It the antibiotics in your da	ta file		
Guidelines		NCCLS			
Number of rows of data	for each isolate	More than one row			
Antibiotic sequence		Variable antibiotic	sequence		
Test methods		Disk,MIC,Etest			
Number of test methods	in one row of data	One method	One method		
Does the first row of the d O Yes	ata file have the names of the O No	e data fields?			
D 1 C 11	Define the relationship	between your data fields	and WHONET data		

Though not required, you may wish to click on the **New data file** button. On this screen, you can indicate the default data **File location** for your new WHONET files. By default, BacLink will put the WHONET files in the same location as your original LabPro files. You can also indicate the name of the WHONET file that you will create, though it is generally more convenient to give a file name later, just before a file conversion, and not here on this screen. The default WHONET file name will have the three-letter laboratory code as the file extension. Click on the **OK** button.

Click on **Save**. Give a name to the BacLink configuration file, which will save the above-indicated user selections, for example "bwh.cfg" or "labpro.cfg". You may give any valid Windows file name. BacLink will add ".cfg" as a file extension to indicate to BacLink that this is a configuration file.

Click on **Exit**. This will return you to the main BacLink screen. Your newly defined file format will appear on the list of formats available to you.

2. Converting data with BacLink

Original data file

From the main BacLink screen, click on the File Format configured in the previous step. On the BacLink 2 screen under "Original data file", "File name", select the download file to be converted. Example c:\whonet5\data\jan2003.txt.

New data file

Enter a name for the new WHONET data file that you wish to create with your converted data. Example: c:\whonet5\data\jan2003.xxx, where 'xxx' refers to your three-letter laboratory code. Your screen should then look similar to the following:

BacLink 2		
Choose the name ar	d format of the original data file.	
Enter a name and fo	rmat for the new data file. Click on 'Begin conversion'.	
If the format of your (data file does not appear on the list, choose 'New format'	•
Original data file		
File format	Boston General Hospital (Cerner)	New format
bgh.cfg		<u>E</u> dit format
		Delete format
File name	c:\whonet5\data*.*	Browse
Table name		T
New data file		
File name	c:\whonet5\data*.bgh	Browse
Table name	For Access files only	
File format	WHONET 5 (dBASE)	_
Select Jangu	age Begin conversion	Exit

Click on **Begin Conversion**. BacLink begins converting the downloaded delimited file to a WHONET 5 file. BacLink will show you the first three isolates to permit a visual inspection of the accuracy of the conversion. The information from your data file, as read by BacLink, appears to the left of the screen. The information which will be saved in the WHONET file appears to the right of the screen. Where appropriate, WHONET will change your codes and formats to those used by WHONET.

olates								
Fie	ld name		Jan200)4.txt	Т	Jan2004	4.bgh	
Identificati	on number							
Last name	2				9	SMITH		
First name	2					JOHN		
Full name	Full name S		SMITHJOHN			SMITHJOHN		
Sex		F			f			
Date of bir	th	1/1/1950			(01-Jan-1950		
Age					5	51		
Location		SICU			\$	sicu		
Departmer	Department II		ICU		1	ICU		
Specimen	number	04:B0	:B0001234R		(04:b0001234r		
Specimen	date	12/31	/2004		(01-Dec-2001		
Specimen	type	URINE			U	ur		
Local spec	cimen code	URINE			(URINE		
Organism		ESCH	ERICHIA CO	LI	6	eco		_
II ocal orga	nism code	IESCH	FRICHIA CO	11	I F	ESCHEBICHIA CO	11	
ntibiotics								
AMP_NM	>16	CRO_NM	1 <=8	3 OFX_N	М	<=1		
AMC_NM	>16	CIP_NM	<=.	5 <u>TCY_</u> N	M	<=1		
CHB_NM	64 51C	GEN_NN	1 <=.	5 TIC_N	M	<=16		
EZO_NM FOX_NM	4	NIT_NM	<=3	32 TOB_P	(M)	21		
			Γ	N	ext	1	Cance	əl

If you notice any discrepancies or errors in the field mappings, you may correct these from the main BacLink screen using "Edit format". Click "Next" to advance through the first three isolates. BacLink will then continue until the file is completely converted.

If BacLink does not understand some of the data codes in your file, the program asks whether you would like to define the unrecognized codes. If you answer **Yes**, you will be shown a list of the various organism, antibiotic, specimen type, location, gender, and test result codes that could not be understand. Click on a variable of interest, such as "Organism", and click **Define codes**.

You will subsequently be shown a list of each of the unrecognized code. Select a code and click **Define code**. For most variables (except Location), you will be asked to select the matching or closest term from a list of WHONET codes. For Location, you will have the option of defining the patient department and type (inpatient, outpatient, ICU, *etc.*). Continue defining codes until you have defined all, or at least the most important and frequent, data elements. When finished, click "OK", "OK" to return to the main BacLink screen.

If you have defined some additional codes, you should then convert the same file a second time in order to include the new code matchings in the converted data file. When finished with BacLink, click **Exit**.

PART 4. GETTING STARTED WITH WHONET

- Now that you have created a valid WHONET file using BacLink and your LabPro data, you can proceed to WHONET. For details on the use of WHONET, consult the manual WHONET 5.0 whonet5manual.doc, as well as available update pages describing the enhancements of further versions of the software.
- 1. <u>Creating a laboratory configuration</u>
 - To begin using WHONET, you must first create a "Laboratory configuration" with descriptive information about your laboratory -- antibiotics, breakpoints, patient locations, *etc.* For laboratories not using BacLink, this is typically done with a feature called **New laboratory**. However, for users of BacLink, there is a shortcut available called **Create a laboratory from a data file**.
 - Double-click on the WHONET icon. You will be shown a list of WHONET laboratories defined on your computer (with the default installation, you will see a single laboratory "USA Test Hospital"). To access the aforementioned shortcut, click on **Cancel**. Then click **File** from the main WHONET menu, and then the option **Create** a laboratory from a data file.
 - You will be requested to indicate your country, laboratory name, and laboratory code. Enter the responses using the same country and laboratory code which you selected in BacLink.
 - You will then be requested to select a valid WHONET data file. Search and select for the file which you created above using BacLink. Then click **OK**. At this point, WHONET will scan the contents of this file antibiotics, location codes, *etc.* and create a valid WHONET laboratory configuration. When requested, you can click **Yes** if you want to review the details of the configuration. Otherwise, click **No**, and you can continue with Data analysis.
 - <u>Note</u>: After creating the configuration utilizing the here-described shortcut, further edits, such as any modifications to the antibiotic breakpoints, can be done with **Modify laboratory**.

2. Using WHONET

Once you have defined a laboratory configuration, it will appear in the list of laboratories when you enter WHONET. Click on your laboratory name. For data entry or data analysis options, click on **Open laboratory**. If you wish to modify the laboratory information in the configuration, click on **Modify laboratory**. For use of the WHONET analysis features, explore the screen display and/or consult the manual.