

# BacLink

## Introduction



**WHO Collaborating Centre for  
Surveillance of Antimicrobial Resistance**

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## BacLink Tutorial – Introduction

This tutorial covers the following areas:

- Part 1. What is BacLink?
- Part 2. What systems are compatible with BacLink?
- Part 3. How does BacLink work?
- Part 4. What's the next step?

### Part 1. What is BacLink?

Many laboratories around the world already have well-established computer databases that meet the day-to-day needs of clinical reporting, specimen processing, and long-term data storage. Unfortunately, most of these systems have limited capacity for sophisticated data analysis. It is in these areas that WHONET is a valuable supplement to existing systems.

This purpose of the BacLink software is the conversion and standardization of microbiology data from existing systems into WHONET. You can convert data on a weekly, monthly, or *ad hoc* basis, or in a number of institutions, it has also been possible to automate and schedule the entire process. Both WHONET and BacLink are available free-of-charge from the WHO Collaborating Centre for Surveillance of Antimicrobial Resistance website: <https://whonet.org>.

By converting data to WHONET, laboratories have the benefits of: 1. flexible data analysis capabilities; and 2. the ability to share data with other laboratories, for example in a national surveillance network.

### Part 2. What systems are BacLink compatible with BacLink?

BacLink is compatible both with “User-defined” data formats as well as “Proprietary” or “Fixed” data formats. More specifically, BacLink can convert data from the following systems:

*Standard desktop softwares and text files:* BacLink can directly import data files with the following formats: Microsoft Access, dBASE, and EpiInfo. In addition, BacLink has a flexible, configurable interface for the import of simple text files. So most systems capable of creating text files (such as Excel and most laboratory information systems) should be able to create files that can be converted with BacLink.

*Laboratory organism identification and susceptibility test instruments:* BacLink is compatible with the following commercial systems.

- MIC systems: ATB, MiniAPI, Microscan, Pasco, Sceptor, Sensititre, Vitek, Wider
- Disk diffusion readers: Aura, Biomic, Osiris, SirScan, Videobac, Wider

In most cases, BacLink cannot access data from the internal, proprietary databases of these instruments since these are protected by the vendor. Fortunately, most systems have an “export”, “report”, or “interface” capability which can be used for the transfer of data to text files which BacLink can use to create WHONET files.

*Laboratory information systems:* We have developed specific guidelines for the export and conversion of data from the following commercial information systems.

- Meditech Magic
- Cerner Classic

It is also possible to convert data from the following systems, but we have not developed formal documentation describing the process. For further details, please contact us directly.

- ADBakt (Sweden, Denmark)
- MADS (Denmark)
- Oman Health Information System (Oman)
- WinPath (Malaysia)

*Other standard formats:* BacLink can understand the following standard data formats.

- EARSS (European Antimicrobial Resistance Surveillance System)
- JIAQA (Japan-International Association for Quality Assurance)
- NORM (Norwegian Resistance Monitoring)

If your system does not appear on these lists, you can still use BacLink if your system can create simple text files. Guidance on how to do this is provided in the document “BacLink and Laboratory information systems”

### **Part 3. How does BacLink work?**

BacLink allows you to take data from a number of different sources and create new data files with the standard WHONET file structure. Detailed instructions for specific systems are provided in other tutorials or in the BacLink manual, but for each the overall process is the same:

#### *Step 1. Create a file compatible with BacLink*

If your data file is already compatible with BacLink, for example with simple text files, Access, and a few other formats, there is nothing that you need to do in this step – the data file that you have is already compatible with BacLink.

For most laboratory instruments and information systems, you will first need to export data from your system into a format compatible with BacLink, most frequently a delimited text file. The accompany tutorials and BacLink manual provide instructions on how you can accomplish this.

### *Step 2. Configure the conversion*

You will need to tell BacLink what kind of file you want to import and details about the file: what is the file format (text, Access, Vitek, Cerner, *etc.*), what susceptibility test methods are included, how the data fields are organized, date formats, *etc.*

For propriety data structures, configuration is very easy since BacLink is already programmed with all of the necessary details about the file structure. For generic structures, there are a few additional screens where you provide details about the data file contents and organization. If you have multiple files with the same data format, configuration only needs to be done once.

### *Step 3. Running the conversion*

After configuring the conversion, you are ready to convert your files. BacLink will show you the first three isolates on the screen so that you can check the accuracy of the conversion, and BacLink will also notify you of any problems or unrecognized codes that it encounters. The file created by the BacLink conversion is a valid WHONET data file that you can subsequently analyze with WHONET.

At the present time, most laboratories run BacLink interactively, for example once a week, month or quarter. For a number of systems, it is also possible to schedule BacLink, for example to convert data automatically on a daily basis.

## **Part 4. What's the next step?**

The next steps depend on the type of system that you have.

*Standard desktop softwares:* If you have data in Microsoft Access, Excel, EpiInfo or dBASE, or other system that can create simple text files, proceed with the tutorial "BacLink and Excel, text files, and other desktop applications".

*Laboratory instruments:* If you want to transfer data from your laboratory instrument, consult the instructions provided in the main BacLink manual or specific guideline developed for that instrument.

*Laboratory information systems:* If you have a Meditech Magic or Cerner Classic system, continue with the detailed instructions provided with the accompanying documentation. For ADBakt, MADS, the Oman Hospital Information System, and WinPath, contact us for further details. For any other system, then you should proceed with the tutorial "BacLink and Laboratory information systems".

Our group is currently working on the development of interface options for Meditech Client/Server, Cerner Millennium, and Mysis. If you would like to assist in the development or testing of interfaces for these systems or any other system, please contact John Stelling at [jstelling@rics.bwh.harvard.edu](mailto:jstelling@rics.bwh.harvard.edu).