





Dr.Sina Mobasherizadeh
PhD. Bacteriology



WHONET 5

WHO Collaborating Centre for
Surveillance of Antimicrobial Resistance
Boston, Massachusetts

دکتر سینا مباحثری زاده
دکتری تخصصی باکتری شناسی

مدیر امور آزمایشگاه های معاونت درمان دانشگاه علوم پزشکی اصفهان



WHONET چیست؟

- **هونت (WHONET)** یک **نرم افزار رایگان** است که با همکاری سازمان جهانی بهداشت به منظور مراقبت از مقاومت آنتی بیوتیکی برای نظارت از بیماری های عفونی و مقاومت آنتی بیوتیکی بر پایه آزمایشگاه درست شده است.

- **دو هدف اصلی این نرم افزار شامل:**

- الف. ارتقاء کاربرد های منطقه ای از داده های آزمایشگاهی
 - ب. توسعه همکاری های ملی و بین المللی، با تبادل اطلاعات
- هونت می تواند به طور منفرد در آزمایشگاه بکار گرفته شود، یا اینکه قسمتی از شبکه ملی یا بین المللی مراقبت باشد.



- در حال حاضر نرم افزار به **۱۷ زبان دنیا** و بیش از **۸۰ کشور** مورد استفاده قرار گرفته و اطلاعات بیش از ۱۰۰۰ آزمایشگاه کلینیکال، بهداشت عمومی، دامپزشکی و آزمایشگاه های غذا را مدیریت می کند.

- **ابزار تحلیلی WHONET موارد زیر را تسهیل می کند:**

- شناخت اپیدمیولوژی محلی از جمعیت های میکروبی
 - انتخاب عوامل ضد میکروبی
 - تشخیص اپیدمی های بیمارستانی و جامعه
 - تشخیص مشکلات تضمین کیفیت در آزمایشات
- در حال حاضر WHONET توانایی مدیریت نتایج آزمایشات باکتری، قارچ و انگل ها را دارد. اما آزمایشات ویروس شناسی را راه اندازی نکرده است که برنامه ریزی آن برای سال های آینده انجام شده است.



WHONET چه کاری را می تواند انجام دهد؟

WHONET از سه قسمت اصلی تشکیل شده است

- فایل آزمایشگاه
- ورود اطلاعات و گزارش بالینی
- تحلیل اطلاعات

Origin Human

Origin

Identification number	<input type="text"/>	Age category	<input type="text"/>
Last name	<input type="text"/>	Nosocomial infection	<input type="text"/>
First name	<input type="text"/>	Surgical site infection	<input type="text"/>
Sex	<input type="text"/>	Urinary tract infection	<input type="text"/>
Age	<input type="text"/>	Bacteremia	<input type="text"/>

Location

Location	<input type="text"/>	Department	<input type="text"/>
Institution	<input type="text"/>	Location type	<input type="text"/>

Specimen

Specimen number	<input type="text"/>	Specimen type	<input type="text"/>
Specimen date	<input type="text"/>		

Microbiology

Organism	<input type="text"/>
Serotype	<input type="text"/>
Beta-lactamase	<input type="text"/>
ESBL	<input type="text"/>
Carbapenemase	<input type="text"/>
MRSA screening test	<input type="text"/>
Inducible clindamycin	<input type="text"/>
Urine colony count	<input type="text"/>
Antibiotic panel	All antibiotics

☒ Disk
 ☐ MIC
 ☐ Etest

AMK	<input type="text"/>	AMX	<input type="text"/>	AMC	<input type="text"/>	AMP	<input type="text"/>
SAM	<input type="text"/>	AZM	<input type="text"/>	CZO	<input type="text"/>	FEP	<input type="text"/>
CTX	<input type="text"/>	CTC	<input type="text"/>	FOX	<input type="text"/>	CAZ	<input type="text"/>
CCV	<input type="text"/>	CZX	<input type="text"/>	CRO	<input type="text"/>	CXA	<input type="text"/>
CEP	6	CHL	<input type="text"/>	CIP	<input type="text"/>	CLI	<input type="text"/>
COL	<input type="text"/>	DOX	<input type="text"/>	ERY	<input type="text"/>	GEN	<input type="text"/>
CEU	<input type="text"/>	IPM	<input type="text"/>	LMZ	<input type="text"/>	LMZ	<input type="text"/>

Save isolate

View database

BacTrack summary

Print

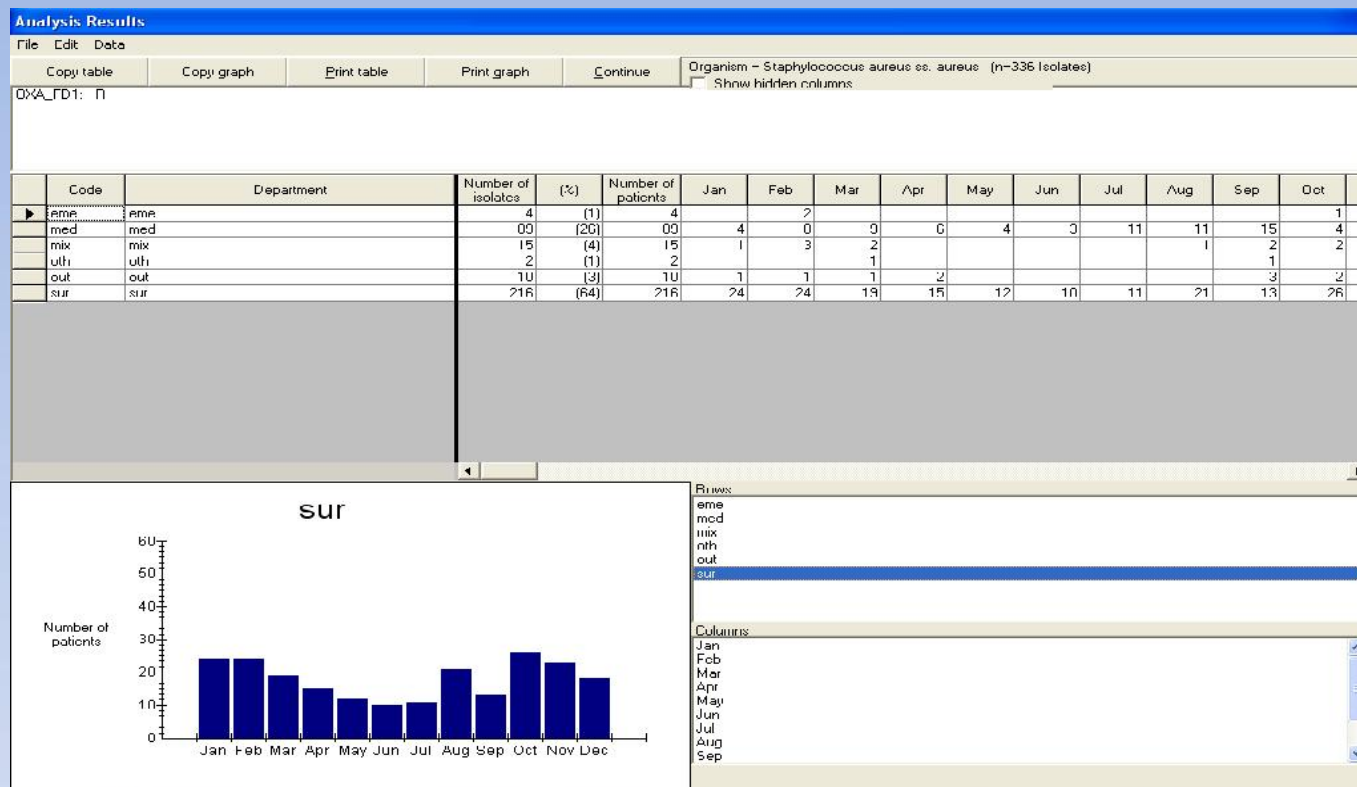
Exit

Caliper Clear

Identification number

PATIENT_ID

Maximum: 12 characters



توزیع ایزوله های MRSA براساس بخش. تنها شامل ایزوله اول هر بیمار می باشد. این نمودار بخش جراحی را نمایش می دهد.



Analysis Results

File Edit Data

Copy tableCopy graphPrint tablePrint graphContinue

Organism = All organisms (n=1219 isolates)

Show hidden columns

Specimen type: M

Identification number	Specimen type	Organism	Organism type	AMK	AMC	AMP	AZL	ATM	MAN	OMK	OPF	CDK	CTT	FSK	OPD	OPS	GAZ
9609274202	M	pen	-	25		07	29	25				23	19				25
9609200021	M	pen	-	30		07	26	30				23	19				27
1570022905	M	pen	-		30	30											
0403211953	M	pen	-		26	26											
4663070521	M	pen	-		36	36						19	26	26			
4917579739	M	pen	-		5	5						5	5	5			
0529162712	M	pen	-		26	26						20	5	34			
5041423061	M	pen	-	5	25	25	5	5	5	5	5	5	5	5	5	5	5
0243700175	M	pen	-	24	23	26	25	30	26	31	26	26	27	23	27		29
0608939505	M	pen	-	24	21	26	27	26	31	34	27	32	32	24			27
2446275408	M	pen	-	25	25	26	25	25	29	25	26	34	26	22	21		32
7232677032	M	pen	-	25	26	26	26	25	28	32	27	29	29	22	26		26
0626439959	M	pen	-	26	30	30	33	25	25	25	30	25	34	20			26
1623614301	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2997963014	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6377446254	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
3010379905	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5324322633	M	pen	-	26	36	36						26	31	26			27
7726959634	M	pen	-	26		26	26	26	31								24
0009622040	M	pen	-	33	07	07	14	07	14	12	07	09	07				25
4931879639	M	pen	-	29	29	32	36					32					24
002509627	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
020607543	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
0396463406	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5
0403963691	M	pen	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Analysis Results

File Edit Data

Copy tableCopy graphPrint tablePrint graphContinue

Organism = All organisms (n=1219 isolates)

Show hidden columns

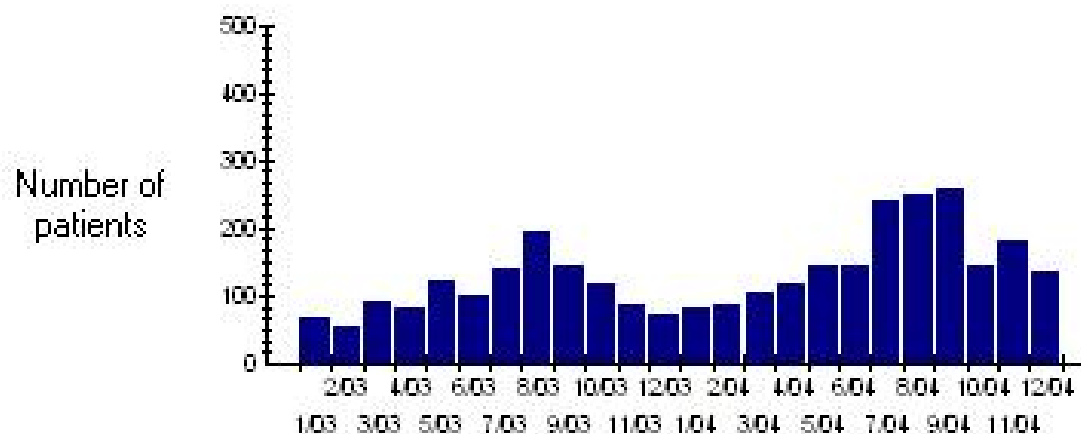
Specimen type: M

Identification number	Alert	Priority	Organism	Isolate alert	Quality control	Important species	Imported
9609274202							
9609200021							
1570022905							
0403211953							
4663070521		High priority	Anaerobes	Non-susceptible to metronidazole			
4917579739		High priority	Enterobacteriaceae	Non-susceptible to carbapenems			
0529162712							
5041423061							
0243700175							
0608939505							
2446275408		Medium priority	All organisms	Discordant penicillin and beta-lactam-inhibitor results			
7232677032		High priority	Anaerobes	Non-susceptible to metronidazole			
0626439959		High priority	Anaerobes	Non-susceptible to metronidazole			
1623614301							
2997963014							
6377446254							
3010379905		High priority	Enterobacteriaceae	Non-susceptible to carbapenems			
5324322633		Medium priority	Salmonella sp.	Important species			
7726959634		Medium priority	Salmonella sp.	Important species			
0009622040		Medium priority	All organisms, Salmonella sp.	Discordant penicillin and beta-lactam-inhibitor results, In			
4931879639							
002509627		High priority	Staphylococcus sp., Staphylococcus sp.	Non-susceptible to vancomycin, teicoplanin, linezolid			
020607543							
0396463406		Medium priority	Staphylococcus aureus	MRSA - Methicillin-resistant S. aureus			
0403963691		Medium priority	Staphylococcus aureus	MRSA - Methicillin-resistant S. aureus			
		Medium priority	Staphylococcus aureus	MRSA - Methicillin-resistant S. aureus			
		High priority	Enterobacteriaceae	Non-susceptible to carbapenems			

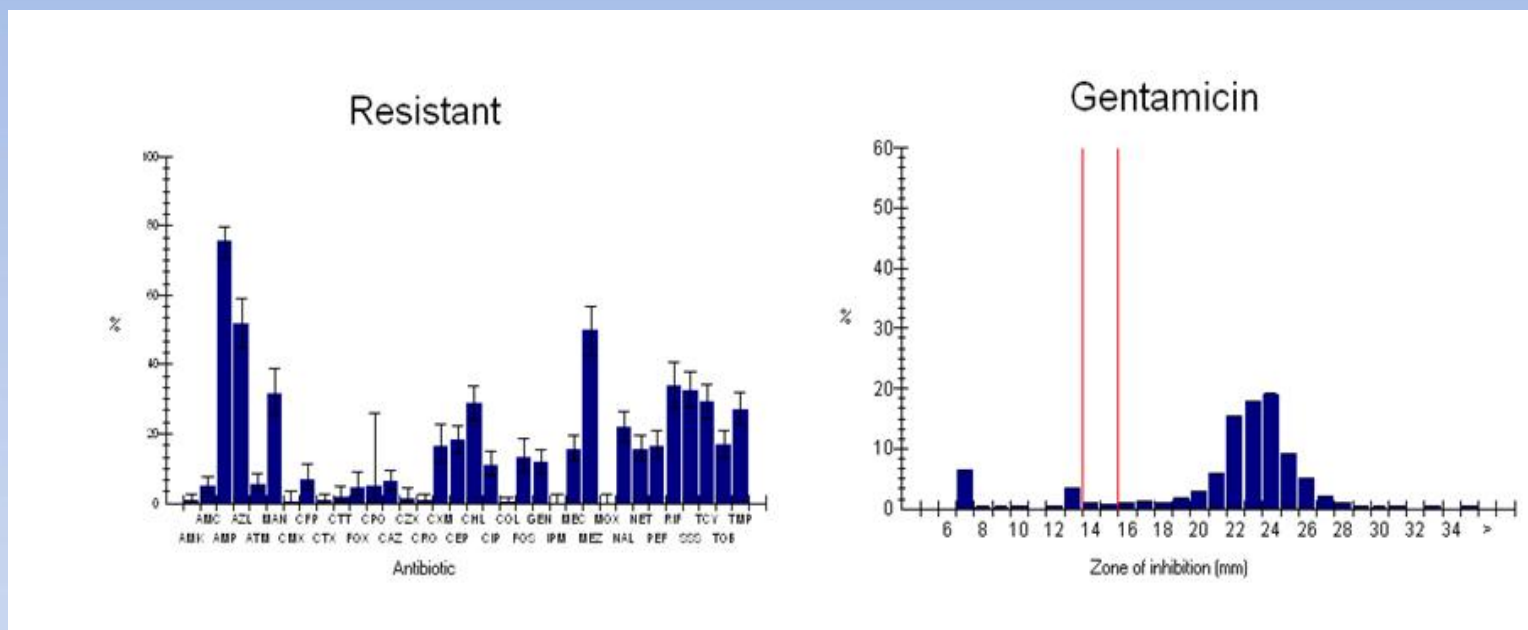
قسمتی از ایزوله های کشت مثبت خون. قسمت سمت چپ لیست حاوی اطلاعات دموگرافیک بیماران به همراه نتایج آنتی بیوتیکی. قسمت سمت راست شامل هشدار های میکروبیولوژیک در خصوص مقاومت آنتی بیوتیکی و خطاهای یافت شده یا قابل امکان آزمایشگاهی



Acinetobacter baumannii



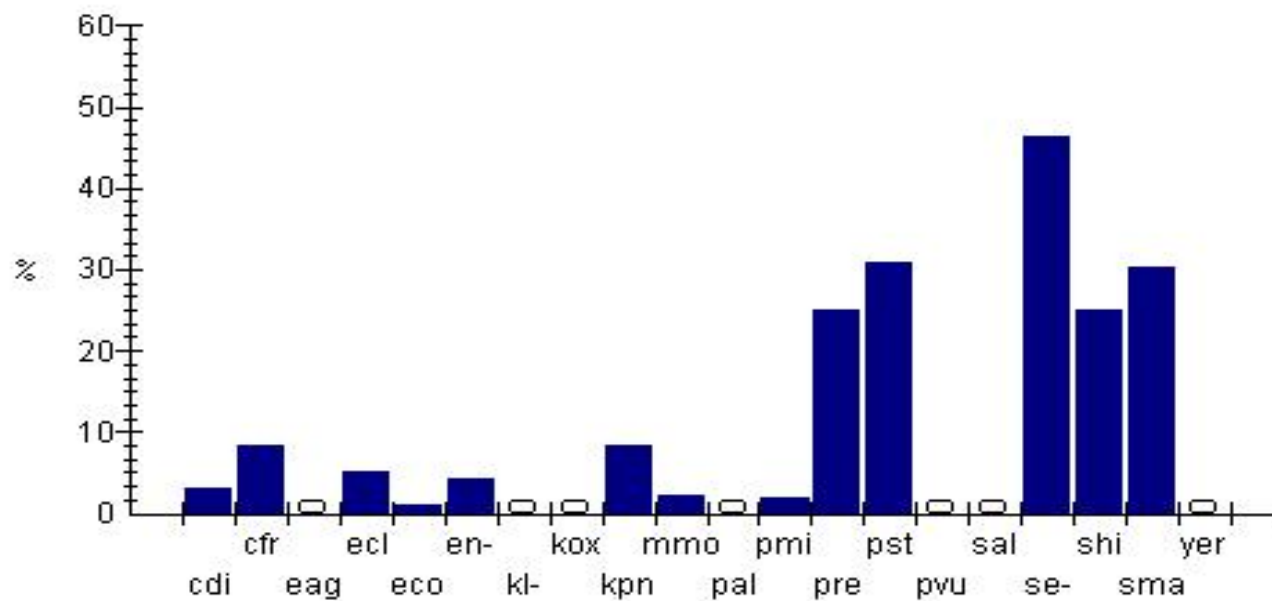
توزیع ماهیانه بیماران مبتلا به اسینتوباکتر بومانی در یک دوره دو ساله



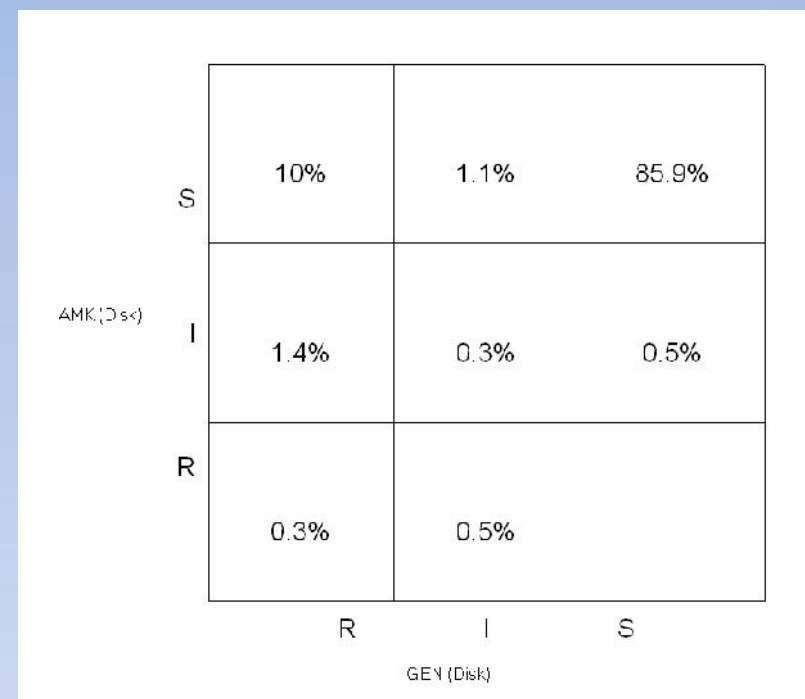
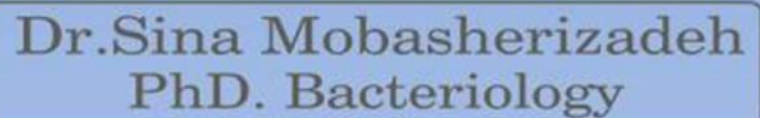
درصد مقاومت، حساسیت بینایی و حساسیت برای کلبسیلا پنومونیه. در سمت چپ درصد مقاومت را برای تمام عوامل ضد میکروبی نشان می دهد. که شامل ۹۵٪ محدوده اطمینان می باشد. نمودار سمت راست توزیع هاله عدم رشد را برای دیسک جنتامایسین در روش انتشار از دیسک نشان می دهد.



Ciprofloxacin



درصد مقاومت به سیپروفلوکساسین برای اعضای خانواده انتروباکتریاسه نشان می دهد.



مقایسه نمودار پراکندگی نتایج جنتامایسین و آمیکاسین برای کلبسیلا پنومونیه. عکس سمت چپ مقایسه نتایج عدم رشد را به روش انتشار از دیسک نشان می دهد. عکس سمت راست مقایسه تفسیر نتایج مقاومت، حساسیت بینابینی، و حساس را نشان می دهد.



Analysis Results							
File Edit Data							
Copy table Print table Print table Print table Continue Organism = All organisms (n=427 isolates)							
Specimen type: All							
Number	Organism	Alert	Number of isolates	Priority	Quality control	Important species	Important resistance
9	All organisms	Discordant penicillin and beta-lactam-inhibitor result	57	Medium priority	<input checked="" type="checkbox"/>		
10	All organisms	Discordant quinolone and fluoroquinolone results	1	Medium priority	<input checked="" type="checkbox"/>		
12	Enterobacteriaceae	Non-susceptible to meropenem	10	High priority	<input checked="" type="checkbox"/>		
27	Enterobacteriaceae	Discordant aminoglycoside results	4	Medium priority	<input checked="" type="checkbox"/>		
26	Enterobacteriaceae	Discordant first, second, and third-generation cephalosporins	4	Medium priority	<input checked="" type="checkbox"/>		
30	Enterobacteriaceae	Probable ESBL-producing Enterobacteriaceae	10	Medium priority	<input checked="" type="checkbox"/>		
31	Enterobacteriaceae	Non-susceptible to amikacin	5	Medium priority	<input checked="" type="checkbox"/>		
32	Enterobacteriaceae	Non-susceptible to carbapenems	3	High priority	<input checked="" type="checkbox"/>		
33	Enterobacteriaceae	Non-susceptible to fluoroquinolones	20	Medium priority	<input checked="" type="checkbox"/>		
35	Enterococcus faecalis	Non-susceptible to penicillins	31	Medium priority	<input checked="" type="checkbox"/>		
37	Enterococcus sp.	VRE - Vancocin-resistant Enterococcus	15	Medium priority	<input checked="" type="checkbox"/>		
61	Lactia monocytogenes	Important species	3	High priority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
90	Salmonella sp.	Important species	3	Medium priority	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
104	Shigella sp.	Non-susceptible to colistin, polymyxin	1	Medium priority	<input checked="" type="checkbox"/>		
107	Staphylococcus aureus	MSSA - Methicillin-resistant S. aureus	32	Medium priority	<input checked="" type="checkbox"/>		
113	Staphylococcus sp.	Non-susceptible to vancomycin, teicoplanin by disk	210	Medium priority	<input checked="" type="checkbox"/>		
117	Staphylococcus sp.	Non-susceptible to vancomycin, teicoplanin	210	High priority	<input checked="" type="checkbox"/>		
123	Streptococcus pneumoniae	Beta-lactams limited by disk diffusion (except for pen)	16	Medium priority	<input checked="" type="checkbox"/>		
124	Streptococcus pneumoniae	Non-susceptible to fluoroquinolones	13	High priority	<input checked="" type="checkbox"/>		
126	Streptococcus pneumoniae	S. pneumoniae Non-susceptible to penicillin, third-gen	2	Medium priority	<input checked="" type="checkbox"/>		

خلاصه ای از هشدار های میکروبیولوژیک مشاهده شده در اطلاعات تحلیل شده. دسته بندی هشدار ها شامل کنترل کیفی، گونه مقاوم، مقاومت با اهمیت، ارسال به آزمایشگاه مرجع و هشدار های کنترل عفونت.



BacLink چیست؟

- تعداد زیادی از آزمایشگاه ها در دنیا، از سیستم های کامپوتری برای مدیریت اطلاعات میکروبیولوژیک برخوردارند.
- یکی از روش های دریافت اطلاعات از طریق سیستم کامپیوتر شما به WHONET ورود اطلاعات به صورت دستی داخل نرم افزار WHONET می باشد. اما این می تواند زمان مفید زیادی را از پرسنل هدر دهد. و تایپ اشتباه هنگام ورود مجدد اطلاعات می تواند باعث خطا شود.
- برای اجتناب از ورود مجدد نتایج به داخل WHONET ، نرم افزار BacLink طراحی شده است.



- پیشنهاد **baclink** تبادل اطلاعات از کامپیوتر شما به داخل **WHONET** را تسهیل می کند. شما این روند را می توانید به طور دلخواه هفتگی ، ماهیانه یا ... فعال کنید.در تعدادی از مراکز این کار به طور اتوماتیک و برنامه با فرآیند کامل انجام می پذیرد.
- نرم افزار **baclink** به طور رایگان از بسته نرم افزار **WHONET** سازمان جهانی بهداشت قابل دستیابی است.
- با استفاده از **baclink** شما می توانید از ورود دستی نتایج به داخل **WHONET** خودداری کنید. یکی از فواید دیگر این است که در همکاری های بین چند مرکز، که دارای تعدادی منابع اطلاعاتی ناقص هستند استاندارد کردن داده ها از طریق **baclink** به داخل یک ساختار مشترک که بتواند توسط **WHONET** تحلیل شود امکان پذیر است.
- برای یادگیری بیشتر در باره **baclink** و کاربرد آن به قسمت **baclink** مراجعه کنید.



WHONET

Supporting global surveillance of
infectious diseases



<http://www.whonet.org/software.html>

WHONET 2019



This is our NEW version of WHONET. It is a modernized version of WHONET 5.6. In addition to the standard WHONET 5.6 features, this version supports 26 languages and includes new features for exporting to the **WHO GLASS** data structure. Further [information on GLASS](#) can be found using this link.

WHONET 2019 is a desktop application written in Visual Studio 2017 with support for CLSI, M100, M45, M60, and M61 and EUCAST 2019 breakpoints. VET03/04, VET06, and VET08 will be included with our next update release.

Download

[WHONET 2019](#)

Online installation (20.8 MB)

Build date: 2019-04-15

Version: 19.4.15

WHONET WEB



This version of WHONET is still in development. In addition to the standard features of the desktop softwares, For U.S. facilities, WHONET WEB also supports monthly reporting to the CDC's NHSN project MDRO-CDI reporting module.

WHONET WEB is a web application written in Visual Studio 2017, and can be installed on a facility's intranet network or the public internet on a server of your choice. The current demonstration version is available in English only, but multilingual support will be added.

Demo

<https://whonetdev.net>

Username: demo

Password: WHONETdemo

Build date: 2018-02-04

WHONET 5.6



This is the version of WHONET used in over 120 countries and 2,300 laboratories around the world. WHONET 5.6 is a desktop application written in Visual Basic 6 with support for 24 languages and 2019 CLSI and EUCAST breakpoints.

Download

[WHONET 5.6](#)

Online installation (18.5 MB)

Build date: 2019-02-19

[WHONET 5.6](#)

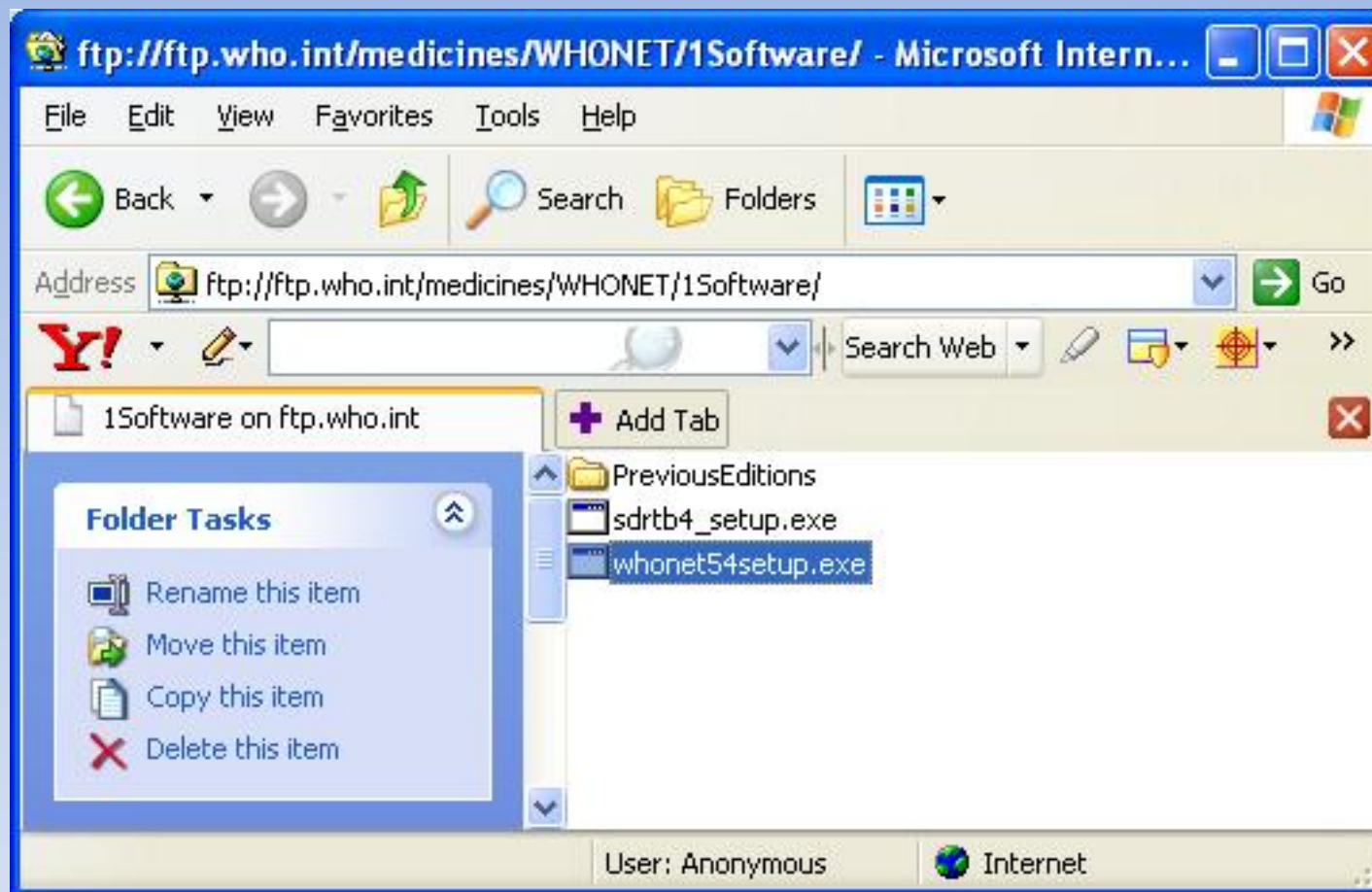
Offline installation (62.5 MB)

Build date: 2019-02-19

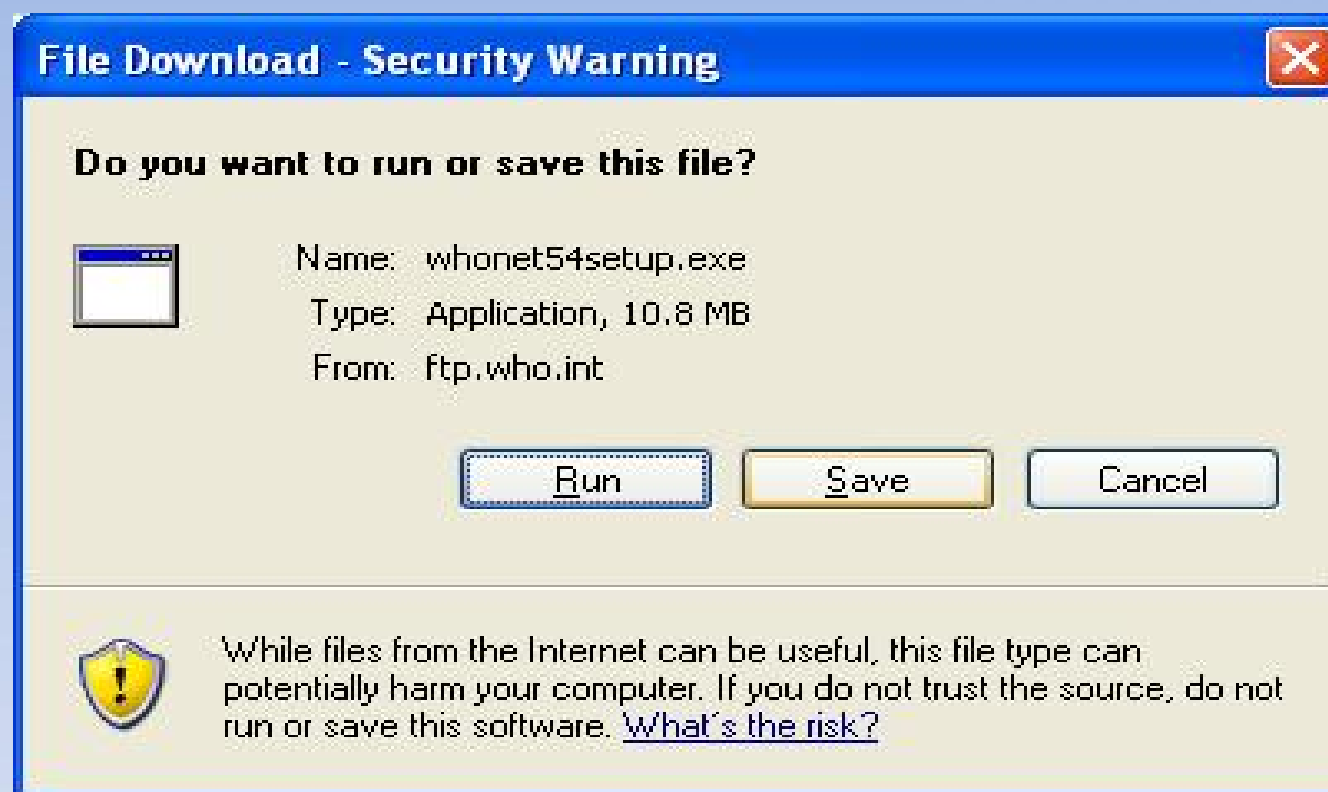
[WHONET 5.6](#)

Backup installation (32.8 MB)

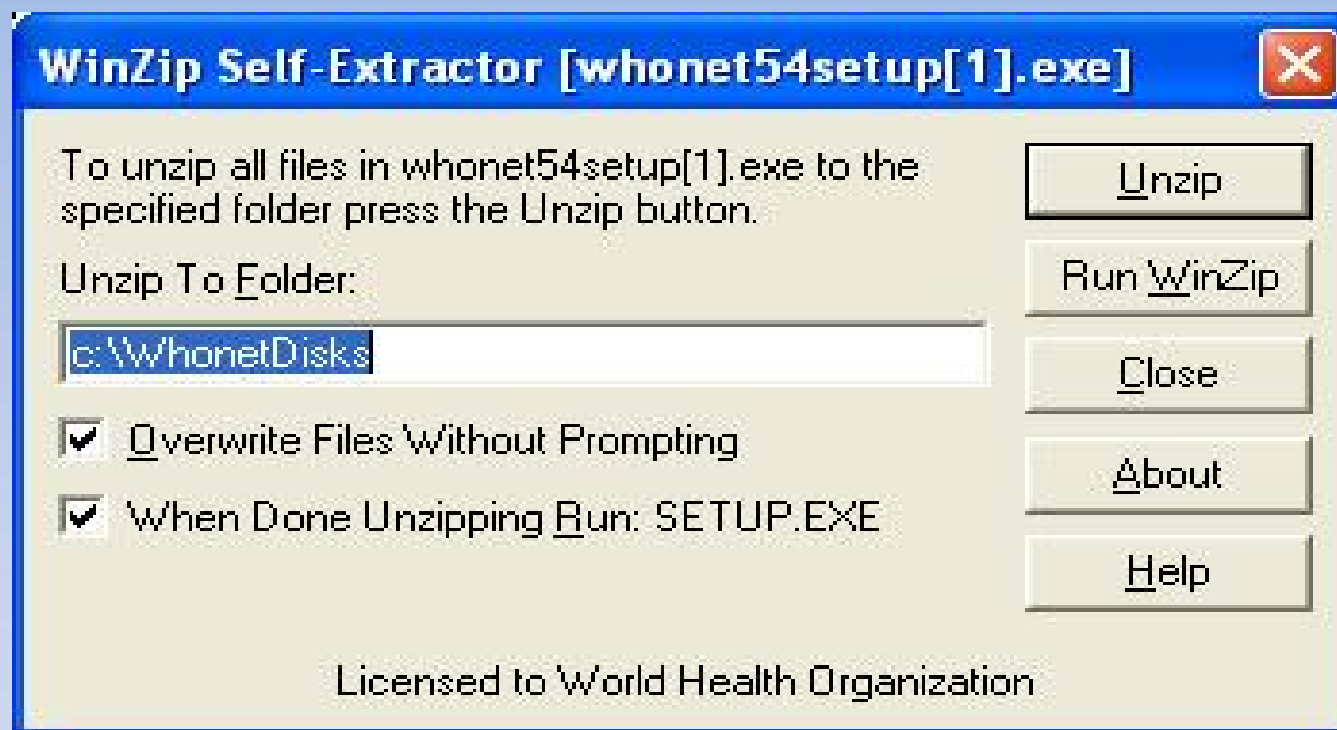
Backup version: 2016-05



بر روی فایل **WHONET56setup.exe** دوبار کلیک کنید.



شما می توانید برنامه در کامپیوتر خود با زدن کلید **Save** ذخیره کنید یا اینکه کلید **Run** را انتخاب کرده تا برنامه به طور خودکار نصب شود.



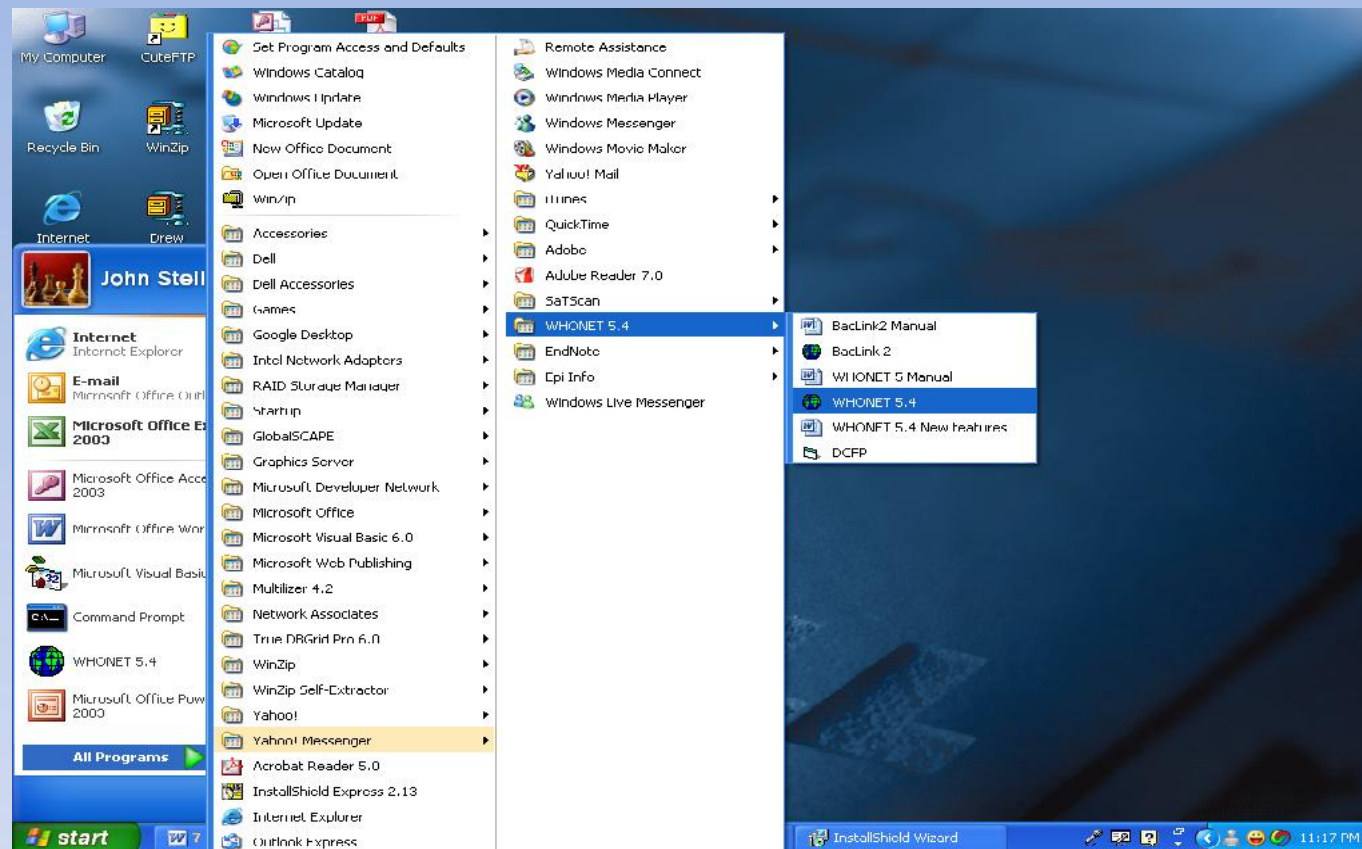
بعد از دانلود WHONET56setup.exe برنامه "WinZip Self-Extractor" اجرا می شود. بر روی "Unzip" کلیک کرده تا WHONET56setup.exe باز شود.



بر روی **“OK”** کلیک کنید. بعد از کلیک بر روی **“OK”** برنامه نصب WHONET آغاز می شود.
دستورات زیر برای نصب برنامه و اجرا ادامه دهید.



بعد از اینکه برنامه نصب شروع شد. در ادامه دستورات را بر روی صفحه اسکرین انجام دهید.
در اغلب موارد به سادگی بر روی "Next", "Next", "Next", "Next" کلیک کرده. و سپس "Finish"
را انتخاب کنید. در برخی از کامپیوتر ها از شما سوال خواهد شد برای تکمیل مراحل نصب کامپیوتر را ری بوت کنید.



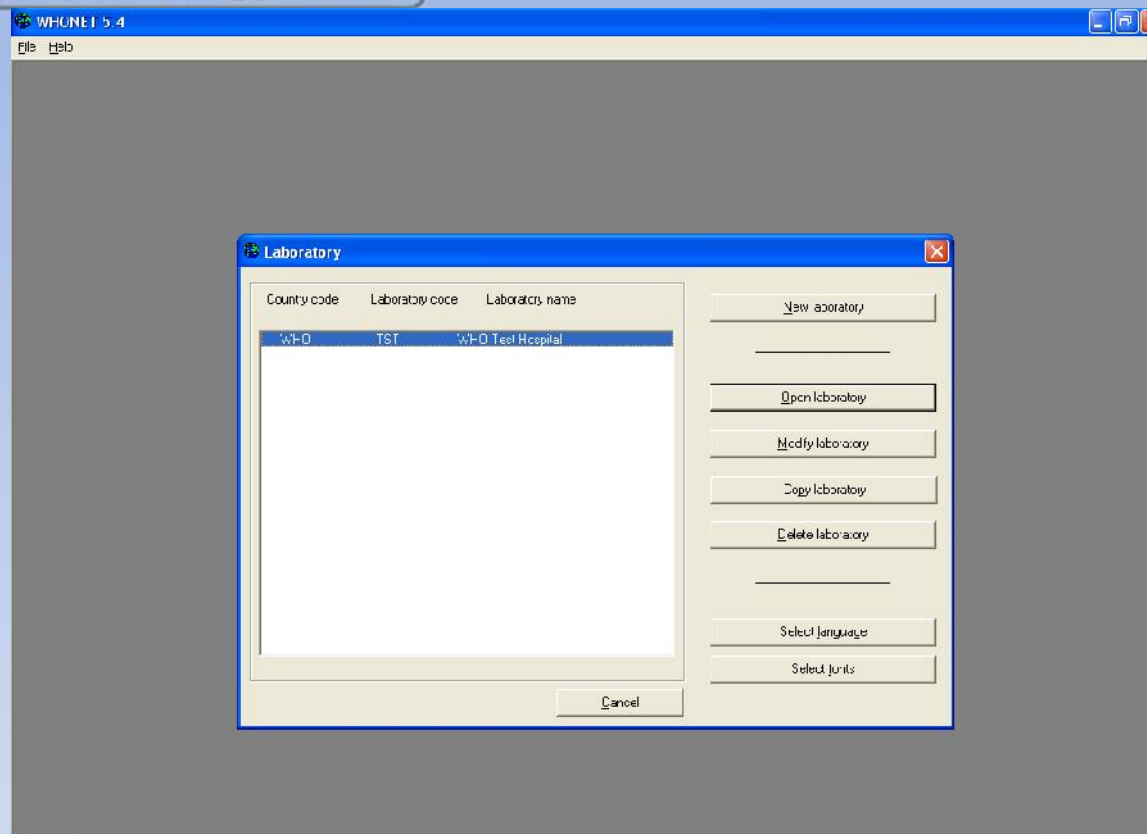
بعد از اینکه شما نصب WHONET را تمام کردید. اکنون هایی برای WHONET و BacLink را بروی دسک تاپ کامپیوتر خود مشاهده می کنید. همچنین دارای لینک هایی از نرم افزار و مستندات (خود آموز و دستورالعمل ها) از طریق ویندوز "Start" و تحت منو "Programs"، "WHONET 5.6" خواهید داشت.



اجرا WHONET



بر روی آیکون WHONET دو بار کلیک کنید تا نرم افزار شروع به کار کند.
شما می توانید ادامه کار را از اسکرین ببینید



- بر روی این اسکرین شما یک لیست از پیکربندی های آزمایشگاه حاضر را بر روی کامپیوتر خود می بینید.
- در آغاز شما تنها یک نمونه آزمایشگاهی به نام "WHO Test Hospital" دارید.
- بر روی این صفحه شما امکان انتخاب زبان مورد استفاده توسط WHONET را دارید.
- پیش فرض WHONET با زبان انگلیسی آغاز می شود. اگر شما می خواهید این را تغییر دهید بر روی "Select language" کلیک کرده زبان مورد نظر خود را انتخاب کنید و OK را کلیک کنید.



The screenshot shows the 'Laboratory' software interface. At the top, there is a header bar with a logo and the text 'Dr.Sina Mobasherizadeh PhD. Bacteriology'. Below this, there is a 'Laboratory' window with fields for 'Country code', 'Laboratory code', and 'Laboratory name', and a 'New laboratory' button. Overlaid on this is a 'Select language' dialog box. This dialog box contains a table with columns for 'Messages', a language dropdown menu, and a 'Translate' button. The rows are for 'Messages', 'Specimen types', 'Antibiotics', 'Field descriptions', 'Countries', and 'Organisms'. All dropdown menus are currently set to 'English'. At the bottom of the dialog box are 'OK' and 'Cancel' buttons. Below the dialog box, there is a 'Browse' button and a text field showing 'C:\WHONET5\'. To the right of this are 'Select fonts' and 'Cancel' buttons.

Messages	Language	Translate
Messages	English	Translate
Specimen types	English	Translate
Antibiotics	English	Translate
Field descriptions	English	Translate
Countries	English	Translate
Organisms	English	Translate

- نرم افزار به زبان انتخاب شده تغییر می کند. در حال حاضر زبان های قابل دسترس عبارتند از: بلغاری، چینی (آسان شده) انگلیسی، استونیایی، فرانسوی، آلمانی، یونانی، اندونزیایی، ایتالیایی، ژاپنی، نروژی (Bokmål) ، نروژی (Nynorsk)، لهستانی، پرتغالی، روسی، اسپانیایی و تایلندی می باشند.
- هر زبانی را که انتخاب کنید پس از ز کلیک بر روی "OK" تمام منو WHONET و پیام هایش به زبان مورد نظر تغییر می کند.



ایجاد فایل آزمایشگاه

- توصیف آزمایشگاه خود
- انتخاب آنتی بیوتیک ها
- انتخاب پانل آنتی بیوتیکی
- انتخاب بخش های بستری و سرپایی
- ایجاد فیلد اطلاعات
- انتخاب هشدار های میکروبیولوژیک
- اتمام فایل آزمایشگاه



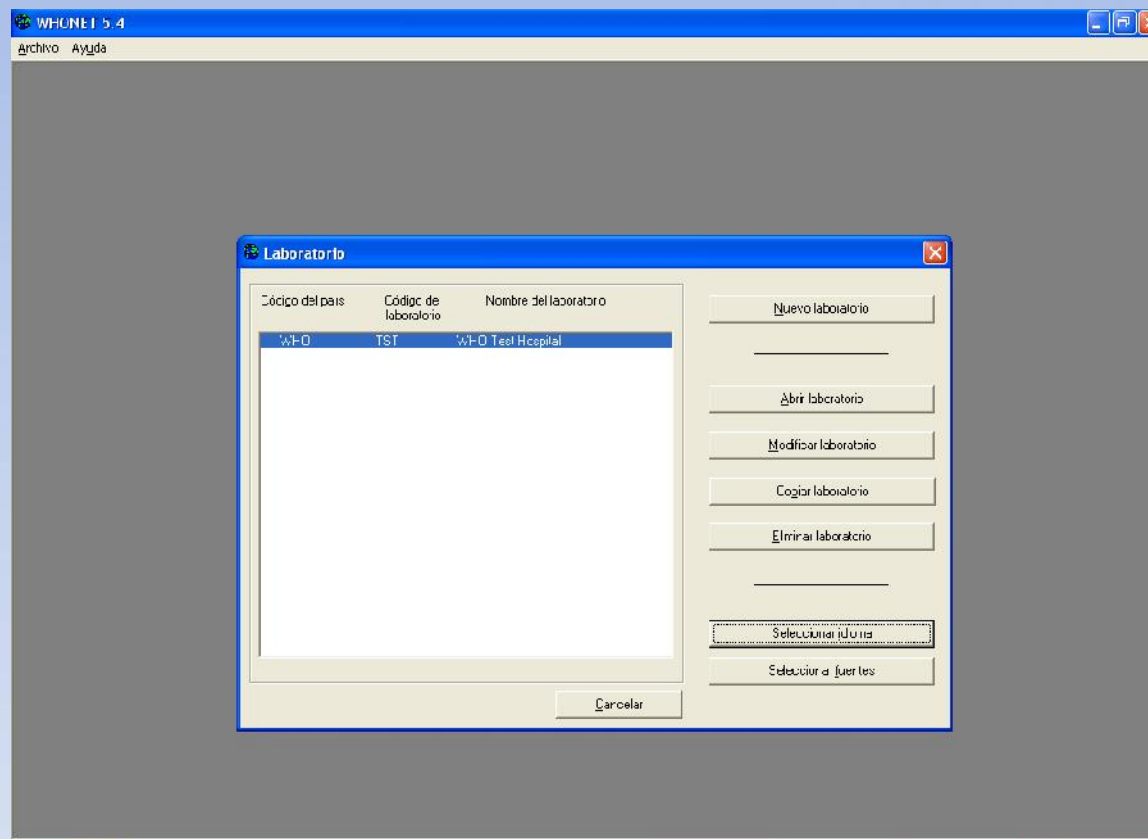
Dr.Sina Mobasherizadeh

PhD. Bacteriology





Describing your laboratory



- بر روی آیکون هونت بر روی دسکتاپ خود دوبار کلیک کنید و سپس گزینه **“New laboratory”** انتخاب کنید.



Laboratory configuration

Country:

Laboratory name:

Laboratory code: Configuration file:
Maximum 3 letters

☒ Human
☐ Human, Animal, Food, Environment

Required: Enter the antibiotics tested in your laboratory.

Optional: Enter your patient locations, departments, and institutions.

Optional: Select the fields to include in your data files.

Optional: Define alert rules

D:\WHONET5\



Laboratory configuration

Country:

Laboratory name:

Laboratory code:

Maximum 3 letters

☐ Human, Animal, Food, Environment

Required: Enter the antibiotics tested in your laboratory.

Optional: Enter your patient locations, departments, and institutions.

Optional: Select the fields to include in your data files.

Optional: Define alert rules

D:\WHONET5\



Laboratory configuration

Country: Iran, Islamic Republic of IRN

Laboratory name: Isfahan Reference Lab

Laboratory code: IRL Configuration file:

Maximum 3 letters

☒ Human
☐ Human, Animal, Food, Environment

Antibiotics Required: Enter the antibiotics tested in your laboratory.

Locations Optional: Enter your patient locations, departments, and institutions.

Data fields Optional: Select the fields to include in your data files.

Alerts Optional: Define alert rules

Save **Cancel**

Browse C:\WHONET5\ **Select fonts**

Cancel



Selecting your antibiotics

Laboratory configuration

Country: Iran, Islamic Republic of IRN

Laboratory name: Isfahan Reference Lab

Laboratory code: IRL Configuration file: labirn.rli
Maximum 3 letters

☒ Human
☐ Human, Animal, Food, Environment

Antibiotics Required: Enter the antibiotics tested in your laboratory.

Locations Optional: Enter your patient locations, departments, and institutions.

Data fields Optional: Select the fields to include in your data files.

Alerts Optional: Define alert rules

Save **Cancel**



Antibiotic Configuration

1. Choose the antibiotics which you test in your laboratory.
Indicate the guidelines, the test method, and the antibiotic name.
2. Print and review the antibiotic breakpoints.
3. Define antibiotic panels (for data entry) and antibiotic profiles (for data analysis).

WHONET antibiotic list

Guidelines: CLSI 2016 (United State)

Test method: ☒ Disk ☐ MIC ☐ Etest

(User-defined...)
5-Fluorocytosine (CLSI,NEO-10ug)
5-Fluorocytosine (CLSI,NEO-1ug)
Acetylmidecamycin
Acetylspiramycin
Amikacin (CLSI,EUCAST-30ug)
Amikacin (NEO-40ug)
Amikacin/fosfomycin (CLSI)
Amoxicillin (2ug)
Amoxicillin (CLSI,SFM-25ug)
Amoxicillin (EUCAST-10ug)
Amoxicillin (NEO-30ug)
Amoxicillin/Clavulanic acid (25/2ug)

Search:

Local antibiotic list

Move up Move down Edit

Code	Antibiotic name
AMK_ND30	Amikacin

Number of antibiotics = 1
Amikacin_CLSI_Disk_30ug

Breakpoints Panels Profiles Print OK Cancel

•Reference guidelines

• Test method

•The name of the antibiotic

•The disk potency for disk
diffusion testing

Antibiotic configuration screen



Antibiotic Configuration

1. Choose the antibiotics which you test in your laboratory.
Indicate the guidelines, the test method, and the antibiotic name.
2. Print and review the antibiotic breakpoints.
3. Define antibiotic panels (for data entry) and antibiotic profiles (for data analysis).

WHONET antibiotic list

Guidelines: CLSI 2016 (United States)

Test method: ☒ Disk ☐ MIC ☐ Etest

(User-defined...)

5-Fluorocytosine (CLSI,NEO-10ug)
5-Fluorocytosine (CLSI,NEO-1ug)
Acetylmidecamycin
Acetylsparamycin
Amikacin (CLSI,EUCAST-30ug)
Amikacin (NEO-40ug)
Amikacin/fosfomycin (CLSI)
Amoxicillin (2ug)
Amoxicillin (CLSI,SFM-25ug)
Amoxicillin (EUCAST-10ug)
Amoxicillin (NEO-30ug)
Amoxicillin/Clavulanic acid (25/2ug)

Search

Local antibiotic list

Move up Move down Edit

Code	Antibiotic name
AMK_ND30	Amikacin
AMX_ND25	Amoxicillin
AMC_ND20	Amoxicillin/Clavulanic acid
AMP_ND10	Ampicillin
SAM_ND10	Ampicillin/Sulbactam
AZM_ND15	Azithromycin
CZO_ND30	Cefazolin
FEP_ND30	Cefepime
CTX_ND30	Cefotaxime
CTC_ND30	Cefotaxime/Clavulanic acid
FOX_ND30	Cefoxitin
CAZ_ND30	Ceftazidime

Number of antibiotics = 47

Breakpoints Panels Profiles Print OK



Antibiotic Configuration

1. Choose the antibiotics which you test in your laboratory.
Indicate the guidelines, the test method, and the antibiotic name.
2. Print and review the antibiotic breakpoints.
3. Define antibiotic panels (for data entry) and antibiotic profiles (for data analysis).

WHONET antibiotic list

Guidelines: CLSI 2016 (United State)

Test method: ☐ Disk ☐ MIC ☒ Etest

Trovafloracin (DIN-5ug)
Tulathromycin (CLSI)
Tylosin (NEO-150ug)
Tylvalosin (CLSI)
Ulfloxacin (Prulifloxacin) (5ug)
Vancomycin (CLSI_AFA,SFM-30ug)
Vancomycin (EUCAST,NEO-5ug)
Vancomycin (NEO-70ug)
Vancomycin-Macromethod
Viomycin
Virginiamycin (NEO-30ug)
Virginiamycin (SFM-15ug)
Voriconazole (CLSI-1ug)

Local antibiotic list

Move up Move down Edit

Code	Antibiotic name
RIF_ND5	Rifampin
TEC_ND30	Teicoplanin
TCY_ND30	Tetracycline
SXT_ND1.2	Trimethoprim/Sulfamethoxazole
VAN_ND30	Vancomycin
VAN_NE	Vancomycin
CTX_NE	Cefotaxime
CRO_NE	Ceftriaxone
GRX_ND5	Grepafloxacin
CLR_ND15	Clarithromycin
ETP_ND10	Ertapenem
CXM_ND30	Cefuroxime

Number of antibiotics = 47
Vancomycin_CLSI_Etest

Breakpoints Panels Profiles Print OK



Antibiotic Configuration

1. Choose the antibiotics which you test in your laboratory.
Indicate the guidelines, the test method, and the antibiotic name.
2. Print and review the antibiotic breakpoints.
3. Define antibiotic panels (for data entry) and antibiotic profiles (for data analysis).

WHONET antibiotic list

Guidelines: EUCAST 2016 (Europe)

Test method: ☐ Disk ☐ MIC ☒ Etest

Ticarcillin (CLSI,EUCAST-75ug)
Ticarcillin/Clavulanic acid (CLSI,EUCAST-75/
Tigecycline (CLSI,EUCAST-15ug)
Tilbroquinol
Tildipirosin (CLSI)
Tilmicosin (CLSI-15ug)
Tinidazole (CLSI,NEO-16ug)
Tinidazole (CLSI-4ug)
Tiodonium chloride
Tioxacin
Tizoxanide (CLSI)
Tobramycin (AFA,SRGA-30ug)
Tobramycin (CLSI,EUCAST-10ug)

Local antibiotic list

Move up Move down Edit

Code	Antibiotic name
TEC_ND30	Teicoplanin
TCY_ND30	Tetracycline
SXT_ND1.2	Trimethoprim/Sulfamethoxazole
VAN_ND30	Vancomycin
VAN_NE	Vancomycin
CTX_NE	Cefotaxime
CRO_NE	Ceftriaxone
GRX_ND5	Grepafloxacin
CLR_ND15	Clarithromycin
ETP_ND10	Ertapenem
CXM_ND30	Cefuroxime
TGC_EE	Tigecycline

Number of antibiotics = 48
Tigecycline_EUCST_Etest

Search

Breakpoints Panels Profiles Print OK



Antibiotic panels

Antibiotic Panels (Optional)

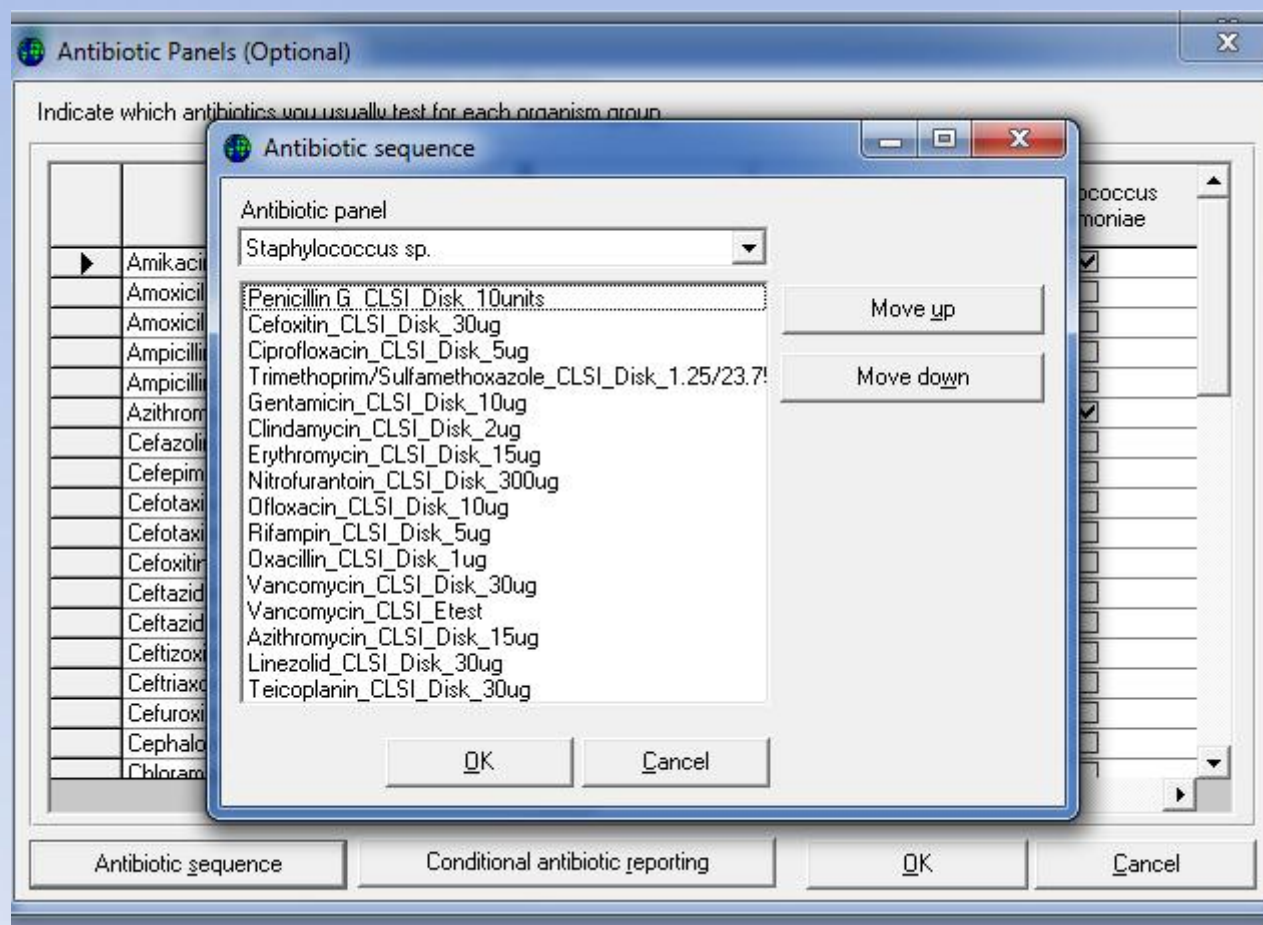
Indicate which antibiotics you usually test for each organism group.

Antibiotic	Staphylococcus sp.	Streptococcus sp.	Streptococcus pneumoniae
Azithromycin_CLSI_Disk_15ug	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Cefazolin_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cefepime_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cefotaxime_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cefotaxime/Clavulanic acid_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cefoxitin_CLSI_Disk_30ug	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceftazidime_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceftazidime/Clavulanic acid_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceftizoxime_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceftriaxone_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cefuroxime axetil_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cephalothin_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloramphenicol_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ciprofloxacin_CLSI_Disk_5ug	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Clindamycin_CLSI_Disk_2ug	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Colistin_CLSI_Disk_10ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doxycycline_CLSI_Disk_30ug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Erythromycin_CLSI_Disk_15ug	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Antibiotic sequence Conditional antibiotic reporting OK Cancel



Antibiotic sequence





Antibiotic Configuration

1. Choose the antibiotics which you test in your laboratory.
Indicate the guidelines, the test method, and the antibiotic name.
2. Print and review the antibiotic breakpoints.
3. Define antibiotic panels (for data entry) and antibiotic profiles (for data analysis).

WHONET antibiotic list

Guidelines: EUCAST 2016 (Europe)

Test method: ☐ Disk ☐ MIC ☒ Etest

Ticarcillin (CLSI,EUCAST-75ug)
Ticarcillin/Clavulanic acid (CLSI,EUCAST-75/
Tigecycline (CLSI,EUCAST-15ug)
Tilbroquinol
Tildipirosin (CLSI)
Tilmicosin (CLSI-15ug)
Tinidazole (CLSI,NEO-16ug)
Tinidazole (CLSI-4ug)
Tiodonium chloride
Tioxacin
Tizoxanide (CLSI)
Tobramycin (AFA,SRGA-30ug)
Tobramycin (CLSI,EUCAST-10ug)

Local antibiotic list

Move up Move down Edit

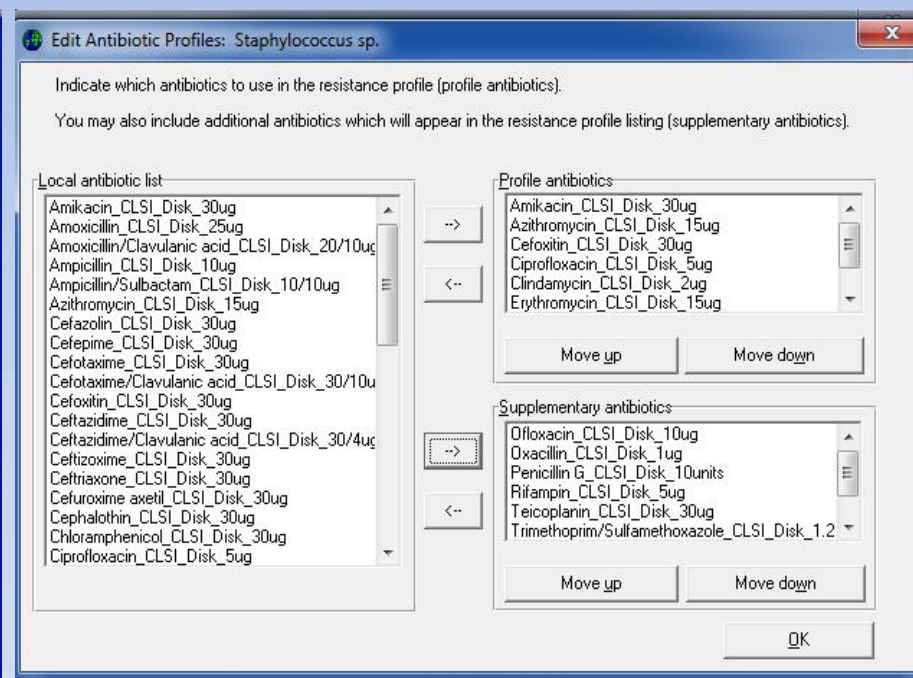
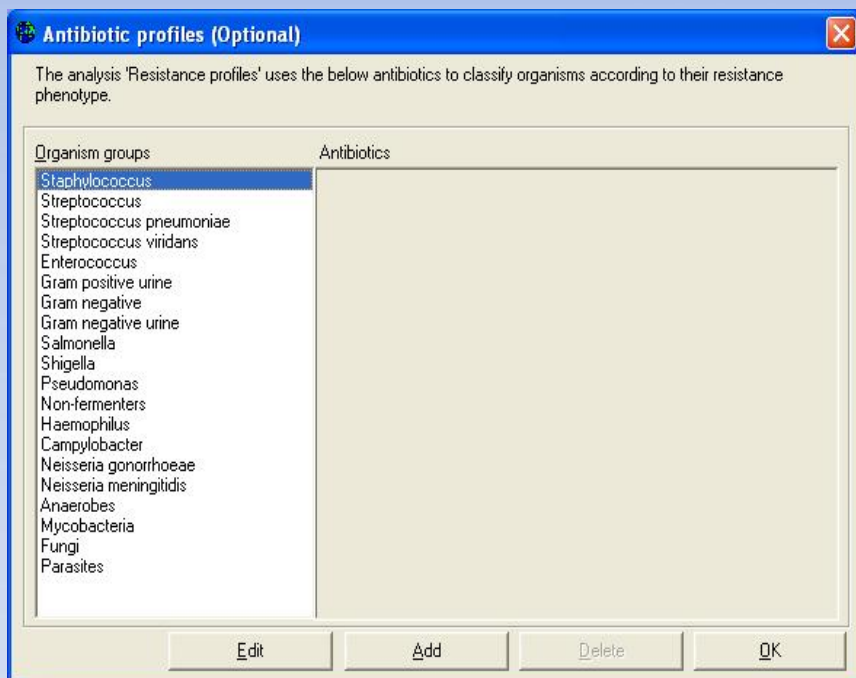
Code	Antibiotic name
TEC_ND30	Teicoplanin
TCY_ND30	Tetracycline
SXT_ND1.2	Trimethoprim/Sulfamethoxazole
VAN_ND30	Vancomycin
VAN_NE	Vancomycin
CTX_NE	Cefotaxime
CRO_NE	Ceftriaxone
GRX_ND5	Grepafloxacin
CLR_ND15	Clarithromycin
ETP_ND10	Ertapenem
CXM_ND30	Cefuroxime
TGC_EE	Tigecycline

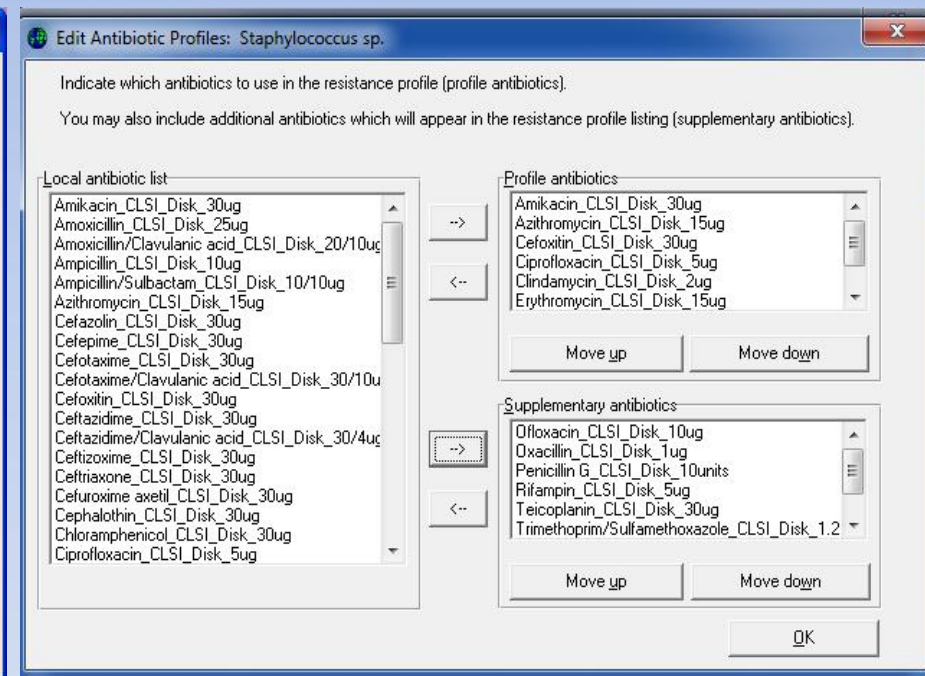
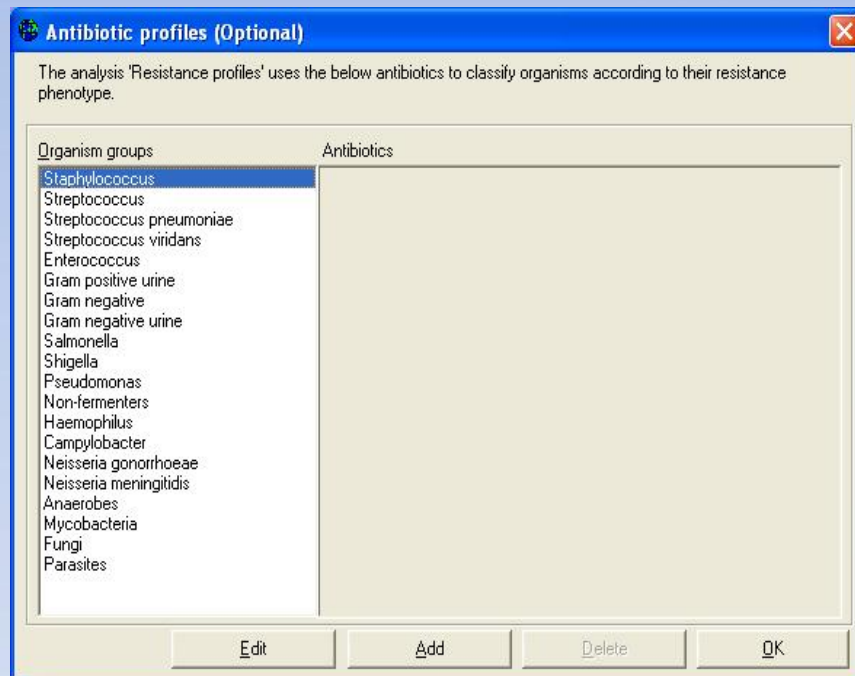
Number of antibiotics = 48
Tigecycline_EUCST_Etest

Breakpoints Panels Profiles Print OK



Antibiotic resistance profiles







Patient locations

Laboratory configuration

Country: Iran, Islamic Republic of (dropdown) IRN

Laboratory name: Reference Lab Isfahan

Laboratory code: RLI (Maximum 3 letters) Configuration file: labirn.rli

☒ Human
☐ Human, Animal, Food, Environment

Antibiotics Required: Enter the antibiotics tested in your laboratory.

Locations Optional: Enter your patient locations, departments, and institutions.

Data fields Optional: Select the fields to include in your data files.

Alerts Optional: Define alert rules

Save Cancel



Locations

Location name	Code	Institution	Department	Type	Institutions	Edit
*						

Code Text

- med Medicine
- sur Surgery
- icu Intensive care unit
- int Intermediate care unit
- obg Obstetrics/Gynecology
- ped Pediatrics
- neo Neonatology
- inf Infectious diseases
- hao Hematology/Oncology
- psy Psychiatry

Location type

- out Outpatient
- in Inpatient
- inx Inpatient (non-ICU)
- icu Intensive care unit
- int Intermediate care unit

Delete

Print OK Cancel

Browse D:\WHONE15\ Cancel

Locations

Location name	Code	Institution	Department	Type	Institutions	Edit
*						

Code Text

- out Outpatient
- in Inpatient
- inx Inpatient (non-ICU)
- icu Intensive care unit
- int Intermediate care unit
- eme Emergency
- nur Nursing home
- com Community
- hos Other hospital
- lab Laboratory

Location type

- out Outpatient
- in Inpatient
- inx Inpatient (non-ICU)
- icu Intensive care unit
- int Intermediate care unit

Delete

Print OK Cancel

Browse D:\WHONE15\ Cancel



Locations

	Location name	Code	Institution	Department	Type
	Medicine	1	irl	med	in
	Surgery	2	irl	sur	in
	ICU	3	irl	icu	icu
	Neonatology	4	irl	neo	in
	Clinic	5	irl	com	out
*					

Institutions **Edit**

Departments **Edit**

med Medicine
sur Surgery
icu Intensive care unit
int Intermediate care unit
obg Obstetrics/Gynecology

Location type

out Outpatient
in Inpatient
inx Inpatient (non-ICU)
icu Intensive care unit
int Intermediate care unit

Delete

Print **OK** **Cancel**

Browse D:\WHUNET5\ **Cancel**



Data fields

Data fields

Your data fields appear below.
Make any necessary changes.
If you want to add or remove fields, select 'Modify list'.

Country
Laboratory
Origin
Identification number
Last name
First name
Sex
Date of birth
Age
Age category
Location
Institution
Department
Location type
Specimen number
Specimen date
Specimen type
Specimen type (Numeric)
Reason
Isolate number
Organism

Modify list
Print
Move up
Move down

Country
Description Country
Name COUNTRY_A
Type Text
Length 3

Code list None

Data entry
Section Hidden
☒ Human
☒ Animal
☒ Food
☐ Isolate listing

Number of fields = 30

Browse D:\WHONEIS\ Cancel



Modify list

Your data fields appear below to the right. You may include additional fields from the WHONET list to the left.

WHONET

Data categories

- Clinical information
- EARSS (European Union)
- ECDC TESSy AMR
- Electronic Laboratory Reporting
- Global Foodborne Infections Network
- Infection control**

Data fields

- (User-defined...)
- Bacteremia
- Central catheter
- Urine catheter
- Ventilator
- Nosocomial infection
- Operation
- Peripheral catheter
- Pneumonia
- Surgical site infection
- Urinary tract infection

-->

<--

* = Field already selected

Country

- Laboratory
- Origin
- Identification number
- Last name
- First name
- Sex
- Date of birth
- Age
- Age category
- Location
- Institution
- Department
- Location type
- Specimen number
- Specimen date
- Specimen type
- Specimen type (Numeric)
- Reason
- Isolate number
- Organism

Number of fields = 30

OK

Cancel



Modify list

Your data fields appear below to the right. You may include additional fields from the WHONET list to the left.

WHONET

Data categories

- Clinical information
- EARSS (European Union)
- ECDC TESSy AMR
- Electronic Laboratory Reporting
- Global Foodborne Infections Network
- Infection control**

Data fields

- (User-defined...)
- Bacteremia
- Central catheter
- Urine catheter
- Ventilator
- *Nosocomial infection**
- Operation
- Peripheral catheter
- Pneumonia
- Surgical site infection
- Urinary tract infection

-->

<--

Location

Institution

Department

Location type

Specimen number

Specimen date

Specimen type

Specimen type (Numeric)

Reason

Isolate number

Organism

Organism type

Serotype

Beta-lactamase

ESBL

Carbapenemase

MRSA screening test

Inducible clindamycin resistance

Comment

Date of data entry

Nosocomial infection

Number of fields = 31

* = Field already selected

OK

Cancel



Data fields

Your data fields appear below.
Make any necessary changes.
If you want to add or remove fields, select 'Modify list'.

OK

Nosocomial infection	
Description	Nosocomial infection
Name	NOSOCOMIAL
Type	Text
Length	10
Code list	None
Data entry	
Section	Origin
<input checked="" type="checkbox"/> Human	
<input checked="" type="checkbox"/> Animal	
<input checked="" type="checkbox"/> Food	
<input type="checkbox"/> Isolate listing	

Location
Institution
Department
Location type
Specimen number
Specimen date
Specimen type
Specimen type (Numeric)
Reason
Isolate number
Organism
Organism type
Serotype
Beta-lactamase
ESBL
Carbapenemase
MRSA screening test
Inducible clindamycin resistance
Comment
Date of data entry
Nosocomial infection

Modify list
Print
Move up
Move down

Number of fields = 31

Browse D:\WHONET5\ Cancel



Alerts

All rules

1. Acinetobacter baumannii	Pencillins or Cephalosporin I or Cephamycins = Susceptible
2. Acinetobacter baumannii	Quinolones or Fluoroquinolones = Susceptible
3. Acinetobacter sp.	Colistin or Polymyxin = Non-susceptible
4. Aerococcus viridans	Linezolid = Non-susceptible
5. Aerococcus viridans	Vancomycin or Teicoplanin = Non-susceptible
6. Aeromonas sp.	Penicillins = Susceptible
7. All organisms	All antibiotics = Non-susceptible
8. All organisms	Penicillins and Beta-lactamase = Discordant results
9. All organisms	Quinolones and Fluoroquinolones = Discordant results
10. Bacillus anthracis	Ciprofloxacin = Non-susceptible
11. Bacillus anthracis	Important species

☒ Active rule

Organisms	<input type="text"/>	Alerts	<input type="text"/>
Isolates	<input type="text"/>	Messages	<input type="text"/>



Laboratory configuration

Country: Iran, Islamic Republic of IRN

Laboratory name: Isfahan Reference Lab

Laboratory code: IRL
Maximum 3 letters

Configuration file:

☒ Human
☐ Human, Animal, Food, Environment

Antibiotics Required: Enter the antibiotics tested in your laboratory.

Locations Optional: Enter your patient locations, departments, and institutions.

Data fields Optional: Select the fields to include in your data files.

Alerts Optional: Define alert rules

Save **Cancel**

Browse D:\WHONET5\ **Cancel**



Laboratory [X]

Country code	Laboratory code	Laboratory name
IRN	IRL	Isfahan Research Lab
IRN	MRL	Isfahan Research Lab
WHO	AGI	WHO AGISAR Sample data
WHO	TST	WHO Test Hospital

[Browse] D:\WHONET5\

[New laboratory]

[Open laboratory]

[Modify laboratory]

[Copy laboratory]

[Delete laboratory]

[Update laboratory to EUCAST]

[Select language]

[Select fonts]

[Cancel]



WHONET 5

WHO Collaborating Centre for
Surveillance of Antimicrobial Resistance
Boston, Massachusetts

ورود اطلاعات

دکتر سينا مباشري زاده

دکتری تخصصی باکتری شناسی

رئیس اداره امور آزمایشگاه های معاونت درمان دانشگاه علوم پزشکی اصفهان
عضو مرکز تحقیقات عفونت های بیمارستانی دانشگاه علوم پزشکی اصفهان



Dr.Sina Mobasherizadeh

PhD. Bacteriology





Laboratory [X]

Country code	Laboratory code	Laboratory name
IRN	IRL	Isfahan Research Lab
IRN	MRL	Isfahan Research Lab
WHO	AGI	WHO AGISAR Sample data
WHO	TST	WHO Test Hospital

[Browse] D:\WHONET5\

[New laboratory]

[Open laboratory]

[Modify laboratory]

[Copy laboratory]

[Delete laboratory]

[Update laboratory to EUCAST]

[Select language]

[Select fonts]

[Cancel]

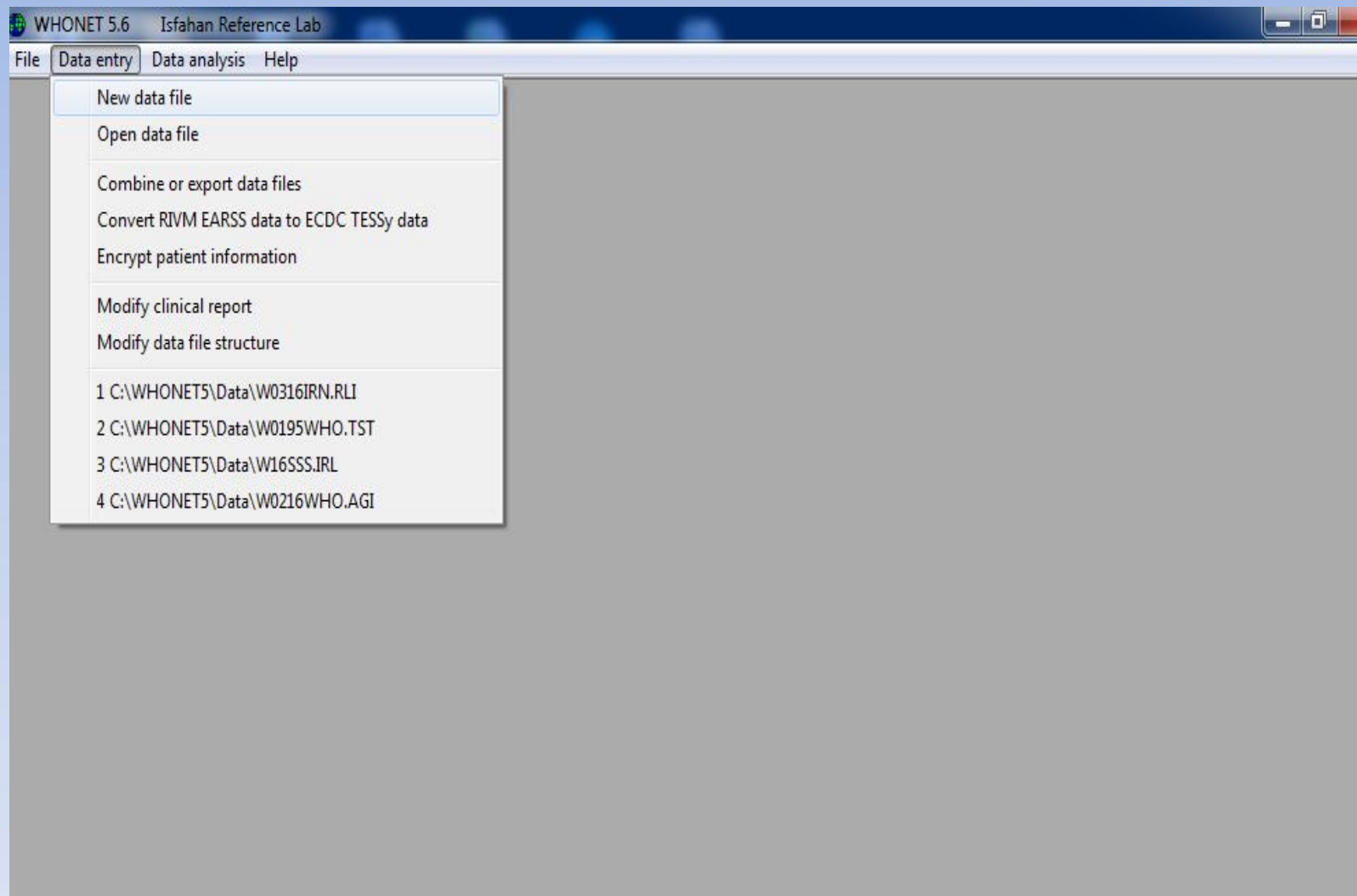


Figure 1. Main WHONET menu with the Data entry options selected.



Data entry

Give a name to the new data file.

WHONET filenames usually include the country code, the laboratory code, and the time period of the data.

File name:

w16irn.rli

C:\WHONET5\Data

File name

☒ Year

☐ Month/Year

☐ Other

Save as type:

WHONET 5

Drives:

c:

OK Cancel

ExcelDemo.xls
W0195WHO.TST
W0216WHO.AGI
W0316IRN.RLI
W16IRN.GHZ
W16SSS.IRL

C:\
WHONET5
Data

Figure 2. Indicate the name of the new WHONET data file.



Data entry: C:\WHONET5\Data\W0316IRN.RLI

Origin:

Origin

Identification number:

Last name:

First name:

Sex:

Age:

Age category:

Nosocomial infection:

Surgical site infection:

Urinary tract infection:

Bacteremia:

Location

Location:

Institution:

Department:

Location type:

Specimen

Specimen number:

Specimen date:

Specimen type:

Microbiology

Organism:

Serotype:

Beta-lactamase:

ESBL:

Carbapenemase:

MRSA screening test:

Inducible clindamycin:

Urine colony count:

Antibiotic panel:

☒ Disk ☐ MIC ☐ Etest

AMK	AMX	AMC	AMP
SAM	AZM	CZD	FEP
CTX	CTC	FOX	CAZ
CCV	CZX	CRO	CXA
CEP	CHL	CIP	CLI
COL	DOX	ERY	GEN
GEH	IPM	LVX	LNZ
NAI	MLT	NOV	OFX

Save isolate

View database

BacTrack summary

Print

Exit

Caliper

Clear

Identification number

PATIENT_ID

Maximum: 12 characters



Dr.Sina Mobasherizadeh PhD. Bacteriology



Data entry: D:\WHONET5\Data\W14IRN.MRL

First name	<input type="text"/>	Surgical site infection	<input type="text"/>
Sex	<input type="text"/>	Urinary tract infection	<input type="text"/>
Age	<input type="text"/>	Bacteremia	<input type="text"/>
Age category	<input type="text"/>		

Location		Department	<input type="text"/>
Location	<input type="text"/>	Location type	<input type="text"/>
Institution	<input type="text"/>		

Specimen		Specimen type	<input type="text"/>
Specimen date	<input type="text"/>		

Microbiology	
Organism	<input type="text"/>
Serotype	<input type="text"/>
Beta-lactamase	<input type="text"/>
ESBL	<input type="text"/>
Carbapenemase	<input type="text"/>
MRSA screening test	<input type="text"/>
Inducible clindamycin	<input type="text"/>
Vancomycin screen plate	<input type="text"/>
Antibiotic panel	<input type="text" value="All antibiotics"/>

☒ Disk ☐ MIC ☐ Etest

AZM	<input type="text"/>	FOX	<input type="text"/>	CIP	<input type="text"/>	CLI	<input type="text"/>
DOX	<input type="text"/>	ERY	<input type="text"/>	GEN	<input type="text"/>	LNZ	<input type="text"/>
OXA	<input type="text"/>	PEN	<input type="text"/>	QDA	<input type="text"/>	RIF	<input type="text"/>
TCY	<input type="text"/>	SXT	<input type="text"/>	VAN	<input type="text"/>	POL	<input type="text"/>
POL	<input type="text"/>	AMK	<input type="text"/>	AMX	<input type="text"/>	AMC	<input type="text"/>
AMP	<input type="text"/>	SAM	<input type="text"/>	CZO	<input type="text"/>	FEP	<input type="text"/>
CFM	<input type="text"/>	CTX	<input type="text"/>	CAZ	<input type="text"/>	CZX	<input type="text"/>
CEP	<input type="text"/>	CHL	<input type="text"/>	COL	<input type="text"/>	FOS	<input type="text"/>
IPM	<input type="text"/>	LVX	<input type="text"/>	MEM	<input type="text"/>	NAL	<input type="text"/>
NIT	<input type="text"/>	NOR	<input type="text"/>	OFX	<input type="text"/>	TZP	<input type="text"/>
TEC	<input type="text"/>	CRO	<input type="text"/>	CXA	<input type="text"/>		

Other	
Comment	<input type="text"/>

<input type="button" value="Save isolate"/>
<input type="button" value="View database"/>
<input type="button" value="BacTrack summary"/>
<input type="button" value="Print"/>
<input type="button" value="Exit"/>
<input type="button" value="Caliper"/> <input type="button" value="Clear"/>

Search

an Abdomen
ab Abdominal fluid
as Abscess
ad Abscess, abdominal
de Abscess, dental
ac Abscess, perirectal
pt Abscess, peritonsillar
ak Abscess, skin
am Amniotic fluid
ap Appendix
ar Arm
at Aspirate
fn Aspirate, fine-needle
au Autopsy
ax Axilla
bi Bile
bx Biopsy
bl Blood
bv Blood vessel
bo Bone
bm Bone marrow
bn Brain
bt Breast
mi Breast milk
br Bronchial
ba Broncho-alveolar lavage
bs Burns
bu Bursa
ca Catheter
cs Catheter site
cc Catheter, central
ch Catheter, peripheral
cp Catheter, permanent
cu Catheter, umbilical



Dr.Sina Mobasherizadeh

PhD. Bacteriology



Data entry: D:\WHONET5\Data\W14IRN.MRL

First name	<input type="text"/>	Surgical site infection	<input type="text"/>
Sex	<input type="text"/>	Urinary tract infection	<input type="text"/>
Age	<input type="text"/>	Bacteremia	<input type="text"/>
Age category	<input type="text"/>		

Location		Department	<input type="text"/>
Location	<input type="text"/>	Location type	<input type="text"/>
Institution	<input type="text"/>		

Specimen		Specimen type	<input type="text" value="cv"/>
Specimen date	<input type="text"/>		

Microbiology	
Organism	<input type="text" value="eco"/> Escherichia coli
Serotype	<input type="text"/>
Beta-lactamase	<input type="text"/>
ESBL	<input type="text"/>
Carbapenemase	<input type="text"/>
MRSA screening test	<input type="text"/>
Inducible clindamycin	<input type="text"/>
Vancomycin screen plate	<input type="text"/>
Antibiotic panel	<input type="text" value="Gram negative urine"/>

☒ Disk ☐ MIC ☐ Etest

CIP	<input type="text"/>	GEN	<input type="text"/>	SXT	<input type="text"/>	DOX	<input type="text"/>
TCY	<input type="text"/>	AMP	<input type="text"/>	SAM	<input type="text"/>	NAL	<input type="text"/>
FEP	<input type="text"/>	CFM	<input type="text"/>	CTX	<input type="text"/>	CAZ	<input type="text"/>
CZX	<input type="text"/>	CEP	<input type="text"/>	FOS	<input type="text"/>	IPM	<input type="text"/>
MEM	<input type="text"/>	OFX	<input type="text"/>	TZP	<input type="text"/>	CRO	<input type="text"/>
CXA	<input type="text"/>	NIT	<input type="text"/>				

Other	
Comment	<input type="text"/>

Save isolate

View database

BacTrack summary

Print

Exit

Caliper

Clear

Search

☐ Extended list

aba	Acinetobacter baumannii
bfr	Bacteroides fragilis
pce	Burkholderia cepacia
cco	Campylobacter coli
caj	Campylobacter jejuni ss. jejuni
cal	Candida albicans
cfr	Citrobacter freundii
cdp	Corynebacterium sp. (diphtheroids)
cmv	Cytomegalovirus
eae	Enterobacter aerogenes
ecl	Enterobacter cloacae
eav	Enterococcus avium
efa	Enterococcus faecalis
efm	Enterococcus faecium
ent	Enterococcus sp.
ebv	Epstein-Barr virus
eco	Escherichia coli
157	Escherichia coli O157:H7
hin	Haemophilus influenzae
hxb	Haemophilus influenzae (not type b)
hib	Haemophilus influenzae (type b)
hav	Hepatitis A virus
hbs	Hepatitis B virus
hcv	Hepatitis C virus
hsv	Herpes simplex virus
hs1	Herpes simplex virus 1
hs2	Herpes simplex virus 2
hhv	Human herpesvirus
hvp	Human papillomavirus
iva	Influenza A virus
ivb	Influenza B virus
kpn	Klebsiella pneumoniae ss. pneumoniae
lmo	Listeria monocytogenes
mix	Mixed bacterial species present



Data entry: D:\WHONET5\Data\W14IRN.MRL

First name Surgical site infection
Sex Urinary tract infection
Age Bacteremia
Age category

Location
Location Department
Institution Location type

Specimen
Specimen date Specimen type

Microbiology
Organism Escherichia coli
Serotype
Beta-lactamase
ESBL
Carbapenemase
MRSA screening test
Inducible clindamycin
Vancomycin screen plate
Antibiotic panel

☒ Disk ☐ MIC ☐ Etest

CIP	<input type="text" value="23"/>	S	GEN	<input type="text" value="8"/>	R	SXT	<input type="text" value="14"/>	I	DOX	<input type="text"/>
TCY	<input type="text"/>		AMP	<input type="text"/>		SAM	<input type="text"/>		NAL	<input type="text"/>
FEP	<input type="text"/>		CFM	<input type="text"/>		CTX	<input type="text"/>		CAZ	<input type="text"/>
CZX	<input type="text"/>		CEP	<input type="text"/>		FOS	<input type="text"/>		IPM	<input type="text"/>
MEM	<input type="text"/>		OFX	<input type="text"/>		TZP	<input type="text"/>		CRO	<input type="text"/>
CXA	<input type="text"/>		NIT	<input type="text"/>						

Other
Comment

Save isolate

View database

BacTrack summary

Print

Exit

Caliper

Clear

Clinical reports

<F8> Include or exclude an antibiotic

<F9> Include all tested antibiotics

Trimethoprim/Sulfamethoxazole_CLSI_Disk_1.25/23.75ug

SXT_ND1.2

Maximum: 2 characters

Trimethoprim/Sulfamethoxazole

CLSI

1.25/23.75ug

11 - 15

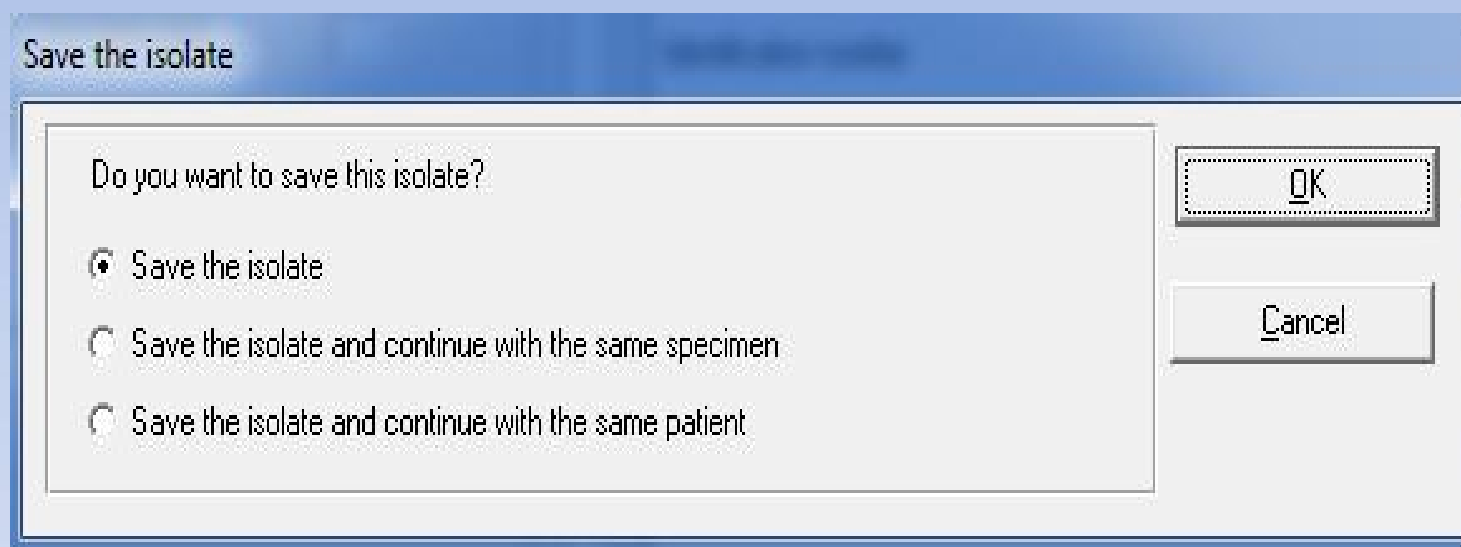


Figure 4. Save the isolate and continue with the same specimen



Data entry: C:\WHONET5\Data\W0316IRN.RLI

Sex		Urinary tract infection	
Age		Bacteremia	

Location		Department	
Institution		Location type	

Specimen		Specimen type	bl
Specimen number			
Specimen date			

Microbiology		Organism	eco Escherichia coli
Serotype			
Beta-lactamase			
ESBL			
Carbapenemase			
MRSA screening test			
Inducible clindamycin			
Urine colony count			
Antibiotic panel			Gram negative

AMK		AMX		AMC		AMP	
SAM		AZM		CZO		FEP	
CTX		CTC		FOX		CAZ	
CCV		CZX		CRO		CXA	
CEP		CHL		CIP		CLI	
COL		DOX		ERY		GEN	
GEH		IPM	6	LVX		LNZ	
NAL		NIT		NOV		OFX	
OXA		PEN		TZP		RIF	
TEC		TCY		SXT		VAN	
GRX		CLR		ETP		CXM	

Save isolate
View database
BacTrack summary
Print
Exit
Caliper
Clear

Clinical reports
<F8> Include or exclude an antibiotic
<F9> Include all tested antibiotics

High priority alert

This is an important finding. Confirm that this is not a laboratory error.

Enterobacteriaceae
Carbapenems = Non-susceptible

OK

Figure 5. High-priority alert for *Enterobacteriaceae* non-susceptible to carbapenems.



Save the isolate

Do you want to save this isolate?

☒ Save the isolate

☐ Save the isolate and continue with the same specimen

☐ Save the isolate and continue with the same patient

OK

Cancel

Alerts

<input type="checkbox"/> Quality control alert	<input checked="" type="checkbox"/> Send to a reference laboratory
<input type="checkbox"/> Important species	<input checked="" type="checkbox"/> Infection control alert
<input checked="" type="checkbox"/> Important resistance	<input type="checkbox"/> Therapy comment
<input checked="" type="checkbox"/> Save the isolate	<input type="checkbox"/> Other alert

Carbapenems = Non-susceptible
Non-susceptible isolates are rare.

Figure 6. Saving the results with a summary of the microbiological alerts for this isolate.



Data entry: C:\WHONET5\Data\W0316IRN.RLI

Origin: Human

Origin

Identification number:

Last name:

First name:

Sex:

Age:

Age category:

Nosocomial infection:

Surgical site infection:

Urinary tract infection:

Bacteremia:

Location

Location:

Institution:

Department:

Location type:

Specimen

Specimen number:

Specimen date:

Specimen type:

Microbiology

Organism:

Serotype:

Beta-lactamase:

ESBL:

Carbapenemase:

MRSA screening test:

Inducible clindamycin:

Urine colony count:

Antibiotic panel: All antibiotics

Disk MIC Etest

AMK AMX AMC AMP

SAM AZM CZO FEP

CTX CTC FOX CAZ

CCV CZX CRO CXA

CEP CHL CIP CLI

COL DOX ERY GEN

GEH IPM LVX LNZ

MAI MIT MOX OFX

Save isolate

View database

BacTrack summary

Print

Exit

Caliper Clear

Identification number

PATIENT_ID

Maximum: 12 characters



Data entry: C:\WHONET5\Data\W0316IRN.RLI

Edit isolate	Edit table	Delete	Find	Replace	Print	Continue				
	Identification number	Specimen number	Organism	Country	Laboratory	Origin	Last name	First name	Sex	Age
			sau	IRN	RLI	h			f	11
			sau	IRN	RLI	h				
			sau	IRN	RLI	h				
	n1		bca	IRN	RLI	h			m	65
	n2		bca	IRN	RLI	h			m	72
	n3		bca	IRN	RLI	h			m	69
	n4		bca	IRN	RLI	h			f	5
	n5		bca	IRN	RLI	h			m	66
	n6		bca	IRN	RLI	h			m	3
	n7		bca	IRN	RLI	h			m	72
▶	h			IRN	RLI	h				

Figure 7. Viewing the database in table format.



Print results

Select the print format

☒ Clinical report
☒ Conditional antibiotic reporting
☐ Isolate listing

Isolates

☒ Current isolate only
☐ Select isolates

Date of data entry

27-2016-دسامبر -- 27-2016-دسامبر

Figure 8. Print clinical reports and isolate listings



WHO TUTORIAL HOSPITAL

Identification number = 12345
Last name = Smith
First name = John
Date of birth = 1-Jan-1980

Location = Neurology
Specimen number = 1111
Specimen date = 12-Oct-2005
Specimen type = Blood

Organism = *Escherichia coli*

Ampicillin	R	6 mm	Ceftriaxone	R	10 mm
Ciprofloxacin	S	22 mm	Gentamicin	I	13 mm
Imipenem	R	12 mm			

2-Jul-2006 23:42 R = Resistant I = Intermediate S = Susceptible NS = Non-susceptible



Edit clinical report

Report header

Data fields

Report footer

Number of reports per page 2

Save

Cancel

Print example

Figure 9. Editing the clinical report.

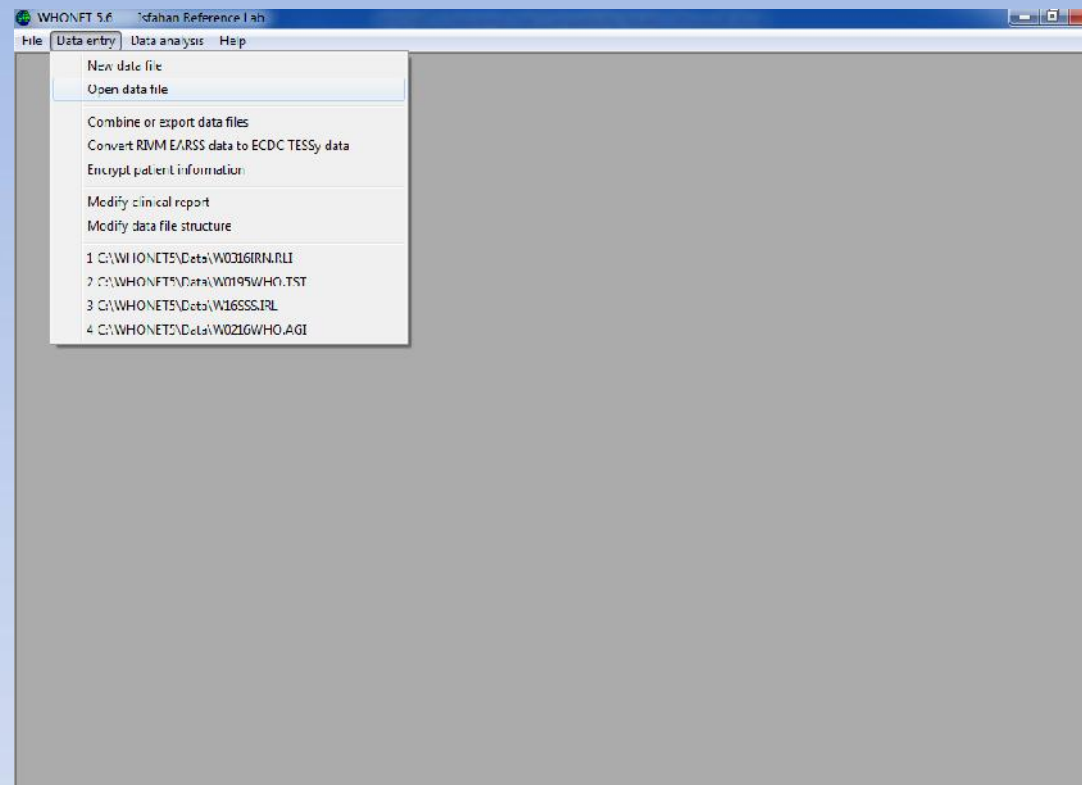
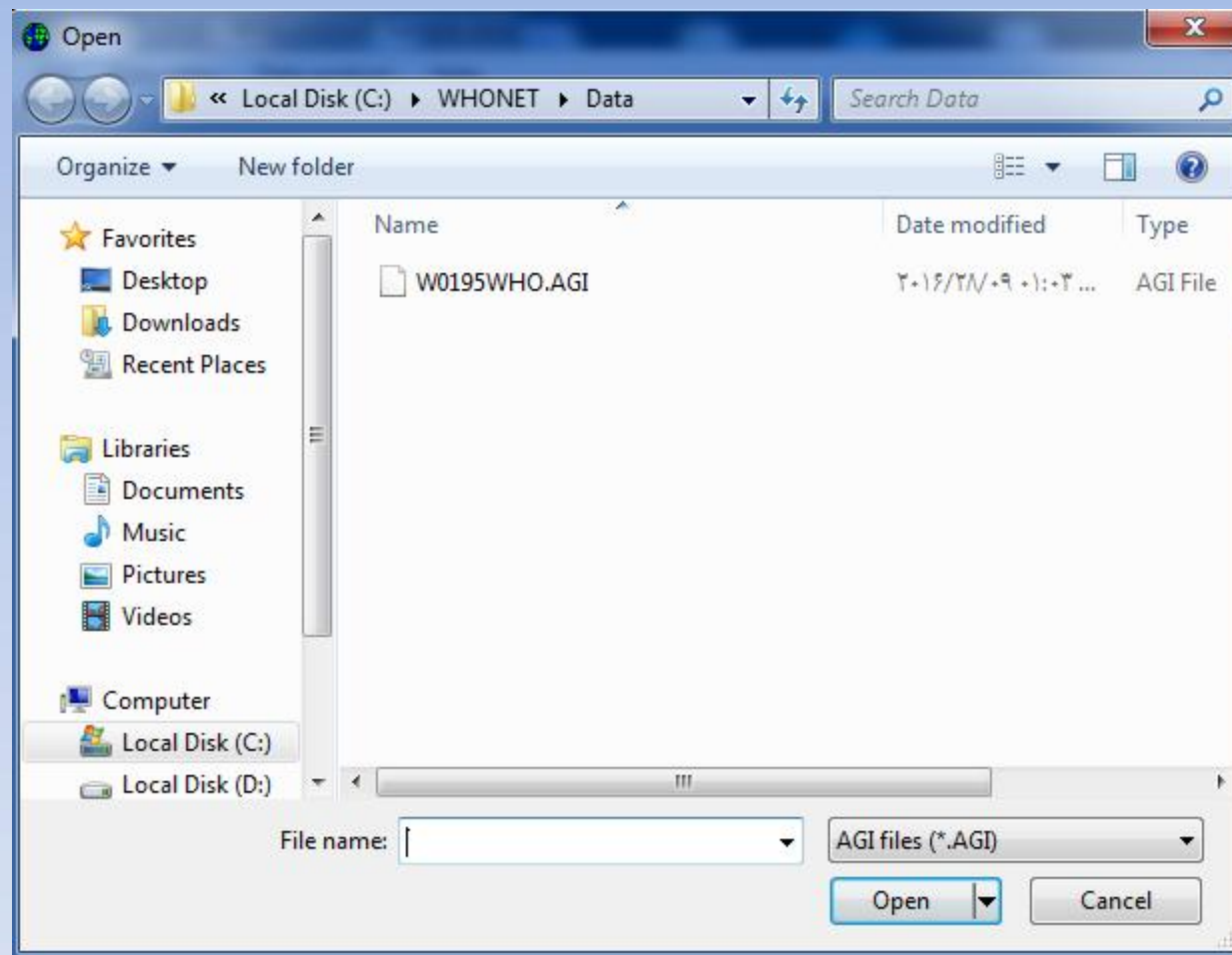


Figure 10. The main WHONET screen with the most recently opened data file highlighted.





WHONET 5

WHO Collaborating Centre for
Surveillance of Antimicrobial Resistance
Boston, Massachusetts

قسمت آخر

تجزیه و تحلیل

دکتر سینا مباحثری زاده

دکتری تخصصی باکتری شناسی

رئیس اداره امور آزمایشگاه های معاونت درمان دانشگاه علوم پزشکی اصفهان
عضو مرکز تحقیقات عفونت های بیمارستانی دانشگاه علوم پزشکی اصفهان





Laboratory

Country code	Laboratory code	Laboratory name
WHO	AGI	WHO AGISAR Sample data
WHO	GLS	GLASS Demonstration
WHO	TST	WHO Test Hospital

New laboratory

Open laboratory

Modify laboratory

Copy laboratory

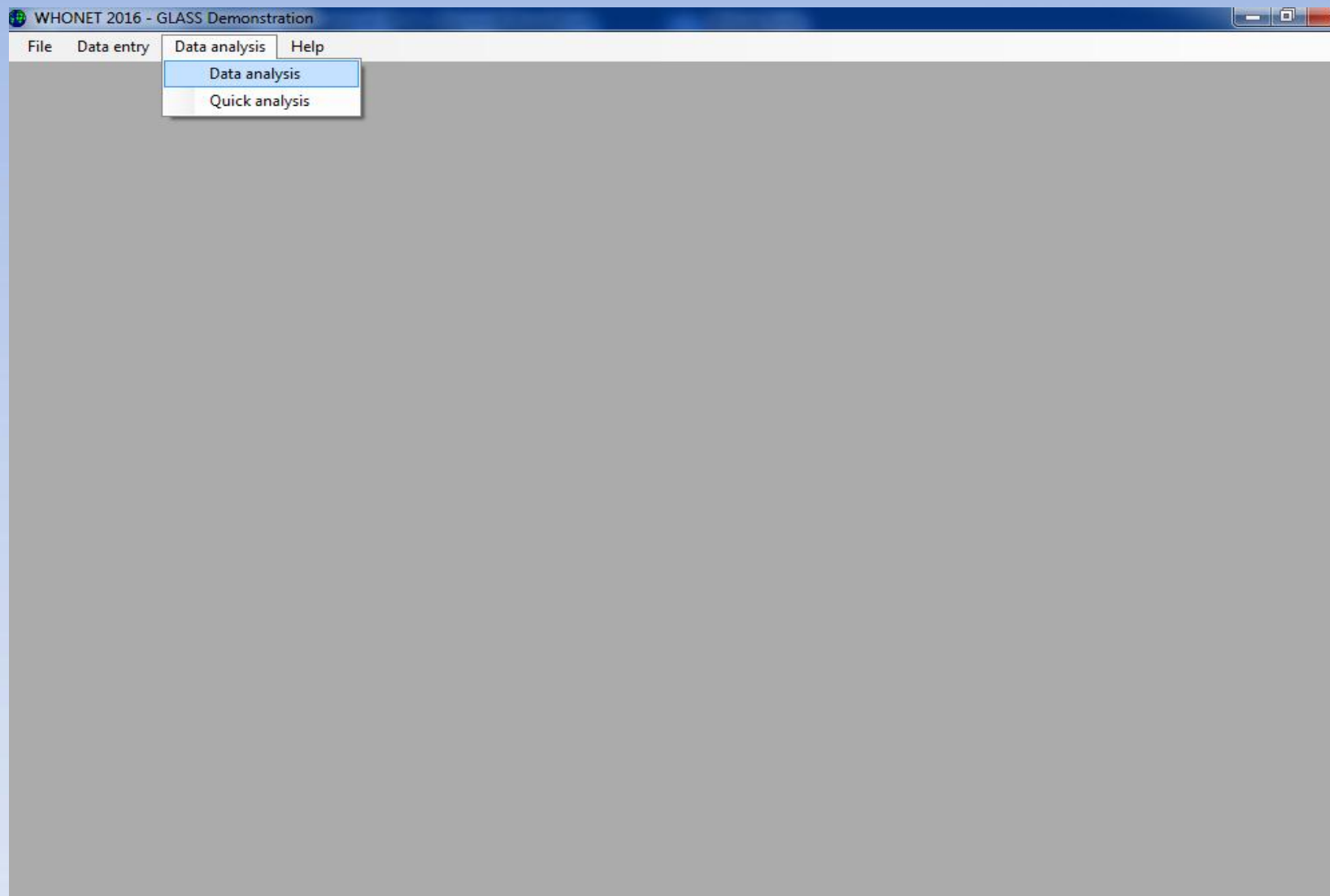
Delete laboratory

Select language

Select fonts

Cancel

Browse C:\WHONET\





Data analysis: GLASS Demonstration



Analysis type

Options

One per patient?

Organisms

Isolates

Data files

Output to:

Screen



Macros

Begin analysis

Exit



Data a

Analysis Selection

Analysis type

☐ Isolate listing and summary

☒ %RIS and test measurements

☐ Multi-File %RIS and distributions

☐ Scatterplot

☐ Resistance profiles

☐ BacTrack - Isolate alerts

☐ Cluster alerts

Report format

☒ 1. %RIS and test measurements

☒ Tables

☒ Graphs

☐ 2. Summary

☒ Tables

☒ Graphs

Summary

Rows 1. Antibiotic

2. (None)

3. (None)

4. (None)

Antibiotics

☒ All antibiotics

☐ Select antibiotics

Browse

OK



Data analysis: GLASS Demonstration

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

Isolates

Data files

Output to: Screen

Macros

Begin analysis

Exit



Organisms [X]

Select the organisms that you would like to include in the analysis.
Make your selections by double-clicking or by typing the codes and pressing <Enter> after each one.

WHONET organism list

Code

☐ Extended list ☐ Organism groups

aba	Acinetobacter baumannii
bfr	Bacteroides fragilis
pce	Burkholderia cepacia
cco	Campylobacter coli
caj	Campylobacter jejuni ss. jejuni
cal	Candida albicans
cfr	Citrobacter freundii
cdp	Corynebacterium sp. (diphtheroids)
cmv	Cytomegalovirus
eae	Enterobacter aerogenes
ecl	Enterobacter cloacae
eav	Enterococcus avium
efa	Enterococcus faecalis
efm	Enterococcus faecium
ent	Enterococcus sp.

Search

Analysis organism list

sau	Staphylococcus aureus ss. aureus
eco	Escherichia coli

☐ Analyze as one organism



Data analysis: GLASS Demonstration

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

sau Staphylococcus aureus ss. aureus
eco Escherichia coli

Isolates

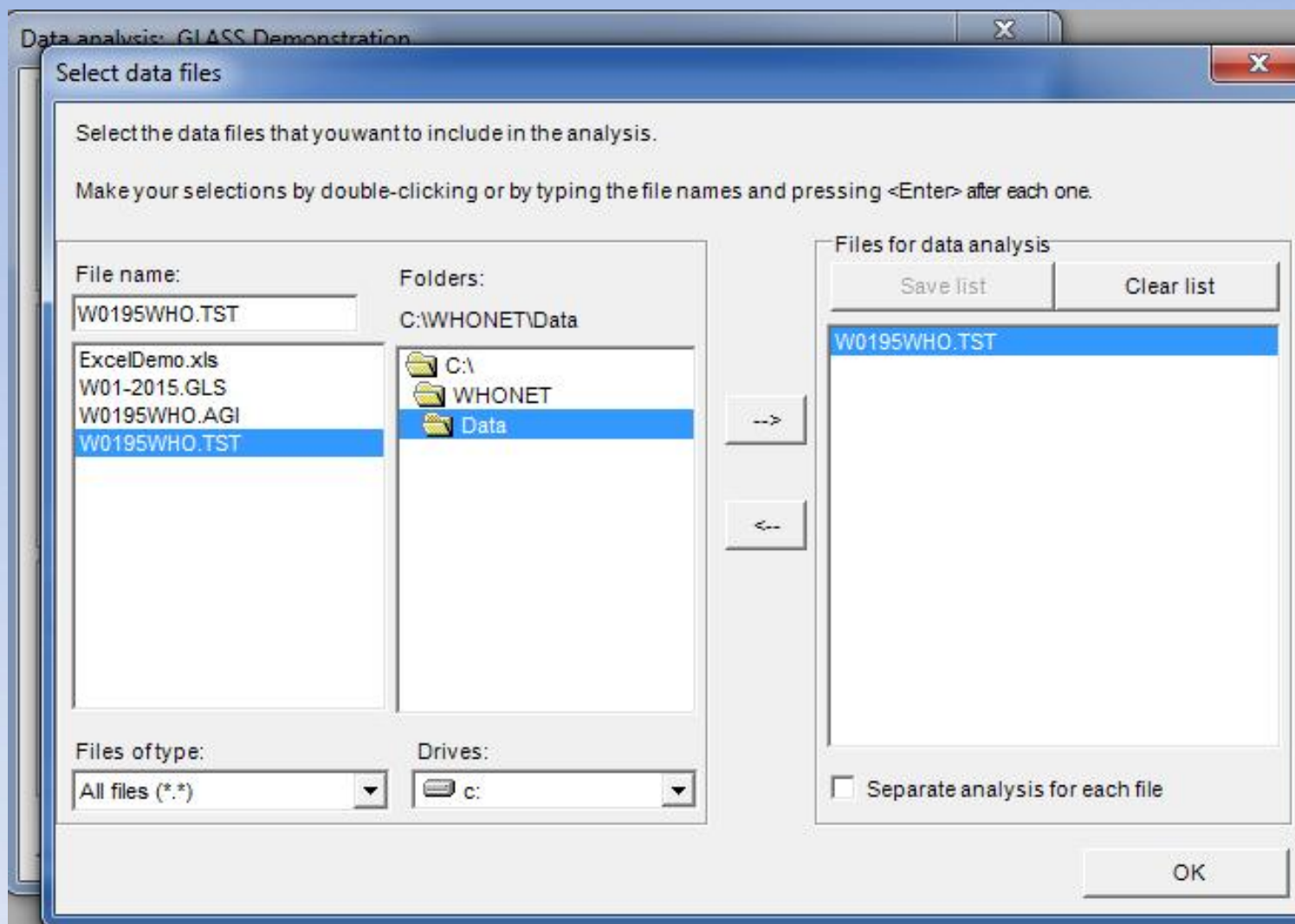
Data files

Output to: Screen

Macros

Begin analysis

Exit





Data analysis: WHO Test Hospital [X]

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

sau Staphylococcus aureus ss. aureus
eco Escherichia coli

Isolates

Data files

w0195who.tst

Output to: Screen

Macros

Begin analysis

Exit



Analysis Results

File Edit Data

Copy table

Copy graph

Print table

Print graph

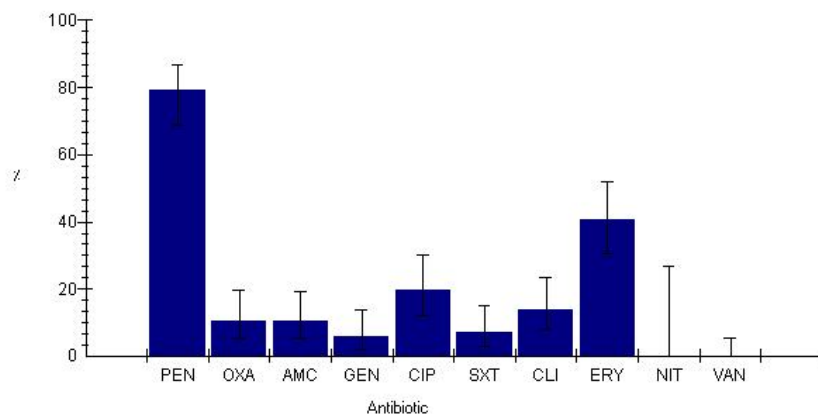
Continue

Organism = Staphylococcus aureus ss. aureus (n=86 isolates)

☐ Show hidden columns

	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	??	%R 95% C.I.	Number	6	7	8	9	10	11	12
▶	PEN_ND10	Penicillin G	S >= 29	86	79.1	0	20.9		68.7-86.8	86	5.8	1.2		3.5	2.3	3.5	9.3
	OXA_ND1	Oxacillin	11 - 12	85	10.6	0	89.4		5.3-19.6	85	10.6						
	AMC_ND20	Amoxicillin/Clavulanic acid	S >= 20	86	10.5	0	89.5		5.2-19.4	86			1.2			1.2	1.2
	GEN_ND10	Gentamicin	13 - 14	86	5.8	1.2	93		2.2-13.6	86	4.7		1.2				
	CIP_ND5	Ciprofloxacin	16 - 20	86	19.8	8.1	72.1		12.3-30.1	86	12.8	1.2	1.2			3.5	
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	86	7	0	93		2.9-15.2	86	7						
	CLI_ND2	Clindamycin	15 - 20	86	14	0	86		7.8-23.5	86	14						
	ERY_ND15	Erythromycin	14 - 22	86	40.7	12.8	46.5		30.4-51.8	86	27.9			4.7	4.7	2.3	1.2
	NIT_ND300	Nitrofurantoin	15 - 16	14	0	7.1	92.9		0.0-26.8	14							
	VAN_ND30	Vancomycin		86	0	0	0	100	0.0-5.3	86							

Resistant



RIS

Resistant

Intermediate

Susceptible

Unknown

Number tested

Test measurements

Penicillin G

Oxacillin

Amoxicillin/Clavulanic acid

Gentamicin

Ciprofloxacin

Trimethoprim/Sulfamethoxazole

Clindamycin

Erythromycin

Nitrofurantoin

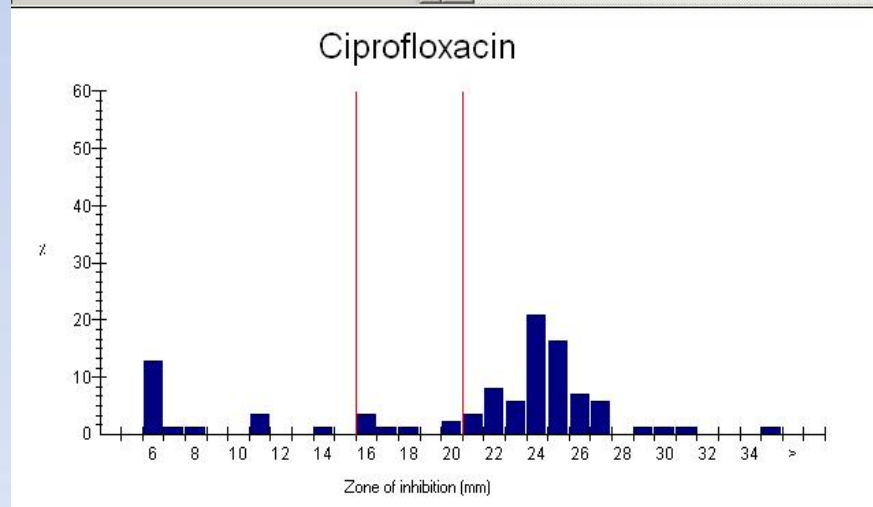
Vancomycin



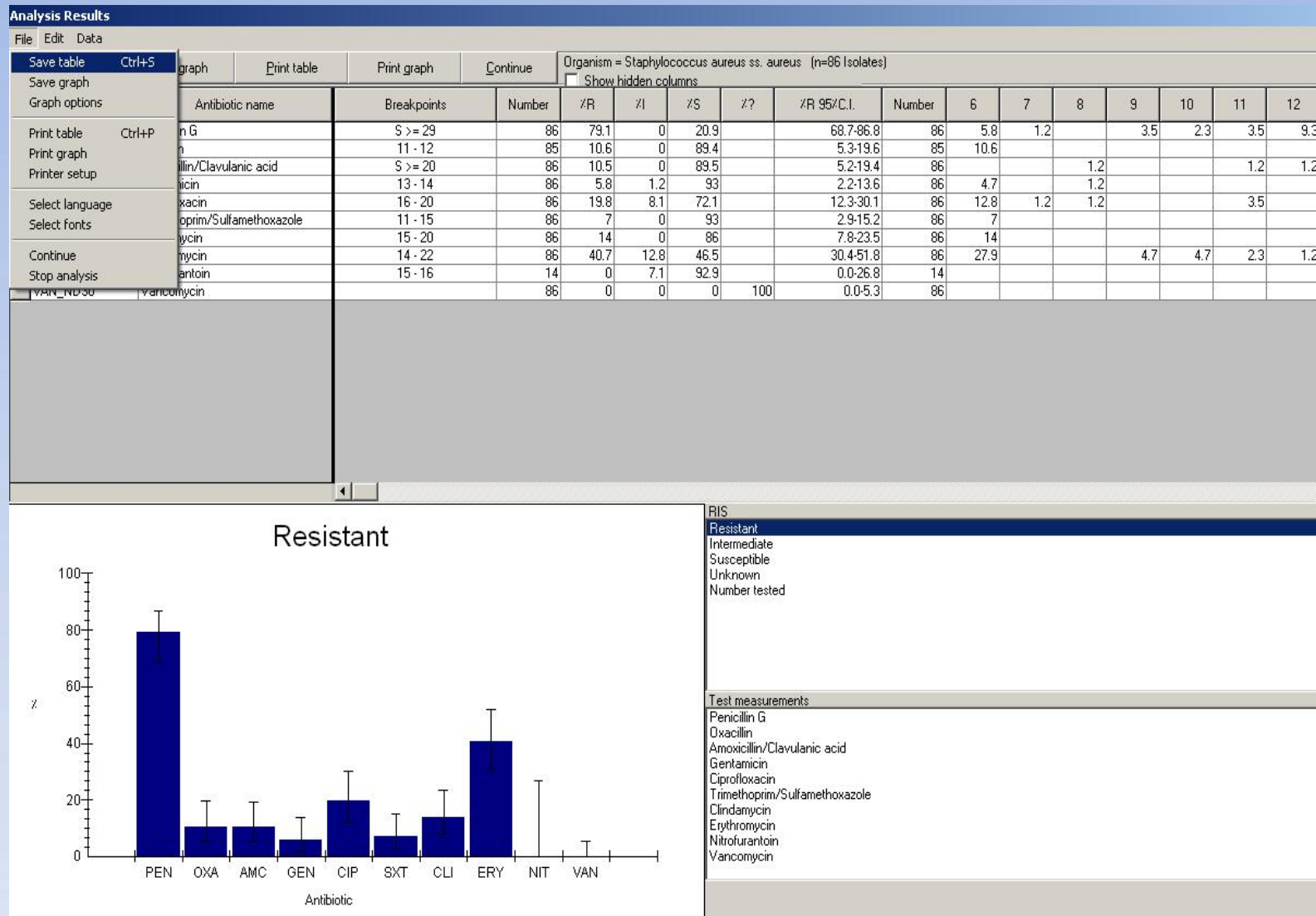
Analysis Results

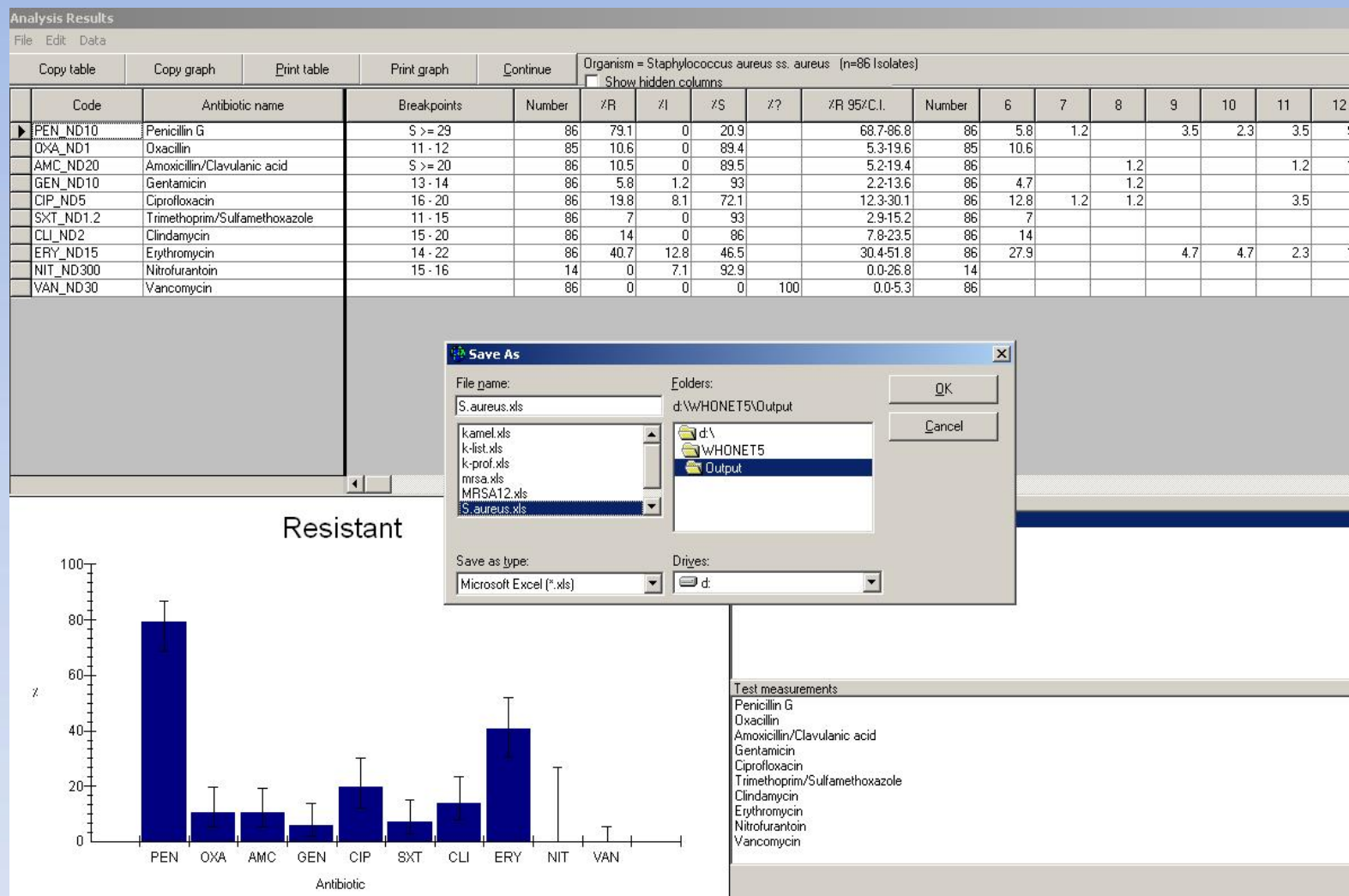
File Edit Data

Copy table	Copy graph	Print table	Print graph	Continue	Organism = Staphylococcus aureus ss. aureus (n=86 Isolates)												
					<input type="checkbox"/> Show hidden columns												
	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	%?	%R 95% C.I.	Number	6	7	8	9	10	11	12
▶	PEN_ND10	Penicillin G	S ≥ 29	86	79.1	0	20.9		68.7-86.8	86	5.8	1.2		3.5	2.3	3.5	9.
	OXA_ND1	Oxacillin	11 - 12	85	10.6	0	89.4		5.3-19.6	85	10.6						
	AMC_ND20	Amoxicillin/Clavulanic acid	S ≥ 20	86	10.5	0	89.5		5.2-19.4	86			1.2			1.2	1.
	GEN_ND10	Gentamicin	13 - 14	86	5.8	1.2	93		2.2-13.6	86	4.7		1.2				
	CIP_ND5	Ciprofloxacin	16 - 20	86	19.8	8.1	72.1		12.3-30.1	86	12.8	1.2	1.2			3.5	
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	86	7	0	93		2.9-15.2	86	7						
	CLI_ND2	Clindamycin	15 - 20	86	14	0	86		7.8-23.5	86	14						
	ERY_ND15	Erythromycin	14 - 22	86	40.7	12.8	46.5		30.4-51.8	86	27.9			4.7	4.7	2.3	1.
	NIT_ND300	Nitrofurantoin	15 - 16	14	0	7.1	92.9		0.0-26.8	14							
	VAN_ND30	Vancomycin		86	0	0	0	100	0.0-5.3	86							



RIS
Resistant
Intermediate
Susceptible
Unknown
Number tested
Test measurements
Penicillin G
Oxacillin
Amoxicillin/Clavulanic acid
Gentamicin
Ciprofloxacin
Trimethoprim/Sulfamethoxazole
Clindamycin
Erythromycin
Nitrofurantoin
Vancomycin





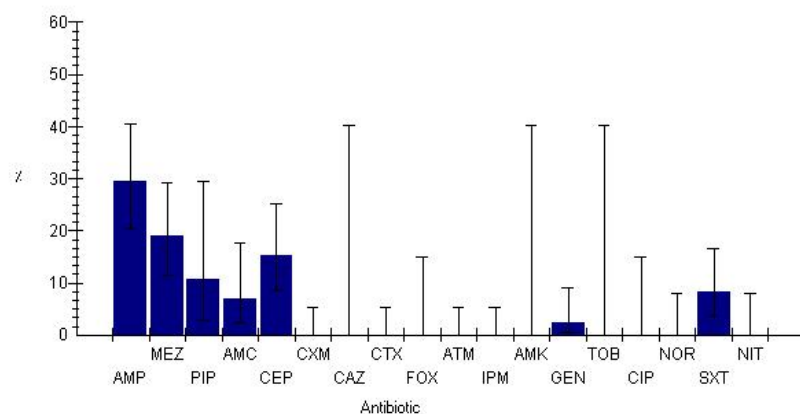


Analysis Results

File Edit Data

Copy table	Copy graph	Print table	Print graph	Continue	Organism = Escherichia coli (n=86 Isolates)												
					<input type="checkbox"/> Show hidden columns												
	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	%R 95% C.I.	Number	6	7	8	9	10	11	12	13
▶	AMP_ND10	Ampicillin	14 - 16	85	29.4	2.4	68.2	20.3-40.4	85	27.1					1.2	1.2	
	MEZ_ND75	Mezlocillin	18 - 20	84	19	3.6	77.4	11.6-29.3	84	6				2.4	1.2	3.6	
	PIP_ND100	Piperacillin	18 - 20	28	10.7	3.6	85.7	2.8-29.4	28	7.1							
	AMC_ND20	Amoxicillin/Clavulanic acid	14 - 17	57	7	12.3	80.7	2.3-17.8	57					3.5		1.8	
	CEP_ND30	Cephalothin	15 - 17	85	15.3	18.8	65.9	8.7-25.1	85	9.4			1.2				
	CXM_ND30	Cefuroxime	15 - 17	85	0	5.9	94.1	0.0-5.4	85								
	CAZ_ND30	Ceftazidime	18 - 20	8	0	0	100	0.0-40.2	8								
	CTX_ND30	Cefotaxime	23 - 25	85	0	5.9	94.1	0.0-5.4	85								
	FOX_ND30	Cefoxitin	15 - 17	28	0	21.4	78.6	0.0-15.0	28								
	ATM_ND30	Aztreonam	18 - 20	85	0	1.2	98.8	0.0-5.4	85								
	IPM_ND10	Imipenem	20 - 22	85	0	1.2	98.8	0.0-5.4	85								
	AMK_ND30	Amikacin	15 - 16	8	0	0	100	0.0-40.2	8								
	GEN_ND10	Gentamicin	13 - 14	85	2.4	0	97.6	0.4-9.1	85	1.2		1.2					
	TOB_ND10	Tobramycin	13 - 14	8	0	0	100	0.0-40.2	8								
	CIP_ND5	Ciprofloxacin	16 - 20	28	0	0	100	0.0-15.0	28								
	NOR_ND10	Norfloxacin	13 - 16	57	0	0	100	0.0-7.9	57								
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	85	8.2	0	91.8	3.6-16.7	85	8.2							
	NIT_ND300	Nitrofurantoin	15 - 16	57	0	5.3	94.7	0.0-7.9	57								

Resistant



RIS

Resistant
Intermediate
Susceptible
Unknown
Number tested

Test measurements

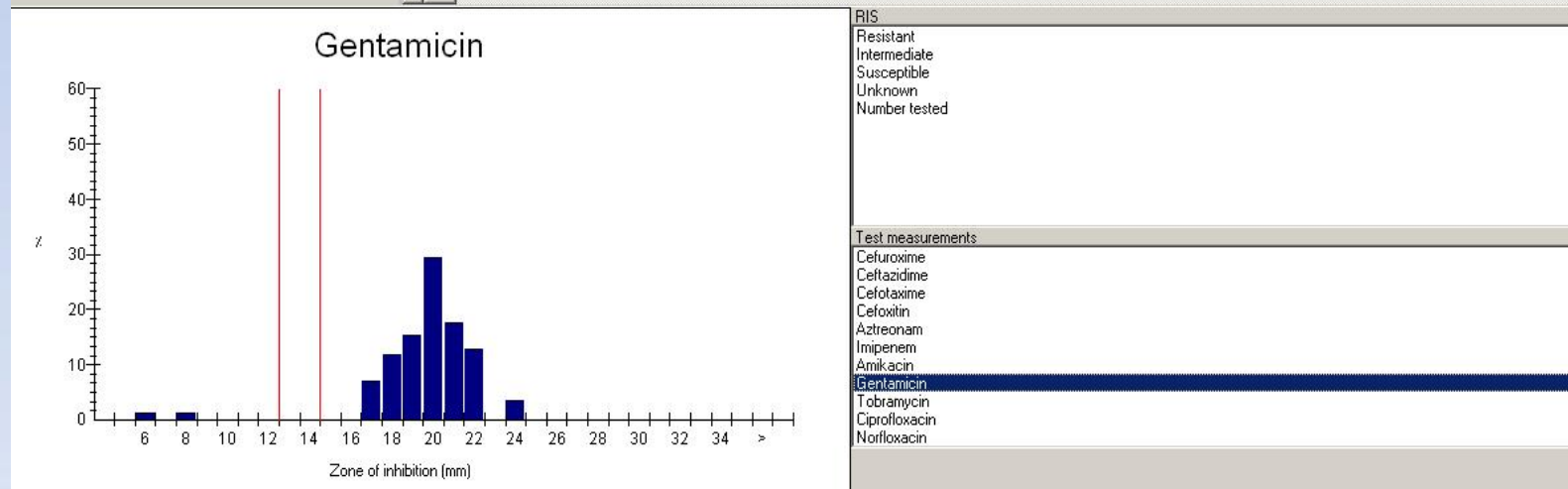
Ampicillin
Mezlocillin
Piperacillin
Amoxicillin/Clavulanic acid
Cephalothin
Cefuroxime
Ceftazidime
Cefotaxime
Cefoxitin
Aztreonam
Imipenem



Analysis Results

File Edit Data

Copy table	Copy graph	Print table	Print graph	Continue	Organism = Escherichia coli (n=86 isolates)												
					<input type="checkbox"/> Show hidden columns												
	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	%R 95% C.I.	Number	6	7	8	9	10	11	12	13
	AMP_ND10	Ampicillin	14 - 16	85	29.4	2.4	68.2	20.3-40.4	85	27.1					1.2	1.2	
	MEZ_ND75	Mezlocillin	18 - 20	84	19	3.6	77.4	11.6-29.3	84	6				2.4	1.2	3.6	
	PIP_ND100	Piperacillin	18 - 20	28	10.7	3.6	85.7	2.8-29.4	28	7.1							
	AMC_ND20	Amoxicillin/Clavulanic acid	14 - 17	57	7	12.3	80.7	2.3-17.8	57					3.5		1.8	
	CEP_ND30	Cephalothin	15 - 17	85	15.3	18.8	65.9	8.7-25.1	85	9.4			1.2				
	CXM_ND30	Cefuroxime	15 - 17	85	0	5.9	94.1	0.0-5.4	85								
	CAZ_ND30	Ceftazidime	18 - 20	8	0	0	100	0.0-40.2	8								
	CTX_ND30	Cefotaxime	23 - 25	85	0	5.9	94.1	0.0-5.4	85								
	FOX_ND30	Cefoxitin	15 - 17	28	0	21.4	78.6	0.0-15.0	28								
	ATM_ND30	Aztreonam	18 - 20	85	0	1.2	98.8	0.0-5.4	85								
▶	IPM_ND10	Imipenem	20 - 22	85	0	1.2	98.8	0.0-5.4	85								
	AMK_ND30	Amikacin	15 - 16	8	0	0	100	0.0-40.2	8								
	GEN_ND10	Gentamicin	13 - 14	85	2.4	0	97.6	0.4-9.1	85	1.2		1.2					
	TOB_ND10	Tobramycin	13 - 14	8	0	0	100	0.0-40.2	8								
	CIP_ND5	Ciprofloxacin	16 - 20	28	0	0	100	0.0-15.0	28								
	NOR_ND10	Norfloxacin	13 - 16	57	0	0	100	0.0-7.9	57								
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	85	8.2	0	91.8	3.6-16.7	85	8.2							
	NIT_ND300	Nitrofurantoin	15 - 16	57	0	5.3	94.7	0.0-7.9	57								





Data analysis: WHO Test Hospital

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

sau Staphylococcus aureus ss. aureus
eco Escherichia coli

Isolates

Data files

w0195who.tst

Output to: Screen

Macros

Begin analysis

E_xit



Isolates [X]

To define selection criteria, choose a data field and click on 'Define criteria'.

- Origin
- Country
- Laboratory
- Identification number
- First name
- Last name
- Sex**
- Date of birth
- Age
- Location
- Institution
- Location type
- Age category
- Specimen number
- Department
- Specimen date

☒ Exclude laboratory isolates: Specimen type = 'qc' , 'la' , 'ex' , 'Department = 'lab'

☒ Exclude screening isolates: Specimen type = 'sc' , 'mr' , 'vr' , 'cd'

☒ Include isolates that satisfy all of the selection criteria.

☐ Include isolates that satisfy at least one of the selection criteria.

Define criteria Clear this criterion Clear all criteria **OK**



Isolates

Make your selections by double-clicking or by typing the codes and pressing <Enter> after each one.

SEX
Sex

f

Sex

m Male

f Female

-->

<--

f Female

☒ Include ☐ Exclude

OK Cancel



Isolates

To define selection criteria, choose a data field and click on 'Define criteria'.

Origin
Country
Laboratory
Identification number
First name
Last name
--> Sex = f
Date of birth
Age
Location
Institution
Location type
Age category
Specimen number
Department
Specimen date

☒ Exclude laboratory isolates: Specimen type = 'qc' , 'la' , 'ex' , 'Department = 'lab'

☒ Exclude screening isolates: Specimen type = 'sc' , 'mr' , 'vr' , 'cd'

☒ Include isolates that satisfy all of the selection criteria.

☐ Include isolates that satisfy at least one of the selection criteria.

Define criteria Clear this criterion Clear all criteria OK



Data analysis: WHO Test Hospital [X]

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

sau Staphylococcus aureus ss. aureus
eco Escherichia coli

Isolates

Sex: f

Data files

w0195who.tst

Output to: Screen

Macros

Begin analysis

E_xit



Analysis Results

File Edit Data

Copy table

Copy graph

Print table

Print graph

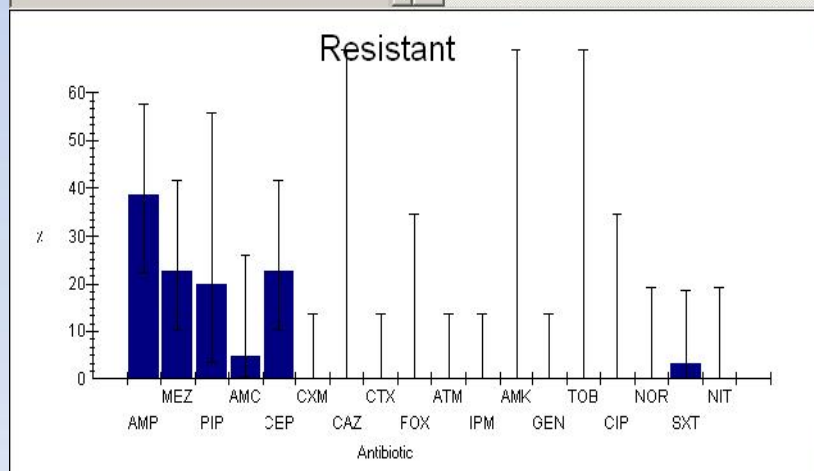
Continue

Organism = Escherichia coli (n=32 isolates)

☐ Show hidden columns

Sex: f

	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	%R 95% C.I.	Number	6	7	8	9	10	11	12	13
▶	AMP_ND10	Ampicillin	14 - 16	31	38.7	3.2	58.1	22.4-57.7	31	35.5							3.2
	MEZ_ND75	Mezlocillin	18 - 20	31	22.6	3.2	74.2	10.3-41.6	31	9.7							6.5
	PIP_ND100	Piperacillin	18 - 20	10	20	0	80	3.5-55.8	10	10							
	AMC_ND20	Amoxicillin/Clavulanic acid	14 - 17	21	4.8	19	76.2	0.3-25.9	21					4.8			
	CEP_ND30	Cephalothin	15 - 17	31	22.6	22.6	54.8	10.3-41.6	31	19.4							
	CXM_ND30	Cefuroxime	15 - 17	31	0	12.9	87.1	0.0-13.7	31								
	CAZ_ND30	Ceftazidime	18 - 20	3	0	0	100	0.0-69.0	3								
	CTX_ND30	Cefotaxime	23 - 25	31	0	9.7	90.3	0.0-13.7	31								
	FOX_ND30	Cefoxitin	15 - 17	10	0	50	50	0.0-34.5	10								
	ATM_ND30	Aztreonam	18 - 20	31	0	3.2	96.8	0.0-13.7	31								
	IPM_ND10	Imipenem	20 - 22	31	0	3.2	96.8	0.0-13.7	31								
	AMK_ND30	Amikacin	15 - 16	3	0	0	100	0.0-69.0	3								
	GEN_ND10	Gentamicin	13 - 14	31	0	0	100	0.0-13.7	31								
	TOB_ND10	Tobramycin	13 - 14	3	0	0	100	0.0-69.0	3								
	CIP_ND5	Ciprofloxacin	16 - 20	10	0	0	100	0.0-34.5	10								
	NOR_ND10	Norflloxacin	13 - 16	21	0	0	100	0.0-19.2	21								
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	31	3.2	0	96.8	0.2-18.5	31	3.2							
	NIT_ND300	Nitrofurantoin	15 - 16	21	0	9.5	90.5	0.0-19.2	21								



RIS

Resistant
Intermediate
Susceptible
Unknown
Number tested

Test measurements

Ampicillin
Mezlocillin
Piperacillin
Amoxicillin/Clavulanic acid
Cephalothin
Cefuroxime
Ceftazidime
Cefotaxime
Cefoxitin
Aztreonam



Isolates

To define selection criteria, choose a data field and click on 'Define criteria'.

- Origin
- Country
- Laboratory
- Identification number
- First name
- Last name
- > Sex = f
- Date of birth
- Age
- Location
- Institution
- Location type**
- Age category
- Specimen number
- Department
- Specimen date

☒ Exclude laboratory isolates: Specimen type = 'qc' , 'la' , 'ex' , 'Department = 'lab'

☒ Exclude screening isolates: Specimen type = 'sc' , 'mr' , 'vr' , 'cd'

☒ Include isolates that satisfy all of the selection criteria.

☐ Include isolates that satisfy at least one of the selection criteria.

Define criteria Clear this criterion Clear all criteria OK



Isolates

Make your selections by double-clicking or by typing the codes and pressing <Enter> after each one.

WARD_TYPE
Location type

Code

out	Outpatient
in	Inpatient
inx	Inpatient (non-ICU)
icu	Intensive care unit
int	Intermediate care unit
eme	Emergency
nur	Nursing home
com	Community
lab	Laboratory
unk	Unknown

-->

<--

out Outpatient

☒ Include ☐ Exclude

Search

OK Cancel



Data analysis: WHO Test Hospital

Analysis type

Study = RIS and test measurements
All antibiotics

Options

One per patient?

Organisms

sau Staphylococcus aureus ss. aureus
eco Escherichia coli

Isolates

Sex: f
Location type: out

Data files

w0195who.tst

Output to: Screen

Macros

Begin analysis

Exit



Analysis Results

File Edit Data

Copy table

Copy graph

Print table

Print graph

Continue

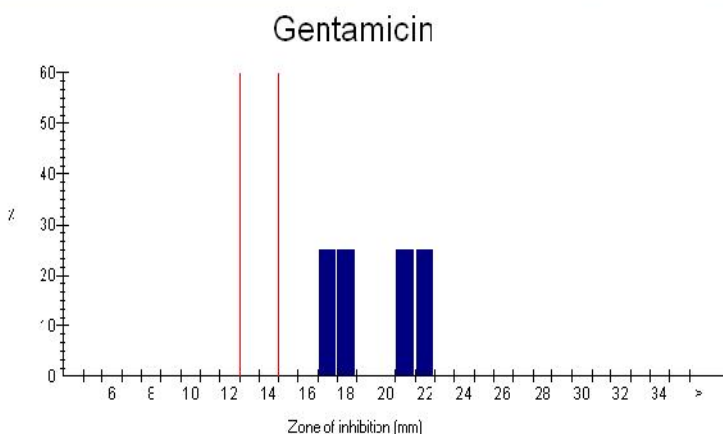
Organism = Escherichia coli (n=4 Isolates)

☐ Show hidden columns

Sex: f

Location type: ou:

	Code	Antibiotic name	Breakpoints	Number	%R	%I	%S	%R 95% C.I.	Number	6	7	8	9	10	11	12	13
▶	AMP_ND10	Ampicillin	14 - 16	4	0	0	100	0.0-60.4	4								
	MEZ_ND75	Mezlocillin	18 - 20	4	0	25	75	0.0-60.4	4								
	AMC_ND20	Amoxicillin/Clavulanic acid	14 - 17	4	0	25	75	0.0-60.4	4								
	CEP_ND30	Cephalothin	15 - 17	4	0	50	50	0.0-60.4	4								
	CXM_ND30	Cefuroxime	15 - 17	4	0	0	100	0.0-60.4	4								
	CTX_ND30	Cefotaxime	23 - 25	4	0	0	100	0.0-60.4	4								
	ATM_ND30	Aztreonam	18 - 20	4	0	0	100	0.0-60.4	4								
	IPM_ND10	Imipenem	20 - 22	4	0	0	100	0.0-60.4	4								
	GEN_ND10	Gentamicin	13 - 14	4	0	0	100	0.0-60.4	4								
	NOR_ND10	Norfloxacin	13 - 16	4	0	0	100	0.0-60.4	4								
	SXT_ND1.2	Trimethoprim/Sulfamethoxazole	11 - 15	4	0	0	100	0.0-60.4	4								
	NIT_ND300	Nitrofurantoin	15 - 16	4	0	0	100	0.0-60.4	4								



RIS

Resistant
Intermediate
Susceptible
Unknown
Number tested

Test measurements

Ampicillin
Mezlocillin
Amoxicillin/Clavulanic acid
Cephalothin
Cefuroxime
Cefotaxime
Aztreonam
Imipenem
Gentamicin
Norfloxacin



Isolates [X]

To define selection criteria, choose a data field and click on 'Define criteria'.

Origin
Country
Laboratory
Identification number
First name
Last name
--> Sex = f
Date of birth
Age
Location
Institution
--> Location type = out
Age category
Specimen number
Department
Specimen date

☒ Exclude laboratory isolates: Specimen type = 'qc' , 'la' , 'ex' , 'Department = 'lab'

☒ Exclude screening isolates: Specimen type = 'sc' , 'mr' , 'vr' , 'cd'

☒ Include isolates that satisfy all of the selection criteria.

☐ Include isolates that satisfy at least one of the selection criteria.

Define criteria Clear this criterion Clear all criteria OK



Analysis Selection [X]

Analysis type

☐ Isolate listing and summary
☐ %RIS and test measurements
☐ Multi-File %RIS and distributions

☐ Scatterplot
☒ Resistance profiles
☐ BacTrack - Isolate alerts
☐ Cluster alerts

Report format

☐ 1. Listing
☐ 2. Summary
☒ 3. Both

☒ Tables
☒ Graphs

Summary

Rows 1. Resistance profile
2. (None)
3. (None)

Columns Specimen date Month

Antibiotics

Resistance profile Automatic Edit Profiles

Summary ☐ Include cluster alerts Options

OK



Analysis Results

File Edit Data

Copy table

Copy graph

Print table

Print graph

Continue

Organism = Escherichia coli (n=86 Isolates)

☐ Show hidden columns

Letter = Resistant
Or intermediate
Space = Susceptible
- = Not tested



























? = No interpretation possible
C = CEP 15 - 17
A = AMP 14 - 16
G = GEN 13 - 14

T = SXT 11 - 15
F = CTX 23 - 25
I = IPM 20 - 22
R = CXM 15 - 17

M = MEZ 18 - 20
Z = ATM 18 - 20

Identification number	Resistance profile	MDR	XDR	PDR	Number of classes tested	Number of classes no
5861218602	CEP AMP CTX IPM CXM AT	MDR			8	6
4866809785	CEP AMP CTX CXM	MDR			8	4
3394747373	CEP AMP GEN SXT MEZ	MDR			8	4
0171654670	CEP AMP CTX CXM	MDR			8	4
9876786254	Ignore isolate	Ignore isolate	Ignore isolate	0	0
0152811778					8	0
3491549456					8	0
4235481234					8	0
4333243787					8	0
4613576098					8	0
4638663794					8	0
4992858701					8	0
1647307449					8	0
2573107018					8	0
5160288338					8	0
6130695730					8	0
3013033135	CEP AMP MEZ				8	2
6311085076					8	0
6444619124					8	0
6765429334					8	0
► _6979872399_					8	0
6986161054					8	0
7885679496					8	0
6013382777					8	0
1647307449					8	0
0212379489					8	0
0318151964					8	0
0948255928					8	0
0958006210					8	0
1835732908					8	0
1228538231					8	0
1858637928					8	0
1238843072					8	0
2180021385					8	0
3681053192	CEP AMP MEZ				8	2
7337835430					8	0
1967916590					8	0



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Dr.Sina Mobasherizadeh
PhD. Bacteriology



ورود یا ثبت نام



جستجو ویدیوهای رویدادها، شخصیتها و ...

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آپارات



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آموزش نصب و کار با نرم ...



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