

# ErbaExpert

Information system ErbaExpert  
Statistics module



## Statistics module manual

Cat n. INS00075

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The knowledge provided in this manual is essential for the proper working of the software. Therefore, pay attention to this manual.

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## 1. Foreword

Information system ErbaExpert is a laboratory information system for identification of strains of microorganisms isolated from samples of clinical material, determination of their susceptibility to antibiotics and evaluating results using an expert system based on EUCAST and CLSI data.

The statistics module is part of the ErbaExpert system used to analyze the data obtained during ErbaExpert's operation. It allows studying of system data from many different angles, a selection of data based on custom parameters and outputs in both spreadsheet and chart formats.

## 2. How to use this manual

This manual describes the procedures performed by the system user when working with the ErbaExpert system statistics module.

The first (after installation of the system) is to set up the system according to the needs of a particular workplace. The setup procedure and available options are described in System setting.

The chapter Working with the statistics module describes a typical workflow, including the links of the individual processes.

## 3. System setting

Statistics module function is affected by some ErbaExpert settings. System settings are the responsibility of the system administrator. For more information on system settings, see the ErbaExpert Administrator Manual.

### 3.1 Roles management

The user roles that should have access to the ErbaExpert statistics module must be allowed access to the statistics module. You can run the role management form from the top menu bar by clicking the System options button and then clicking the **Role Management** button.

On the List tab, select the appropriate role and switch to the **Access Settings** tab:

The screenshot shows a window titled "List of user roles" with three tabs: "Edit data", "Access settings", and "List". The "Access settings" tab is active. A search bar contains the text "Clinician". Below the search bar is a table with the following columns: "Program name", "Full access", "No delete", and "Read Only". The table lists several programs, with "Statistics" highlighted in blue. The "Full access" checkbox for "Statistics" is unchecked.

Program name	Full access	No delete	Read Only
Quality control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reading of other methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Results	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Results export to LIS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample receipt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples corrections	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Station change	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Statistics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System options	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

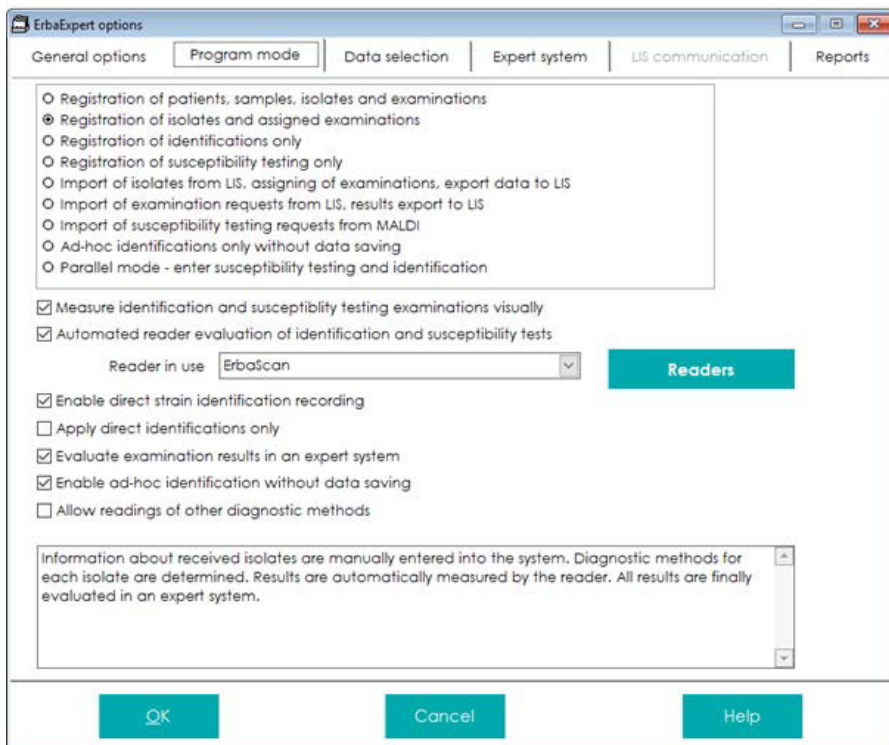
Check the box in the *Full Access* column in the Statistics row. From the next reboot, the role can work with the statistics module.

## 3.2 Program mode

Working with the statistics module is fundamentally affected by the system's chosen mode of operation.

The system work mode can be set in the ErbaExpert Options setting form, which starts from the top menu bar by clicking on the System options button and clicking on the **Option settings** button.

On the Program Mode tab, you can set basic system mode (supported work processes).



The screenshot shows the 'ErbaExpert options' dialog box with the 'Program mode' tab selected. The dialog has several tabs: 'General options', 'Program mode', 'Data selection', 'Expert system', 'LIS communication', and 'Reports'. The 'Program mode' tab contains a list of radio buttons for selecting a system mode, several checkboxes for enabling specific features, a dropdown menu for 'Reader in use', and a text box with information. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

**ErbaExpert options**

General options | **Program mode** | Data selection | Expert system | LIS communication | Reports

☐ Registration of patients, samples, isolates and examinations  
☒ Registration of isolates and assigned examinations  
☐ Registration of identifications only  
☐ Registration of susceptibility testing only  
☐ Import of isolates from LIS, assigning of examinations, export data to LIS  
☐ Import of examination requests from LIS, results export to LIS  
☐ Import of susceptibility testing requests from MALDI  
☐ Ad-hoc identifications only without data saving  
☐ Parallel mode - enter susceptibility testing and identification

☒ Measure identification and susceptibility testing examinations visually  
☒ Automated reader evaluation of identification and susceptibility tests

Reader in use:  **Readers**

☒ Enable direct strain identification recording  
☐ Apply direct identifications only  
☒ Evaluate examination results in an expert system  
☒ Enable ad-hoc identification without data saving  
☐ Allow readings of other diagnostic methods

Information about received isolates are manually entered into the system. Diagnostic methods for each isolate are determined. Results are automatically measured by the reader. All results are finally evaluated in an expert system.

**OK** **Cancel** **Help**

If a user selects **Registration of patients, samples, isolates and examinations** mode, a complete set of statistics will be available in the statistics module.

If the user chooses any other mode in which the test data is stored, the statistics module will only have access to a set of statistics limited to the isolate information.

### 3.3 Data selection

The outputs of the statistics module are also affected by the extent of the recorded data.

The scope of recorded data can be set in the ErbaExpert Options form, which starts from the top menu bar by clicking on the **System options** button and clicking on the **Options setting** button.

The **Data selection** tab allows you to set the range of data recorded in the system.

ErbaExpert options

General options | Program mode | **Data selection** | Expert system | LIS communication | Reports

Sample data

Recorded data	Obligatory	Optional
Attending physician	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultivation medium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Date and time of sampling	<input type="checkbox"/>	<input type="checkbox"/>
Diagnosis	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Isolate number	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Laboratory station	<input type="checkbox"/>	<input type="checkbox"/>
Material type	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Patient identification	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Requesting ward	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample delivery label	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample number	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Patient data

Recorded data	Obligatory	Optional
Insurance company	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Name	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Patient internal code	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Personal number	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sex	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surname	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Year of birth	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact on statistics has evidence:

- Patient diagnosis
- Kind of material
- Patient identification
- Requesting ward

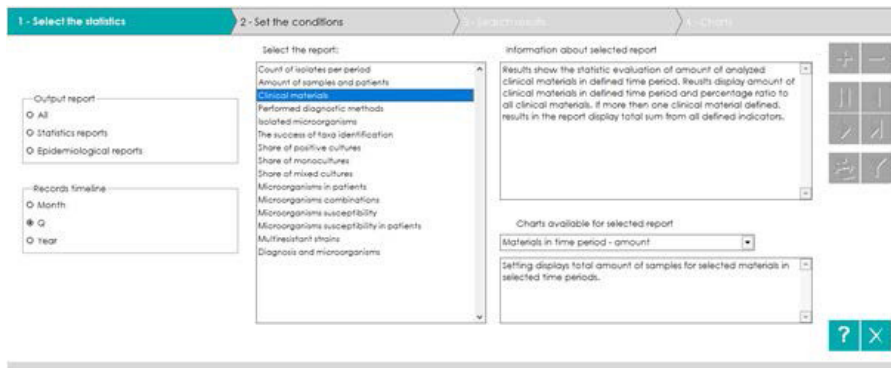
If any of these data is not recorded, the scope of available statistics or the range of possible graphs for some statistics is limited. For further information see the next chapters of this document.

## 4. Working with the statistics module

To run the statistics module from the top menu bar, click the **Results** button and then click the **Statistics** button.

The statistics form opens on the Select the statistics tab.

### 4.1 Select the statistics



For all modes other than **Registration of patients, samples, isolates and examinations** mode, patient and data assemblies associated with samples (material sent by the requesting ward, diagnosis) will be omitted from the list.

**Output report** – it is possible to select statistical reports, epidemiological reports or all. Epidemiological reports refer to the population (they are therefore related to patients, not just to isolates).

**Records timeline** – select the time period for which the analyzed data will be listed.

**Information about selected report** – description of the received output for the report currently selected in the report list.

**Charts available for selected report** – all the charts available for the selected report in the report list are included in the drop-down list. After selecting a chart, its description will appear in the box below the drop-down list of charts. Selecting a graph is informative only; user selects the final graph in the Graphs tab in the next step.

After selecting the report and the time period, go to the **Set the conditions** tab.

## 4.2 Set the conditions

1 - Select the statistics    2 - Set the conditions    3 - Search results    4 - Charts

**Time period** Extract from date  /  to date  /  Clear

**Sample** Type of material  all records

**Patient** Patient  all records    Sex ☐ woman  
Diagnosis  all records    ☐ male  
Health insurance  all records    ☐ unknown  
☒ all records

**Result** Taxonomic group  all records  
Taxon  all records  
Antibiotics group  all records  
Antibiotic  all records

? X

On this tab, limitations for published data will be defined. For each report, the list of data that can be used to define a constraint may vary. The list of usable data also varies according to which data is defined as mandatory in the system settings.

Clear all restrictions by pressing the **Clear** button.

After choosing listing conditions, go to the **Search results** tab.

## 4.3 Search results

1 - Select the statistics    2 - Set the conditions    3 - Search results    4 - Charts

<input checked="" type="checkbox"/>	Taxon	<input checked="" type="checkbox"/>	Antibiotics	isolates	Q	%	I	%	P	%
<input type="checkbox"/>	Salmonella enterica subsp. enterica									
<input type="checkbox"/>	Proteus mirabilis									
<input type="checkbox"/>	Klebsiella pneumoniae subsp. pneumoniae									
<input type="checkbox"/>	Escherichia coli									
<input type="checkbox"/>	Proteus vulgaris									
<input type="checkbox"/>	Senftenberg marcescens									
<input type="checkbox"/>	Enterobacter cloacae subsp. cloacae									
<input type="checkbox"/>	Klebsiella aerogenes									
<input type="checkbox"/>	Salmonella serovar enteritidis									
<input type="checkbox"/>	Yersinia enterocolitica subsp. enterocolitica									
<input type="checkbox"/>	Citrobacter koseri									
<input type="checkbox"/>	Salmonella gallinarum									
<input type="checkbox"/>	Salmonella serovar paratyphi									
<input type="checkbox"/>	Shigella sonnei									
<input type="checkbox"/>	Morganella morganii subsp. morganii									
<input type="checkbox"/>	Alcaligenes faecalis									
<input type="checkbox"/>	Citrobacter freundii									
<input type="checkbox"/>	Staphylococcus aureus subsp. aureus									

? X

### 4.3.1 Tables control

When you first enter the Search results tab, only the content of the control table on the left is displayed. By clicking on the (item selection) control table, data displays in the slave tables. When moving in tables, the data displayed in slave tables also changes.

If changing the selection of items in the control table, the list of items in the slave tables always resets.

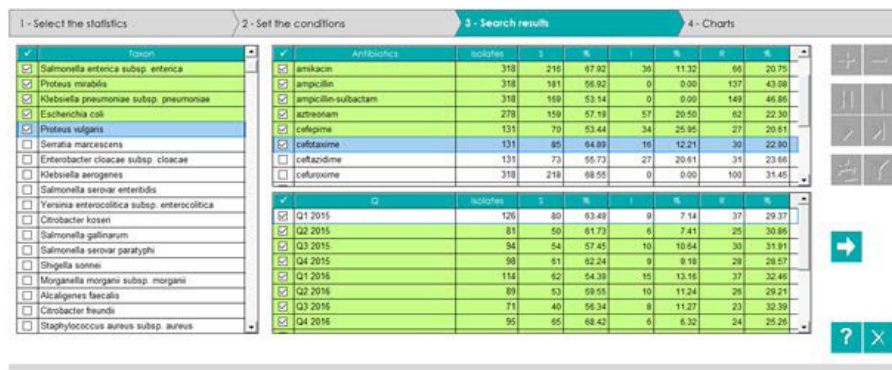
**Multiple items** can be selected:

- Click the check box in the first column of the table
- Press Enter on the item
- Press the space bar on the item

Selected items are marked with a check mark and green tint.

You can **select / remove the selection of all items** in the given table by clicking on the header of the first column of the table.

You can **sort the tables** by any column by clicking on the header of the column. The header of the column according to which the table is sorted will be displayed in bold with the dot.



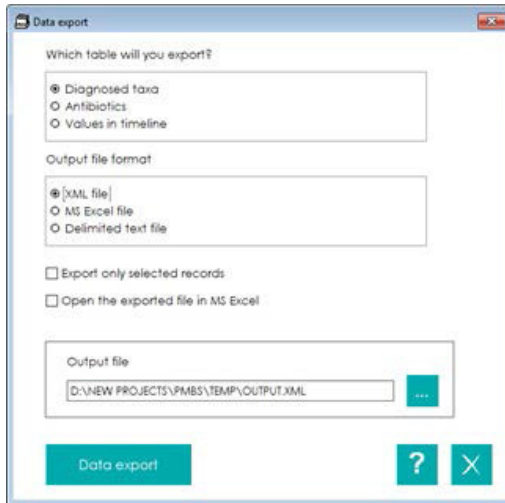
1 - Select the statistics    2 - Set the conditions    3 - Search results    4 - Charts

Antibiotics	Isolates	S	%	I	%	E	%
amikacin	310	210	67.82	36	11.32	66	20.75
ampicillin	310	191	61.61	0	0.00	137	43.98
ampicillin-sulbactam	310	169	54.52	0	0.00	149	48.06
aztreonam	278	159	57.19	57	20.50	62	22.30
cefepime	131	70	53.44	34	25.96	27	20.61
ceftriaxime	131	85	64.89	16	12.21	30	22.90
cefazidime	131	73	55.73	27	20.61	31	23.66
cefuroxime	310	218	69.55	0	0.00	100	31.45

Isolates	S	%	I	%	E	%	
Q1 2015	126	80	63.49	9	7.14	37	29.37
Q2 2015	81	55	67.73	6	7.41	25	30.86
Q3 2015	94	54	57.45	10	10.64	30	31.91
Q4 2015	90	61	67.78	9	9.19	20	22.22
Q1 2016	114	62	54.38	15	13.16	37	32.46
Q2 2016	89	53	59.55	10	11.24	26	29.21
Q3 2016	71	40	56.34	9	11.27	23	32.39
Q4 2016	95	65	68.42	6	6.32	24	25.26

### 4.3.2 Export of tables

The individual tables displayed on the **Search results** tab can be exported. Click the arrow button on the form on the right to launch the export. The export dialog opens:



First, select the table of interest to export from the list of tables. If the statistics contains only one table, the list is missing.

**Output File Format** – choose the file format of interest to export the table.

**Export only selected records** – only selected records are exported. If you leave the checkbox unchecked, all the table entries will be exported.

**Open the exported file in MS Excel** – if MS Excel is installed on your computer and the output file selected format allows it, the file will be opened for editing after export.

**Output file** – select the output file to which the table will be exported.

Press the **Data export** button and export the table.

### 4.3.3 Statistics list

This chapter describes the individual statistics, including the information in which modes they are accessible.

#### 4.3.3.1 Count of isolates per period

The statistics show the count of isolates in each selected period.

*Accessible:* always

#### 4.3.3.2 Amount of samples and patients

Results show the statistic evaluation of amount of analysed samples and patients in defined requesting wards. Results display total amount of samples and patients and percentage ratio to all samples, patients. If more than one requesting ward defined, results in the report of time period list displays total sum from all defined requesting wards.

*Accessible:* Registration of patients, samples, isolates and examinations; registration of patients

#### 4.3.3.3 Amount of samples

Results show the statistic evaluation of amount of analysed samples from defined requesting ward. Results display amount of samples and percentage ratio to samples from all requesting wards. If more than one requesting ward defined, results in the report display total sum from all defined indicators.

If the requesting ward is registered and you select multiple items in the ward list, the results in the slave list of time periods will be the sum of all selected departments.

*Accessible:* Registration of patients, samples, isolates and examinations

#### 4.3.3.4 Used clinical materials

Results show the statistic evaluation of amount of used clinical materials according to defined requesting wards. Results display amount and percentage ratio to all used clinical materials. Results display the monitored indicators per requesting ward in defined timeline. If more than one material type or requesting ward defined, results in the report display total sum from all defined indicators.

If the requesting ward is not registered, the result is data on the amount of clinical material over the period. The numbers and percentage ratios of all analysed materials are given.

*Accessible:* Registration of patients, samples, isolates and examinations; registration of material

#### 4.3.3.5 Performed diagnostic methods

Results show the statistic evaluation of amount of performed analyses of defined diagnostic methods. Results display amount and percentage ratio to all performed analyses.

If more than one method defined, results in the report of time period list displays total sum from all defined methods.

*Accessible:* always

#### 4.3.3.6 Isolated microorganisms

Results show the statistic evaluation of amount of isolated taxa in analyses in defined requesting wards. Results display amount and percentage ratio to all isolated taxa. Results display monitored indicators in requesting wards in defined timeline. If more than one taxon or requesting ward defined, results in the report display total sum from all defined indicators.

If the ward is not registered, the result is data about isolations of individual taxa per period. The numbers and percentages of all isolated taxa are given.

*Accessible:* always except Registration of susceptibility testing only mode

#### 4.3.3.7 The success of taxa identification

Results show the success of identification for individual taxa in selected time periods.

*Accessible:* always except Registration of susceptibility testing only mode

#### 4.3.3.8 Share of positive cultures

Results show the statistic evaluation of amount of positive cultures in analyses of clinical materials. Results display amount of samples and percentage ratio of positive cultures to all samples. Results are displayed in table, right upper corner shows list of requesting wards, left part shows list of clinical material types from defined requesting wards. Third table shows indicators in defined timeline. If more than one material type or requesting ward defined, results in the report display total sum from all defined indicators.

If neither ward nor materials are recorded, the result is data on the amount of positive cultures per period. The numbers of all samples, the number of positive cultures and the percentage of positive cultures are shown.

*Accessible:* Registration of patients, samples, isolates and examinations

#### 4.3.3.9 Share of monocultures

Results show the statistic evaluation of amount of monocultures in clinical materials analyses. Results display amount of samples and percentage ratio of monocultures to all samples. Results are displayed in tables, right upper corner shows list of requesting wards, left part shows list of clinical material types from defined requesting wards. Third table shows indicators in defined timeline. If more than one material type or requesting ward defined, results in the report display total sum from all defined indicators.

If neither ward nor materials are recorded, the result is data on the amount of monocultures per period. The numbers of all samples, the number of monocultures and the percentage of v are shown.

*Accessible:* Registration of patients, samples, isolates and examinations

#### 4.3.3.10 Share of mixed cultures

Results show the statistic evaluation of amount of mixed cultures in clinical materials analyses. Results display amount of samples and percentage ratio of mixed cultures to all samples. Results are displayed in tables, right upper corner shows list of requesting wards, left part shows list of clinical material types from defined requesting wards. Third table shows indicators in defined timeline. If more than one material type or requesting ward defined, results in the report display total sum from all defined indicators.

If neither ward nor materials are recorded, the result is data on the amount of mixed cultures per period. The numbers of all samples, the number of mixed cultures and the percentage of mixed cultures are shown.

*Accessible:* Registration of patients, samples, isolates and examinations

#### 4.3.3.11 Microorganisms in patients

Results show the statistic evaluation of amount of isolation of individual taxa in defined requesting wards. Re-isolation of the same strain from one patient is considered as one case. Results display amount and percentage ratio of individual taxa to all isolations. Results display monitored indicators in individual requesting wards in defined timeline. If more than one taxon or requesting ward defined, results in the report display total sum from all defined indicators.

*Accessible:* Registration of patients, samples, isolates and examinations; registration of patients

#### 4.3.3.12 Microorganisms susceptibility

Results show the list of the most commonly co-isolated taxa. Results display total sum of co-isolated taxon combination.

*Accessible:* always except Registration of susceptibility testing only mode

#### 4.3.3.13 Microorganisms susceptibility

Results show the statistic evaluation of susceptibility of individual taxa. Results display amount of S, I, R isolates and percentage ratio to all isolates from defined taxa. Results display monitored indicators of individual antibiotics in defined timeline. If more than one taxon or requesting ward defined, results in the report display total sum from all defined indicators.

*Accessible:* always except Registration of susceptibility testing only mode

#### 4.3.3.14 Microorganisms susceptibility in patients

Results show the statistic evaluation of individual taxa susceptibility. Results display amount of S, I, R isolates and percentage ratio to all isolates in defined taxa. Re-isolation of the same taxon of similar antibiogram is considered as one case. Results display monitored indicators in individual taxa in defined timeline. If more than one taxon or antibiotic defined, results in the report display total sum from all selected items.

*Accessible:* Registration of patients, samples, isolates and examinations; registration of patients

#### 4.3.3.15 Multiresistant strains

Results show the list of the isolation of multiresistant strains in defined taxa. Results display amount and combination of resistant antimicrobials in defined combination and taxon; combinations of antimicrobials are displayed in separate table. A list of multiresistant strains is always listed for only one taxon.

*Accessible:* always except Registration of susceptibility testing only mode

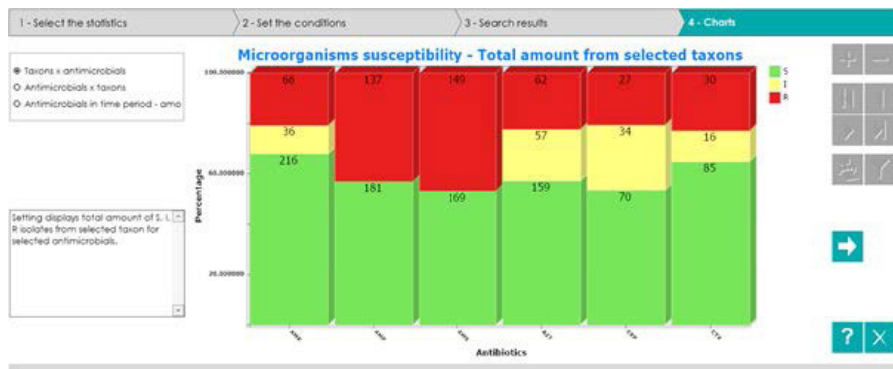
#### 4.3.3.16 Diagnosis and microorganisms

Results show the statistic evaluation of individual taxa isolation in defined diagnosis. Results display amount of taxon isolations in defined diagnosis and percentage ratio to all taxa from defined diagnosis. Results display monitored indicators in individual taxa in defined timeline. If more than one taxon or diagnosis defined, results in the report display total sum from all defined indicators.

*Accessible:* Registration of patients, samples, isolates and examinations; registration of diagnoses

## 4.4 Graphs

In the Graphs tab, the item selection is always checked. If at least one entry is not selected in the previous Search results tab, the transition is not allowed. Only when the statistics are displayed in three tables and no item is selected for the timeline, it is possible to continue, without possibility to display the time data.



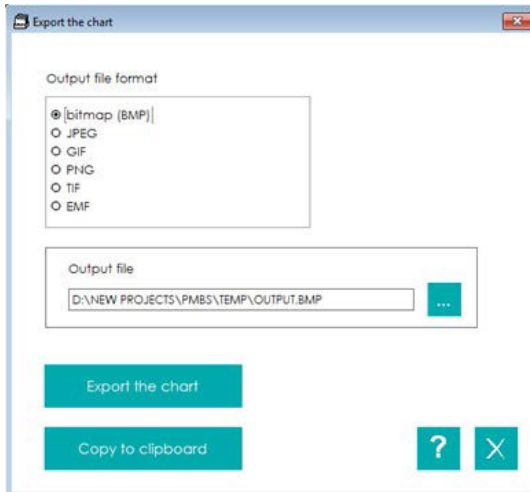
If multiple graphs are available for the selected statistics, they are displayed in the top left-hand switch. If only one chart is available at this time, the switch is hidden.

The description of the currently selected graph is always displayed in the bottom left field.

When you hover over a chart object, additional information is also displayed as tooltips.

### 4.4.1 Export of graphs

The displayed graphs can be exported. Click the arrow button on the form on the right to launch the export. The export dialog opens:



**Output File Format** – choose the file format to export the chart.

**Output file** – select the output file to which the graph will be exported.

Press the **Export the chart** button to export the graph.

By pressing the **Copy to clipboard** button, the graph is copied in the operating system clipboard, from where it can be inserted, for example, into an MS Word file or a presentation.

### 4.4.2 List of statistics and graphs

#### 4.4.2.1 Count of isolates per period

**Graph: Isolates in time period** – Setting displays total amount of isolates in selected time periods.

#### 4.4.2.2 Amount of samples and patients

**Graph: Requesting ward - amount** – Setting displays total amount of patients and samples in selected requesting wards in time period.

**Graph: Requesting ward – details** – Setting displays detailed amount of patients and samples in selected requesting wards and time period. Select maximum 5 requesting wards.

**Graph: Sample count in time period** – Setting displays total amount of samples and patients in selected time periods.

#### 4.4.2.3 Amount of samples

**Graph: Selected wards - amount** – Setting displays total amount of samples in selected requesting wards in time period.

**Graph: Selected wards - details** – Setting displays detailed amount of samples in selected requesting wards and time period. Select maximum 5 requesting wards.

**Graph: Sample count in time period** – Setting displays total amount of samples in selected time periods.

#### 4.4.2.4 Used clinical materials

**Graph: Material types in ward - amount** – Setting displays total amount of samples from selected material types in requesting wards.

**Graph: Material types in ward - details** – Setting displays detailed amount of samples from selected material types in requesting wards. Select maximum 10 material types.

**Graph: Ward in time period - amount** – Setting displays total amount of samples from selected material types and requesting wards in time period.

**Graph: Ward in time period - details** – Setting displays detailed amount of samples from selected material types and requesting wards in time period. Select maximum 10 requesting wards.

**Graph: Most common material types** – Setting displays 15 most common material types. The values in the graph represent the percentage of the total.

**Graph: List of material types** – Setting displays comparison of selected material types. Select maximum 20 material types.

**Graph: Materials in time period - amount** – Setting displays total amount of samples for selected materials in selected time periods.

**Graph: Materials in time period - details** – Setting displays detailed amount of samples for selected materials in selected time periods. Select maximum 10 materials.

#### 4.4.2.5 Performed diagnostic methods

**Graph: Selected methods - amount** – Setting displays total amount of selected methods in time period.

**Graph: Selected methods - details** – Setting displays detailed amount of analysis of selected methods in time period. Maximum 10 methods can be chosen.

#### 4.4.2.6 Isolated microorganisms

**Graph: Taxons in requesting wards - amount** – Setting displays total amount from selected taxon isolates in requesting wards.

**Graph: Taxons in requesting wards - details** – Setting displays detailed amount of isolates from selected taxa in requesting wards. Select maximum 10 taxa.

**Graph: Requesting wards in time period - amount** – Setting displays total amount of isolates from selected taxa and requesting wards in time period.

**Graph: Requesting wards in time period - detail** – Setting displays detailed amount of isolates from selected taxa and requesting wards in time period. Select maximum 10 requesting wards.

**Graph: The most common taxons** – Setting displays 15 most commonly isolated taxa. The values in the graph represent the percentage of the total.

**Graph: List of isolated taxons** – Setting displays comparison of selected taxa. Select maximum 20 taxa.

**Graph: Taxons in time period - amount** – Setting displays total amount of isolates for selected taxa in selected time periods.

**Graph: Taxons in time period - details** – Setting displays detailed amount of isolates for selected taxa in selected time periods. Select maximum 10 taxa.

#### 4.4.2.7 The success of taxa identification

**Graph: Identification success rate** – The output is the overall success of the identification for all selected taxa.

**Graph: Identification success - detail** – The output is the detailed success of the identification for particular selected taxa.

#### 4.4.2.8 Share of positive cultures

**Graph: Positive cultures in ward - amount** – Setting displays total amount of positive cultures from selected material types in requesting wards.

**Graph: Positive cultures in ward - details** – Setting displays detailed amount of positive cultures from selected material types in requesting wards. Select maximum 10 material types.

**Graph: Requesting wards in time period - amount** – Setting displays total amount of positive cultures from selected material types and requesting wards in time period.

**Graph: Requesting wards in time period - detail** – Setting displays detailed amount of positive cultures from selected material types and requesting wards in time period. Select maximum 10 requesting wards.

**Graph: Materials in time period - amount** – Setting displays total amount of positive cultures for selected materials in selected time periods.

**Graph: Materials in time period - details** – Setting displays detailed amount of positive cultures for selected materials in selected time periods. Select maximum 10 materials.

**Graph: Ward in time period - amount** – Setting displays total amount of positive cultures for selected requesting wards in selected time periods.

**Graph: Ward in time period - details** – Setting displays detailed amount of positive cultures for selected wards in selected time periods. Select maximum 10 wards.

**Graph: Positive cultures in time period** – Setting displays total amount of positive cultures in selected time periods.

#### 4.4.2.9 Share of monocultures

**Graph: Monocultures in wards - amount** – Setting displays total amount of monocultures from selected material types in requesting wards.

**Graph: Monocultures in wards - details** – Setting displays detailed amount of monocultures from selected material types in requesting wards. Select maximum 10 material types.

**Graph: Requesting ward in time period - amount** – Setting displays total amount of monocultures from selected material types and requesting wards in time period.

**Graph: Requesting ward in time period - details** – Setting displays detailed amount of monocultures from selected material types and requesting wards in time period. Select maximum 10 requesting wards.

**Graph: Materials in time period - amount** – Setting displays total amount of monocultures for selected materials in selected time periods.

**Graph: Materials in time period - details** – Setting displays detailed amount of monocultures for selected materials in selected time periods. Select maximum 10 materials.

**Graph: Ward in time period - amount** – Setting displays total amount of monocultures for selected requesting wards in selected time periods.

**Graph: Ward in time period - details** – Setting displays detailed amount of monocultures for selected wards in selected time periods. Select maximum 10 wards.

**Graph: Monocultures in time period** – Setting displays total amount of monocultures in selected time periods.

#### 4.4.2.10 Share of mixed cultures

**Graph: Mixed cultures in wards - amount** – Setting displays total amount of mixed cultures from selected material types in requesting wards.

**Graph: Mixed cultures in wards - details** – Setting displays detailed amount of mixed cultures from selected material types in requesting wards. Select maximum 10 material types.

**Graph: Requesting ward in time period - amount** – Setting displays total amount of mixed cultures from selected material types and requesting wards in time period.

**Graph: Requesting ward in time period - details** – Setting displays detailed amount of mixed cultures from selected material types and requesting wards in time period. Select maximum 10 requesting wards.

**Graph: Materials in time period - amount** – Setting displays total amount of mixed cultures for selected materials in selected time periods.

**Graph: Materials in time period - details** – Setting displays detailed amount of mixed cultures for selected materials in selected time periods. Select maximum 10 materials.

**Graph: Ward in time period - amount** – Setting displays total amount of mixed cultures for selected requesting wards in selected time periods.

**Graph: Ward in time period - details** – Setting displays detailed amount of mixed cultures for selected wards in selected time periods. Select maximum 10 wards.

**Graph: Mixed cultures in time period** – Setting displays total amount of mixed cultures in selected time periods.

#### 4.4.2.11 Microorganisms in patients

**Graph: Taxons in time period - amount** – Setting displays total amount of isolates from selected taxa in time period.

**Graph: Taxons in time period - details** – Setting displays detailed amount of isolates from selected taxa in time period. Select maximum 10 taxa.

**Graph: Most commonly isolated taxons** – Setting displays 15 most commonly isolated taxa. The values in the graph represent the percentage of the total.

**Graph: List of selected taxons** – Setting displays comparison of selected taxa. Select maximum 20 taxa.

#### 4.4.2.12 Microorganisms combinations

**Graph: List of selected combinations** – Setting displays comparison of selected combinations.  
Select maximum 20 combinations.

**Graph: The most common combinations** – Setting displays 15 the most commonly co-isolated taxon combinations. The values in the graph represent the percentage of the total.

#### 4.4.2.13 Microorganisms susceptibility

**Graph: Taxons x antimicrobials** – Setting displays total amount of S, I, R isolates from selected taxon for selected antimicrobials.

**Graph: Antimicrobials x taxons** – Setting displays total amount of S, I, R isolates for selected antimicrobials and selected taxa.

**Graph: Antimicrobials in time period - amount** – Setting displays total amount S, I, R isolates from selected taxa in time period.

#### 4.4.2.14 Microorganisms susceptibility in patients

**Graph: Taxons x antimicrobials** – Setting displays total amount of S, I, R isolates from selected taxon for selected antimicrobials.

**Graph: Antimicrobials x taxons** – Setting displays total amount of S, I, R isolates for selected antimicrobials and selected taxa.

**Graph: Antimicrobials in time period - amount** – Setting displays amount of S, I, R isolates from selected taxa and antimicrobials in time period.

#### 4.4.2.15 Multiresistant strains

**Graph: List of selected strains** – Setting displays comparison of selected multiresistant strains of taxa. Select maximum 20 taxa.

**Graph: Most common multiresistant strains** – Setting displays 15 the most commonly isolated multiresistant strains from isolated taxa. The values in the graph represent the percentage of the total.

#### 4.4.2.16 Diagnosis and microorganisms

**Graph: Diagnosis in taxons - amount** – Setting displays total amount of isolates from selected taxa in diagnosis.

**Graph: Diagnosis in taxons - details** – Setting displays detailed amount of isolates from selected taxa in diagnosis. Select maximum 10 diagnoses.

**Graph: Taxons in time period - amount** – Setting displays total amount of isolates from selected taxa and selected diagnosis in time period.

**Graph: Taxons in time period - details** – Setting displays detailed amount of isolates from selected taxa and selected diagnosis in time period. Select maximum 10 taxa.

## 5. Terms and abbreviations used

### 5.1 Terms used

**Data file** – a file that stores the results of analyzes of individual samples and isolates. It changes during working with the program.

**Diagnostic method, diagnostic kit** – a user-defined or predefined set of diagnostic tests used to analyze isolates; also a commercially available set of diagnostic tests.

**Diagnostic test** – traceable property or taxa characteristics in the identification matrix; then also the procedure, used to detect the occurrence of given property in the studied strain.

**Identification matrix** – databases distributed along with the program that includes the occurrence frequencies of observed properties (diagnostic tests) in observed taxa. Identification matrix data are not changed during the analyses procedure.

**Strain, isolate** – specific microbial culture, with specific properties. Isolates are studied using defined diagnostics methods.

**Data file field** – unit of the data file structure, carrying information about the identified isolate or sample.

**Taxon** – taxonomic unit contained in an identification matrix. It can be a species, subspecies, biovar or pathovar. The properties of the taxa are defined in the identification matrix by the frequencies of the individual diagnostic tests.

**Sample** – material of biological (clinical) origin, analyzed for the presence of microorganisms.

**Backup file** – a security copy of the data file created on the backup media (other network hard drive, tape, etc.).

### 5.2 Abbreviations

ATB	Antibiotic
LIS	Laboratory Information system
MALDI	Matrix-Assisted Laser Desorption/Ionization
MIC	Minimal Inhibition Concentration





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