Overview of an Outbreak Tools linelist features

# Introduction

Outbreak-tools is a set of tools to facilitate the creation and maintenance of Excel linelists. In particular, you can easily:

* Define different types of variables (dropdown lists, Excel formulas) their format and data validation rules.
* Print a register book that perfectly match your linelist.
* Translate your linelist into several languages.
* Use pre-defined geo databases for patient origin.
* Display custom analyses (univariate, bivariate, temporal, spatial) as tables and graphs.
* Export the entire data or selected variables/lines.
* Migrate the data to an updated version of the linelist.

The linelist is defined in a configuration file called *setup*. This *setup* file is then loaded into another file that designs the linelist (the *designer*). The designer creates the linelist, based on the configurations of the *setup*.

The goal of this exercise is to explore the functionalities and use of a measles linelist containing fictitious data.

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| Functionalities |
| The features are described in a user guide sent with this exercise. You can read it to get an idea of all the features available. We’ll just go through a few of them in this document. The main ones are presented in the following two diagrams: |

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| |  | | --- | | (a) Getting started | |  |

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| |  | | --- | | (b) Features | |

Figure 1: Linelist Features

## Exercise: Using linelist features

You have a linelist named linelist\_measles\_usage\_en.xlsb, and an Excel sheet containing data called import\_linelist\_en.xlsb. We’re going to explore the linelist, and answer some questions.

#### 1- Discover the data entry sheet.

*Sorting data*

Sort the data in the ‘ID number’ column.

To do this, click on the $A$9 cell.

On the OutbreakTools tab, click on the Sort Variable button.

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| Question |
| What are your thoughts? |

Now sort the data on the column Identification number padded.

*Show/Hide Variables*

On the OutbreakTools tab, click on the Show/Hide Variables button.

Hide the first three custom variables.

#### 2- Entering data

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| Filling the Linelist |
| The GeoHelper can help in entering geographical informations in a hierarchical way.  Geo helper  Geo helper  You can use custom dropdowns to prefill some dropdowns on your own, based on the informations you have, like for example the missing admin levels in the geobase.  Custom dropdowns  Custom dropdowns |

You have data for the following two patients:

Patient 1:  
  
 Notification date: 2023-10-22  
 Name: John Doe  
 Sex: Male  
 Age: 3 years  
 Origin: Lualabala, Kapanga, Kanampumb, Kasankara  
 Date of onset of symptoms: 2023-10-18  
 Date hospitalised: 2023-10-25  
 Vaccinated against measles: no  
 Date of discharge: 2023-11-01 (Died)  
  
 Patient 2:  
  
 Identification number: 44  
 Date of notification: 2023-11-05  
 Name: Jane Doe  
 Sex: Female  
 Age: 7 Months  
 Origin: Lualabala, Kapanga, Mulambu, Mulambu  
 Date of onset of symptoms: 2023-11-04  
 Date of hospitalisation: 2023-11-10  
 Vaccination status unknown  
 Date of discharge: 2023-11-12 (Cured)

Enter this data in the linelist. Filter the column Date of onset of symptoms.

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| Question |
| Do you see any discrepancies? Correct them. |

#### 3- Browse analyses

Click on the sheet Uni and bi-variate analyses.

*Global overview, univariate analyses*.

In the OutbreakTools tab, click on Refresh analyses.

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| Questions |
| How many patients do you have in the database? What is the case fatality rate? What is the proportion of children under 5? |

*Analysis on filtered data*.

Click on the sheet Linelist patients and filter the age group column to keep only children under 5.

Click on the sheet Uni and bi-variate analyses then click on Refresh analyses in the OutbreakTools tab.

You now have analyses only on the data you have filtered.

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| Question |
| What is the CFR of children under 5? |

*Bivariate analysis*

Click on the sheet Linelist patients.

In the OutbreakTools tab click on Remove all filters.

Click on the Uni and bi-variate analyses sheet.

Using the Go to Section button on the $C$2 tab, select the the section Patient Age Characteristics. Remember to refresh the analyses.

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| Questions |
| Among the unvaccinated patients, what is the most represented age group?  Have any adult patients (over 15 years of age) died? How many? |

*Temporal analysis*

Click on the Temporal analyses sheet, and update the analyses as before.

In cell $G$11$, choose the month as the time unit.

In cell $E$11, set the start date as 2019-01-01.

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| Questions |
| During 2019, in which month were there the most cases?  During this month of 2019, in which epidemiological week were there the most cases?  Overall during the epidemic, in which epidemiological week were there the most cases?  During this epidemiological week, what was the case fatality rate? |

*You can use the filters in the Patient list sheet to answer the following questions*.

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| Questions |
| What is the case-fatality rate for under-5 during the most affected epidemiological week?  In which epidemiological week were the most deaths recorded? |

*Spatial analysis*

Click on the Spatial analyses sheet and refresh the analyses as before.

In cell $C$14$, select the option Health-area.

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| Questions |
| How many patients have no information about their origin?  Which health area is the most affected? We will keep its name for future use.  Where do most of the patients who die come from? |

*Spatio-temporal analysis*.

Remember that we had to keep in mind the health area most affected.

Click on the Spatio-temporal analysis sheet.

In cell $C$14, click twice. A box for selecting locations is displayed.

Select the most affected health area. You can stop at level 3 and click OK.

Then update the analyses as before.

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| Question |
| During the epidemic, this health area had the most cases in which week? |

You can choose up to 10 health areas and display them on a graph if you wish.

#### 4- Exporting data

In the OutbreakTools tab, click on Export Data button.

Click on Anonymous export for MoH. Choose where you want to save the export.

Do the same and make an Anonymous export for MSF. This is the export that is sent to the dashboard. Don’t rename it. You can open it to explore the data and see the differences between the two exports. The password is 1234.

#### 5- (Bonus) Import data.

On the OutbreakTools tab, click on the Import data button. Browse and select the import\_linelist\_en.xlsb file, then click OK.

At the end of the import, you will be asked if you want to see a report. Select ‘Yes’.

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| Question |
| Which variables are not available in the imported data? |