⭐⭐ Add dynamic elements to reports

📋 Instructions

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2025-02-04

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This exercise builds on the previous exercise where you learnt to [build a simple MS Word report ⭐](./exercise3_instructions.html).

## Objectives 🎯

* You are tasked with generating a simple analytically reproducible report on a fictitious outbreak;
* If you have generated the simple MS Word report as in [Exercise 3](./exercise3_instructions.html), continue working on the same Quarto notebook you already modified. Otherwise, download the files df1.RData and exercise4.qmd using the links provided on the right-hand side of this page. For simplicity, please put these two files under the same folder and open the Quarto notebook in RStudio.
* Complete each of the following tasks and render the document after each task or set of tasks to track your progress;
* All text formatted in bold is a placeholder and should be replaced with appropriate automated calculations or cross-references;
* The final output should be a Microsoft (MS) Word report, containing all required tables, figures, corresponding captions and cross-references, and formatted with the Swiss TPH template.

## Improve navigation and readability

* Insert a table of contents to the rendered MS Word document;
* Automatically number the different sections of the rendered MS Word document;
* Configure the table of contents to only display two levels of section headings.

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| Tip |
| * See Quarto documentation about [table of contents](https://quarto.org/docs/output-formats/ms-word.html#table-of-contents) |

## Implement dynamic calculations

* Change the date 2023-12-31 to the date at which the MS Word document was last rendered;
* Format the date at which the MS Word document was last rendered to display it with the format December 31, 2023;

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| Tip |
| * See Quarto documentation about [date formatting](https://quarto.org/docs/reference/dates.html#date-formatting) * See Quarto documentation about [dynamic dates](https://quarto.org/docs/reference/dates.html#date-parsing) |

* Replace the placeholder text in bold with the automated calculation of the outbreak start and end dates;

“*The outbreak ran from* ***date*** *to* ***date***”

* Replace the placeholder text in bold with the automated calculation of the number of cases, confirmed cases and deaths.

“*Over the studied period, there were* ***N*** *cases, including* ***N*** *confirmed cases and* ***N*** *confirmed deaths.*”

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| Tip |
| * See Quarto documentation about [inline code](https://quarto.org/docs/computations/inline-code.html) |

## Reference tables

#### Table 1

* Assign a label to the table summarising the demographic characteristics and outcome frequency of all cases;
* Replace the placeholder text in bold with a cross-reference to the table.

“***cross-reference*** *provides a summary of the demographic characteristics and the outcome proportion for the overall population*”

#### Table 2

* Assign a label to the table summarising the demographic characteristics of individuals who died versus those who are still alive;
* Replace the placeholder text in bold with a cross-reference to the table.

“*while* ***cross-reference*** *compares the demographic characteristics of individuals who died versus those who are still alive*”

#### Table 3

* Assign a label to the table summarizing the odds ratios from the logistic regression model;
* Replace the placeholder text in bold with a cross-reference to the table

“The results of the logistic regression model are summarized in the formatted regression table, which is presented in **cross-reference**.”

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| Tip |
| * See [Quarto documentation about table cross-references](https://quarto.org/docs/authoring/tables.html#cross-references) |

## Reference figures

#### Figure 1

* Assign a label to the figure;
* Replace the placeholder text in bold with a cross-reference to the figure;

“***cross-reference*** *illustrates the outbreak’s progression, which can be divided into distinct phases.*”

* Adjust the dimensions of the figure until you are happy with them.

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| Tip |
| * See [Quarto documentation about figure cross-references](https://quarto.org/docs/authoring/cross-references.html#computations) * See [fig-width and fig-height](https://quarto.org/docs/computations/execution-options.html#figure-options) options to adjust figure dimensions |

## Reference code chunks

* Add a caption to the code chunk for your R implementation of the logistic regression;
* Assign a label to the code chunk;
* Replace the placeholder text in bold with a cross-reference to the code chunk.

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| Tip |
| * See [Quarto documentation about code chunk cross-references](https://quarto.org/docs/authoring/cross-references.html#code-listings) |

## Add references

* Create a bibliography (BibTeX) file my\_biblio.bib in the same folder as your Quarto notebook;
* Link the BibTeX file by adding it to the YAML header of your Quarto notebook;
* Add a new reference for [10.1016/S0140-6736(24)02669-2](https://doi.org/10.1016/S0140-6736(24)02669-2) in the BibTeX file;
* Create a new section named Background in your Quarto notebook, after the Overview section and before the Population section;
* Insert the following sentence into the Background section, and replace the placeholder text in bold with the correct citation key from your BibTeX file.

“***citation*** *describes trends in suspected and confirmed monkeypox virus cases in the Democratic Republic of Congo using epidemiological and laboratory surveillance data collected from 2010 to 2023.*”

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| Tip |
| * You can generate the BibTeX entry from the DOI using citation management tools; * See [Quarto documentation about citations](https://quarto.org/docs/authoring/citations.html) for guidance on formatting references; * If you are not familiar with BibTeX files or programming, Quarto’s visual mode offers user-friendly tools for managing citations, allowing you to handle most of the previous steps automatically. |

## Format MS Word reports with styles

* Apply the Swiss TPH template swisstph\_template.docx to your rendered MS Word report;
* To go further, try creating your own custom Word template and apply it to your report to explore how MS Word styles can be personalized.

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| Tip |
| * See [Quarto documentation about Word templates](https://quarto.org/docs/output-formats/ms-word-templates.html); * To create a template with customized MS Word styles, you will need to start with a Quarto-rendered MS Word report. This is because not all MS Word styles are supported by Quarto, and starting from a rendered report ensures better compatibility. |