Surv𝒮tat@RKI 2.0

Surv𝒮tat@RKI 2.0 allows retrieval of aggregated data on cases of notifiable diseases reported to the Robert-Koch-Institute (RKI) under the German 'Act on the Prevention and Control of Infectious Diseases in Man' (IfSG). Queries can be created individually or customized from pre-defined queries to generate tables, charts, and maps according to the user's needs.

1.   The Query Form

The query form is composed of the following elements:
- *Notification*
- *Filter Settings*
- *Attributes to Display*
- *Display Options*
- *Results*

Fig.1 *SurvStat@RKI 2.0 - Query form -*

2. Create Query

Before you begin creating a query, you may consider the following questions:

- *Which subset of the entire dataset do you want to analyse (disease/s, state/s, year/s of notification)?*

- *By which attribute (e.g., disease, time, age, or place information) should the query result be grouped, i.e. which attribute should be used to define the rows and/or columns of your result table?*

- *Do you want the absolute number of cases or case rates (number per 100,000 inhabitants, incidence) to be displayed in the result?*

- *Should the result table display not only rows and columns with case numbers or incidences >0, but also those with zero values?*

- *Case data may be subject to change over a period of time. Do you want to analyse the current data status or that of a previous year?*

2.1. Notification

The first step in your query is to choose between two notification paths. According to the IfSG (Sections 6.1.1 and 7.1), most notifiable diseases in Germany are to be reported via local and state health departments to the Robert-Koch-Institute (RKI). A few diseases require notification on a non-named-patient basis directly to the RKI (according to section 7.3 of the IfSG). The notification path that covers most diseases -'via local and state health department' - is preset by default.

> **Note:** Further information and definitions are provided by tool tips, which appear when hovering with the cursor over items to be selected. To find out, which diseases are to be notified directly to the RKI, keep your cursor positioned on the option 'Directly to the RKI'.

2.2. Data Status (Reporting Period)

The data provided is updated weekly (sections 6.1.1 and 7.1 IfSG) or monthly (section 7.3 IfSG), synchronised with the official national notifiable diseases statistics published weekly in the [Epidemiological Bulletin](#). This is why there are two different '**Data Status**' displayed in the top section of the query page (In both cases, the end of the reporting period is given in parentheses).

2.3. Filter Settings

Typically, a query result does not cover the entire dataset (all cases of notifiable diseases in Germany since 2001), but displays, after definition of selection criteria, information about a subset of data. To apply a filter in **SurvStat@RKI 2.0** you first select an '**Attribute**' (of the cases) which causes an automatically generated list of corresponding '**Values**' for the attribute to appear for your selection. From the list you pick the desired value(s) of the attribute to serve as criterion for filtering the dataset.

In the query, all selected attributes are connected by the Boolean operator AND, whereas selected values are connected by OR. Meaning that, for a case to be included in the query results table, it must meet one of the selected values for each of the selected attributes. Example: All cases having [(attribute) 'disease' = 'Influenza' (value)] AND [(attribute) 'state' = 'Bavaria' OR 'Saxony'(values)] AND [(attribute) 'Age' = '20' OR '21' OR '22' OR '23' OR '24' (values)].

For cases that are reported 'via local and state health department', attributes from five categories listed below are available for selection (attributes in brackets):

- **Notification category** *(Notification Regulation, Disease, Pathogen)*

- **Time** *(Year of notification, Week of notification, Year and week of notification, Season year (27), Season week (27), Season year and week(27), Season year (40), Season week (40), Season year and week(40)),*

- **Place** *(State, Territorial unit ([NUTS Level 2])[1], County)*

- **Person** *(Sex, Age stratification: children fine, Age stratification: children coarse, Age stratification: children medium, Age stratification: 5 year intervals, Age stratification: 1 year intervals)*

- **Case definition** *(Reference definition, Case definition category)*

> **Attention!** For queries on cases reported 'via local and state health department', the attribute 'Reference definition' is preselected and <Yes> is preset as value. Do not delete this preset if you want to compare your query result to data presented in RKI publications.

For cases that are reported 'Directly to the RKI', attributes from four categories listed below are available for selection (attributes in brackets):
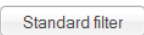
- **Notification category** *(Disease, Pathogen)*

- **Time** *(Year of diagnosis, Quarter of diagnosis, Month of diagnosis, Year and month of diagnosis)*

- **Place** *(State, Territorial unit ([NUTS Level 2]), Region)*

- **Person** *(Sex, Transmission category, Age stratification: children fine, Age stratification: children coarse, Age stratification: children medium, Age stratification: 5 year intervals, Age stratification: 1 year intervals)*

The document [Overview of Variables] summarizes all available attributes, and gives short explanations for some of them.

Attributes grouped under the categories 'Notification category' and 'Place' are connected **hierarchically**. Setting the value(s) for an attribute from a higher level limits the values that can be selected for lower level attributes.

If you, for instance, select the attribute 'State' and choose the value < Bavaria >, the values selectable for the (lower level) attributes 'Territorial unit' and 'County' are limited to territorial units and counties within the borders of the state Bavaria

Applying Filter Settings

Using the button [Standard filter] adds one filter each from the categories **Notification category**, **Time**, **Place** and **Person** to the filter settings. These can be further edited by selecting one or several values for each attribute (see the following description).

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1 NUTS (french: Nomenclature des unités territoriales statistiques; Nomenclature of territorial units for statistics)

To add a single filter to the filter settings

- click into the blank field (- Select an option -) in the left hand column (**Attribute**) of the filter settings section.

⊗   Select an option   ▼

⇨ The list of selectable attributes opens.

- Choose an attribute, e.g. under the category ‘Place’ choose the item < State / Territorial unit / County >

⇨ In the column **Value(s)** of the filter settings section, a field (- Select options -) appears for each of the attributes (‘State’, ‘Territorial unit’ and ‘County’ in our example).

Select options

- Click into the value selection field (i.e. click into the field labelled ‘State’).

⇨ The list of selectable values for the attribute (federal states in our example) opens.

- Select one or more values (states) among the entries e.g. select < Bavaria >.

⇨ The Results section, at the end of the query page, shows the number of cases that fit the filter settings (in our example: cases in Bavaria).

Note: To select more than one value, hold down the CTRL-key while selecting among the listed entries. To select all of the listed values, click on the button 🔲 **Select All**, to remove all selected values, choose button 🔲 **Deselect All** positioned to the right of the value selection field.
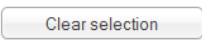

By using the respective buttons (⊕ **Add** and ⊗ **Remove**), filters can be added to or removed from the filter settings. Each attribute can be added only once.

You can add to the above described filter settings the attribute < Year of notification > listed under category ‘*Time*’ and

- Select the values < 2012 > and < 2013 >.

⇨ The **Result** section, at the end of the query page, shows the number of cases in Bavaria in 2012 and 2013.

Note: The selection of values is supported by a **search function**. If you type the search term, or a part thereof, into the **Values** selection field you will be offered all matching entries. For instance, typing "sax" into the values field for the attribute ‘*State*’ narrows the list of states that may be selected to "Saxony", "Lower Saxony" und "Saxony-Anhalt". The search is not case-sensitive.

Filters that have been added, either sequentially or together as ‘Standard filters’, can be removed all at once by using the [Clear selection] button at the end of the query form. This also clears the selection of attributes to display (see following section).

2.4. Attributes to display

You may group the total number of cases that match your filter settings by selecting an attribute for display '**In rows**' or '**In columns**'. The values of the selected attribute will form the row or column labels of the result table. All of the attributes listed in the 'Filter Settings' section are also available for configuring the result table layout.

Choosing two independent attributes for display (one in each of 'In rows' and 'In columns'), yields a crosstab. The assignment of attributes to rows and/or columns can be reversed by using the button ⊕ **Swap Attributes**.

To list the number of cases for each notifiable disease in the above mentioned example (number of cases in Bavaria, 2012 and 2013) you may:

- Under the heading '**In rows**' click into the blank field (- *Select an option* -) and under the category '*Notification category'* select the entry
  < Notification regulation / Disease / Pathogen >.

⇨ A new drop-down menu appears.

- Click onto the new menu and choose the attribute < Disease > for display.

⇨ In the Result section a table appears with the disease names labeling each row followed by the number of cases in a column with the header 'Number of Cases'.

To show the number of cases separately for each year,

- Under the heading '**In columns**' choose the attribute < Year of notification > for display.

⇨ For each year selected in the Filter Settings section (2012 and 2013 in our example) a separate column appears in the result table, showing the number of cases for each disease and year.

2.5. Display Options

To modify the display of the result table beyond the assignment of attributes to rows and columns, the following options are available:

- *Zero Values*

- *Totals*

- *Incidence, not case numbers*

- *Data Status to be displayed*

Select the option '**Zero values**' to display rows or/and columns in the result table for which there are zero cases. This is particularly important to allow for a continuous representation on the time or age axis. If you choose an attribute from the category '*Place'* (State, Area or County) for display, the option 'Zero values' is preset to ensure a complete map.
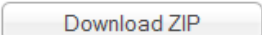
If you want the result table to show summed cases/total incidence for both rows and columns, select the option **Totals**.
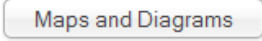
Comparisons between regions (state, territorial unit or county/region) and age groups should take into account differences in population sizes. Therefore, those figures should be displayed as an **incidence** rate (i.e., cases per 100,000 population). In contrast to earlier versions of Surv*S*tat, the total incidence shown refers to the entire time period selected in the 'Filter Settings' section.

For queries covering several years, the mean incidence (per year) must be calculated by dividing the total incidence by the relevant number of years.

In addition to the most recent ("last published") **data status** (preset), the data status of a previous year may be selected in order to compare your query result to official data **published** by the RKI in recent annual reports (reference date: March 1st of the following year). If you for instance want to create a query over data available as of March 1st 2010, you should select < Annual report 2009 >. As data collected according to state specific regulations are not part of the RKI annual reports and are published by the states themselves, queries on these data will not retrieve any result if you select the data status of a specific annual RKI report to be displayed.

3. Maps and Diagrams

Once the query and the tabular display of the result suffice your needs, you may download the result table as a csv-file together with a description/summary of the query (in PDF-format) using the button [Download ZIP] .

For a graphic display of the query result, use the button [Maps and Diagrams] This will take you to a new page, where you can choose between different chart types (line, bar, column, area, pie and doughnut diagram) or a map:
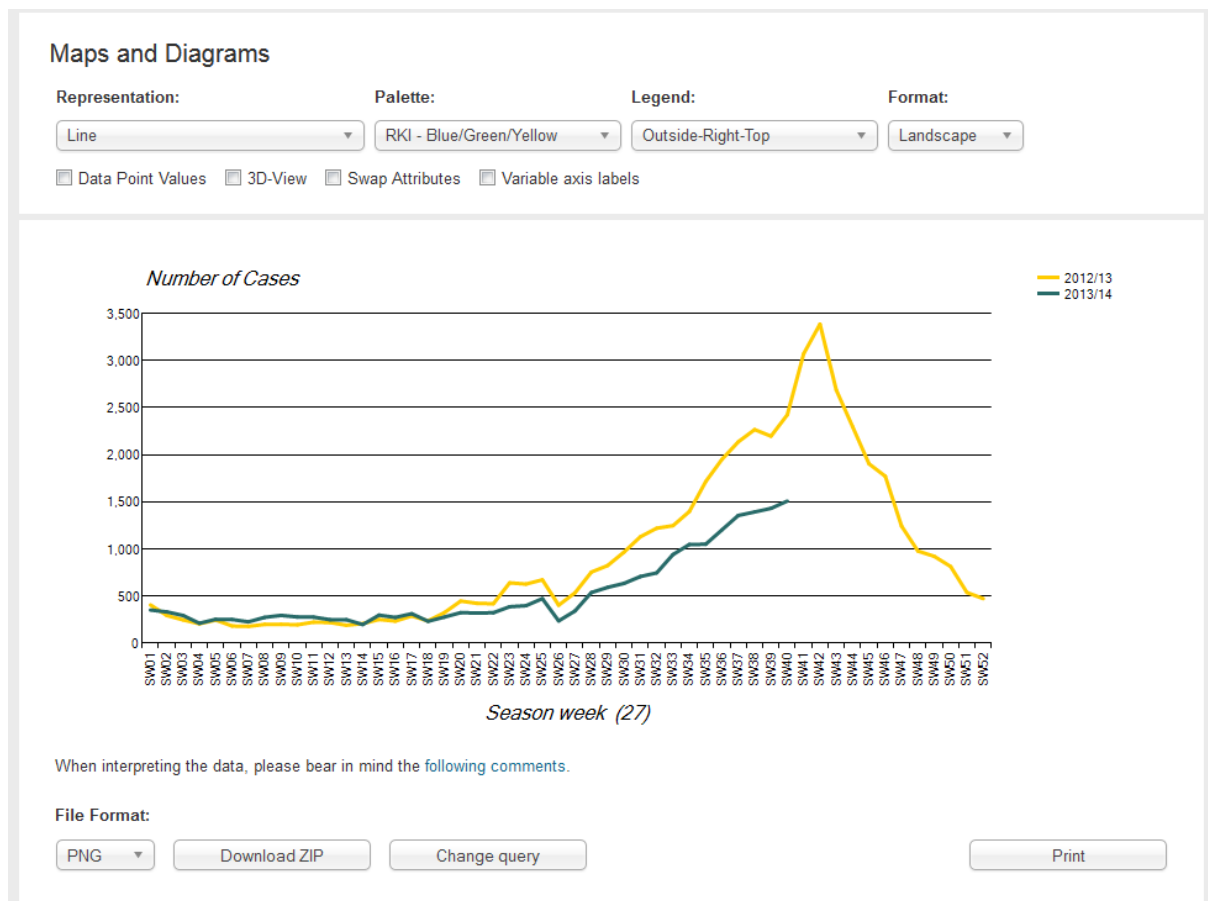

Fig.2 *SurvStat@RKI 2.0 - Maps and Diagrams -*

> **Attention!** Only queries with an attribute from the category ‘Place’ (e.g. State, Territorial unit or County/Region) as the <u>sole</u> attribute to display, can produce a **map**. In this case, the Display Option ‘Zero Values’ is selected by default, to ensure an error-free generation of the map.

    Maps do not necessarily have to display the total area of the Federal Republic of Germany. By choosing one or several states, territorial units/regions or counties in the filter settings, they may also be generated for the selected part of the federal territory (see Fig. 3).
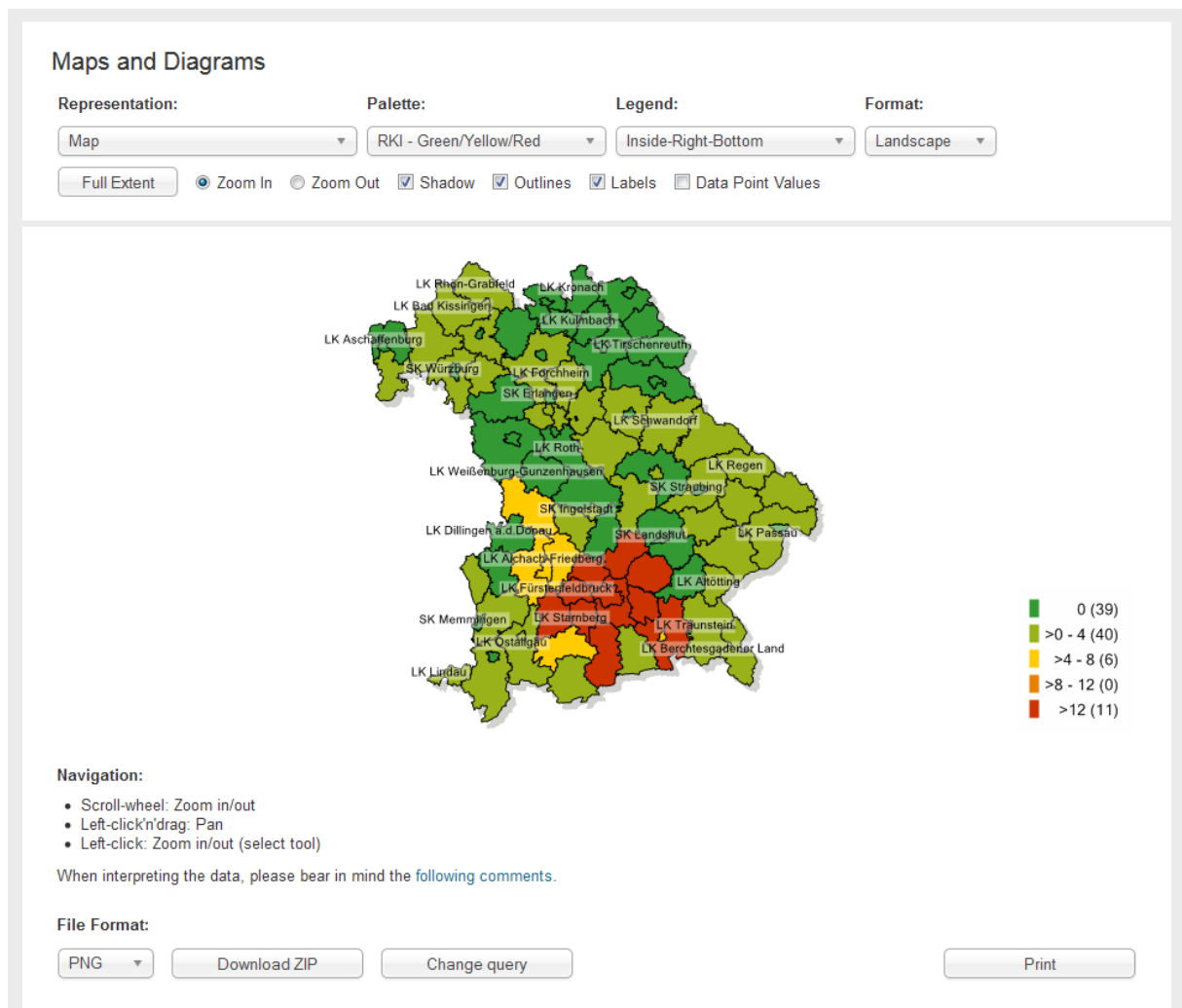

Fig.3 *SurvStat@RKI 2.0 – Incidence rate of Measles in Bavaria, 2013*
      (Data status: Annu. Report 2013)

    Diagrams and maps may be modified in terms of color (Palette), format, legend positioning and various other aspects (via the drop-down menus and check-boxes at the top of the page). The graphics can be saved in a variety of file formats (via drop-down menu at the bottom of the page) and may be downloaded together with the result table and a description/summary of the query.