# HOTspots surveillance and response program

## User guide for the HOTspots digital platform

September 2024

# 1 HOTspots website

The HOTspots digital platform provides public access to aggregated pathology data collated for the HOTspots surveillance and response program (for more information please visit HOTspots website).  The HOTspots digital platform provides a customisable interface for users via a member registration.  This guide will explain how to register as a member and use each of the platform sections.

Click **here** for the HOTspots digital platform (also found here https://amr-hotspots.net/).

# 2 Member area

The dedicated member's area allows users to customise settings, gain deeper insights, and access analytics based on saved searches, making it easy to continue their analysis seamlessly.

## 2.1 Registration and login

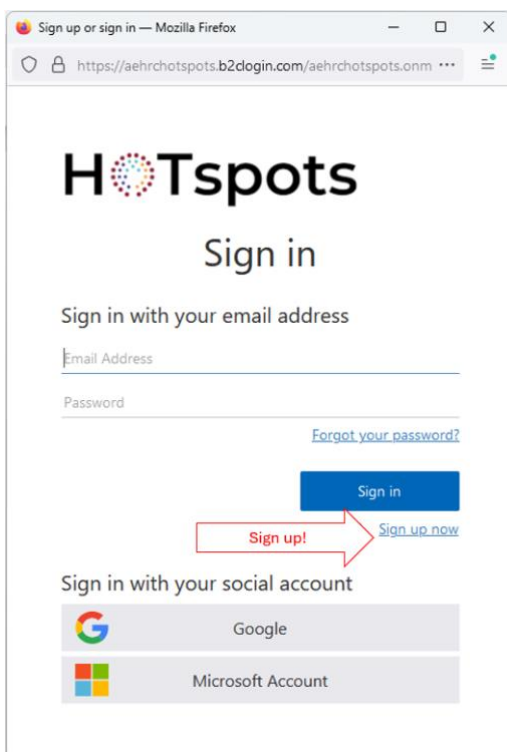MEMBER LOGIN

Registration is free.  Click on the MEMBER LOGIN or REGISTER FOR A FREE MEMBER ACCOUNT button.

In the popup, click on 'SIGN UP NOW' link under the blue SIGN IN button if you wish to use a username/password, OR sign in with a social account from Google or Microsoft.
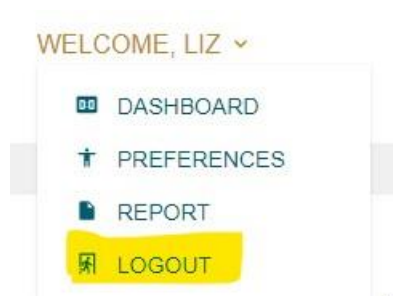
To unsubscribe email the HOTspots team at HOTspots@csiro.au.

### 2.1.1 Change password

For users with username/password, the option to change password is available by clicking on the 'FORGOT YOUR PASSWORD' link. For social account users, the password is managed by that provider, e.g. by Google.

### 2.1.2 Logout



Once login is successful, a 'Welcome, <name>' should appear in the top right. Click on this link to reveal a dropdown and the bottom link is the option to 'LOGOUT'.

## 2.2 Dashboard

The member dashboard displays the sections available which are discussed in more detail as follows. A link to this page can be found in the "Welcome" dropdown menu.

# 3 Using the digital platform

## 3.1 Navigation

The main sections of the digital platform are shown in the navigation bar at the top of the screen



 or, if viewing in smaller screen such as a mobile device, by clicking on the hamburger icon at the top left.

## 3.2 Map

The initial landing page shows the Map view. Data from the HOTspots datasets is displayed in a choropleth map – a  map that shows statistical information in various colours. The Map view provides a geographical representation of the % resistance of an antimicrobial organism (drug-bug) combination.

% Resistance of E. coli to Ampicillin from 2007 to 2022
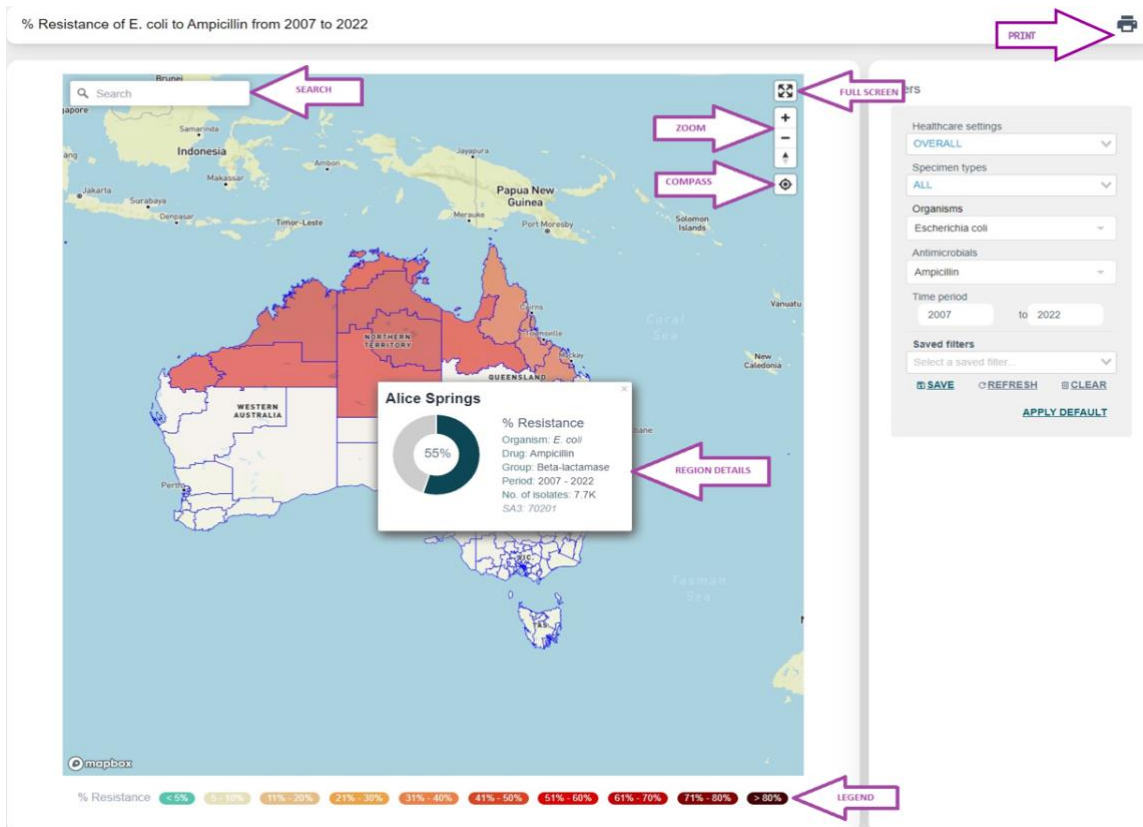
### 3.2.1 Region details

Clicking on a region in the map will show a popup window with the drug-bug details, including the mean %resistance value, the number of isolates used to give the mean %resistance value and the period covered by the data. To close the popup, click the grey cross in the top right or anywhere else on the screen. In regions where no data has been collected, the popup will show "No data available" and the map colour is white.

### 3.2.2 Search

In the top left, a search entry field is available to quickly locate a region of interest. Start typing and a dropdown should appear populating possible entries, move the cursor to one of the entries either by mouse or by clicking directly. To clear the entry, click on the grey cross at the right side of the box.

### 3.2.3 Zoom and full screen

On the top right, there is a panel with:

1. buttons to zoom in (+) or out (-),

2. go to full screen mode, or

3. zoom to current location (a popup in your browser will ask that you give permission to use your current location first)

### 3.2.4 Compass

On the top right, under the zoom buttons, a compass button allows you to re-orientate the map. Click on the button and hold then move the cursor over the map until desired rotation is achieved. Return to the default position by clicking on the button or refreshing the page.

### 3.2.5 Legend

Below the map, the legend of the colours used in the choropleth map are shown as ranges of %resistance from the lowest percentage <5% to the highest percentage of >80%.

## 3.3 Antibiograms

Antibiograms provide an overview of how susceptible specific bacteria are to different antimicrobials. Antibiograms summarise the cumulative proportions of organisms that are susceptible to antimicrobials. Antibiograms are presented as a table using a traffic light format.
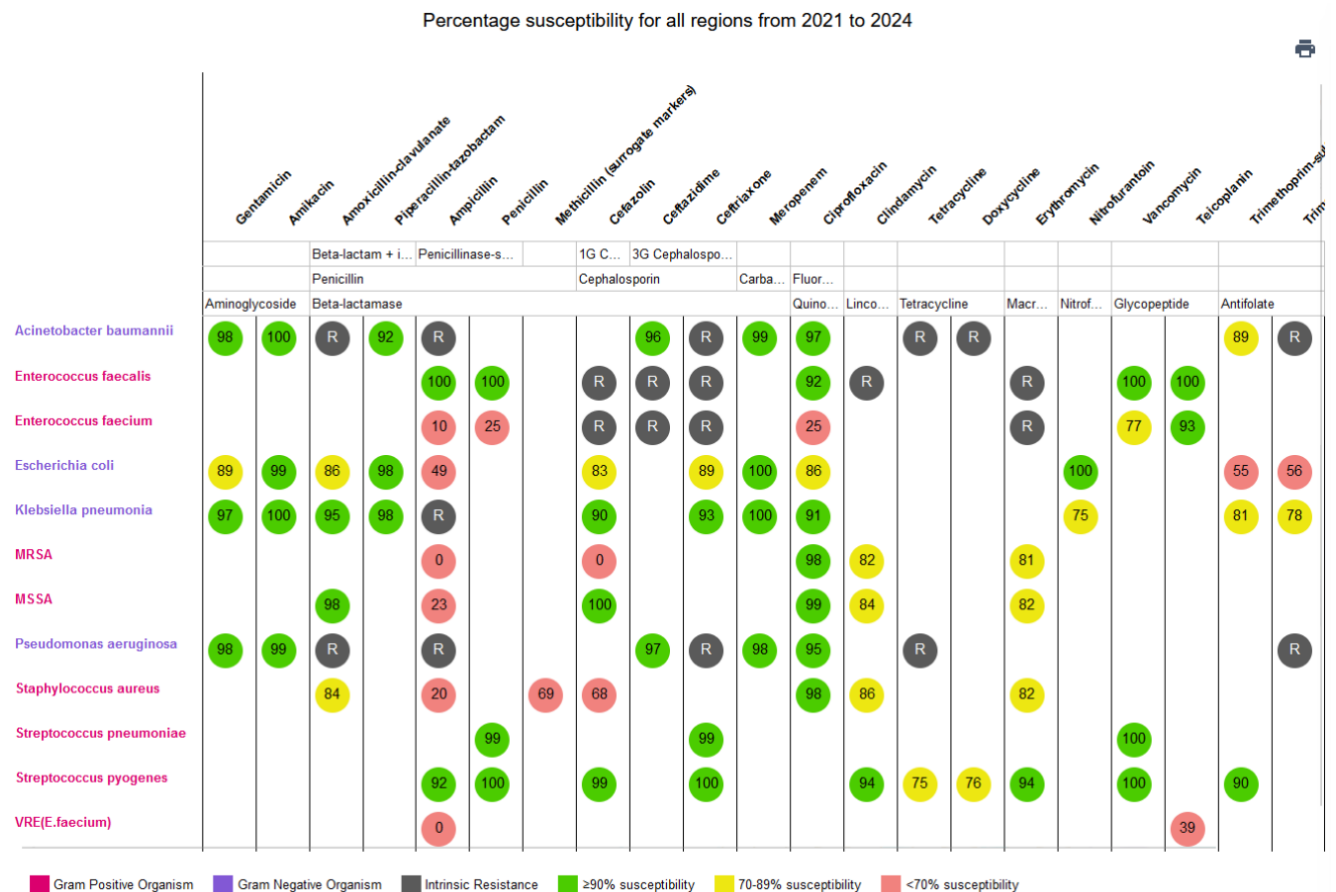
Green dots are >=90% susceptible

Yellow dots are 70-89% susceptible

Red dots are < 70% susceptible

Black dots with R, indicate intrinsic resistance

Move the cursor over the dots for more information about the number of isolates used in calculating the mean.

Percentage susceptibility for all regions from 2021 to 2024

| Organism | Gentamicin | Amikacin | Amoxicillin-clavulanate | Piperacillin-tazobactam | Ampicillin | Penicillin | Methicillin (surrogate markers) | Cefazolin | Ceftazidime | Ceftriaxone | Meropenem | Ciprofloxacin | Clindamycin | Tetracycline | Doxycycline | Erythromycin | Nitrofurantoin | Vancomycin | Teicoplanin | Trimethoprim-sulfa | Trim... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acinetobacter baumannii | 98 | 100 | R | 92 | R | | | | 96 | R | 99 | 97 | R | R | | | | | | 89 | R |
| Enterococcus faecalis | | | | | 100 | 100 | | R | R | R | 92 | R | | | | R | 100 | 100 | | | |
| Enterococcus faecium | | | | | 10 | 25 | | R | R | R | 25 | | | | | R | 77 | 93 | | | |
| Escherichia coli | 89 | 99 | 86 | 98 | 49 | | | 83 | | 89 | 100 | 86 | | | | | 100 | | | 55 | 56 |
| Klebsiella pneumonia | 97 | 100 | 95 | 98 | R | | | 90 | | 93 | 100 | 91 | | | | | 75 | | | 81 | 78 |
| MRSA | | | | | | 0 | | 0 | | | | 98 | 82 | | 81 | | | | | | |
| MSSA | | | 98 | | | 23 | | 100 | | | | 99 | 84 | | 82 | | | | | | |
| Pseudomonas aeruginosa | 98 | 99 | R | | R | | | | 97 | R | 98 | 95 | R | | | | | | | | R |
| Staphylococcus aureus | | | 84 | | | 20 | 69 | 68 | | | | 98 | 86 | | 82 | | | | | | |
| Streptococcus pneumoniae | | | | | | 99 | | | | 99 | | | | | | | | 100 | | | |
| Streptococcus pyogenes | | | | | 92 | 100 | | 99 | | 100 | | 94 | 75 | 76 | | 94 | | 100 | | 90 | |
| VRE (E.faecium) | | | | | 0 | | | | | | | | | | | | | 39 | | | |

Legend: Gram Positive Organism | Gram Negative Organism | Intrinsic Resistance | ≥90% susceptibility | 70-89% susceptibility | <70% susceptibility
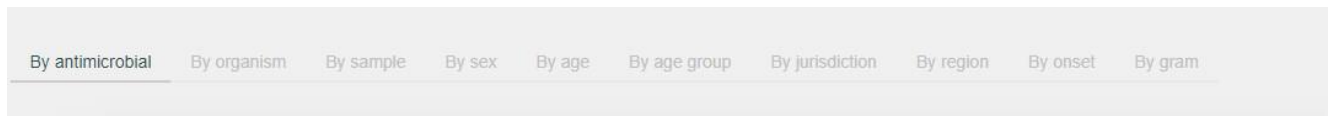
## 3.4  Print

A printable version of each view is available by clicking on the 'print' button.

Depending on the browser, the quality of the print may vary and it may be necessary to make some adjustment in the print options provided by the browser.

## 3.5  Plots

Plots by various categories are displayed in the Plot view. This allows users to investigate the data in meaningful ways.  Select the required view by selecting from the Plots navigation bar. Options include by antimicrobial, organism, sample, sex, age, age group, jurisdiction, region, onset and by gram.

| By antimicrobial | By organism | By sample | By sex | By age | By age group | By jurisdiction | By region | By onset | By gram |
|---|---|---|---|---|---|---|---|---|---|

The plot is interactive with the following functionality:

1. Hide or show a dataset by clicking on the name in the legend.

2. Hover the cursor over the data to view the plotted value.

3. Hover the cursor over the plot to select other options:

    a. Zoom in/out

    b. Pan

    c. Select a region by box or lasso

    d. Autoscale and reset axes

    e. Download as PNG
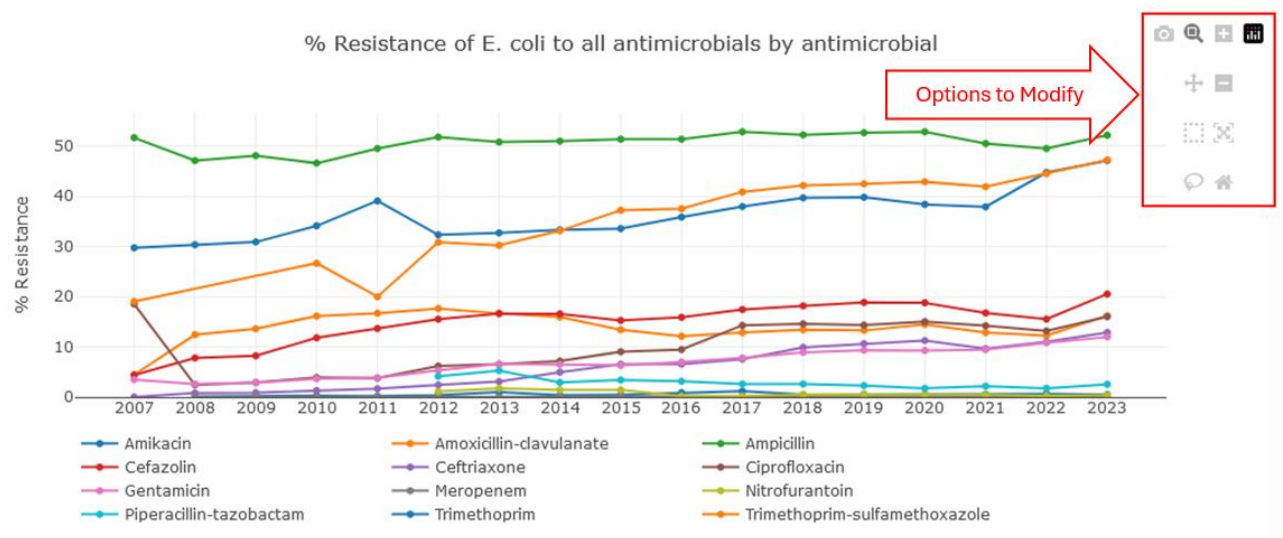
## 3.6  How to save in figure format (png)

📷 A figure version of the view is available to download by clicking on the 'camera' button.

The figure will be saved in the format of 'png' and named as 'newplot' once clicking.
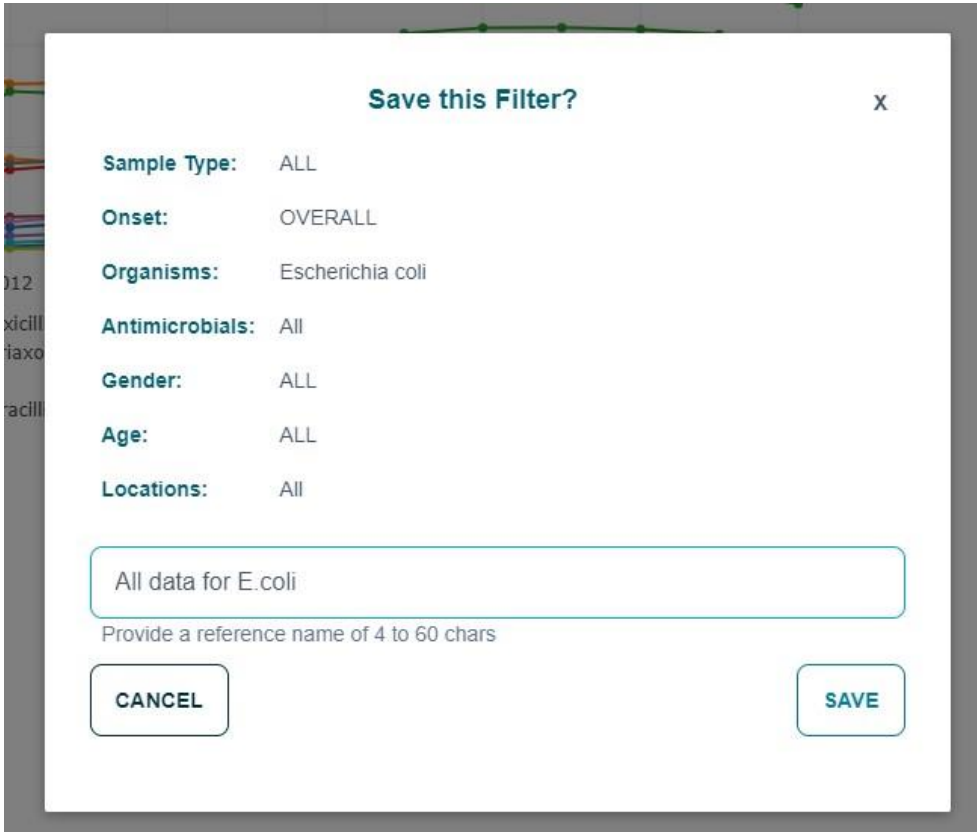
## 3.7  Filters

For each view, data filters can be adjusted in a side panel on the right.  Select required options from the dropdown menus and the data displayed will update immediately.  Dependent on the type of view, multiple options may be available and an "All" option is present.  If filters result in excluding all data, a message "No data available" will be displayed.

| Filter types | Map | Antibiogram | Plot |
|---|---|---|---|
| **Measure** can be displayed as percent resistance, rate of infection or rate of resistance | Y | NA | y |
| **Healthcare setting** can be displayed as hospital, community or all | Y | Y | Y |
| **Specimen types** can be displayed as blood, other, respiratory, skin, urine or all | Y | Y | Y |
| **Gender** | NA | Y | Y |
| **Age brackets** covering birth to 81 years plus | NA | Y | Y |
| **Locations can be displayed by State/Territory.** Within each of these locations (e.g. NT) regions can also be identified (e.g. Alice Springs, Barkly, Daly-Tiwi-West Arnhem, Darwin city, Darwin suburbs, East Arnhem, Katherine, Litchfield and Palmerston) | Y | Y | Y |
| **Organisms** are listed in the drop-down box | Y | Y | Y |
| **Antimicrobials** are listed in the drop-down box | Y | Y | Y |
| **Time period** can be adjusted to show data on years of interest | Y | Y | by year |

* Y=Yes; NA=Not Applicable

### 3.7.1 Saved filters

Filter settings are not saved automatically but can be saved by clicking on "SAVE" below the "Saved filters" dropdown. A popup box will appear showing the filter settings that are currently selected. Provide a name for this filter setting which allows users to recall previous filter settings by selecting them from the dropdown at "Saved filters".



### 3.7.2 Clear saved filters

Remove previous filters by clicking on "CLEAR" which will show a popup with a list of saved filters. Remove each filter set by clicking on the DELETE button.

IMPORTANT: As a public user, the saved settings are saved in the user's browser, thus if the user decides to use a different browser on the same machine or a different machine or device, the saved settings will not be available. However, if the user becomes a member by registering, the saved settings will be available from all devices and browsers.

### 3.7.3    Refresh saved filters

If saved filters do not appear in the dropdown list, click on "REFRESH" in the Filters panel.

### 3.7.4    Reset filters

Click on 'APPLY DEFAULT' in the Filters panel, to reset the filters. For members, this will reload any saved default preferences.

## 3.8  Filter Preferences

Members can **save default sets of filters** which will load on page load for each of Map, Antibiogram and Plots (see #1 in the diagram). This will override the default provided by HOTspots which is currently *E.coli* and Ampicillin for all categories.

In the right-hand panel, **a preview of the data** selected by the filters should assist in defining the appropriate filter settings (see #2 in the diagram). This table shows the sample (isolates) count and the mean %resistance.

Click on 'SAVE' to save the default filter preference set.

To return to the HOTspots default, click on 'RESET FACTORY' then click 'SAVE'.

An option to select data by **data source provider** is available for Members who have been granted access to a specific data source provider (See Organisation Form and #3 in the diagram).

**Filter preferences**

Here you can setup your default preferences for Map, Antibiogram and Plot views.

Select tab, adjust to required filters, check the Data Preview to see that filters return results, then click SAVE.

- To return to factory default, click Reset Factory on this page.
- In each of Map, Antibiogram and Plots pages, click Apply Default to load these settings.

For Map    For Antibiogram    For Plots    #1

Healthcare settings
OVERALL

Specimen types
ALL

Genders
ALL

Age Brackets
ALL ×

Organisms
Escherichia coli

Antimicrobials
Ciprofloxacin

Time period
2021    to    2023

RESET FACTORY

**Data Preview**

| ORGANISM⬍ | ANTIMICROBIAL⬍ | SAMPLES⬍ | %RESISTANCE⬍ |
|---|---|---|---|
| Escherichia coli | Ciprofloxacin | 40290 | 14% |

#2

SAVE    #3

IMPORTANT: These default settings load on page load only.  Clicking APPLY DEFAULT will load any **saved** member settings otherwise the HOTspots defaults will load.

## 3.9  Organisation Form

**Request data access**

If you are a member of one of our contributing organizations, you can request access to your data here.

Please select your organization *

Describe your request for data access

0 of 500 chars

SEND

Members who are associated with one of HOTspots data providers can request access by completing and sending the form on this page.

An email will be sent to the member if the request is successful, and the data provider organisation will show in the Member dashboard header bar and the data provider dropdown in the filter panels.

Name: Liz Cooper
Country: Australia
Organizations: Pathology Queensland

# 4  Troubleshooting

1. If saved filters do not appear in the dropdown list, click on "REFRESH" in the Filters panel.
2. Most issues should resolve by refreshing the page in the browser.

Please contact HOTspots  (HOTspots@csiro.au) for any other issues.

**As Australia's national science agency and innovation catalyst, CSIRO is solving the greatest challenges through innovative science and technology.**

CSIRO. Unlocking a better future for everyone.

**For further information**

Contact HOTspots
Australian eHealth Research Centre
Health & Biosecurity, CSIRO
HOTspots@csiro.au
www.csiro.au