

How to load data sets



Illustration 1: File upload panel

1. For preloaded dataset, click the **Upload File button**, select one item from drop down list (e.g. "TamilNadu-current.tcube")
2. Once you have finished using TCWI or want to refresh the data - Click **Clear Data** button to unload the dataset and clean up time series and map display

How to query the data cube

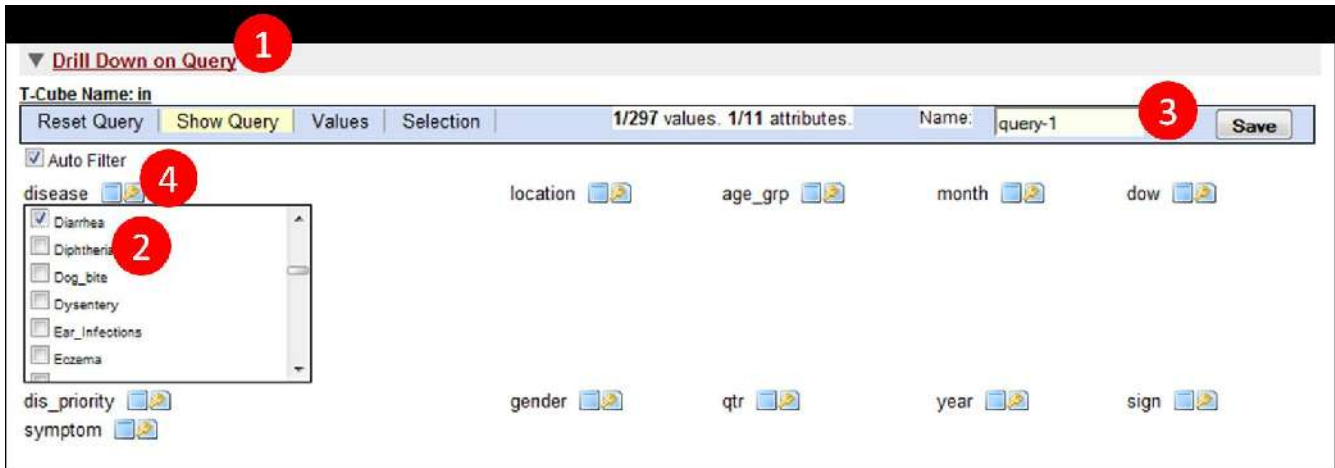


Illustration 2: Query panel

1. Click to expand **Drill Down on Query** section
2. Click any attribute name and select attribute values (e.g. attribute =disease, value = diarrhea)
3. By default, this will update the "current query". Optionally, you may supply a name of the query and save it, which will be appeared as a named time series in the time series panel.
*Note: named time series can be renamed, to rename a time series, expand **Analysis** section, in left panel select the time series to be renamed, supply a name at the bottom of the left panel, and click **rename** button*
4. For Advanced Query, click **key icon**, it will show panel as following, this example shows how to extract all fever like diseases - type "fever" , click **contains** radio button, click **select**, then **okay** button, Click **show Query** to confirm that the query is correct



Illustration 3: Advance query

How to navigate the time series panel

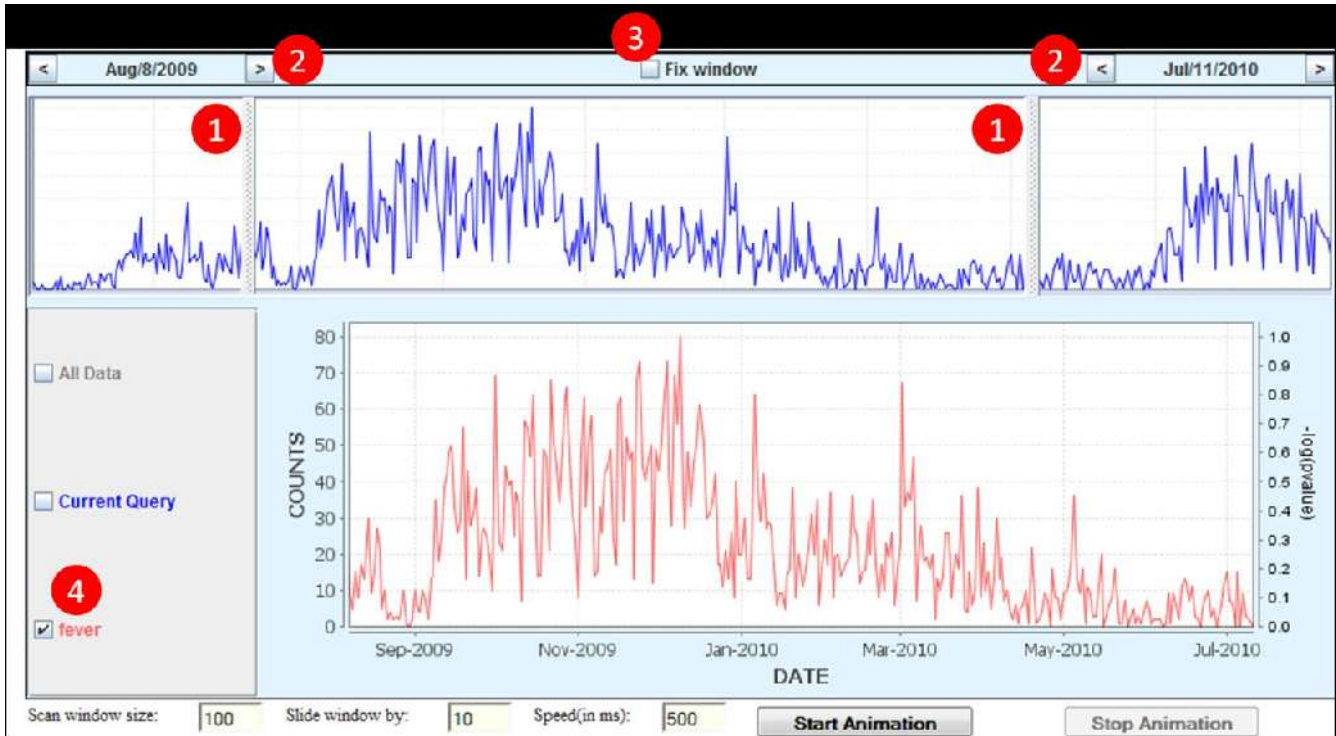


Illustration 4: Time series panel

1. The upper panel of time series shows a complete view of “current query”, moving slider bars allows to sub select the time series, so that lower panel of the time series (i.e. look at the time series in a particular time window, e.g. Aug/08/2009 to July/11/2010) and then the map will be updated accordingly
2. For finer control of the sliding bar, use arrow button to move in one day increments or decrements
3. Check **Fix window** allows the two sliding bars to moving simultaneously
4. This area list all time series can be displayed, checking/un-checking any of them enable displaying/un-displaying time series. Right click the name of time series brings up control panel which allows changing visual property of time series such as color, line type, thickness etc.

How to navigate map panel

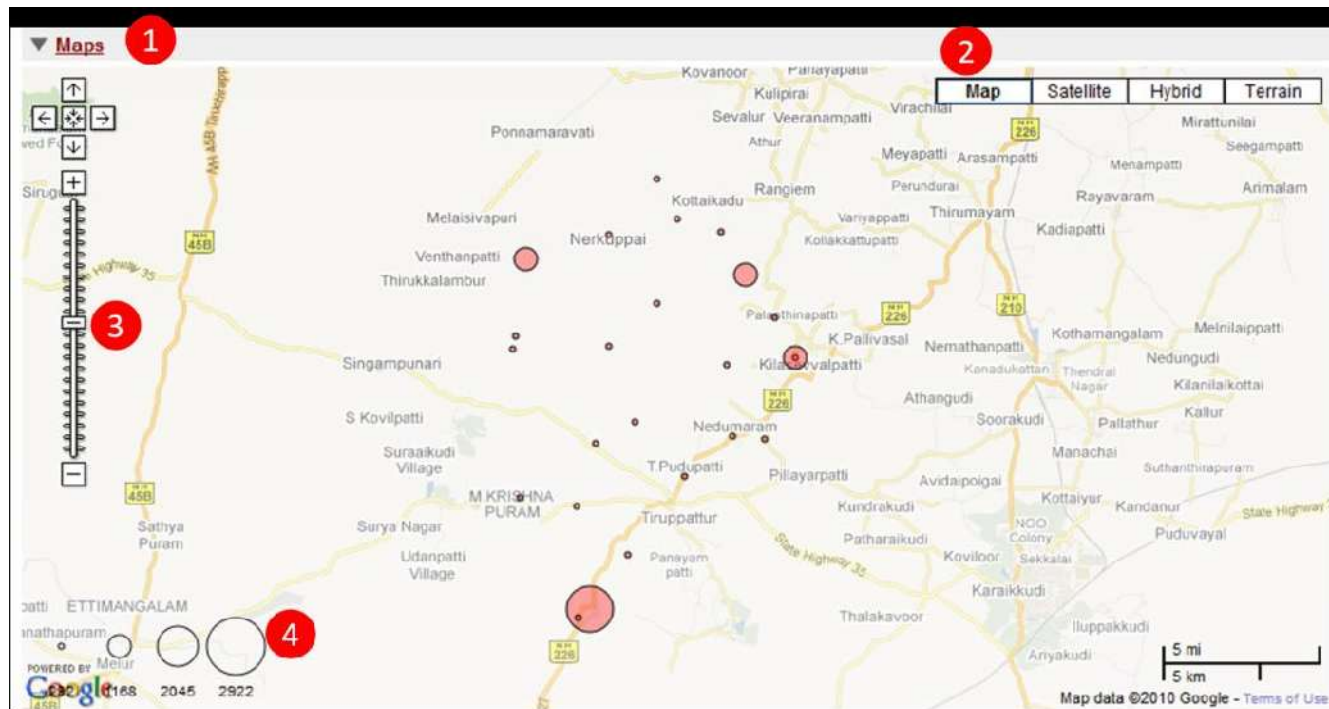


Illustration 5: Map panel

1. Click to expand the **map** section
2. Optionally, you may switch among different type of map: map, satellite, hybrid, terrain
3. Optionally, zoom in or zoom out the map
4. This is the legend, circle size is proportional to accumulated patient case counts within certain range of time scoped by the sliding bars in time series panel

Note: The circles are solid colored if there is only one time series in display; it changes to non solid circle when multiple time series are displayed

How to do pre-defined screening

Screening Results

The following screenings are available:

Escalating Fever Diseases Escalating Notifiable Diseases Escalating other communicable Diseases

This screening shows data about all diagnoses of fever and fever-like diseases. It will show locations and age groups in which fever diseases have been statistically unusual recently.(15 queries)

Id	Query	Date	PValue	Window	Count	Expected Count	Ranked PValue	Alt Date	Alt PVal
1	disease=(Cerebro_Spinal_Fever,Dengue_Fever,Fever,Scarlet_Fever,Typhoid_Fever),location=(Thirukosbyur-PHC),age_grp=(45-99)	11/14/2010	1.999E-20	28	164	71.61	1.081E-2		
2	disease=(Cerebro_Spinal_Fever,Dengue_Fever,Fever,Scarlet_Fever,Typhoid_Fever),age_grp=(45-99)	11/14/2010	2.201E-18	28	259	143.89	3.423E-2		
3	disease=(Cerebro_Spinal_Fever,Dengue_Fever,Fever,Scarlet_Fever,Typhoid_Fever),location=(Thirukosbyur-PHC),age_grp=(45-99)	11/14/2010	7.060E-7	28	46	20.75	3.063E-2		

On 11/14/2010, we note that the counts in last 28 days are significantly higher than expectation. The chance of seeing anything more extreme is extremely rare.

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Dump Query Use For Drill-Down Save To List Name: Escalating Fever Diseases Save Results to File Print List

Rate usefulness of the result User Name: Comments:

No Answer 1 2 3 4 5

Submit Feedback

Illustration 6: Predefined screening panel

1. Click to expand the **Screening Results** section
2. Click on any of the button to run a particular type of screening (e.g. Escalating fever diseases)
3. This section describes the nature of the selected screening, for example, we're now screening for any significant upward trend of fever cases in last 7 days in a particular location and/or age group. This screen returns 15 result queries;
4. Click on any of the result queries in the list, the time series and map panel will be uploaded accordingly, a view of time series is shown below
5. This is a general description of the highlighted result query
6. You may navigate to other set of result queries by clicking this button
7. You may save the screening result to a comma separated (csv) file (**Save Result to File** button) or generate a well-formatted html file to be readily printed (**Print List** button)

Below is a time series view of a particular screening result query

8. This is the raw counts of result query (i.e. a target query in temporal scan, refer to temporal scan analysis)
9. This is temporal scan p-value series
10. Highlighted is the window with most the significant p-value (i.e. the window contains period with most significant trend of increasing fever diseases for a particular location and/or age group).

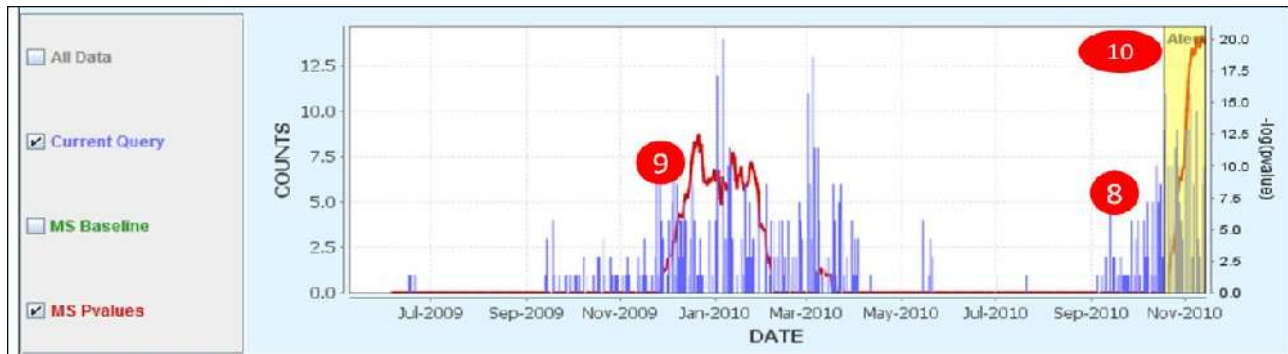


Illustration 7: Time series highlighted with alert and most significant p-values

How to run preconfigured pivot table (report)

PreLoaded Table Name	Description
IDSP - Weekly Report	This pivot table shows disease vs location for notifiable diseases for the last 7 days.
Morbidity Report	This pivot table shows disease vs age_grp vs gender for the last 28 days.

Location	Acute_Diarrheal_Disease	Dog_bite	Dysentery	Fever	Polio	Total
Keelasevalpatty-PHC	0	3	3	37	0	43
Nerkuppai-PHC	0	0	0	15	0	15
Sevenipatti-PHC	5	2	0	11	0	18
Thirukostiyur-PHC	0	2	0	114	1	117
Total	5	7	3	177	1	193

Illustration 8: Pivot table panel

1. Click to expand **Pivot Table** section
2. Select data source of the pivot table (if multiple data cubes are loaded) (For IDSP weekly report)
3. Click on the title of report – IDSP weekly report, the pivot table is immediately populated with accumulated counts by disease by location from last seven days.

4. Colored cells indicate increase of counts from last period of same length (e.g. increase of counts from last week)
5. If set to “Numeric”, large numbers will be moved to upper left corner of the table, otherwise, the list of disease name and location names are ordered alphabetically
6. If set to “Yes”, the pivot table only shows diseases and/ locations with non zero counts; otherwise, all locations and diseases in the database will show up in the table, rendering of large table can be slow.

(For monthly Morbidity Report)

7. Click on the title of report – Morbidity report, the pivot table is populated accordingly
8. click on any of the location to show the section of report related to that particular location
9. **Save to File** saves the current pivot table to a csv file; **Print Report** will display a well formatted html file for printing in following format

Pivot Table Report Report Run Time: Wed Nov 17 11:16:08 GMT-500 2010
 Dataset ID: in

This pivot table shows disease vs location for diseases in form P and S for the last 7 days. Pivot Table Date Range: 2010-11-08 - 2010-11-14

	Dysentery	Fever	Total
Kaasiasecalpatry-PHC	3	37	40
Nerikypa-PHC	0	11	11
Sevenipatri-PHC	0	11	11
Thindokstyar-PHC	0	114	114
Total	3	177	180

End report.

Illustration 9: Sample pivot table report

How to run analytical method

All analytical methods are made available from Analysis section. A generic procedure to perform analysis is as following:

1. Pick a time series as “target query” from left panel
2. Pick a method
3. Set parameters and where applicable, a second time series (e.g. as baseline)
4. Push **submit** button, the result query is added to the time series panel

Smoothing (moving average/moving sum)

Create New Update

Choose Method: ▼

Series name: Target: Auto update on target change

Smoothing: Trailing Centered Leading

Window Size:

Submit

Illustration 10: Statistical estimations panel

Note: when “Auto Update on target change” is checked, the analysis result queries will be updated with the target change. This is only applicable when use “current query” as a target query.

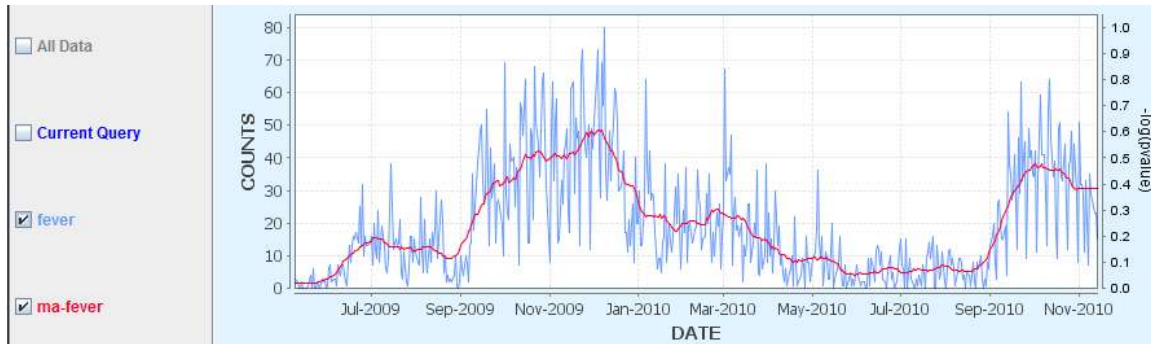


Illustration 11: Sample output of moving average

Temporal Scan

Create New Update

Choose Method: Temporal Scan

Series name: tempscan-fever Target: fever Auto update on target change

Baseline: All Data Auto update on baseline change

Period of Analysis - Start Date: 05/10/2009 End Date: 11/14/2010

Period of Reference - Start Date: 05/10/2009 End Date: 11/14/2010

Window size 7 ReferenceType: Reference Type Trailing

Reference Window: 28 Lag: 0

Scan option: Upper Tail Min Support: 0 Pvalue threshold 0.05 Apply FDR

Submit

Illustration 12: Temporal Scan parameters

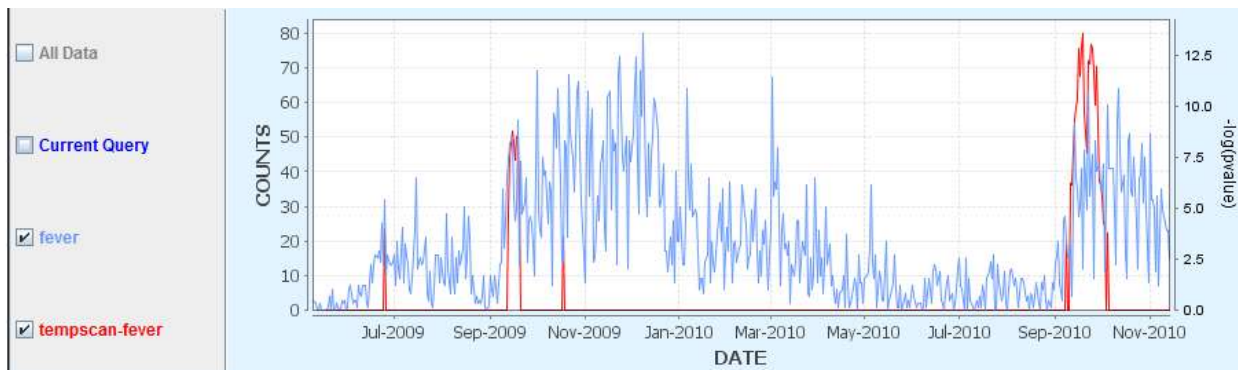


Illustration 13: Sample temporal scan output

The temporal scan result shows that there is increasing trend of fever cases as comparing with baseline (all disease cases) in September 2010.

CuSum

Create New Update

Choose Method:

Series name: Target: Auto update on target change

Cusum Tolerance (K): Cusum Period (in days): Cusum Threshold:

Illustration 14: CuSum parameters

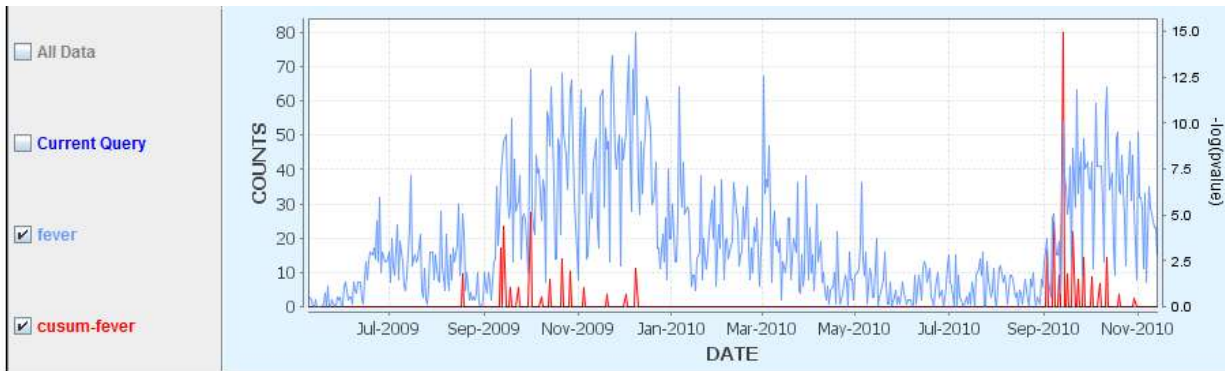


Illustration 15: Sample CuSum output

Figure 15 shows The CuSum result indicates an increasing trend for fever cases in September 2010

Spatial Scan

Create New Update

Choose Method:

Series name: Target:

Start Date(mm/dd/yyyy): End Date(mm/dd/yyyy):

Window: Group Size: Amplitude: Previous Days:

Illustration 16: Spatial scan parameters

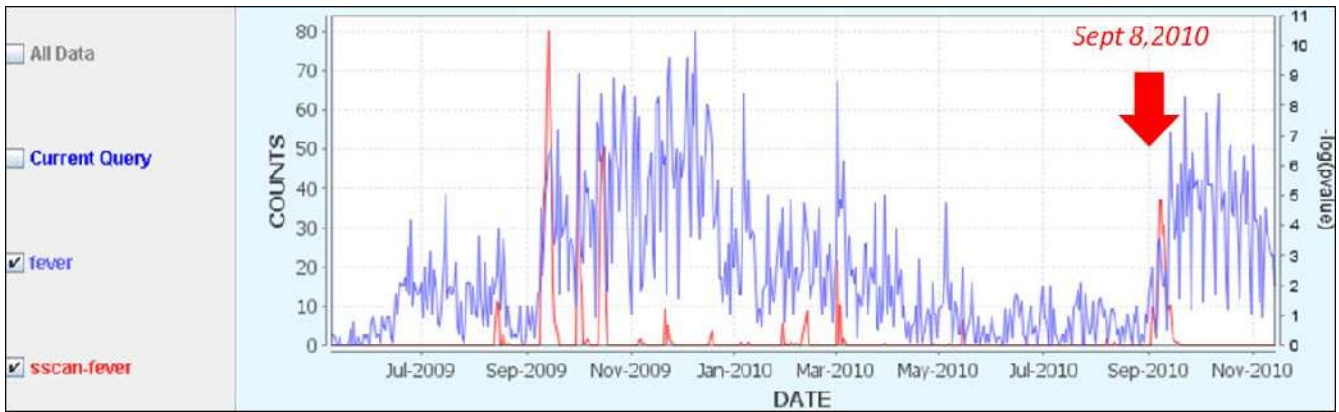


Illustration 17: Sample spatial scan results

The spatial scan result shows global score of outbreak probability (i.e. the likelihood of having something going on among all the locations), when moving the sliding bar to the arrow location, the map view is as following, the red circle(s) highlights the location(s) where the spatial scan believe has high probability of outbreaks in last 7 days.

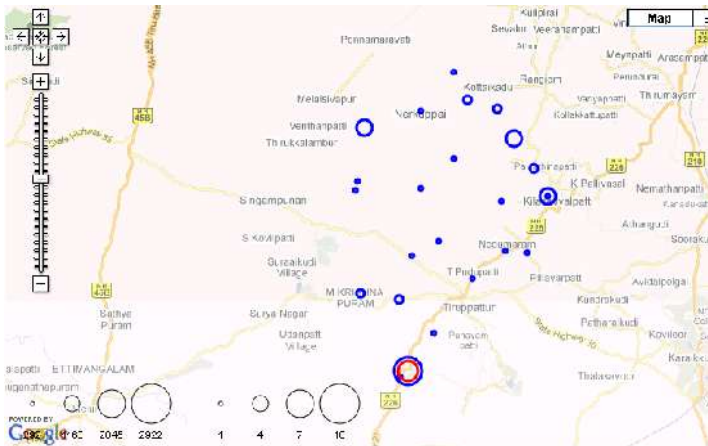


Illustration 18: Sample plot of Temporal Scan on map

To confirm that there is actually something going on in this particular location, we plot time series of fever cases for this location (Thirukostiyur-PhC). It seems that there was sudden increase of fever case in this location around September 8, 2010.

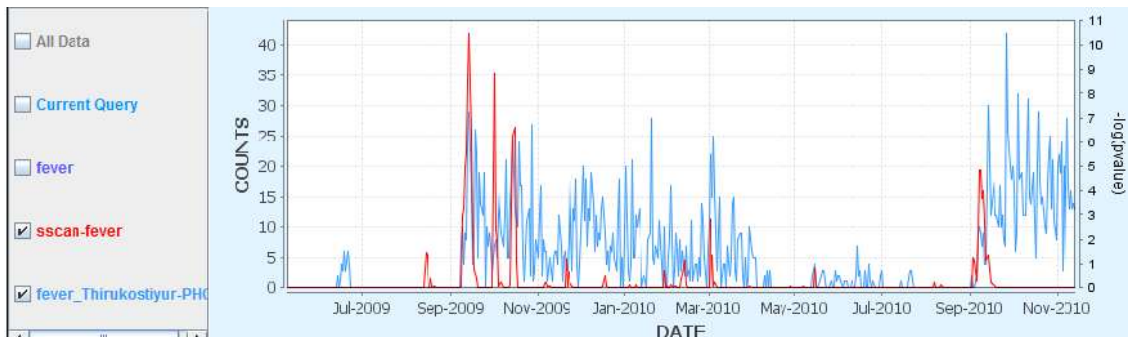


Illustration 19: Temporal scan detects fever cases in a location