



Public Health
England

Enhanced Tuberculosis Surveillance Strain Typing Module User Guide

TB Section, CIDSC

November 2013

This user manual was produced by CIDSC TB Section; Maeve Lalor (TB Cluster Investigator), Jennifer Davidson (TB Laboratory Surveillance Scientist) and Laura Anderson (TB Surveillance Senior Scientist). Please contact CIDSC if you have queries regarding this manual or if you experience technical problems using the STM. With thanks to Esther Hamblion (TB Cluster Investigator) for comments and producing the user manual Appendix 1, and with thanks to Andy Burkitt (TB Cluster Investigator) and Natasha Ratna (Information Assistant) for providing comments on this user manual. If you require assistance in cluster investigation please contact one of the cluster investigators.

maeve.lalor@phe.gov.uk, 020 8327 7154

esther.hamblion@phe.gov.uk, 020 7811 7228

jennifer.davidson@phe.gov.uk, 020 8327 7610

andy.burkitt@phe.gov.uk, 0844 225 3550

Contents

Introduction to strain typing module	3
Laboratory Users.....	4
Getting started.....	4
1. Create Template.....	5
2. Generate cluster reports.....	7
3. View cluster reports.....	7
4. Search.....	13
HPT and Regional users.....	15
Getting started.....	15
1. Enter Cluster Details	16
2. Search.....	26
Appendix 1: Other uses of STM	28
Appendix 2: Searching for a strain type using ETS.....	30
Appendix 3: Matching laboratory records to notifications.....	31

Introduction to strain typing module

The strain typing module (STM) is an integrated part of the Enhanced Tuberculosis Surveillance (ETS) system. The module is designed to identify strain typing clusters and assist with cluster investigation. Users can review clinical and risk factor data relevant to cases in a cluster to inform investigation. Questionnaires within the system can be used to collect additional information on cases, and information on cluster investigation can be recorded, for example epidemiological links between cases. In addition the STM can be used to search for cases in a cluster by cluster number or strain type.

The cluster report contains isolates which have been identified as being part of a strain typing cluster based on 24 loci Mycobacterial Interspersed Repetitive Unit-Variable Number Tandem Repeats (MIRU-VNTR) typing (see “TB Strain Typing and Cluster Investigation Handbook” for further details). The allocation of isolates to a geographical area is based on the source laboratory of the isolate. This means that occasionally the isolate belonging to a patient will not be assigned to the cluster report for the patient’s Health Protection Team (HPT) of residence, and manual editing of reports may be required.

The STM has been designed primarily for use by HPT users who have responsibility for monitoring and investigating TB clusters. There is also the function for regional and national ETS users to view cluster reports at the relevant geographical level. Clinic level users do not have access to the STM tab itself, but can access questionnaires sent to them through ETS by the cluster questionnaire alert on the ETS homepage. Laboratory users are able to see cluster reports containing isolates typed at their laboratory, while HPT and regional users are able to see isolates for cases within the geography relevant to their access, from all reference laboratories.

Cluster reports created by the laboratories are only seen by the laboratory that created the report. Reports for local geographical areas are created and regenerated weekly by the CIDSC TB Section.

Please note at the time of the STM release (November 2013), ETS functions within the boundaries that were in existence under the Health Protection Agency. Plans to update this to Public Health England (PHE) boundaries are underway.

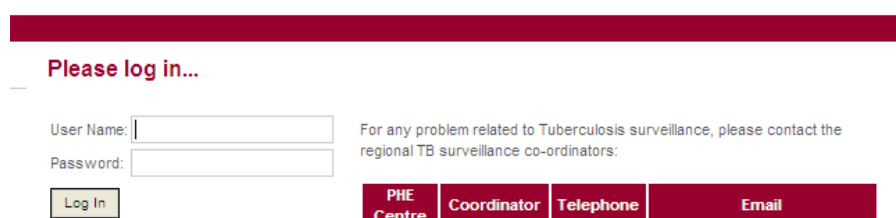
Laboratory Users

Laboratory users can create and utilise reports within the STM to see geographical reports of isolates submitted to their laboratory which cluster with other isolates submitted to their laboratory. The STM cluster reports can also be used to link and view to clinical data relevant to the case (as entered on ETS). The STM search page can be used to identify if strain types are present elsewhere in the UK, or have been identified by other laboratories.

Getting started

Log in

- 1) Go to the ETS website (<https://webservices.hpa.nhs.uk/ETS.Site/>)
- 2) Log in with user name and password

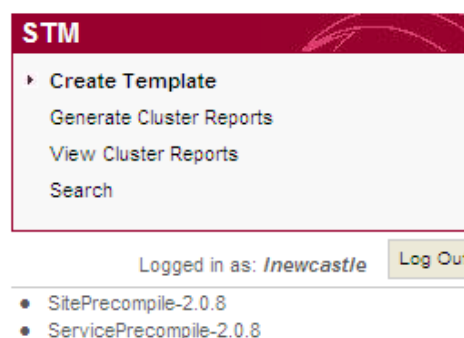


- 3) You will be brought to the home page of ETS. Click on the Strain Typing tab.



There are four tabs you have access to:

- (1) Create Template,
- (2) Generate Cluster Reports,
- (3) View Cluster Reports and
- (4) Search



1. Create Template

Help

Create cluster template

Template name

Geographical level
[Please select] ▼

Specific geographical area

Show 15 Loci

Max no. of isolates

Min no. of isolates
2

Min no. of recent isolates
2

No. of missing loci permitted
0

Max time period (years)
2

Time period for recent isolates (months)
6

Save template

A cluster template can be created with specific criteria, which can be used to generate the cluster report for your laboratory. Flexibility exists to change the criteria set in the template to allow for laboratories to analyse their own data over a specified time period or in a particular geographical area (e.g. all clusters in London over the last 10 years).

Template name – This is the name that will be given to the cluster report. The template name must be in the following format: laboratory abbreviation (NMRL, BMH, NCL, CRD), geographical location of template (North East, London).

For example “NMRL London”, “NCL North East”.

Geographical level – Select “National”, “Region” or “HPU” from the drop down list. By selecting “national” as the geographical area, you can see all the isolates typed in your laboratory regardless of geographical location.

Specific geographical area – Select a specific Region or HPU from the drop down list.

Show 15 loci – The option is included if users wish to create additional reports which include historical data with 15 loci for retrospective investigation or research purposes.

Note: This will not be selected for routine cluster reports generated by CIDSC Colindale to be sent to HPTs.

Max isolates – This is the maximum number of isolates with an indistinguishable strain type that will appear in a cluster report. Recommended entry is 50,000.

Min isolates – This is the minimum number of isolates with an indistinguishable strain type that will appear in a cluster report. Recommended entry is 2. This is to ensure all clusters with at least 2 isolates will be reported.

Min number of recent isolates – This is the minimum number of isolates with an indistinguishable strain type, within a selected recent time period, which will appear in a cluster report. Recommended entry is 2.

Max time period (years) – This is the number of years of data that will be returned in the report. Isolates returned are those with indistinguishable strain types with specimen dates within the number of years specified. Recommended entry is 10.

Time period for recent isolates (months) –This is the specimen time period for classifying what a recent isolate is. Recommended entry is 120 months (i.e. showing all clusters with no restriction. See note).

Note: There is other functionality within the report which highlights isolates with specimen dates in the last 3 months. We therefore recommend users not to restrict the clusters that are returned in the report.

No. of missing loci permitted – This specifies the maximum number of missing loci present in isolates to be included in clusters. Selecting 0 will produce clusters only with complete 24 MIRU-VNTR profiles. Recommended entry is 1.

Note: A standard template, which captures all clusters with a minimum of 2 isolates without any time restriction will be generated by CIDSC Colindale for distribution to HPTs. The recommendation is that each laboratory sets up a template for each HPU, region and a national report with the same standard template to be able to view isolates processed by your laboratory. Additional templates can be created as determined by your needs or interests.

Standard Template:

Template name – NCL North East

Geographical level – Region

Specific geographical area – North East

Max isolates – 50,000

Min isolates – 2

Min number of recent isolates – 2

No. of missing loci permitted – 1

Max time period (years) – 10

Time period for recent isolates (months) – 120

Note: If an error is made during template creation, the template can be deleted by clicking in the box beside the template name and selecting “Delete”. Once a cluster report has been generated based on the template, it cannot be deleted

2. Generate cluster reports

This is used the first time you need to generate a cluster report using the templates you have created.

Help

Generate Cluster Reports

Name	Level	Geographical Area	Min Isolates	Years	Recent Isolates	Months	Max Isolates	Show 15 Loci
<input type="checkbox"/> NMRL National	National		2	10	2	120	5000	No
<input type="checkbox"/> NMRL East midlands	Regional	East Midlands	2	10	2	120	5000	No
<input type="checkbox"/> NMRL South West	Regional	South West	2	10	2	120	5000	No
<input type="checkbox"/> NMRL Sussex	HPU	Sussex/ Surrey HPU	2	10	2	120	5000	No

To generate a cluster report, tick the box beside the cluster report name and select “Generate cluster report”. More than one template can be selected at the same time.

Note: If the number of templates span more than one page the “Generate cluster report” button must be selected on each page.

3. View cluster reports

Reports can be viewed in the “View Cluster Reports” tab. Please be patient as the generation of cluster reports can take several minutes to complete depending on the size of the report. The “Refresh” button should be clicked to allow newly generated reports to appear.

Help

View Cluster Reports

Date From Date To

Cluster Report Name	Report Delivered	Regenerated At	Report
<input type="checkbox"/> NMRL National 141013 Oct 14 2013 10:02AM	No		View
<input type="checkbox"/> NMRL Sussex Sep 24 2013 12:14PM	No		View
<input type="checkbox"/> NMRL South West Sep 24 2013 11:52AM	No		View
<input type="checkbox"/> NMRL East midlands Sep 24 2013 11:40AM	No		View

The dates to and from can be used to select cluster reports generated within a specific time period. The date boxes should be left blank to see all cluster reports. Cluster reports are shown in chronological order, with the most recently (re)generated report at the top. The cluster report name is the template name followed by the date and time of the first generation.

3.1. Cluster report contents

To view a report click “View” in the Report column.

NMRL Sussex HPU Sep 24 2013 12:14PM [Show clusters with new data](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Specimen Date	VNTR Profile	Resistant To	Lab details
<input type="checkbox"/> A1001	155369				28/02/2013	61466243262233263313-61		View
<input type="checkbox"/> A1001	157060				25/07/2013	61466243262233263313661		View
<input type="checkbox"/> A1004	131693				22/09/2010	614642432622334263313461		View
<input type="checkbox"/> A1004	136870				08/07/2011	614642432622334263313461		View
<input type="checkbox"/> A1004	136870				15/07/2011	614-42432622334263313461		View
<input type="checkbox"/> A1004	137394				08/08/2011	614642432622334263313461	PYR	View
<input type="checkbox"/> A1018	133047				02/12/2010	4646424326223321A8323271	ISO	View
<input type="checkbox"/> A1018	138629				26/07/2011	4646424326223321A83232-1	STR	View
<input type="checkbox"/> A1018	138494				01/11/2011	4646424326223321A8323271		View
<input type="checkbox"/> A1018	141262				21/03/2012	4646424326223321A8323271		View
<input type="checkbox"/> A1018	142693				19/04/2012	4646424326223321A8323271		View
<input type="checkbox"/> A1018	153065				17/09/2012	4646424326223321A83232-1		View
<input type="checkbox"/> A1018	155611				11/04/2013	4646424326223321A8323271		View
<input type="checkbox"/> A1025	138245				02/09/2011	464642432622332148323271		View
<input type="checkbox"/> A1025	138245				06/10/2011	464642432622332148323271		View

The isolates shown in the cluster reports are from the data that is routinely uploaded into ETS from each laboratory. Each cluster of two or more cases within the specified time period and geographical location is shown along with the cluster name as assigned in the cluster naming tool (<http://www.hpa-bioinformatics.org.uk/TBCluster/tbhome.php>).

A summary of each case/isolate is shown in the cluster report. Isolates with specimen dates in the 3 months prior to the date the report was (re)generated are highlighted in yellow. The case/isolate information shown in the report is derived from deduplication and merging of records with identical name and date of birth for specimen dates within a year of each other. This allows for the cluster report to show the most complete strain type and the most complete/resistant drug resistance profile. Merged records are indicated by a blue symbol next to the name field.

Cluster No	Case Id	Name
<input type="checkbox"/> A1368	137419	
<input type="checkbox"/> A1368	137103	

Note: Please be aware that clusters can span more than one page.

Isolates may be matched to ETS cases automatically through the system if they have identical personal identifiers, or they can be matched manually by ETS users. Isolates matched to ETS cases will have an ETS ID shown in the report. Click this ID to access the ETS case record.

Note: All laboratories will have read only access to ETS case records. To navigate back to the strain typing tab from a case record, click on the strain typing tab and then on the “View cluster reports”.

3.2. Comments and deleting cases from clusters

Where the deduplication and merging of records is not possible due to difference in names and dates of birth, duplicates may be deleted from reports. To delete a case, the box next to the case should be selected and the “Delete” button should be clicked.

For duplicates, it is of benefit for the record with the most relevant information should be kept. Laboratory details will need to be examined in order to determine which isolate should be kept. To view further laboratory details on each case click on “View” in the Lab details column.

Isolates which are confirmed as false positives may also be deleted, as outlined above.

There is a function for the laboratory staff to add comments to the report. Comments are linked to clusters by selecting the appropriate cluster number from the dropdown list before saving the comment using the “Add Comments” button.

For each isolate that is deleted (duplicate, false positive or other), a comment should be added outlining the reason for deletion, to avoid the loss of important information that may be of importance to clinical or public health staff. The ETS ID (if available) or the name and date of birth of the case should precede the comment.

Any other comments that may be relevant with respect to the cluster can also be added in the comments section. A record of the user who added the comment and the date the comment were added are recorded next to each comment.

Lab comments

Date	Username	Cluster No	Comments
22/10/2013	inmrl	A1001	isolate with ETS ID 111111, Johnny Walsh, 01/01/77, was deleted as the isolate is confirmed as contaminated.

Cluster Number

Comments

Add Comments

Note: Deleting a case from the report generated by the lab will not result in the case being deleted from other reports.

3.3. View lab record details

Information contained on the lab record in the cluster report, or combined information from all lab records into the merged lab record, can be viewed in more detail by selecting “view” at the side of the entry in the cluster report.

B1011 [155069](#) 05/03/2013 4243523325173334564433-2 ETHAM, ISO, KAN, RIF, RIFB, STR [View](#)

MycobNet details:

Forename	Surname	Date of birth	Sex	Age
			M	50
Address	Postcode	NHS number	Hospital Patient No	Organism name
			T0125677	tuberculosis
Source laboratory number	Source laboratory	Reference laboratory number	Reference laboratory	Comments
NTYGH	North Tyneside General Hospital	49212T	Newcastle	
Specimen type	Strain Type (MIRU-VNTR)			
Sputum	4243523325173334564433-2			

Strain type details

ETR-	ETR-	ETR-	ETR-	ETR-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MIRU-	MTUB21	MTUB34	QUB26	QUB11B
A	B	C	D	E	2	10	16	20	23	24	26	27	39	40	4	42	47	52	53				
4	2	4	3	5	2	3	3	2	5	1	7	3	3	3	4	5	6	4	4	3	3	-	2

Antibiotic susceptibility

Result	Antibiotic
Sensitive	Amikacin
Sensitive	Azithromycin
Sensitive	Capreomycin
Sensitive	Ciprofloxacin
Sensitive	Clarithromycin
Resistant	Ethambutol
Resistant	Isoniazid
Resistant	Kanamycin
Sensitive	Linezolid
Sensitive	Moxifloxacin
Sensitive	Oxfloxacin
Sensitive	PAS
Sensitive	Prothionamide
Sensitive	Pyrazinamide
Resistant	Rifabutin
Resistant	Rifampicin
Resistant	Streptomycin

Note: The results (specimen type, VNTR profile and susceptibility) on the merged record in the cluster report may be different from the results listed in your laboratory system for the ID shown on the merged record.

3.4. Accepting VNTR changes

Isolates which were first reported with one missing loci, but have since had the locus filled will appear in red. The cluster algorithm does not check that the updated isolate should still remain in the cluster, so it is necessary to review the VNTR changes. If the VNTR is no longer valid as part of the cluster, you should select the record(s) using the tick box at the left hand side, and click “Delete”. If the VNTR is valid as part of the cluster you should acknowledge these changes by selecting the record(s) using the tick box at the left hand side and then click the “Accept Vntr Changes” button.

Two clusters shown below have updated VNTRs to review. In the first (C1575), the two updated isolates are valid and should be accepted, while cluster C1580 is no longer a valid cluster and both isolates should be deleted.

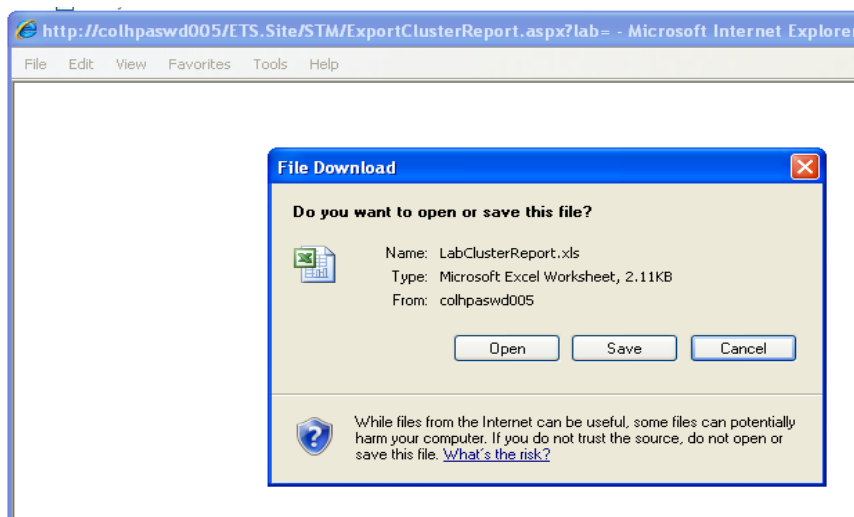
<input type="checkbox"/> C1575	129670		17/03/2010	42235254251-333542423384		View
<input type="checkbox"/> C1575	140292		26/01/2012	422352542517333542423384	ISO	View
<input type="checkbox"/> C1575	141759		28/03/2012	42235254251-333542423384		View
<input type="checkbox"/> C1575	157024		30/05/2013	422352542517333542423384		View
<input type="checkbox"/> C1580	138636		24/01/2011	42235264251733442223374		View
<input type="checkbox"/> C1580	147520		17/08/2012	42235264251733442223364		View
<input type="checkbox"/> C1587	147145		21/07/2012	422352572517333541423424		View
<input type="checkbox"/> C1587	147145		21/07/2012	422352572517333541423424		View
<input type="checkbox"/> C1587	154107		09/08/2012	422352572517333541423424		View
<input type="checkbox"/> C1587	154107		12/08/2012	422352572517333541423424		View
<input type="checkbox"/> C1599	142614		16/05/2012	422352542515333322423384		View
<input type="checkbox"/> C1599	156649		17/05/2013	422352542515333322423384		View
<input type="checkbox"/> C1623	132195		22/10/2010	42235254251-133542423384		View

1 2 3 4 5 6 7 8 9 10 ...

3.5. Saving and downloading a cluster report

All changes or additions that have been made to the report can be saved by selecting “Save Cluster report”.

The report can be downloaded as an excel file by selecting “Download report”. You will then be given the option to save it on your computer or to open it and print.



Note: There is also a button “Accept Cluster Report”. This is not currently in use (further development is planned).

3.6. Regenerating cluster reports

Cluster reports should be regenerated by selecting the cluster report in “View Cluster reports” and using the “Regenerate Report” button. Several reports can be selected at the same time. After selecting the “Regenerate Report” button the reports will temporarily disappear from the list but will reappear again once they have been regenerated. New cases will be added to the existing clusters from the previous report as well as any new clusters that have appeared since the previous report. New cases are highlighted in yellow when the specimen date is within the last three months from the date the cluster report was (re)generated. The date when the cluster report was regenerated is shown in the “Regenerated At” column.

NMRL Sussex HPU Sep 24 2013 12:14PM

[Show clusters with new data](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Specimen Date	VNTR Profile	Resistant To	Lab details
<input type="checkbox"/> A1001	155369				28/02/2013	614662432622333263313-61		View
<input checked="" type="checkbox"/> A1001	157060				25/07/2013	614662432622333263313661		View
<input type="checkbox"/> A1004	131693				22/09/2010	614642432622334263313461		View
<input type="checkbox"/> A1004	136870				08/07/2011	614642432622334263313461		View
<input type="checkbox"/> A1004	136870				15/07/2011	614-42432622334263313461		View
<input type="checkbox"/> A1004	137394				08/08/2011	614642432622334263313461	PYR	View
<input type="checkbox"/> A1018	133047				02/12/2010	4646424326223321A8323271	ISO	View
<input type="checkbox"/> A1018	138629				26/07/2011	4646424326223321A83232-1	STR	View
<input type="checkbox"/> A1018	138494				01/11/2011	4646424326223321A8323271		View
<input type="checkbox"/> A1018	141262				21/03/2012	4646424326223321A8323271		View
<input type="checkbox"/> A1018	142693				19/04/2012	4646424326223321A8323271		View
<input type="checkbox"/> A1018	153065				17/09/2012	4646424326223321A83232-1		View
<input type="checkbox"/> A1018	155611				11/04/2013	4646424326223321A8323271		View

Select “Show clusters with new data” to see only new clusters with new cases (within 3 months from date of regeneration).

NMRL Sussex HPU Sep 24 2013 12:14PM

[Show all clusters](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Specimen Date	VNTR Profile	Resistant To	Lab details
<input type="checkbox"/> A1001	155369				28/02/2013	614662432622333263313-61		View
<input checked="" type="checkbox"/> A1001	157060				25/07/2013	614662432622333263313661		View
<input type="checkbox"/> B1005	128255				07/04/2010	424352332515333456443382		View
<input type="checkbox"/> B1005	136102				03/06/2011	4-4352332515333456443382		View
<input type="checkbox"/> B1005	136820				28/06/2011	424352332515333456443382		View
<input type="checkbox"/> B1005	137443				09/08/2011	424352332515333456443382		View
<input type="checkbox"/> B1005	141269				16/02/2012	42435233251533345644338-		View
<input type="checkbox"/> B1005	153938				26/01/2013	424352332515333456443382		View
<input checked="" type="checkbox"/> B1005	157220				01/07/2013	424352332515333456443382		View

Duplicates may be removed from the new data that has been added as previously described.

4. Search

The search page can be used to find isolate information by selecting either “Cluster number” or “Strain type” from the search criteria drop down menu.

Home page Administration **Strain typing** Help

STM

- Create Template
- Generate Cluster Reports
- View Cluster Reports
- Search

Enter search criteria below

Search criteria [Please select] Search value

Cluster number

Strain type

Logged in as: *Inewcastle* Log Out

- SitePrecompile-2.0.8
- ServicePrecompile-2.0.8

© Public Health England - Designed, developed and maintained by CFI Software Development Unit

After selecting to search by either “Cluster number” or “Strain type” geographical, date and time parameters must be selected.

Geographical level

National

Region

HPU

Specific geographical area

Date options

Specimen date

Notification date

Date Period

Last 6 months

Last 12 months

Last 2 years

Last 5 years

Last 10 years

ALL

Search

Select the “Geographical level” by choosing “National”, “Region” or “HPU”. If “Region” or “HPU” are selected then it is necessary to use the “Specific geographical area” dropdown to choose the breakdown required.

To view all isolates with or without an ETS match in a selected time period choose “Specimen date” and then the time period from the “Date Period” drop down list. By selecting “ALL” the date period restriction will not apply and all isolates will appear for the chosen geographical area. To view only isolates with an ETS match select “Notification date”.

Once all desirable criteria are selected click on the “Search” button.

The “Summary report” will show the total number of isolates for all laboratories while the list of “Possible match(es) found” contains all the isolates from your own laboratory. Searching at a National level will produce a summary table of the number of cases by Region. Searching at a Regional level will produce a summary table of cases by HPU. Searching at the HPU level will produce a summary table of cases found by hospital.

Possible match(es) found

Summary report by regions

Regions	No. of Isolates
	3
East of England	1
London	11
North East	7
North West	1
South East	3
Wales	1
West Midlands	5
Yorkshire and the Humber	17
Total:	49

Note : The summary numbers by region include all isolates in the cluster nationally. The detailed list below shows isolates from your reference laboratory, but do not show isolates from other reference laboratories.

CaseldName	D.O.B	SexAgePostcodeHospital	HPU	Region	Specimen date	
147637			LEEDS GENERAL INFIRMARY	West Yorkshire HPU	Yorkshire and The Humber	16/08/2012
139199			HULL ROYAL INFIRMARY	North Yorkshire and Humber HPU	Yorkshire and The Humber	06/12/2011
154332			HULL ROYAL INFIRMARY	North Yorkshire and Humber HPU	Yorkshire and The Humber	28/12/2012

If the isolate displayed in the list matches an ETS case you can view the ETS case record by clicking on the ETS ID.

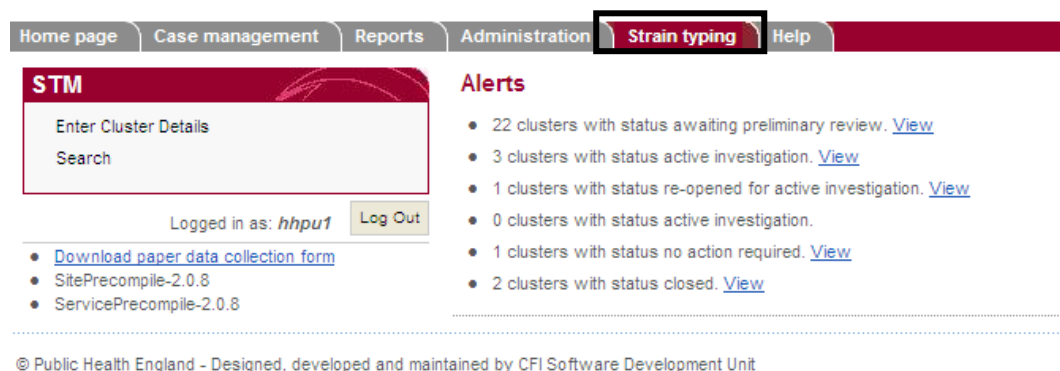
HPT and Regional users

The reports used by HPT and regional users are different to those used by laboratory users. The reports generated by laboratories only contain isolates from the specific laboratories, while the reports generated by CIDSC for HPT and regional users contain isolates from the given area for all laboratories that the isolates have been sent to.

Getting started

Log in

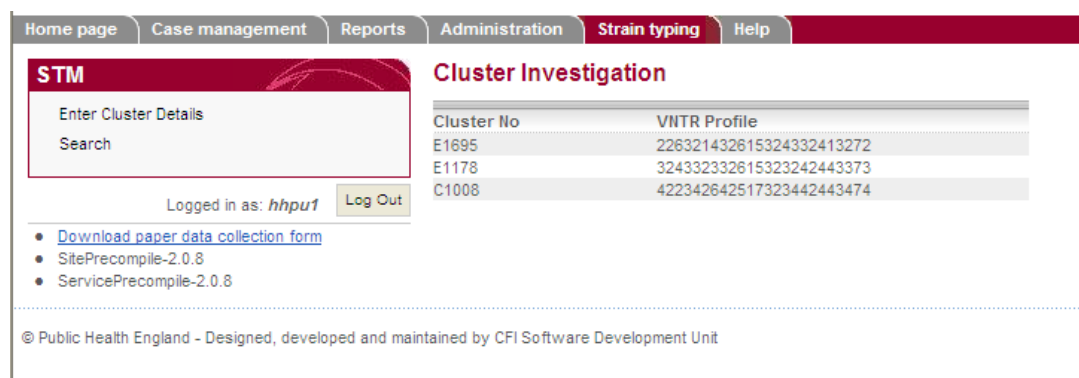
- 1) Go to ETS website (<https://webservices.hpa.nhs.uk/ETS.Site/>)
- 2) Log in with user name and password
- 3) You will be brought to the home page of ETS. Click on the Strain Typing tab.



The screenshot shows the ETS Strain Typing interface. The navigation bar includes: Home page, Case management, Reports, Administration, Strain typing (highlighted), and Help. The main content area is divided into two sections: STM and Alerts. The STM section contains a form for "Enter Cluster Details" with a search field and a "Log Out" button. Below the form, it shows "Logged in as: hhp1" and a list of links: "Download paper data collection form", "SitePrecompile-2.0.8", and "ServicePrecompile-2.0.8". The Alerts section displays a list of cluster statuses with "View" links: 22 clusters with status awaiting preliminary review, 3 clusters with status active investigation, 1 cluster with status re-opened for active investigation, 0 clusters with status active investigation, 1 cluster with status no action required, and 2 clusters with status closed. The footer reads: "© Public Health England - Designed, developed and maintained by CFI Software Development Unit".

HPT and Regional users will see an “Alerts” page which will display the number of clusters with each status set by those investigating the cluster e.g. the number of clusters under investigation. All clusters are given the default status of “Awaiting Preliminary review”.

To see the list of clusters with a particular status select “View” next to the status and the list will be displayed by cluster number and VNTR, as shown below.



The screenshot shows the ETS Strain Typing interface with the "Cluster Investigation" section selected. The navigation bar is the same as in the previous screenshot. The STM section is identical. The Cluster Investigation section displays a table with the following data:

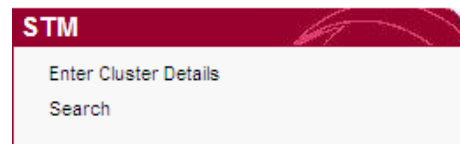
Cluster No	VNTR Profile
E1695	226321432615324332413272
E1178	324332332615323242443373
C1008	422342642517323442443474

The footer reads: "© Public Health England - Designed, developed and maintained by CFI Software Development Unit".

To return to the home page click on the strain typing tab.

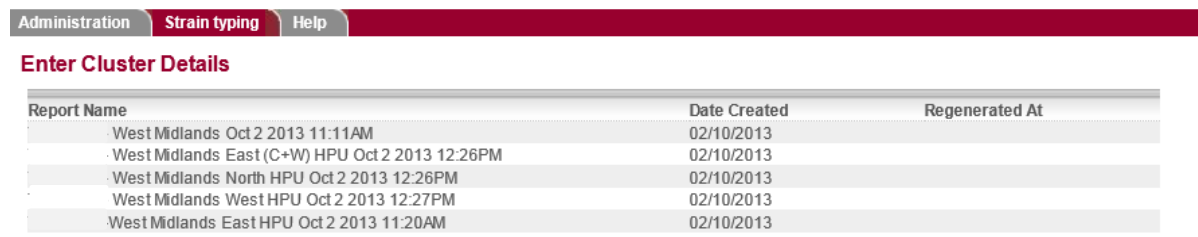
In the STM there are two tabs you have access to:

- (1) Enter Cluster Details and
- (2) Search

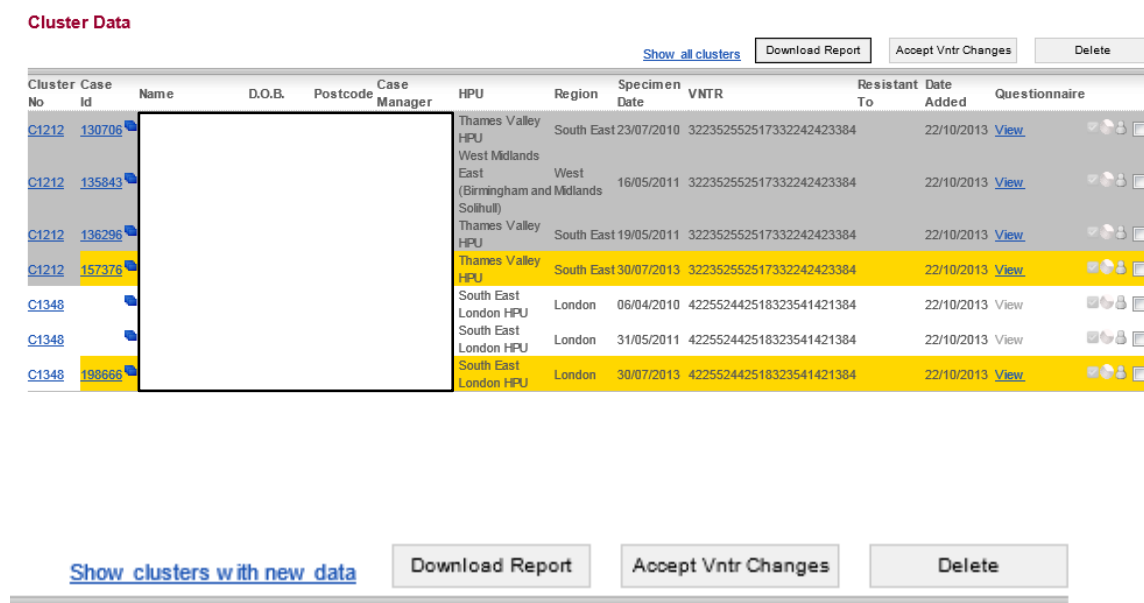


1. Enter Cluster Details

To view clusters select “Enter Cluster Details”. This will show you a table of cluster reports. Open a report by clicking on the report name.

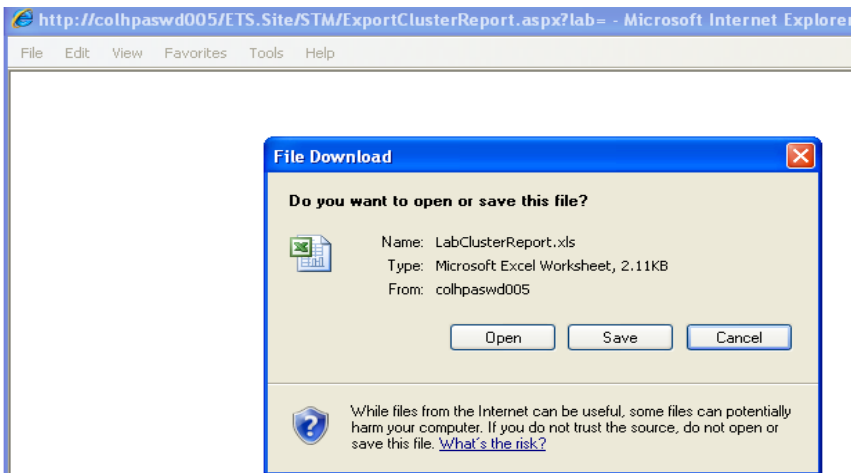


To open a cluster report click on the report name. Opening the report shows the records of all cases/isolates that are clustered within the geography of the report under the “Cluster Data” title. Clusters are ordered alphanumerical by cluster number. At the top of the report there are several functions available;



Click on the “**Show clusters with new data**” to display only clusters that have cases with specimen dates in the last three months.

Click on the “**Download Report**” button to create an excel line listing of the report. The excel spreadsheet includes the fields shown in the STM report as well as risk factor and epidemiological information from ETS and the STM cluster questionnaire data.



“Accept Vntr Changes” function highlights changes in strain type profiles of cases within the report. Records will appear in red when the strain type for a case in the cluster report has been updated following regeneration of the report. Updated records include isolates which had a missing locus when it was first reported, but have since had the locus filled. The cluster algorithm does not check that the updated isolate should still remain in the cluster, so it is necessary to review the VNTR changes. If the VNTR is no longer valid as part of the cluster, you should select the record(s) using the tick box at the left hand side, and click the “Delete”. If the VNTR is valid as part of the cluster you should acknowledge these changes by selecting the record(s) using the tick box at the left hand side and then click the “Accept Vntr Changes” button.

Two clusters (see below) have updated strain types to review. The isolate for Case ID “156896” previously had a missing locus, and was valid to appear in two clusters. Since it was first reported the missing locus was typed therefore the updated results appear in red (see below). In the first cluster (B1005), the updated isolate is no longer valid (strain type is different than cluster strain type) and should be deleted. In the second cluster (B1134), case “156896” is still valid within this cluster and should be accepted.

													Show all clusters	Download Report	Accept Vntr Changes	Delete
Cluster No	Case Id	Name	D.O.B.	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire				
B1005	137400					North Yorkshire and Humber HPU	Yorkshire and The Humber	07/06/2011	424352332515333456443382		05/12/2012	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1005	147456					North Yorkshire and Humber HPU	Yorkshire and The Humber	02/08/2012	42435233251533345-443382		26/03/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1005						North Yorkshire and Humber HPU	Yorkshire and The Humber	26/10/2012	424352332515333456443382		27/02/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1005	155954					West Yorkshire HPU	Yorkshire and The Humber	24/05/2013	424352332515333456443382		23/09/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1005	156896					North Yorkshire and Humber HPU	Yorkshire and The Humber	16/07/2013	424352332515333456443372		23/09/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1134	154504					North Yorkshire and Humber HPU	Yorkshire and The Humber	27/02/2013	424352332515333456443372		04/09/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B1134	156896					North Yorkshire and Humber HPU	Yorkshire and The Humber	16/07/2013	424352332515333456443372		23/09/2013	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In addition, a case may need to be deleted if the isolate has been confirmed as a contaminant. If a case has one missing loci they may cluster with more than one cluster, but if there is reason to believe that a case should not be part of one of the clusters it is assigned to then the delete function can be used.

1.1 Viewing and recording cluster details

To view a specific cluster use the “Filter by” dropdowns and select “Cluster number” or “VNTR Profile”. “Cluster Status” can be selected from the “Filter by” drop down list to see all clusters with a given status.

Note: If you filter by VNTR profile you will miss cases/isolates with one missing loci who have been assigned to the cluster. It is therefore recommended that you filter by cluster number if looking at a specific cluster.

Filter by: Cluster Number

Cluster Number: [Please select]

Notes: - Select a cluster number (or other)

Cluster Data

Cluster No	Case Id	Name	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire
A1016				18/02/2011	644562432622-33243312461		02/10/2013	View
A1016				05/10/2011	64456243262233243312461		02/10/2013	View
A1018	132375			22/10/2010	4646424326223321A8323271	ETHAM, ISO	02/10/2013	View
A1018	139063			17/11/2011	4646424326223321A8323271		02/10/2013	View
A1018	139063			21/11/2011	464642432622-321A8323271		02/10/2013	View
A1018	140674			03/02/2012	464642432622-321A8323271	ISO	02/10/2013	View

Once a cluster has been selected from the dropdown list this will display an information page specific to the cluster.

The page includes several sections which are explained in points 1-10 below.

1. “**Cluster details**” which is used to assign a cluster status, which will be logged in the “**Cluster status change log**”. The default cluster status is “Awaiting Preliminary Review” (see “TB Strain Typing and Cluster Investigation Handbook” for status definitions).

Cluster details

Cluster Status

Awaiting Preliminary Review

- Awaiting Preliminary Review
- No Action Required
- Active Investigation
- Re-opened for Active Investigation
- Watchful Waiting
- Closed

Cluster status change log

Date	Username	Cluster Status
18/10/2013	etempest	Active Investigation

2. **“Notes on cluster”** can be used to record the following information on a cluster;
 - a summary of the cases in the cluster after risk assessment
 - any information already known that may be relevant to the investigation e.g. “active investigation not required at present as epidemiological links already well known”
 - HPZone number
 - Actions taken during the investigation - e.g. Cluster questionnaires sent out, screenings undertaken
 - Any information obtained during the course of the investigation that cannot be entered into the questionnaires e.g. “investigated whether new cases since 2012 have ever been to ‘The Red Lion pub’ (where outbreak investigation was conducted in 2010), they have not, so no further investigation of the ‘The Red Lion pub’ is required at present.”
 - Reason for changes in cluster status
3. **“Actions recommended by Cluster investigator”** e.g. “Additional screening of hostel should be considered as two cases reside in the same hostel (this information should be recorded by the HPT if discussion or advice is sought from cluster investigators).” **It should be noted that this text box should be completed by those leading the cluster investigation at local level.**

Note: It is necessary to click the relevant “Add” button to save these notes and actions.

Notes on cluster

No cluster notes found

Notes

Add notes

Actions recommended by cluster investigator

No actions recommended found.

Actions recommended

Add actions recommended

4. A **“summary”** table of settings relevant to the cluster is populated automatically by data from the completed cluster questionnaires.

Note: This is not a summary of the risk factor information that is recorded on ETS, which can be viewed in the cluster data. This is a summary of the information from the questionnaire data.

Summary

	No. of cases	% of cases
Childcare/Education	0	0
Workplace	0	0
Place of worship	0	0
Regular place of socialising	0	0
Detention (e.g prison)	0	0
Treatment/Rehab Center	0	0
Hostel/Homeless Shelter	0	0
Other place of interest (e.g. hospital)	0	0

5. **“Contact tracing”** figures and results related to the cluster can be recorded in a table. The **“Save”** button must be clicked for the information to be stored.

Contact tracing prior to cluster investigation

No. of contacts	<input type="text"/>	No. positive with mantoux	<input type="text"/>
No. screened for mantoux	<input type="text"/>	No. positive IGRA	<input type="text"/>
No. screened for IGRA	<input type="text"/>	No. positive chest X-ray	<input type="text"/>
No. screened chest X-ray	<input type="text"/>		
No. with latent infection	<input type="text"/>		
No. diagnosed with active disease	<input type="text"/>		
No. of contacts that did not attend screening	<input type="text"/>		

Contact tracing as a result of cluster investigation

No. of contacts screened	<input type="text"/>
No. of active cases	<input type="text"/>
No. of latent cases	<input type="text"/>

Save

6. **“Cluster Data”** displays the cases/isolates in the cluster. (The functions detailed in section 1: Enter Cluster Details can also be performed when looking at a specific cluster).

Cluster Data

[Show clusters with new data](#) [Download Report](#) [Accept Vntr Changes](#) [Delete](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire
C1688	128391					South West (North) HPU	South West	17/02/2010	42234274251133443242325-		24/09/2013	View
C1688	148447					South West (North) HPU	South West	02/11/2012	422342742511334432423253		24/09/2013	View

7. To view the **“Summary of cases”**, which shows the risk factors for each case with an ETS ID in the cluster, click the cluster number in the **“Cluster Data”** table and a new table will be presented below the cluster data.

Cluster Data

[Show clusters with new data](#)
[Download Report](#)
[Accept Vntr Changes](#)
[Delete](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire
C1398	138501					South West (South) HPU	South West	19/09/2011	422352531517333542423374		24/09/2013	View
C1398	139531					South West (South) HPU	South West	06/12/2011	42235253151733354242337-		24/09/2013	View

Summary of cases

Id	Name	Notification date	Sex	Age	Postcode	Birth Country	Ethnicity	Year of Entry	Occupation	Symptom Onset	Treatment Start Date	Prev. Diagnosis	Drug Use	Alcohol Use	Homeless	Prison	Sputum Result	Disease to	Resistant to
138501						KENYA	Black-African	1989		14/08/2011	17/10/2011	No	No	No	No	No	Negative	Pulmonary	
139531						SYRIAN ARAB REPUBLIC	Mixed / Other	2006	Unemployed	01/05/2011	19/12/2011	No	No	No	No	No	Positive	Pulmonary	

[Close](#)

- To view ETS details of each case click on the Case ID. This accesses the ETS case record. To return to the cluster you must go back through the strain typing tab.

C1006						South West (North) HPU	South West	12/01/2012	422342742511334432423254		24/09/2013	View
C1006	140822					Ruth Unsworth HPU	South West	02/04/2012	422342742511334432423254		24/09/2013	View
C1008	155149					Stephen Moore HPU	South West (North) HPU	27/04/2012	422342642517323442443474		24/09/2013	View
C1008						South West (South) HPU	South West	17/07/2013	422342642517323442443474		24/09/2013	View
C1011	136647					Judith Wells HPU	South West	01/04/2010	422352642515333342423374		24/09/2013	View
C1011	134941					Mark Grover HPU	South West (North) HPU	28/03/2011	422352642515333342423374		24/09/2013	View

- During investigation you may discover epidemiological links between cases in the cluster with someone who does not have a strain type but who is a contact that you wish to add to the cluster. To **“add a case to cluster”**, enter the ETS ID into the **“Case Id”** box in the section of Add case to cluster and click on **“Search”** to check for any lab results that are available for the case. Finally click **“Add”**, the case will appear in the cluster with the date added in the **“Date Added”** column. Added cases with no laboratory results will have no specimen date or VNTR so it will be easy to recognise added cases.

- Links can be formed between cases by selecting the cases from the two drop down lists under **“Epidemiological links”**. The certainty of the link can be added as **“Known epidemiological link”**, **“No epidemiological link”** or **“Possible epidemiological link”**. The **“Type of contact”** and **“Contact Setting”** can be added along with the **“Postcode of Setting”**. To add the link click on **“Add link”**.

The link with the relationship will then appear underneath. If the link needs to be deleted (e.g. link added in error), select the right hand box and click on “Remove Relation”.

Epidemiological links

Create a link:

as follows:




Type of contact:




Contact Setting:

Postcode of Setting:

Epidemiological Link Comments:

1.2. Cluster questionnaires

There are three symbols beside the “View” questionnaire link   , these are all greyed out when no actions have been taken with the case’s questionnaire.













- The first symbol  indicates when the questionnaire has been saved
- The second symbol , a circle goes green which indicates the questionnaire has been completed (information has been entered into the patient question fields in the questionnaire. Not all fields need to be completed for it to be assigned completed symbol)
- The third symbol  shows the questionnaire has been submitted through ETS to the case manager.

It is only possible to view questionnaires for cases which have ETS IDs. If no ETS ID is shown, the case is either not notified or the isolate has not been matched to the case.

To view a cluster questionnaire click on “View” on the right hand side of the case.

Cluster Data

[Show clusters with new data](#)

Cluster No	Case Id	Name	D.O.B.	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire
A 1001	128461					East Midlands North HPU	East Midlands	24/02/2010	614662432622333263313661		22/10/2013	View   
A 1001	127568					East Midlands South HPU	East Midlands	26/02/2010	614662432622333263313661		22/10/2013	View   
A 1001						West Midlands East (Birmingham and Solihull)	West Midlands	04/03/2010	614662432622333263313661		22/10/2013	View   
A 1001	127637					Bedfordshire and Hertfordshire HPU	East of England	10/03/2010	61466243262233326331-661		22/10/2013	View   

This will open the questionnaire in a separate window. The patient details are pre-filled at the top. There is an option to enter detail on the size of the cluster, the location of the cases and any other

relevant information, including patient specific questions. Once any additions have been made to the top section of the form select “Save” at the bottom of the questionnaire

Cluster investigation questionnaire

Cluster No	A1001	Case Id	128461	Case Manager	jgratton
Forename					
Hospital	DERBY CITY GENERAL HOSPITAL	HPU	East Midlands North HPU	Region	East Midlands
Source Lab	DRI	MIRUVNTR	614662432622333263313661	Mycobacteriology reference unit	Birmingham

Dear Colleague

There are currently TB cases in this cluster.

The other cases are in the following HPUs/Regions/Towns/Cities

London (Finsbury Park area), Brighton and Birmingham

Cluster characteristics of interest

There are 5 people with a history of prison, including 3 who are currently in prison. The majority of cases are of White ethnicity and born in the UK.

To investigate transmission of disease, could you please provide the following information and ask extra questions in relation to information given above (e.g. did the patient visit or have visitors from these areas). Please provide postcodes of places visited/frequent contacts where possible.

Please return this form to .

Thank you very much for your co-operation.

Patient specific questions:

Has this patient ever spent time in Pentonville prison? If so, what were the dates?

Has the patient ever attended Florence Nightingale Rehab in Lisson Grove? If so, when?

Has the patient ever socialised in the Red Lion Pub in Camden? If so how often and during which dates?

There is no onset of symptoms date completed on ETS, please could you find out when his

Save

Save & download

Submit

Go back

The questionnaire can then be sent through ETS to the assigned case manager by clicking the “Submit” button. The questionnaire will then appear as an alert on the case manager’s ETS homepage.

Alerts

Treatment outcome

- 79 twelve month treatment outcome reports due. [View](#)
- 2 twenty four month treatment outcome reports due. [View](#)
- 2 thirty six month treatment outcome reports due. [View](#)

Case transfers

- 0 inbound transfers pending.
- 0 outbound transfers pending.
- 0 rejected outbound transfers pending.

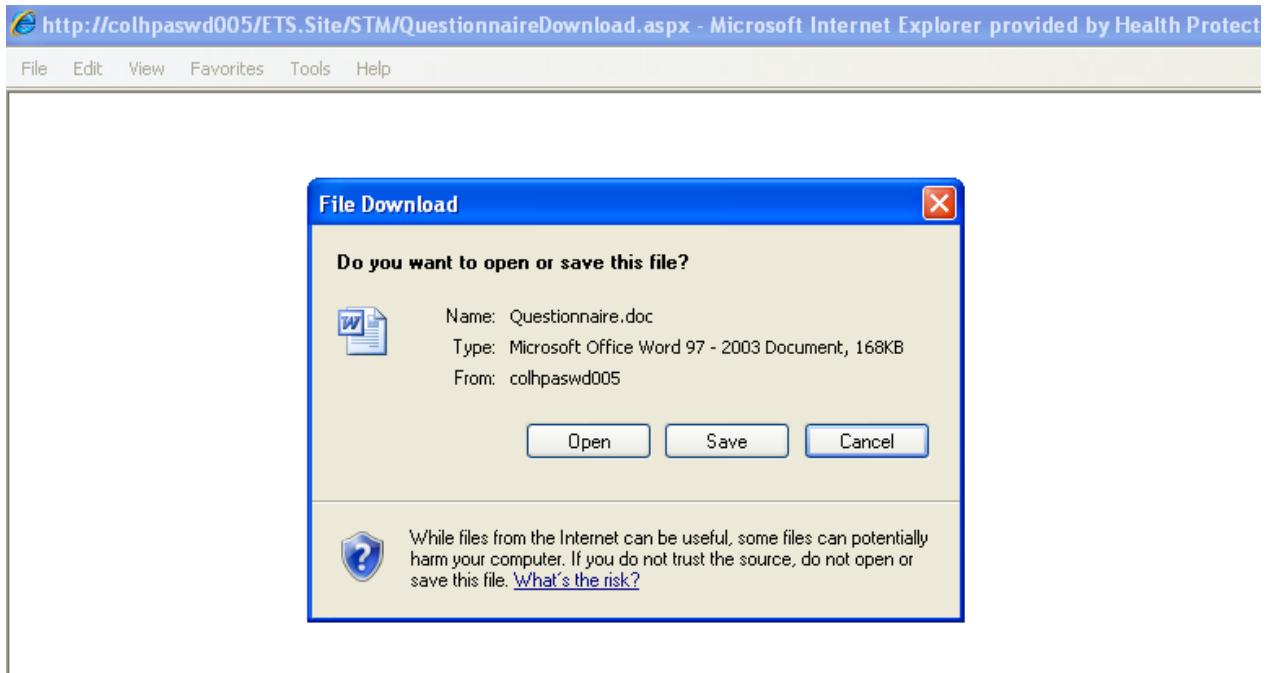
Laboratory isolates

- 190 unmatched laboratory isolates available for matching. [View](#)

Questionnaires due

- 1 Strain typing questionnaire due. [View](#)
- 32 M. bovis questionnaires waiting. [View](#)

The questionnaire can also be downloaded as a word document by selecting "Download"



You can then save it and send it to clinics by email or open and print, for example if the case manager is not an ETS user. In particular, this will affect London HPTs who will need to send questionnaires by email or fax.

Questionnaire

Cluster ID		Hospital	NORTH MANCHESTER GENERAL HOSPITAL
Case ID	138046	HPU	Greater Manchester HPU
Patient Forename		Region	North West
Patient Surname		Source Lab	ROH
Patient DOB		MIRU/VNTR	422352541517333542 423384
Case Manager		Mycobacteriology Reference Unit	Newcastle

Dear Colleague,

There are currently 2 TB cases in this cluster.

The other cases are in the following HPUs/Regions/Towns/Cities: London

Cluster characteristics of interest: Alcohol use

To investigate transmission of disease, could you please provide the following information and ask extra questions in relation to the information given above on this cluster (e.g. did the patient visit or have visitors from these areas). **Please provide postcodes of places visited/frequent contacts where possible.**

Please return this form to: Laura Anderson

Thank you very much for your help and co-operation.

Patient specific questions:

Did the patient attend Brownlee Mosque?

The questionnaire can be entered on the STM in by the case manager/person investigating the cluster if returned in paper format using the drop down lists and the free text boxes. Please save any changes to the questionnaire by selecting “Save”. To return to the cluster select “Go Back”.

Did patient regularly attend the following in the 2 year before diagnosis			Please provide name, address and dates
Childcare/Education	Yes	<input type="checkbox"/> Nursery <input checked="" type="checkbox"/> Primary School <input type="checkbox"/> College/sixth form	
Workplace	No	<input type="checkbox"/> Office <input type="checkbox"/> Factory <input type="checkbox"/> Warehouse	
Place of worship	Yes	<input type="checkbox"/> Church <input type="checkbox"/> Synagogue <input checked="" type="checkbox"/> Mosque	
Regular place of socialising	[Please select]	<input type="checkbox"/> Pub <input type="checkbox"/> Club <input type="checkbox"/> Bar	
Detention (e.g prison)	[Please select]	<input type="checkbox"/> Prison <input type="checkbox"/> Immigration detention centre <input type="checkbox"/> Youth detention centre	
Treatment/Rehab Centre	[Please select]	<input type="checkbox"/> Alcohol rehabilitation centre <input type="checkbox"/> Drug rehabilitation centre <input type="checkbox"/> Medical/Physical rehabilitation	

Once data is completed in questionnaires, the summary table at the top of the report will be populated with the information derived from specific key fields and a proportion of cases in the cluster with a specific characteristic is automatically calculated and displayed.

Note: This is not a summary of the risk factor information that is recorded on ETS, which can be viewed in the cluster data. This is a summary of the information from the questionnaire data

Notes:

- Select a VNTR profile above to load data into the fields below for the selected VNTR cluster.

Summary

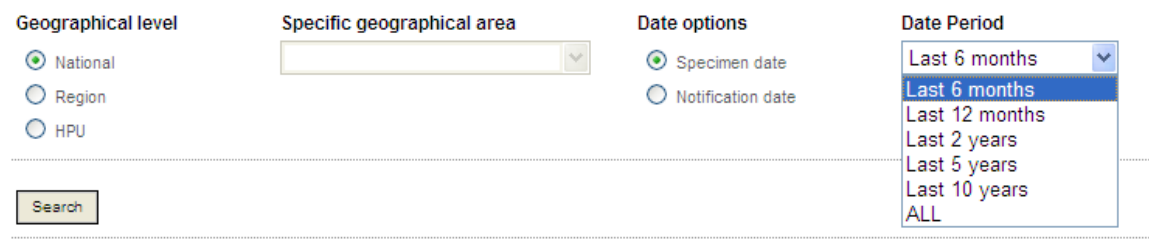
	No. of cases	% of cases
Childcare/Education	1	25
Workplace	0	0
Place of worship	1	25
Regular place of socialising	0	0
Detention (e.g prison)	0	0
Treatment/Rehab Center	0	0
Hostel/Homeless Shelter	0	0
Other place of interest (e.g. hospital)	0	0

2. Search

The search page can be used to find isolate information by selecting either “Cluster number” or “Strain type” from the search criteria drop down menu.



After selecting to search by either “Cluster number” or “Strain type” geographical, date and time parameters must be selected.



Select the “Geographical level” by choosing “National”, “Region” or “HPU”. If “Region” or “HPU” are selected then it is necessary to use the “Specific geographical area” dropdown to choose the breakdown required.

To view all isolates with or without an ETS match in a selected time period choose “Specimen date” and then the time period from the “Date Period” drop down list. By selecting “ALL” the date period restriction will not apply and all isolates will appear for the chosen geographical area. To view only isolates with an ETS match select “Notification date”.

Once all desirable criteria are selected click on the “Search” button.

The “Summary report” will show the total number of isolates for all areas and the list of “Possible match(es) found” contains all the isolates with ETS IDs and their location. In addition isolates which you have permissions to view will have names and date of birth displayed along with the ability to click on the ETS ID which navigates to the ETS record.

Searching at a National level will produce a summary table of the number of cases by Region. Searching at a Regional level will produce a summary table of cases by HPU. Searching at the HPU level will produce a summary table of cases found by hospital.

Summary report by regions

Regions	No. of Isolates
London	13
North East	1
Yorkshire and The Humber	4
Total:	18

CaseldName	D.O.B	SexAgePostcodeHospital	HPU	Region	Specimen date	Case manager
196933			North East and Central London HPU	London	14/09/2012	Jacqui Carless
187527		ROYAL LONDON HOSPITAL	North East and Central London HPU	London	18/03/2010	Jacqui Carless
189674		QUEEN'S HOSPITAL [ROMFORD]	North East and Central London HPU	London	12/07/2010	Jacqui Carless
132414		ROYAL VICTORIA INFIRMARY [NEWCASTLE]	North East HPU	North East	29/06/2010	Judith Campbell

Note: cases imported to ETS from the London TB Register (LTBR) always have “Jacqui Carless” listed as case manager within ETS and STM. Jacqui Carless is the Regional TB Co-ordinator for London. LTBR case managers are not ETS users so cannot be listed as case managers within the system. If you need to contact a London case manager regarding a patient please email (LTBR.Support@phe.gov.uk) or phone (0207 811 7214) the LTBR team with the patient’s ETS ID to obtain the contact details of the relevant case manager.

Appendix 1: Other uses of STM

The STM can be used to assist in TB data provision processes. In particular for; Multi Displinary Teams, cohort reviews, and sending information to clinics.

1. Open the required cluster report as described in the main body of this document
2. Download the report and open in excel
3. In excel apply filters

Cluster No	Case Id	Surname	Forename	DOB	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR Profile	Resistant To
1	A1001						Thames Valley HPU	South East	17/09/2012	{614-62432622333263313661}	
2	A1001						Sussex / Surrey HPU	South East	28/02/2013	{614662432622333263313461}	
4	A1001						Sussex / Surrey HPU	South East	25/07/2013	{614662432622333263313661}	
5	A1002						Thames Valley HPU	South East	11/05/2012	{614862432622333263313661}	
6	A1002						Thames Valley HPU	South East	17/09/2012	{614-62432622333263313661}	
7	A1004						Sussex / Surrey HPU	South East	22/09/2010	{614642432622334263313461}	
8	A1004						Sussex / Surrey HPU	South East	08/07/2011	{614642432622334263313461}	
9	A1004						Sussex / Surrey HPU	South East	15/07/2011	{614-42432622334263313461}	
10	A1004						Sussex / Surrey HPU	South East	08/08/2011	{614642432622334263313461}	PYR
11	A1018						Sussex / Surrey HPU	South East	02/12/2010	{4646424326223321A8323271}	ISO
12	A1018						Thames Valley HPU	South East	06/08/2011	{46464243262233-1A8323271}	

4. To look between a particular date range e.g. for cohort review, filter by notification date
5. To look at cases that are part of clusters by hospital, e.g. to send monthly reports to a clinic scroll along to the hospital column and select only the hospital that require the information.

PrisonMoreThan5Years	PrisonAbroadMoreThan5Years	SputumResu	DiseaseSites	Hospital	Reference	ReferenceLab	ClusterStatus
67		Negative	Pulmonary	EAST SURREY HOSPITAL	NMRL	H11460003	
159			Pulmonary	EAST SURREY HOSPITAL	NMRL	H12406009	
190			Pulmonary	EAST SURREY HOSPITAL	NMRL	H12406009	
242			Pulmonary	EAST SURREY HOSPITAL	NMRL	H12406009	
289			Pulmonary	EAST SURREY HOSPITAL	NMRL	H123080029	
381			Extra-thoracic lymph nodes	EAST SURREY HOSPITAL	NMRL	H121660016	
405			Pulmonary	EAST SURREY HOSPITAL	NMRL	H120320003	
432			Pulmonary	EAST SURREY HOSPITAL	NMRL	H122640008	
500			Pulmonary	EAST SURREY HOSPITAL	NMRL	H102180521	
502			Pulmonary	EAST SURREY HOSPITAL	NMRL	H103740110	

6. These data can then be matched with a list of ETS IDs that are part of a cohort review to determine which of the cases that are part of the cohort review are in a cluster, for example in Stata, Access or by using the 'vlookup' function in Excel.
7. You can also use the spreadsheet to analyse the cluster data. The excel download contains all the data for the entire report (not just the cluster). You can see all the data for the cases

including the data collected on cluster questionnaires. There is also a download button for epidemiological links that you can click to download that data.

To look at more detailed information on cluster investigations for reporting at cohort review

Once you have determined which clustered cases are part of a cohort review, by undertaking the above, information on the investigation of the cluster can be interrogated.

1. Go to the STM “Enter Cluster Details” tab
2. Look up the cluster you require by using the ‘filter by Cluster Number’ function.
3. Information is then available on the following factors which could then be reported;
 - cases in the cluster in the ‘Cluster Data’ section
 - whether questionnaires have been sent and received
 - notes on the cluster
 - it’s status e.g. whether under active investigation or not
 - details on any epidemiological links found
 - details of any contact tracing undertaken as a result of the investigation

Public Health England

Home page | Case management | Reports | Administration | Strain typing | Help

STM

- Create Template
- Generate Cluster Reports
- View Cluster Reports
- New Cluster Reports
- Enter Cluster Details
- Search
- Enter Lab Field Mapping

Logged in as: ehamb/ron | Log Out

Download paper data collection form

- SshPrecompile-2.0.7
- ServicePrecompile-2.0.7

Enter Cluster Details

Report Name	Date Created	Regenerated At
TRAINING- North West Region Oct 2 2013 11:08AM	02/10/2013	
TRAINING- Northern Ireland Oct 2 2013 11:08AM	02/10/2013	
TRAINING- South East Oct 2 2013 11:09AM	02/10/2013	
TRAINING- South West Oct 2 2013 11:10AM	02/10/2013	
TRAINING- Wales Oct 2 2013 11:10AM	02/10/2013	
TRAINING- West Midlands Oct 2 2013 11:11AM	02/10/2013	
TRAINING- Yorkshire and the Humber Oct 2 2013 11:12AM	02/10/2013	
TRAINING- East of England South HPU Oct 2 2013 11:18AM	02/10/2013	
TRAINING- Greater Manchester HPU Oct 2 2013 11:18AM	02/10/2013	
TRAINING- South East Wales HPU Oct 2 2013 12:25PM	02/10/2013	

1 2 3 4 5 6 7

TRAINING- South East Oct 2 2013 11:09AM

Filter by Cluster Number

Cluster Number A1001

Notes:

Select a cluster number (or other filter options) above to load data into the fields below for the selected VNTR cluster.

Cluster details

Cluster Status

Awaiting Preliminary Review

Patients in this cluster are also under investigation nationally

Save Cluster Details

Cluster status change log

No status change log found.

Notes on cluster

No cluster notes found

Notes

Add notes

100%

Appendix 2: Searching for a strain type using ETS

It is possible to search by strain type using the main ETS search (although this is only recommended for clinic users, who do not have access to the STM search).

Public Health England

Home page Case management Reports Administration Strain typing Help

Home page

- New case
- Search for case
- Treatment outcome result due
- Case transfers
- Laboratory isolate matching
- Questionnaires due

Logged in as: *jdavidson* Log Out

- Download paper data collection form
- SitePrecompile-2.0.13
- ServicePrecompile-2.0.13

Enter search criteria below to find a case

Case ID: Local patient ID: Forename: Surname:

Date of birth: Year of diagnosis: Strain type:

Case manager: Region (residence): HPU (residence): Hospital:

Search options

Return only cases I have access to

Return only cases I do not have access to

Search ETS

Using ETS to search by strain type return details of notified cases which have a laboratory record containing the strain type.

Note: Using ETS search by strain typing and viewing the case record will not currently tell you if the case is in a cluster or provide the cluster number. If from searching by strain type more than one case is returned then it would be known if this case was in a cluster.

For a user to find the strain type for a specific case, use the ETS search (by Case ID or Date of birth, for example), select the case from the search return and navigate to the “Laboratory Results” page. Once on the “Laboratory Results” page click on a laboratory record and look at the “Strain Type” field.

Ethnicity & Origin

Clinical Details

Laboratory Results

Risk Factors

Treatment Planned

Report Details

Treatment Outcome

Report Summary

Logged in as: *jdavidson* Log Out

- Download paper data collection form
- SitePrecompile-2.0.13
- ServicePrecompile-2.0.13

Laboratory Results

Results

Category

Mycobacterial Culture

Mycobacterial Culture

Mycobacterial Culture

Mycobacterial Culture

Mycobacterial Culture

Details of MycobNet data

Forename	Surname	Date of birth	Sex
[Empty row]			

Address	Postcode	NHS number	Patient ID
[Empty row]			

Source laboratory number	Source laboratory	Reference laboratory number	Reference laboratory
WBIRM	WBIRM	M.11.0604790.A	Birmingham

Strain Type (MIRU-VNTR)

61464243262233426231346

Click on the strain type to search for other cases with same strain type

Specimen type

Other tissues

Appendix 3: Matching laboratory records to notifications

The “Cluster Data” table in the “Enter Cluster Details” tab shows name, date of birth and postcode from the laboratory record. The HPU and region are derived from the local laboratory on the laboratory record. The “Case Id” column in the “Cluster Data” table shows if a laboratory record is linked to an ETS record (i.e. if there is no id then the laboratory record is not linked to a case).

Note: laboratory records match automatically within ETS to case notifications if the personal identifiers are identical. If there are differences in personal identifiers laboratory records will have to be manually matched to the notification.

Cluster Data

Cluster Data												
Show clusters with new data Download Report Accept Vntr Changes Delete												
Cluster No	Case Id	Name	D.O.B.	Postcode	Case Manager	HPU	Region	Specimen Date	VNTR	Resistant To	Date Added	Questionnaire
A1001						North West London HPU	London	28/06/2010	614662432622333263313-61		25/11/2013	View
A1001						North East and Central London HPU	London	02/07/2010	614662432622333263313-61		25/11/2013	View
A1001						North West London HPU	London	02/08/2010	614662432622333263313-61		25/11/2013	View
A1001	191804				Jacqui Carless	West London HPU	London	07/04/2011	614662432622333263313-61		25/11/2013	View
A1001	194467				Jacqui Carless	West London HPU	London	11/01/2012	614662432622333263313661		25/11/2013	View
A1001	194478				Jacqui Carless	North East and Central London HPU	London	30/01/2012	614662432622333263313661		25/11/2013	View
A1001	195776				Jacqui Carless	South West London HPU	London	30/05/2012	614662432622333263313661		25/11/2013	View
A1001						North East and Central London HPU	London	12/09/2012	614662432622333263313661		25/11/2013	View

Case managers who use ETS are notified of unmatched isolates so that they can manually match isolates. However, not all case managers are ETS users (e.g. London case managers) and there are always outstanding isolates that require matching. STM users may find it useful to manually match cases for cases in clusters under investigation.

To link a laboratory record to a case in the STM cluster report, it is necessary to do this through ETS. To check if the case has been notified use the ETS search page and search using the name and/or date of birth from the laboratory record.

Note: it may be necessary to search using the name and date of birth separately in order to find the case record as there must be difference(s) in the personal identifiers on the case notification and the laboratory record as the match has not occurred automatically within the system.



Home page Case management Reports Administration Strain typing Help

Home page

New case

 Treatment outcome result due
 Case transfers
 Laboratory isolate matching
 Questionnaires due

Logged in as: *jdavidson*

- Download paper data collection form
- SitePrecompile-2.0.14
- ServicePrecompile-2.0.13

Enter search criteria below to find a case

Case ID Local patient ID Forename Surname

Date of birth Year of diagnosis Strain type

Case manager Region (residence) HPU (residence) Hospital

Search options

Return only cases I have access to
 Return only cases I do not have access to

If the case notification is not found, then it is likely that this case has not been notified. If the case notification is found click on the result and navigate to the laboratory results page. Laboratory records which have been received and uploaded into ETS (received routinely from the reference laboratories) and are not yet matched to the notification will appear under the “Mycobnet matched results” section. Review if these laboratory results should be linked to the notification and tick the “Accept” box in the bottom right hand corner to manually match the isolates. The case will now be linked to the laboratory record in the STM report.



Home page Case management Reports Administration Strain typing Help

Home page

Demographics
 Patient Occupation
 Ethnicity & Origin
 Clinical Details

 Risk Factors
 Treatment Planned
 Report Details
 Treatment Outcome
 Report Summary

Logged in as: *jdavidson*

- Download paper data collection form
- SitePrecompile-2.0.14
- ServicePrecompile-2.0.13

Id: 192183, Case notification date: 17/05/2011, Legacy Migration Id: 2011:200381511

Laboratory Results

Results

Category	Specimen	Status	Specimen date	Species	Source	Delete
Microscopy	Sputum	Negative	25/05/2011		ETS	<input type="checkbox"/>
Mycobacterial Culture	Sputum (induced)	Positive	25/05/2011	<i>Mycobacterium tuberculosis</i>	ETS	<input type="checkbox"/>
Microscopy	Sputum (induced)	Negative	25/05/2011		ETS	<input type="checkbox"/>

Note(s):
 - Laboratory result matches are automatic and should be checked and confirmed by the case manager.

Add a new sputum smear result

Specimen Type Specimen Date Status

Add new culture or other results

Test Type Specimen Type Specimen Date

Status

MycobNet matched results

The following reference laboratory results may relate to this patient.
 Only positive cultures are listed.
 Click on each record to view further details.
 Please select all the records that you are certain relate to this patient and click the 'Accept selected records' button.
 Further results may appear here later.

Name	Date of birth	Age	Sex	Specimen date	Reference laboratory	Accept
				24/05/2011	Unlisted	<input type="checkbox"/>