



News and Updates from the Public Health Laboratory Birmingham.

Find out more information about the tests and services offered at the Public Health England Public Health Laboratory Birmingham please visit [www.heftpathology.com](http://www.heftpathology.com)

## New Laboratory Facilities at Heartlands



*Picture courtesy of HEFT*

The official opening of our innovative new laboratory medicine facility at Heart of England NHS Foundation Trust (HEFT) took place on Monday 8 July 2013 with Lord Carter of Coles and Trust Chairman, Lord Philip Hunt unveiling a plaque to mark the occasion.

This world class development has been jointly funded by the Heart of England NHS Foundation Trust (HEFT) and Public Health England and comprises a two storey extension to the current pathology building at the Heartlands Hospital site.

The microbiology services have been relocated to a modern, new laboratory with state of the art technology to enable efficient and rapid specimen processing leading to faster results for service users. The new molecular suite within the development will enable us to expand our molecular microbiology diagnostics and to provide a high quality, up to date service to our users.

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## Modernisation and Automation

As part of our programme of modernisation and automation, the Public Health Laboratory Birmingham is now using MALDI-TOF for identification of bacteria.

### What is MALDI-TOF and how does it work?

MALDI-TOF stands for “Matrix-assisted laser desorption ionisation – time of flight” which is a kind of mass spectrometry. The MALDI-TOF instrument uses a laser to break down and ionise ribosomal proteins from tiny quantities of the bacteria we grow from clinical samples. The broken and ionised proteins then pass along an electrical field to a target that detects when the protein fragments hit. Based on size and charge differences, the proteins produce distinctive fragment patterns that differ between species.

### How does MALDI-TOF benefit the laboratory and users?

Traditional bacterial identification and even molecular methods can sometimes take up to 48 hours to give a bacterial species identification. MALDI-TOF however, can identify bacteria in as little as 20 minutes. Identifying bacteria faster allows rapid throughput and turnover of clinical specimens thus potentially reducing the time to reporting test results.

### What differences might laboratory users notice?

In addition to getting some of your reports faster, you may receive reports with more detailed and accurate bacterial genus and species names, or names of some unfamiliar organisms.

Some examples of changes:

Old Identification	New Identification
Beta-haemolytic Streptococcus group A	Streptococcus pyogenes
Beta -haemolytic Streptococcus group B	Streptococcus agalactiae

The laboratory will endeavour to interpret significant results on reports and will be available for advice.

## New Laboratory Phone Number

The new PHE Public Health Laboratory Birmingham telephone number is:  
0121 4243111.

Please use the new number for ALL enquiries.

Any other numbers that you may currently use to contact the laboratory will cease to be available after Thursday 7th November 2013.

## Birmingham Chest Clinic Marks its 80th Year

The Birmingham Chest Clinic first opened in Great Charles Street in Birmingham city centre in the pre-NHS era and was an example of a drive to improve public health in cities. A Public Health Laboratory was established on the same site after World War II which then moved to the present Heartlands Hospital site in 1965.

The Chest Clinic is one of a network of clinics across Birmingham which are mainly based in hospitals. As rates of TB in Birmingham are amongst the highest in European cities, there is an increasing emphasis on rapid treatment to control active infection. City-wide efforts to control TB in Birmingham are directed and supported by a multi-disciplinary team of Chest and Paediatric Physicians, Nurses, Microbiologists, Public Health Epidemiologists and Scientists. Importantly, all patients with TB in Birmingham are served by the same team of specialist nurses, who support patients with active disease through the complex treatment regimens. These nurses also identify and treat patients infected with latent TB from contact with infected patients. The Chest Clinic additionally provides clinical services for patients with allergies, asthma, and conditions caused by workplace exposure and pollutants.

Today, the Birmingham Chest Clinic is at the forefront of combating TB in the UK. The clinic was recently involved with the initial evaluation of the current blood-based interferon-gamma release assays for the diagnosis of latent TB infection. It is also now leading the development and implementation of

enhanced cluster investigation using a combination of DNA fingerprinting data provided by the Public Health Laboratory Birmingham and enhanced epidemiological investigation led by Dr Martin Dedicoat. Next-generation sequencing of *Mycobacterium tuberculosis* strains in collaboration with Oxford University has highlighted and confirmed transmission in very complex patient groups where the exact social links between patients are difficult to identify.

The Birmingham Chest Clinic also provides a focus for training healthcare professionals as it hosts a three day intensive training course in "Tuberculosis Management and Control in the UK" every six months.



*The Birmingham Chest Clinic on Great Charles Street*