Overview

Lancet Laboratories is a leading pathology service providing vital diagnostic and monitoring pathology services in Botswana, Ghana, Kenya, Mauritius, Mozambique, Nigeria, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

Lancet operates in the private healthcare environment and services the corporate, insurance and industrial sectors. From our modest beginnings in the 1940s, we have grown exponentially in capacity and in 2010 Lancet conducted 1.8 million blood tests each month across the country.

Where we operate

Please visit the Lancet Laboratories website www.lancet.co.za and click “Where to find us” for a list of more than 200 laboratories and depots throughout South Africa. These addresses can be downloaded as electronic business cards, as PDF’s or they can be emailed.

Our Offering

Lancet offers the following services:

- Microbiology
- Chemical Pathology
- Molecular Biology
- Histology and Cytology
- Haematology
- Cytogenetics
- Coagulation and Newborn Screening

Occupational Health and Corporate Services

According to the Occupational Health and Safety Act of 1993, it is the responsibility of the employer to create and maintain, as far as is reasonable, a work environment that is safe and without risk to the workforce.

Together, the employer and employee must work as a team to make the workplace a healthy and safe environment.

Lancet Laboratories’ SANAS accredited Occupational and Industrial Health Unit offers a comprehensive testing, monitoring and consulting service for mining and industry throughout Africa. Our team has extensive experience in the design of new protocols for the bio-monitoring of new compounds, not specified in the South African Occupational Health and Safety Act of 1993, as well as the specified range of Table 3 substances. A comprehensive list of tests are available on our website www.lancet.co.za

Lancet Laboratories can partner with your organisation to provide the following services:
Before drug testing in the workplace is embarked on, a formal Drug and Alcohol Policy, describing the whole process in detail, needs to be drawn up and made available to employees. Drugs of abuse testing generally utilises an immunoassay as the screening test. This can take the form of a near-patient testing device or point-of-care (POC) test, or a test performed on a large automated instrument in the laboratory. Immunoassays are rapid, sensitive and can be easily automated. They test for drug classes, not individual drugs. Due to the nature of the assay, they are susceptible to interference, which may result in false-positive as well as false-negative results. For this reason they are only to be used for screening purposes.

Once a positive (i.e. non-negative) result has been obtained on the screening test, a confirmatory test should be performed. This test is performed in the laboratory on highly specialised instruments utilising a different analytical principle than the screening test, typically involving some form of chromatography. These tests can distinguish between different drugs within a specific class. The results are given as an amount or concentration of drug is the sample. Turnaround time will be linked to the specific method used and can be up to seven days.

Blood alcohol (ethanol) levels can be done if acute alcohol intoxication is suspected. Lancet Laboratories also offers the carbohydrate deficient transferrin (CDT) and gamma-glutamyltransferase (GTT) tests, which may assist with the diagnosis of chronic alcohol abuse.

Lancet Laboratories provides a comprehensive HIV testing programme, including HIV treatment monitoring (including HIV viral load testing, CD4 count and side-effect monitoring), HIV resistance testing (genotyping) due to suspected virological failure, and therapeutic drug monitoring. Along with testing, we also offer pre- and post test counselling for:

- Self-referral patients
- Those whom have tested HIV positive without receiving counselling
- Adherence to treatment

South Africa is a country with a very high TB [tuberculosis] burden, so our exposure to TB is constant and high. TB is contracted by inhaling the aerosolized TB bacteria after being in contact with an infected person who is coughing, if contact is close and prolonged.

Most healthy South African adults who are immune-competent [intact immune system] do not develop active TB after exposure. TB is often contained by the individuals own robust immune system and goes into a stage of latency [latent TB].

This latent stage of TB can remain dormant for years unless something alters a person's immune status e.g. HIV infection, malnutrition, alcoholism, immunosuppressive drugs or other serious medical conditions.

In South Africa no treatment or prophylaxis is recommended for latent TB in immune-competent persons except in children under 5years of age and only in immunosuppressed patients e.g. HIV positive individuals, or those on immune suppressive medications.

At present there are no rapid screening tests for active TB in adults immediately post exposure.
If you feel that you have had a significant exposure to a person with active TB it is recommended that one be aware of the symptoms and signs of TB disease. The TB questionnaire will help eliminate or suggest the risk of TB infection, if for example you are positive for 2 or more symptoms and signs after using the questionnaire, then it is advised that you seek appropriate medical attention. Medical personnel will perform a full physical examination, request a Chest X ray if warranted and submit the appropriate samples for testing for TB disease.

This is a general recommendation only and if there are any unusual circumstances surrounding possible exposure or clinical presentation, please seek help from your medical practitioner.

### TB Testing

Lancet Laboratories offers the full spectrum of TB diagnostic testing. This ranges from simple to perform TB microscopy to advanced molecular methods. TB microscopy entails making a slide from the appropriate clinical sample and staining it to look for Acid fast bacilli (AFB) which is indicative of a mycobacterial infection. The sensitivity of such testing is less than 30% in the best of hands, so it should not be used solely in making the diagnosis of TB.

Culturing the sample is widely held as the gold standard for diagnosis. Lancet performs MGIT cultures, which is an automated liquid culture method to detect the growth of mycobacteria after the sample has been prepped and inoculated into the liquid culture media. Once cultures become positive, which can take up to six weeks (the universally accepted recommended incubation period), further identification of the mycobacterial species is performed using various molecular methods.

Some of these include PCR testing like the HAIN PCR and the GeneXpert (Cepheid®, Xpert®MTB/RIF) which is a WHO endorsed method and can also be performed directly on a sample. This provides an accurate and early diagnosis of TB within 48 hours of the sample reaching the laboratory, compared to other testing methods that can take many weeks.

These molecular tests also give additional information about the sensitivity of the organism to one or two anti-TB medications (i.e. Rifampicin and Isoniazid). These PCR tests can rapidly identify if these organisms are drug-susceptible or multi-drug resistant [MDR] TB. In addition further susceptibility testing to additional anti-TB medications can be performed using traditional culture methods or the newer PCR methods, which are both available at Lancet Laboratories.
If you suspect that you may have TB or have been in contact with someone known to have TB, please complete the following questionnaire to determine if you have symptoms suggestive of TB.

**Do you have any of the following symptoms?**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes</th>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>Coughing for more than 3 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coughing up blood-stained sputum</td>
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<td></td>
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<tr>
<td>Frequent fevers</td>
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<tr>
<td>Unusual sweating, especially at night</td>
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<tr>
<td>Unexplained weight loss</td>
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<tr>
<td>Loss of appetite</td>
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<tr>
<td>Unusually tired</td>
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<td></td>
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<tr>
<td>Shortness of breath</td>
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If you have answered yes to any of these questions, especially if you have had a cough for more than 3 weeks plus one of the other symptoms, please see your health care provider as TB testing may be required.
HPV is the major cause of cervical cancer. Human Papilloma Virus (HPV) screening is an important advance in detecting women at risk for development of cervical cancer. The pap test is a screening test that has been very successful at finding signs of cervical cancer. Liquid-based cytology is the first real improvement to the conventional pap smear in 50 years, and is the most widely used in the United States, receiving FDA approval in May 1996. Lancet provides molecular testing for identification of HPV as well as a service by nurses trained to do pap smear and liquid-based cytology procedures.

### Hepatitis

Hepatitis A virus infection is endemic in South Africa. Depending on socio-economic status, and hygiene and sanitary conditions, between 50% and 91% of adult blood donors have evidence of prior exposure to Hepatitis A. Disease is generally mild, with asymptomatic infection common in children, but disease severity does tend to increase with increasing age. Hepatitis A infection is an acute infection and there is no chronic carrier state and chronic liver damage does not occur.

**How is hepatitis A transmitted?**

Hepatitis A virus is mainly transmitted through the faecal-oral route, either by person-to-person contact or ingestion of contaminated food or drink. Large foodborne outbreaks have been described following ingestion of contaminated shellfish and uncooked vegetables and fruit.

**Which occupations are at increased risk of hepatitis A infection?**

People working in medical microbiology laboratories, sewage workers, people working in healthcare facilities and other institutions who care for incontinent patients, and people working with primates are at increased risk of hepatitis A infection and require pre-exposure vaccination. Other healthcare workers and people working in childcare facilities are not at increased risk of hepatitis A acquisition if standard hygiene practices and contact precautions are adhered to.

Testing for immunity against hepatitis A (hepatitis A IgG) prior to pre-exposure vaccination in people with potential high risk occupational exposure may be cost effective due to the high prevalence of antibodies against hepatitis A in South African adults. However, there is no harm to vaccinating people with prior immunity, whether due to prior exposure or vaccination.

**Vaccination schedule**

Three inactivated hepatitis A vaccines are available in South Africa, one of these is a combination vaccine against both hepatitis A virus and hepatitis B virus. For pre-exposure vaccination two doses of the vaccine, administered 6 – 12 months apart, is required. Protective immunity should last for at least 20 years after completing the second dose.

Vaccination can also be used for post-exposure prophylaxis in healthy individuals aged between 2 and 40 years, if given within 14 days of exposure.

**Response to a case of acute hepatitis A**

When someone presents with symptoms suggestive of hepatitis, (e.g. jaundice, right upper quadrant pain, nausea and vomiting), infection with hepatitis A virus can be confirmed with a positive hepatitis A IgM antibody result.
Hepatitis B virus infection is prevalent in South Africa. Approximately 10% of the population are chronic carriers. The virus is spread via contaminated body fluids. These include genital secretions (sexual and vertical transmission), breast milk (vertical transmission) and blood. HBV is highly infectious due to the high viral loads found in blood as well as the relative hardiness of the virus. The risk of transmission following a single needlestick injury may be as high as 30%, compared with 0.3% for HIV. Health care workers and allied hospital workers (porters, cleaners and maintenance staff) are at risk for HBV infection due to exposure to blood and other bodily fluids during their daily activities. HBV vaccination is an important strategy for minimizing transmission in this group.

Who should be vaccinated?

All workers whose activities bring them into regular physical contact with patients and/or their blood or bodily fluids should be vaccinated.

Should there be pre-vaccination testing?

There is no harm in vaccinating an individual who is already immune to or infected with HBV. However, in a high prevalence setting (individuals who grew up in low socioeconomic circumstances) it may be cost-effective to first screen staff for infection and immunity. An individual who has active HBV infection (HBsAg positive) or is immune to HBV (anti-HBs positive) does not require vaccination. Those with active HBV infection should be referred for appropriate investigations and treatment.

Vaccination

3 doses of a hepatitis B vaccine should be administered at 0, 1 and 6 months.

Confirmation of successful vaccination

Anti-HBs (HBsAb) should be tested 1-3 months after the last vaccine dose. A level >10mIU/ml is considered to be protective.

Booster doses

There is good evidence that if vaccination is successful, as demonstrated by a post-vaccination anti-HBs titre >10mIU/ml, immunologic memory will persist and protect against infection even if antibody titres drop. A routine hepatitis B vaccine booster is no longer recommended.
If an individual has an exposure to HBV, the anti-HBs titre should be checked. If the titre is <10mIU/ml, a vaccine booster should be given. If the titre is >10mIU/ml, no booster is required.

Non-responders

Non-responders are defined as individuals with anti-HBs titres that remain <10mIU/ml after appropriate vaccination. It is important to exclude active HBV infection in these individuals and a full hepatitis B screen (HBsAg, anti-HBc and anti-HBs) is recommended. Those with active infection should be referred for appropriate investigations and treatment.

Approximately 10% of adults will not respond to the first vaccination course. If anti-HBs was not tested within 3 months of the last vaccine dose, a single dose of vaccine followed by anti-HBs testing 1-3 months later will distinguish between those who are nonresponders and those with waning antibody levels. If the anti-HBs titres remains <10mIU/ml, a second vaccine series (total of 3 doses) should be administered. If the patient is >30 years old, obese or immunosuppressed, a double dose of vaccine should be used at each administration. 50-60% of those that do not respond to the first vaccination course will respond to the second. The small percentage who remain anti-HBs negative after the second vaccination course will require administration of hepatitis B immune globulin if they are exposed to HBV.
Employee wellness management is part of the four pillars of strength in the workplace and goes hand in hand with HIV and TB monitoring, biological monitoring and a comprehensive Health and Safety programme. Employee wellness initiatives, including corporate wellness days, can help to improve workplace morale and performance, and help to reduce absenteeism.

To ensure employees get the most out of their corporate wellness days, Lancet can provide the following pathology tests and health screening services to meet your company’s needs:

### Onsite Corporate Wellness Days Testing

Lancet’s wellness day programme includes the following onsite tests and health-screening services. These services are offered to companies as follows:

#### Registered companies: (Active account for the past year)

In recognition of the company’s support and loyalty, one day free service per year on a first come first served basis, for one branch/site. The results of these tests are available to employees on the day of testing:

- Finger prick fasting or random glucose
- Finger prick cholesterol
- Blood pressure
- BMI and waist circumference

A minimum of 50 employees for wellness testing is required.

Additional requests for testing will be charged at R125 per person if additional days are requested.

This price will be reviewed annually.

A travel nurse fee may be applicable.

#### Registered companies: (Account not active for the past year)

The fee of R125 per person will apply.

The onsite corporate wellness day service is offered to a maximum of 2 companies per month.

Lancet Laboratories reserves the right to decline a wellness day service.

### Laboratory Corporate Wellness Day Testing

Lancet provides the following laboratory-based pathology tests and health-screening services. These tests are required to be processed in a laboratory, with results available to employees several days to a week following testing. Onsite phlebotomy for these tests and other services are available to companies on request. Kindly request a quotation for the laboratory tests.

A travel nurse fee may be applicable.

- TSH
- PSA (men over 40)
- Pap smear examinations
- HIV ELISA

Health education and training conducted by one of our specialist pathologists - available free of charge on request.
One must consider all risk factors for cardiovascular disease when evaluating an individual’s cholesterol status. The more risk factors a person has, in combination with undesirable lipid levels, the greater the risk of developing cardiovascular disease.

Pathology tests and wellness services provided by Lancet assess for some of these risk factors including high blood pressure, increased body mass index (BMI), diabetes and high total cholesterol. If an employee’s total cholesterol is high, Lancet will recommend additional lipid testing to assess for high LDL cholesterol and low HDL cholesterol (Lipogram).

Lancet can also provide a healthy eating plan to help employees reduce cholesterol and manage diabetes.
Phlebotomy, Pap smear and ASISA workshops are offered as a free service to nursing personnel within organisations registered as clients with Lancet. Lancet also offers workshops for HIV case managers and medical professionals. Educational brochures and posters are available on the website www.lancet.co.za

For more information on Lancet's Corporate Wellness services, please contact a member of our team.

Lancet’s Online Pathology Report Viewing System

Our pathology report viewing system, PathPortal, is a user friendly online programme that provides authorised personnel with quick access to employee results. Key features include:

- Paperless system
- Secure login validation from anywhere
- No software installation is required - only an internet connection and JavaScript enabled browser
- Inbox styled layout, with report status indicators
- Search facilities
- Group practice and multiple practice support

PDF format conversions (for printing and local copy storage)

Training

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References


