

Genetic detection

With a new range of genetic screening services, patients can now detect a host of infectious diseases through a single test, writes ANUSHA K.

AHMAD (not his real name) had been unwell for two weeks. Fatigue and blurred vision kept occurring even with proper rest. Both his parents were diagnosed with Type 2 diabetes.

At the clinic, the doctor advised him to have a blood test but he had to wait for days for the results. In the meantime, his condition deteriorated.

Unfortunately, comprehensive genetic screening services and all-in-one tests for infectious diseases had not been introduced yet. If they were, he would have known if he was at risk of contracting a genetic illness like diabetes from his parents.

Genetic screening examines a person's genome for known variation markers — some causal for diseases, others carry a lifetime risk for contracting a genetic illness. Aberrations in human genome give rise to different types of diseases such as cancer, autism, Alzheimer's and Down's Syndrome. Other genetic variations may be responsible for adverse reactions to drugs.

Introduced by the Malaysian Genomics Resource Centre Berhad (MGRC), genetic screening services will be made available at hospitals and other primary care facilities around the country. Healthcare professionals can use these services to see if a person

is predisposed to inherited diseases, corresponding risk factors and drugs that have side effects.

With help from qualified geneticists, doctors can better understand and advise on the management of their patients' health. In addition, doctors can prescribe more effective medication at optimal dosage based on their patients' genetic make-up.

Access to information from a genetic screening test can help reduce the threat posed by both genetic and infectious diseases through early detection and treatment.

"Our tests correlate to inherited and infectious diseases that commonly afflict Asians, making them relevant to the local population. Predictive medicine is practised through genetic screening on patients to check early if a patient has genes that predispose him to a disease," says Dr Stephen Rudd, MGRC chief scientific officer, at a recent talk in Kuala Lumpur to introduce the services.

Apart from tests for genetic diseases, MGRC will soon offer a single test for a multitude of infectious diseases, streamlining the rapid identification and treatment of disease-causing microbes in humans.

For example, current diagnostic tests for dengue are reliable only about five days after symptoms are first observed and once antibodies are present in the blood. MGRC's rapid, genetic marker-



Genetic screening services, done in the lab, will be available at hospitals and other primary care facilities in the country

based test, which does not depend on the presence of antibodies, will enable earlier detection so proper treatment can be given.

One of the tests is genome sequencing, which allows the examination of genetic differences at the genome level through the sequencing of the whole genome, exome or transcriptome. Such an approach provides views of the human genome at various levels, enabling subsequent survey of different types of

human genetic variations.

Basic to extensive genotyping involves the examination of an individual's genome for known markers that reveal genetic variations within DNA and predispositions to genetic disorders and inherited diseases. This extensive service also checks for possible adverse reactions to drugs.

Perinatal genotyping is an examination of newborns and young children up to 5 years

old for inherited diseases and genetic disorders, with particular focus on health and disease traits affecting infants. Parents can opt to get their children tested to better understand their genetic predispositions.

Pre-conception genetic tests involve checks for inherited diseases and genetic disorders for couples to determine which traits they may pass on to their unborn child. These services can be obtained for both parents and

their newborn.

Finally, there's the infectious diseases test that enables the detection of hundreds of infectious and communicable diseases in a single test. It covers common diseases affecting the Asian region such as dengue, tuberculosis, H1N1, hepatitis and malaria.

Ask your local healthcare practitioner for a screening. Visit www.mgrc.com.my