

This Quick Test May Hold the Key to Containing Hospital Disease Outbreaks

Polymerase chain reaction (PCR) technology - rapidly replicating DNA in a test tube - can swiftly and accurately identify a bacterial outbreak and trace the source. This technology could help curtail hospital outbreaks such as the *Klebsiella* bacteria outbreak that killed a number of newborns at Mahatma Gandhi Memorial Hospital in Durban in June and the *Enterobacter* outbreak (from infected drips), which killed six babies at Pelonomi Hospital in Benoni last year.

Dr Gerhard Weldhagen, a member of the National Pathology Group (NPG) and molecular biologist, said that PCR enabled clinicians to test outbreaks on a molecular level. It provided results much more

rapidly than a traditional bacterial culture.

"Using PCR techniques can reduce the waiting period for a result from weeks to days. In addition, traditional bacterial culture can only identify the organism, not its genetic source, whereas a PCR test can be absolute about the genetic background of the infection. This tells you whether the disease is being spread by one person, or one infected batch of equipment, or whether it is multi-sourced," Dr Weldhagen said.

In essence, PCR is a rapid, relatively inexpensive and simple means of producing large numbers of copies of DNA molecules from minute quantities of source material, such as a single hair follicle or even a single cell. This replication is possible even when cells and bacteria are dead.

Hospitals are breeding ground for bacteria which are harmless to healthy individuals but the sick. Babies, the elderly and adults with immune systems are all vulnerable to infection can be spread by poor hygiene practices. Other of infection include 'moonlighting' personnel shifts at a variety of institutions.

