

Senate Community Affairs Committee

ANSWERS TO ESTIMATES QUESTIONS ON NOTICE

HEALTH PORTFOLIO

Supplementary Budget Estimates 2015 - 2016, 21 October 2015

Ref No: SQ15-000773

OUTCOME: 9 - Biosecurity and Emergency Response

Topic: Lyme Disease

Type of Question: Written Question on Notice

Senator: Madigan, John

Question:

It is known that a significant percentage of the Australian population have immune and antigen conditions that will corrupt many diagnostic tests employed in Australian laboratories, specifically tests measuring the immune response to infection, rather than identifying a specific pathogen.

- a) At this late stage in investigations into pathogenic disease, why aren't all NATA accredited laboratories using direct and specific tests focusing on DNA sequencing/PCR?
- b) At this late stage in investigations into pathogenic disease, why are patients not pre-screened to identify immune conditions to assist in selection of the most appropriate testing technology for that patient, and to eliminate or minimise the risk of corrupted test results and inaccurate diagnosis?

Answer:

Next generation sequencing techniques including Whole Genome Sequencing, remain research tools. The mainstreaming of such techniques will assist in the direct detection of nucleic acid (genetic material) of pathogens. Polymerase Chain Reaction (PCR) as a type of nucleic acid amplification technology is not a panacea for diagnosis and has limitations. Despite the theoretical applications, false positive and false negative test results can occur. The procedures for PCR must be rigidly adhered to because of contamination problems. These techniques also fail to differentiate between viable (live) and nonviable (dead) microorganisms.

Pre-screening of immunological competence is not required for diagnostic testing. Unless the immunological system has been ablated, serological laboratory tests will still detect circulating antibodies.