Detection and discrimination of human and avian influenza

Professor David Russell (University of East Anglia)

Professor Rob Field (John Innes Centre)

Rachel Watmore (University of East Anglia)

In April 2009, a novel influenza virus appeared in Mexico, causing pneumonia and 59 deaths in Mexico City alone. This influenza virus, known as 'swine flu', soon spread to the USA and around the world. Within two months, the World Health organization (WHO) declared that the viral outbreak met the criteria of a level 6 pandemic. Fears emerged that it could pose a threat akin to the Spanish Flu pandemic that killed between 50 million and 100 million people worldwide in 1918-19. While swine flu was not as virulent as first feared, the US President's Council of Advisors on Science and Technology recommended that '…**the development of novel accurate point of care diagnostics for influenza'** was a major priority.

Even in the absence of a global pandemic in winter around 70,000 people a week in England and Wales will consult with their health care providers over flu like symptoms, with more than 800,000 people a year admitted to hospital with influenza like symptoms. These data highlight the importance of being able to definitively identify influenza infections as early as possible in order to take appropriate therapeutic action.

Professor David Russell (UEA) and Professor Rob Field (JIC) have developed a simple diagnostic test that can detect and discriminate between human and avian influenza virus. The test is suitable for point-of-care use and medical surveillance applications. This technology has been protected and published and market research shows that it has advantages over existing available tests. The Norwich Research Park Translational Funding will be used for further developments, particularly obtaining clinical data, so that the new test may become available to meet the demonstrated need. The underpinning technology may also be applicable to the diagnosis of other viral diseases both in humans and in animals.