Relative Performance of a Range of Filtering Facepieces and Surgical Masks Against Ambient Particles, an Artificial Saliva Aerosol and an Attenuated Strain of Influenza Virus

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Conflicting advice is available to healthcare workers and others on the appropriate precautions to take when potentially exposed to aerosols generated by people suffering from respiratory illness, or from certain medical procedures. In particular this is relevant in the context of current concern about the potential for an influenza pandemic and the need for front-line workers including those in healthcare to be adequately protected. The UK's Health and Safety Executive's (HSE) current stance is that use of FFP3 devices represents best practice, FFP2 may be an acceptable pragmatic compromise, and that surgical masks are wholly inadequate.

Although some work was done by the Health and Safety Laboratory a number of years ago, additional scientific evidence is required to support HSE's current position, especially with regard to respiratory viruses. The work to be undertaken in this study aims to provide that evidence by a combination of challenge studies to measure non-biological airborne particles and subsequently to use a microbiological challenge using an attenuated strain of influenza virus.

Method
Tests were conducted using particle conunting to determine the relative levels of protection provided by a range of filtering facepieces and surgical masks against ambient particles and against a simulated cough / sneeze generated aerosol. Further tests using a commercially available attenuated strain of influenza virus mixed with artificial saliva provided additional data.

Results
The presentation will describe the study, present the results obtained to date, and draw a conclusion on the relative performance of filtering facepieces and surgical masks that will support HSE's guidance.