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Presentation Abstract

Session: 224-Influenza Control: What's New? And Late-breakers

Tuesday, Sep 15, 2009, 8:30 AM -11:00 AM

Presentation Title: **K-1918b - The First Randomised, Controlled Clinical Trial of Surgical Masks Compared to Fit-Tested and Non-Fit Tested N95 Masks in the Prevention of Respiratory Virus Infection in Hospital Health Care Workers in Beijing, China**

Location: Room 103

Presentation Number: K-1918b

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Merck Role(s): Collaborator, Scientific Advisor (Review Panel or Advisory Committee), **Received:** Consulting Fee.

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Abstract: **Background:** There are no published RCTs on the efficacy of surgical masks compared to N95 masks. **Aims:** To compare the clinical efficacy of surgical masks, N95 masks (fit tested) and N95 masks (non fit tested) compared to control in front line health care workers. **Methods:** A cluster RCT of 24 hospitals and 1936 front line hospital health care workers in Beijing, China. subjects wore masks for 4 weeks during winter and were followed for development of illness for 5 weeks. Symptomatic subjects were tested for respiratory viruses including influenza. Outcomes were clinical respiratory illness (CRI), influenza-like illness (ILI), any laboratory confirmed respiratory virus infection, and laboratory confirmed influenza. **Results:** By intention to treat analysis, surgical masks had no efficacy for any outcome. N95 masks were significantly more protective than control. Fit testing did not improve the efficacy of N95 masks, which had statistically significant efficacy of 60% against CRI, 75% against ILI, 56% against lab confirmed respiratory viral infection, and 75% against confirmed influenza. **Conclusions:** Previous evidence about N95 masks has been limited to experimental studies. While N95 masks are highly protective but we were unable to demonstrate efficacy of surgical masks. Fit testing does not improve the efficacy of N95 masks. Given the logistic difficulties of fit testing, particularly during an infectious diseases emergency, this is an advantage for public health control. These data are the first clinical data to confirm the superiority of N95 masks in preventing respiratory infections. Front line health care workers are key to an effective pandemic response, and should be protected with N95 masks.

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