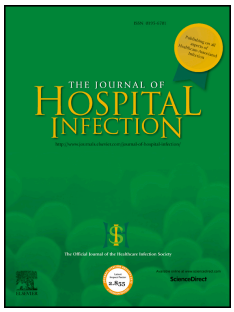
Accepted Manuscript



Lowbury Lecture 2014 Airborne transmission and precautions: facts and myths

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PII: S0195-6701(14)00370-3

DOI: 10.1016/j.jhin.2014.11.005

Reference: YJHIN 4429

To appear in: *Journal of Hospital Infection*

Received Date: 17 November 2014

Accepted Date: 20 November 2014

Please cite this article as: Seto W-H, Lowbury Lecture 2014 Airborne transmission and precautions: facts and myths, *Journal of Hospital Infection* (2015), doi: 10.1016/j.jhin.2014.11.005.

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Lowbury Lecture 2014

Airborne transmission and precautions: facts and myths

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SUMMARY

Airborne transmission occurs only when infectious particles of <5 µm, known as aerosols, are propelled into the air. The prevention of such transmission is expensive, requiring N95 respirators and negative pressure isolation rooms. This lecture first discussed whether respiratory viral infections are airborne with reference to published reviews of studies before 2008, comparative trials of surgical masks and N95 respirators, and relevant new experimental studies. However, the most recent experimental study, using naturally infected influenza volunteers as the source, showed negative results from all the manikins that were exposed. Modelling studies by ventilation engineers were then summarized to explain why these results were not unexpected. Second, the systematic review commissioned by the World Health Organization on what constituted aerosol-generating procedures was summarized. From the available evidence, endotracheal intubation either by itself or combined with other procedures (e.g. cardiopulmonary resuscitation or bronchoscopy) was consistently associated with increased risk of transmission by the generation of aerosols.

Keywords:

Airborne transmission

Influenza

N95 respirator

Respiratory virus

Severe acute respiratory syndrome (SARS)

Surgical mask

Introduction

In the past, there has been a tendency to consider all infections of the lungs as a possible source of airborne transmission. This seems logical because such infections often present with