Preventing H1N1 spread to health care workers: Dilemma, debate and confusion

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A commentary in the December issue of The *Lancet Infectious Diseases* brings to light the gaps in knowledge on the transmission of a common pathogen - the influenza virus - and its impact on decisions about how best to protect health care workers. Infectious diseases specialist Leonard Mermel, DO, medical director of infection control for Rhode Island Hospital, looks at the ongoing debate in light of the H1N1 pandemic, what past research tells us about the spread of influenza, and what is missing in the debate. His commentary is currently available in an online first edition.

Mermel, who is also a professor of medicine at The Warren Alpert Medical School of Brown University and a member of the University Medicine Foundation, says, "There is ongoing debate regarding influenza transmission and how best to mitigate risk of disease acquisition among health care workers (HCWs). For no other common infectious disease is there such varied opinion, reflecting gaps in our knowledge about a common human pathogen."

Mermel points out five variables in preventing the transmission of the virus to HCWs: the dynamics of disease transmission; the availability of personal protective equipment (PPE); compliance among HCWs in the use of PPE; cost of PPE; and immune status of HCWs.

He notes that in two studies, one already published and one recently presented at the Infectious Diseases Society of America Annual Meeting, researchers found no statistically significant reduction in

influenza-like illness among HCWs wearing N95 respirators compared with surgical masks.

Mermel points out that there is tremendous variability in the bioaeorosols produced by influenza-infected patients. He suggests that the inability to easily identify those individuals who produce large amounts of bioaerosols (i.e., superspreaders) is "The Achilles' heel of infection control" and he says, "Our limited understanding of such events leaves us vulnerable since we cannot predict which influenza-infected person is a superspreader."

Mermel notes the paramount importance of source control (i.e., influenza-infected patients wearing surgical masks, as tolerated) to minimize risk of transmission to HCWs. Mermel also refers to the risk of HCW-to-HCW influenza transmission if influenza-infected HCWs work while ill.

As a physician, Mermel believes that, "Science will guide us as we care for patients infected with
H1N1 2009 but a lack of attention to our understanding of the transmission of human influenza has left us debating which procedures create influenza superspreading events, what is appropriate personal protective equipment, use of suboptimum engineered respirators that need fit testing and are poorly tolerated for prolonged use, and limited industrial capacity to meet our needs. For now, infection-control experts at each institution must weigh the variables noted to establish not only what is best, but what is realistic in reducing risk to their staff, their visitors, and their patients."

Mermel is a past president of the Society for Healthcare Epidemiology of America.

Source: Lifespan (news : web)