Aggressive infection control protects cancer patients from acquiring H1N1 influenza

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Despite a 100-fold increase in H1N1 influenza cases in the Seattle area during spring 2009, an aggressive infection control program to protect immunocompromised cancer patients and thorough screening measures resulted in no corresponding increase in H1N1 cases among the total patient population at the Seattle Cancer Care Alliance, according to a new study by researchers and physicians at Fred Hutchinson Cancer Research Center and the SCCA.

The findings appear in this week's online version of the journal *Blood*. In the paper, authors Corey Casper, M.D., Janet Englund, M.D. and Michael Boeckh, M.D., detail how patients with blood cancers are screened, diagnosed and treated for H1N1 infections and then how the SCCA's infection control program led to successful suppression of a potentially serious pandemic among clinic patients and staff.

"Our experience shows that aggressive infection control procedures can minimize transmission within the immunocompromised patient population and also reduce acquisition from sources outside the system," the authors concluded.

The SCCA's infection control program is unique in that it is devoted entirely to outpatient infection control among cancer patients, according to Casper, a researcher in the Hutchinson Center's Vaccine and Infectious Disease Institute and medical director of the SCCA's infection control program.

"Lessons learned here are important ones because the majority of cancer care is provided in an outpatient setting," Casper said. "Outpatient cancer care poses more challenges when it comes to protecting patient health because the environment is less controlled than that of a hospital."

The SCCA infection control program follows recommendations set forth by the federal Centers for Disease Control and Prevention. The cornerstone of the program, which begins Oct. 1 and runs through April 30 each year, is early identification of individuals with potential influenza infection. Each person who enters the SCCA outpatient clinic building is met with hand hygiene stations and information about respiratory infections and respiratory etiquette. Licensed practical nurses or volunteers administer an 11-point symptom survey to all who enter clinical areas. A sticker color coded for the day of the week documents the completion of the survey. No individual without a sticker is admitted to clinical areas and all employees are empowered to enforce the policy.

Patients who have respiratory symptoms have their appointments rescheduled; those who cannot be rescheduled are given masks and placed in either an isolation area or private room until they can be assessed by their clinical care team. Isolation lists are maintained electronically as part of each patient's medical record.

Staff members with any symptom of respiratory infection are furloughed until they are symptom free. Respiratory virus testing is offered to staff who have minimal residual symptoms but feel well enough to work after an absence of more than four days; a negative test allows them to return to work.

A comprehensive isolation plan was developed and widely distributed for outpatient and inpatient facilities (SCCA adult cancer patients receive inpatient care at the University of Washington Medical Center and SCCA pediatric inpatients are cared for at Seattle Children's).

Adherence to hand hygiene and compliance with isolation guidelines are monitored regularly. An electronic surveillance system allows for real-time quantification of the numbers of patients and staff who are infected with influenza, which is reviewed daily by the infection control team.

The infection control program is rounded out with the requirement that staff receive annual influenza vaccinations (or sign a written declination waiver), a sick leave policy that is tolerant of absences for respiratory illnesses, redundant work plans for staff at all levels should absences be required, helping families and caregivers identify resources for furloughing caregivers and a plan for giving antiviral drugs to exposed patients and staff.

The authors urge that healthcare institutions caring for immunocompromised patients require that all of their staff receive influenza vaccination as key goal to control influenza.

While vaccination is a primary prevention tool, healthcare staff who have significant exposure to confirmed cases of influenza who have not been vaccinated or who received a vaccination less than three weeks prior to the time of exposure should be considered for preventive antiviral therapy, the authors said.

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