

Chest X-rays can help predict which H1N1 patients are at greatest risk

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A new study published in the April issue of *Radiology* suggests that chest x-rays may play an important role in the diagnosis and treatment of H1N1 influenza by predicting which patients are likely to become sicker.

"Working in the [emergency room](#) is very stressful and physicians need information fast," said lead author Galit Aviram, M.D., head of cardiothoracic imaging in the Department of Radiology at Tel Aviv Sourasky Medical Center in Tel Aviv, Israel. "Our study provides significant findings that will help clinicians triage patients presenting with clinically suspected H1N1 [influenza](#)."

According to the [Centers for Disease Control and Prevention](#) (CDC), the H1N1 virus is the predominant [influenza virus](#) in circulation during the 2009-2010 flu season. The CDC estimates that between April 2009 and January 2010 there have been approximately 57 million cases of H1N1 in the U.S., resulting in 257,300 hospitalizations and 11,686 deaths.

As in past pandemics, the virus can occur in waves. It is possible that the U.S. could experience additional waves of the virus throughout 2010.

In the study, Dr. Aviram's research team analyzed the chest x-rays of 97 consecutive patients with flu-like symptoms and laboratory-confirmed diagnosis of H1N1, admitted to the emergency department of Tel Aviv Sourasky Medical Center between May and September 2009. The researchers then correlated the x-ray findings with adverse patient

outcomes.

"To our knowledge, this is the largest series describing the presentation of chest x-ray findings in patients diagnosed with H1N1 influenza," Dr. Aviram said.

The chest x-rays revealed abnormal findings for 39 of the patients, five (12.8 percent) of whom experienced adverse outcomes, including death or the need for [mechanical ventilation](#). For the other 58 patients, chest x-ray findings were normal, although two (3.4 percent) of the patients experienced adverse outcomes. The mean age of patients in the study, which included 53 men and 44 women, was 40.4 years.

"Abnormal findings in the periphery of both lungs and in multiple zones of the lungs were associated with poor clinical outcomes," Dr. Aviram said.

Although a normal chest x-ray did not exclude the possibility of an adverse outcome, Dr. Aviram said the study's findings can help physicians better identify high-risk H1N1 patients who require close monitoring.

"In H1N1, as in various types of community-acquired pneumonia, initial chest x-rays may not show abnormalities that develop later in the course of the disease," Dr. Aviram explained. "Further x-rays should be performed according to the patient's clinical course."

Provided by Radiological Society of North America

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