H1N1 flu outbreak of 2009 helped ready U.S. hospitals for coronavirus

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As the new coronavirus spreads across the United States, leading health experts are noting that America has been here before—and past lessons are helping officials prepare for today's crisis.

Starting with the 2003 SARS epidemic and the avian influenza ("bird flu") outbreak of 2005, many U.S. hospitals, nursing homes and other health facilities started putting disease outbreak preparations into place, according to a trio of experts at Johns Hopkins University.

Then in 2009 came the notorious H1N1 novel strain of influenza.

H1N1 was "linked to reports of severe disease [and] no specific vaccine was available," noted Drs. Amesh Adalja, Eric Toner and Thomas Inglesby, all from Hopkins' Bloomberg School of Public Health in Baltimore.

However, because U.S. federal, state and local governments had already been preparing a coordinated response to disease outbreaks after SARS and avian flu, by 2009 many health care centers were quickly able to "activate" their pandemic flu plans.

That proved to be crucial. In 2009, hospitals "experienced a large surge of patients in emergency departments and intensive care units [ICUs]," the experts said. Improvements in diagnostic testing helped quickly sort out which incoming patients had H1N1 and which didn't—triaging patients, saving precious hospital resources, and cutting down on the flu's spread.

"In many ways, the current coronavirus epidemic is reminiscent of the beginning of the 2009 influenza pandemic," the Johns Hopkins team wrote in the March 3 issue of the *Journal of the American Medical Association*. Therefore, planning begun a decade ago could pay off for Americans faced by COVID-19 today.

"Many health care institutions did substantial work on those plans at that time," the experts wrote, and "institutions should use those plans as the foundation for needed planning efforts now."

According to the report's authors, some of the key ways that hospitals should be preparing for a potential onslaught of patients infected with COVID-19 include:

- **"Establishing protocols for triaging and isolating patients** suspected of having infection in emergency departments and urgent care centers," so that the virus doesn't spread to staff or other patients. That's especially critical in nursing homes and assisted living centers, since the frail elderly are especially vulnerable to coronavirus illness.
- **Training health care staff to protect themselves** against contracting COVID-19,

and supplying them with the protective equipment they need. That includes technology such as N95 respirator masks, which may cut down on infection risk. On Monday, the U.S. government mandated new efforts to greatly expand the supply of masks to health care workers.

- **Preparing hospital ICUs**. That includes making sure there are enough beds to care for an influx of patients in ICUs, as well as related "step-down" and post-anesthesia units. It also means making sure that wards have enough space for patient isolation, as well as a good supply of mechanical ventilators and other key drugs or devices.

But even with prior planning in place, meeting these goals could be challenging, the authors stressed.

"Many hospitals operate at or near capacity already," they noted, "and even an above-average flu season can cause operational disruption."

So getting prepared now is crucial.

In the end, the full impact of COVID-19 on Americans "will be substantially influenced by the preparedness and response work of the health care and public health care communities," the Hopkins doctors said.

"Preparation will take time," they said, so everyone involved will "need to move quickly forward in their efforts to be ready to confront this disease around the country."

More information: The World Health Organization has more about COVID-19.

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