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This year's flu season has not overwhelmed EDs so far, but it is still dangerous, especially for high-risk groups 40

When it comes to the presentation of chronic fatigue syndrome in the ED, investigators recently found that patients are less than satisfied with their care. 45



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Polar Vortex Creates New Challenges for Hospitals, EDs

Addressing patient and staff concerns requires planning, coordination with community services

While the Midwest is accustomed to cold weather, the bone-chilling blast of freezing temperatures that swept through the heartland at the end of January provided added challenges to hospitals and EDs in the region.

The so-called polar vortex ushered in ultralow temperatures in several states. The coldest temperature (minus 56 degrees Fahrenheit) was recorded early on Jan. 31 in Cotton, MN, with other communities in Wisconsin, Illinois, and Iowa charting record or near-record lows. The harsh environmental conditions forced schools and businesses to close and created heightened risks for people who needed to venture outside their homes.

Meanwhile, hospitals in the region not only had to prepare for frostbite, hypothermia, and other cold-related issues, but also an influx of people seeking shelter.

Further, facilities needed to make provisions for staff members, many of whom found it safer to bunk at work than to face the risks posed by the

plunging temperatures. Hospitals in St. Paul, MN, engaged in community-wide planning for the deep freeze that hovered over the region during the last days of January and early February.

Of particular concern was the plight of the city's homeless population, which is generally the group most at risk for developing cold-related injuries and conditions, explains **Kurt Isenberger**, MD, chair of the ED at Regions Hospital, a Level I trauma facility in St. Paul, and an assistant professor of emergency medicine at the University of Minnesota Medical School.

"With this in mind, we partnered closely with our county's undersheriff to coordinate our plans for addressing the cold and keeping people safe," Isenberger says. "In our community, shelters extended their hours and expanded their capacity. Law enforcement picked up those without shelter and transported them to warming spaces. Here at Regions, we arranged to keep homeless people in the hospital until law enforcement could come and transport them to local shelters."

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The ED at Regions generally sees about 240 patients per day. This trend did not change when the polar vortex hit the area, but the effect of the plunging temperatures was evident in a handful of hypothermia patients who arrived and a sharp increase in patients presenting with frostbite.

“From Jan. 28 through Feb. 1, we saw 34 patients with frostbite. During an average winter week, we usually see five to six frostbite cases overall,” Isenberger notes.

Typically, the treatment for patients with frostbite involves rewarming the skin with warm water, measuring between 98 degrees and 108 degrees Fahrenheit, for 15-30 minutes.

“Frostbite and the rewarming process can be painful, so we also treat [patients] with oral pain medication as needed,” Isenberger says. “Then, we apply sterile dressing to protect the skin, separating fingers and toes. If blood flow is not restored with this method, we then admit patients to our burn center, which can provide specialized treatment for this injury.”

While volume into the ED remained in check during the deep freeze, patients presented in force when the cold began to ease.

“On Feb. 4, we saw a record number of patients in the ED [335] due to very slick and icy conditions. The majority of these were head injuries from falls,” Isenberger recalls.

This is when all the hospital's regular simulations of patient surges during mass-casualty events came into play. “We're ready for these instances,” Isenberger notes. “We were able to call in extra staff members, open up additional beds in the ED, and convert spaces like surgical recovery and waiting areas

into patient care spaces.” Ultimately, on Feb. 4, the ED treated 93 patients with injuries related to the icy conditions, Isenberger adds.

Address Staffing Concerns

In Chicago, the Sinai Health System, which operates Mount Sinai Hospital and Holy Cross Hospital, worked with the city to prepare for the plunging temperatures.

“We participated in citywide calls so that all the hospitals [in the region] would be prepared and have a plan for those who were displaced and/or needed a warming shelter temporarily,” explains **Michele Mazurek**, RN, MSN, MBA, CCRN, chief nursing officer and vice president of patient care services at Sinai Health System.

Both Mount Sinai and Holy Cross were used as designated warming centers, Mazurek notes.

“Folks were welcomed in, given shelter with warm blankets and winter accessories (if needed), and hot drinks and food were also provided,” she says. “If people needed a longer stay, the city provided warming buses to the hospitals to give those in need a ride to area shelters. Sinai saw about 30 people and a few families between the two hospitals.”

Provisions also were made to ensure that hospital staff could make it to work throughout the deep freeze.

“Sinai transportation was available to provide rides to those whose cars did not start or who took public transportation. Some of the public transportation systems were not running at full schedules or capacity,” Mazurek relates. “Sinai operations opened a command

center so that calls could be funneled and answered immediately through the system.”

The command center fielded calls pertaining to staffing or any other cold-related issues, Mazurek says.

“This provided the hospitals with a centralized center to take care of all needs so that units could focus on providing care to our patients and visitors,” she explains, noting that both hospitals remained fully staffed throughout the period of record cold.

Mazurek adds that cold snaps and emergencies are not uncommon for Sinai’s EDs, considering the large number of trauma cases that move through the health system. While staff at Mount Sinai and Holy Cross treated a few cold exposure-related injuries, including one that was severe, they did not see a big increase in these types of injuries.

“I believe this was due to the early warning systems that the city and media put in place to alert residents to the dangers of the upcoming weather,” Mazurek offers. “There were also many public announcements about warming shelters and hospitals being used for refuge from the cold. The Chicago Fire Department and Chicago Police Department were very active in making sure the homeless population was evaluated.”

Mazurek stresses that preparation and strong leadership oversight at the executive level are keys to managing these types of emergencies and ensuring staff members have the resources they need.

“Round on your caregivers,” she advises colleagues. “With extreme weather and school closings, many staff had to find child care, dig their vehicles out of street parking, and deal with the cold themselves. We provided hot beverages to all

EXECUTIVE SUMMARY

It was a different kind of emergency in the Midwest as temperatures well below 0 degrees Fahrenheit began to hover over the region in the waning days of January and early February. Hospitals and EDs responded by serving as warming centers for people seeking shelter while also gearing up for frostbite, hypothermia, and other cold-related maladies. Some hospitals activated their incident command procedures while others leveraged their daily huddles to make sure both staff and patient needs were addressed.

- The ED at Regions Hospital in St. Paul, MN, saw 34 patients arrive with frostbite between Jan. 28 and Feb. 1, and made space for homeless individuals until law enforcement could transport them to local shelters. When temperatures began to ease, the ED saw record volume due to injuries from slick and icy conditions. Most of these cases involved head injuries from falls.
- In Chicago, Mount Sinai Hospital and Holy Cross Hospital served as warming centers for homeless individuals. The Sinai Health System, which operates both hospitals, activated its incident command to address staffing and other cold-related issues.
- Just west of Chicago, Loyola University Medical Center began its preparations for the polar vortex by making sure that all patients who could be discharged safely were released before temperatures plunged. While patient volume was not a problem during the cold emergency, the number of patients directed to the hospital’s burn unit doubled, including frostbite cases as well as patients injured during house fires that resulted from space heater use.

our caregivers to warm them up and thank them for coming in to work on days when many other professionals got to stay home.”

Leverage the Huddle Process

Just west of Chicago, Loyola University Medical Center began its preparations for the polar vortex by making sure that all patients who could be discharged safely were released before the plunging temperatures arrived. This involved making sure that family members were coming in as scheduled and, in some cases, arranging for transportation home.

“Simultaneously, we were ensuring that beds were open and available in the burn unit for potential frostbite cases,

hypothermia, and anything involving the hands or feet,” explains **Mark Cichon, DO, FACEP, FACOEP**, chair of Loyola University Medical Center’s department of emergency medicine. “The focus institutionally was to ensure there was sufficient staffing, services, and appropriate transfer of patients coming into the institution and through the ED.”

Cichon adds that ensuring unimpeded care throughout the Level I trauma center’s multiple units (including the neonatal ICU, pediatric ICU, burn ICU, transplant program, and cancer service) was prioritized.

Much of the operational decision-making throughout this period was conducted through the morning huddle, which is designed to anticipate all the challenges or limitations that the hospital may encounter on any particular

day, Cichon notes. For instance, providing food for staff was part of this discussion.

“A few of the coffee shops on campus were consolidated into the main cafeteria to ensure [adequate] staffing,” he says. “Also, there were cots set up and available for any staff members who couldn’t get home or didn’t want to attempt to get home.”

Loyola’s medical school closed during the deep freeze, creating some housing resources such as shower availability for any staff members who stayed on campus throughout the emergency.

Considering the polar vortex affected the entire state of Illinois, the governor authorized a state of emergency, making extra resources available in the prehospital environment, including additional vehicles to transport affected individuals.

“The state, through the department of public health, tracked cold-related injuries on a daily basis. That data had to be put into the state computer because [while the state was] tracking it on a global basis, we were tracking it on a regional basis,” Cichon says.

While patient volume was not a problem during the cold emergency, the number of patients directed

to the burn unit doubled. This included frostbite cases as well as patients injured during house fires that resulted from space heater use, Cichon explains. Further, the acuity of patients presenting to the ED was higher than normal. The department also faced an influx of people simply seeking shelter from the cold.

“We are fortunate in that we have social workers in the ED as well as nursing case managers who helped set up transportation to homeless shelters that were available. They had been proactive in getting the [appropriate] names, numbers, and all of those things in anticipation,” Cichon notes. “Also, people in the institution and members of the ED took the initiative and brought in extra clothes and jackets, knowing that we would probably encounter some homeless people.”

Once temperatures returned to what is normal for the region, volume picked up in the ED, perhaps from lower-acuity patients who resisted leaving their homes while environmental conditions were so harsh.

For instance, on Feb. 4 (which fell on a Monday), the ED saw close to 160 patients, up from the average per-day volume of 135. However, Monday typically is the busiest

day of the week, Cichon observes. Cichon’s advice to colleagues faced with a similar weather emergency is to leverage their morning meetings fully to address anticipated challenges quickly.

“That is the beauty of having that morning huddle,” he says. “It allows the opportunity to discuss lessons learned immediately — not the next day — and to be proactive.”

However, ample, long-range preparation also is important. “Know the infrastructure needs of the institution,” Cichon advises. “We had teams available at all levels — medical, electrical, pipefitters, physical plant, and grounds people — to ensure that the ship was staying afloat.” Quickly adjusting to new challenges takes practice, but is important when you are in uncharted territory. For instance, Cichon, who has spent his whole life in the Chicago region, has experienced plenty of cold temperatures. Still, the polar vortex of 2019 was different.

“It was much more pronounced, it occurred quicker, and it lasted for about 40 to 60 hours,” he says. “It was another character-building day in Chicago. My hope for the next one is to get that character-building day in a warmer environment.” ■

Epidemiologists See a Milder Flu Season, Warn Danger Remains for High-Risk Groups

Antiviral medications and diagnostic tools can help providers treat flu, monitor season severity

Although not nearly as challenging as 2017-2018, this year’s flu season is nonetheless proving dangerous for those at highest risk. The CDC noted that by mid-February, 41 flu-related pediatric deaths had been reported so far this

season, including seven deaths that occurred in the week ending Feb. 16.

Also by mid-February, influenza-like illness was at a high point for the year and still on the rise, according to epidemiologists. They reported widespread flu activity in 48 states

and Puerto Rico, with the proportion of people seeing healthcare providers for influenza-like illnesses increasing from 4.8% in the previous week to 5.1%. For comparison purposes, the CDC noted that over the past five years, the peak proportion of people

seeking treatment from a healthcare provider for influenza-like illness has ranged between 3.6% in the 2015-2016 flu season to a high of 7.5% during the 2017-2018 season.

After last year's brutal season, when EDs were repeatedly challenged by soaring volumes and a particularly nasty flu strain, frontline providers are naturally on guard about what this season portends. It turns out there are some new tools at their disposal this year as well as one new antiviral option for treating patients.

Epidemiologists from the CDC shared the latest information about this year's circulating viruses in a Clinician Outreach and Communications Activity presentation on Feb. 5, highlighting what disease investigators know about this flu season thus far as well as the panoply of recommended treatment choices.

H1 Influenza Dominates

When describing the trajectory of this year's flu season, **Alicia Budd**, MPH, an epidemiologist in the influenza division at the National Center for Immunization and Respiratory Diseases at the CDC, noted that flu activity, based on specimens testing positive for the circulating viruses, was low across the country in October and November 2018, but then began to pick up in December.

There was a brief decrease in the number of specimens testing positive just after the holidays when most children were out of school. However, Budd said public health authorities have seen steady increases in specimens testing positive ever since.

While public health labs primarily test specimens for surveillance purposes, they also inform public

EXECUTIVE SUMMARY

This year's flu season is not overwhelming EDs like last year's record-breaking season. However, the circulating viruses remain dangerous, particularly to groups most at risk. By mid-February, the CDC reported there had been 41 flu-related pediatric deaths, with flu activity still on the rise across the country. To help frontline providers, the CDC is offering new tools to help them keep track of flu activity and severity. Further, there is a new antiviral medication that has been approved by the FDA.

- By the week ending Feb. 16, the CDC reported widespread flu activity in 48 states and Puerto Rico, with the proportion of people seeing healthcare providers for influenza-like illnesses increasing from 4.8% in the previous week to 5.1%.
- This year, epidemiologists are seeing primarily an H1 virus-predominant season, although in the Southeast, epidemiologists are seeing more H3 viruses circulating.
- Early data suggest the circulating viruses are well-matched to the vaccines prepared for this year's flu season. Also, vaccination rates are up a few percentage points over last year.
- The CDC recommends antiviral treatment for any patient with suspected or confirmed flu who is hospitalized; has severe, complicated, or progressive illness; or is at high risk for influenza complications. Also, children younger than 2 years of age are considered at highest risk for complications.

health authorities on the types of flu viruses that are circulating, and in what proportion, Budd explained. For example, there are two influenza A subtypes: H1 and H3. Also, there are two influenza B lineages: either Victoria or Yamagata.

"This year, we are seeing primarily an H1-predominant season. That is the most commonly reported virus nationwide, and that is true in nine of the 10 surveillance regions," Budd said. "However, the southeast part of the country ... is actually seeing more H3 viruses than H1 viruses, although they are seeing significant H1 activity as well."

Budd noted that public health authorities have found very little influenza B activity this season, with labs showing only about 1% of the specimens testing positive for influenza B viruses. Most of these are Yamagata lineage viruses.

Public health labs send a subset of their positive flu specimens to the CDC for genetic and antigenic testing so that epidemiologists can monitor the circulating viruses for any changes as the season progresses. Epidemiologists also use these samples to assess how susceptible the strains are to vaccines that have been prepared to protect people from the flu. Budd reported that the information culled from these examinations has yielded good news so far.

"Nearly all of the H1, H3, and B Yamagata lineage viruses collected in the U.S. this season that have been antigenically characterized are similar to their respective cell-grown, vaccine-referenced viruses," Budd said. "There is a little bit more diversity when you look at the B Victoria viruses. Even so, more than 71% of those viruses that have been

tested are antigenically similar to the vaccine-[referenced] viruses.”

Vaccines Well-Matched

These data suggest that the flu vaccines prepared for this season are well-matched to circulating virus strains that have been tested by the CDC to this point. Further, Budd noted that tests of susceptibility to antiviral medications also have produced positive results so far.

“All the viruses tested — around 700 viruses — have shown susceptibility to zanamivir. More than 99% of [viruses] showed susceptibility to oseltamivir and also peramivir,” Budd said. However, she added that only a small number of H1 viruses have demonstrated reduced or highly reduced susceptibility to antiviral medications.

By mid-February, flu-related hospitalizations amounted to 27.4 per 100,000 people, with the highest rates occurring among adults 65 years of age and older, according to the Influenza Hospitalization Surveillance Network. Among this older age group, there were 75.6

hospitalizations per 100,000 people. Children younger than 5 years of age were hospitalized at a rate of 40.2 per 100,000. Adults 50-64 years of age were hospitalized at a rate of 37.7 per 100,000.

The data seem to correlate with the two most recent H1-predominant seasons. For example, in 2015-2016, the end-of-season flu hospitalization rate amounted to 31 per 100,000 people. In the 2013-2014 season, the end-of-season hospitalization rate was 35 per 100,000 people, Budd noted.

“We do expect the hospitalization rates [this year] to continue to increase as the season progresses, but we certainly don’t expect to see hospitalization rates anywhere near the record-breaking rates we saw in the H3-predominant season we had last year,” Budd offered.

In the 2017-2018 season, hospitalization rates were the highest ever recorded since surveillance was expanded to include all age groups in 2005, according to the CDC. The hospitalization rate ranged from 58 per 100,000 people in adults 18-49 years of age to 260 per 100,000 people in adults 65 years of age and older. In children younger than 5

years of age, the hospitalization rate was 139 per 100,000 people.

“It was the first time that we had a season where all three age groups were at a level of high severity,” Budd noted.

Tools Track

Activity, Severity

As in past years, the CDC posts an update on the influenza data it has gathered each week throughout the flu season. This “FluView” report (*Read more about this report online at: <https://bit.ly/2veekNI>*) includes mostly national-level activity, but there is some discussion of regional and state-level activity, too.

Further, there is an online tool that is called “FluView Interactive” (*Read more about this report online at: <https://bit.ly/2loFOKK>*), which enables clinicians to study surveillance data in greater depth. For instance, clinicians can examine data from different regions as well as from past seasons, Budd explained. The FluView and FluView Interactive data are updated every Friday morning. Also, there is a new report the CDC is debuting this year that provides updates on the severity classification for the current flu season as well as preliminary burden estimates. (*Read more online at: <https://bit.ly/2T6EMVN>*).

“The severity assessment is based on a couple of the surveillance system components, and it is how we are objectively classifying the severity of this season,” Budd noted. “Basically, we are taking the data ... and comparing where we are right now to different threshold indicators of severity based on data we have from past seasons.”

In the past, the CDC only produced such a report at the end of

COMPLICATIONS AND SEVERE ILLNESS

Clinicians should be aware that certain groups are at higher risk for complications and severe illness from the flu. These groups include:

- children younger than 5 years of age, particularly those younger than 2 years of age;
- adults 65 years of age and older;
- people with immunosuppression or chronic medical conditions;
- pregnant and postpartum women;
- children taking long-term aspirin therapy;
- American Indians;
- Alaska natives;
- individuals who are extremely obese;
- residents of nursing homes and other long-term care facilities.

the season when the surveillance data were final. This year, updated reports are released weekly as the season unfolds, Budd said.

“What this [report does] is use mathematical models to translate some of our surveillance data into estimated numbers of illnesses, hospitalizations, and deaths,” she explained. “We do this because we know the surveillance system cannot provide those actual counts. It does a great job of tracking activity, but not providing those numbers of cases. And we know that information can be helpful.”

Certain Groups at Higher Risk

Most clinicians are aware that influenza can be associated with a range of symptoms that include upper respiratory tract illness, an abrupt onset of fever, coughing, chills, sore throat, fatigue, muscle aches, and headache. However, **Angela Campbell**, MD, MPH, medical director of the influenza division in the National Center for Immunization and Respiratory Diseases, noted that flu may present differently in certain age groups. For example, gastrointestinal symptoms such as abdominal pain, vomiting, and diarrhea are more common in children with the flu. Infants may present with fever but no respiratory

symptoms at all. “On the other end of the age spectrum, elderly people as well as people who are immunosuppressed may have atypical symptoms and may not have fever,” Campbell added.

Campbell noted that while most adults hospitalized with the flu present with some type of underlying medical condition such as diabetes or cardiovascular disease, that is not necessarily the case for children.

“More than half of children hospitalized with flu actually have no previously known underlying medical conditions,” she said.

One common complication of flu is otitis media, which can develop in up to 40% of children younger than 3 year of age. Another mild to moderate complication of flu is sinusitis.

“Influenza can also exacerbate chronic underlying conditions such as asthma or heart disease,” Campbell explained. “Other common causes of hospitalization with flu actually include the dehydration that goes along with it or pneumonia. This can be either viral pneumonia or secondary bacterial pneumonia.” The flu can cause other types of respiratory symptoms such as croup, bronchiolitis, or extra-pulmonary complications, including renal failure, myocarditis, myositis, rhabdomyolysis, encephalitis, and even sepsis, Campbell observed. “Sepsis, in fact, has been found to be

listed as a complication in up to 30% of pediatric death reports,” she said.

Campbell added that the most common bacteria found in co-infections with the flu are *Staphylococcus aureus*, *Streptococcus pneumoniae*, and *Streptococcus pyogenes* (or group A strep).

Test and Treat

Generally, Campbell said that influenza testing should be performed when the results are likely to influence clinical management. This may be by decreasing lab testing for other etiologies, decreasing the unnecessary use of antibiotics, facilitating the implementation of infection prevention and control measures, increasing the use of appropriate antiviral drugs, or potentially decreasing length of stay in the hospital.

“Testing should also be performed if the results would influence a public health response, such as for outbreak identification and invention,” she said, noting that this could pertain to a long-term care facility, for example. “If a patient with suspected flu is being admitted to the hospital, testing is recommended along with empiric antiviral treatment while results are pending. If the patient is not being admitted, but if results will influence clinical management, the same recommendation applies.”

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For cases in which testing results are not likely to influence clinical management, testing is not necessary, Campbell added.

“For example, if flu can be clinically diagnosed, empiric treatment can simply be initiated,” she said. “Empiric treatment is recommended if the patient is in a high-risk group or has progressive disease.”

Regarding what tests should be used to diagnose influenza, Campbell said that for outpatients, rapid molecular assays are highly sensitive and offer better detection than rapid influenza diagnostic tests that rely on antigen detection.

“For hospitalized patients, molecular assays, including RT-PCR or other multiplex molecular assays, should be used to improve detection of influenza. For immune-compromised patients specifically, multiplex molecular panels are recommended,” she said.

Experts agree that the best way to prevent flu is with annual vaccinations. There is some evidence that the harsh 2017-2018 season may have prompted an uptick in vaccination rates this year, Campbell said. For instance, she noted that by November 2018, flu vaccination coverage among children aged 6 months to 17 years was 45.6%, reflecting a 6.8% increase over November 2017, according to

the National Internet Flu Survey (NIFS). Similarly, NIFS data show vaccination coverage for adults in November 2018 stood at 44.9%, reflecting an increase of 6.4% over November 2017.

**WHILE
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While vaccination is the primary method for preventing flu, antiviral medications are an important adjunct to vaccination in that they can help to prevent severe outcomes, Campbell said. Further, she noted that of particular importance is the

treatment of patients with severe disease and those at the highest risk of developing severe influenza complications.

“Clinical trials and observational data show that early antiviral treatment shortens the duration of fever and flu symptoms,” Campbell said. “Meta-analyses of randomized, controlled trials have demonstrated that early treatment reduces the risk of otitis media in children and lower respiratory tract complications requiring antibiotics and hospital admission in adults.”

Further, Campbell noted that data from observational studies suggest early antiviral treatment reduces the risk of hospital admissions among high-risk outpatient children and adults. Also, early treatment of hospitalized children and adult patients with oseltamivir, one of the available antiviral medications, shortened hospitalization. Data also show that early treatment of hospitalized adults with oseltamivir reduced the likelihood of death.

In brief, Campbell noted that antiviral treatment is recommended for any patient with suspected or confirmed flu who is hospitalized; has severe, complicated, or progressive illness; or is at high risk for influenza complications. Campbell reiterated that children younger than 2 years of age are considered at highest risk for complications.

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“We also note that antiviral treatment can certainly be considered for any previously healthy symptomatic patient not at high risk with suspected or confirmed flu on the basis of clinical judgment if treatment can be initiated within 48 hours of onset,” she said. Currently, there are four FDA-approved antiviral medications, including one new medication (baloxavir), which the FDA approved in October 2018. Although the CDC does not recommend any particular antiviral medication over another, there are some differences among the options. For example, oseltamivir, which is taken orally, is FDA-

recommended for anyone 2 weeks of age or older, although Campbell noted that the CDC supports its use from birth even in preterm infants. Oseltamivir also is recommended for chemoprophylaxis, to prevent flu, and is the preferred antiviral medication for pregnant women as well as hospitalized patients. Adverse events associated with oseltamivir include nausea, vomiting, and headache, although Campbell noted that these issues can be ameliorated if the medication is taken with food.

Zanamivir is an inhaled medication recommended for patients 7 years of age and older. This drug also is recommended

for chemoprophylaxis. One adverse reaction (bronchospasm) is associated with this drug, so it is not recommended for patients with underlying airway diseases, Campbell noted.

Peramivir is administered intravenously in a single dose. This drug is recommended for patients 2 years of age and older. It is associated with one adverse reaction (diarrhea).

Baloxavir is taken orally in a single dose. The dose measurement is based on weight and age. The drug is recommended for patients 12-64 years of age. Currently, there are no adverse reactions associated with the drug. ■

Investigators Find Patient Frustration With Chronic Fatigue Syndrome

Research offers clues on how to improve such encounters

The results of the first-ever study on the presentation of chronic fatigue syndrome (CFS) in the ED suggests there may be ample room for improvement in the way emergency clinicians perceive and interact with those who report CFS symptoms.

Investigators from Georgetown University Medical Center used an online questionnaire to collect patient

impressions on the nature of their symptoms, and on their encounters in the emergency setting.¹

From Sept. 29, 2015, to Nov. 29, 2015, the authors collected 282 responses from anonymous participants, all of whom had been given a diagnosis of CFS. Investigators sought to understand the severity of core symptoms associated with the disease, including

fatigue, malaise following mild exertion, cognitive dysfunction, sleep disturbances, and pain. However, the authors also queried patients about their experiences in the ED, with many reporting they were quite a bit less than satisfied.

Nonetheless, investigators suggested the data offer an opportunity for frontline providers to learn more about CFS and to

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achieve a better grasp of what brings most patients with this disease to the ED in the first place.

Learn Criteria

It was a small study, but the results suggest there is a fundamental lack of understanding on the part of many emergency physicians about what CFS is, according to **James Baraniuk**, MD, a professor of medicine at Georgetown University Medical Center and study co-author. “[CFS] doesn’t have a blood test and it doesn’t have a drug you can give. It just gets put into that big wastebasket term of psychosomatic,” he explains.

This can leave patients with CFS who have visited the ED because of worsening symptoms frustrated and dissatisfied with their care, according to the study findings. Of the 59% of those surveyed who had visited the ED, 42% reported their complaints were dismissed as psychosomatic. The investigators reported that only one-

third of these patients indicated that they received appropriate treatment in the ED. Further, on a scale of 0-10, the respondents who had visited the ED rated their caregivers’ knowledge of CFS at 3.6, on average.

Among the 41% of respondents who reported that they had not visited the ED when they were ill, the responses indicated that they believed nothing could be done to ease their symptoms, there would be a lack of respect or compassion, and/or that emergency clinicians would not take them seriously. To be fair, Baraniuk, who treats patients with CFS, stresses that it is not just emergency providers who lack an understanding of CFS. The problem is common across the medical profession, including both general practitioners and specialists, he says. While making an accurate diagnosis of CFS is not that difficult for a practitioner who is familiar with CFS criteria, many providers do not realize there are diagnostic criteria for the condition.

“If you don’t know that there actually are criteria, then you are going to just not understand out of your own personal experience how somebody can be so tired, how somebody can be in so much pain, or how somebody can all of a sudden have problems thinking,” Baraniuk says. “If someone is in good health, it doesn’t make sense. If you don’t know anybody who has [CFS], it just doesn’t make sense.”

Leverage Tools

There are tools that can help practitioners improve their performance in this area. For example, a symptom severity questionnaire has been devised to help clinicians discern when a patient has CFS or to differentiate symptoms of CFS from other causes (<https://bit.ly/2UfNxsP>).

Further, in one finding that was particularly enlightening, the study revealed that the most common symptom by far that CFS patients presented with when they visited the ED was orthostatic intolerance (33%). This is a condition that emergency practitioners understand well, Baraniuk notes. “It is a cardinal feature of dehydration, of any blood loss, or of someone who is in shock from any cause, whether it is heart attack, infection, or sepsis,” he observes.

Typically, for patients with orthostatic intolerance, they generally feel fine when lying down. However, when these patients stand, they become dizzy or lightheaded regardless of the underlying problem, Baraniuk explains. “Usually in the ED, what [the practitioner] will do is have the person lie down and then stand,” he says. “Normally, when a person stands up, the heart rate goes up by only about 10 beats per

EXECUTIVE SUMMARY

The results of a new study suggest that patients with chronic fatigue syndrome (CFS) often are dissatisfied with their encounters in the emergency setting. In fact, investigators reported that many of these patients decline to seek care in the ED because they believe their symptoms will be dismissed as psychosomatic. However, the study also shed light on the most common reason why patients with CFS visit the ED.

- Through an online anonymous survey, investigators queried CFS patients about their encounters in the ED and the nature of their symptoms.
- Out of 282 responses, 59% of those surveyed indicated they had visited the ED. Of these, 42% reported that their complaints were dismissed as psychosomatic.
- On a scale of 0-10, the respondents who had visited the ED rated their caregivers’ knowledge of CFS at 3.6, on average.
- The most common reason cited by far (33%) for coming to the ED was orthostatic intolerance, a condition characterized by dizziness and lightheadedness, particularly when patients stand from a supine position.

minute. But if it goes up by 30 beats or more, then you know they have lost a lot of fluid or a lot of blood or they have [some type of] autonomic or parasympathetic dysfunction ... so that they can't control their heart rate properly when they stand."

All these issues must be considered, but if the patient is dehydrated and shows the telltale change in heart rate when he or she stands, then the clinician should treat the condition by giving the patient fluids, Baraniuk notes. If the patient has CFS, fluids seem to work as well, although it is not entirely clear why.

"We think there is some reason the heart [of CFS patients] is not filling with blood sufficiently," Baraniuk notes. "Giving them the extra fluid is able to perhaps pop up the tank so that they are able to circulate their blood more efficiently and reduce the sense of dizziness."

When patients present to the ED with orthostatic intolerance, practitioners should rule out heart attack, stroke, infection, and the other potential causes. But if clinicians know the patient has CFS, they can quickly go through that differential diagnosis and anticipate that there is a high chance that CFS is at the root of the orthostatic intolerance-related complaints, Baraniuk says. Once a clinician makes the diagnosis, then standard treatment for orthostatic intolerance can be provided to alleviate the symptoms that brought the patient to the ED.

Survey respondents who visited the ED cited other symptoms, including muscle weakness (12%), fatigue (8%), post-exertional malaise (8%), muscle pain (8%), gastrointestinal (8%), headache (7%), joint pain (5%), and fainting (5%). In addition, investigators categorized 9% of "other"

complaints, which included some heart-related issues. Although the survey results shed light on the most common reasons why patients with CFS come to the ED and how these patients feel about their encounters in this setting, investigators did not assess the nature or effect of the care the survey respondents received.

"It would be an inappropriate conclusion based on this data to say that the care received during these ED visits was inadequate or poor because we simply have no data to back up that conclusion," explains **Christian Timbol**, MD, study co-author and emergency medicine resident physician at Thomas Jefferson University Hospital in Philadelphia. However, Timbol believes that most medical professionals, not just emergency physicians, could benefit from more education on the current body of information regarding CFS. Baraniuk agrees, noting that more continuing education about the medical basis for CFS would go a long way toward improving acceptance of the disease. In fact, he suggests that frontline providers should view the study

results as a "teachable moment." Also, it is important to distribute this information to patients, Baraniuk stresses.

"Recognizing that you have a worsening of your usual symptoms — that is part of CFS. The question is how bad do [these symptoms] have to get for the patient to feel like it is something different," Baraniuk suggests. "For example, if the patient is often dizzy and lightheaded, but then she has chest pain, she goes to the ED for that combination. If she has dizziness and lightheadedness that come on after she has exerted herself more than she is used to, then it is [related to] her post-exertional malaise, which is part of the diagnosis of CFS."

With a better understanding of CFS, patients can make the most appropriate decisions about when a trip to the ED or another healthcare setting is warranted. ■

REFERENCE

1. Timbol CR, Baraniuk JN. Chronic fatigue syndrome in the emergency department. *Open Access Emerg Med* 2019;11:15-28.

CME/CE OBJECTIVES

After completing this activity, participants will be able to:

1. Apply new information about various approaches to ED management;
2. Discuss how developments in the regulatory arena apply to the ED setting; and
3. Implement managerial procedures suggested by your peers in the publication.

COMING IN FUTURE MONTHS

- New approaches to keeping healthcare workers safe from violence
- What frontline providers need to know about measles outbreaks
- Sounding the alarm about drug interactions in the ED
- Identifying victims of human trafficking



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CME/CE QUESTIONS

- 1. Hospitals in St. Paul, MN, engaged in community-wide planning for the deep freeze that hovered over the region during the last days of January and early February. Kurt Isenberger, MD, chair of the ED at Regions Hospital and an assistant professor of emergency medicine at the University of Minnesota Medical School, explains that of particular concern was:**
 - a. backup power reserves.
 - b. the plight of the city's homeless population.
 - c. staffing shortages.
 - d. the state of EMS operators.
- 2. At Loyola University Medical Center, Mark Cichon, DO, FACEP, FACOEP, chair of the department of emergency medicine, says that much of the operational decision-making throughout the polar vortex period was conducted through the:**
 - a. emergency response team.
 - b. hospital's executive committee.
 - c. incident command system.
 - d. morning huddle.
- 3. According to Alicia Budd, MPH, an epidemiologist in the influenza division at the National Center for Immunization and Respiratory Diseases at the CDC, the 2017-2018 flu season marked the first time that there was a season when all age groups were:**
 - a. at a level of high severity.
 - b. at high risk for flu complications.
 - c. treated with antiviral medications.
 - d. treated with antibiotics.
- 4. In the first-ever study on the presentation of chronic fatigue syndrome (CFS) in the ED, investigators found that the most common complaint cited by CFS patients for coming to the ED was:**
 - a. cognitive problems.
 - b. orthostatic intolerance.
 - c. post-exertional malaise.
 - d. gastrointestinal issues.