Critical care and infectious disease specialists at the University of Michigan Health System have documented a pattern among patients with severe lung problems who were infected with the pandemic (H1N1) 2009 influenza virus—a pattern that suggests obesity may be emerging as a new risk factor in the pandemic.

This may have implications as the virus circulates back to the area later this year.

A high proportion of patients with H1N1 flu accompanied by pneumonia or acute respiratory distress syndrome (ARDS) who were cared for in the U-M Surgical Intensive Care Unit earlier this year were obese or extremely obese.

Out of a series of 10 patients, nine were obese, with a body mass index over 30. Seven of those were extremely obese, with a BMI over 40. Obesity alone is not considered a risk factor for regular seasonal flu.

Clinicians should be aware of the potential for severe complications of H1N1 flu, particularly in extremely obese patients, according to a report on the U-M cases that appeared in the U.S. Centers for Disease Control and Prevention’s publication Morbidity and Mortality Weekly Report.

“Most of the patients had no other illness that would make them prone to advanced viral infection and ARDS,” says lead author Lena Napolitano, M.D., chief of the Division of Acute Care Surgery, director of surgical critical care, and associate chair for critical care in the U-M Department of Surgery.

Three of the patients died. Two out of the three patients who died had no other health problems.

“Our findings may influence decision-making at the community hospital level, which is the first line in caring for potential H1N1 flu patients,” Napolitano says. “When doctors see patients with acutely worsening upper respiratory infection symptoms, they should consider the possibility of H1N1 viral pneumonia and initiate early appropriate empiric antiviral medications.”

“We should start to consider obese patients as high risk and identify flu early, treat early,” adds Carol Chenoweth, M.D., clinical professor of internal medicine at the U-M Medical School, professor of epidemiology at the U-M School of Public Health and hospital epidemiologist at the U-M Health System.

The median age of patients in the report was 46 years old; the youngest was 21 years old. Only three of the 10 patients had known risk factors (such as advanced age, pregnancy, or a chronic health problem like asthma or heart problems) which might make them more vulnerable to complications from seasonal flu.

continued on back page
Chemotherapy and radiation can be effective at treating cancer of the larynx without removing the organ that controls speech and swallowing. But the approach doesn’t work for everyone.

Researchers at the University of Michigan Comprehensive Cancer Center have shown that a single round of induction chemotherapy will indicate which patients can benefit from the chemoradiation treatment — and which would be better off having a laryngectomy.

A recent U-M study finds that even those patients with the largest of larynx tumors can preserve their speech by opting for chemotherapy and radiation over surgery to remove the voice box.

“Organ preservation studies have excluded these patients because their tumors are so large. We found that if a patient’s tumor does not respond to chemotherapy, the patient can be instantly referred for a laryngectomy. But if the tumor responded to the drugs, perhaps some of those people could survive the cancer with their larynx intact,” says lead study author Francis P. Worden, M.D., associate professor of internal medicine at the U-M Medical School.

Researchers reviewed data from two U-M studies of advanced laryngeal cancer patients. The current analysis included only patients with T4 squamous cell carcinoma of the larynx that had not been previously treated. Because T4 tumors are large and have often invaded the nearby cartilage, they are particularly difficult to treat.

Study participants were given one round of cisplatin and 5-fluorouracil as induction chemotherapy, designed to see if the cancer responds. If the tumor shrank by more than 50 percent after that first round, study participants were given three more rounds of cisplatin concurrent with daily radiation therapy.

Those whose tumors did not respond to the induction chemotherapy were referred for surgery.

Thirty-six people with T4 disease were enrolled in the two studies. Eighty-one percent responded to the induction chemotherapy and 64 percent had complete response. After three years, 78 percent of the T4 study participants were still alive, and 58 percent still had an intact larynx. The results, which appeared in the journal *Laryngoscope*, were comparable to what has been seen in patients with less-advanced T3 tumors.

New Internal Medicine Chair  
John M. Carethers, M.D.

Leading gastroenterologist John M. Carethers, M.D., has been named Chair of the U-M Department of Internal Medicine, pending approval of the University’s Board of Regents. Carethers will replace John Del Valle, M.D., Professor of Internal Medicine, who served as interim chair.

A Detroit native, Carethers earned his M.D. at Wayne State University. He completed his Internal Medicine residency at Massachusetts General Hospital, then a fellowship in gastroenterology at U-M. Carethers was most recently chief of the University of California-San Diego School of Medicine’s Division of Gastroenterology — a position he held since 2004.

Carethers has developed an impressive resume of scientific research, earning a reputation among the top gastroenterologists nationwide with his study of colorectal cancers, especially among African Americans.

“We are delighted that Dr. Carethers will be leading our internal medicine department. He has proven throughout his career that he is committed to developing faculty, educating trainees and building research and clinical programs,” says James O. Woolliscroft, M.D., dean of the University’s medical school.

Carethers’ distinguished career includes many honors and awards, including fellowships with the American Gastroenterological Association, the American College of Physicians and the American College of Gastroenterology. He was elected in 2008 to the American Society of Clinical Investigation.

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The researchers stressed the importance of the induction chemotherapy for targeting the correct patients with chemotherapy and radiation.

“Approximately 30 percent to 40 percent of patients with advanced laryngeal cancer will not be cured with chemotherapy and radiation. The survival rates for such patients have traditionally been poor. That’s why these patients should be identified as early as possible. When we did that, we found that the survival rate for these patients was markedly improved, as was the survival rate for the group of patients who were successfully treated with chemotherapy and radiation,” says study author Gregory Wolf, M.D., professor of otolaryngology at the U-M Medical School.

While chemotherapy and radiation come with unpleasant and serious side effects of their own, avoiding surgery allows patients to retain their voice. The study found that people who preserved their larynx reported better quality of life and less depression than those who had surgery. Often, patients who are successfully treated with organ preservation are left with a dysfunctional larynx that leads to trouble breathing or swallowing. But in this study, only 17 percent of patients required a feeding tube and 17 percent required tracheostomy.

“If the patient failed chemotherapy up front, he or she could go straight to surgery and avoid the side effects of chemoradiation,” Worden says.

“Meanwhile, a large group of patients get to preserve their voice box by avoiding laryngectomy.”

“We saw no survival difference between the smallest and the largest tumors, which suggests that organ preservation is a viable alternative to surgery for some of the largest laryngeal cancers,” adds Dr. Worden.

In addition to Worden and Wolf, study authors were Jeffrey Moyer, M.D.; Julia S. Lee; Jeremy M.G. Taylor, Ph.D.; Susan G. Urba, M.D.; Avraham Eisbruch, M.D.; Theodoros N. Teknos, M.D.; Douglas B. Chepeha, M.D.; Mark E. Prince, M.D.; Norman Hogikyan, M.D.; Amy Anne D. Lassig, M.D.; Kevin Emerick, M.D.; Suresh Mukherji, M.D.; Lubomir Hadjiski, Ph.D.; Christina I. Tsien, M.D.; Tamara H. Miller; Nancy E. Wallace; Heidi L. Mason, N.P.; and Carol R. Bradford, M.D.

Funding for the research was from the National Institutes of Health, U-M Head and Neck Cancer SPORe grant and the U-M Comprehensive Cancer Center support grant.

Reference: Laryngoscope, DOI: 10.1002/lary.20294
Researchers at the sleep lab studied mothers who sought help for depression during pregnancy from the U-M Depression Center’s Women’s Mood Disorders Program, and their newborns. They compared results with data from new mothers who had no past or current depression, and their newborns.

Results showed infants of depressed mothers had significant sleep disturbances compared with infants born to non-depressed mothers. At two weeks and 30 weeks postpartum, the former group took up to two hours more to settle for sleep at night, woke up more often and had more daytime sleep than infants who were born to mothers without depression.

“We may have identified vulnerability in the initial entrainment of sleep and circadian rhythms that may elevate the risk for these children to develop later depression,” Armitage says. “Can we reduce the risk of developing later depression by enriching sleep and circadian rhythms in infancy?”

Parents with a history of depression should pay close attention to the conditions they create for their babies’ sleep, and their own sleep, says Roseanne Armitage, Ph.D., leader of the Sleep and Chronophysiology Laboratory team at U-M Depression Center.

She and her team have recently reported that babies born to depressed moms are likely to suffer from erratic sleep patterns, which could predispose them to depression later in life.

Armitage’s team studies a broad range of possible links between sleep and depression. They have found that sleep and biological rhythm disturbances persist throughout at least the first eight months of life in babies of depressed mothers.

Parents can expose babies regularly to bright light during the day, which helps develop circadian rhythms linked to light cycles.

By four months, a baby’s sleep schedule should be composed of longer blocks of sleep, focused on nighttime sleep.

The period immediately after giving birth is a high-risk time for depression, even in women who have never had depression before. Those who have had depression or a family history are most at risk. Postpartum depression can be worsened or triggered by lack of sleep.

“Because of the hormonal changes in new moms and the need to recover from the pregnancy and birth, sleep deprivation can really be a problem,” Armitage says.

Infants and toddlers need to nap during the daytime to get all the sleep they need – up to 18 hours total sleep for babies in the first two months of life, 15 hours for the next 10 months, and 12 to 14 hours from ages 1 to 3.

“Establishing rituals around bedtime helps infants begin to distinguish between night sleep and day sleep,” says Armitage.

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New option for new mothers: U-M clinic for postpartum pelvic care

First-time mom Brandi Phare thought she was all alone when she began suffering postpartum ailments. She experienced pain as a result of multiple lacerations from giving birth, and also faced severe incontinence.

Phare later discovered she was in the majority – but that other women rarely spoke of their experience.

“Over half of women who have vaginal birth, at least their first birth, will have some problem in terms of bowel, bladder or sexual dysfunction that can occur,” said Dee Fenner, M.D., director of the University of Michigan’s new Healthy Healing After Delivery Program. Fenner is also a professor in the Department of Obstetrics and Gynecology, and director of both Gynecology and Surgical Services in the department.

Many women wrongly believe that postpartum ailments are simply a part of giving birth, and that they need not be addressed.

Fenner urges women to take care of their own health after delivery, not solely their infant’s.

“Unfortunately, I think many women suffer in silence in that they don’t really complain or know that something can be done,” Dr. Fenner says.

“We want to empower women and give them tools and treatment to help relieve their symptoms.”

Phare saw a U-M nurse about her incontinence and other problems and was referred to U-M’s Healthy Healing After Delivery Program. She received a device and medication to help her incontinence, and is now symptom-free.

About 15 percent of the new mothers seen in the Michigan Healthy Healing After Delivery Clinic end up needing surgery for various reasons, including urinary incontinence or lacerations that did not heal correctly. Fortunately, most woman recover without the need for surgery and are symptom-free by their baby’s first birthday.

Together, U-M physicians, nurses, midwives, physical therapists and other specialists offer comprehensive postpartum care to new mothers, including specialized diagnostic testing and both surgical and non-surgical care.

The clinic serves those suffering from bowel or urinary incontinence, a non-healing or painful episiotomy, 3rd or 4th degree lacerations, rectovaginal fistulas and difficulty during intercourse. The team has extensive experience in evaluation of incontinence, and can counsel women about their concerns regarding their next pregnancy.

The program offers education to help women understand what is normal or abnormal, when to worry and when to just wait for healing to occur. It also offers pelvic floor training, including consultations with a Ph.D. nurse continence expert and physical therapists in the treatment of urinary and bowel incontinence. The team also teaches diet and lifestyle changes to promote healthy living and the prevention of future incontinence issues.

The program is open to any woman, regardless of where she delivered her baby.

For more information call M-LINE at 800-962-3555 or visit www.med.umich.edu/obgyn/healthy-healing
Jodi DeFrenn thought her two-month-old daughter had a bad case of the sniffles. But her physician noticed something odd and measured the infant’s head. After a speedy ultrasound and CT scan, her baby had a much-scarrier diagnosis: a vein of galen malformation. This particular arteriovenous malformation, or AVM, affects a large deep vein at the base of the brain and can even lead to congestive heart failure.

The DeFrenn family quickly took little Kenzee to the University of Michigan, where a team of neurosurgeons and radiologists worked to insert coils that would preserve her brain function.

Now Kenzee is a happy 4-year-old who attends preschool in Owosso, Mich. With the high-flow shunt in her brain that controls her hydrocephalus, U-M doctors have helped her live a normal life, her mother says. “It’s a miracle all the way around, but this could have been a very different story if we hadn’t gone to U-M,” says Jodi DeFrenn.

The team-oriented, minimally invasive neurovascular care that helped save Kenzee has recently been enhanced at U-M with the opening of a new neurointerventional suite. The suite—the first of its kind in the nation—makes it possible to both detect and repair strokes, cerebral aneurysms and even rare conditions like Kenzee’s all in the same room.

The new suite, which opened in May, has three scanning rooms and houses both a 64-slice CT scanner and biplane imaging tools for angiography in the same room, together with other equipment for minimally-invasive diagnostics and procedures. A patient gets one-stop treatment: going from diagnosis to surgery in the same room, with a team of radiologists and neurosurgeons working closely together.

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“What’s key is the combination of the equipment in the same room,” says Joseph J. Gemmete, M.D., clinical associate professor of both Radiology and Otolaryngology and an interventional neuroradiologist on the U-M team. “We can do the CT scanning and the CT perfusion there, then turn the table and go straight to angio.”

This is especially crucial in emergent cases, where time lost is brain lost — and every second counts. Gemmete says the new equipment provides great images, even allowing a CT scan while a catheter is placed in an artery.

The suite reduces the patient’s wait time between diagnosis and treatment, and encourages the collaboration among radiology, neurology and neurosurgery that U-M already champions, says N. Reed Dunnick, M.D., chair of U-M’s Department of Radiology.

“This allows us a better opportunity for image guidance and to better plan the surgery,” says Dunnick. “It gives us more information to safely and quickly plan more minimally invasive techniques.”

The new suite is especially helpful for stroke patients in need of endovascular techniques for thrombolysis or removal of clots — treatment that has to be delivered within eight hours of the onset of symptoms, says B. Gregory Thompson, M.D., professor, Department of Neurosurgery, Director, Division of Cerebrovascular, Neurointerventional and Skull Base Surgery and Surgical Director, Neurosurgical Intensive Care Unit.

The new suite allows U-M physicians to perform both CT and CT angiography scans that are needed before an interventional procedure, and then to perform the procedure without moving the patient.

In the new suite, results can be interpreted in five to six minutes, says Aditya Pandey, M.D., an assistant professor in the Department of Neurosurgery. He estimates that being in the same room saves 20 to 30 minutes in a patient’s treatment.

“It quickly allows us to see which artery is blocked and if tissue is surviving,” Pandey says. “We don’t have to take them to a different room.”

U-M teams have performed minimally invasive neurovascular procedures for years, offering patients a high level of experience and access to new options. In fiscal year 2008, U-M physicians saw 1,470 neuro-diagnostic or neuro-interventional patients.

U-M also is the only hospital in Michigan with two neurosurgeons dually-trained in neuroendovascular surgery and open cerebrovascular surgery. In addition, U-M also has two radiologists dually-trained in interventional neuroradiology and endovascular neurosurgery.

There also are two physicians dedicated to neuro-intensive care of patients after their procedures.

“The addition of a new INR suite will not only provide additional capability for performing elective and emergent procedures, but also provide uniquely efficient care for your stroke patients,” says Pandey.

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Non-emergency, call M-LINE at 800-962-3555
Emergency, call 734-389-3204, a 24-hour, seven-day-a-week cell phone line staffed by members of the neurovascular surgery program

Conditions treated
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• arteriovenous malformations of the brain and spine
• carotid artery disease
• carotid-cavernous fistula
• compression fracture
• dural arteriovenous fistulae
• embolization for bleeding
• spinal vascular malformations
• intracranial atherosclerotic disease
• stroke
• temporary and permanent vessel occlusion
• tumor embolization
providers, specializes in caring for patients with ARDS. A number of advanced critical care treatment strategies, including high frequency oscillatory ventilation, extracorporeal membrane oxygenation and continuous renal replacement therapy were required for the treatment of these critically ill patients with bilateral H1N1 viral pneumonia.

In the first three months after H1N1 first appeared in the area, a number of severely ill H1N1 patients from around Michigan and the upper Midwest were transferred to U-M. Community hospitals throughout Michigan have played a significant role in the care of these patients both prior to transfer, and in ongoing management of the patients’ care after their clinical condition stabilized.

Hospitals everywhere, including UMHS, are preparing for a likely surge in H1N1 flu cases during the regular 2009-2010 flu season, which begins in October. Armed with the knowledge gained during the spring outbreak, clinicians at all types of hospitals will have a better foothold in the management of severely ill H1N1 patients.

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H1N1 continued

The U-M team notes that additional study is needed to confirm their findings. “A small number of patients were involved in this case series and the CDC has not added obesity to its list of risk factors,” says Sandro Cinti, M.D., clinical assistant professor of internal medicine at U-M Medical School.

U-M is a regional center for ARDS care. Because some of the patients were transferred to U-M from other hospitals, the authors estimate that on average the patients had started receiving antiviral medications eight days after their illness began.

This delay in the initiation of antiviral medications may have contributed to the severity of the viral pneumonia that occurred in these patients. Increased dosing of oseltamivir (150 mg PO BID) was used to treat critically ill patients once they arrived at U-M.

Another contributing factor may have been the test used to identify H1N1 patients. “We now recognize the poor sensitivity of rapid testing with direct immunofluorescent antibody and viral culture as diagnostic tests for Influenza A (H1N1) disease, and only PCR testing should be relied upon for accurate diagnosis,” says Napolitano.

A significant complication seen in the patients who had severe viral pneumonia in both lungs due to their H1N1 infection was pulmonary emboli/thrombi. Therefore, physicians caring for these patients should be aware that concomitant pulmonary emboli can also contribute to hypoxemia and consider diagnostic studies and/or systemic anticoagulation.

The U-M Surgical Intensive Care Unit’s team, which includes physicians, nurses, respiratory therapists, and other health care