

Job Aid
**Care of the Pregnant Patient with
Known or Suspected H1N1 Influenza**
SNGH-SLH-SOH-SVBH-SWRH

Human infections with novel influenza A (H1N1) (initially referred to as “ swine flu” or novel H1N1 flu) were first identified in April of 2009. The epidemiology and clinical presentations of these infections are currently under investigation. Initial findings indicate that this virus causes a spectrum of illness that is similar to that caused by seasonal influenza viruses. While many infections with novel influenza A (H1N1) virus are relatively mild, some persons infected with this virus have had severe or even fatal infections. Over half of persons who have required hospitalization because of novel influenza A (H1N1) virus infection have had an underlying medical condition or have been pregnant. In addition, evidence from the previous pandemics of 1918-1919 and 1957-1958 and from seasonal influenza suggests that pregnant women are likely to be at increased risk of morbidity and mortality related to infection with this novel flu virus. The impact of novel H1N1 flu on the newborn is unknown, but based on previous experience; newborns are expected to be at increased risk of severe illness.

The following table outlines the WHCEC recommended screening and management of the Sentara mother or infant with known, suspected or confirmed H1N1 influenza

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
Screening	<p>All patients presenting for care will be screened for ILI, each time they present, utilizing the Influenza Screening Tool available in the Obstetric Admission Navigator in EPIC</p> <p>Screening should be completed each time a patient presents for an outpatient evaluation or a scheduled admission.</p> <p>Screening will include: temperature, review of ILI symptoms, assessment of household member's wellness, history of anti-viral use and history of seasonal and H1N1 vaccine for the current flu season.</p> <p>Pregnant patients less than 20 weeks gestation may be screened and worked up in the Emergency Room.</p> <p>Pregnant patients 20 weeks or greater presenting to the main Emergency Room and without</p>	<p>Staff should remain vigilant in assessing for symptoms of influenza via assessment of temperature and symptomatology</p> <p>L&D staff should communicate to Nursery staff as soon as diagnosis of maternal ILI is made. The newborn should be considered potentially infected if delivery occurs during the 2 days before through 7 days after illness onset in the mother.</p>	<p>Staff should remain vigilant in assessing for symptoms of influenza via assessment of temperature and symptomatology</p>	<p>Infants are considered to be at higher risk for severe illness from novel influenza A (H1N1) virus infection. Staff should remain vigilant in assessing for symptoms of influenza via assessment of temperature and symptomatology.</p> <p>The newborn should be considered potentially infected if delivery occurs during the 2 days before through 7 days after illness onset in the mother.</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	urgent, life threatening conditions, should be masked and transported to the Labor & Delivery triage area for screening and work-up.			
Admission	<p>Should be considered for women with signs of worsening disease including:</p> <ul style="list-style-type: none"> • Shortness of breath, either during physical activity or while resting • Difficulty in breathing • Cyanosis • Bloody or colored sputum • Chest pain • Altered mental status • High fever that persists beyond 3 days • Hypotension <p>Pregnant patients less than 20 weeks gestation may be admitted off ob service to medical beds with obstetric consultation as needed.</p> <p>Pregnant patients 20 weeks or</p>	<p>Should be considered for women with signs of worsening disease including</p> <ul style="list-style-type: none"> • Shortness of breath, either during physical activity or while resting • Difficulty in breathing • Cyanosis • Bloody or colored sputum • Chest pain • Altered mental status • High fever that persists beyond 3 days • Hypotension <p>MFM is available to consult with physicians on the care of H1N1 patients. Referral- Transfer to SNGH will be considered on a case by case basis and generally reserved for those patients with</p>	<p>Should be considered for women with signs of worsening disease including:</p> <ul style="list-style-type: none"> • Shortness of breath, either during physical activity or while resting • Difficulty in breathing • Cyanosis • Bloody or colored sputum • Chest pain • Altered mental status • High fever that persists beyond 3 days • Hypotension <p>MFM is available to consult with physicians on the care of H1N1 patients. Referral- Transfer to SNGH will be considered on a case by case basis and generally reserved for those patients with</p>	<p>Should be considered for infants with signs of worsening disease including:</p> <ul style="list-style-type: none"> • Shortness of breath, either during physical activity or while resting • Difficulty in breathing • Cyanosis • Bloody or colored sputum • Altered mental status • High fever that persists beyond 3 days • Hypotension • Lack of alertness, • Difficulty in waking up <p>Neonatology is available to consult with physicians on the care of H1N1 patients. Referral- Transfer to SNGH or CHKD will be considered on a case by case</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<p>greater should be attended by their Obstetrician with appropriate consultative services such as pulmonary medicine.</p> <p>MFM is available to consult with physicians on the care of H1N1 patients. Referral- Transfer to SNGH will be considered on a case by case basis and generally reserved for those patients with progressing respiratory compromise and an inability to maintain oxygen saturation.</p> <p>Perinatal H1N1 patients need not be transferred from the Women' s areas unless they require more complex critical care support.</p>	<p>progressing respiratory compromise and an inability to maintain oxygen saturation.</p> <p>Perinatal H1N1 patients need not be transferred from the Women' s areas unless they require more complex critical care support.</p>	<p>progressing respiratory compromise and an inability to maintain oxygen saturation.</p> <p>Perinatal H1N1 patients need not be transferred from the Women' s areas unless they require more complex critical care support.</p>	<p>basis and generally reserved for those patients with progressing respiratory compromise and an inability to maintain oxygen saturation.</p>
EFM And Pregnancy Surveillance	<p>Pregnant patients 20 weeks or greater require diligent maternal-fetal surveillance.</p> <p>Timing and interval of external fetal monitoring should be ordered with consideration to maternal prenatal history, gestational age and the</p>	<p>Pregnant patients 20 weeks or greater require diligent maternal-fetal surveillance.</p> <p>Timing and interval of external fetal monitoring should be ordered with consideration to maternal prenatal history, gestational age and the</p>	Na	Na

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<p>potentially deleterious effects of fever, tachycardia and altered respiratory function in the pregnant H1N1 patient. Alterations of fetal heart rate may signal worsening maternal status.</p> <p>Regular and diligent assessment of maternal symptoms of pregnancy complications, such as cramping, contractions, abdominal pain, should be done by qualified providers and nurses.</p>	<p>potentially deleterious effects of fever, tachycardia and altered respiratory function in the pregnant H1N1 patient. Alterations of fetal heart rate may signal worsening maternal status.</p> <p>Regular and diligent assessment of maternal symptoms of pregnancy complications, such as cramping, contractions, abdominal pain, should be done by qualified providers and nurses.</p>		
Diagnosis & Testing	<p>Optional Diagnosis made presumptively on the symptoms of fever (temperature of 100°F [37.8°C] or greater) and presence of cough and or sore throat in the absence of other known causes of symptoms</p> <p>If patient is admitted for suspected H1N1 or worsening influenza like illness, testing should be done for confirmation and identification of flu strain using the EPIC order “ PCR H1N1 Testing” order. A</p>	<p>Diagnosis made presumptively on the symptoms of fever (temperature of 100°F [37.8°C] or greater) and presence of cough and or sore throat in the absence of other known causes of symptoms</p> <p>If patient is admitted for suspected H1N1 or worsening influenza like illness, testing should be done for confirmation and identification of flu strain using the EPIC order “ PCR H1N1 Testing” order. A nasopharyngeal swab should be</p>	<p>Diagnosis made presumptively on the symptoms of fever (temperature of 100°F [37.8°C] or greater) and presence of cough and or sore throat in the absence of other known causes of symptoms</p> <p>If patient is admitted and develops suspected H1N1 or worsening influenza like illness, testing should be done for confirmation and identification of flu strain using the EPIC order “ PCR H1N1 Testing” order. A</p>	<p>Diagnosis is difficult and is made after excluding other possible sources of infection with associated fever. If patient is admitted and develops suspected H1N1 or worsening influenza like illness, testing should be done for confirmation and identification of flu strain using the EPIC order “ PCR H1N1 Testing” order. A nasopharyngeal swab or washing should be utilized to obtain the specimen.</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	nasopharyngeal swab should be utilized to obtain the specimen.	utilized to obtain the specimen.	nasopharyngeal swab should be utilized to obtain the specimen.	
Isolation	<p>Patients who present in the main Emergency Room, who are 20 weeks or greater gestation with ILI will be masked during transport to the Labor & Delivery area..</p> <p>Any patients who are confirmed, probable or suspected cases and present for care at a Sentara Healthcare facility should be placed directly into individual rooms with the door kept closed.</p> <ul style="list-style-type: none"> • Droplet with eye protection and Standard Precautions should be initiated • Isolation precautions should be continued for 7 days from symptom onset or until the resolution of symptoms, whichever is longer • If a sudden influx of infected patients stressed the capacity of the physical plant, flu patients may be cohorted after consultation with Infection Prevention and Control. 	<p>Any patients who are confirmed, probable or suspected cases and present for care at a Sentara Healthcare facility should be placed directly into individual rooms with the door kept closed.</p> <ul style="list-style-type: none"> • Droplet with eye protection and Standard Precautions should be initiated • Isolation precautions should be continued for 7 days from symptom onset or until the resolution of symptoms, whichever is longer • If a sudden influx of infected patients stressed the capacity of the physical plant, flu patients may be cohorted after consultation with Infection Prevention and Control. • Standard ESD cleaning procedures are appropriate for flu patients 	<p>Any patients who are confirmed, probable or suspected cases and present for care at a Sentara Healthcare facility should be placed directly into individual rooms with the door kept closed.</p> <ul style="list-style-type: none"> • Droplet with eye protection and Standard Precautions should be initiated. • Isolation precautions should be continued for 7 days from symptom onset or until the resolution of symptoms, whichever is longer • If a sudden influx of infected patients stressed the capacity of the physical plant, flu patients may be cohorted after consultation with Infection Prevention and Control. • Standard ESD cleaning procedures are appropriate for flu patients. 	<p>The newborn of a suspected or confirmed influenza infected mother should be housed in the nursery instead of the mother's room.</p> <ul style="list-style-type: none"> • Droplet with eye protection and Standard Precautions should be initiated • Isolation precautions should be continued for 7 days from symptom onset or until the resolution of symptoms, whichever is longer • These infants should be segregated from infants of well mothers. The bassinet of infants of well mothers shall be tagged with a green adhesive dot. The bassinet of infants of known or suspected mothers shall be tagged with a red adhesive dot. Current state regulations for bassinet arrangement should be

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<ul style="list-style-type: none"> Standard ESD cleaning procedures are appropriate for flu patients 			<p>followed</p> <ul style="list-style-type: none"> Standard ESD cleaning procedures are appropriate for flu patients
PPE	<ul style="list-style-type: none"> For general care of patients with known, suspected or confirmed H1N1 Influenza a surgical mask should be worn by the patient and staff. The following masks are preferred: 1. FOG FREE: Kimberly Clark TecnoL Ulti Mask Fog-free surgical mask Reference # 49310 2. STANDARD: Kimberly Clark TecnoL The Lite one Surgical Mask Reference # 48100 Staff caring for patients with extreme respiratory secretions or difficulty controlling their secretions should wear goggles or a surgical 	<ul style="list-style-type: none"> For general care of patients with known, suspected or confirmed H1N1 Influenza a surgical mask should be worn by the patient and staff. The following masks are preferred: 1. FOG FREE: Kimberly Clark TecnoL Ulti Mask Fog-free surgical mask Reference # 49310 2. STANDARD: Kimberly Clark TecnoL The Lite one Surgical Mask Reference # 48100 Staff caring for patients with extreme respiratory secretions or difficulty controlling their secretions should wear goggles or a surgical 	<ul style="list-style-type: none"> For general care of patients with known, suspected or confirmed H1N1 Influenza a surgical mask should be worn by the patient and staff. The following masks are preferred: 1. FOG FREE: Kimberly Clark TecnoL Ulti Mask Fog-free surgical mask Reference # 49310 2. STANDARD: Kimberly Clark TecnoL The Lite one Surgical Mask Reference # 48100 Staff caring for patients with extreme respiratory secretions or difficulty 	<ul style="list-style-type: none"> For general care of patients with known, suspected or confirmed H1N1 Influenza a surgical mask should be worn by the patient and staff. The following masks are preferred: 1. FOG FREE: Kimberly Clark TecnoL Ulti Mask Fog-free surgical mask Reference # 49310 2. STANDARD: Kimberly Clark TecnoL The Lite one Surgical Mask Reference # 48100 Staff caring for patients with extreme respiratory secretions or difficulty

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<p>mask fitted with a face shield.</p> <ul style="list-style-type: none"> Gowns are not required at this time. For Procedures That are Likely to Generate Aerosols (e.g., bronchoscopy, endotracheal intubation, suctioning, administering nebulized medications) a N95 Respirator is recommended 	<p>mask fitted with a face shield.</p> <ul style="list-style-type: none"> Gowns are not required at this time. For Procedures That are Likely to Generate Aerosols (e.g., bronchoscopy, endotracheal intubation, suctioning, administering nebulized medications) a N95 Respirator is recommended 	<p>controlling their secretions should wear goggles or a surgical mask fitted with a face shield.</p> <ul style="list-style-type: none"> Gowns are not required at this time. For Procedures That are Likely to Generate Aerosols (e.g., bronchoscopy, endotracheal intubation, suctioning, administering nebulized medications) a N95 Respirator is recommended 	<p>controlling their secretions should wear goggles or a surgical mask fitted with a face shield.</p> <ul style="list-style-type: none"> Staff will follow existing state regulations regarding gowning when feeding and holding babies. Additional gowning procedures are not required at this time. <p>The N95 Respirator has little application in the newborn, Special Care or Neonatal Intensive Care Unit due to the unlikely presence of respiratory aerosols and the nature of the closed endotracheal intubation system. .</p>
Medication	<p>For maximum benefit exposure/symptom to prophylaxis /treatment interval should be as short as possible with a target of 48 hours or less.</p> <p>Post exposure antiviral chemoprophylaxis should be ordered for pregnant women who</p>	<p>Treat flu exposure prophylactically: Tamiflu 75 mg po once daily for 10 days.</p> <p>Treat patients with actual flu symptoms: Tamiflu 75 mg po twice daily for 5 days</p>	<p>Treat flu exposure prophylactically: Tamiflu 75 mg po once daily for 10 days.</p> <p>Treat patients with actual flu symptoms: Tamiflu 75 mg po twice daily for 5 days</p>	<p>Tamiflu approved by the U.S. Food and Drug Administration (FDA) under an Emergency Use Authorization (EUA); dosing for these children is age-based</p> <p>Treat flu exposure prophylactically:</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<p>are close contacts of persons with suspected or laboratory confirmed novel influenza A (H1N1) virus infection.</p> <p>Treat flu exposure prophylactically: Tamiflu 75 mg po once daily for 10 days.</p> <p>Treat patients with actual flu symptoms: Tamiflu 75 mg po twice daily for 5 days</p> <p>Patients who are being discharged from the outpatient setting should receive their first dose of Tamiflu prior to discharge.</p>	<p>For maximum benefit exposure/symptom to prophylaxis /treatment interval should be as short as possible with a target of 48 hours or less.</p>	<p>For maximum benefit exposure/symptom to prophylaxis /treatment interval should be as short as possible with a target of 48 hours or less.</p>	<p>Age less than 9 months: 3mg/kg/dose once daily for 10 days</p> <p>Age 9 months of older: 3.5 mg/kg/dose once daily for 10 days</p> <p>Treat patients with actual flu symptoms:</p> <p>Age less than 9 months: 3mg/kg/dose BID for 5 days</p> <p>Age 9 months of older: 3.5 mg/kg/dose BID for 5 days</p> <p>For maximum benefit exposure/symptom to prophylaxis /treatment interval should be as short as possible with a target of 48 hours or less.</p>
Vaccine	<p>Pregnant women should be vaccinated against both seasonal and H1N1 influenza to decrease the risk of serious complications of infection with H1N1.</p>	<p>NA LAIV (live attenuated influenza vaccine) is not licensed for use in pregnant women. Pregnant women do not need to avoid</p>	<p>Post-partum women, who have not been vaccinated, should receive the H1N1 vaccine to decrease risk to the newborn.</p> <p>LAIV (live attenuated influenza</p>	<p>Vaccination is not currently available for infants less than 6 months of age.</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	LAIV (live attenuated influenza vaccine) is not licensed for use in pregnant women. Pregnant women do not need to avoid contact with persons recently vaccinated with LAIV.	contact with persons recently vaccinated with LAIV.	vaccine) is not licensed for use in pregnant women. Pregnant women do not need to avoid contact with persons recently vaccinated with LAIV.	
Visitors	<p>No children will be allowed into Women and Infant areas</p> <p>Adult visitors who demonstrate fever or other symptoms of ILI will not be allowed access to the Women and Infants areas until they are afebrile times 24 hours, on Tamiflu for 48 hours and able to control coughs and secretions. May offer PPE (except for N95 mask)</p> <p>Hospital visitors of influenza-infected pregnant women should receive infection control education on droplet precautions and hand hygiene and should be asked to practice these measures during their hospital visit.</p>	<p>No children will be allowed into Women and Infant areas</p> <p>Adult visitors who demonstrate fever or other symptoms of ILI will not be allowed access to the Women and Infants areas until they are afebrile times 24 hours, on Tamiflu for 48 hours and able to control coughs and secretions. May offer PPE (except for N95 mask)</p> <p>Hospital visitors of influenza-infected pregnant women should receive infection control education on droplet precautions and hand hygiene and should be asked to practice these measures during their hospital visit.</p>	<p>No children will be allowed into Women and Infant areas</p> <p>Adult visitors who demonstrate fever or other symptoms of ILI will not be allowed access to the Women and Infants areas until they are afebrile times 24 hours, on Tamiflu for 48 hours and able to control coughs and secretions. May offer PPE (except for N95 mask)</p> <p>Hospital visitors of influenza-infected pregnant women should receive infection control education on droplet precautions and hand hygiene and should be asked to practice these measures during their hospital visit.</p>	<p>No children will be allowed into Women and Infant areas</p> <p>Adult visitors who demonstrate fever or other symptoms of ILI will not be allowed access to the Women and Infants areas until they are afebrile times 24 hours, on Tamiflu for 48 hours and able to control coughs and secretions. May offer PPE (except for N95 mask)</p> <p>May offer PPE (except for N95 mask)</p> <p>Hospital visitors of influenza-infected pregnant women should receive infection control education on droplet precautions and hand hygiene</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	All persons who come within 3 feet of the mother with known or suspected H1N1 should wear a surgical mask and practice hand hygiene before and after contact with the mother.	All persons who come within 3 feet of the mother with known or suspected H1N1 should wear a surgical mask and practice hand hygiene before and after contact with the mother.	All persons who come within 3 feet of the mother with known or suspected H1N1 should wear a surgical mask and practice hand hygiene before and after contact with the mother.	and should be asked to practice these measures during their hospital visit.
Lactation	NA	NA	<p>Breast milk is not known to transmit influenza virus</p> <p>Should be protected and supported at all times because of the protection from respiratory infection that breast milk provides to the infant</p> <p>The mother with influenza-like-illness should be encouraged and assisted to express her milk During this time, the infant should be fed the mother's expressed milk by another person who is well</p> <p>Chemoprophylaxis with antiviral medications is not a</p>	<p>Breast milk is not known to transmit influenza virus</p> <p>Should be protected and supported at all times because of the protection from respiratory infection that breast milk provides to the infant</p> <p>The mother with influenza-like-illness should be encouraged and assisted to express her milk During this time, the infant should be fed the mother's expressed milk by another person who is well</p> <p>Chemoprophylaxis with antiviral medications is not a</p>

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
			contraindication to breastfeeding.	contraindication to breastfeeding.
Mom-Baby Dyad	NA	NA	<p>The mother who has influenza like illness at delivery will be separated from her infant until the following conditions have been met:</p> <ul style="list-style-type: none"> •She has received antivirals for 48 hours •Her fever is fully resolved without the use of antipyretics •She can control coughs and secretions 	<p>The newborn infant of an influenza-infected woman should be housed in the hospital nursery instead of the mother's room.</p> <p>The infant should be placed on standard and droplet precautions.</p> <p>The infant should be placed in a private room in the nursery. If a private room is not available in the nursery, the newborn should be kept 3 feet from other babies in the nursery.</p>
Crew Resource Management	<p>TEAM HUDDLES</p> <p>Team huddles should be held frequently throughout the day, 0500,0900, 1300, 1700, 2100 including charge nurses from all Women's and Infants clinical areas. The following information should be shared at the huddle:</p> <ul style="list-style-type: none"> • Changes in clinical management recommendations from Sentara, WHCEC, or CDC sources. 			

	OUTPATIENT ANTEPARTUM	INTRAPARTUM	POSTPARTUM	NEWBORN
	<ul style="list-style-type: none"> • Current census with numbers of known and suspected ILI mom's and babies • Staff callouts and anticipated staffing needs for next shift and 24 hour projection • Potential transfers in or out as well as staffing considerations • Review L&D scheduled cases for next shift. Discuss ability to meet indicated schedule and consider need to move elective cases as staffing and census demand • In the event of high census of influenza moms and babies, consider offer of early discharge to well moms and babies <p>STAFFING CONSIDERATIONS</p> <ul style="list-style-type: none"> • Staff will notify unit leadership as soon as they become aware that they will miss their next scheduled shift • Staffing ratio's will adjust according to the acuity and volume and may be outside of normal operating procedures if a pandemic emergency is declared within the hospital • In the event that Women's and Infants patients are moved from one facility to another, the staff assigned for that moved cohort may be moved with the patients and be utilized in the accepting facility. 			