PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH

Section A

DIVISION OF DISEASE CONTROL ACUTE COMMUNICABLE DISEASE CONTROL PROGRAM

Guidelines for the Prevention and Control of Infectious Diseases in Emergency Housing Office of Homeless Services

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Introduction

The control of communicable diseases is a function of the State and City Departments of Health, governed by State laws and local Department of Public Health regulations. The City of Philadelphia Office of Supportive Housing is a key partner in the control of communicable disease spread in residential shelter settings. Infectious disease prevention and control in shelter situations relies on three major activities:

- Vaccination, consistent with age-appropriate public health recommendations, to protect against vaccine-preventable diseases such as pertussis, measles, mumps, rubella, influenza, and hepatitis A
- Hand washing and respiratory hygiene to break the chain of transmission of germs that are spread during close contact by respiratory droplets and through shedding in the stool (fecal-oral spread)
- Surveillance or recognition of diseases among shelter residents or staff, with prompt reporting to shelter and public health officials.

Hand Washing and Respiratory Hygiene Recommendations

Hand washing is one of the most effective ways to interrupt the spread of germs between people. It is an important way to reduce the spread of respiratory infections such as influenza ("the flu"), and enteric infections (stomach infections) that cause vomiting and diarrhea. Recommendations apply to all residents and staff.

- Hand washing must be done:
- After using the bathroom, changing diapers, and taking care of personal needs (e.g., combing hair)
- Before preparing or serving foods, and eating
- Before preparing bottles for babies, and before feeding babies
- After handling garbage or trash, even if using gloves.
- Hot and cold running water must be available for hand washing in all bathroom areas, diaper changing areas, and in all food preparation and service areas
- Post signage in all bathrooms and kitchen/food preparation areas reminding people to wash hands
- Liquid soap in mounted dispensers (not bars of soap) should be available.
- Diaper pails should be available on each floor where diaper-age children reside or play, in close proximity to diaper changing areas.
- Steps to good hand washing:
- Soap and warm running water should be used.
- The entire surface of hands and fingers should be washed, rubbing hands together for at least 15 seconds.
- Alcohol-based hand sanitizers may be used for hand washing when access to hand washing facilities is limited.
- Rinse hands and dry with clean towels. Use towel to turn off water faucet, and discard after use.
- Encourage respiratory hygiene and cough etiquette among all staff and residents:
- Cover mouth and nose when coughing or sneezing
- Use tissues and dispose in no-touch waste containers
- Wash hands with soap and water or use hand sanitizer after soiling hands with respiratory secretions

Communicable Diseases Requiring Reporting

To prevent ongoing transmission of communicable disease (of resident or shelter staff) the following diseases are reportable to the PHMC Infection Control Coordinator (beeper 215-308-8316) and/or the OSH Operations Supervisor (phone 215-686-7186). Either the PHMC coordinator or the OSH Supervisor will then report these conditions to the Division of Disease Control at the Philadelphia Department of Public Health. Prompt reporting ensures the institution of an infection control plan in consultation with the Philadelphia Department of Public Health. Amebiasis (*Entamoeba histolytica*) Chickenpox/Shingles *Campylobacter Clostridium difficile Cryptosporidium E. coli* 0157:H7 *Giardia* Hepatitis A Measles Meningitis (due to any cause) Mumps Pertussis (whooping cough) Rubella *Salmonella* *Shigella* Tuberculosis In addition, the occurrence of any of the following conditions in three or more shelter residents should also be reported immediately to the PHMC Infection Control Coordinator (beeper # 215-308-8316) or the Philadelphia Department of Health (215-685-6740). Diarrhea (any cause) Skin infections (strep, staph including MRSA) OSH Shelter Standards Shelter Services REVISION December 2008 4

HEPATITIS A

Hepatitis A is a viral infection that causes nausea, vomiting and jaundice (yellow skin and dark urine). Hepatitis A is shed in the stool and is spread from person-to-person when someone with hepatitis A does not wash his or her hands properly after using the bathroom. Someone with hepatitis A can spread the disease from 2 weeks before he or she becomes sick, until 7 days after they become jaundiced. Hepatitis A can be prevented by hepatitis A vaccine, which is now offered routinely to young children. People who have not received vaccine and who are exposed to hepatitis A can receive either hepatitis A vaccine or a medication called immune globulin (IG) immediately following the exposure to prevent the infection. Both must be given within 2 weeks of the exposure to be effective. Someone is immune to hepatitis A if she or he has had the disease or two doses of hepatitis A vaccine. Hepatitis A vaccine is now given to all children age 12-23 months of age as part of the regular childhood immunization schedule. Hepatitis A vaccine is also recommended for the following adults:

- Men who have sex with men
- Travelers to foreign countries with high incidence of hepatitis A
- People who use street drugs
- People with chronic liver disease
- People with clotting problems

The key to controlling the spread of hepatitis A is through vaccination and through proper hygiene. *Both staff and residents should understand the importance of hand washing after using the toilet or diaper changing facilities and before preparing or eating food.* The Division of Disease Control, Philadelphia Department of Public Health, (PDPH) should be notified for any case of hepatitis in a shelter resident or staff member. The Division of Disease Control telephone number is 215-685-6740, Monday through Friday, 8:30 AM-5:00 PM; after hours, please call 215-686-1776 and ask for the person on call for Disease Control. The PDPH Division of Disease Control staff will provide guidelines to interrupt the spread of disease in the shelter and determine the need for the administration of IG (see Management of contacts, below). The shelter operator, or a designated person should be available to communicate information about new cases and assist with efforts to control the spread of hepatitis A. PDPH will provide educational materials, and if necessary, conduct training on infection control for shelter staff and residents.

General Recommendations to Prevent Spread of Hepatitis A

These general recommendations should be followed at all times, even when there are not cases of hepatitis A.

1. Hepatitis A vaccine should be given to all shelter residents > 12 months of age at intake, if they have not already received two doses of vaccine.

2. Bathrooms, diaper changing facilities, and any area where diapers are changed, as well as food preparation areas must have sings to remind staff and residents to wash their hands after using the bathroom, changing diapers and before food preparation or eating.

3. All shelters that admit diaper-age children should have diaper-changing facilities near sinks for handling washing after each diaper change. Cleaning of these facilities between each change is crucial to prevent the spread of the disease. Containers for diaper disposal should also be available.

4. Sinks used for hand washing after diaper changing should not be in or near food preparation or eating areas.

Management of Cases

Any resident with hepatitis A should be managed as follows:
1. Residents with hepatitis A must be referred to a health care provider for evaluation and diagnosis. Residents who do not have a primary health care provider can receive medical care at any PDPH District Health Care Center.

2. Residents or staff with hepatitis A should not prepare or serve food until one week after they become jaundiced.

3. If possible, residents with hepatitis A should use separate toilet facilities, which are not shared by residents who do not have hepatitis, until one week after the onset of jaundice.

4. If possible, residents with hepatitis A and their families should be housed together, sharing the same living space and bathrooms. This should continue until one week after the last person in the family has jaundice.

Management of Contacts Exposed to a Confirmed Case of Hepatitis A

Close contacts of someone with hepatitis A are at risk for getting the infection, if they have not previously received hepatitis A vaccine. Infection can be prevented by giving the exposed person either immune globulin or hepatitis A vaccine, provided it is given within 2 weeks. The PDPH will determine if any residents or staff are candidates for immune globulin or vaccine, and assist with the administration, if needed.

Admission/Transfer Recommendations for Shelters with Confirmed Case of Hepatitis A

Residents with hepatitis A entering a shelter should be sent to a facility where they can have their own room and toilet facilities. If this is not possible, and alternative housing can be arranged, the resident should not be admitted to the shelter until one week after the onset of jaundice.

No resident with hepatitis A, or family who has a member with hepatitis A should be discharged or transferred to another group facility or shelter or private home, unless they will have separate living space and toilet facilities at that location. Residents with hepatitis A may be transferred one week after they had become jaundiced. Residents who do not have hepatitis A, and leave a shelter where there has been a case of hepatitis A in the preceding 45 days, should be advised to seek medical attention if they develop jaundice.

INFECTIOUS DIARRHEA

Infectious diarrhea (with nausea, vomiting and diarrhea) can be caused by a bacteria, viruses, or parasites. Infectious diarrhea is spread from person-to-person when someone who is sick does not wash his or her hands properly after using the bathroom. This section contains general prevention and control recommendations for all causes of infectious diarrhea. Specific recommendations regarding the control of *Shigella* and norovirus infections are contained in a separate section within this manual. The Division of Disease Control, Philadelphia Department of Public Health, (PDPH) should be notified for any case of diarrhea in a shelter caused by a specific type of bacteria or parasite, *or* if three or more residents have diarrhea, regardless of whether the cause is known. The Division of Disease Control telephone number is 685-6740, Monday through Friday, 8:30 AM-5:00 PM; after hours, please call 686-1776 and ask for the person on call for Disease Control. One or more cases of diarrhea in a shelter resident or staff member caused by *Campylobacter, Clostridium difficile, Cryptosporidium, E. coli* 0157:H7, *Entamoeba histolytica* (amebiasis), *Giardia, Salmonella, or Shigella* should be reported to the Division of Disease Control. Division staff will provide specific recommendations for disease management based on the cause of illness, including guidance to interrupt the spread of disease in the shelter and direct ill shelter residents to medical care. The shelter operator, or a designated person should be available to communicate information about new cases and assist with efforts to control an outbreak.

General Recommendations to Prevent Spread of Infection

PDPH will provide educational materials, and if necessary, conduct training on infection control for shelter staff and residents. The key to controlling the spread of infectious diarrhea is proper hygiene. *Both staff and residents should understand the importance of hand washing after using the toilet or diaper changing facilities and before preparing or eating food.* These general recommendations should be followed even when there is not an outbreak of diarrhea.

1. Bathrooms, diaper changing facilities, and any area where diapers are changed, as well as food preparation areas must have sings to remind staff and residents to wash their hands after using the bathroom, changing diapers and before food preparation or eating.

2. All shelters that admit diaper-age children should have diaper-changing facilities near sinks for handling washing after each diaper change. Cleaning of these facilities between each change is crucial to prevent the spread of the disease. Containers for diaper disposal should also be available.

3. Sinks used for hand washing after diaper changing should not be in or near food preparation or eating areas.

Management of Cases with Infectious Diarrhea

Any resident complaining of diarrhea (three or more loose stools/day) should be managed as follows:

1. Any resident with diarrhea for more than 72 hours must be referred for medical attention. If three or more residents have diarrhea, all residents with symptoms should have a medical evaluation within 24 hours. Residents who do not have a primary health care provider can receive medical care at any PDPH District Health Care Center.

2. If possible, residents with diarrhea should use toilet facilities that are not shared by residents who do not have diarrhea, until they no longer have symptoms.

3. If possible, residents with diarrhea, and their families, should be housed separately from other residents, including living space and bathrooms. This should continue until they no longer have diarrhea.

4. Residents or staff with diarrhea from any cause should not prepare or serve food until they no longer have symptoms. Residents with *Shigella* must have proof of negative stool cultures before they can return to handling food. Residents with other infections (e.g., *Salmonella, Campylobacter, Giardia*) must have negative stool cultures before being cleared to handle or serve food if there is evidence of disease spread within the shelter. The Division of Disease Control, Philadelphia Department of Public Health should determine when a person with infectious diarrhea can return to high risk activities such as food handling.

Management of Contacts of Infectious Diarrhea

Close contacts (e.g., usually household contacts) of persons who have diarrhea due to bacteria such as *Salmonella, Shigella* and other types of bacteria may be presumed to be carriers of the bacteria, even if they have no symptoms of infection. Close contacts in a shelter situation will need to be identified on a case-by-case basis, in conjunction with DDC staff, but will likely include family members, others who share the same sleeping and living quarters, and bathrooms. Because of the likelihood of spread to close contacts, these individuals should be presumed to be shedding the same bacteria as the index case. They must be excluded from any of the following situations until they show proof of negative stool cultures:
Child care settings either as staff or participant
Healthcare settings - if direct patient contact
Food handling or service

Admission/Transfer Recommendations for Shelters with Infectious Diarrhea

1. If three or more residents have diarrhea, the shelter should be closed to new admissions, until there are no symptomatic residents. If there are separate living and toilet facilities for symptomatic individuals, then the shelter can accept new admissions.

2. New residents entering the shelter system should be asked if they have diarrhea (defined as three or more loose stools/day). Residents with diarrhea should be referred

for medical evaluation and if possible, admitted to a facility where they will have their own bathroom and their own room.

3. No resident with diarrhea, or family who has a member with diarrhea should be discharged or transferred to another group facility or shelter, unless they will have separate living space and toilet facilities at that location. Residents can be discharged to private homes. Residents who do not have diarrhea, and leave a shelter where there has been diarrhea, should be advised to seek medical attention if they develop diarrhea within two weeks of discharge.

INFLUENZA

Influenza is a respiratory virus that causes an acute respiratory illness characterized by fever, cough, sore throat, headache, and muscle aches. Symptoms generally resolve in 5-7 days, but may persist for several weeks. Bacterial complications (e.g., bronchitis, pneumonia, ear infections) are common following infection with influenza. Influenza viruses are highly contagious; close contacts to cases often develop infection. The infection is spread via respiratory droplets that are spread through coughing, sneezing, or contamination of objects and other frequently touched surfaces. The incubation period is generally 1-5 days. Adults with influenza will shed virus in respiratory secretions for up to 5 days after symptom onset; children will shed influenza virus for up to 10 days. Influenza circulates seasonally, with annual outbreaks generally occurring during winter months. In any given year, up to 20% or more of a community can be affected by influenza. In closed settings such as nursing homes or schools, up to 50% of persons may become ill, especially when there are young children involved. Shelter settings are thus at high risk for influenza outbreaks. Influenza is preventable with a vaccine that is given each year. Beginning in the 2008-2009 season, influenza vaccination is recommended for the following groups:
All children between 6 months and 18 years of age
Adults with chronic medical conditions
Adults > 50 years of age
Adults who have contact with high risk susceptible persons (e.g., parents or caretakers of infants, healthcare workers).

Outbreaks of respiratory illnesses occur frequently during winter months, especially among children. The Division of Disease Control, Philadelphia Department of Public Health, (PDPH) should be notified for outbreaks of influenza (or suspected influenza) occurring in shelters, particularly shelters with young children, and/or immune compromised persons who might be at increased risk for influenza complications. Three or more cases of influenza-like illness (fever to 100° F, and cough or sore throat, without other explanation for illness) suggest an outbreak of influenza; symptomatic persons should be tested for influenza. The Division of Disease Control telephone number is 685-6740, Monday through Friday, 8:30 AM-5 PM; after hours, please call 686-1776 and ask for the person on call for Disease Control. Division staff will provide specific recommendations for disease management, including vaccination if necessary, guidance to interrupt the spread of disease in the shelter, and access to diagnostic testing for influenza, if needed. The shelter operator, or a designated person should be available to communicate information about new cases and assist with efforts to control an outbreak. **General**

Recommendations to Prevent Spread of Influenza

Influenza can be prevented with yearly vaccination and through promotion of respiratory hygiene and hand washing:
DDC recommends that all staff and shelter residents receive a yearly flu shot as soon as it becomes available each fall. People who delay getting the shot can receive it throughout the winter or early spring. As long as influenza is circulating in the community, the vaccine may prevent disease. Individuals in the categories described above should be vaccinated early in the season, as a priority.

Respiratory hygiene and cough etiquette should be encouraged, and shelters should make supplies available:

- Everyone should be encouraged to cover the mouth and nose with tissues when coughing or sneezing
- Tissues should be available and disposed in no-touch waste containers
- Hands should be washed with soap and water or hand sanitizer after soiling hands with respiratory secretions

Handwashing in general should be promoted throughout the shelter:

- Staff and residents should wash their hands with soap and water frequently.
- Children should be assisted in washing their hands with soap and water frequently.
- Alcohol hand gels are an effective addition to hand washing, and a reasonable temporary substitute when soap and clean water are not readily available. Encourage good personal hygiene practices including the following:

Management of Cases with Influenza

Residents with respiratory illness that appears to be influenza should be managed as follows:

1. Any resident with influenza or suspected influenza who is at high risk for complications (e.g., persons with chronic medical problems, immune suppression, advanced age) should be referred for medical evaluation early in the course of illness, ideally within 48 hours of symptom onset. Antiviral medications may shorten illness and prevent severe complications if given early.
2. If possible, residents with influenza and their families, should be housed separately from other residents, with dedicated living space and even bathrooms if possible. Resident with influenza should try to remain in the shelter, and not participate in work, school or childcare until completely well. Adults with influenza who work in healthcare settings should remain out of work for 5 days after the onset of symptoms.
3. If three or more residents have influenza-like illness, the shelter may be experiencing an outbreak of influenza. Patients should be referred to healthcare providers for diagnostic testing. DDC should be contacted to assist with access correct diagnostic tests, and to provide outbreak control recommendations. Patients who have no primary health care provider can receive medical care at any PDPH District Health Care Center. Shelter staff should report this to the OSH Operations Supervisor (phone 215-686-7183) and the PHMC Infection Control Coordinator (215-985-2562 or beeper # 215-308-8316).

Management of Contacts of Influenza

Because influenza is likely to be spread to close, susceptible contacts, unvaccinated persons living in shelter situations who are exposed to influenza are at high risk of getting this infection. While it might be desirable to prevent influenza in all persons in a shelter situation, the priority should be to prevent illness in those most susceptible to complications of influenza, including persons who are immunosuppressed (e.g., living with HIV infection, undergoing treatment for cancer), very young children and the elderly.

1. Close contacts in a shelter situation will need to be identified on a case-by-case basis, in conjunction with DDC staff, but will likely include family members, others who share the same sleeping and living quarters, and bathrooms. In shelters where everyone shares communal eating areas, all residents and staff may be considered to be at risk for influenza.
2. DDC will ensure that the shelter has access to influenza vaccine to provide to unvaccinated shelter residents.
3. In selected situations (e.g., shelters with immunosuppressed residents, or others at high risk for influenza-related complications), DDC may recommend that all residents take antiviral medication as long as there is influenza in the shelter, until one week after the outbreak is over.

Admission/Transfer Recommendations for Shelters with Influenza

1. If there is an outbreak of influenza in the shelter, unvaccinated persons who are at high risk for influenza-related complications (e.g., children < 6 months of age, immunosuppressed persons) should not be admitted to the shelter. This restriction should continue until there are no symptomatic residents.
2. During periods of widespread influenza transmission in the community, new residents entering the shelter system should be asked if they have influenza-like illness. Residents with influenza should be referred for medical evaluation, especially if they are at high-risk for medical complications and were not vaccinated. If possible, they should be admitted to a shelter where they may have their own living space and bathroom facilities.

LICE

Lice (pediculosis) are parasites that live on or under the skin of people. Any setting where overcrowding and close person-to-person contact occurs may be an ideal place for transmission. There are 3 different types of lice that may infest humans: the human body louse, the human head louse, and the pubic or crab louse. All lice live on the skin and feed on the blood of its host. Head lice are the most common form of lice among children. Head and body lice are spread through direct or indirect contact with an infected person, or through shared objects used by infected persons such as headgear and combs, clothing, bedding and other personal items like towels. Head and body lice may survive for only one week without a food source. Pubic lice (crabs) are most frequently transmitted through sexual contact. Overcrowding may increase the likelihood of spread. Crabs can only live 2 days without a host. The incubation period between exposure and symptoms is generally between 7-10 days but can extend up to 3 weeks.

Management of Cases of Lice

Head lice may be hard to see, but persons who are infected may have continuous scratching of the head, back of neck. People with other forms of lice will have itching on the infested part of the body or genital area. Recommended therapy Head lice may be treated with 1% permethrin cream rinse (Nix), a pyrethrin-based product such as RID, or 1% lindane (Kwell). All are available as shampoos or hair treatments; Kwell should be considered a second-line treatment, and is not recommended for infants, pregnant or nursing women, persons with inflamed or traumatized skin, or persons with seizure disorders. Pubic lice can be treated with the same medications that are effective for head lice. Retreatment is recommended 7-10 days later. All sexual contacts should be treated. If eyelashes are infested by pubic lice, they should be treated with petrolatum ointment, and not one of the recommended parasite medications. Body lice lay eggs (nits) and reside in the seams of clothing rather than on the skin of human hosts. Nits can persist in clothing for up to one month. Treatment for body lice consists of improving hygiene and cleaning clothes and bedding. Clothing and bedding must be laundered and dried at hot temperatures to kill lice. The topical treatments recommended for head and pubic lice should not be necessary for body lice if materials are laundered at least weekly. Consult with the Philadelphia Department of Public Health Division of Disease Control for cases or outbreaks that are difficult to manage.

Management of Contacts of Lice and Other Control Measures

Shelter residents who are infested with lice need contact precautions. Close contacts of persons with head lice should be examined and treated if infested. Sexual contacts of persons with pubic lice should be treated whether or not they have signs of infection. Bedmates and immediate family members and others with intimate contact should also be treated prophylactically. All medical treatments should be used in conjunction with other measures such as disinfesting headgear, pillowcases, and towels.

Clothing and bedding of all affected families and residents should be washed in hot water in an automatic washer and dried in a dryer.

Clothing that cannot be washed but can be dried should be placed in a hot dryer for at least 20 minutes (dryer should be turned on). Stuffed animals, coats, and blankets should also be put into a hot dryer for 20 minutes.

Items that cannot be washed or dried should be dry cleaned or put into a sealed plastic bag and placed in a cool, dry place for 2 weeks. Floors, furniture, other upholstery can be vacuumed.

Soak combs, hairbrushes thoroughly in hot water (130° F) or in lice treatment shampoo for at least 5 minutes.

Admission/Transfer Recommendations for Shelters with Lice

There are no restrictions on shelter admission or transfer of residents with lice. Efforts should be made to recognize and treat residents with lice as quickly as possible.

MEASLES

Measles is a very contagious vaccine preventable disease that is spread from person-to-person through the spread of airborne respiratory droplets that are produced by coughing, sneezing. Measles causes fever, rash, red eyes and a runny nose. A person is immune to measles if she or he has had the disease or has received two doses of measles vaccine. When a confirmed case of measles occurs in a residential setting, everyone is considered exposed. Determining whether or not residents and staff are immune to measles should occur as soon as possible. This is especially important for children under one year old and immune compromised persons who are most likely to get a serious illness if exposed to measles. *All staff and residents of homeless shelters in Philadelphia should be immune to measles.* Proof of immunity includes:

1. Documentation of immunization for measles, with type of vaccine and dates received. Immunization requires two doses of measles-containing vaccine (usually MMR) received on or after the first birthday;

2. A copy of a laboratory report of a blood test indicating immunity to measles; or

3. Proof of birth before January 1, 1957.

New shelter residents who were born after 1956, are >12 months of age, and have no proof of immunity should be referred to a health care provider for immunization for measles, mumps and rubella. Children 18 years of age and under should be provided with any routine childhood immunizations at intake, as appropriate. Older persons without health care providers can be referred to any Philadelphia Department of Public Health (PDPH) District Health Center for immunizations at no cost.

Management of Suspected Cases of Measles

Shelter staff must report confirmed or suspected cases of measles to the Division of Disease Control, PDPH at 685-6740, Monday through Friday, 8:30 AM-5:00 PM. After hours, call 686-1776 and ask for the person on call for Disease Control. Measles is contagious 3-5 days before and until 5 days after the rash appears. Any shelter staff or resident with suspected measles should be evaluated immediately at a health care facility, and have a blood test to confirm or rule out the diagnosis. All suspected or confirmed cases of measles and their families must be provided with a separate living space within the shelter. Shelter residents with measles should not return to work or school until 5 days after the onset of their rash. Shelter staff with confirmed measles must not return to work until after 5 days after the onset of their rash.

Management of Contacts Exposed to a Confirmed or Suspected Case of Measles

After receiving a report of suspected or confirmed case of measles, DDC Immunization Program staff will provide assistance in determining the immune status of residents and staff of the shelter. DDC will also work with shelter staff to monitor shelter residents and staff for new cases of rash illness that should be evaluated for measles. Measles vaccine, given within 72 hours of exposure, will provide protection from measles in most cases. Shelter residents 12 month of age or older and staff who received only one dose of measles vaccine before exposure should receive a second dose within 72 hours of exposure; resident children 6-11 months of age should receive a single dose of measles vaccine. *Measles vaccine should not be given to anyone who is pregnant or immune compromised - they must be referred to a health care provider if exposed.* Staff Staff who are not immune to measles must be vaccinated within 72 hours of exposure or cannot return to work until 14 days after rash onset in the last confirmed case of measles at the shelter. *Nonimmune pregnant or immunocompromised staff should not be vaccinated but referred for evaluation by a health care provider to determine appropriate post-exposure management.* Residents Residents who are not immune to measles must be vaccinated within 72 hours of exposure, including children 6-11 months of age. *Nonimmune pregnant or immunocompromised staff should not be vaccinated but referred for evaluation by a health care provider to determine appropriate post-exposure management.* Immune globulin Exposed, non-immune residents or staff who are pregnant, immune compromised, or less than 12 months of age, are candidates for immune globulin (IG). If given within 6 days of exposure, IG may prevent measles. All efforts should be made to vaccinate children 6-11 months of age within 72 hours of exposure, in place of giving IG. Children less than 6 months of age, non-immune pregnant or immune-compromised residents or staff should be referred for evaluation by a health care provider to determine if they should receive IG.

Admission/Transfer Recommendations for Shelters with Measles

If a confirmed case of measles occurs in a shelter: 1. No children less than 12 months of age, or residents who lack proof of measles immunity should be admitted to the shelter until 14 days after the onset of rash in the last confirmed case at the shelter. Residents with measles entering a shelter should be sent to a facility where they can have their own room and avoid contact with residents who are not immune; if this is not possible, and temporary housing can be arranged, admission to the shelter should be delayed until the fifth day after onset of rash. Persons with measles who are already residents should have their own room and avoid contact with residents who are not immune. 2. No exposed resident without proof of immunity or resident child 6 months of age should be transferred out of the shelter unless they received measles vaccine within 72 hours of exposure. Residents with measles should not be transferred to another shelter or discharged to a private home where any residents are not immune to measles until the fifth day after onset of their rash.

NOROVIRUS

Norovirus is a common cause of nausea and vomiting, especially during the winter and spring. It is also very contagious. The typical symptoms are nausea, vomiting, fever, abdominal cramps, and watery non-bloody diarrhea. The usual incubation period is 1-2 days, but can be as short as 12 hours. Illness typically lasts 12-60 hours and is self-limiting. Virus is present in vomitus and stool, and can be shed in stool for up to two weeks. Norovirus can be a problem for facilities because the infectious dose is very low: very few virus particles are necessary to cause illness. In addition, the virus can persist on surfaces in the environment for weeks, and is relatively resistant to many disinfecting agents. Contamination of food and drink may occur when infected individuals handle food or beverage, leading to spread of infection to those who consume those products. Reinfection may occur multiple times during a lifetime. There is no specific therapy for norovirus infection; treatment is supportive and centered on fluid replacement. An outbreak of norovirus infection is likely when there are at least 3 residents and/or staff in a shelter who are experiencing symptoms of nausea and vomiting within a 48-hour period. Any outbreak should be promptly reported to shelter managers and/or to the PHMC shelter medical coordinator, who should report the outbreak to PDPH (215-685-6740).

Management of Cases of Norovirus

1. Residents with symptoms of norovirus should be restricted to their own living space as much as possible. This will help prevent contamination of the shared living space.
2. If possible, place residents with norovirus in private rooms. If several residents have the same illness, they can co-reside.
3. Bathroom facilities should be cleaned frequently with a chlorine-based or other appropriate disinfectant (see below).
4. Symptomatic individuals should not prepare or serve food for others until 72 hours after resolution of symptoms.
5. Cases should be referred for medical attention if the illness is unusually severe (e.g., refractory vomiting) or if the case is at risk of dehydration (e.g., infant, elderly, or medically unstable).
6. Report outbreak of suspected norovirus (3 or more cases occurring within 48 hours) to the Division of Disease Control PDPH at 215-685-6740.
7. The Pennsylvania Department of Health Bureau of Laboratories (BOL) can identify norovirus in stool and vomitus using a PCR-based assay. PDPH must be consulted before clinical specimens can be submitted to the lab for testing.

- Stool or vomit should be collected during the acute phase of illness, and put into a dry, sterile container. Liquid stool obtained during the acute phase of illness will have a higher yield than semi-formed stool obtained later in the illness.
- Each specimen container should be labeled with patient name, date of collection, and name of the facility from which the specimen is obtained.
- Specimens can be stored in a working refrigerator (4C) until ready for shipment or pick-up. Specimens should be kept away from food, double-bagged (and/or wrapped in plastic) and clearly labelled if stored in the same refrigerator as food.
- Ideally, specimens from at least 4 or 5 individuals should be obtained during outbreaks.
- PDPH can assist with specimen transport to the lab.

Infection Control Measures

Strict hand hygiene and other infection control practices are necessary to control norovirus spread. Hands should be washed vigorously with soap and water:

AFTER:	BEFORE:
Toilet visits Cleaning up vomitus or diarrhea Changing diapers Handling soiled clothing or linens Contact with a symptomatic person	Eating Food preparation Serving food Playing with young children Providing any type of direct care for activities of daily living

Section B

NOVEL INFLUENZA A (H1N1)

Novel influenza A (H1N1), also called “swine flu,” is a new strain of influenza that emerged in the United States in the spring of 2009. This new strain of influenza causes the same illness that is seen with the usual, seasonal flu strains. Symptoms are fever, cough, sore throat, headache, and muscle aches. The illness usually lasts 5-7 days but bacterial complications (e.g., bronchitis, pneumonia, ear infections) are common following infection with influenza. Influenza viruses are highly contagious; close contacts to cases often develop infection. The infection is spread via respiratory droplets that are spread through coughing, sneezing, or contamination of objects and other frequently touched surfaces. The incubation period is generally 1-5 days. Adults with influenza will shed virus in respiratory secretions for up to 5 days after symptom onset; children will shed influenza virus for up to 10 days.
In a typical winter season, up to 20% or more of a community can be affected by influenza. In closed settings such as nursing homes or schools, up to 50% of persons may become ill, especially when there are young children involved. Shelter settings are thus at high risk for influenza outbreaks. This new strain of flu is expected to cause even more illness because there is no vaccine at this point, and there is no immunity in the population. A prior flu shot or previous infection with the flu will not protect against this strain.

The Division of Disease Control, Philadelphia Department of Public Health (PDPH) should be notified for outbreaks of influenza (or suspected influenza) occurring in shelters, particularly shelters with young children, and/or immunocompromised persons who might be at increased risk for influenza complications. Three or more cases of influenza-like illness (fever to 100° F, and cough or sore throat, without other explanation for illness) suggest an outbreak of influenza; symptomatic persons should be tested for influenza.

The Division of Disease Control (DDC) telephone number is 215-685-6740, Monday through Friday, 8:30 AM-5 PM; after hours, please call 215-686-1776 and ask for the person on call for Disease Control. Division staff will provide specific recommendations for disease management and guidance to interrupt the spread of disease in the shelter, and access to diagnostic testing for influenza, if needed. The shelter operator or a designated person should be available to communicate information about new cases and assist with efforts to control an outbreak.

General Recommendations to Prevent Spread of Influenza

Seasonal influenza can be prevented with yearly vaccination and through promotion of respiratory hygiene and hand washing. In the absence of a vaccine for novel H1N1, disease prevention will rely on the following infection control measures:
Persons who are ill with influenza-like symptoms should be considered contagious, and they should be confined to their rooms, with limited interaction with the general shelter population for up to 1 week after the onset of their symptoms.

Respiratory hygiene and cough etiquette should be encouraged, and shelters should make supplies available:

- Everyone should be encouraged to cover the mouth and nose with tissues when coughing or sneezing
- Tissues should be available and disposed in no-touch waste containers
- Hands should be washed with soap and water or hand sanitizer after soiling hands with respiratory secretions

Handwashing in general should be promoted throughout the shelter:
o Staff and residents should wash their hands with soap and water frequently.
o Children should be assisted in washing their hands with soap and water frequently.
o Alcohol hand gels are an effective addition to hand washing, and a reasonable temporary substitute when soap and clean water are not readily available.

Management of Cases with Influenza

Residents with respiratory illness that appears to be influenza should be managed as follows:
1. Any resident with influenza or suspected influenza who is at high risk for complications (e.g., persons with chronic medical problems, pregnancy, immune suppression, advanced age, and children under the age of 5 years) should be referred for medical evaluation early in the course of illness, ideally within 48 hours of symptom onset. Antiviral medications may shorten illness and prevent severe complications if given early.

2. If possible, residents with influenza and their families should be housed separately from other residents, with dedicated living space (and bathrooms if possible) and meals eaten in room, or separated from the general population. Resident with influenza should try to remain in the shelter, and not participate in work, school or childcare until 7 days after the onset of symptoms.

3. If three or more residents (unrelated to each other) have influenza-like illness, the shelter may be experiencing an outbreak of influenza. The initial patients should be referred to healthcare providers for diagnostic testing, although once the presence of an outbreak in the shelter is established, others with influenza-like illness can be presumed to have influenza and will probably not require testing unless there are special circumstances. Shelter staff should report this to the OSH Operations Supervisor (phone 215-686-7183) and the PHMC Infection Control Coordinator (215-985-2562 or beeper # 215-308-8316).

4. Limit congregate activities when there are multiple cases of influenza in a shelter, including use of playrooms. Structure mealtimes so that ill persons and their close family contacts eat together, at a time separate from the general shelter population.

5. DDC should be contacted to assist with access correct diagnostic tests, and to provide outbreak control recommendations. Patients who have no primary health care provider can receive medical care at any PDPH District Health Care Center.

Management of Contacts of Influenza

When there are cases of influenza (confirmed or suspected) among shelter residents, the shelter staff should work with the PHMC Infection Control Coordinator to identify new cases through active symptom screening, if possible. Newly identified persons who are at high risk for complications should be managed as outlined above. The priority should be to prevent illness in those most susceptible to complications of influenza, including persons who are immunosuppressed (e.g., living with HIV infection, undergoing treatment for cancer), very young children and the elderly. 3

1. Close contacts in a shelter situation will need to be identified on a case-by-case basis, in conjunction with DDC staff, but will likely include family members, others who share the same sleeping and living quarters, and bathrooms. In shelters where everyone shares communal eating areas, all residents and staff may be considered to be at risk for influenza.

2. High risk contacts are candidates for prophylaxis with antiviral medications, and should be referred to medical providers for that purpose. In selected situations (e.g., shelters with immunosuppressed residents, or others at high risk for influenza-related complications), DDC may recommend that some or all residents take antiviral medication as long as there is influenza in the shelter, until one week after the outbreak is over.

Admission/Transfer Recommendations for Shelters with Influenza

1. If there is a case of influenza in the shelter, persons who are at high risk for influenza-related complications (e.g., pregnant women, persons with underlying medical problems, children < 1 year old who are too young for antiviral therapy) should not be admitted to the shelter, if at all possible. This restriction should continue for 7 days after the onset of symptoms in the last case.

2. If an outbreak is recognized in the shelter, there should be no new admissions to the shelter or transfers from the shelter to another shelter until at least one week has elapsed with no new cases and after the onset of symptoms in the most recent case.

3. During periods of widespread influenza transmission in the community, new residents entering the shelter system should be asked if they have influenza-like illness, and referred for medical evaluation if they are at high-risk for medical complications. If possible, they should be admitted to a shelter where they may have their own living space and bathroom facilities.

4. Families/residents with active flu symptoms should not transfer to other shelters until at least 1 week after symptoms have resolved. Family members who have shared sleeping quarters are at high risk for infection themselves, and ideally should not transfer to other shelters while they might be incubating influenza