PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH
DIVISION OF DISEASE CONTROL
ACUTE COMMUNICABLE DISEASE CONTROL PROGRAM

Guidelines for the Prevention and Control of Infectious Diseases in Homeless Shelters, Office of Homeless Services
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TABLE OF CONTENTS

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 Homeless Services 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 OHS Operations Supervisor (phone 215-686-7186). Either the PHMC coordinator or the OHS 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)

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 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 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:

5. 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.

6. 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.

7. 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 OHS 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

4. 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.

5. 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 (4°C) 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

- Patients with symptoms of norovirus infection should be managed with careful attention to hand hygiene practices. If water and soap are not available, use an alcohol-based hand sanitizer with 62% ethanol-based hand sanitizer, preferably in gel form.
- Staff must clean up vomit and fecal spillages promptly and carefully so that virus aerosolization is minimized. Dispose of vomit or feces in a toilet and disinfect the surrounding area with a bleach-based cleaner (as detailed below).
- Immediately wash clothing or linens that may be contaminated with the virus, especially after an episode of vomiting or diarrhea. Staff should handle soiled linens as little as possible, with minimal agitation so that aerosols are prevented. Launder with hot water and detergent on the maximum cycle length and machine dry.

Recommendations for staff

- Any staff member, including kitchen staff, with symptoms of norovirus infection should be sent home. Symptomatic staff must not return to work for 48 – 72 hours after symptoms resolve.
- Infected food handlers must not prepare or serve food for others under any circumstances
- Educate all staff, patients and visitors about norovirus and the risk of infection. During community-wide outbreaks, instruct staff with diarrhea or vomiting not to come to work until they have recovered.

Cleaning and Disinfection of Environmental Surfaces

During an outbreak, routine bathroom and toilet cleaning should occur with increased frequency, especially common-use bathrooms. “High touch” surfaces such as faucets, toilets, commodes,

bath rails, toilet rails, counters, phones, tables, chairs, handrails, doorknobs, elevator buttons, light switches and ice machines, require frequent cleaning.

- Disinfection with either chlorine bleach or a U.S. Environmental Protection Agency (EPA) approved disinfectant can be used to control norovirus outbreaks.
- Chlorine bleach should be applied to hard, non-porous, environmental surfaces at a minimum concentration of 1000 ppm (generally a dilution of 1 part household bleach solution to 50 parts water – e.g., 1/3 cup bleach mixed in 1 gallon of water). In areas of high levels of soiling and resistant surfaces, a concentration of 5000 ppm may be used (a dilution of 1 part bleach to 10 parts water, or 1 2/3 cup (25 tablespoons) of bleach mixed with 1 gallon water). Chlorine-based solutions should be freshly prepared to disinfect.
- Phenolic-based disinfectants (e.g., Pinesol® or Lysol®) are effective but may require concentrations of 2-4 times the manufacturer's recommendations for routine use.
- Heat disinfection (to 60°C or 140°F) has been suggested for items that cannot be subjected to chemical disinfectants such as chlorine bleach.
- Quaternary ammonium compounds, often used for sanitizing food preparation surfaces and disinfecting large surfaces such as countertops or floors, are *not* effective against noroviruses.

Admission/Transfer Recommendations for Shelters with an Outbreak of Norovirus

Limit new admissions until the outbreak is over. Educate staff, residents and visitors about norovirus and the risk of infection.

PERTUSSIS (WHOOPING COUGH)

Pertussis, also known as whooping cough, is a bacterial disease spread through the respiratory system. The cough that accompanies pertussis releases the bacteria into the air. Other symptoms of pertussis include runny nose and cough. Fever is usually absent. As the disease progresses, the characteristic cough comes in continuous bouts called paroxysms and may be followed by vomiting. Young children develop a high-pitched whooping sound. Infants may develop apnea (no breathing) during the bouts of coughing; pertussis is most severe when it occurs during the first 6 months of life, when infection can be fatal.

Pertussis can infect children under 1 year who are too young to have completed their primary immunizations. It can also infect children over 1 year who are incompletely immunized. Teenagers and adults can be infected due to declining immunity from immunizations received in childhood. Shelter dwelling concentrates vulnerable children and adults in small spaces potentially exposing them to this airborne communicable disease. When a resident or staff member is diagnosed with pertussis, everyone is considered exposed. Timely implementation of an infection control plan will help to minimize illness among residents and staff. When a diagnosis of pertussis has been made, shelter staff must report this immediately to the OHS Operations Supervisor (phone # 215- 686- 7183) and the PHMC Infection Control Coordinator (215-985-2562 or beeper # 215-308-8316).

Management of Cases of Pertussis

Residents with confirmed pertussis should be confined to their designated living area until they have completed 5 days of appropriate antibiotic treatment. Respiratory hygiene, such as use of tissues and covering coughs, should be encouraged.

The PHMC Infection Control Coordinator will verify all reported suspects or cases through the Philadelphia Department of Health, Division of Disease Control. Once a case has been verified, the Infection Control Coordinator will notify the OHS Operations Supervisor. The OHS Operations Supervisor will issue a Health Alert bulletin.

The Infection Control Coordinator will implement symptom screening, obtain specimens as necessary, provide vaccine and coordinate provision of preventive medication in accordance with current CDC recommendations. In addition, the coordinator will monitor residents and staff compliance with preventive medication and work with shelter staff to monitor the shelter's residents and staff for secondary cases.

Exclusion of Cases from Childcare, School, or Work

Children with pertussis will be excluded from childcare or school until they have completed 5 days of antibiotic treatment. Adults, including shelter staff, with pertussis disease will be excluded from work until they have completed 5 days of treatment.

Management of Contacts to Pertussis

All contacts of a case of pertussis must receive preventive antibiotic prophylaxis **regardless** of vaccination status. Contacts should receive chemoprophylaxis with any of the recommended treatment courses described below.

Current treatment and prophylaxis guidelines
The same treatment and treatment course is recommended for both the treatment of persons with pertussis, and for prevention of pertussis in their close contacts. Appropriate regimens are:

- Erythromycin 40-50 mg/kg/day in 4 divided doses daily for 14 days. (Adolescents and adults should receive 500 mg 4 times daily)
- Clarithromycin 15-20 mg/kg/day in 2 divided doses daily for 7 days. (Adolescents and adults should receive 500 mg twice daily)
- Azithromycin 10-12 mg/kg/day/ in a single dose on day #1; followed by 5 mg/kg/day for a total of 5 days. (Adolescents and adults should receive 500 mg as a single dose on day 1, then 250 mg daily on days 2-5).
- Trimethoprim-sulfamethoxazole (TMP-SMX) TMP, 8 mg/kg per day; SMX 40 mg/kg per day in 2 divided doses for 14 days. (Alternative medication for people with allergy to macrolides; contraindicated at <2 months of age)

All school-age children in Philadelphia should have documentation of 5 pertussis-containing vaccines prior to school entry at ages 5-6. Pertussis vaccine should be updated for children under the age of 7 years if:

a. The child has had fewer than 4 total doses of pertussis vaccine **OR**
b. The child received their 3rd dose of vaccine more than 6 months ago **OR**
c. The child received a 4th dose of vaccine more than 3 years previously.

Admission/Transfer Recommendations for Shelters with Pertussis

All admissions and transfers to a shelter with a suspect or confirmed case of pertussis will be suspended until all residents are screened for symptoms and prophylactic treatment is completed for those determined to be at risk for infection. Shelter restrictions will be imposed for a minimum of 5 days after initiation of treatment or prophylaxis.

After consultation with the Infection Control Coordinator, the Philadelphia Department of Health will determine when the shelter placement restrictions may be ended. The Infection Control Coordinator will notify the OHS Operations Supervisor and a Health Alert bulletin will be issued, lifting placement and transfer restrictions.

RUBELLA

Rubella is a very contagious vaccine-preventable disease that is spread from person-to-person by coughing, sneezing, or direct contact. Rubella causes slight fever and rash, but can cause severe malformations in unborn children if their mother is infected while pregnant. A person is immune to rubella if she or he has had the disease or has received rubella vaccine.

When a confirmed case of rubella occurs in a residential setting, everyone is considered exposed. Determining whether or not residents and staff are immune to rubella should occur as soon as possible. This is especially important for pregnant women who are not immune to rubella.

All staff and residents of homeless shelters in Philadelphia should be immune to rubella. Proof of immunity includes:

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

2. A copy of a laboratory report of a blood test indicating immunity to rubella.

3. New shelter residents who are 12 or more months of age and have no proof of immunity should be referred to a health care provider for immunization for MMR vaccine. 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 Rubella

Shelter staff must report confirmed or suspected cases of rubella to the Division of Disease Control, PDPH at 215-685-6740, Monday through Friday, 8:30 AM-5:00 PM. After hours, call 215-686-1776 and ask for the person on call for Disease Control.

Rubella is contagious 7 days before until 7 days after the rash appears. Any shelter staff or resident with suspected rubella should be evaluated immediately at a health care facility, and have a blood test to confirm or rule out the diagnosis. All efforts should be made to provide a separate living space within the shelter for suspected or confirmed cases of rubella and their families. Shelter residents with rubella should not return to work or school until 8 days after the onset of their rash.

Shelter staff with confirmed rubella must not return to work until after 8 days after the onset of their rash.

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

After receiving a report of suspected or confirmed case of rubella, PDPH Immunization Program staff will provide assistance in determining the immune status of residents and staff of the shelter and advise on the management of susceptible contacts.

Rubella vaccine will not provide protection following exposure to rubella. However, efforts should be made to immunize non-immune staff and residents 12 month of age or older. *Rubella vaccine should not be given to anyone who is pregnant or immune compromised - they must be referred to a health care provider if exposed.*

Admission/Transfer Recommendations for Shelters with a Case of Rubella

Residents with rubella 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 eighth day after onset of rash. Persons with rubella who are already residents should have their own room and avoid contact with residents who are not immune.

Residents with rubella should not be transferred to another shelter or discharged to a private home where any residents are not immune to rubella until the eighth day after onset of their rash.

If a confirmed case of rubella occurs in a shelter:

- No children less than 12 months of age, or residents who lack proof of rubella immunity, should be admitted to a shelter with a suspected case of rubella. Twenty-one days must pass after the onset of rash in the last confirmed case before infants and non-immune persons can be admitted.

- No exposed resident without proof of immunity or resident child less than 12 months of age should be transferred out of the shelter until 21 days after the onset or rash in the last case of rubella.

SCABIES

Scabies is a condition caused by a parasite (Sarcoptes scabiei, or the “itch mite”) that burrows into the skin of human beings, causing an intensely itchy, red and sometimes raised rash that tends to occur at areas of clothing-to-skin or skin-to-skin contact. The burrows may be seen around finger webs, folds of the anterior wrists and elbows, under arms, beltline, thighs, external genitals, and lower portion of the buttocks in adults. In infants, the head, neck, palms and soles may be involved. Itching is often more severe at night.

Scabies is transmitted by intimate personal contact. The mite can burrow under the skin in minutes after contact. Sharing intimate clothing or items, or sharing a bed immediately after an infested individual can also lead to spread. Unlike lice, scabies is not spread by contaminated items. The incubation period for people who have not been exposed to scabies previously is between 4-6 weeks.

Management of Cases

Infected children and adults should apply a topical medication over the entire body, below the head. In infants and young children, treatment of the head and neck area is recommended. Because the scabies rash results from a reaction to the mite, itching may not subside for several weeks despite successful treatment.

- The drug of choice is 5% permethrin cream, approved for all but infants < 2 months of age. Permethrin should be removed by bathing after 8-14 hours.
- Kwell (1% Lindane) lotion is recommended as an alternative treatment. Lindane should not be used in people with known seizure disorders, young infants, women who are pregnant or breastfeeding.
- Medication should be reapplied after washing hands each time, since hands are common sites of infestation. The nails should be cut before applying lotion.

Children should be excluded from school or childcare until treatment has been completed.

Management of Contacts and Prevention Measures

- Close contacts who have had prolonged skin-to-skin contact with cases should be treated prophylactically, like family members and other intimate contacts.
- All close contacts should be treated at the same time to prevent re-infestation.
- Bedding and clothing worn next to the skin during the 3 days before initiation of therapy should be laundered in a washer with hot water and dried on the hot cycle. Mites do not survive more than 3 days without skin contact.
- Clothing that cannot be laundered should be removed from the patient and stored for several days to a week to avoid re-infestation.
- Environmental disinfestation is not necessary.

Admission/Transfer Recommendations for Shelters with Scabies

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

SHIGELLA

Shigella is a bacterial disease of the intestine resulting in watery diarrhea. *Shigella* associated diarrhea is frequently accompanied by mucous and blood. Fever, nausea, vomiting and abdominal cramps may accompany the diarrhea.

Shigella is generally spread by hand-to-hand contact and/or contact with contaminated surfaces. People who have the infection shed the germ in the stool, often even after people's symptoms have improved. Inadequate hand washing after using the toilet facilities or changing diapers allows the bacteria to remain on the hands. Preparing food or providing physical care for children with contaminated hands allows the bacteria to be passed from person to person. It is highly contagious (easy to spread) because very few germs are needed to cause infection. (See the general recommendations in the infectious diarrhea policy for hygiene guidelines and the guidelines for effective hand washing.)

Symptoms of the disease can be seen within one to three days after exposure. Prompt recognition of symptoms and institution of antibiotic therapy helps to reduce transmission of this disease. Shelter staff who learn of a case of *Shigella* in a resident or staff member should report it immediately to the PHMC Infection Control Coordinator (beeper 215-308-8316) and/or the OHS Operations Supervisor (phone 215-686-7186). Either the PHMC coordinator or the OHS Supervisor will then report these conditions to the Division of Disease Control at the Philadelphia Department of Public Health.

Management of *Shigella* Cases

Shelter staff and residents, with symptoms of diarrhea **lasting longer than 72 hours**, must be evaluated by a medical care provider. Residents who do not have a medical care provider can receive care at any PDPH District Health Care Center or the Mary Howard Health Center (adults only) at 125 South 9th St. (phone# 215-592 4500).

The Division of Disease Control Philadelphia Department of Public Health will verify all reported cases of *Shigella* associated with the shelter, and work with the OHS Operations Supervisor and PHMC Infection Control Coordinator to develop an infection control plan. The Operations Supervisor will issue a Health Alert bulletin based on the recommendations of the Division of Disease Control.

Residents or staff with S*higella* should be treated with appropriate antibiotic therapy. Antibiotics will reduce the time an individual is contagious. The Infection Control Coordinator should follow cases until completion of therapy. Because antibiotic resistance is common with *Shigella*, treatment should be determined by a healthcare professional, and guided by culture results. DDC staff may be consulted to ensure appropriate therapy has been prescribed.

The following infection control measures should be instituted:

- Separate bathrooms for symptomatic residents. Shelter providers will set aside bathroom facilities for the use of confirmed cases and symptomatic residents. All confirmed cases of *Shigella* will continue to use these set-aside facilities until completion of therapy and 2 negative follow-up cultures

- Job reassignment for symptomatic residents and staff. Symptomatic kitchen staff and childcare workers will be reassigned to other duties that do not pose a risk for spreading *Shigella* to others. Food handlers with *Shigella* who cannot be re-assigned should be excluded from work until they have proof of two negative stool cultures collected 48 hours (or more) after antibiotics have been completed, and no less than 24 hours apart.
- Thorough hand washing (all residents and staff). The Infection Control Coordinator and shelter staff will instruct residents in hand washing technique. Shelter providers will ensure the availability of hand soap and paper towels in all bathrooms.

The OHS Operations Supervisor, and/or the PHMC Infection Control Coordinator will implement symptom screening, obtain stool cultures and arrange appropriate antibiotic therapy. Residents and staff will be interviewed daily to identify new symptomatic residents and establish the extent of transmission to close contacts within the shelter.

Exclusion From Daycare

Staff and residents providing daycare, or children attending daycare, who are suspected of having infection with S*higella*, may not work or attend daycare until:

a. Symptomatic individuals are determined to not have *Shigella* by a medical provider.
b. Confirmed cases have completed treatment and have 2 negative stool cultures collected 24 hours apart and at least 48 hours after the last dose of any antimicrobial therapy.

Work Restrictions

Staff and residents who are suspected of having infection with S*higella* may not work in food preparation or service or healthcare with direct patient contact until:

a. Symptomatic individuals are determined not to have *Shigella* by a medical provider**.**
b. Confirmed cases have completed treatment and have 2 negative stool cultures collected 24 hours apart and at least 48 hours after the last dose of any antimicrobial therapy.

Management of *Shigella* Contacts

If there is a child, adult or staff member with confirmed *Shigella* infection in the shelter, other residents with diarrhea and other symptoms suggestive of *Shigella* should have a stool culture obtained, ideally by their own healthcare professional, or through the Philadelphia Department of Public Health.

Close contacts of cases of *Shigella* should be presumed to be carrying the bacteria, whether or not they are symptomatic. Because close contacts are probable carriers, they must also be excluded from the following high-risk situations until they have proof of two negative stool cultures:

- Child care – either as staff or participant
- Health care – if direct patient contact
- Food handling or service

Close contacts are typically defined as household contacts, and in a shelter situation may be determined to be all of the persons who share a common bathroom, common kitchen, or other living quarters. DDC staff should be consulted to define close contacts at risk for asymptomatic infection in a specific shelter situation.

Admission/Transfer Recommendations for Shelters with *Shigella*

1. The Infection Control Coordinator will confer with the Division of Disease Control regarding new admissions. If there is wide spread disease throughout the shelter, the shelter should be closed to new admissions until the outbreak is over, as determined by the Division of Disease Control.
2. Symptomatic residents or confirmed cases may not be transferred to another shelter until cleared by the Infection Control Coordinator. They may be required to demonstrate proof of two negative stool cultures before transfer, unless they are transferred to a facility where they will have private, dedicated bathroom and diaper changing facilities.
3. Residents who do not have *Shigella* and are transferred to another shelter or leave shelter should be advised to seek medical attention if they develop symptoms.

After consultation with the Infection Control Coordinator, the Philadelphia Department of Health will determine when the shelter restrictions may be ended. The Infection Control Coordinator will notify the OHS Operations Supervisor and a Health Alert bulletin will be issued lifting any placement or transfer restrictions.

STAPH (MRSA) SKIN INFECTIONS

Staphylococcus aureus (staph) bacteria are a common cause of skin infections, particularly boils and abscesses that have pus or drainage. MRSA ("methicillin-resistant *Staph aureus*") is a type of staph that is resistant to certain antibiotics, including methicillin and related medications. Although infections from MRSA may be more difficult to treat than infections from regular staph, they are otherwise similar. In the past, MRSA occurred mainly in hospitals and nursing homes, where it caused serious infections like pneumonia, bloodstream infections and surgical wound infections. But now, it is more common in community settings such as schools and among groups of people who have frequent close contact (e.g., families, athletic teams, inmates in jails). Community associated MRSA infections most commonly present as skin pustules or boils.

MRSA, like all staph infections, is spread from person to person through direct contact with infected skin or contaminated items that are shared. Good personal hygiene is the best way to prevent and control the spread of MRSA.

Management of *Staph* (including MRSA) Skin Infections

Most MRSA infections that occur in the community are skin infections that appear as pustules or boils, which often are red, swollen, painful, and have pus or other drainage. These skin infections often occur at sites of visible skin trauma, such as cuts and abrasions, and areas of the body covered by hair (e.g., back of neck, groin, buttock, armpit, beard area of men).

Shelter staff who observe residents with open skin wounds or boils should refer them to the shelter staff or the PHMC coordinator. Not all skin infections are due to MRSA. A skin lesion that is one centimeter or larger in size should be referred to a medical care provider for diagnosis and treatment. All persons with lesions that appear to be open, uncovered, and/or draining pus, should also be referred to a medical provider for evaluation.

Skin infections that are due to Staph or MRSA may respond to simple drainage of the wound or boil. Antibiotic treatment may also be necessary. People with bacterial infections of the skin that are caused by Staph should:

- Cover skin lesions or skin trauma such as cuts and abrasions with a clean and dry bandage that is taped on all four sides, until healed.
- Avoid sharing personal items (towels, razors) that come into contact with bare skin. Use a barrier (clothing, towel) between skin and equipment that is shared between people (e.g., gym equipment such as weight-training benches).

Shelter healthcare staff should wear disposable gloves when examining skin lesions or providing wound care. Gloves should be used when changing bandages and soiled bandages should be disposed of in infectious waste containers or placed inside a plastic zip lock bag before being discarded.

In general, single cases of MRSA infection do not need to be reported to PDPH.

Management of Two or More Cases of Staph/MRSA in a Shelter

MRSA infections are extremely common in the community: more than one case in a shelter at any given time does not necessarily mean that transmission occurred within the shelter. However, transmission is extremely common among families, and others who have direct skin contact or who share common personal items (e.g., towels, linens, clothing).

Two or more cases of MRSA from the same shelter (who are not from the same household) should be reported to the Department of Public Health. PDPH will work with shelter staff to verify that the cases are actually staph infections, and to investigate whether the cases may have resulted from spread within the shelter. Staff in the Division of Disease Control will assist in providing additional guidance with respect to prevention and control as needed.

Management of Contacts - Prevention of Staph/MRSA Infections in Shelters

Contacts to MRSA infections require no special treatment, although a close contact who develops a skin lesion that appears to be an infection should be evaluated by a medical provider. The spread of Staph infections, including MRSA, can be prevented by the following measures:

- Practicing good hygiene (washing hands with soap and water or using an alcohol-based sanitizer, showering after exercise or group physical activities).
- Covering skin lesions or skin trauma such as cuts and abrasions with a clean and dry bandage until healed.
- Avoiding sharing personal items (towels, razors) that come into contact with bare skin. Use a barrier (clothing, towel) between skin and equipment that is shared between people (e.g., gym equipment such as weight-training benches).

Recommendations for Facility Cleaning

Because staph bacteria are primarily carried on people, there are no routine disinfection measures that are recommended for shelters to eliminate staph from the environment. The spread of MRSA is mainly controlled through personal hygiene measures such as good hand hygiene and the covering of infections.

- In general, common-use personal items (e.g., towels) should not be shared by residents, particularly by a resident with a skin infection.
- Cleaning of shared surfaces/equipment is recommended in settings where a risk for direct skin contact is identified (e.g. gym equipment, athletic gear, etc.), particularly when there is possible MRSA spread among users of the shared facility or equipment. DDC staff should be consulted to determine if the shelter requires any special cleaning or disinfection procedures.
- If there is evidence of MRSA transmission in the shelter that appears to be related to contamination of shared items or facilities, the following disinfection procedures are advised:

    a. Contaminated surfaces that are non-porous should be cleaned using an EPA-registered disinfectant or dilute bleach solution (1:100 dilution or 500-615 ppm).

b. Wood and other porous surfaces that require disinfection should be cleaned with a 1:10 dilution of household chlorine bleach. If commercial products are used for disinfection, the label should be checked to make sure the product is suitable for the type of surface being treated, and that the product label specifies *Staphylococcus aureus* and other bacteria.

c. Gloves should be worn when cleaning. For additional information regarding cleaning and disinfection recommendations please contact the Division of Disease Control. A list of EPA-registered products effective against MRSA can be found at http://epa.gov/oppad001/chemregindex.htm.

In general, disease control measures for MRSA should focus on hygiene and eliminating opportunities for contact with infected skin and environmental disinfection of shared equipment that appears to be responsible for disease spread. Consult the Division of Disease Control, PDPH for recommendations regarding cleaning measures that are appropriate.

Admission/Transfer Recommendations for Shelters with Staph/MRSA Infections

There are no specific recommendations for limiting admissions or transfers to or from shelters with Staph or MRSA infections. Efforts should be made to recognize skin infections in both residents and staff to ensure that wounds are covered appropriately and that all shelter residents observe good hygiene practices.

VARICELLA (CHICKENPOX and SHINGLES)

Chickenpox and shingles are caused by the varicella zoster virus. Chicken pox is a vaccine-preventable, generalized vesicular (blistering) rash illness that is spread by coughing, sneezing, or direct contact. Chickenpox can be spread 1-2 days before the rash appears until all skin lesions have crusted over. A person is immune to chickenpox if she or he has had the disease or received at least 2 doses of the varicella (chickenpox) vaccine.

Shingles ("varicella zoster") is a localized vesicular rash that occurs in a person who has already had chickenpox. It is caused by a re-activation of the varicella virus that remains inside the body's nerve cells after someone has recovered from chickenpox. People who have never had chickenpox can develop chickenpox after exposure to a person with shingles.
Shingles can be spread through direct contact with the shingles rash, and occasionally through the air. The rash is contagious until it has crusted over.

When a confirmed case of chickenpox or shingles occurs in a residential setting, everyone is considered exposed. Timely implementation of an infection control plan will help to minimize illness among residents and staff. Shelter staff must report confirmed or suspected cases of varicella or shingles (resident or staff member) to the Office of Homeless Services (OHS) Operations Supervisor (phone 215-686-7186) and/or the Philadelphia Health Management Corporation (PHMC) Infection Control nurse (phone 215-985-2562, beeper 215-308-8316), who will report the case(s) to the Division of Disease Control, Philadelphia Department of Public Health.

Routine Vaccination

- Shelter staff – The Philadelphia Department of Public Health (PDPH) recommends varicella vaccine (Varivax) for all shelter staff who do not meet the immunity criteria (see below) and are not pregnant or immunocompromised.
- Homeless families seeking shelter placement will see the Immunization Nurse during the intake process at OHS. All children from the age of 1 to 18 years of age will be immunized with Varivax if they do not have documentation of age-appropriate varicella immunization. Varivax will be offered to all parents who also do not meet the evidence of immunity criteria.

These actions will decrease the possibility of transmission should a case occur in a residential site.

Management of Cases of Varicella (Chickenpox or Shingles)

Residents with a rash illness must be evaluated by a medical care provider and return to shelter with a written diagnosis for the rash. Residents without a medical care provider can be referred to the Philadelphia Department of Public Health District Health Centers or the Mary Howard Health Center (adults only) at 125 S. 9th Street (phone 215-952-4500). Prompt administration of antiviral medication (i.e., begun within 48 hours of rash onset) can decrease shedding of virus, and is recommended.

All confirmed or suspected cases will be verified by the Infection Control Coordinator through the PDPH Division of Disease Control. The Division of Disease Control can be reached by telephone at 215-685-6740, Monday through Friday, 8:30 am – 5:00 pm; after hours division staff can be reached through the City Hall operator at 215-686-1776. When a case has been

verified, the Operations Supervisor will issue a Health Alert bulletin to the shelter, based on the recommendations of the Division of Disease Control staff.

Families with suspected or confirmed cases of chickenpox or shingles will be isolated in their own room. Meals will be eaten in the family's room. When there is no attached bathroom to the family's room, a shower stall should be set aside for use by the index case. Isolation will be observed until all chickenpox or shingles lesions have crusted. Shelter residents and shelter staff with confirmed chickenpox or shingles should not return to work or school until all lesions have crusted. Resident with shingles should be instructed to keep their rash covered, and use separate bathing facilities, if possible, until all lesions have crusted.

The Infection Control Nurse will provide active surveillance for secondary cases until 42 days after the last case of chickenpox. After consultation with the Philadelphia Department of Public Health, the Infection Control Coordinator will notify the OHS Operations Supervisor and another Health Alert bulletin will be issued to the shelter, lifting admission and transfer restrictions.

Management of Contacts to Varicella (Exposure Management)

If a confirmed case of varicella or shingles occurs, shelter staff and residents will be questioned by the Infection Control Nurse regarding evidence of immunity. People who are not immune and are pregnant or immune compromised must be identified and referred to a health care provider. Vaccination will be considered for residents and staff who are not immune, provided they are not pregnant or immune compromised. Evidence of immunity will be determined by the following:

- Documentation of age-appropriate vaccination with a varicella containing vaccine (2 doses one month apart)
- Prior diagnosis of chickenpox or shingles, verified by a physician or other healthcare provider
- Laboratory confirmation of immunity

Vaccine

Varicella vaccine, if given within 5 days of exposure, may provide protection for non-immune residents and staff who have been exposed to a person with varicella.

- Shelter residents and staff not meeting the immunity criteria or who haven't received 2 doses of varicella vaccine before exposure should receive vaccine.
- Shelter residents or staff unsure of their vaccine history before exposure should receive varicella vaccine
- Varicella vaccine should not be given to anyone who is pregnant or immune compromised (i.e., CD4 count < 200 in the setting of HIV infection)

Immune Globulin

Exposed, non-immune residents or staff who are immune compromised or pregnant may be candidates to receive "Varizig," an immune globulin product containing antibody to varicella virus. This product must be administered within 96 hours of exposure to prevent or reduce the seriousness of varicella infection.

Requests for Varizig must be made to the PDPH Varicella Active Surveillance Program within the Division of Disease Control, who will determine if it is indicated. The product must be requested from the Centers for Disease Control and Prevention, in Atlanta, Georgia.

Additional recommendations for exposed staff or residents

- Shelter staff, OHS employees, and shelter-based employees of other agencies who are pregnant or immune compromised and haven't received Varizig may be evaluated by antibody titer. Until titer results are known, these employees may not return to the affected shelter until admission restrictions are lifted.
- Non-immune residents who do not receive the indicated protection (i.e., vaccination or immune globulin when indicated) should be isolated until 42 days after the onset of the last case.

Admission/Transfer Recommendations for Shelters with a Confirmed Case of Varicella

If a confirmed case of chickenpox or shingles occurs in a shelter, the following persons should not be admitted to the shelter:

- Pregnant women without documentation of 2 doses of previous vaccine
- Clients who are immune compromised and who have no proof of immunity
- Children less than 1 year of age born to mothers without documented immunity

New admissions to the affected shelter will need to meet evidence of the immunity criteria as listed above, or receive varicella vaccine at OHS prior to placement. Children under the age of 1 year can be admitted to shelter if the birth mother meets the evidence of immunity criteria. Limited admissions will be in place while the Infection Control Nurse monitors the shelter for additional cases and vaccinates susceptible residents and staff. Admissions will be limited for 42 days after rash onset in the last case of chickenpox.

Homeless clients WITH chickenpox 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 all lesions have crusted over.

Transfer policy **from** affected shelter to another shelter

- Residents meeting evidence of immunity criteria may be transferred. Previously non-immune residents who have received vaccine within 5 days of rash onset of the case may also be transferred.
- Families or single adults WITH chickenpox or shingles should not be transferred until all lesions have crusted over.
- The following persons are not eligible for transfer until 42 days after the last case of chickenpox:
    - Any exposed, non-immune person not vaccinated within 5 days after the onset of rash in the case
    - Any resident receiving Varizig.

Transfer policy **to** affected shelter from another shelter

- Residents meeting the evidence of immunity may be transferred to the affected shelter.
- Previously non-immune residents who have received 2 doses of varicella vaccine may be transferred to the affected shelter.

Discharges

- Residents with chickenpox or shingles may be discharged at any time to a self-contained independent living environment (e.g., house, apartment, etc.)

Delayed Recognition or Reporting of Cases

For all cases reported beyond 5 days after the rash first appears, the following will apply:

1. Admission criteria are the same as for timely reporting of cases
2. All susceptible residents and staff will be vaccinated and counseled that the vaccine may not prevent disease
3. Residents who have evidence of immunity and previously non-immune residents who have received the vaccine are eligible for transfer.