



Pat Quinn, Governor

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TO: Local Health Department Administrators and Infectious Diseases Program Staff,
Regional Offices of the Illinois Department of Public Health, Infection Control
Professionals/Infection Preventionists, Long-Term Care Facilities, Assisted
Living Facilities, Supportive Living Facilities

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DATE: January 10, 2012

SUBJECT: Guideline for the Prevention and Control of Viral Acute Gastroenteritis Outbreaks
in Illinois Long-Term Care Facilities, 2012

The purpose of the memo is to provide you with a copy of the Illinois Department of Public Health (IDPH) Guideline for the Prevention and Control of Viral Acute Gastroenteritis Outbreaks in Illinois Long-Term Care Facilities, 2012. The IDPH Communicable Disease (CD) Control Section developed this guideline to provide recommendations for local health departments and long-term care facilities (LTCF) so that LTCFs can implement appropriate measures to prevent and control viral acute gastroenteritis outbreaks. This guideline replaces and supersedes the IDPH guideline “Control of Viral Gastroenteritis Outbreaks in Illinois Long-Term Care Facilities, 2006” and is based on updated Norovirus outbreak management and disease prevention guidelines published in 2011 by the U.S. Centers for Disease Control and Prevention (CDC).

The guideline recommendations are applicable for the prevention and control of all types of viral acute gastroenteritis outbreaks in LTCFs, including outbreaks caused by Norovirus. Recommendations for LTCFs are found in Section 2 and recommendations for local health departments are found in Section 3. Outbreak definitions are found in Section 2.A.1.

The guideline is posted on the IDPH Intranet “CD Topics A-Z” Web pages under “A.G.E. Outbreaks” and “Norovirus.” Janette Candido and Kate Kelly-Shannon in the IDPH CD Control Section Central Office (telephone number 217-782-2016) are the primary points of contact for local health departments for surveillance and investigation of viral acute gastroenteritis outbreaks in an institutional setting including LTCFs, daycare centers and schools.

Thank you for your continued surveillance and reporting of viral acute gastroenteritis outbreaks in the institutional settings. Any comments or suggestions are appreciated.

**ILLINOIS DEPARTMENT OF
PUBLIC HEALTH GUIDELINE FOR
THE PREVENTION AND
CONTROL OF VIRAL ACUTE
GASTROENTERITIS OUTBREAKS
IN ILLINOIS LONG-TERM CARE
FACILITIES, 2012**

Communicable Disease Control Section

Division of Infectious Diseases

Illinois Department of Public Health

January 2012

ILLINOIS DEPARTMENT OF PUBLIC HEALTH GUIDELINE FOR THE PREVENTION AND CONTROL OF VIRAL ACUTE GASTROENTERITIS OUTBREAKS IN ILLINOIS LONG-TERM CARE FACILITIES, 2012

This guideline replaces and supersedes the Illinois Department of Public Health (IDPH) guideline “Control of Viral Gastroenteritis Outbreaks in Illinois Long-Term Care Facilities, 2006” and is based upon updated norovirus outbreak management and disease prevention guidelines published in 2011 by the U.S. Centers for Disease Control and Prevention (CDC). NOTE: Refer to CDC’s Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings, 2011, available at <http://www.cdc.gov/hicpac/pdf/norovirus/Norovirus-Guideline-2011.pdf> and to CDC’s Updated Norovirus Outbreak Management and Disease Prevention Guidelines, MMWR 2011; 60 (No. RR- 3), available at <http://www.cdc.gov/mmwr/pdf/rr/rr6003.pdf>.

The IDPH Communicable Disease (CD) Control Section developed this guideline to provide basic recommendations and resources for local health departments and long-term care facilities (LTCF) so that LTCFs can implement appropriate measures to prevent and control viral acute gastroenteritis (A.G.E.) outbreaks. Additional recommendations as indicated by the specific circumstances of an A.G.E. outbreak may also be issued by the local health department or IDPH.

For the purposes of this guideline, LTCF includes Assisted Living Facilities, Community Living Facilities (i.e., 77 Illinois Administrative Code 370), Illinois Veterans Homes, Intermediate Care Facilities for the Developmentally Disabled, Intermediate Care Nursing Facilities, Long Term Care for Under Age 22 Facilities, Shared Housing Establishments (i.e., 77 Illinois Administrative Code 295), Shelter Care Facilities, Skilled Nursing Facilities, Supportive Residences (i.e., 77 Illinois Administrative Code 385), and Supportive Living Facilities (i.e., 89 Illinois Administrative Code 146). This guideline is also intended for use by inpatient rehabilitation facilities, long-term psychiatric hospitals, and senior living residential facilities. In this guideline, local health department refers to the local health department in whose jurisdiction the LTCF is located. If there is no local health department for a jurisdiction, IDPH will assume the local health department role in the A.G.E. outbreak investigation.

The recommendations in this guideline are applicable for the prevention and control of all types of viral A.G.E. outbreaks in LTCFs. Supplementary information about norovirus is provided because norovirus is the predominant cause of A.G.E. outbreaks (Please refer to Sections 4 and 5). This guideline contains the following nine Sections:

- Section 1: Acute Gastroenteritis (A.G.E.) Overview
- Section 2: Recommendations for Long-Term Care Facilities
- Section 3: Recommendations for Local Health Departments
- Section 4: Norovirus Information for Illinois Healthcare Professionals
- Section 5: Illinois Norovirus Epidemiology
- Section 6: Line List Examples
- Section 7: Facts About Viral Acute Gastroenteritis
- Section 8: Visitor Signage Example
- Section 9: Worksheet Example

SECTION 1. ACUTE GASTROENTERITIS (A.G.E.) OVERVIEW

The main symptoms of viral A.G.E. are diarrhea and/or vomiting. A.G.E. transmission occurs through exposure to direct or indirect fecal contamination found on fomites, by ingestion of fecally-contaminated food or water, or by exposure to aerosols from vomiting persons. Noroviruses are the most common etiological agent of A.G.E. and often are responsible for outbreaks in a wide spectrum of community and healthcare settings; however, other viruses (e.g., adenoviruses, astroviruses, rotaviruses, sapoviruses) also can cause A.G.E. outbreaks. A.G.E. outbreak prevention can be challenging for LTCFs because these viruses may be introduced into the LTCF via ill staff, visitors, or newly admitted residents. Despite these challenges, A.G.E. outbreaks in LTCFs call for prompt implementation of strict control measures including, but not limited to, isolation of symptomatic residents, exclusion of affected staff, and enhanced cleaning and disinfection.

In Illinois, norovirus outbreaks are classified as one of two types: confirmed or suspect. A confirmed norovirus outbreak is one in which norovirus is identified from specimens collected from at least two of the cases; a suspect norovirus outbreak is one that is not confirmed but ill persons have clinically compatible illness (i.e., acute gastroenteritis).

SECTION 2. RECOMMENDATIONS FOR LONG-TERM CARE FACILITIES

2.A. AWARENESS OF A.G.E. OUTBREAK OCCURRENCE AND NOTIFICATION

2.A.1. Use the following definitions to determine if an A.G.E. outbreak is occurring:

- Diarrhea: three or more loose stools in a 24-hour period when the occurrence is not readily explained by other known pre-disposing medical factors.
- Vomiting: two or more episodes of vomiting in a 24-hour period when the occurrence is not readily explained by other known pre-disposing medical factors.
- Acute gastroenteritis (A.G.E.) case: a person (resident or staff) with diarrhea and/or vomiting.
- Unit: a functional care unit of the LTCF (e.g., floor, hall, neighborhood, wing).
- A.G.E. outbreak: two or more A.G.E. cases occurring in a unit with initial dates of onset within 48 hours of each other. NOTE: When an A.G.E. outbreak occurs in one unit of a LTCF it is common for A.G.E. cases to develop in other units. A.G.E. cases that occur in other units are included in the initial outbreak unless sufficient time has passed to indicate the occurrence of a new outbreak (refer to “Duration of A.G.E. outbreak”).
- Duration of A.G.E. outbreak: The time period beginning with the day the index (first) case associated with the outbreak developed A.G.E. symptoms until 96 hours after the last A.G.E. case’s onset of symptoms. (Note: Two incubation periods equal 96 hours.)

2.A.2. Ensure each unit of the LTCF immediately reports to the facility’s Infection Preventionist/Infection Control Professional and/or Director of Nursing/designee any resident(s) or staff with A.G.E. symptoms.

2.A.3. Begin active case finding when an A.G.E. outbreak is detected. Implement line lists to track A.G.E. cases in residents and staff.

2.A.3.a. Refer to Section 6 for line list examples.

2.A.4. Follow facility protocol for notification of LTCF Medical Director when an A.G.E. outbreak occurs.

2.A.5. Report the A.G.E. outbreak as soon as possible during normal business hours, but within 24 hours (i.e., within eight regularly scheduled business hours after identifying the A.G.E. outbreak), to the local health department AND the IDPH LTC Division or applicable State agency (e.g., Illinois Department of Healthcare and Family Services). The local health department will then report to the IDPH CD Control Section and obtain an outbreak number as soon as possible, but within 24 hours. NOTE: If there is no local health department for a jurisdiction, IDPH will assume the local health department role in the A.G.E. outbreak investigation. The IDPH CD Control Section telephone number is (217)782-2016.

2.A.6. During an A.G.E. outbreak, provide regular updates to the local health department for the duration of the outbreak.

2.A.6.a. Notify the local health department whenever any of the following criteria is met:

- Percentage of A.G.E. cases exceeds 25% of the LTCF average daily census
- Ongoing occurrence of new A.G.E. cases during the outbreak for more than 14 days after the index (first) case onset
- Two or more A.G.E. cases are hospitalized
- Death of an A.G.E. case

2.B. BASIC INFECTION CONTROL PRACTICES

2.B.1. Avoid exposure to vomitus or diarrhea by following Standard Precautions during all resident encounters facility-wide. Use a surgical or procedure mask to prevent exposure to aerosolized vomitus and/or feces. Masks and eye protection or a full face shield are recommended to protect the mucous membranes of the eyes, nose, and mouth during procedures and resident-care activities that are likely to generate splashes or sprays. Refer to pages 77-83 of the CDC/Healthcare Infection Control Practices Advisory Committee (HICPAC) 2007 “Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings” for Standard Precautions recommendations (<http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>).

2.B.2. In addition to Standard Precautions, place residents on Contact Precautions if they have symptoms consistent with A.G.E. Wear a gown and gloves when in contact with, or caring for, an affected resident. Refer to pages 84-86 of the CDC/HICPAC 2007 “Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings” for Contact Precautions recommendations (<http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>).

2.B.2.a. Limit the transport and movement of these residents outside of their room(s) to medically-necessary purposes.

2.B.2.b. Maintain Contact Precautions for a minimum of 48 hours after the resolution of A.G.E. symptoms to prevent further exposure of susceptible persons.

2.B.2.c. Single occupancy rooms are recommended for residents on Contact Precautions. When single occupancy rooms are not available, as feasible, efforts should be made to cohort (group) residents with A.G.E. symptoms in the affected unit(s) and to separate them from asymptomatic residents. The benefit of moving exposed but asymptomatic residents (e.g., exposed to a symptomatic roommate) is uncertain since there is an increased likelihood they may already be infected. Exposed but asymptomatic residents should not be moved from an affected unit to an unaffected unit.

2.B.3. During an A.G.E. outbreak, exclude non-essential staff, students, and all volunteers from working in the affected unit(s) for the duration of the outbreak.

2.B.4. During an A.G.E. outbreak, consider suspending group activities (e.g., dining or social events) in the affected unit(s) for the duration of the outbreak.

2.C. COHORTING

2.C.1. Establish protocols for staff and resident cohorting (grouping) in the event of an A.G.E. outbreak. As feasible, on a shift-by-shift basis, ensure staff care for one resident cohort on an affected unit and do not move between resident cohorts or units. Resident cohorts may include symptomatic, exposed but asymptomatic, or unexposed resident groups.

2.C.2. During an A.G.E. outbreak, dependent upon facility characteristics, approaches for cohorting residents may include placing symptomatic residents in multi-occupancy rooms, or designating resident care areas or contiguous sections within the facility.

2.D. DIAGNOSTIC TESTING

2.D.1. Because noroviruses are the predominant cause of gastroenteritis outbreaks worldwide, in addition to other diagnostic tests ordered (e.g., stool specimen testing for bacterial pathogens), norovirus testing should be ordered when an A.G.E. outbreak occurs.

2.D.1.a. Prior to the occurrence of an A.G.E. outbreak, the LTCF should work with its laboratory provider to identify a commercial clinical laboratory that can perform norovirus testing because this type of testing might not be routinely performed at some commercial clinical laboratories.

2.D.1.b. Specimen collection for norovirus testing should begin as early as possible during the acute phase of illness (i.e., within 48-72 hours after A.G.E. case onset of symptoms) while stools are still liquid or semisolid.

2.D.2. During an A.G.E. outbreak, report to the local health department the results of any stool specimen testing of A.G.E. cases.

2.D.3. During an A.G.E. outbreak, the local health department may request stool specimen submission for norovirus testing at the IDPH Laboratory (refer to Section 3.D.).

2.E. ENVIRONMENTAL CLEANING AND DISINFECTION

2.E.1. Follow recommendations in the CDC/HICPAC 2008 “Guideline for Disinfection and Sterilization in Healthcare Facilities” (http://www.cdc.gov/hicpac/pdf/guidelines/Disinfection_Nov_2008.pdf) and the CDC/HICPAC 2003 “Guidelines for Environmental Infection Control in Health-Care Settings” (<http://www.cdc.gov/mmwr/PDF/rr/rr5210.pdf>).

2.E.2. Perform routine cleaning and disinfection of frequently touched environmental surfaces and equipment. Frequently touched surfaces include, but are not limited to, commodes, toilets, faucets, hand/bedrails, telephones, door handles, computer equipment, and kitchen preparation surfaces.

2.E.3. Clean and disinfect surfaces starting from the areas with a lower likelihood of contamination (e.g., tray tables, counter tops) to areas with highly contaminated surfaces (e.g., toilets, bathroom fixtures). Change mop heads when a new bucket of cleaning solution is prepared, or after cleaning large spills of vomitus or fecal material.

2.E.4. Clean and disinfect shared equipment between residents using Environmental Protection Agency (EPA)-registered products with label claim for use in healthcare. Follow the manufacturer's recommendations for dilution, application, and contact time.

2.E.5. During an A.G.E. outbreak, increase the frequency of cleaning and disinfection of resident care areas and frequently touched surfaces in the affected unit(s) for the duration of the outbreak (e.g., increase unit-level cleaning to twice daily, with frequently touched surfaces cleaned and disinfected three times daily using EPA-registered products for healthcare settings).

2.E.6. During an A.G.E. outbreak, disinfect potentially contaminated environmental surfaces in the affected unit(s) for the duration of the outbreak using a sodium hypochlorite (bleach) solution or product with a minimum concentration of 1,000 ppm (1:50 dilution of household bleach [5.25%]) or other EPA-registered product with activity against norovirus. Refer to the EPA list of products with activity against norovirus (http://www.epa.gov/oppad001/list_g_norovirus.pdf).

2.E.6.a. Quaternary ammonium compounds should not be used for disinfecting these surfaces in the affected unit(s) because noroviruses are non-enveloped viruses and most quaternary ammonium compounds (which act by disrupting viral envelopes) do not have significant activity against them.

2.E.6.b. Consider avoiding the use of upholstered furniture and rugs or carpets in resident care areas, as these objects are difficult to clean and disinfect completely. Immediately clean soilage, such as vomitus or fecal material, from upholstery and rugs or carpets, using the manufacturer's recommendations for cleaning and disinfection of these items. In the absence of manufacturer's recommendations, remove visible debris (soilage) with a double-layer absorbent material and steam clean the contaminated area at 158 degrees Fahrenheit (F) for five minutes or 212 degrees F for one minute. Discard disposable items in a sealed plastic bag to minimize particle dispersal.

2.E.7. Use Standard and Contact Precautions while working in the room of a resident on Contact Precautions. Persons cleaning environmental surfaces heavily contaminated with vomitus or feces should wear surgical masks as well to prevent transfer of viruses to their oral mucosa.

2.E.8. Double bagging, incineration, or modifications for laundering are not indicated for handling or processing soiled linen. Standard Precautions are appropriate for laundry workers handling soiled resident linens.

2.F. FOOD HANDLING

2.F.1. Ensure food handlers comply with the IDPH Food Service Sanitation Code, 77 Illinois Administrative Code 750, including the requirement to avoid direct contact (i.e., using bare hands) with ready-to-eat food whenever possible.

2.F.2. Persons who assist residents at meal time should wash their hands prior to providing such assistance.

2.F.3. Disposable silverware and dishware are not required. Silverware and dishware may undergo normal processing and cleaning using standard procedures.

2.F.4. During an A.G.E. outbreak, consider suspending self-service at food and beverage bars for the duration of the outbreak.

2.F.5. During an A.G.E. outbreak, remove all shared or communal food items in the affected unit(s) for the duration of the outbreak.

2.G. SICK LEAVE POLICY

2.G.1. Develop and adhere to sick leave policies for staff, including food handlers and agency staff, students, and volunteers who have symptoms consistent with A.G.E. Exclude ill persons until a minimum of 48 hours after the resolution of A.G.E. symptoms. When the excluded person(s) returns to work, reinforce the importance of performing frequent hand hygiene.

2.H. HAND HYGIENE

2.H.1. Ensure food handlers perform proper hand washing as required by the IDPH Food Service Sanitation Code, 77 Illinois Administrative Code 750.

2.H.2. Ensure resident-care staff, including agency staff, students, and volunteers, perform appropriate hand hygiene during all resident care encounters facility-wide. Refer to the CDC/HICPAC 2002 “Guideline for Hand Hygiene in Health-Care Settings” for hand hygiene recommendations (<http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>).

2.H.3. During an A.G.E. outbreak, use soap and water for hand hygiene after providing care or having contact with residents with A.G.E. for the duration of the outbreak.

2.H.4. During an A.G.E. outbreak, actively promote adherence to hand hygiene among staff, residents, and visitors in the affected unit(s) for the duration of the outbreak.

2.I. INFORMATION AND EDUCATION

2.I.1. Provide information and education to staff, including food handlers and agency staff, students, volunteers, residents, and visitors about A.G.E. symptoms, preventing infection, and modes of transmission upon the recognition and throughout the duration of an A.G.E. outbreak.

2.I.1.a. Refer to Section 7 for a fact sheet about viral A.G.E. that may be used to provide information and education.

2.I.2. Consider providing educational sessions and making resources available on the prevention and management of viral A.G.E. before outbreaks occur, as part of annual staff trainings, and when sporadic cases are detected.

2.I.2.a. Consider providing supplementary information about norovirus because, to date, norovirus is the predominant cause of A.G.E. outbreaks in LTCFs.

2.I.2.b. Refer to Section 4 for norovirus information that may be used by the LTCF administrative team as a resource to facilitate their development of educational sessions.

2.J. RESIDENT TRANSFER AND UNIT CLOSURE

2.J.1. Implement systems to designate residents with symptomatic A.G.E. and to notify receiving healthcare facilities or personnel prior to transfer of such residents within or between facilities.

2.J.2. During an A.G.E. outbreak, consider closing the affected unit(s) to new admissions or transfers for the duration of the outbreak.

2.K. VISITORS

2.K.1. Establish visitor policies for A.G.E. outbreaks.

2.K.1.a. Refer to Section 8 for signage that may be used to notify visitors of the outbreak.

2.K.2. During an A.G.E. outbreak, restrict non-essential visitors from the affected unit(s) for the duration of the outbreak.

2.K.2.a. Screen essential visitors and exclude those with A.G.E. symptoms until a minimum of 48 hours after the resolution of A.G.E. symptoms.

2.K.2.b. Ensure essential visitors of A.G.E. residents comply with hand hygiene and Contact Precautions recommendations.

SECTION 3. RECOMMENDATIONS FOR LOCAL HEALTH DEPARTMENTS

3.A. AWARENESS OF A.G.E. OUTBREAK AND NOTIFICATION

3.A.1. Use definitions in Section 2.A.1. to determine if an A.G.E. outbreak is occurring at a LTCF.

3.A.2. Ensure the LTCF has ready access to the “Illinois Department of Public Health Guideline for the Prevention and Control of Viral Acute Gastroenteritis Outbreaks in Illinois Long-Term Care Facilities, 2012.”

3.A.2.a. Provide a copy of the guideline as necessary.

3.A.3. During an A.G.E. outbreak, collect relevant demographic and epidemiologic information.

3.A.3.a. Refer to Section 9 for an example of a worksheet that may be used to collect preliminary information about the outbreak. Line list examples are provided in Section 6.

3.A.4. Report the A.G.E. outbreak to the IDPH CD Control Section via telephone [(217)782-2016] or electronic means (once available) and obtain an outbreak number as soon as possible during normal business hours, but within 24 hours (i.e., within 8 regularly scheduled business hours after receiving notification of the A.G.E. outbreak by the LTCF). The IDPH CD Control Section will inform the IDPH LTC Division or applicable State agency (e.g., Illinois Department of Healthcare and Family Services) of the outbreak number.

3.A.4.a. Unless directed to do so by the IDPH CD Control Section, do **not** enter the A.G.E. cases into I-NEDSS.

3.A.5. During an A.G.E. outbreak, conduct an epidemiologic assessment to determine whether foodborne/waterborne or person-to-person transmission is occurring.

3.A.5.a. Use the following criteria to determine likely mode of transmission:

- Foodborne/waterborne transmission: A.G.E. case onsets occur primarily within one incubation period (i.e., 12-48 hours), with cases occurring throughout the facility. Often, a food handler(s) may report A.G.E. illness prior to residents.
- Person-to-person transmission: A.G.E. outbreak begins with a small number of A.G.E. cases followed by additional cases that occur during subsequent incubation periods. If cases are occurring only on one or two units in a large LTCF, this may be indicative of person-to-person transmission.

3.B. INTERVENTION DETERMINATION

3.B.1. Determine if the LTCF needs clarification about the guideline recommendations and consult with the IDPH CD Control Section as indicated.

3.B.2. During an A.G.E. outbreak, determine whether kitchen inspection is warranted based upon epidemiologic assessment and proceed accordingly. Inform the IDPH CD Control Section of inspection findings or that inspection was not warranted at present time.

3.B.3. During an A.G.E. outbreak, promptly implement recommendations issued by IDPH.

3.B.4. Refer to the IDPH Intranet for a tiered response protocol used to guide response activities (refer to “Investigation of Viral Causes of Acute Gastroenteritis in Long-Term Care Facilities and Schools in Illinois”).

3 C. COMMUNICATION

3.C.1. During an A.G.E. outbreak, maintain ongoing communication with the LTCF to assess progression and resolution of the outbreak.

3.C.2. During an A.G.E. outbreak, promptly notify the IDPH CD Control Section whenever any of the following criteria is met and implement additional recommendations issued by IDPH:

- Percentage of A.G.E. cases exceeds 25% of the LTCF average daily census
- Ongoing occurrence of new A.G.E. cases during the outbreak for more than 14 days after the index (first) case onset
- Two or more A.G.E. cases are hospitalized
- Death of an A.G.E. case

3.D. DIAGNOSTIC TESTING

3.D.1. During an A.G.E. outbreak, request that the LTCF report the results of any stool specimen testing of A.G.E. cases to the local health department.

3.D.2. During an A.G.E. outbreak, when norovirus testing has not been ordered and the LTCF is unable to submit specimens to a commercial clinical laboratory, request approval from the IDPH CD Control Section to submit stool specimens to the IDPH Laboratory for norovirus testing. When approved, obtain no more than five stool specimens for norovirus testing at the IDPH Laboratory (refer to map available on the IDPH Intranet “CD Topics A-Z” page to determine which IDPH Laboratory to use). A properly filled IDPH Laboratory test requisition form, indicating the outbreak number, must accompany each specimen. (Note: a copy of the IDPH Division of Laboratories Communicable Diseases Laboratory Test Requisition form is available on the IDPH Intranet “CD Topics A-Z” page.)

3.D.2.a. Each norovirus stool specimen should be at least one tablespoon (approximately the size of a walnut), collected and placed in a clean, dry, leak-proof, tightly-sealed specimen container (e.g., urine specimen cup) without preservative. Refrigerate immediately after collection (refrigerator temperature should be 4 degrees Celsius [39.2 degrees Fahrenheit] or less) and

maintain cold during transport and shipping. Do not freeze the specimen(s). Use cold packs for shipping but do not use ice because it will melt and leak during shipping.

3.D.2.b. Ship specimen(s) for overnight delivery. Do not ship specimens for delivery to the IDPH Laboratory on weekends or State holidays. It is the shipper’s responsibility to ensure compliance with all applicable packaging and labeling requirements. Contact the IDPH Laboratory to order shipping supplies as appropriate.

3.D.2.b.i. Instructions for Messenger/Courier ground transport to the IDPH Laboratory: Wrap specimen container(s) individually in absorbent material (e.g., paper towels, super absorbent packet). Place wrapped specimen container(s) into a biohazard-labeled bag and seal securely. Place the properly completed test requisition form(s) on the outside of the biohazard-labeled bag. Place the sealed biohazard-labeled bag and test requisition forms(s) and cold packs into the shipping container and close securely. The shipping container must be rigid such as a cooler and labeled with the UN 3373 Biological Substance Category B marking. Transport the shipping container to the appropriate IDPH Laboratory (see below).

3.D.2.b.ii. Instructions for Commercial Carrier ground/air transport to the IDPH Laboratory: Wrap specimen container(s) individually in absorbent material (e.g., paper towels, super absorbent packet). Place wrapped specimen container(s) into a biohazard-labeled 95 kPa bag and seal following the instructions on the bag. Place the properly completed test requisition form(s) on the outside of the 95 kPa bag. Place the sealed 95 kPa bag and the test requisition form(s) and cold packs inside the outer shipping container and close securely. The outer shipping container must be rigid. Chipboard or paperboard boxes, foam boxes, plastic bags and paper or padded envelopes are not rigid and are unacceptable for use as outer shipping containers. Label the outer shipping container with the appropriate IDPH Laboratory address (see below). Complete the return address section to include the name of the person shipping the package, business name and address, and a business phone number. The shipping container must be labeled with the UN 3373 Biological Substance Category B marking. Ship the container to the appropriate IDPH Laboratory.

Carbondale	Chicago	Springfield
IDPH Laboratory 1155 S. Oakland Avenue Carbondale, IL 62901	IDPH Laboratory 2121 W. Taylor Street Chicago, IL 60612-7260	IDPH Laboratory 825 N. Rutledge Street Springfield, IL 62702

3.E. END OF THE A.G.E. OUTBREAK

3.E.1. An A.G.E. outbreak in a LTCF may be considered to be ended (over) when 96 hours have passed since the last A.G.E. case's onset of symptoms. (Note: Two incubation periods equal 96 hours.)

3.E.2. Complete and submit the applicable final report form to the IDPH CD Control Section within 30 days following the end of the outbreak.

3.E.2.a. Complete and submit the IDPH Non Foodborne-Non Waterborne Outbreak Final Report form (available on the IDPH Intranet) for A.G.E. outbreaks attributed to person-to-person mode of transmission.

3.E.2.b. Complete and submit the CDC National Outbreak Reporting System form (available on the IDPH Intranet) for A.G.E. outbreaks attributed to foodborne/waterborne transmission.

SECTION 4. NOROVIRUS INFORMATION FOR ILLINOIS HEALTHCARE PROFESSIONALS

SUMMARY:

- Noroviruses are the predominant cause of acute gastroenteritis outbreaks worldwide.
- Noroviruses are transmitted primarily through the fecal-oral route, either by direct person-to-person spread or fecally-contaminated food or water.
- Noroviruses can be introduced into a healthcare facility by staff, visitors, and patients who might either be incubating or infected with norovirus upon admission.

Biology: Noroviruses are a group of related, non-enveloped, single-stranded RNA viruses that cause acute gastroenteritis in humans. *Norovirus* is the official genus name for the groups of viruses previously described as Norwalk-like viruses, named after the original strain which caused an outbreak of gastroenteritis in a school in Norwalk, Ohio, in 1968. Noroviruses are part of the *Caliciviridae* family, which also includes the genus *Sapovirus*, which also cause acute gastroenteritis in humans, and the genera *Lagovirus*, *Vesivirus*, and *Nebovirus*, which are not pathogenic for humans.

Noroviruses are classified into five genogroups, designated GI-GV, with most human infections resulting from genogroups GI and GII. Genogroups are classified further into genotypes; more than 25 different genotypes have been identified. According to information from the U.S. Centers for Disease Control and Prevention (CDC), over 80% of confirmed human norovirus infections are associated with genotype GII.4 (genogroup II type 4). CDC reports that, since 2002, multiple new variants of the GII.4 genotype have emerged and quickly become the predominant cause of human norovirus disease.

Clinical features: Noroviruses, which are the predominant cause of acute gastroenteritis outbreaks worldwide, cause acute gastroenteritis in persons of all ages. Norovirus outbreaks occur throughout the year although there is a seasonal pattern of increased activity during the winter months.

Illness caused by norovirus typically begins after an incubation period of 12-48 hours and is characterized by acute onset, non-bloody diarrhea, vomiting, nausea, and abdominal cramps. Some persons might experience only vomiting or diarrhea. Low-grade fever, chills, headache, and body aches also might be associated with infection, and thus the term “stomach flu” often is used to describe the illness, although there is no biologic association with influenza. Although norovirus symptoms might be severe, they typically resolve without treatment after one to three days in otherwise healthy persons. However, more prolonged courses of illness lasting four to six days can occur, particularly among young children and elderly persons. Dehydration and electrolyte imbalance, as well as more severe medical presentations such as hypokalemia and renal insufficiency and severe outcomes with longer durations of illness are most likely to be reported among the elderly. Norovirus-associated deaths have been reported among elderly persons and in the context of outbreaks in long-term care facilities.

Norovirus is shed primarily in the stool but also can be found in the vomitus of infected persons. The virus can be detected in stool for an average of two weeks or more following infection, although peak viral shedding occurs two to five days after infection. However, the precise time after illness at which an infected person is no longer contagious is unknown. Up to 30% of norovirus infections are asymptomatic, and asymptomatic persons can shed virus, albeit at lower titers than symptomatic persons. The role of asymptomatic infection in transmission and outbreaks of norovirus remains unclear.

Immunity: The mechanisms of immunity to norovirus are unclear. It appears that immunity may be strain-specific and last only several months. There currently is no vaccine available for norovirus and, generally, no medical treatment is offered for norovirus infection apart from oral or intravenous fluid replacement.

Transmission: Norovirus is extremely contagious with an estimated infectious dose as low as 10-100 viral particles. It is estimated that approximately 5 billion infectious doses might be contained in each gram of feces during peak shedding which occurs two to five days after infection.

Noroviruses are transmitted primarily through the fecal-oral route, either by direct person-to-person spread or fecally-contaminated food or water. Noroviruses can also spread via vomitus. In healthcare facilities, transmission can additionally occur through hand transfer of the virus to the oral mucosa via contact with materials, fomites, and environmental surfaces that have been contaminated with either feces or vomitus. The virus can be introduced into a healthcare facility by staff, visitors, and patients who might either be incubating or infected with norovirus upon admission.

Foodborne transmission typically occurs by contamination from infected food handlers during preparation and service but might also occur further upstream in the food distribution system through contamination with human waste. Food can become contaminated with norovirus at any point during production, processing, distribution, and preparation. Secondary person-to-person transmission is common following point-source food exposure.

Prevention and control: Preventing norovirus infection and controlling transmission in healthcare facilities is accomplished by proper hand hygiene, exclusion and isolation of infected persons, and environmental disinfection.

Appropriate hand hygiene is an important strategy to prevent norovirus infection and control transmission. Reducing any norovirus present on hands is best accomplished by thorough handwashing with running water and soap. According to information from CDC, the efficacy of alcohol-based and other hand sanitizers against norovirus remains controversial with mixed evidence depending on the product formulation and evaluation methodology.

Due to the highly infectious nature of norovirus, exclusion and isolation of infected persons are primary means of interrupting transmission of virus and limiting contamination of the environment. These strategies attempt to minimize unprotected contact with persons during the most infectious periods of their illness. This includes the acute phase of illness as well as a period following recovery while the person is still shedding virus at high levels.

The use of chemical disinfectants is one of the key approaches to interrupt norovirus spread from contaminated environmental surfaces. Particular attention should be given to the likely areas of greatest environmental contamination such as bathrooms and high-touch surfaces. Noroviruses are non-enveloped viruses. Most quaternary ammonium compounds (“quats”) are not effective against norovirus because most “quats” act by disrupting viral envelopes. Environmental surfaces in patient-care areas that are potentially contaminated with norovirus should be cleaned and then disinfected using a sodium hypochlorite solution/product or other commercial product registered with the U.S. Environmental Protection Agency (EPA) as effective against norovirus.

SECTION 5. ILLINOIS NOROVIRUS EPIDEMIOLOGY

From 2004-2010, there were 787 reported norovirus outbreaks in Illinois, which represents 65% of all reported outbreaks in the state for that time period. Of the reported norovirus outbreaks, 68.4% were attributed to person-to-person transmission, 30% were determined to be due to foodborne transmission, and the rest had an undetermined mode of transmission. In Illinois, norovirus outbreaks are classified as one of two types: confirmed or suspect. A confirmed norovirus outbreak is one in which norovirus is identified from specimens collected from at least two of the cases; a suspect norovirus outbreak is one that is not laboratory confirmed but ill persons have clinically compatible illness (i.e., acute gastroenteritis). Of the 787 norovirus outbreaks reported in Illinois in 2004-2010, 359 outbreaks were confirmed and 428 were suspect.

Data about the type of facility where the norovirus outbreak occurred was not obtained until 2006. Since 2006, 366 of the reported norovirus outbreaks occurred in long-term care facilities (LTCF). This number represents 51% of all norovirus outbreaks reported in Illinois. Person-to-person transmission was attributed to 365 (99.2%) of the reported LTCF norovirus outbreaks and foodborne transmission was determined to be the cause of one LTCF norovirus outbreak. An increasing trend is seen in the number of reported LTCF outbreaks (Table). This trend may be due to several factors such as increased awareness, improved reporting, or a true increase in norovirus outbreak occurrence. Reported data reveals the following: the average duration of a LTCF norovirus outbreak is 12.5 days; 36.3% of those exposed become ill; 10.1% of ill persons are staff members.

(Section 5 data provided by Janette Candido, Epidemiologist, IDPH Communicable Disease Control Section.)

Table. Reported norovirus outbreaks in Illinois long-term care facilities 2006 – 2010

Year:	2006	2007	2008	2009	2010
Number of Reported LTCF Norovirus Outbreaks:	79	47	51	78	111

SECTION 6. LINE LIST EXAMPLES

- Line list of residents ill with diarrhea and/or vomiting (refer to attachment)
- Line listing of staff ill with diarrhea and/or vomiting (refer to attachment)
- Excel LTCF case log (available on the IDPH Intranet)

The remainder of this page intentionally left blank; line listing pages follow.

SECTION 7. FACTS ABOUT VIRAL ACUTE GASTROENTERITIS

What is viral acute gastroenteritis?

Viral acute gastroenteritis is an inflammation of the stomach and intestine caused by viruses, especially a group of viruses called noroviruses. Viral acute gastroenteritis is sometimes called “stomach flu” but it is **not** related to the flu, which is a respiratory illness caused by the influenza virus.

What are the symptoms of viral acute gastroenteritis?

The main symptoms are a sudden onset of vomiting and/or diarrhea and stomach cramping. Some persons may also experience a low-grade fever, chills, headache, and body aches.

How is viral acute gastroenteritis spread?

Noroviruses and other viruses that cause viral acute gastroenteritis are found in the stool and vomitus of infected people. Other people can become infected by:

- Having direct contact with an infected person or the person’s stool or vomit.
- Touching surfaces or objects that are contaminated with these viruses and then placing their hand in their mouth.
- Eating food or drinking liquids that are contaminated with these viruses.

How can I avoid becoming ill with viral acute gastroenteritis?

Frequent handwashing is the number one way to avoid getting ill with viral acute gastroenteritis. It is important to wash your hands after toileting or changing diapers, before eating or preparing food, and after touching an ill person. Staff in long-term care facilities, hospitals and other healthcare settings should always wash their hands or, as appropriate, use an alcohol-based hand rub (hand sanitizer) before and after providing care to each patient.

How is viral acute gastroenteritis treated?

There is no specific drug to treat viral acute gastroenteritis. Antibiotics are not effective because the infection is caused by a virus. Most people get better on their own within one to three days; however, more prolonged illness lasting four to six days can occur, particularly among young children, elderly persons, and persons with weakened immune systems. Preventing dehydration is important for infected persons. People with severe dehydration or other complications may require hospitalization.

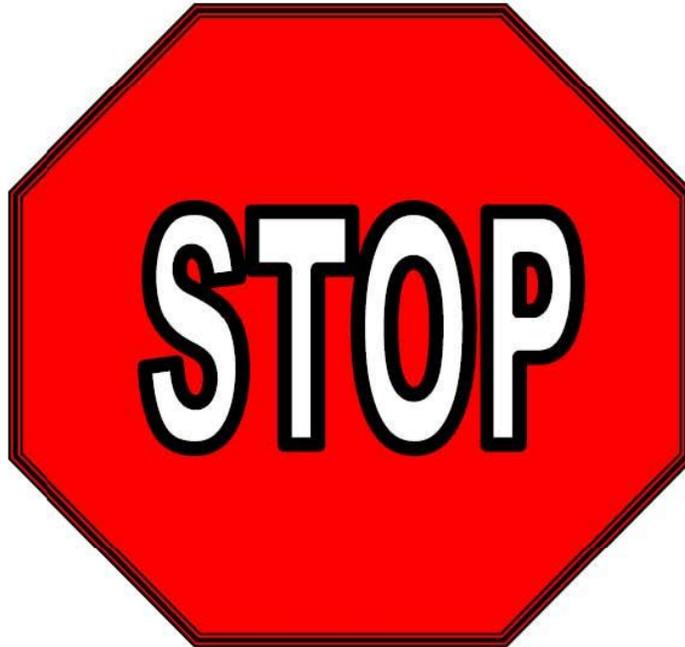
Should an infected person stay home?

Persons with viral acute gastroenteritis should stay home until they no longer experience vomiting or diarrhea and have been symptom-free for at least 48 hours. Food handlers and healthcare workers should not return to work for a minimum of 48 hours after their symptoms resolve. Persons with diarrhea or vomiting should not swim or use a shared whirlpool.

SECTION 8. VISITOR SIGNAGE EXAMPLE

- **STOP ATTENTION VISITORS!!!** poster (refer to attachment)

The remainder of this page intentionally left blank; poster page follows.



ATTENTION VISITORS!!!

We presently have a number of ill residents. Please wash your hands before visiting and before leaving. You may wish to reconsider visiting at this time.

If you have any questions please contact either the Administrator _____ or the Director of Nursing _____.

Thank you

SECTION 9. WORKSHEET EXAMPLE

- Worksheet: Preliminary Report of Acute Gastroenteritis Outbreak in a LTCF (refer to attachment)

The remainder of this page intentionally left blank; worksheet page follows.

Worksheet: Preliminary Report of Acute Gastroenteritis* Outbreak in a LTCF

NOTE: This worksheet was developed by the Illinois Department of Public Health (IDPH) Communicable Disease (CD) Control Section in January 2012. Use of this worksheet is not mandatory; however, local health departments (LHD) and long-term care facilities (LTCF) may find its use facilitates collection of relevant demographic and epidemiologic information during an acute gastroenteritis outbreak.

Date reported to LHD: _____ Reported to LHD by: _____

LTCF name: _____

LTCF address: _____

Outbreak onset date: _____ Most recent illness onset date: _____

Number of residents ill with vomiting* and/or diarrhea* since outbreak onset: _____

Number of employees ill with vomiting* and/or diarrhea* since outbreak onset: _____

Are any of the ill employees food handlers? YES:___ NO:___

If yes, how many: _____

LTCF average daily census: _____ Total number of employees: _____

Number of residents hospitalized due to vomiting* and/or diarrhea*: _____

LTCF has ready access to the "Illinois Department of Public Health Guideline for the Prevention and Control of Viral Acute Gastroenteritis Outbreaks in Illinois LTCFs, 2012" YES:___ NO:___

If no, date copy provided to the LTCF: _____

Control measures implemented: _____

LTCF notified IDPH LTC Division or applicable State agency: YES:___ NO:___

Date LHD reported to IDPH CD Control Section: _____ IDPH Outbreak #: _____

* Use the following definitions to determine if an acute gastroenteritis (A.G.E.) outbreak is occurring in a LTCF:

- Diarrhea: three or more loose stools in a 24-hour period when the occurrence is not readily explained by other known pre-disposing medical factors.
- Vomiting: two or more episodes of vomiting in a 24-hour period when the occurrence is not readily explained by other known pre-disposing medical factors.
- Acute gastroenteritis (A.G.E.) case: a person (resident or staff) with diarrhea and/or vomiting.
- Unit: a functional care unit of the LTCF (e.g., floor, hall, neighborhood, wing).
- A.G.E. outbreak: two or more A.G.E. cases occurring in a unit with initial dates of onset within 48 hours of each other. NOTE: When an A.G.E. outbreak occurs in one unit of a LTCF it is common for A.G.E. cases to develop in other units. A.G.E. cases that occur in other units are included in the initial outbreak unless sufficient time has passed to indicate the occurrence of a new outbreak (refer to "Duration of A.G.E. outbreak").
- Duration of A.G.E. outbreak: The time period beginning with the day the index (first) case associated with the outbreak developed A.G.E. symptoms until 96 hours after the last A.G.E. case's onset of symptoms.