

**Maryland Department of Health and Mental Hygiene
Epidemiology and Disease Control Program
Revised September, 2000**

Guidelines for the Prevention and Control of Upper and Lower Acute Respiratory Illnesses (including Influenza and Pneumonia) in Long Term Care Facilities

INTRODUCTION

These guidelines supersede *Guidelines for Prevention and Control of Upper and Lower Acute Respiratory Illnesses (including Influenza and Pneumonia) in Long Term Care Facilities, 1997* and cover all long term care facilities (LTCFs) within Maryland except those designated as assisted living centers. These guidelines, however, may be tailored for alternative settings such as assisted living centers. At this time, the Maryland Department of Health and Mental Hygiene does not recognize differences between acuity levels or units within a LTCF.

Each year outbreaks of respiratory illness including pneumonia occur in LTCFs such as nursing homes. Because of their underlying health status, residents in LTCFs are at high risk for developing serious complications or dying when they become ill. Historically, specific emphasis has been placed on influenza. In the United States, influenza is associated with an average of 20,000 deaths yearly, and an even larger number of hospitalizations. Not only are morbidity and mortality a problem, but because people are in close proximity to one another, once the influenza virus is introduced into the LTCF, it can spread rapidly. During some nursing home outbreaks over half of the residents have been affected. In addition to the burden of influenza, other respiratory viruses that cause the “common cold” and bacterial pathogens causing respiratory illness affect residents and staff of LTCFs each year. Because infection with these agents can compromise an already poor health status of the LTCF resident, control of these agents in the LTCF is also critical.

In order to facilitate the investigation of respiratory disease outbreaks and implementation of control measures, the following guidelines have been established. These guidelines emphasize priorities regarding prevention and control of influenza and pneumococcal disease including pneumonia as follows:

- to prevent pneumococcal disease through immunization
- to prevent outbreaks through influenza immunization and antiviral drug use
- to detect the occurrence of an outbreak early
- to stop transmission of the influenza virus through control measures
- to measure the level of morbidity and mortality
- to identify the etiologic agent, e.g., the strain of influenza virus responsible for the outbreak

These guidelines are divided into seven sections plus attachments:

- Section 1 discusses prevention of influenza and pneumococcal disease
- Section 2 provides definitions and characteristics of respiratory illnesses
- Section 3 addresses the use of surveillance to detect cases
- Section 4 outlines management of single cases
- Section 5 outlines the management of respiratory illness outbreaks in LTCFs (includes a flow chart)
- Section 6 covers specimen collection including transport
- Section 7 reviews data collection and the summary

SECTION 1. PREVENTION

Influenza: Two measures are available in the United States to minimize the impact of influenza: vaccination and use of antiviral drugs. Annual vaccination before the influenza season of high risk persons and employees, volunteers, and family members in contact with those at high risk is the most important way of reducing the impact of influenza. Effective October 1, 2000, Maryland law mandates that LTCFs vaccinate residents and employees with the influenza vaccine each year. Those refusing the vaccine must sign a waiver declining immunization. Two antiviral drugs, amantadine and rimantadine, are effective only against influenza type A infections and are used in both **prevention and treatment**. Oseltamivir and zanamivir are new antiviral drugs approved in 1999 for **treatment only** of both influenza type A and B. Additional information can be found in the annually updated Centers for Disease Control and Prevention (CDC), Morbidity and Mortality Weekly Report (MMWR), *Prevention and Control of Influenza*. An example of the most recent MMWR document is MMWR 2000; Vol. 49, No. RR03 (website:www.cdc.gov).

Pneumococcal pneumonia: Pneumococcal vaccine is available to prevent illness due to *Streptococcus pneumoniae*. Pneumococcal pneumonia is a common complication of influenza. Effective October 1, 2000, Maryland law requires LTCFs to vaccinate residents with pneumococcal vaccine (unless previously vaccinated) or to sign a waiver if refused. The Code of Maryland Regulations (COMAR 10.06.01.12-1) also puts this responsibility upon the physician in attendance for a resident of a LTCF. The physician is responsible for educating the resident or their guardian on the availability of pneumococcal vaccine and administering the vaccine to individuals who have not already been immunized with pneumococcal vaccine or referring the individual to a health care provider who will administer the vaccine. Further information regarding the vaccine can be found in the CDC MMWR Recommendations of the Immunization Practices Advisory Committee, *Prevention of Pneumococcal Disease* (most recent version: MMWR 1997; Vol. 46, No. RR-8)(website:www.cdc.gov).

Included in these Guidelines is the *Vaccine Administration and Waiver Record* form to assist with documentation of vaccines given to LTCF residents and employees (see page 12).

SECTION 2. CASE DEFINITIONS, CLINICAL CHARACTERISTICS, AND OUTBREAK DEFINITIONS

A. Case Definitions

A case of acute respiratory disease (ARD) is defined as a person with mild to moderate symptoms of one or more of the following: rhinitis, pharyngitis, laryngitis, bronchitis, and cough. These symptoms are usually caused by a rhinovirus, of which there are more than 100 recognized subtypes. The incubation period is between 12 hours and 5 days but usually 2 days. Getting freshly shed virus particles from one person onto the mucous membranes of another is thought to be the most important mode of transmission. Inhaling virus particles by the airborne route is another way to spread rhinoviruses. The duration of illness is normally 2-7 days.

A case of acute febrile respiratory disease (AFRD) is defined as a person with one or more respiratory symptoms (rhinitis, pharyngitis, laryngitis, bronchitis, and cough) in the presence of a temperature of 37.8°C (100°F) or greater orally or 38.3°C (101°F) rectally. Acute febrile respiratory diseases are caused by numerous agents including viruses and bacteria. The incubation period is 1 to 10 days. While influenza is primarily spread via airborne transmission, the chief mode of transmission for non-influenza agents is contact with infectious secretions either directly or indirectly through contaminated hands or environmental surfaces (bed rails, telephones, etc). A person infected with one of these agents can shed the agent from a few days prior to symptom onset and throughout the course of active disease.

A case of influenza or influenza-like illness (ILI) is defined as a person with temperature of 37.8°C (100°F) or greater orally or 38.3°C (101°F) rectally **PLUS cough** during the influenza season (October 1 through May 31). A person with laboratory confirmed influenza is also considered a case even if the person does not have cough and fever. The incubation period for influenza is short, usually 1 to 3 days. Communicability includes the period immediately prior to clinical onset and throughout the course of active disease.

A case of pneumonia is defined as a person with clinical symptomatology **PLUS** a new X-ray finding of pneumonia that is not felt to be aspiration pneumonia. For the purposes of these Guidelines, specific emphasis is placed on *Streptococcus pneumoniae* (the “pneumococcus”), respiratory viruses, *Haemophilus influenzae*, aerobic gram-negative bacilli, and *Staphylococcus aureus*. Pneumococcal pneumonia is characterized by fever, chills, cough, and pleuritic pain. The case-fatality rate remains 20% to 40% among patients with substantial underlying disease. The organism is spread by droplet, direct, or indirect inoculation. Person-to-person transmission of the organism is common, but illness among casual contacts and attendants is uncommon. The incubation period may be as short as 1 to 3 days. Appropriate antibiotic therapy will render patients noninfectious within 1 to 2 days.

B. Outbreak Definitions

An outbreak of acute febrile respiratory disease (AFRD) or ILI is defined as **three or more** clinically defined cases (see above) in a facility within a 7 day period; an outbreak of influenza is **one** or more laboratory proven case of influenza. Unless indicated by laboratory results, influenza and ILI apply only between Oct 1 and May 31.

An outbreak of pneumonia is **two or more** cases of pneumonia in a ward/unit within a 7 day period.

SECTION 3. SURVEILLANCE

Each LTCF should have their designated infection control practitioner (ICP) routinely maintain records on the occurrence of fever and illness in residents and employees. Employees should report respiratory illness (as well as other acute illnesses such as diarrhea) to the appropriate staff person at the LTCF throughout the year. The one-time pneumococcal vaccination and yearly influenza vaccination status of each current resident should also be recorded in the resident's chart and employee information should be recorded in the employee record (see *Vaccine Administration and Waiver Record* form, page 12). In addition, ICPs may wish to maintain a separate log or database documenting the vaccination status of each resident and employee. These methods will enable rapid assessment of susceptible individuals in the event of an outbreak.

Influenza and/or ILI should be suspected during the influenza season from Oct 1 through May 31. When a person who meets the case definition is identified, the case management procedures as described below should be followed unless the fever is known to have another cause.

SECTION 4. SINGLE CASE MANAGEMENT

A stepped-care approach has been developed for case and outbreak management of respiratory illness in LTCFs. This section covers single cases among LTCF residents and employees.

Acute Respiratory Disease

A. Residents

- Observe case for signs/symptoms that suggest need for physician consult.
- Encourage the case to limit contact with other residents and others, etc. (if possible) by limiting group activities while ill, washing hands, and using tissues to cover mouth and nose while coughing and sneezing.

B. Employees

- Exclude from direct patient care (if possible) and review vigilance for hand washing and covering the mouth when coughing or sneezing.

Acute Febrile Respiratory Disease, Influenza, or ILI

A. Residents

- Observe case for signs/symptoms that suggest a need for physician consult.
- Restrict the case to his/her room (i.e., restrict the case from participating in group activities) until the patient no longer has active symptoms.
- Consider confirmation of the diagnosis with appropriate viral throat culture and/or rapid antigen test or sputum Gram stain and bacterial culture, or consultation with a physician.
- If between October 1 and May 31, suspect **influenza** or **ILI**.
- Give antiviral treatment to the case regardless of vaccination status within the first 48 hours of illness when a physician has a high suspicion of an influenza type A diagnosis and when the Maryland Department of Health and Mental Hygiene (DHMH) has determined that influenza type A is in the community. This information can be obtained by calling the

local health department or DHMH Epidemiology and Disease Control Program at 410-767-6700.

- Give influenza vaccine to any unvaccinated roommates of a case and to other unvaccinated residents and staff during the influenza season.
- Observe the roommates of a case and others in the facility closely for similar signs and symptoms of influenza-like illness.

B. Employees

When a case of acute febrile respiratory disease, influenza or ILI is recognized in an employee, exclude from the facility or from clinical duties until the employee is no longer symptomatic.

Pneumonia

A. Residents

- Recommend diagnostic testing to establish the diagnosis and to determine the cause of pneumonia (e.g., chest X-ray, sputum Gram stain and bacterial cultures, and/or bronchoscopy).
- Consult with a resident's physician regarding appropriate antibiotic treatment.
- Restrict case to his/her room until completion of first 48 hours of antibiotic therapy if treated with antibiotics.
- Report individual case of pneumonia caused by organisms that are reportable in accordance with State regulations, e.g., *Legionella pneumophila*, to your local health department.
- If the pneumonia is caused by *Streptococcus pneumoniae*, attempt vaccination of residents who have previously waived pneumococcal vaccination.

B. Employees

- Verify diagnosis of pneumonia by obtaining chest x-ray results.
- Exclude from the facility until completion of first 48 hours of antibiotic therapy if given and until the employee is no longer symptomatic.

SECTION 5. OUTBREAK MANAGEMENT (see flow diagram, page 10)

A. Reporting

Per the Code of Maryland Regulations 10.06.01, nursing homes and other LTCFs should report outbreaks of diseases of public health importance including outbreaks as defined in these guidelines. Reporting should be made within 24 hours to a local health department. Please contact your local health department for an emergency telephone number where they can be reached during weekends and after work hours in the event of an outbreak.

Note: Acute upper respiratory disease outbreaks (i.e., colds) are not reportable to the local health department. The LTCF may call the local health department if consultation is needed.

B. Outbreak Control Measures

Acute Febrile Respiratory Disease, Influenza, or ILI

When an outbreak of acute febrile respiratory disease, influenza, or ILI is recognized in a LTCF, the control measures for a single case should be instituted immediately on each case.

In addition, the following control measures should be implemented and maintained for the duration of the outbreak. All outbreak control measures can be lifted when no new cases have occurred for three consecutive days.

- Stop new admissions of residents after one case of lab proven influenza or three or more cases of acute febrile respiratory disease or influenza-like illness in a 7 day period; the Health Officer may allow new admissions to an unaffected ward or unit based on the progression of the outbreak.
- Allow readmissions to the facility, preferably to an unaffected ward or unit.
- Institute visitor precautions (e.g., posting a sign to alert visitors that an outbreak is occurring; encourage/advise visitors to refrain from visiting if they have respiratory symptoms or are at risk of illness). A ban on visitors is not necessary.
- Assign employees to care for the same group of patients during a shift, to the extent possible.

During the influenza season (October 1 through May 31):

- Require influenza vaccine for unvaccinated residents and employees or obtain a waiver.
- Consider antiviral prophylaxis (e.g., amantadine or rimantadine) for ill and well residents (regardless of vaccination status) and unvaccinated employees if influenza type A is present in the community (as determined by positive lab findings or DHMH).

Pneumonia

- During pneumonia outbreaks, in addition to the recommendations made for the management of a single case with pneumonia, follow the recommendations listed above for acute febrile respiratory disease, influenza, and ILI outbreaks.
- Follow the recommended diagnostic procedures for pneumonia and AFRD in the following section.
- Consider using the attached questionnaires: Respiratory Illness Employee Questionnaire (see page 14) and Respiratory Illness Resident Questionnaire (see pages 15-16).
- If legionellosis is diagnosed, contact your local health department for further recommendations.

SECTION 6. SPECIMEN COLLECTION

Influenza

If influenza is suspected based on clinical symptoms, laboratory testing will confirm the diagnosis. A case of influenza can be laboratory confirmed by three techniques. Most commonly, a viral throat culture is used to detect influenza; however, influenza infection can be confirmed using serology, as well as a rapid antigen detection method.

A. Viral Throat Culture

A throat culture should be collected on up to 10 to 12 cases within 72 hours of illness onset (a "viral throat swab" kit should be used if submitting samples to the DHMH Laboratory). The following steps should be followed closely when preparing to submit viral throat swabs for laboratory culture:

Procedures for Collection and Transport of Viral Throat Specimens

- A. Obtain viral throat swab kits from DHMH Laboratories Administration, Specimen Mailing Assemblies (Outfit Room) at 410-767-6120 or your local health department.
- B. Complete the accompanying Virus Throat Swab form (DHMH-72) including clinical diagnosis. Note "influenza" if influenza is suspected as the clinical diagnosis.
- C. Open sterile cotton-tipped swabs. Hold two swabs together and swab the posterior pharynx and tonsillar areas vigorously with swabs.
- D. Immerse swab-tips in media and break off the top portion of the wooden swab to allow the swabs to fit into the tube.
- E. Refrigerate specimen immediately after collection unless transporting immediately. Alternatively, the specimen can be frozen at -70 degrees C; this requires a specialized freezer. Do not freeze in a regular freezer (-15 degrees C).
- F. Refrigerated specimens should be transported on wet ice or cold packs to DHMH Virology Laboratory, 201 W. Preston Street, Baltimore, MD 21201. "Wet ice" is a mixture of ice with a small amount of water; specimens should be placed into the water portion. Specimens frozen at -70°C should be shipped on dry ice.

Failure to follow the above procedures will render the specimens unsatisfactory and the DHMH laboratory will not process them.

B. Rapid Antigen Detection

Techniques have been developed to allow the rapid detection of influenza type A antigen in as little as 15 minutes. These techniques vary greatly and include several different detection systems, such as the immunofluorescence assay (IFA) and the enzyme immunoassay (EIA). In addition, these systems are available as commercially sold kits. When compared to viral cultures (which are thought to be the "gold standard" for influenza detection), these rapid testing methods were able to detect from 87 to 99 percent of all positive influenza cases.

As with many laboratory tests, there is always a potential for a false-positive and false-negative result. However, use of rapid detection methods in conjunction with a viral throat culture should minimize false-positive results. In addition, use of both methods allows a more efficient administration of antiviral medications and infection control measures, while also permitting the identification and typing of circulating strains of influenza virus.

Decision regarding the choice of rapid detection method should be made in conjunction with the clinical laboratory used by the LTCF. Cost, technical support, and resources available for testing may all factor into the choice of rapid influenza detection methods.

DHMH will perform a rapid antigen detection test for influenza A on any viral throat kit specimen submitted for influenza detection between October 1 and April 30.

C. Serology

Serological specimens do not need to be routinely collected. If serological specimens are recommended by DHMH then two blood specimens (acute and convalescent) are needed to demonstrate a significant rise in anti-influenza antibody titer. The first specimen should be collected as early as possible after onset of illness, and the second specimen three weeks later. In either instance, obtain 5-8 ml of blood in a RED TOP TUBE. Do not freeze whole blood since this will result in complete hemolysis and renders the specimen unsatisfactory for testing. Serum or clotted blood specimens may be transported unrefrigerated to the laboratory.

AFRD or Pneumonia

For patients with **acute febrile respiratory disease (AFRD) or pneumonia** during an outbreak of pneumonia, obtain diagnostic testing. If the patient has been hospitalized, obtain information on the diagnostic work-up and if not performed, recommend that it be done as follows:

- A. **Chest x-ray** on patients with AFRD or suspected pneumonia; chest-x-ray results on patients with “confirmed” pneumonia.
- B. **Sputum specimen** (see NOTE) for:
 - i. Bacterial culture-- include *Mycoplasma* and *Streptococcus pneumoniae* among the organisms for which the laboratory tests.
 - ii. Gram stain
 - iii. *Legionella* culture—special media is required to grow *Legionella*. *Legionella* can not be isolated from routine bacterial culture. Consult with the laboratory where you are submitting specimens for instructions.

NOTE: If expectorated sputum is not obtainable, recommend that a sputum specimen be induced. If the patient is intubated, obtain a tracheal aspirate specimen; if the patient undergoes bronchoscopy, obtain a bronchio-alveolar lavage (BAL) specimen.

- C. **Viral throat culture:**

Request that the laboratory culture for influenza, parainfluenza, adenovirus, and RSV. Specimens should be refrigerated and transported on wet ice within 72 hours of collection to DHMH. The swabs must remain refrigerated or on wet ice at all times. The swabs must not be frozen.

- D. **Paired serum specimens** for viral antibody titers--(red top tube)

- i. An acute specimen should be collected as early as possible after the onset of illness.
- ii. A convalescent specimen should be collected 3 weeks later.

Ask the laboratory to hold the acute specimen until the convalescent specimen is submitted. Consult EDCP for specific tests to request.

- E. **Blood culture** (prior to antimicrobial treatment)--check with lab for collection tube

- F. **Urine** for *Legionella* antigen--sterile container, no preservative necessary

Please note: Specimens may be sent to DHMH (except for blood cultures) or to a private laboratory. Except for emergencies, the DHMH laboratory is not open Sunday for receipt of specimens. Please plan accordingly. Specimens can be sent to: DHMH Laboratories Administration, 201 West Preston Street, Baltimore, MD 21201.

SECTION 7. DATA COLLECTION AND SUMMARY

Pertinent information regarding each resident and employee case should be entered into the LTCF Infection Control Professional's surveillance log and updated daily. Once an outbreak has been identified, cases should be placed on a "line list" (see line listing form for influenza, page 13). The local health department at the conclusion of the outbreak should fill out a summary sheet and a copy should be forwarded to the Division of Outbreak Investigation (see outbreak summary form for respiratory illness outbreaks, page 11). For each respiratory illness outbreak, indicate the number of residents and employees meeting case definitions for influenza, ILI, ARD, AFRD, and pneumonia.

Flow Chart for the Management of Respiratory Illness Outbreaks in Long-Term Care Facilities

**Prevention Program: Influenza and Pneumococcal Vaccines
and Antiviral Prophylaxis**



Establish and Maintain Surveillance



Case Identification



Case Management

- restrict to room
- treat with antiviral drugs or antibiotics if appropriate
- vaccinate any unvaccinated roommates if appropriate
- observe others for symptoms
- report all cases of reportable disease to local health department (e.g., legionellosis)



Continue Surveillance



Outbreak Identified



Continue Surveillance and Place Cases on a "Line List"

- report outbreak
- implement control measures
- collect specimens
- maintain "line list"
- give outbreak information to LHD
contact who will complete outbreak summary

**RESPIRATORY ILLNESSES IN LONG-TERM CARE FACILITIES
OUTBREAK SUMMARY FOR LONG TERM CARE FACILITIES**

Date _____

DHMH Outbreak # _____

(Obtain from DHMH Division of Outbreak Investigation @ 410-767-6677)

Facility Name: _____ County: _____

Person completing this form: _____ Agency _____

RESIDENTS

No. Cases of Influenza/ILI _____	Total No. Residents in Facility _____
No. Cases of ARD _____	No. Case Hospitalizations _____
No. Cases of AFRD _____	Onset of First Case _____/____/____
No. Cases of Deaths _____	Onset of Last Case _____/____/____
_____/____/____	

EMPLOYEES

No. Cases of Influenza/ILI _____	Total No. Employees in Facility _____
No. Cases of ARD _____	No. Case Hospitalizations _____
No. Cases of AFRD _____	Onset of First Case _____/____/____
No. Cases of Deaths _____	Onset of Last Case _____/____/____
_____/____/____	

LABORATORY SPECIMENS

Type and number of lab specimens submitted:

Type of Lab Specimen/ Procedure	Number Submitted	Results
Viral Throat Culture		
Rapid Antigen Test		
Acute Serology		
Convalescent Serology		
Other (specify: _____)		

Total number of laboratory confirmed cases: _____

Confirmed by:

culture alone: _____

rapid antigen test alone: _____

serology alone: _____

culture and rapid antigen test: _____

culture and serology: _____

serology and rapid antigen test: _____

culture, serology, and rapid antigen test: _____

Causative Agent (if known): _____

Influenza and Pneumococcal Vaccination and Waiver Record for Residents and Employees Of Nursing Homes and Long Term Care Facilities

Facility: _____ **County:** _____

Employee or Resident Name: _____ **Birth date:** ___/___/___

Employee **Resident** (Check appropriate box)

	Receipt of Vaccination					Waiver of vaccination				
	Date	Manu- facturer	Lot Number	Signature of vaccinator	Signature of employee or resident	Date	Signature of employee or resident	Reason for waiver		
								Religious	Medical	Other
Influenza (2000- 2001)										
Influenza (2001-2002)										
Influenza (2002-2003)										
Influenza (2003-2004)										
Influenza (2004-2005)										
Influenza (2005-2006)										
Influenza (2006-2007)										
Influenza (2007-2008)										
Influenza (2008-2009)										
Influenza (2009-2010)										
Pneumococcal Vaccine (Residents only)										
Pneumococcal ¹										
Pneumococcal ¹										
Pneumococcal ¹										
Pneumococcal ¹										
Pneumococcal ¹										
Pneumococcal ¹										
Pneumococcal ¹										

¹ - Most persons should receive pneumococcal vaccine only ONCE. However, some very high-risk persons (i.e. those with anatomic or functional asplenia, or who are immunocompromised) may need a booster dose after 5 years. Other persons who received pneumococcal vaccine before age 65, and for whom 5 years have elapsed since the first dose, should also receive a booster dose.

*Maryland Department of Health and Mental Hygiene
Office of Health Care Quality
Long Term Care*

(Sept 2000)

**Maryland Department of Health and Mental Hygiene
Epidemiology and Disease Control Program
Revised September, 2000**

Respiratory Illness Employee Questionnaire

Please fill out this questionnaire as completely as possible, including negative answers where relevant.

Name of facility: _____

County: _____

Employee name: _____ Sex: _____ Age: _____

Job description: _____

Work areas: _____

Have you had a flu vaccine this season? yes no

Have you had any symptoms of respiratory illness since _____? yes no If yes,

Date of onset: _____ Duration of symptoms: _____

Did you miss work because of these symptoms? yes no Dates: _____ Signs

and symptoms:

Fever: yes no

Highest temp. _____

GI symptoms: yes no

(specify) _____

Chills: yes no

Chest congestion: yes no

Headache: yes no

Sore throat: yes no

Muscle aches: yes no

SOB: yes no

Cough: yes no

Nasal congestion: yes no

Wheezing: yes no

Other: _____

Did you consult a physician for these symptoms? yes no If yes,

What was the physician's diagnosis? _____

What was the prescribed treatment? _____

Did you follow the prescribed treatment? yes no If no, what treatment did you follow? _____

Today's date: _____

Thank you for your cooperation.

**Maryland Department of Health and Mental Hygiene
Epidemiology and Disease Control Program
Revised September, 2000**

Respiratory Illness Resident Questionnaire for Pneumonia Outbreaks in Long Term Care Facilities

Name of facility: _____ Outbreak number: _____

Form completed by: _____ Date: _____

Demographics:

Name:	Sex:	Age:	DOB:
Wing and floor:	Room:	Admitted to facility:	

Vaccination history:

Influenza vaccine:	yes <input type="checkbox"/>	no <input type="checkbox"/>	refused <input type="checkbox"/>	Date:
Pneumococcal vaccine:	yes <input type="checkbox"/>	no <input type="checkbox"/>	refused <input type="checkbox"/>	Date:

Signs and symptoms:

Ill:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Date of onset:	Duration:		
Fever:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Cough:	yes <input type="checkbox"/>	no <input type="checkbox"/>	
highest temp: _____			Nasal congestion:	yes <input type="checkbox"/>	no <input type="checkbox"/>	
Chills:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Chest congestion:	yes <input type="checkbox"/>	no <input type="checkbox"/>	
Myalgias:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Sore throat:	yes <input type="checkbox"/>	no <input type="checkbox"/>	
Headache:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Wheezing:	yes <input type="checkbox"/>	no <input type="checkbox"/>	
				SOB:	yes <input type="checkbox"/>	no <input type="checkbox"/>
				GI symptoms:	yes <input type="checkbox"/>	no <input type="checkbox"/>
				(specify) _____		
				Other:	yes <input type="checkbox"/>	no <input type="checkbox"/>

Diagnosis and outcome:

Diagnosis: Pneumonia	yes <input type="checkbox"/>	no <input type="checkbox"/>	Causative agent:	Physician(s) name & number: _____ _____
ILI	yes <input type="checkbox"/>	no <input type="checkbox"/>		
URI	yes <input type="checkbox"/>	no <input type="checkbox"/>		
Other:	_____			
Hospitalized:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Dates:	Hospital name:
Died:	yes <input type="checkbox"/>	no <input type="checkbox"/>	Date:	Cause of death:

Other treatment: _____

Risk Factors: underlying illnesses, medications, etc.

Comments: