



County Mass Fatality Planning Services

**County Field Guide for the Management
of Dead Bodies During an
Influenza Pandemic**

June 1, 2008

Final Report



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May 30, 2008

To: Indiana Public Health Preparedness Providers

From: Judy Monroe, M.D., State Health Commissioner 

The Indiana State Department of Health has taken an active role in preparation for a potential influenza pandemic. To that end, we have contracted with Health Care Excel to prepare the *County Field Guide for the Management of Dead Bodies During an Influenza Pandemic*. We are pleased to distribute this quality tool throughout the state to those in the health departments, funeral homes, coroners, EMAs, EMS, and hospital bioterrorism coordinators. I urge you to study the content of this Field Guide so that all health care responders have one resource from which to begin.

You also will be receiving information regarding training sessions to be held in various locations around the state. This will be a valuable time for you to not only gather more information, but to meet with others from your county and/or district. Members of the health departments and the county coroners are filling out needs assessments regarding the counties' preparedness for an influenza pandemic. The results of this needs assessment will be shared at the training session. The strong points of a county's preparedness plan will be identified as well as gaps yet to be filled. Statewide survey results also will be shared at these sessions. I strongly encourage you to attend the session nearest you.

Once again, thank you for taking time to read and study this Field Guide. As public health providers in the state, we are tasked with being prepared to whatever degree possible. It is my sincere belief that this document will lead us in that direction.

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The Indiana State Department of Health supports Indiana's economic prosperity and quality of life by promoting, protecting and providing for the health of Hoosiers in their communities.

**County Field Guide for the Management of Dead Bodies
During An Influenza Pandemic**

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Introduction

The vast majority of resources devoted to pandemic management will, and should be, devoted to care for the living. Nonetheless, appropriate and respectful treatment of influenza pandemic fatalities is a moral necessity, and can be of significant psychological assurance and comfort to both the families and the larger community.

In an influenza pandemic, the county and its authorities are responsible not only for providing effective immediate assistance to its citizens but also for maintaining ongoing basic services. The county has the responsibility to plan for the handling and final disposal of dead bodies resulting from the pandemic. The county should take the leading role in organizing the public sector, health sector, and non-governmental sectors involved in managing remains. The disposition of bodies has a significant impact on the well-being of surviving family members and should always reflect the traditions and values of the community.

Assumptions

The Indiana State Department of Health (ISDH) has made the following assumptions while preparing this Field Guide:

- The number of influenza pandemic fatalities is very challenging to anticipate.
- For a new virus, the attack rate may be as high as 35% and occur over a period of 12 weeks. Predictions reflect the fatalities rate could be approximately 2.1% of cases.
- The very nature of a pandemic implies that the community needs will overwhelm the community's resources.

SECTION 1: COORDINATING INSTITUTIONS

Stakeholders

The management of mass fatalities in an influenza pandemic requires the involvement of representatives from governmental and nongovernmental organizations, as well as volunteers. Such representatives should come from local, regional, and state government; public health, emergency management, and the health care industry (including hospitals); agriculture, education, and business—especially the funeral industry; communication/media, community- and faith-based organizations, the Medical Reserve Corps (MRC), and private citizens/volunteers.

Communication and coordination among all the relevant institutions is critical. A Pandemic Preparedness Coordinating Committee (PPCC), accountable for planning and executing the county's operational influenza pandemic plan, should be established in each county. Based on interviews with representatives from a number of counties, not all Indiana counties have such a PPCC. A number of counties integrate this subject into their Emergency Preparedness Committee. A PPCC should present the following:

- Provide effective leadership. Each participating institution should have its roles and responsibilities clearly outlined.
- Prevent duplication of efforts and ensure that all needs are met.
- Provide for rapid and effective communications among institutions and the community.
- Develop uniform procedures, including common guidelines and standards that encompass the entire process.

A county's influenza pandemic plan should include the following.

- Specifying the chain of command—who has decision-making authority and who will oversee the management of dead bodies. This is ordinarily the county coroner.
- Assuring that people are trained and available to handle, identify, and dispose of the bodies.
- Identifying alternate morgue sites if the coroner's office or local medical facilities are over capacity.
- Obtaining financial resources needed for emergency management and for managing dead bodies.
- Accessing resources, including volunteers for the recovery and transportation of bodies, refrigerated trailers, and sites to serve as temporary morgues.
- Identifying sites for burial of the dead (possibly mass burials).

- Listing of communication systems to be used to coordinate activities.
- Listing the availability of mental health resources for staff and volunteers.

Widely circulate the plan. Everyone involved in handling dead bodies should be familiar with this plan, especially with the sections relating to their roles.

Conduct periodic exercises to test the plan. These exercises can consist of tabletop exercises, field exercises, and other training exercises aimed at providing specific skills to technical personnel and/or volunteers. Handling and identifying dead bodies that result from an influenza pandemic should not be viewed as isolated actions, but should be included as an integral part of the county's preparedness plan.



SECTION 2: REGULATORY REQUIREMENTS

State of Emergency

Should the governor declare a state of emergency, the present legal requirements on fatalities may be waived or modified as necessary to meet the needs of the influenza pandemic. In a pandemic, health officials may implement non-pharmaceutical protective measures (e.g., school closure, gathering restrictions), in which the following may be applicable:

- Most traditional burials should not be delayed until the pandemic has passed but conducted within health department limitations on gatherings. This will slow the accumulation of remains and may preclude the need for mass burial.
- Memorial services may be postponed until the cessation of the pandemic.
- If [mass burials](#) are required (see Section 2), be mindful of the following considerations:
 - All documentation and permanent IDs must be secured.
 - Respect for bodies will be observed as a priority.
 - Grieving family members' and others' needs should be accommodated within the public health constraints.
- Mental health professionals may be extended beyond capacity.
- The city, town, or townships are responsible for procuring land for the disposition of mass numbers of bodies and/or ashes. (See IC 23-14-75-2.)

Coroner's Jurisdiction

The Indiana Code (IC) stipulates certain circumstances in which the county coroner must investigate a death. Listed below are the circumstances that may occur during an influenza pandemic.

- Any death where there is a question of whether the victim died a natural death.
- Any death that appears to be natural, but there is no physician willing or able to sign the death certificate.
- Any at-home death from a terminal illness where the attending physician will not sign the death certificate.

The following conclusions can be made regarding the role of the coroner's office in the circumstances of an influenza pandemic:

- During an influenza pandemic, the cause of most deaths will not be in question.
- Such deaths will be considered natural.
- Such deaths will not fall under the coroner's jurisdiction.
- If there are reasonable suspicions as to whether a death was natural, the coroner should be contacted for a ruling.

IC 36-2-14 outlines the responsibilities of the coroner, but there are no provisions for mass fatalities. The IC can be accessed at:

<http://www.in.gov/legislative/ic/code/title36/ar2/ch14.pdf>

Pronouncing Death

The final determination of death is left to qualified medical personnel. This may include an attending physician, a registered nurse (such as a hospice nurse), a nurse practitioner or a physician assistant, or a local health officer. Depending on the state of the body upon discovery, law enforcement or first responders may pronounce death.

Signing Death Certificates

Physicians and coroners are authorized to sign a death certificate and enter the cause of death. This would include:

- Attending physician
- Local health officer
- Coroner
- A designated deputy coroner

Unattended Deaths

During a declared influenza pandemic, the following protocol should be followed when an unattended body is discovered:

- If the body is discovered by a family member, relative, neighbor, or friend who can identify the deceased, the discoverer is to contact authorities (e.g., law enforcement, health department, hospital, funeral home director) for directions on how to proceed. Those authorities will request the following information:
 - Ask the discoverer to provide contact information on himself or herself and the identity and location of the deceased.

- Inquire whether the death appears natural or suspicious.
 - If natural, inform the discoverer that the appropriate agency or staff will come to transport the body to the designated site.
 - If suspicious, ask the discoverer to remain on site until an authority arrives to investigate.
- If the discoverer cannot identify the body, he or she should contact the authorities; those authorities will request the following information:
 - Ask the discoverer to provide contact information on himself or herself and on the location of the body.
 - Inquire whether the death appears natural or suspicious.
 - Direct the discoverer to remain on site until an authority arrives to investigate.
- If the discoverer is a first responder, law enforcement, or a public health official, that person will proceed as directed in prior training.

Public and Private Partnerships

As part of the local influenza pandemic plan, many county agencies and private businesses have discussed or implemented a Memorandum of Understanding (MOU) that outlines cooperative arrangements among themselves. Such agreements between local officials and business enterprises (e.g., funeral homes, crematoriums, companies supplying caskets and embalming fluids, cemeteries, grave attendants, refrigerated truck providers) assist all parties in providing the quickest and best service possible to the community. All county plans should include such agreements.

A public-private partnership would be committed to the following:

- Mutually striving for the common good of community members.
- Realizing that, while such a crisis often fosters both the best and the worst in people, their partnership will serve equitably and efficiently.
- Maintaining a level of professionalism that facilitates the execution of mutual responsibilities in an understanding and compassionate manner.
- Appreciating that public agencies, private businesses, and the general public will need to compromise and cooperate during such a crisis.

Indiana Funeral Directors Association (IFDA)

IFDA has drafted association guidelines to deal with multiple-death situations. These guidelines outline procedures for the following:

- Initial Recovery and Staging
- Evacuation to Morgue

- Temporary Morgue Sites
- Return of Bodies to Loved Ones
- Mass Burials
- Unidentified Remains
- Temporary Storage

The IFDA has organized disaster response teams (DRT) to assist coroners in the state in the eventuality of multiple-death emergencies. The DRT coordinates with the local Emergency Management Agencies (EMA) and Disaster Preparedness Coordinator to provide as much guidance and assistance as is required. Coroners are encouraged to maintain strong working relationships with the local IFDA members. IFDA contact information is listed below:

1305 W. 96th Street Suite A
Indianapolis, IN 46260
800.458.0746
317.846.2448
http://www.indiana-fda.org/mgxroot/page_10788.php

Determination of Local Capacity

When does the number of influenza pandemic deaths become *excessive*? The following description may suffice: *Mass fatalities exist when the number of dead persons exceeds the local community's resources and ability to provide for proper disposition of the bodies in a timely manner.*

During the pre-pandemic planning stages it is expected that the PPCC will have developed a four-tiered schema of local capacity for handling mass fatalities. Hospitals, funeral homes, and the local health department personnel might outline these levels of capacity as the following:

- Ordinary—the average daily or weekly capacity for proper body disposition.
- Sustainable—the capacity “under stress” that can be maintained for a determined period.
- Excessive—the level at which the proper disposition of bodies exceeds existing resources and may involve additional or modified resources.
- Critical—exceeds all resources and involves immediate identification and mass burials.

At the point when the number of fatalities reaches the excessive level, the coroner, after consulting with the local health officer and other emergency management personnel, must establish an alternative body-storage and body-preparation site(s). Such a site(s) will require the following considerations.

- Sufficient square footage to allow for several separate areas
- Utilities
- Communication capabilities
- Morgue supplies and embalming fluids
- Storage and cooling facilities
- Waste disposal

See [Section 3, subsection Storage of Bodies](#) for a detailed list of interim morgue requirements.

Mass Burials

When the county has reached the critical level, burial is the most practical method of long-term storage and permanent body disposal because it preserves evidence for future investigation, if necessary. Mass burial (on a strictly temporary basis) may become necessary when the following occurs:

- The number of remains cannot be disposed of in the traditional manner, and their prolonged presence could present a public health concern.
- The remains cannot be adequately refrigerated or embalmed.
- The remains cannot be properly identified or processed in an acceptable manner.

County officials have the authority to decide when a county may or must use mass burials. The county health officer, in consultation with the County Department of Environmental Management, would work to identify mass burial site locations. That decision is based on a number of determining factors:

- Availability of cemetery space (county-, public-, or private-owned)
- Availability of public or private land
- Ease of post-pandemic retrieval of bodies
- Water table, soil conditions, etc.
- Appropriateness of the land for temporary or permanent burials and subsequent memorial services
- Number of remains to be buried
- Distance and transportation considerations

The city, town, or townships have the authority to acquire land for mass burials.

SECTION 3: DISPOSITION OF BODIES

Body Recovery

The body-recovery process must be handled with the utmost respect because it is performed before the public eye. It can stir great community bonding if handled sensitively; or it can cause much grief if not carried out with professionalism.

A county should consider establishing and widely publicizing a central call-in telephone number and Web site for persons to report a death and/or the need for a body retrieval. All personnel assigned or designated to remains recovery should be trained in how to provide this service. If possible, mortuary personnel should be designated. If there are insufficient mortuary personnel, then those selected should be aware of the difficulties they may encounter. If possible, prior training should be provided.

Bodies should be placed in body bags by the recovery personnel. If these are unavailable, use plastic bags/containers, plastic sheets, shrouds, bed sheets, or other locally available material.

Waterproof identification labels (e.g., paper in sealed plastic, pre-numbered metal identification tags, or plastic tags/bracelets) with a unique identification system should be used. Do not write on body bags/sheets as they can be easily erased in storage. See section on [Identification of Bodies](#).

Personal belongings, jewelry, and documents should not be separated from the body during transport, but only during the identification phase.

Transporting Bodies

It is likely that in an influenza pandemic the transportation of a large number of remains will be necessary. It will be essential to have MOUs in place that will allow for a sufficient supply of transporting vehicles. Funeral home hearses, emergency vehicles, and other specialized transports will be needed. However, such specialized vehicles may be in short supply.

Therefore, other vehicles will have to be adapted to meet the demand. The following issues should be considered if this becomes the case.

- Trucks, refrigerated trailers, pick-ups, and vans can be used to transport bodies—preferably closed vehicles, with floors that are either waterproof or covered with plastic. The bodies should already have been packed in duly marked body bags or other containers.
- To the extent feasible, cover any lettering or symbols—including license plates—that identify the companies or individuals that own the transport vehicles being used.

- Vehicles must be thoroughly cleaned once transport is completed or no longer required.
- Health service vehicles, especially ambulances, should not be used to transport dead bodies. These vehicles should be reserved for serving the living.

Storage of Dead Bodies

In the wake of an influenza pandemic, local morgue capacity may be overwhelmed. Therefore, it will be necessary to plan for an interim incident morgue site(s). The following should be taken into consideration when planning an interim morgue:

Storage Space

- Facility available for the necessary time frame
- Retrofit capability and cost
- Appropriate square footage available
 - Less than 100 fatalities—6,000 sq. ft. facility
 - 101 to 200 fatalities—8,000 sq. ft. facility
 - More than 200 fatalities—10,000 sq. ft. facility
 - Room for two 400 to 600 sq. ft. office spaces
- Non-porous flooring or disposable flooring
- Room for a separate holding area, viewing area, and examination area
- Tractor-trailer accessible
- Showers
- Hot and cold water
- Heat or air conditioning (depending upon season)
- Electricity (110 volt, 300 amps minimum)
- Drainage
- Ventilation
- Restrooms
- Space for staff support and rest
- Parking areas for staff and trucks

Communications

Communication capabilities, including multiple telephone lines and satellite accessibility are essential.

Security

Following are several security issues to consider:

- Fenced area with limited access
- Secure entrances into general area
- Secure entrances into facility with uniformed guards
- Security for entire site
- Removed from public view
- Removed from the Family Assistance Center in a need-to-know location

Cold Storage

Cold storage of bodies slows the rate of decomposition and preserves the body for identification. Within 12 to 48 hours in hot temperatures, decomposition will be too advanced to allow facial recognition.

Bodies must be stored between 37-42° Fahrenheit to retard decomposition. Non-embalmed bodies can be stored for up to 72 hours in a controlled environment before deterioration affects viewing. Embalmed bodies can be stored up to seven days. However, if viewing prior to burial is not an issue, cold storage and embalming may be effective for more than 30 days. Bodies should not be placed directly in or on ice. The melt water causes rapid deterioration.

Refrigerated facilities and/or vehicles that could serve as temporary storage units should be identified by the county and pre-approved agreements put into place. Other options not discussed in this document are temporary burial, the use of ice, and the use of dry ice.

Identification of Dead Bodies

It is essential that an identification tracking system be in place for following the body from the point of death to storage to disposition. All burial transit permits (BTP) should be documented electronically through a proven scanning device by connection to the body ID. This system improves accountability and accuracy of the number of remains. All identified bodies should be released as soon as possible to relatives or their communities for disposal, according to local custom and practice.

There are a number of identification options, such as the following:

- Metal bracelet identification tags which have been pre-stamped or at least written on with indelible ink
- Plastic bracelets (similar to bracelets used for patients in hospitals)
- Radio frequency (RF) tags

Whichever body storage option is decided upon by a county, waterproof labels with a unique identification number should be used. A county may use the number system provided in Annex 1—Sequential Numbers for Unique Referencing.

● Three identification tags should be used for each fatality:

- One tag should be tied to the body with a wire or strong cord or placed around the wrist, ankle, or toe.
- A second tag should be attached to the body bag or body container in a secure manner.
- A third tag should be used with the separate clear plastic bag that will store any personal effects.

As the bodies are prepared for transport, the above procedures for tracking bodies are applicable in the following circumstances:

- When a funeral home and/or the coroner's office is involved in transporting
- When a delegated driver (a volunteer or other county-appointed personnel) transports a body to the designated location

Identification Forms

Make every effort to collect the personal identification information on the deceased at the time of body retrieval, or at the time the body is brought to a designated location (interim morgue) by family members, neighbors, or friends.

The most readily available ID sources are the following:

- Family, relatives, neighbors, friends
- Wallet, purse, drivers' license, credit cards

A *Dead Bodies Identification Form* should immediately be filled out, coded, and filed accordingly. A sample form is provided in Annex 2. This information may also be added to a *Body Inventory Sheet*, a sample is provided in Annex 3.

Additional methods to aid in permanent and unalterable identification of a body include the following on the tag or in the file:

- Photograph
- Finger/thumb print
- Blood sample
- Dental records (in file only)
- DNA

Unidentified Bodies

Counties also should develop a procedure for numbering and identifying unidentified bodies. Disposition of unidentified bodies is the responsibility of the county coroner. If the coroner delegates that responsibility, the following procedures are suggested:

- When an unidentified body is discovered or brought to a hospital, interim morgue, or other facility, follow the tagging suggestions above.
- The body should then be transported to a designated location, using the outlined transportation suggestions above.
- After a body is appropriately tagged and transported, identification procedures should begin.
- A *Dead Bodies Identification Form* should be filled in as much as possible at this time.
- This information may also be added to a *Body Inventory Sheet*, a sample of which is provided in Annex 3.

Procedures that can aid in the identification process include the following, which can be kept on the tag or in the file:

- Photograph
- Finger/thumb print
- Blood sample
- Dental records (in file only)
- DNA

Storage of Personal Effects

All personal effects that accompany the body will be stored in clear plastic bags or containers that have been appropriately tagged with the body's individualized number or code.

Embalming

Some authors define embalming simply as the preparation of a dead body for preservation, while others make a distinction between transitory preservation and body preparation (PAHO).

A majority of bodies will be embalmed, as is the standard custom in most communities. Embalming could be performed at the interim morgue site or at a funeral home after the body is released. The family should make the determination, or the coroner, based on expected time of body release or burial.

Among the most important requirements to take into account for these procedures are the following:

- Trained technical personnel
- Appropriate equipment and instruments
- Preservation materials
- Adequate working area

Burial Sites

Note: Indiana Law, IC 23-14-54-1—...the remains of all individuals who die in Indiana or are shipped into Indiana shall be deposited:

- *In the earth in an established cemetery;*
- *In a mausoleum;*
- *In a garden crypt; or*
- *In a columbarium;*

within a reasonable time after death, except as ordered by the state department of health.

Note: A columbarium is a vault with niches for urns containing ashes of the dead.

The majority of the deceased may not be owners of cemetery property. Additional or new cemetery property may be in limited supply. Therefore, a county should consider the need for increased burial sites and have pre-approved agreements in place.

If additional burial sites need to be procured, refer to the subsection above on [Mass Burials in Section 2, Regulatory Requirements](#).

Observe the following procedures in arranging for additional burial sites:

- Soil conditions, highest water table level, and available space must be considered.
- The site should be acceptable to communities living near the burial site.
- The site should be close enough for the affected community to visit.
- The burial site should be clearly marked and surrounded by a buffer zone to allow planting of deep-rooted vegetation and to separate the site from inhabited areas.
- Burial sites should be at least 225 yards away from water sources such as streams, lakes, springs, waterfalls, beaches, and the shoreline.
- Suggested burial distance from drinking water wells is provided in the following table (Table 1). Distances may have to be increased based on local topography and soil conditions.

Table 1. Recommended distance of graves from drinking water wells

Number of bodies	Distance from drinking water wells
4 or less	220 yards
5 to 60	275 yards
60 or more	400 yards

Grave Construction

Regarding gravesite preparation, the following points merit consideration:

- Dead bodies should be buried in clearly marked, individual graves.
- Prevailing religious practices may indicate preference for the orientation of the bodies (e.g., heads facing east or toward Mecca).
- Although there are no standard recommendations for grave depth, it is suggested that graves should be between 5- and 10-feet deep.

Note: Indiana Law, IC 23-14-54-2—All dead human bodies interred in the earth shall have a cover of at least two (2) feet of earth at the shallowest point over the outer receptacle in which the body is placed.

- If a communal or mass grave is needed, it should consist of a trench holding a single row of bodies each placed parallel to the other, 1.5 feet apart; there should be at least 7 feet between the bottom of the grave and water table. Or, any level to which ground water rises, the distances may have to be increased depending on soil conditions.

Burial of Unidentified or Unclaimed Bodies

Burial is the most practical method of disposing of bodies. One benefit is that it preserves evidence for future forensic investigations, if such ever become necessary. Helpful suggestions include the following:

- Each body must be buried with its unique identification number on a waterproof label. This number must be clearly marked at ground level, mapped and recorded for future reference.
- Religious considerations should be observed. Non-denominational rites should be held at the site of the burial.

Cremation

Cremation, on the other hand, can be suggested but with the sensitivity that many people, for cultural or religious reasons, are averse to it. In addition, cremation remains cannot be investigated for forensic or identification purposes, should that ever become necessary.

There are additional factors to consider with the possibility of cremation of a large number of dead bodies:

- Large amounts of fuel would be needed (usually wood).
- Achieving complete incineration is difficult, often resulting in partially incinerated remains that have to be buried.
- It is logistically difficult to arrange for the cremation of a large number of dead bodies.

SECTION 4: RESOURCE AVAILABILITY

During an influenza pandemic, resources of all types will be scarce. With much of the county affected and a 30% loss in the workforce, both material supplies and labor will be greatly impacted. The demand for a number of items and skills will be high, and the normal supply will be greatly reduced. There will be little capacity to meet the need.

The state and federal governments have stated they will not be in a position to offer assistance to a county during the influenza pandemic; therefore, a county must be able to function on its own. It is critically important that a county begin to plan now with their vendors, suppliers, and other public officials to maintain basic services during a pandemic.

Equally important is to begin to plan with health care organizations, the educational system, private and nonprofit sectors of the community. All sectors have something to contribute to the effort, and conversely all sectors will be significantly impacted.

Two entities with which a county should begin discussions are the funeral directors and coroner located within the jurisdiction. The possibility of mass fatalities during a pandemic is real. Having adequate resources in place, and/or available, is vital to the continuity of operations, but also to the psychological welfare of the community.

Body Disposition Resources

The following are items that should be discussed, resourced, and pre-agreements developed.

- Body bags—Most counties will have a limited supply on hand. Stockpiling is an option. Alternatives to traditional body bags should be investigated and pre-agreements put into place.
- Embalming fluid—Embalming a dead body for burial is the most common practice in this country. Each body will require approximately 24 ounces of concentrated embalming fluid. With the indefinite shelf life of an unopened container of embalming fluid, the county and funeral directors should consider increasing its inventory and setting aside containers for use in a pandemic.
- Embalmers—An inventory should be taken of the number of people trained as embalmers within the county. This should include those persons who have retired but would be willing to assist in a pandemic, and those who are trained but are not currently practicing.
- Caskets—With the greatly increased number of deaths in the county, the normal supply of caskets will quickly be outstripped. A manufacturer's ability to produce additional caskets will be diminished. The ability to transport additional caskets also will be diminished. A county should seek to identify supply alternatives and/or temporary alternatives and put into place pre-approved agreements.

- Burial sites—See this discussion under subsection [Burial, Section 3 Disposition of Bodies](#).
- Grave preparations—Manpower used to prepare gravesites also will be affected. An alternative workforce should be identified and trained.
- Crematoriums—A county should inventory the number of crematoriums located within its jurisdiction, as well as the crematoriums' capacity and speed. If there are no crematoriums within the county, pre-approved agreements should be put into place with the closest and/or most logical facilities. Discussions should take place regarding the disposition of ashes and become a part of the pre-agreement.
- Transporters—For retrieval of remains, these personnel must be trained in proper techniques for identification and transport and be aware of safety precautions.

SECTION 5: CULTURAL AND RELIGIOUS CONSIDERATIONS

Funeral Home Capacity

There are several challenges in addressing the issue of funeral home capacity. Some of those issues are the following:

- Body preparation averages about four hours.
- Depending on funeral home size, one establishment can conduct up to three community funerals and/or four in-house funerals a day.
 - Community funerals are those conducted at a church, synagogue, or other location where a traditional service is held.
 - In-house funerals are those conducted in the funeral home followed by interment at a cemetery at another site.
- While a certain percentage of the population has pre-planned and paid for their funeral arrangements (e.g., embalming, visitation, disposition of the body, cemetery plot, casket, headstone, cremation, disposition of ashes), an even larger percentage has no such plans, thus slowing down the traditional funeral planning and arrangements.
- The above estimate of funeral home capacity presumes healthy personnel, which is not necessarily a given during a pandemic.
- If the local health department encourages (or mandates) closure of certain establishments or the isolation of the sick, traditional funeral ceremonies may be put on hold until post-pandemic.

Funeral Services

The capacity for churches, synagogues, temples, etc., to perform funeral services or memorial services depends on many factors. Some of those determinants follow:

- Availability of ministers, clergy, rabbis, imams, etc.
- Availability of funeral facilities
- Level of isolation or quarantine mandated by local authorities

Cultural, Social and Religious Attitudes

In the event of an influenza pandemic, the recovery, identification, transportation, storage, and final disposition of bodies carry deeply felt personal and public emotions and beliefs. For many people, their inability to perform rituals condemns a family to a second and third death. The first death distinguishes the physical presence of the loved one.

The second death is the absence of a tomb, the symbol that perpetuates the loved one's name and confers social worth to the deceased. The third death is the lack of inclusion of the deceased in the generational continuity of a family.

Because human beings are social by nature, death is a very public event. It is through public ritual that society accepts and pays attention to the grieving process, so important for the survivors. Public rituals around death strengthen the social bonds with the hope of shared survival. Rituals provide mourners the opportunity to express their loss in a prescribed way and to accept the reality of their loss, which requires disposing of the body of the loved one.

The effects of disrupting normal rituals and the unresolved mourning of a society are traumatic and debilitating to individual mourners and the public in general. As social beings, we have rites of passage (separation, marginalization, and reincorporation) through which we must traverse on the occasion of death. To be deprived of this ritual dimension is yet another loss to the soul and psyche.

Time-of-Death Reminders

When making important decisions about whether to streamline, postpone, or eliminate traditional funeral rituals, the following factors must be carefully contemplated:

- A body must always be treated in a dignified manner.
- Many people believe the living body to be the temple of the Holy Spirit and thus, in death, deserving of respect.
- Some people would never consent to an autopsy for a loved one, seeing it as a violation of the principle of respect.
- Some people are strongly opposed to cremation given their belief in the *glorification of the body in the next life*.
- Many families maintain a bond with the deceased, and this bond is maintained in spirit and sensually through a vigil with the corpse and visitations at the grave site.
- People's *right to worship* includes the right to appropriately perform the rites of vigil and burial for the deceased.

- For many, participation in the rites surrounding death assuages the sting of loss and binds the survivors with stronger ties to the deceased and to each other.
- The importance of worship is a right not lightly set aside.
- Mourners should be treated with compassion and respect.
- Time and attention given to mourners' psychological needs is a social responsibility borne by all members of the community.
- In responding to and making decisions about the management of an influenza pandemic, the cultural and religious convictions of the survivors must be given serious consideration.
- The overly rapid elimination of corpses, fumigation of spaces, common graves, reduction of contaminants through *fire* are misguided and debilitating in the long term (an influenza-stricken corpse poses a limited risk only for certain pathogens, determined by very specific circumstances).
- In summary, turning bodies over to families, facilitating rituals that allow mourners to grieve and celebrate, to memorialize and connect are essential for individual and community health of body and soul.

SECTION 6: SURVEILLANCE AND REPORTING

Surveillance

Surveillance has been defined as "an ongoing systematic collection, analysis and interpretation of outcome-specific data for use in the planning, implementation and evaluation of public health practices" (Flahault 1998). Surveillance is more than the collection of data. A timely, representative, and efficient surveillance system is the cornerstone of the control of epidemic-prone communicable diseases (Pacific Public Health Surveillance Network 2004).

In order to be able to detect an unusual cluster or number of cases of illness that may be due to a new influenza virus, the United States participates in an early warning system for human disease (Global Influenza Surveillance Network). So also, each Indiana county participates in a state-wide surveillance effort to detect and track pandemic influenza cases.

The Indiana State Department of Health (ISDH) uses five different surveillance components to monitor influenza activity (seasonal influenza) in Indiana. These components assist in determining where, when, and what influenza viruses are circulating, along with determining the level of influenza activity. During a pandemic, the ISDH will disseminate surveillance information to local health departments, hospitals, and other stakeholders by way of the Indiana Health Alert Network (IHAN).

The state and counties must define the objectives of surveillance. During the interpandemic period and the pandemic alert period (phases 1-5), surveillance in all counties should target the rapid identification of the circulating strain and the early detection and reporting of the pandemic strain in humans.

Surveillance, using different methodology/tools, is required to determine the intensity and impact of influenza activity; to identify the high-risk populations; to identify when, where, and which influenza viruses are circulating.

Surveillance Objectives

Counties affected by a pandemic threat should determine how widespread the outbreak is, as well as whether or how efficiently human-to-human transmission is occurring. Surveillance during these periods should include the following:

- Laboratory reports
- Hospital admissions for acute respiratory disease
- Reports on animal to animal and animal to human transmissions
- Possible monitoring of pneumonia cases and antiviral drug resistance

In crises situations, such as an influenza pandemic, the gathering, management, and analysis of information is crucial to decision making. How health departments respond to such a pandemic is significantly affected by the quantity and quality of information at their disposal. If the county's *Influenza Pandemic Plan* has outlined how the retrieval and tracking of information is to be handled, those strategies for collecting data could be in place and functioning.

On the other hand, if information management is not organized, there will need to be on-the-spot development of some rudimentary procedures for documenting and conveying the kinds of data that both the county and the state will need.

Pandemic surveillance includes the following events:

- Hospital admissions of suspected or confirmed cases of pandemic strain influenza
- Deaths among suspected or confirmed cases of influenza pandemic
- Workforce absenteeism in services designated as essential
- Vaccine usage for routine and pandemic strain influenza vaccinations (if available)
- Adverse vaccine events attributable to the pandemic strain vaccine (if available)
- Data collection for later use in the calculation of vaccine effectiveness (if it was available)
- Monitoring pneumococcal vaccine use and adverse events associated with its use (if it was available)
- Monitoring of antiviral use and adverse events attributable to its use (if available)

In addition, some mechanism for data aggregation, interpretation, and transmission for decision-making should be gathered.

Reporting

Early detection is vital to effective preparation for a potential influenza pandemic. Any hope of containing or slowing a pandemic requires almost immediate notification and action. Such then, is the importance of up-to-date and accurate surveillance.

State and local preparedness is crucial to pandemic readiness. The daily or weekly reporting from the local community to the state is a dimension of partnership communications critical to effective response to a pandemic.

When an outbreak is confirmed, the health authorities should inform health professionals and the public through the usual accepted channels of communications on the outbreak, the opportunity of vaccination (mass campaign, targeted campaign, catch-up program, or voluntary immunization), and the treatment.

A county should be prepared to report at a minimum the following information as can be seen in the Influenza-Associated Deaths Case Investigation (Annex 4):

- What types of influenza testing was conducted and what were the results
- Complications that occurred during the acute illness
- If the patient received medical care for the illness
- Place and date of death
- Other pre-existing medical conditions that could be contributing risk factors

In addition to the individual patient-level records relating to influenza-associated deaths, a line list of cases by category should be created, maintained, and development of a spot map should be considered. If the outbreak is relatively contained, there will be time to search for and isolate a possible source (e.g., institutional, travelers, health care settings). Available clinical data on age-specific attack rates and complications and outcomes of influenza in specific risk groups (e.g., pregnant women, babies under two years, and others) as identified in research priorities needs to be collected, collated and analyzed. If necessary, population groups need to be reprioritized for possible vaccination.

SECTION 7: PUBLIC HEALTH ISSUES

Issues of Concern

Any substantive influenza pandemic plan must anticipate possible public health issues that could arise. Public affairs roles and responsibilities of officials and personnel need to be anticipated and assigned. Remains as a result of the influenza pandemic will not be hazardous to the community. This should be communicated widely throughout the pandemic.

A definitive analytical protocol still has not been developed that makes it possible to objectively quantify whether the presence of dead bodies increases health risks for the living (PAHO, *Management of Dead Bodies*, Ch. 3).

Such issues include the following:

- A dead body is the result of an epidemic and not the cause of the epidemic.
- Dead bodies in disease endemic areas can be carriers of the etiologic agent without being the cause of the epidemic.
- The available evidence indicates that the presence of human corpses represents little or no public health hazard.
- Individuals handling human remains have a small risk through contact with blood and feces for Hepatitis B and C, HIV, and Tuberculosis.
- Basic hygiene protects workers from exposure to diseases spread by blood and certain body fluids. (Pandemic influenza is spread through respiratory droplets.)
- Body handlers should use the following protections:
 - Gloves
 - Frequent hand washing
 - Avoidance of touching face, mouth, eyes
 - Face masks (if indicated)

References

Pan American Health Organization, 2006, *Management of Dead Bodies after Disaster: a Field Manual for First Responders*. Washington D.C., ISBN 92 75 12630.5 (English). Available at <http://publications.paho.org/english/index.cfm>

Pan American Health Organization, 2004, *Management of Dead Bodies in Disaster Situations*. Washington D.C., ISBN 92 75 12529-5 (English). Available at <http://publications.paho.org/english/index.cfm>

The Indiana Code

<http://www.in.gov/legislative/ic/code/>

The Indiana Funeral Directors Association – available at

http://www.indiana-fda.org/mgxroot/page_10788.php

IFDA Yearbook, 2005-2006, Indianapolis, IN 46260. The Yearbook is self-published by the Association.

Pacific Public Health Surveillance Network (PPHSN) Influenza Guidelines. 2005.

Available at <http://www.spc.int/phs/PPHSN/Publications/Guidelines/Influenza.htm>

Kamps, B.S., et al. *Influenza Report 2006: Pandemic Preparedness*. Available online:

<http://www.influenzareport.com/ir/pp.htm>

Indiana State Department of Health. *Influenza-Associated Deaths Case Investigation State Form 52576 (2-06)*. Available online:

http://www.in.gov/isdh/form/pdfs/52576_InfluenzaAssocDeath.pdf

Annex 1—Sequential Numbers for Unique Referencing
Begin numbers with county numerical code (i.e., 29001)

When using the list below, cross each number off the list when it is used to avoid using it twice.

__001	__051	__101	__151	__201	__251	__301	__351	__401	__451
__002	__052	__102	__152	__202	__252	__302	__352	__402	__452
__003	__053	__103	__153	__203	__253	__303	__353	__403	__453
__004	__054	__104	__154	__204	__254	__304	__354	__404	__454
__005	__055	__105	__155	__205	__255	__305	__355	__405	__455
__006	__056	__106	__156	__206	__256	__306	__356	__406	__456
__007	__057	__107	__157	__207	__257	__307	__357	__407	__457
__008	__058	__108	__158	__208	__258	__308	__358	__408	__458
__009	__059	__109	__159	__209	__259	__309	__359	__409	__459
__010	__060	__110	__160	__210	__260	__310	__360	__410	__460
__011	__061	__111	__161	__211	__261	__311	__361	__411	__461
__012	__062	__112	__162	__212	__262	__312	__362	__412	__462
__013	__063	__113	__163	__213	__263	__313	__363	__413	__463
__014	__064	__114	__164	__214	__264	__314	__364	__414	__464
__015	__065	__115	__165	__215	__265	__315	__365	__415	__465
__016	__066	__116	__166	__216	__266	__316	__366	__416	__466
__017	__067	__117	__167	__217	__267	__317	__367	__417	__467
__018	__068	__118	__168	__218	__268	__318	__368	__418	__468
__019	__069	__119	__169	__219	__269	__319	__369	__419	__469
__020	__070	__120	__170	__220	__270	__320	__370	__420	__470
__021	__071	__121	__171	__221	__271	__321	__371	__421	__471
__022	__072	__122	__172	__222	__272	__322	__372	__422	__472
__023	__073	__123	__173	__223	__273	__323	__373	__423	__473
__024	__074	__124	__174	__224	__274	__324	__374	__424	__474
__025	__075	__125	__175	__225	__275	__325	__375	__425	__475
__026	__076	__126	__176	__226	__276	__326	__376	__426	__476
__027	__077	__127	__177	__227	__277	__327	__377	__427	__477
__028	__078	__128	__178	__228	__278	__328	__378	__428	__478
__029	__079	__129	__179	__229	__279	__329	__379	__429	__479
__030	__080	__130	__180	__230	__280	__330	__380	__430	__480
__031	__081	__131	__181	__231	__281	__331	__381	__431	__481
__032	__082	__132	__182	__232	__282	__332	__382	__432	__482
__033	__083	__133	__183	__233	__283	__333	__383	__433	__483
__034	__084	__134	__184	__234	__284	__334	__384	__434	__484
__035	__085	__135	__185	__235	__285	__335	__385	__435	__485

__036	__086	__136	__186	__236	__286	__336	__386	__436	__486
__037	__087	__137	__187	__237	__287	__337	__387	__437	__487
__038	__088	__138	__188	__238	__288	__338	__388	__438	__488
__039	__089	__139	__189	__239	__289	__339	__389	__439	__489
__040	__090	__140	__190	__240	__290	__340	__390	__440	__490
__041	__091	__141	__191	__241	__291	__341	__391	__441	__491
__042	__092	__142	__192	__242	__292	__342	__392	__442	__492
__043	__093	__143	__193	__243	__293	__343	__393	__443	__493
__044	__094	__144	__194	__244	__294	__344	__394	__444	__494
__045	__095	__145	__195	__245	__295	__345	__395	__445	__495
__046	__096	__146	__196	__246	__296	__346	__396	__446	__496
__047	__097	__147	__197	__247	__297	__347	__397	__447	__497
__048	__098	__148	__198	__248	__298	__348	__398	__448	__498
__049	__099	__149	__199	__249	__299	__349	__399	__449	__499
__050	__100	__150	__200	__250	__300	__350	__400	__450	__500

Annex 2—Dead Bodies Identification Form

Body/Body Part Code: (Use unique numbering and include on associated files, photographs, or stored objects.)	
Possible Identity of Body:	
Person Reporting: Name:	
Official Status:	Place and Date:
Signature:	
Recovery details (Include place, date, time, by whom and circumstances of finding. Indicate if other bodies were recovered in the same area, including name and possible relationship, if identified):	

A. PHYSICAL DESCRIPTION

A.1	General Condition (mark one):	a.	Complete body	Incomplete body (describe):		Body Part (describe):	
		b.	Well preserved	Decomposed	Partially skeletonized	Skeletonized	
A.2	Apparent Sex (mark one and describe evidence):	Male	Female	Probably male	Probably female	Undetermined	
		Describe evidence (genitals, beard, etc):					
A.3	Age Group (mark one):	Infant	Child	Adolescent	Adult	Elderly	
A.4	Physical Description (measure or mark one):	Height (crown to heel):		Short	Average	Tall	
		Weight:		Slim	Average	Fat	
A.5	a. Head Hair:	Color:	Length:	Shape:	Baldness:	Other:	
	b. Facial Hair:	None	Moustache	Beard	Color:	Length:	
	c. Body Hair	Describe:					

A.6	Distinguishing features:	Continue on additional sheets if needed. If possible, include a sketch of the main findings.
	Physical (e.g. shape of ears, eyebrows, nose, chin, hands, feet, nails; deformities, missing limbs/amputation)	
	Surgical implants or prosthesis (artificial limb)	
	Skin marks (scars, tattoos, piercings, birthmarks, moles etc.)	
	Apparent injuries (include location, side)	
	Dental Condition (crowns, gold teeth), adornments, false teeth) Describe any obvious features	

B. ASSOCIATED EVIDENCE

B.1	Clothing:	Type of clothes, colors, fabrics, brand names, repairs. Describe in as much detail as possible
B.2	Footwear:	Type (boot, shoes, sandals), color, brand, size: describe in as much detail as possible
B.3	Eyewear:	Glasses (color, shape), contact lenses: describe in as much detail as possible
B.4	Personal items:	Watch, jewelry, wallet, keys, photographs, mobile phone (incl. number), medication, cigarettes, etc: Describe in as much detail as possible
B.5	Identity Documents:	Identification card, drivers license, credit card, video club card, etc. Take photocopy if possible. Describe the information contained.

C: RECORDED INFORMATION

C.1	Fingerprints:	Yes	No	By whom? Stored where?:
C.2	Photographs of body:	Yes	No	By whom? Stored where?:

D: IDENTITY

D.1	Hypothesis of identity:	Explain reasons for attributing a possible identity:
------------	--------------------------------	--

E: STATUS OF BODY

Stored:	(Morgue, refrigerated container, temporary burial; describe location):
	Under whose responsibility:
Released:	To whom and date:
	Authorized by:
	Final destination:

Annex 4—Influenza-Associated Deaths Case Investigation

INFLUENZA-ASSOCIATED DEATHS CASE INVESTIGATION - Page 1 of 4

Indiana State Department of Health
State Form 52576 (2-06)

DIRECTIONS - PLEASE READ BEFORE YOU BEGIN:

- 1 Print firmly and neatly.
- 2 Only use pens with blue or black ink.
- 3 Fill in circles like this: ●
- 4 Print capital letters only and numbers completely inside boxes.
- 5 Please complete all items on form.
- 6 Date format: MM/DD/YY

Not like this: ✗
Mark mistakes like this: ✗

A | 2 | C | 3

Section 1. Demographic Information

ISDH Action: A case Not a case

Last Name _____

First Name _____ MI _____ Phone Number _____ - _____ - _____

Number & Street Address _____

City _____ State _____ ZIP Code _____ - _____

County _____ Date of Birth ____/____/____ Age _____

Race: Asian Black or African American American Indian or Alaska Native Native Hawaiian or Other Pacific Islander

Ethnicity: White Other/Multiracial Unknown Hispanic or Latino Not Hispanic or Latino Unknown

Sex: Male Female Unknown

Is Age in day/mo/yr? Days Months Years

Occupation _____ Phone of Employer/School/Day Care _____ - _____ - _____

Name of Employer School Day Care _____

Address of Employer/School/Day Care _____

City _____ State _____ ZIP Code _____ - _____

Section 2. Clinical Information

____/____/____ Date of Illness Onset ____/____/____ Date of Death Was an autopsy performed? Yes No

Location of Death: Home Emergency Department (ED) Inpatient Ward ICU Other

If Other, specify _____

Hospital/Institution Name _____

Hospital/Institution Address _____

City _____ State _____ ZIP Code _____ - _____

____ - ____ - ____ Hospital/Institution Phone

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INFLUENZA-ASSOCIATED DEATHS CASE INVESTIGATION - Page 2 of 4

Indiana State Department of Health
State Form 52576 (2-06)

Section 2. Clinical Information (continued)

Influenza Testing (check all that were used):

<u>Test Type</u>	<u>Results</u>			<u>Specimen Collection Date</u>
<input type="radio"/> Commercial Rapid Antigen/Diagnostic Test	<input type="radio"/> Influenza A <input type="radio"/> Influenza B	<input type="radio"/> Influenza A/B (not distinguished) <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> Viral Culture	<input type="radio"/> Influenza A (subtyping not done) <input type="radio"/> Influenza A (unable to subtype) <input type="radio"/> Influenza B	<input type="radio"/> Influenza A (H1) <input type="radio"/> Influenza A (H3) <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> Direct Florescent Antibody (DFA)	<input type="radio"/> Influenza A <input type="radio"/> Influenza B	<input type="radio"/> Influenza A/B <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> Indirect Florescent Antibody (IFA)	<input type="radio"/> Influenza A <input type="radio"/> Influenza B	<input type="radio"/> Influenza A/B <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> Enzyme Immunoassay (EIA)	<input type="radio"/> Influenza A (subtyping not done) <input type="radio"/> Influenza A (unable to subtype) <input type="radio"/> Influenza B	<input type="radio"/> Influenza A (H1) <input type="radio"/> Influenza A (H3) <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> RT-PCR	<input type="radio"/> Influenza A (subtyping not done) <input type="radio"/> Influenza A (unable to subtype) <input type="radio"/> Influenza B	<input type="radio"/> Influenza A (H1) <input type="radio"/> Influenza A (H3) <input type="radio"/> Negative		___ / ___ / ___
<input type="radio"/> Immunohistochemistry(IHC)	<input type="radio"/> Influenza A	<input type="radio"/> Influenza B	<input type="radio"/> Negative	___ / ___ / ___

Was an INVASIVE bacterial infection confirmed by culturing an organism from a normally sterile site (e.g., blood, cerebrospinal fluid (CSF), tissue, or pleural fluid)?

Yes No

If Yes, check all that apply:

- | | |
|--|---|
| <input type="radio"/> <i>Streptococcus pneumoniae</i> | <input type="radio"/> <i>Staphylococcus aureus</i> , Methicillin Sensitive |
| <input type="radio"/> <i>Haemophilus influenzae</i> (type b) | <input type="radio"/> <i>Staphylococcus aureus</i> , Methicillin Resistant (MRSA) |
| <input type="radio"/> <i>Haemophilus influenzae</i> (not type b) | <input type="radio"/> <i>Staphylococcus aureus</i> (sensitivity not done) |
| <input type="radio"/> Group A <i>Streptococcus</i> (GAS) | <input type="radio"/> <i>Neisseria meningitidis</i> (serogroup, if known) |
| <input type="radio"/> Other Invasive Bacteria: | |

Did the patient receive medical care for this illness?

Yes No **If Yes, date:** ___ / ___ / ___

If Yes, indicate level(s) of care received (check all that apply):

- Outpatient Clinic Emergency Department (ED) Inpatient Ward ICU

If Yes, did the patient require mechanical ventilation?

Yes No

Check all complications that occurred during the acute illness:

- | | | |
|---|---|---------------------------------------|
| <input type="radio"/> None | <input type="radio"/> Acute Respiratory Disease Syndrome (ARDS) | <input type="radio"/> Croup |
| <input type="radio"/> Pneumonia (chest x-ray confirmed) | <input type="radio"/> Encephalopathy/Encephalitis | <input type="radio"/> Reye's Syndrome |
| <input type="radio"/> Bronchiolitis | <input type="radio"/> Seizures | <input type="radio"/> Shock |
| <input type="radio"/> Other Complications: | | |

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INFLUENZA-ASSOCIATED DEATHS CASE INVESTIGATION - Page 3 of 4

Indiana State Department of Health
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Section 3. Risk Factors

Check all medical conditions that existed before onset of the acute illness:

- Moderate to Severe Developmental Delay
- Hemoglobinopathy (e.g., sickle cell disease)
- Asthma/Reactive Airway Disease
- Diabetes Mellitus
- History of Febrile Seizures
- Seizure Disorder
- Cystic Fibrosis
- Cardiac Disease, specify: _____
- Renal Disease, specify: _____
- Chronic Pulmonary Disease, specify: _____
- Immunosuppressive Condition, specify: _____
- Metabolic Disorder, specify: _____
- Neuromuscular Disorder (including cerebral palsy), specify: _____
- Pregnant, specify gestational age: _____ weeks
- Other, specify: _____

Was the patient receiving any of the following therapies prior to illness onset (check all that apply)?

- Aspirin or Aspirin-containing Products
- Chemotherapy Treatment for Cancer
- Any Other Immunosuppressive Therapy: _____
- Steroids Taken by Mouth or Injection
- Radiation Therapy _____

Did the patient receive any influenza vaccine during the current season (before illness)?

- Yes
- No

If Yes, please specify influenza vaccine received before illness onset:

- Trivalent Inactivated Influenza Vaccine (TIV) Injected
- Live-Attenuated Influenza Vaccine (LAIV) Nasal Spray

If Yes, how many doses did the patient receive and what was the timing of each dose?

- 1 Dose ONLY
 - < 14 days prior to illness onset _____ / _____ / _____
 - ≥ 14 days prior to illness onset _____ / _____ / _____
- 2 Doses
 - < 14 days prior to illness onset _____ / _____ / _____
 - ≥ 14 days prior to illness onset _____ / _____ / _____

Did the patient travel outside the county of residence but within Indiana?

- Yes
- No
- Unknown

If Yes, where

_____/_____/_____
Date of departure Date of return

Did the patient travel outside of Indiana?

- Yes
- No
- Unknown

If Yes, where

_____/_____/_____
Date of departure Date of return

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INFLUENZA-ASSOCIATED DEATHS CASE INVESTIGATION - Page 4 of 4

Indiana State Department of Health
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Section 3. Risk Factors (continued)

Did the patient raise or have contact with poultry or waterfowl?

Yes No Unknown

If Yes, describe

Location

____ / ____ / ____
Date

Section 4. Comments/Follow-up

Comments:

Investigator Name

Agency

____ - ____ - ____ ____ / ____ / ____
Phone Number Date

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