**Agent Information:**

* Influenza viruses, family Orthomyxoviridae, are enveloped, negative-sense, single-stranded, RNA viruses. Three serotypes, A, B, and C, may infect humans.
* Avian influenza A virus (“bird flu”) primarily infects avian species and is classified into subtypes by the antigenic nature of their surface glycoproteins, hemagglutinin (H) or neuraminidase (N). Avian influenza A viruses (AIV) are further characterized by pathogenicity potential, low pathogenicity (LPAI) or highly pathogenic (HPAI).
* Ongoing variability of AIV are attributable to antigenic shifts that produce completely new subtypes through reassortment (genetic recombination between viruses), which occurs in organisms infected by multiple AIV and may follow interspecies virus transmission. The resultant unique virus necessitates vaccine reformulation and can be responsible for pandemics.
* The primary reservoir for AIV is aquatic birds, in which infection is generally mild or asymptomatic, but highly contagious. Other types of birds and other animals may also be infected.
* The distribution of avian influenza A virus (AIV) is worldwide and of high importance to agriculture.
* Infection in domestic poultry can range from mild, for LPAI, to severe or fatal for HPAI.
* Infected birds shed avian influenza A virus in their saliva, mucous and feces.
* Avian influenza A virus zoonosis is rare; however, humans have been infected with the AIV subtypes A(H5N1), A(H7N9), and A(H9N2). In the majority of cases, zoonotic transmission has been associated with unprotected (no PPE) direct or indirect contact with infected live or dead poultry.
* Human infection by avian influenza A virus is through exposure of the eyes, nose, mouth, or by inhalation.
* Symptoms of AIV infections in humans range from mild to severe and may include flu-like illness (e.g., fever, cough, sore throat, muscle aches), conjunctivitis, nausea, abdominal pain, diarrhea, and vomiting, severe respiratory illness and death.
* Antiviral medications (e.g., neuraminidase inhibitors) may be used to treat AIV infections.
* Effectiveness of available vaccines is dependent upon the specific viral strain.
* BSL2 practices and procedures are required for work involving clinical, diagnostic or field-collected specimens that may be infected with avian influenza A virus.
* BSL3 facilities, equipment, and operational practices are required for AIV isolation, propagation and laboratory manipulation of the highly pathogenic H5, H7 and H9 strains (HPAI).

**References:**

* [*Biosafety in Microbiological and Biomedical Laboratories*, 6th edition. U.S. Department of Health and Human Services; CDC](https://www.cdc.gov/labs/pdf/SF__19_308133-A_BMBL6_00-BOOK-WEB-final-3.pdf)  (BMBL6)
* CDC: <https://www.cdc.gov/flu/avianflu/avian-in-birds.htm> and <https://www.cdc.gov/flu/avianflu/avian-in-humans.htm>
* Public Health Agency of Canada. Pathogen Safety Data Sheets: [https://wwhttps://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)w.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/influenza-a-virus-subtypes-h5-h7-h9.html](https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/influenza-a-virus-subtypes-h5-h7-h9.html)
* WHO: [https://www.who.int/news-room/fact-sheets/detail/influenza-(avian-and-other-zoonotic)](https://www.who.int/news-room/fact-sheets/detail/influenza-%28avian-and-other-zoonotic%29)

Enter the following information:

1. Name of the Principle Investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Applicable IBC protocol number(s) (approved or submitted): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. List the laboratory locations (building/room[s]) for, avian influenza A virus (BSL 2 or 3):
* Procedures:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Storage: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. ABSL 2 or 3 containment is required for animals naturally or experimentally or infected with avian influenza A.
* Currently, Temple University does not provide ABSL3-dedicated space.
* Procedures:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Housing:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Date of Agent Summary form completion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_