



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

Table of Contents

| | Worksheet | Worksheet Title | Description |
|----|--|---------------------------|--|
| | <p>Purpose: This laboratory capacity assessment tool is intended to provide guidance to perform a comprehensive laboratory capacity assessment. The tool has been divided into several worksheets, with this excel workbook. There are two comprehensive tools, a "long" form (Complete Tool), "short" form (Influenza Tool), several stand alone modules, and a list of critical equipment and reagents.</p> | 1 | Complete Tool |
| 2 | | Equip & Reagents | List of critical reagents and equipment necessary to perform rRT-PCR for influenza. |
| 3 | | Contact Info | Module designed to capture relevant contact information. |
| 4 | | General Lab | Module designed to assess general laboratory infrastructure and capacity. |
| 5 | | Vir Lab | Module designed to assess laboratory capabilities and capacities for performing virology. |
| 6 | | Mol Lab | Module designed to assess laboratory capabilities and capacities for performing molecular biology. |
| 7 | | Flu Testing | Module designed to assess laboratory capabilities and capacities for performing influenza testing. |
| 8 | | Safety | Module designed to assess biosafety and biosecurity measures in the laboratory. |
| 9 | | Spec Handling & Reporting | Module designed to assess specimen handling procedures and reporting capabilities and capacities. |
| 10 | | QA-QC | Module to review quality assurance and quality control measures used in the laboratory |

Equipment & Reagents



| Category | Specific Equipment and Materials | Number Operational | Age | Current Maintenance Contract (Y/N) | Primary Use |
|-----------|--|--------------------|-----|------------------------------------|-------------|
| equipment | 20µL, 200µL, 1000µL adjustable pipettes and aerosol barrier tips (at least 3 each) | | | | |
| equipment | microcentrifuge | | | | |
| equipment | bubble centrifuge (2) | | | | |
| equipment | vortex | | | | |
| equipment | 24-well cooler racks x 2 | | | | |
| equipment | 96-well cooler racks x 2 | | | | |
| equipment | PCR hood with UV | | | | |
| equipment | Biological Safety Cabinet (BSC) (For Each Area) | | | | |
| equipment | Freezer (-20°C to -40°C) | | | | |
| equipment | Freezer (-70°C to -80°C) | | | | |
| equipment | Refrigerator -2°C to 8°C) | | | | |
| equipment | Floor Centrifuge | | | | |
| equipment | Microscopes | | | | |
| equipment | Incubator (CO ₂ Or Non-CO ₂) | | | | |
| equipment | Water Bath (One For PCR Area, One For Culture Area And For Cell Culture Area) | | | | |
| equipment | Wet Ice machine/ access | | | | |

Equipment & Reagents

| Category | Specific Equipment and Materials | Number Operational | Age | Current Maintenance Contract (Y/N) | Primary Use |
|-------------|--|--------------------|-----|------------------------------------|-------------|
| instruments | real-time thermocycler system | | | | |
| reagents | Invitrogen Catalog #11732-020, SuperScript™III Platinum® One-Step Quantitative RT-PCR Kits | | | | |
| reagents | Ambion Catalog #AM1005, AgPath-ID One-Step RT-PCR Kit | | | | |
| reagents | positive control viral RNAs (H3N2, H5N1 and Human) | | | | |
| reagents | forward and reverse primers (40µM) (FluA, H1, H3, H5, FluB, RNP) | | | | |
| reagents | dual-labeled probes (10µM) (FluA, H1, H3, H5, FluB, RNP) | | | | |
| supplies | 0.2ml PCR reaction tube strips or plates | | | | |
| supplies | optical strip caps | | | | |
| supplies | powder-free gloves (small, medium, large) | | | | |
| supplies | sterile 1.4 ml microcentrifuge tubes 100/pk x 1 | | | | |
| supplies | Lint free clean wipes | | | | |
| supplies | Aluminum foil | | | | |
| supplies | Disposable lab coats (Small, Medium, Large) | | | | |
| supplies | Cloth lab coats (Small, Medium, Large) | | | | |
| supplies | Bleach or RNase Away™ | | | | |
| supplies | RNA extraction kit : Qiagen viral RNA kit | | | | |
| supplies | 100% reagent grade ethanol | | | | |
| supplies | Water (nuclease free) | | | | |
| supplies | Calculators | | | | |
| supplies | Powder-Free Gloves (Small, Medium, Large) | | | | |
| supplies | Lab Notebooks | | | | |
| supplies | Lint Free Clean Wipes | | | | |
| supplies | Sterile Nuclease Free Filtered Pipette Tips | | | | |
| supplies | Serologic Pipet Aid (Example: Drummond) | | | | |
| supplies | Serologic Pipetts | | | | |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

LABORATORY CONTACTS



| | | | |
|----------|--|---|--|
| 1 | | Name of Laboratory _____ Point of Contact _____ Phone _____ FAX _____ Email _____ Alternate Email (yahoo, gmail, etc.) _____ | Best Contact <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
|----------|--|---|--|

| | | |
|----------|--|---|
| 2 | What WHO region is the laboratory located? | AFRO <input type="checkbox"/> WPRO <input type="checkbox"/> PAHO <input type="checkbox"/> SEARO <input type="checkbox"/> EURO <input type="checkbox"/> EMRO <input type="checkbox"/> |
|----------|--|---|

| | | |
|-----------|--|--|
| 3 | Is the laboratory a WHO National Influenza Center (NIC)? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 3a | If No, has the laboratory applied to become a NIC? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |

| | | | | | | | | | | | | | | | | | | |
|--|--|--|------------------------------|--|---------------------|--|-------|--|-------|--|--|--|--------------------|--|------------|--|------------------------|--|
| 4 | What country is this laboratory's WHO Influenza Reference laboratory located in? | | | | | | | | | | | | | | | | | |
| 5 | Which international funding/partner organizations is the laboratory affiliated with? | <table style="margin-left: auto; margin-right: auto;"> <tr><td style="padding-right: 10px;">Pasteur</td><td style="border: 1px solid black; width: 20px; height: 15px;"></td></tr> <tr><td>AMRO</td><td style="border: 1px solid black;"></td></tr> <tr><td>CDC</td><td style="border: 1px solid black;"></td></tr> <tr><td>USAID</td><td style="border: 1px solid black;"></td></tr> <tr><td>WHO</td><td style="border: 1px solid black;"></td></tr> <tr><td>PATH Global Health</td><td style="border: 1px solid black;"></td></tr> <tr><td>World Bank</td><td style="border: 1px solid black;"></td></tr> <tr><td>Other (please specify)</td><td style="border: 1px solid black;"></td></tr> </table> | Pasteur | | AMRO | | CDC | | USAID | | WHO | | PATH Global Health | | World Bank | | Other (please specify) | |
| Pasteur | | | | | | | | | | | | | | | | | | |
| AMRO | | | | | | | | | | | | | | | | | | |
| CDC | | | | | | | | | | | | | | | | | | |
| USAID | | | | | | | | | | | | | | | | | | |
| WHO | | | | | | | | | | | | | | | | | | |
| PATH Global Health | | | | | | | | | | | | | | | | | | |
| World Bank | | | | | | | | | | | | | | | | | | |
| Other (please specify) | | | | | | | | | | | | | | | | | | |
| 6 | Location of Laboratory | <table style="margin-left: auto; margin-right: auto;"> <tr><td style="padding-right: 10px;">Mailing Address (Not PO Box)</td><td style="border-bottom: 1px solid black; width: 300px;"></td></tr> <tr><td>Phone</td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td>email</td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td>FAX</td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td colspan="2" style="padding-top: 10px;">Shipping Address (If different from mailing address, Not PO Box)</td></tr> <tr><td colspan="2" style="border-bottom: 1px solid black;"></td></tr> <tr><td colspan="2" style="border-bottom: 1px solid black;"></td></tr> <tr><td colspan="2" style="border-bottom: 1px solid black;"></td></tr> </table> | Mailing Address (Not PO Box) | | Phone | | email | | FAX | | Shipping Address (If different from mailing address, Not PO Box) | | | | | | | |
| Mailing Address (Not PO Box) | | | | | | | | | | | | | | | | | | |
| Phone | | | | | | | | | | | | | | | | | | |
| email | | | | | | | | | | | | | | | | | | |
| FAX | | | | | | | | | | | | | | | | | | |
| Shipping Address (If different from mailing address, Not PO Box) | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| 7 | Contact within Ministry of Health | <table style="margin-left: auto; margin-right: auto;"> <tr><td style="padding-right: 10px;">Name</td><td style="border-bottom: 1px solid black; width: 300px;"></td></tr> <tr><td colspan="2" style="padding-top: 10px;">Contact information</td></tr> <tr><td>Phone</td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td>email</td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td>FAX</td><td style="border-bottom: 1px solid black;"></td></tr> </table> | Name | | Contact information | | Phone | | email | | FAX | | | | | | | |
| Name | | | | | | | | | | | | | | | | | | |
| Contact information | | | | | | | | | | | | | | | | | | |
| Phone | | | | | | | | | | | | | | | | | | |
| email | | | | | | | | | | | | | | | | | | |
| FAX | | | | | | | | | | | | | | | | | | |

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| | | <p>Does the contact within the MoH speak English? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p style="padding-left: 40px;">If Yes, conversational English <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p style="padding-left: 40px;">If Yes, scientific English <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p style="padding-left: 40px;">If Yes, fluent English <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>Other spoken languages (please specify)? _____</p> |
| 8 | Laboratory Director | <p style="text-align: right;">Name _____</p> <p style="text-align: right;">Contact information _____</p> <p style="text-align: right;">_____</p> <p style="text-align: right;">_____</p> <p style="text-align: right;">_____</p> <p>Does the Influenza Laboratory Director speak English? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, conversational English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, scientific English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, fluent English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Other spoken languages (please specify)? _____</p> |
| 9 | Laboratory Supervisor | <p style="text-align: right;">Name _____</p> <p style="text-align: right;">Contact information _____</p> <p style="text-align: right;">Phone _____</p> <p style="text-align: right;">email _____</p> <p style="text-align: right;">FAX _____</p> <p>Does the Laboratory Supervisor speak English? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, conversational English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, scientific English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="padding-left: 40px;">If Yes, fluent English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Other spoken languages (please specify)? _____</p> |

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| 10 | <p>Influenza Laboratory Supervisor (if different from above) Same as Laboratory Supervisor Above <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Name _____</p> <p style="text-align: right;">Contact information _____</p> <p style="text-align: right;">Phone _____</p> <p style="text-align: right;">email _____</p> <p style="text-align: right;">FAX _____</p> <p>Does the Influenza Laboratory Supervisor speak English? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, conversational English <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, scientific English <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, fluent English <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Other spoken languages (please specify)? _____</p> |
| 11 | <p>Evaluator _____</p> <p>Signature _____</p> <p>Date of visit _____</p> |
| 12 | <p>General Comments/Notes:</p> |





INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

GENERAL LABORATORY

| | |
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| | |
| 1 | What is the laboratory's affiliation/designation? <div style="margin-left: 100px;"> Ministry of Health <input type="checkbox"/> National Laboratory <input type="checkbox"/> University Laboratory <input type="checkbox"/> Hospital Laboratory <input type="checkbox"/> Other (please specify) _____ </div> |
| 2 | What is the primary function of the laboratory? <div style="margin-left: 100px;"> Research <input type="checkbox"/> Clinical <input type="checkbox"/> Other (please specify) _____ </div> |
| 3 | Is the laboratory a Global Aids Project (GAP) laboratory? <div style="margin-left: 100px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </div> |
| 4 | What infectious disease testing services does the laboratory provide? <div style="margin-left: 100px;"> _____ _____ _____ _____ _____ _____ _____ </div> |
| 5 | Does the laboratory have facilities that maintain and care for animals? <div style="margin-left: 100px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </div> |

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| <p>5a</p> | <p>If Yes what animals, and what is the purpose of the animals?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>6</p> | <p>Please describe the surveillance activities the laboratory participates in.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>7</p> | <p>Please describe the existing information exchange capability(ies) the laboratory has.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>8</p> | <p>Does the laboratory appear to be structurally sound (no missing windows doors, etc.)</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>9</p> | <p>Does laboratory equipment appear to be placed appropriately given any structural limitations?</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>10 10a</p> | <p>Is the laboratory easily accessible by ground transportation?</p> <p>If No, please explain transportation options</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____</p> <p>_____</p> |

| | | |
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| <p>11 11a</p> | <p>Is the laboratory supported by a maintenance staff? If Yes, what types of staff:</p> <p style="padding-left: 100px;">Plumber Electrician Mechanical Other (please specify)</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____</p> |
| <p>12</p> | <p>Is there sufficient electrical capacity to power all equipment?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>13</p> | <p>Does the laboratory have an emergency generator/power?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>14</p> | <p>Does the laboratory have the capacity to run:</p> <p style="padding-left: 100px;">220V 110V Do not Know</p> | <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> |
| <p>15 15a</p> | <p>Does the laboratory have facilities security measures in place? If Yes what are these measures?</p> <p style="padding-left: 100px;">Electronic Surveillance (cameras) Manned Surveillance Electronic Security System Front Door Chain Locks ID Badges Require sign-in of visitors Other (please specify)</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____</p> |
| <p>16</p> | <p>Does the laboratory have biosecurity measures in place (prevent internal theft)?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |

| | | | | | | | |
|--------------------------|--|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <p>16a</p> | <p>If Yes what are these biosecurity measures?</p> <p style="text-align: right;"> ID Badges Freezer locks Restricted access to buildings Cameras Restricted access to laboratories (i.e. BSL 3) Other (please specify) </p> | <table style="border: none;"> <tr> <td style="border: none; width: 15px; height: 15px;"><input type="checkbox"/></td> </tr> </table> <hr style="border: none; border-top: 1px solid black; margin-top: 10px;"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| <p>17</p> | <p>Does the laboratory have a written biosecurity plan?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> | | | | | |
| <p>17a</p> | <p>If No, would you be interested in assistance developing one?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> | | | | | |
| <p>18</p> | <p>Are critical equipment (PCR machines, freezers, etc.) connected to UPS battery backups?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> | | | | | |
| <p>19</p> | <p>Is there a 24 hour, 7 day emergency contact, in cases of critical equipment failure or disease outbreaks?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> | | | | | |
| <p>19a</p> | <p>If Yes, What is their job title?</p> | <hr style="border: none; border-top: 1px solid black;"/> | | | | | |
| <p>20</p> | <p>How many hours per day does the laboratory normally operate?</p> | <hr style="border: none; border-top: 1px solid black;"/> | | | | | |
| <p>21</p> | <p>How many days per week does the laboratory normally operate?</p> | <hr style="border: none; border-top: 1px solid black;"/> | | | | | |
| <p>22</p> | <p>What days does the laboratory normally operate?</p> | <hr style="border: none; border-top: 1px solid black;"/> | | | | | |
| <p>23</p> | <p>How many days per year is the laboratory closed for holidays?</p> | <hr style="border: none; border-top: 1px solid black;"/> | | | | | |

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| <p>24</p> <p>24a</p> | <p>Are there specific months where the laboratory is closed for significant time due to holidays or other activities?</p> <p>If Yes, Please specify which one(s)</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____</p> |
| <p>25</p> | <p>Does the laboratory have a crisis plan that can be instituted during an emergency (for example during an influenza epidemic)?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>26</p> <p>26a</p> | <p>Does the laboratory have a written plan to address surge capacity activities?</p> <p>If Yes, briefly describe</p> <p>If No, is the laboratory interested in assistance for developing one?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> <p>_____</p> <p>_____</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>27</p> | <p>Is there an operational BSL-3 laboratory?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>28</p> | <p>Is there an operational BSL-2 laboratory?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>29</p> <p>29a</p> | <p>Does the laboratory use enhanced BSL-2 procedures?</p> <p>If Yes, describe the BSL-3 enhancements to your BSL-2 facility</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>30</p> | <p>How many laboratory staff?</p> | <p>Full-time _____</p> <p>Part-time _____</p> |

| | |
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| <p>31</p> | <p>Please describe the duties of laboratory staff including;</p> <p style="text-align: right;">Influenza Testing Supervisor</p> <p style="text-align: right;">_____</p> <p style="text-align: right;">Primary Laboratory Technician</p> <p style="text-align: right;">_____</p> |
| <p>32</p> | <p>Approximately how many specimens does the laboratory receive for diagnostic testing per week?</p> <p style="text-align: right;">_____</p> |
| <p>33</p> | <p>Approximately how many specimens can the laboratory staff process per week for culture?</p> <p style="text-align: right;">_____</p> |
| <p>33a</p> | <p>Approximately how many specimens can the laboratory staff process per week for PCR?</p> <p style="text-align: right;">_____</p> |
| <p>34</p> | <p>On average how many hours per week do laboratory staff work?</p> <p style="text-align: right;"> <30 hours <input type="checkbox"/> 31 -40 hours <input type="checkbox"/> 41 - 50 hours <input type="checkbox"/> > 50 hours <input type="checkbox"/> </p> |
| <p>35</p> | <p>How many hours per week does laboratory staff work on influenza testing?</p> <p style="text-align: right;">_____</p> |

| | |
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| 36 | Are laboratory staff cross-trained to perform molecular biology and virology? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 37 | Do laboratorians have an office area separate from the laboratory? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 38 | General Comments/Notes: |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

VIROLOGY LABORATORY

| | |
|---------|--|
| | |
| 1 | Does the virology laboratory perform influenza virus isolation? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 2 2a | Does the laboratory perform isolation for other viruses? If Yes, please specify which viruses. <input type="checkbox"/> Yes <input type="checkbox"/> No _____ _____ _____ |
| 3 | How much experience does the laboratory have performing virus culture? <div style="margin-left: 100px;"> < 6 months <input type="checkbox"/> 6 - 12 months <input type="checkbox"/> >12 months <input type="checkbox"/> </div> |
| 4 | Under normal operating conditions, approximately how many specimens are cultured: <div style="margin-left: 100px;"> Daily _____ Weekly _____ Monthly _____ </div> |
| 5 | Approximately what percent of PCR positive influenza specimens are cultured? <div style="margin-left: 100px;"> _____ </div> |

| | | |
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| 6 | Please describe the laboratory's algorithm for culturing specimens: | <hr/> |
| 7 | Does the laboratory use cell culture, eggs, or both? | <input type="checkbox"/> CC <input type="checkbox"/> EGGS <input type="checkbox"/> Both |
| 7a | If using cell culture, what cell lines are being used? | <hr/> <hr/> <hr/> <hr/> |
| 7b | If using cell culture, what is the source of the cell lines? | <hr/> <hr/> <hr/> <hr/> |
| 7c | Are cell lines routinely tested for the presence of mycoplasma sp.? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 8 | Is there a designated clean room for cell culture? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 8a | If No, where do you perform cell culture? | <hr/> |
| 8b | If No, how do you prevent contamination? | <hr/> <hr/> |
| 9 | Is the virology laboratory performing immunofluorescence testing? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | DFA | <input type="checkbox"/> |
| | IFA | <input type="checkbox"/> |
| | Kit and Source | <hr/> |

| | | | | | | | |
|------------|---|--|--|--|-----------------------|-------|---|
| 10 | Is there virology research conducting in the same laboratory as diagnostic testing? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| 11 | Does the laboratory perform haemagglutination inhibition testing (HAI)? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| 11a | If Yes, does the laboratory use the WHO reagent kit? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | | | | |
| 11b | If Yes, from which WHO Centre? | | _____ | | | | |
| 11c | If Yes, what is your source for red blood cells: | | Animal Vendor / Source | _____ _____ | | | |
| 12 | Are there separate BSCs designated for: | | Cell Culture Virus Isolation Avian influenza (i.e. H5N1) non-human influenza | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 13 | What types of vessels are used for cell culture (check all that apply)? | | Flask Tubes Shell Vials Other (please specify) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | _____ | | |
| 14 | Does the virology laboratory have microscopes? | | Upright for tissue culture Immunofluorescence 50w or 100w mercury? Other (please specify) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | Number Operational | Age | Current Maintenance Agreement (Yes/No) |
| | | | _____ | _____ | _____ | _____ | _____ |
| | | | _____ | _____ | _____ | _____ | _____ |
| | | | _____ | _____ | _____ | _____ | _____ |

| | | | | | | |
|------------|---|--|--|--|---|--|
| 15 | Does the virology laboratory have vacuum capability? if Yes, internal line? if Yes, vacuum pump? if Yes, are HEPA filters used? | <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes | <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | |
| 16 | Does the virology laboratory have any of the following centrifuges? Microfuge Floor/bench top for handling volumes > 1ml Dedicated to virology? | <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes | <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No | Number Operational _____ _____ _____ | Age _____ _____ _____ | Current Maintenance Agreement (Yes/No) _____ _____ _____ |
| 16a | Do the centrifuge buckets have lids? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | |
| 17 | Does the virology laboratory have incubators (please check all that apply)? For cell culture For eggs (non-CO ₂) CO ₂ | <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes | <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No | Number Operational _____ _____ _____ | Age _____ _____ _____ | Current Maintenance Agreement (Yes/No) _____ _____ _____ |
| 17a | Is temperature monitored with NIST certified thermometers? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No | | | |
| 18 | Does the virology laboratory have access to the following pieces of equipment? Freezers (-20°C to -40°C) Freezers (-70°C to -80°C) liquid nitrogen Refrigerators (2°C to 8°C) | <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes | <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No | Number Operational _____ _____ _____ _____ | Age _____ _____ _____ _____ | Current Maintenance Agreement (Yes/No) _____ _____ _____ _____ |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|---|----------|--------------------------|-----|--------------------------|----------------------|--------------------------|--------------------------|----------|--------------------------|-----|--------------------------|----|--------------------------|----------------------|--------------------|--------------------------|-----|--------------------------|----|--------------------------|----------------------|-------|--|--|--|--|--|--|
| <p>19</p> | <p>If there is shared freezer space, does virology have a designated shelf or space for:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Reagents</td> <td><input type="checkbox"/></td> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> <td><input type="checkbox"/></td> <td>Do not Know/not sure</td> </tr> <tr> <td>Controls</td> <td><input type="checkbox"/></td> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> <td><input type="checkbox"/></td> <td>Do not Know/not sure</td> </tr> <tr> <td>Archived specimens</td> <td><input type="checkbox"/></td> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> <td><input type="checkbox"/></td> <td>Do not Know/not sure</td> </tr> <tr> <td>Other</td> <td colspan="6" style="border-top: 1px solid black;"></td> </tr> </table> | Reagents | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | Controls | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | Archived specimens | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | Other | | | | | | |
| Reagents | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Controls | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Archived specimens | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>20</p> | <p>If there is shared refrigerator space does virology have a designated shelf or space for:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Reagents</td> <td><input type="checkbox"/></td> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> </tr> <tr> <td>Controls</td> <td><input type="checkbox"/></td> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> </tr> <tr> <td>Other</td> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> </table> | Reagents | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Controls | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Other | | | | | | | | | | | | | | | | | |
| Reagents | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | |
| Controls | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>21</p> | <p>General Comments/Notes:</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

MOLECULAR BIOLOGY LABORATORY

| | |
|----------|--|
| | |
| 1 | <p>Is the molecular biology laboratory performing influenza or other viruses detection, typing, or subtyping with the following methods?</p> <p style="text-align: right;"> Real-time (RT-PCR) <input type="checkbox"/> Yes <input type="checkbox"/> No Conventional PCR <input type="checkbox"/> Yes <input type="checkbox"/> No </p> <p>1a If Yes, which kit(s) and manufacturer</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| 2 | <p>Does the laboratory currently sequence specimens? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| 3 | <p>Where in the laboratory is PCR set-up performed?</p> <p style="text-align: right;"> Clean room <input type="checkbox"/> PCR cabinet <input type="checkbox"/> Designated area <input type="checkbox"/> Other (please specify): _____ </p> |
| 4 | <p>Does the laboratory have a uni-directional workflow (pre-amplification to post-amplification) for PCR? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> |

| | | |
|-------------------------|--|---|
| 5 | <p>Are any of the following dedicated for pre-PCR use only?</p> <p style="text-align: right;">Pipettes Personal protective equipment (PPE) Supplies Reagents Centrifuges Other (please specify)</p> | <p style="text-align: center;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <hr/> </p> |
| 6 | <p>Is there a designated area for handling RNA?</p> | <p style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| 7 7a | <p>What method does the laboratory currently use for RNA isolation / purification? If a kit is employed to purify RNA, please identify which kit and the manufacturer.</p> | <p style="text-align: center;"> <hr/> <hr/> </p> |
| 8 | <p>Is there a designated area for handling post PCR amplified product?</p> | <p style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| 9 9a | <p>What method does the laboratory currently use for DNA isolation / purification? If a kit is employed to purify DNA, please identify which kit and the manufacturer.</p> | <p style="text-align: center;"> <hr/> <hr/> </p> |
| 10 10a 10b 10c | <p>What instrument does the laboratory <u>currently</u> use to perform Real-Time PCR? How many of these instruments does the laboratory have? Please identify any additional instruments the laboratory possesses which could be used for Real-Time PCR? How frequently are these instruments run?</p> | <p style="text-align: center;"> <hr/> <hr/> <hr/> </p> <p style="text-align: center;"> <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never </p> |
| 11 | <p>Does the laboratory have a reliable source for Real-Time PCR reagents and supplies?</p> | <p style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |

| | | | | |
|------------|--|--|--|--|
| 11a | If Yes please identify the reagent and the source (for example CDC, WHO, Manufacturer, etc.) | Reagent _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ | Source _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ | |
| 12 | What pipettes does the laboratory currently use? | P2 <input type="checkbox"/> P10 <input type="checkbox"/> P100 <input type="checkbox"/> P200 <input type="checkbox"/> P1000 <input type="checkbox"/> Other (please specify) _____ _____ _____ _____ | Number Operational _____ _____ _____ _____ _____ _____ | Number Properly Calibrated _____ _____ _____ _____ _____ _____ |
| 13 | What volume disposable tips does the laboratory currently use (please list all)? _____ _____ | Do the tips used in the laboratory fit the pipettes properly? <input type="checkbox"/> Yes <input type="checkbox"/> No Are filtered (aerosol barrier) tips used? <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 13a | | | | |
| 13b | | | | |

| | | | | |
|---------------------------------|---|---|--|---|
| <p>14</p> | <p>Does the molecular biology laboratory have either of the following centrifuges?</p> <p style="text-align: right;">Microfuge <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Floor/bench top for handling volumes > 1ml <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | <p>Number Operational</p> <p>_____</p> <p>_____</p> | <p>Age</p> <p>_____</p> <p>_____</p> | <p>Current Maintenance Agreement (Yes/No)</p> <p>_____</p> <p>_____</p> |
| <p>14a</p> | <p>Are any of the centrifuges identified above (please specific):</p> <p style="text-align: right;">Dedicated to molecular biology? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Dedicated for RNA only? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Dedicated for post PCR? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>_____</p> <p>_____</p> <p>_____</p> | <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>15</p> | <p>Does the molecular biology laboratory have access to any of the follow pieces of equipment?</p> <p style="text-align: right;">Freezers (-20°C to -40°C) <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Freezers (-70°C to -80°C) <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">liquid nitrogen <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Refrigerators (2°C to 8°C) <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | <p>Number Operational</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>Age</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> | <p>Current Maintenance Agreement (Yes/No)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>16</p> | <p>If there is shared freezer space, does molecular biology have a designated shelf or space for:</p> <p style="text-align: right;">Reagents <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Controls <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Archived specimens <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p style="text-align: right;">Other _____</p> | <p>_____</p> | <p>_____</p> | <p>_____</p> |
| <p>17 17a</p> | <p>Are critical reagents (i.e. enzymes) stored in frost free freezers? If Yes, is the automatic defrost disabled?</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | <p>_____</p> | <p>_____</p> | <p>_____</p> |

| | |
|---------------------------------|--|
| <p>18</p> | <p>If there is shared refrigerator space does molecular biology have a designated shelf or space for:</p> <p style="text-align: right;"> Reagents <input type="checkbox"/> Yes <input type="checkbox"/> No Controls <input type="checkbox"/> Yes <input type="checkbox"/> No Other _____ </p> |
| <p>19 19a</p> | <p>Does the laboratory have access to wet-ice? if No, how are samples kept cold at the bench? (when needed)</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No _____</p> |
| <p>20</p> | <p>What is the laboratory's heat source at the bench?</p> <p style="text-align: right;"> Heat block <input type="checkbox"/> Water Bath <input type="checkbox"/> Other (please specify) _____ </p> |
| <p>21</p> | <p>Does the laboratory have vacuum capability? if Yes, internal line? if Yes, vacuum pump? if Yes, are HEPA filters used?</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> |
| <p>22</p> | <p>General Comments/Notes:</p> |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

INFLUENZA TESTING

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|--------------------------|-----|--------------------------|----|----------------------|--------------------------|-----|--------------------------|----|---------------------------------|--------------------------|-----|--------------------------|----|--------------------------------|--------------------------|-----|--------------------------|----|-----------------------|--------------------------|-----|--------------------------|----|---|--------------------------|-----|--------------------------|----|---|--------------------------|-----|--------------------------|----|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | <p>Is the laboratory currently performing influenza testing for:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px 10px;">Human Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">H5N1 Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">High Pathogenic Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Low Pathogenic Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Other Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Novel Influenza (for example A/H1N1 swine-like)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Other influenza viruses, please specify</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> </table> <hr style="margin-top: 10px;"/> | Human Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | H5N1 Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | High Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Low Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Other Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Novel Influenza (for example A/H1N1 swine-like) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Other influenza viruses, please specify | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Human Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H5N1 Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Novel Influenza (for example A/H1N1 swine-like) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other influenza viruses, please specify | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | <p>Are laboratory staff aware of what human (seasonal) influenza is currently circulating in their geographical region?</p> <p style="text-align: center;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2a | <p style="text-align: center;">If Yes, please identify</p> <hr/> <hr/> <hr/> <hr/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | <p>Is the laboratory currently performing influenza virus isolation for:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 2px 10px;">Human Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">H5N1 Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">High Pathogenic Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Low Pathogenic Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Other Avian Influenza</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Novel Influenza (for example A/H1N1 swine-like)</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> <tr> <td style="padding: 2px 10px;">Other influenza viruses, please specify</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 2px 10px;">No</td> </tr> </table> <hr style="margin-top: 10px;"/> | Human Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | H5N1 Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | High Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Low Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Other Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Novel Influenza (for example A/H1N1 swine-like) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | Other influenza viruses, please specify | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| Human Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H5N1 Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Pathogenic Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other Avian Influenza | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Novel Influenza (for example A/H1N1 swine-like) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other influenza viruses, please specify | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
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| 4 | What direct detection methods is the laboratory currently using for testing the following influenza viruses? (Please check all that apply) | |
| 4a | Human Influenza (A/H1/ H3, B) | Virus Isolation <input type="checkbox"/> DFA <input type="checkbox"/> Real Time RT-PCR <input type="checkbox"/> Conventional PCR <input type="checkbox"/> Rapid Tests <input type="checkbox"/> Other (please specify) _____ |
| 4b | Novel Influenza (for example A/H1N1 swine-like) | Virus Isolation <input type="checkbox"/> DFA <input type="checkbox"/> Real Time RT-PCR <input type="checkbox"/> Conventional PCR <input type="checkbox"/> Rapid Tests <input type="checkbox"/> Other (please specify) _____ |
| 4c | H5N1 Avian Influenza | Virus Isolation <input type="checkbox"/> DFA <input type="checkbox"/> Real Time RT-PCR <input type="checkbox"/> Conventional PCR <input type="checkbox"/> Rapid Tests <input type="checkbox"/> Other (please specify) _____ |
| 4d | High Pathogenic Avian Influenza | Virus Isolation <input type="checkbox"/> DFA <input type="checkbox"/> Real Time RT-PCR <input type="checkbox"/> Conventional PCR <input type="checkbox"/> Rapid Tests <input type="checkbox"/> Other (please specify) _____ |

| | | | |
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| 4e | Low Pathogenic Avian Influenza | Virus Isolation DFA Real Time RT-PCR Conventional PCR Rapid Tests Other (please specify) _____ | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 4f | Other Avian Influenza | Virus Isolation DFA Real Time RT-PCR Conventional PCR Rapid Tests Other (please specify) _____ | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 4g | Other influenza viruses | Virus Isolation DFA Real Time RT-PCR Conventional PCR Rapid Tests Other (please specify) _____ | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 5 | What Real-Time PCR instrument(s) is currently being used for influenza testing in the laboratory? | | |
| 5a | Instrument Manufacturer | <input type="checkbox"/> None _____ _____ | |
| 5b | Instrument Model | _____ _____ | |
| 5c | Age | _____ _____ | |

| | | |
|-----------|--|--|
| 5d | Under current maintenance agreement ? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 5e | How frequently are these instruments run? | <input type="checkbox"/> Often <input type="checkbox"/> Rarely <input type="checkbox"/> Never |
| 6 | What specific primers and probes is the laboratory using for influenza testing? <div style="margin-left: 100px;"> Circulating Human Influenza _____ Novel Influenza _____ Avian Influenza _____ Other Influenza _____ </div> | |
| 6a | What is the source / manufacturer of the primers and probes used for influenza testing? <div style="margin-left: 100px;"> Circulating Human Influenza _____ Novel Influenza _____ Avian Influenza _____ Other Influenza _____ </div> | |
| 7 | What is the laboratory's protocol/algorithm for unsubtypeable influenza A specimens? Please describe. | _____ _____ _____ _____ _____ _____ _____ _____ |

| | | |
|--|---|---|
| <p>8</p> <p>8a</p> | <p>Please describe how each diagnostic RT-PCR run is set up:</p> <p>Ask for SOP, ask to describe plate set up, etc.</p> | <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>9</p> <p>9a</p> <p>9b</p> <p>9c</p> | <p>Under normal operating conditions:</p> <p>How many RT-PCR runs can the laboratory execute per day?</p> <p>How many specimens can be typed per day?</p> <p>What percent of your specimens are positive for influenza A?</p> | <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>10</p> <p>10a</p> <p>10b</p> | <p>Will more than one member of the laboratory staff be trained to perform this assay (recommended)?</p> <p>How many full-time staff?</p> <p>How many half-time staff?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>_____</p> <p>_____</p> |
| <p>11</p> <p>11a</p> | <p>Does the laboratory participate in any surveillance networks?</p> <p>If Yes, please list</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>12</p> | <p>Does the laboratory perform any influenza testing from non-human specimens?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |

| | |
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| 12a | If Yes, please describe: _____ _____ _____ _____ |
| 13 | General Comments/Notes: |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

LABORATORY SAFETY & BIOSAFETY

| | |
|-----------|--|
| 1 | <p>At what biosafety levels does the laboratory currently operate at (please check all that apply)?</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: right;"> <input type="checkbox"/> BSL-1 <input type="checkbox"/> BSL-2 <input type="checkbox"/> BSL-3 <input type="checkbox"/> None </div> <div style="text-align: left;"> <p>Percentage of Laboratory Space</p> <p>_____</p> <p>_____</p> <p>_____</p> </div> </div> |
| 2 | <p>Is there a safety team/group/advisor?</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| 3 | <p>Does the laboratory have a safety manual?</p> |
| 3a | <p style="padding-left: 40px;">If Yes, is it easily accessible to all laboratory staff?</p> |
| 3b | <p style="padding-left: 40px;">If Yes, is it reviewed annually?</p> |
| 3c | <p style="padding-left: 40px;">If Yes, are laboratory staff required to sign off on safety procedures?</p> |
| 4 | <p>Where source does the laboratory reference for its biosafety guidelines?</p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: right;"> <input type="checkbox"/> <i>BMBL</i> <input type="checkbox"/> WHO <input type="checkbox"/> National Regulations Other (please describe) _____ </div> </div> |

| | | |
|--------------------|--|--|
| <p>5</p> <p>5a</p> | <p>Are the BSCs certified for biosafety level 2, as described in the current WHO/BMBL guidelines?</p> <p>Has the BSC been certified in the past year?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>6</p> <p>6a</p> | <p>Are the BSCs certified for biosafety level 3, as described in the current WHO/BMBL guidelines?</p> <p>Has the BSC been certified in the past year?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>7</p> | <p>What personal protective equipment (PPE) is available to laboratory staff (please check all that apply)?</p> <p>Gloves (latex)</p> <p>Gloves (latex and powder free)</p> <p>Gloves (other)</p> <p>Lab coats</p> <p>Shoe Covers</p> <p>Safety glasses/visors/face shields</p> <p>Respiratory protection (describe)</p> | <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>_____</p> |
| <p>8</p> | <p>Is the available PPE appropriate for specific tasks?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> |
| <p>9</p> | <p>What type of laboratory coats are available for staff (please check all that apply)?</p> <p>Cloth</p> <p>Impermeable</p> <p>Cuffed Sleeves</p> <p>Disposable</p> <p>Properly sized</p> <p>Other (please describe)</p> | <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>_____</p> |

| | | |
|-----|---|---|
| 10 | How are cloth lab coats cleaned? | _____ |
| 11 | Is there a respirator fit program? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 12 | Are PAPRS available for staff that cannot wear N95 respirators? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 13 | Is there a hand washing station inside of the laboratory? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 14 | Does the hand washing station have foot pedals? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 15 | Is there an eye wash station / shower inside of the laboratory? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 16 | Are <u>powder free</u> gloves worn for all manipulations of specimens, organisms, and reagents? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 16a | If no, is there access to power free gloves? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 16b | If no, are they worn for | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | Designated procedures only Technician discretion | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 17 | Is there a laboratory vaccination policy for staff? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 17a | If Yes, for which diseases? | Seasonal Influenza <input type="checkbox"/> TB <input type="checkbox"/> HBV <input type="checkbox"/> Other Laboratory Relevant _____ |
| 18 | Does the laboratory have written and posted spill clean up instructions? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |

| | | | | | | | | | | | | |
|------------------------------|---|--|-----------------------|--------------------------|-------------------------------------|--------------------------|------------------------------|--------------------------|------------------|--------------------------|------------------|-------|
| 19 | Does the laboratory have a written SOP for proper biohazard disposal? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | |
| 20 | What guidelines does the laboratory reference for biohazard disposal? | _____ | | | | | | | | | | |
| 21 | Does the laboratory have an autoclave on site? | <input type="checkbox"/> Yes <input type="checkbox"/> No <table style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Number Operational</td> <td style="text-align: center;">Age</td> <td style="text-align: center;">Current Maintenance Agreement</td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> </table> | Number Operational | Age | Current Maintenance Agreement | _____ | _____ | _____ | | | | |
| Number Operational | Age | Current Maintenance Agreement | | | | | | | | | | |
| _____ | _____ | _____ | | | | | | | | | | |
| 22 | Are the number of autoclaves sufficient for the amount of biohazardous waste generated? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | |
| 23 | Does the laboratory have access to an incinerator? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | |
| 24 | What treatments are used for solid waste disposal? | <table style="border: none;"> <tr> <td style="padding-right: 20px;">Autoclaving</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Incineration</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Burial with no pre-treatment</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Sharps container</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Other (describe)</td> <td style="text-align: center;">_____</td> </tr> </table> | Autoclaving | <input type="checkbox"/> | Incineration | <input type="checkbox"/> | Burial with no pre-treatment | <input type="checkbox"/> | Sharps container | <input type="checkbox"/> | Other (describe) | _____ |
| Autoclaving | <input type="checkbox"/> | | | | | | | | | | | |
| Incineration | <input type="checkbox"/> | | | | | | | | | | | |
| Burial with no pre-treatment | <input type="checkbox"/> | | | | | | | | | | | |
| Sharps container | <input type="checkbox"/> | | | | | | | | | | | |
| Other (describe) | _____ | | | | | | | | | | | |
| 25 | What treatments are used for liquid waste disposal? | <table style="border: none;"> <tr> <td style="padding-right: 20px;">No treatment</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Autoclave</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Chemical disinfection</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 20px;">Other (describe)</td> <td style="text-align: center;">_____</td> </tr> </table> | No treatment | <input type="checkbox"/> | Autoclave | <input type="checkbox"/> | Chemical disinfection | <input type="checkbox"/> | Other (describe) | _____ | | |
| No treatment | <input type="checkbox"/> | | | | | | | | | | | |
| Autoclave | <input type="checkbox"/> | | | | | | | | | | | |
| Chemical disinfection | <input type="checkbox"/> | | | | | | | | | | | |
| Other (describe) | _____ | | | | | | | | | | | |

| | | |
|-----------|--|--|
| 26 | What chemicals are routinely used for surface decontamination? Ethanol <input type="checkbox"/> Bleach <input type="checkbox"/> Other(please describe) _____ | <input type="checkbox"/> <input type="checkbox"/> _____ |
| 27 | At what concentrations are surface decontaminants kept? | _____ |
| 28 | How long are surface decontaminants kept in circulation? | _____ |
| 29 29a | Are there metal cabinets for flammable chemicals? If Yes, are flammables stored in these cabinets? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 30 | Are acids and bases stored separately? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 31 | General Comments/Notes: | |

| | | |
|--|---|---|
| <p>6</p> <p>6a</p> <p>6b</p> <p>6c</p> | <p>Is there training offered to staff for specimen collection, transport, and labeling?</p> <p>How frequently is training offered?</p> <p>Where is training given (specific location)?</p> <p>Who provides this type of training?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>7</p> <p>7a</p> <p>7b</p> <p>7c</p> | <p>Is there training offered to laboratory staff for specimen logging, processing, and storage?</p> <p>How frequently is training offered?</p> <p>Where is training given (specific location)?</p> <p>Who provides this type of training?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>8</p> <p>8a</p> <p>8b</p> <p>8c</p> | <p>Is there training for staff in shipping infectious substances?</p> <p>How frequently is training offered?</p> <p>Where is training given (specific location)?</p> <p>Who provides this type of training?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |

9 General Comments/Notes:



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

SPECIMEN HANDLING, COLLECTION, AND REPORTING

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|--------------------------|----------------------|--------------------------|-----------------------------|--------------------------|---|--------------------------|--------------------------|--------------------------|----------------------|--------------------------|-------------------------|--------------------------|----|--------------------------|----------------------|
| | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Does the laboratory have written procedures for: | <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 10px;">Specimen collection</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Do not Know/not sure</td> </tr> <tr> <td style="padding-right: 10px;">Specimen transport</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Do not Know/not sure</td> </tr> <tr> <td style="padding-right: 10px;">Specimen labeling</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="padding: 0 10px;">Do not Know/not sure</td> </tr> </table> | Specimen collection | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | Specimen transport | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | Specimen labeling | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure |
| Specimen collection | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | |
| Specimen transport | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | |
| Specimen labeling | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> | Do not Know/not sure | | | | | | | | | | | | | | | | | |
| 2 | What type of Viral Transport Medium (VTM) is used? | <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 10px;">WHO VTM</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Commercial VTM</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Universal Transport medium</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Do not know/not sure</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Other VTM (please describe)</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> <hr style="border: 0; border-top: 1px solid black; margin-top: 5px;"/> | WHO VTM | <input type="checkbox"/> | Commercial VTM | <input type="checkbox"/> | Universal Transport medium | <input type="checkbox"/> | Do not know/not sure | <input type="checkbox"/> | Other VTM (please describe) | <input type="checkbox"/> | | | | | | | | | | | |
| WHO VTM | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Commercial VTM | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Universal Transport medium | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Do not know/not sure | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Other VTM (please describe) | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| 3 | What types of specimens does the laboratory accept? | <table style="width: 100%; border: none;"> <tr> <td style="padding-right: 10px;">Nasopharyngeal swabs</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Nasopharyngeal washes</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Nasopharyngeal aspirates</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Nasal swabs</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Throat swabs</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Dual nasopharyngeal swabs/ throat swabs</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Serum</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Do not Know/not sure</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding-right: 10px;">Other (please describe)</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> <hr style="border: 0; border-top: 1px solid black; margin-top: 5px;"/> | Nasopharyngeal swabs | <input type="checkbox"/> | Nasopharyngeal washes | <input type="checkbox"/> | Nasopharyngeal aspirates | <input type="checkbox"/> | Nasal swabs | <input type="checkbox"/> | Throat swabs | <input type="checkbox"/> | Dual nasopharyngeal swabs/ throat swabs | <input type="checkbox"/> | Serum | <input type="checkbox"/> | Do not Know/not sure | <input type="checkbox"/> | Other (please describe) | <input type="checkbox"/> | | | |
| Nasopharyngeal swabs | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Nasopharyngeal washes | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Nasopharyngeal aspirates | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Nasal swabs | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Throat swabs | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Dual nasopharyngeal swabs/ throat swabs | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Serum | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Do not Know/not sure | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |
| Other (please describe) | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | |

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|---------------|--|--|
| 4 4a | Does the laboratory have written criteria for specimen rejection? Please specify _____ _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 5 | Is the cold chain maintained during the shipment of specimens to the laboratory? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 6 | Does the laboratory accept specimens after normal operating hours? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 7 7a 7b | Is there a responsible official for receiving specimens <u>during</u> normal operating hours? If Yes, what is their job title? If No, who receives specimens | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure _____ _____ |
| 8 8a 8b | Is there a responsible official for receiving specimens <u>outside</u> of normal operating hours? If Yes, what is their job title? If No, who receives specimens | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure _____ _____ |
| 9 | Is there an official area for receiving specimens? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 10 | Does the laboratory provide a unique identifier for all specimens? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 11 | Are there written procedures for specimen logging, processing, and storage? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |

| | | |
|-----|--|--|
| 12 | Are there written procedures for shipping infectious substances? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 13 | What is the laboratory's policy for shipping infectious substances to WHO, NIC, or other reference laboratories? | <hr/> <hr/> |
| 14 | How often are isolates sent to WHO collaborating centers? | Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> |
| 15 | How are isolates chosen for shipping? | <hr/> <hr/> |
| 16 | Are specimens sent for: | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 16a | Confirmation | |
| 16b | If Yes, where are they sent? | <hr/> |
| 16c | If Yes, how often are batches sent? | <hr/> |
| 16d | Further characterization | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 16e | If Yes, where are they sent? | <hr/> |
| 16f | If Yes, how often are batches sent? | <hr/> |
| 17 | Which vendor is the preferred shipper? | <hr/> |
| 18 | What shipper(s) are located in country? | <hr/> |
| 19 | Does the laboratory experience any problems or difficulties with customs? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 19a | If Yes, please explain: | <hr/> <hr/> |

| | | |
|---------------------------------|---|--|
| <p>20</p> | <p>How are specimens stored <u>before</u> diagnostic testing?</p> <p>Refrigeration (2°C to 8°C)</p> <p>Freezer (≤ -20 °C)</p> <p>Liquid nitrogen</p> <p>Do not Know/not sure</p> <p>Other (please specify)</p> | <p>How Long?</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>21</p> | <p>What is the laboratory's specimen retention policy for:</p> <p>Specimens testing positive</p> <p>Specimens testing negative</p> <p>Inconclusive Specimens</p> <p>Other Comments:</p> | <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>22</p> | <p>How does the laboratory track specimens sent for diagnostic testing?</p> <p>LIMS system</p> <p>Software programs installed on computers (i.e. Microsoft Excel)</p> <p>Notebook / Binder</p> <p>Do not Know/not sure</p> <p>Other (please describe)</p> | <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <p>23</p> | <p>How long are records maintained?</p> | <p>_____</p> |
| <p>24</p> | <p>How are records archived?</p> | <p>_____</p> |
| <p>25</p> | <p>How are records backed-up?</p> | <p>_____</p> |
| <p>26 26a</p> | <p>Is there restricted access to archived records?</p> <p>If Yes, who has access?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> <p>_____</p> |

| | |
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| <p>27</p> | <p>How does the laboratory report out results?</p> <p style="text-align: right;"> <input type="checkbox"/> Electronic <input type="checkbox"/> Fax <input type="checkbox"/> Phone <input type="checkbox"/> Do not Know/not sure Other (please specify) _____ </p> |
| <p>28</p> | <p>Does the laboratory have reliable connectivity to report out results (cell phones, landlines, internet)?</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> |
| <p>29</p> | <p>How frequent are diagnostic results reported?</p> <p style="text-align: right;"> <input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Do not Know/not sure </p> |
| <p>30</p> | <p>Does the laboratory use standardized forms to report lab results?</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> |
| <p>31</p> | <p>Does the laboratory staff know what the reporting requirements are?</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> |
| <p>32</p> | <p>Is the laboratory aware of the reporting requirements under the International Health Regulations (IHR)</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> |
| <p>33 33a</p> | <p>Do test results undergo internal review prior to reporting out?</p> <p style="text-align: right;"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure </p> <p style="text-align: center;">If Yes, briefly describe the internal review process.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |

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| 34 | How often are summary reports generated? _____ |
| 35 | Who are diagnostic results reported to? Flu Net <input type="checkbox"/> WHO <input type="checkbox"/> Ministry of Health <input type="checkbox"/> Other (please describe) _____ |
| 36 | If the laboratory has sequencing capability, where is the sequence data deposited? GISAID <input type="checkbox"/> Genbank <input type="checkbox"/> Other database (please specify) _____ Not reported <input type="checkbox"/> Do not Know/not sure <input type="checkbox"/> |
| 37 | Does the laboratory have the capability to perform phylogenetic analyses? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 37a | If Yes, please explain _____ |
| 38 | Does the laboratory assign strain designations to influenza viruses? If Yes, please describe what nomenclature is used (e.g. WHO criteria) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure _____ _____ _____ |
| 39 39a | Is there a policy for rapid notification of reportable influenza cases? If Yes, please describe <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure _____ _____ _____ _____ |

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| 40 | What is the turn around time for reporting diagnostic results from the receipt of the specimen? <hr/> |
| 41 | General Comments/Notes: |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

QUALITY ASSURANCE

| | | |
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| 1 | Does the laboratory have written standard operating procedures for all assays? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 2 | Are records kept of the number and type of tests performed and results? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 3 | Does the laboratory have written QC procedures? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 4 | Does the laboratory QC all reagents and standards? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 5 | Are critical reagents stored properly (enzymes @ -20°C, buffers @ 2°C to 8°C, etc.) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 6 | Are temperature sensitive reagents stored in freezers/refrigerators that are monitored for failures? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |

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| 7 | Does the laboratory have back-up refrigerators and freezers in case of an equipment of power failure? (please indicate all) | Refrigerators (2°C to 8°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure Freezer (-20°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure Freezer (-80°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 8 | Are temperature readings regularly monitored for Refrigerators (2°C to 8°C) Freezer (-20°C) Freezer (-80°C) Water baths Other (please specify) _____ | Refrigerators (2°C to 8°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure Freezer (-20°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure Freezer (-80°C) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure Water baths <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 9 | Does the laboratory a have written preventive maintenance plan and schedule for equipment? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 10 | Does the laboratory keep preventive maintenance records for equipment? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 11 | Are all mechanical laboratory equipment calibrated at least annually? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 12 | Are all non-mechanical laboratory equipment (pipettes, heat blocks, etc.) calibrated at least annually? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |
| 13 | Is all critical laboratory equipment currently under manufacturer service or maintenance agreements? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure |

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| 14 | Are all critical laboratory equipment connected to UPS backups? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | | |
| 14a | Comments | <hr/> <hr/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Does the laboratory have written sterilization/disinfection procedures? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Please describe the laboratory's sterilization / disinfection procedures. | <hr/> <hr/> <hr/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 17a | Does the laboratory have a protocol to monitor contamination? If Yes, please describe: | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure <hr/> <hr/> <hr/> | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Is there task-specific dedication and separation of: | <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Pipettes</td> <td style="width: 10%; text-align: center;"><input type="checkbox"/> Yes</td> <td style="width: 10%; text-align: center;"><input type="checkbox"/> No</td> <td style="width: 47%; text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> <tr> <td>PPE</td> <td style="text-align: center;"><input type="checkbox"/> Yes</td> <td style="text-align: center;"><input type="checkbox"/> No</td> <td style="text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> <tr> <td>Instrumentation</td> <td style="text-align: center;"><input type="checkbox"/> Yes</td> <td style="text-align: center;"><input type="checkbox"/> No</td> <td style="text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> <tr> <td>Equipment</td> <td style="text-align: center;"><input type="checkbox"/> Yes</td> <td style="text-align: center;"><input type="checkbox"/> No</td> <td style="text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> <tr> <td>Supplies</td> <td style="text-align: center;"><input type="checkbox"/> Yes</td> <td style="text-align: center;"><input type="checkbox"/> No</td> <td style="text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> <tr> <td>Reagents</td> <td style="text-align: center;"><input type="checkbox"/> Yes</td> <td style="text-align: center;"><input type="checkbox"/> No</td> <td style="text-align: right;"><input type="checkbox"/> Do not Know/not sure</td> </tr> </table> | Pipettes | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | PPE | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | Instrumentation | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | Equipment | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | Supplies | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | Reagents | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure |
| Pipettes | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| PPE | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Instrumentation | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Supplies | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| Reagents | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Do not Know/not sure | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Does the laboratory use any system for an internal quality control? If Yes, please describe: | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure <hr/> <hr/> | | | | | | | | | | | | | | | | | | | | | | | | |

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| <p>20 20a 20b</p> | <p>Are internal controls included in each test run? If Yes, is the performance of these internal controls recorded and monitored over time? If Yes, are there acceptance / rejection criteria?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>21 21a</p> | <p>Does the laboratory participate in any external quality assurance or proficiency programs? If Yes, please list programs</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure _____ _____ _____ _____ _____</p> |
| <p>22</p> | <p>Does the laboratory keep records of deliveries of reagents and supplies?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>23</p> | <p>Does the laboratory keep records to track stock inventory?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>24</p> | <p>Are quantities of reagents and materials regularly monitored so that there is a warning if stocks become low?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>25</p> | <p>Does the laboratory have a set maximum stock level for reagents and consumables above which inventory level should not go?</p> | <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| <p>26</p> | <p>Who determines how much to order?</p> | <p>_____</p> |

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| 27 | <p>Under normal circumstances, how long does it take from time of ordering to when supplies are available for use?</p> <p style="text-align: right;"><input type="checkbox"/> Do not Know/not sure _____</p> |
| 28 | <p>Does the laboratory have difficulty maintaining inventory of supplies and reagents from outside of the country?</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| 29 | <p>Does the laboratory have difficulty maintaining inventory of supplies and reagents from inside of the country?</p> <p style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Do not Know/not sure</p> |
| 30 | <p>How do reagents and supplies arrive at the laboratory?</p> <p style="text-align: right;"> _____ _____ _____ _____ </p> |
| 31 | <p>General Comments/Notes:</p> |



INTERNATIONAL INFLUENZA LABORATORY CAPACITY REVIEW TOOL

CAPACITY REVIEW SUMMARY

Review & Recommendations:

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