

# Practical experiences of an OIE Reference Laboratory to ensure safe and efficient transport of biological materials

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## Issues to consider for the transport of infectious substances

- It is important to develop a **working relationship** between those involved – the sender, the carrier and the receiver- in order to provide for safe and expeditious transport of these materials

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Azioni rapide Sposta Categorie Modifica

martedì 12/05/2015 13:57

Re: Ghana\_Submission of samples

A  Ellero Francesca

Cc  Terregino Calogero;  Cattoli Giovanni;  Monne Isabella

**Da:** J

[↑ Avanti](#) [↑ Ultimo](#)

**Inviato:** lunedì 11 maggio 2015 21:38

**A:** Ellero Francesca

**Cc:** Terregino Calogero

**Oggetto:** Fw: Submission of samples

Dear Dr. J

Hope this message fine you well.

As you may be aware by now HPAI/H5N1 is again spreading in our subregions and especially in countries surrounding   This is of great concern to us.

We recently had some high mortalities in commercial laying flocks and we want to send tissue samples to your laboratory for confirmation. We had run the rapid Ag-detection on these samples and they came out positive. We started today to run the Conventional RT-PCR and should have results by early tomorrow morning.

So please, could you help us with all the necessary documents to enable us send the samples to your laboratory as soon as possible.

best regards





On Tuesday, May 12, 2015 9:30 AM, Ellero Francesca <[FEllero@izsvenezie.it](mailto:FEllero@izsvenezie.it)> wrote:

Dear Dr. ,

My name is Francesca Ellero and I am writing from the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), in response to the below appended mail and on behalf of Dr. , who is presently out of office. I am the person who follows all Import\_Export procedures in our Unit, therefore I am providing you with some general information regarding the shipment of samples.

First of all it is of utmost importance to provide our laboratory staff with details of the shipment which is being organized. Preliminary communications are extremely important and may give an idea of why the material is being sent, what tests are required, quantity of dispatched samples, and so on.

Please keep also in mind that it is of utmost importance to comply with international shipping procedures, which I am here below outlining.

**Any shipment of biological samples must be labelled as UN 3373 material**, therefore it has to be packed according to international IATA regulations, in proper recipients and boxing. Envelopes or any other shipping container not conforming to these regulations can no longer be accepted; therefore, materials which are shipped to our laboratory not compliant to the suggested protocol will have to be refused and subsequently destroyed.

The courier agent must always be informed of what material is being sent, so that it can advise on how to better handle the shipment. Any parcel has to be accompanied by a series of documents and Permits, which I am herewith enclosing for your own use. The documents in **Word format** have to be printed on headed paper of your Institution and signed by the Head of the laboratory (or any other representative). Please modify and/or change accordingly. Our **import permits are in PDF format** and must accompany the shipment. Our **Guidelines** are also attached, for your own future reference.

In case of UN 2814 and UN 2900 shipments (viral strains, either potentially infectious to humans or animals) need to be transported by a dedicated courier company (i.e., World Courier, PHSE) and packed accordingly, but this is not your case.

In any case, please contact a courier agent before planning a shipment and keep in mind that I can support you if you experience some problems with this. |

For any future reference remember that it is always advisable to contact us before you send any material for testing, so that we can support you in dealing with shipment related matters. Please do not hesitate to contact us for any further information you may need or should you have any doubts on this issue. Remember to copy my name in any email exchange on shipment-related matters.

Best regards.

Francesca Ellero  
Segreteria DSBIO  
Dipartimento di Scienze Biomediche Comparate



**Da:**

**Inviato:** venerdì 22 maggio 2015 12:38

**A:** Ellero Francesca

**Cc:**

**Oggetto:** - ~~samples for PCR~~ - ~~Respiratory infection~~ -

Dear Francesca

Hi, hope you are in best condition.

Today I sent to you one FTA card from ??? to be tested for the blow agents

ILT / APV / H9 / IB / Mg

Hope this is fine with you

Best Regards

This can mean:

1. not proper organization of the shipment
2. delay in the sample analysis;
3. not proper sample analysis;



## Issues to consider for the transport of infectious substances

- It is important to develop a working relationship between those involved – the sender, the carrier and the receiver- in order to provide for safe and expeditious transport of these materials
- The packaging of infectious substances for transport should be designed in order to minimize the potential for **damage** during transport
- The packaging must ensure the **integrity** of the materials and so, in turn, timely and accurate processing of specimens

# Packaging Requirements for Biological and Infectious Substances

Actions before sending samples:  
prior agreement with the recipient laboratory

## Mode of transport:

international courier company specialized in infectious substances transport (trained personnel)

## Preparation of shipment:

classification of the Dangerous Good (UN code)

## Contingency planning:

availability of dry ice, containers, courier



Infectious substances are divided in two categories:

- **Category A** – An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals– IATA PI 620

**UN 2814** “Infectious substance, affecting humans” or both humans and animals (HPAI, pH1N1, Rabies virus, WND virus....)

**CULTURES ONLY (isolates)**

**UN 2900** “Infectious substance, affecting animals” only (Velogenic NDV, FMD, ASF, other influenza isolates of animal origin)

- **Category B – Infectious substances** which do not meet the criteria for inclusion in Category A – IATA PI 650

**UN 3373** “Biological substance, Category B” - Infectious substances which do not meet the criteria for inclusion in Category A (specimens collected directly from animals/humans that are suspected or confirmed to be infected with influenza A virus, including swabs and blood specimens)





# Packaging materials

- Packaging complying with PI 620/650 should be purchased, not 'home made'.
- There is no comprehensive **list of suppliers** of packaging that comply with Packing Instructions PI620 and PI650.
- However, an **Internet search** using a suitable international or national search engine (search "*UN infectious substance packaging*") usually provides appropriate information, as well as access to national regulations.
- Research of packaging materials through **national hospitals** may also give positive results.
- **Carriers and forwarding agents** should also be able to supply details of local suppliers or local companies that can provide such information.

# Any packaging for infectious substances must include three components (basic triple packaging system)

## Primary receptacle

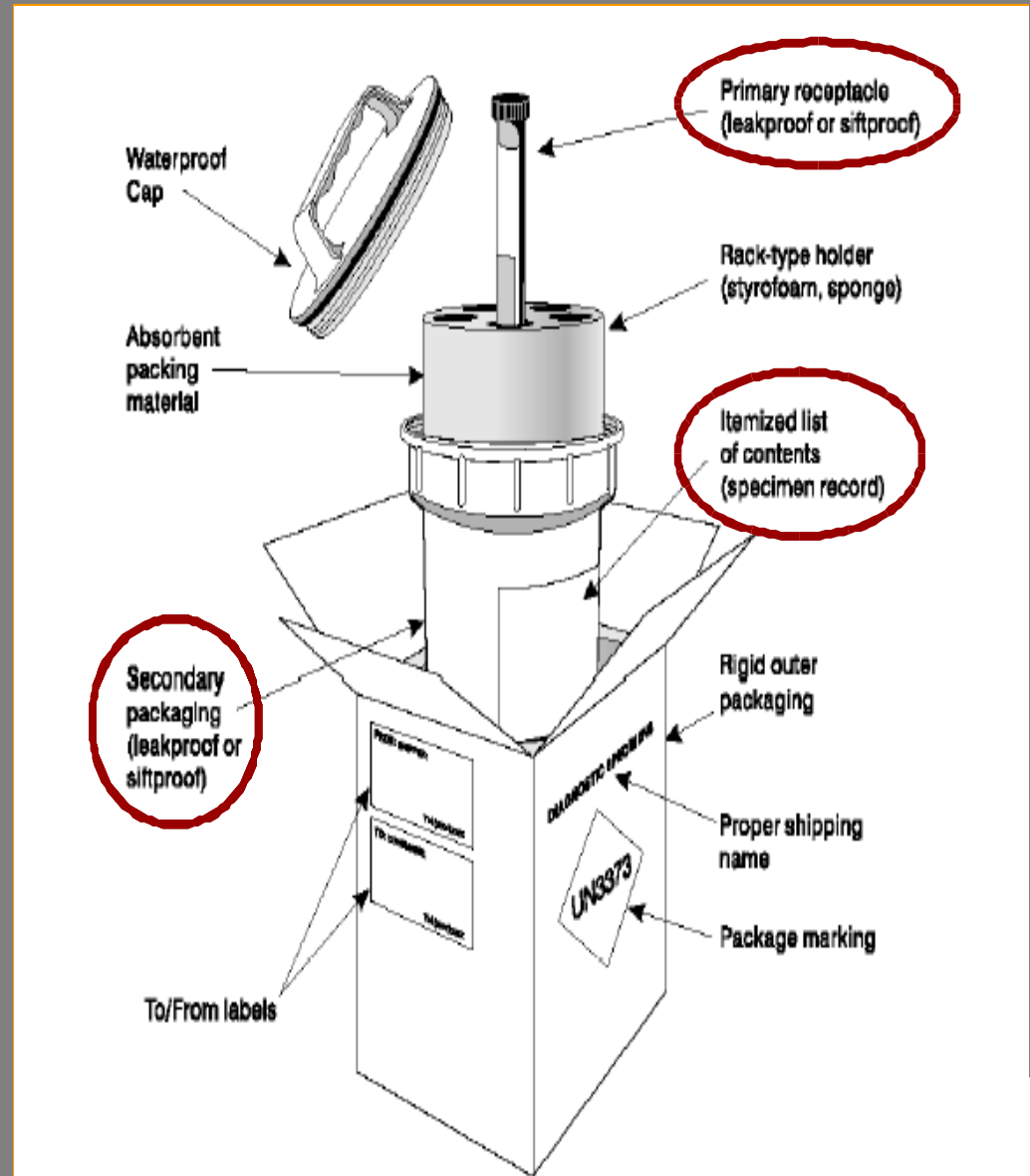
Tube, vial or other rigid container that is in direct contact with the specimen (watertight, leak-proof) with enough absorbent material

## Secondary packing

Durable, watertight, leak-proof packaging to enclose and protect the primary receptacle(s), with sufficient additional absorbent material

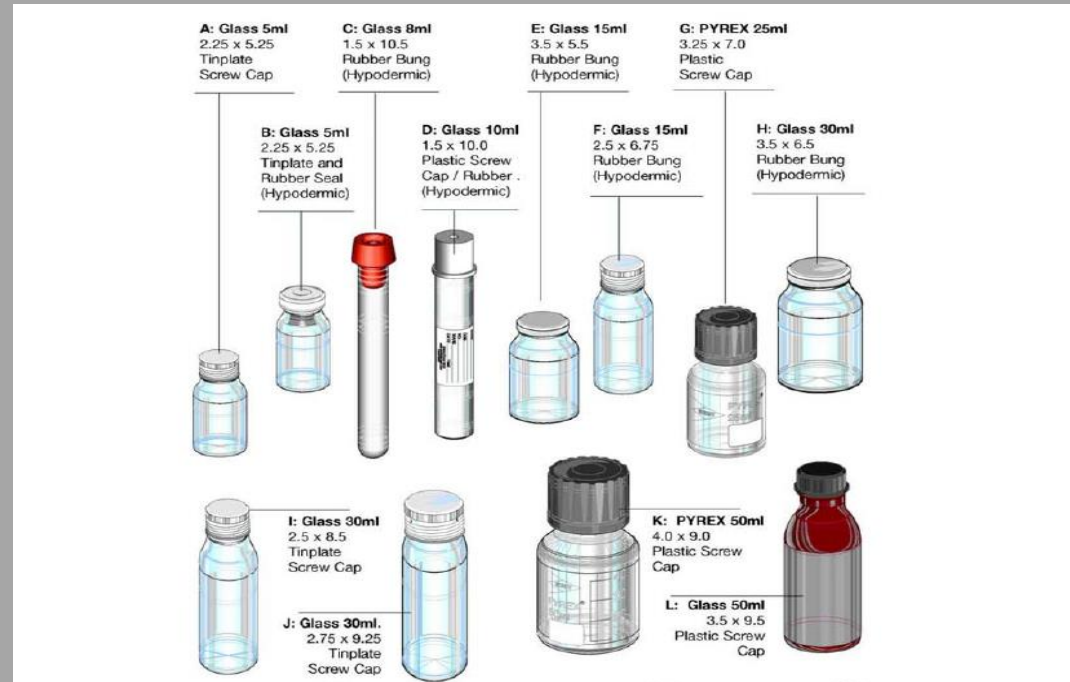
## Rigid outer packaging

Outer shipping packaging with suitable cushioning material. The smallest external dimension shall be 10x10 cm



# Primary receptacle

- Screw caps must be sealed with parafilm
- Multiple fragile samples must be wrapped individually



If several samples are included, they should have clear and distinct identification numbers

For liquids: Absorbent material between primary receptacles and secondary packaging

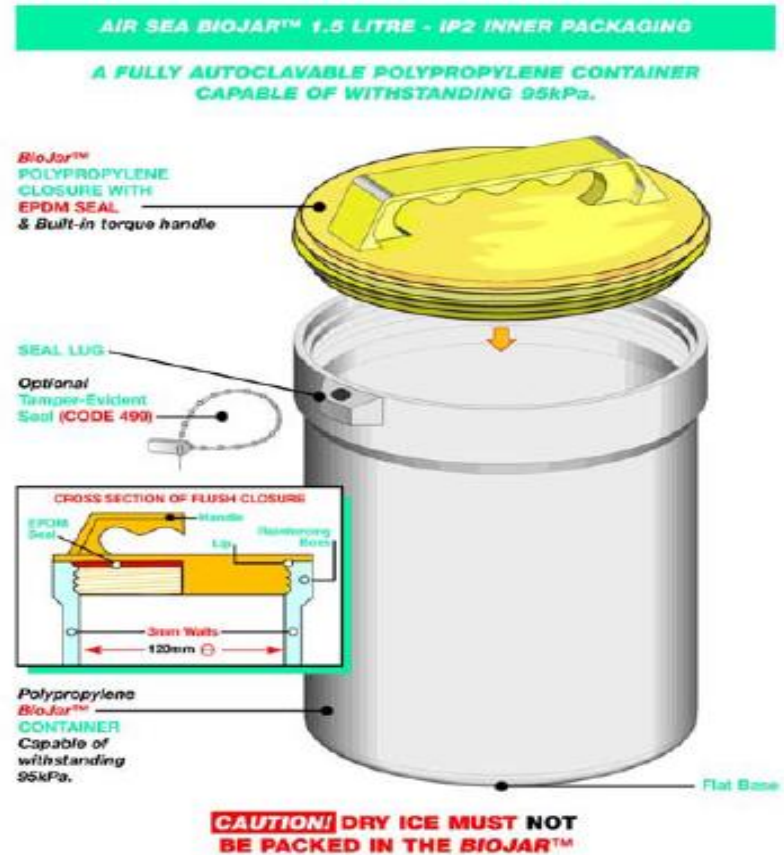
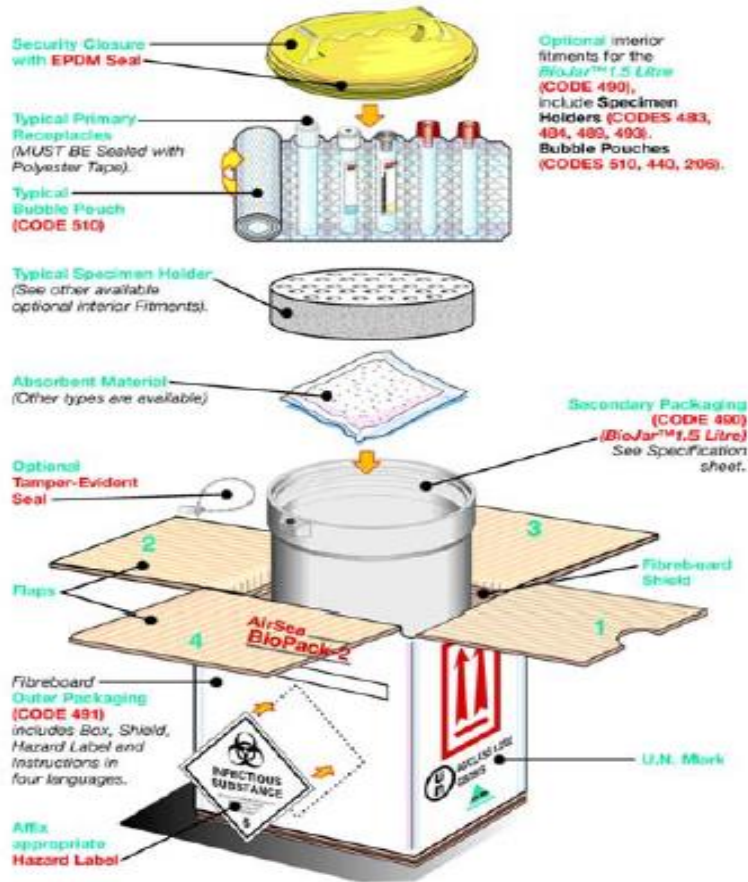
Data(2003): 0,002% breakages, all contained by absorbent material and no damage to the secondary container or outer package



Clinical samples: use appropriate primary receptacle

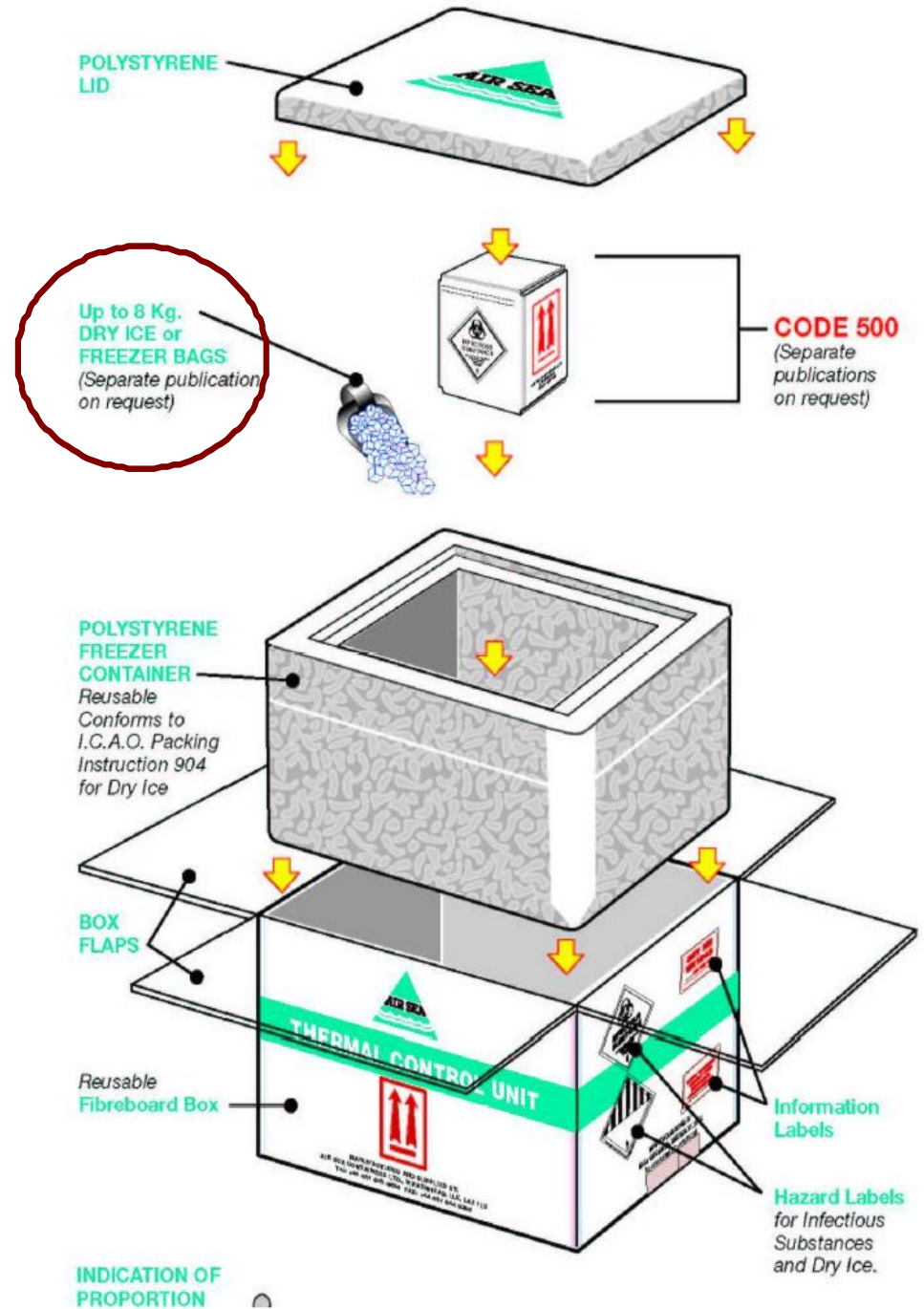
# Secondary container

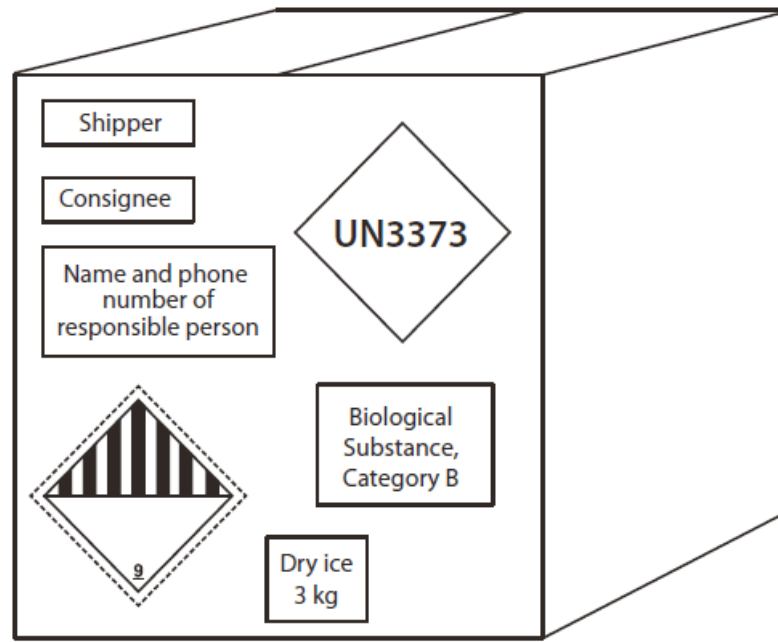
- IATA 650 & 620 packing requirements (water tight, autoclavable material, pressure resistant)
- Absorbent material



# Outer packaging

- List of contents in a plastic bag
- If ice is used, the outer packaging must be leak proof and its performance must not be compromised
- If dry ice is used (UN 1845), the packaging must allow for escape of carbon dioxide gas, and the net quantity must be written on the outside
- If liquid nitrogen is used (UN 3158), primary and secondary container must be capable of withstanding very low temperatures





# Outer packaging documentation

**Shipper and consignee identification - telephone number of a responsible person, knowledgeable about the shipment**

**Import authorisation realised by the destination country (laboratory)**

**Shipper Declaration for Dangerous Goods (Category A)**

**UN identification number as relevant (UN 2814, UN 2900, UN 3373) and proper shipping name**

**Temperature storage requirements (and technical name of the refrigerant, UN number and net quantity)**

**Customs invoice (proforma) and export certificate, if needed**

**Other information:**

- Air Waybill receipt number (AWB)

- Sample details (letter addressed to the recipient laboratory)





**It is important that the package carries the appropriate code!**

**If not: It will not be handled as an urgent consignment**

**It risks to be opened at the airport**

**IATA standard boxes normally come with the code already printed on the side.**



**UN 3373 DIAGNOSTIC SPECIMEN  
PACKED IN COMPLIANCE WITH  
IATA PACKING INSTRUCTION 650**



- **History about the samples:**

**Species and age, area/country of sampling, date of sampling, clinical history, epidemiological information, method and temperature at which samples were stored, etc.**

- **Detailed **identification** of the samples**





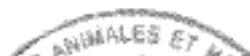
Item Technical Specification/Description of Goods	Quantity
Pot 1(Lung-Spleeng-Trachea-Ceacum) of avian	1
Pot 2(Lung-Spling-Trachea-Ceacum) of avian	1
Pot 3(Lung-Spling-Trachea-Ceacum) of avian	1
Pot4 (Lung-Trachea-Ceacum) of turtledove	1
Total	4

The general value of the above mentioned is of 10 USD

This material has no commercial value.

For research purposis

**Direction of Veterinary Service**





Dear Sir,

**REQUEST FOR MOLECULAR ANALYSIS (PCR AND SEQUENCING) OF AVIAN SAMPLES COLLECTED FROM SUSPECTED NATURAL IN INFECTIONS FROM**

With reference to the above subject, I humbly wish to request for your kind assistance and perhaps collaboration in carrying the above mentioned diagnostic procedure on the my samples.  
Please find below the details of the samples:

1. **Suspected natural infections** samples collected from avian species in I Veterinary Hospital,
2. **Sample Type(s):** Blood and Tissues on FTA card
3. **Test/or Analysis:**
4. **No of samples/**  
7 = Infectious Br  
2 = Infectious Br  
7 = Newcastle D  
10 = Fowl Pox (P)  
7 = Newcastle D  
33 = **Total**

This can mean:  
2. Delay in the sample analysis;  
3. Misleading results;



## Notification of shipment to the recipient laboratory

### Inform the OIE Ref Lab in advance

- Date of the shipment
- Airline name and flight number
- Airway bill number
- Name and contact details of the person to whom the results should be communicated

# Thank you for your attention!

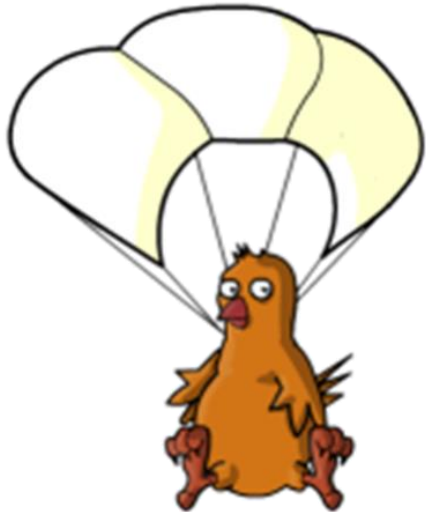
## References:

**WHO:** Guidance on regulations for the Transport of Infectious Substances

[http://apps.who.int/iris/bitstream/10665/78075/1/WHO\\_HSE\\_GCR\\_2012.12\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/78075/1/WHO_HSE_GCR_2012.12_eng.pdf)

**OIE:** Terrestrial Manual 2013, Chapter 1.1.2. Collection and Shipment for Diagnostic Specimens

[http://www.oie.int/fileadmin/Home/eng/Health\\_standards/tahm/1.01.02\\_TRANSPORT%20.pdf](http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/1.01.02_TRANSPORT%20.pdf)



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