



Improving influenza data sharing - *IZSVe, OIE/FAO Reference Laboratory experience*

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IZSVe AI sharing data activity prior to H5N1 era (2006)

- Italian LPAI-HPAI H7N1 outbreak (1999-2001)
- Italian LPAI H7N3 outbreak (2002-2003)
- Isolates regularly submitted to the EU Reference Laboratory for AI (VLA, UK)
- Isolates were fully or partially sequenced and deposited in GenBank
- H7N1-H7N3 & other AI isolates or virus RNA were shared with other labs (e.g. EU-RL; NIH; SEPRL;...)





2006 – a milestone in flu data sharing

- January 2006 – Suspected H5N1 HPAI in Nigeria
- February 2006 – Submission of samples to IZSVE and confirmation
- August 2006 – GISAID initiative came to life





SHARING DATA IN THE INFLUENZA ERA (POST-2006)

- ✓ Sharing biological material (e.g. viral RNA or isolates)
 - ✓ Sharing knowledge (e.g. protocols, information)
 - ✓ Sharing genetic information (e.g. virus sequences)



SHARING BIOLOGICAL MATERIAL

- AI suspected samples submitted to IZSVe
- AI isolates submitted to IZSVe
- AI isolates repository in IZSVe and submission to other laboratories





Submission to IZSVe of AI suspected samples or H5N1 isolates





SHARING KNOWLEDGE

- Trainings
- Sharing of protocols, primers, reagents
- Organizing international proficiency tests for AI
- Sharing activities/information between laboratories (e.g. FAO networking activities; OIE twinnings; OFFLU)
- Sharing information with international organizations (e.g. OIE reporting & notification)





SHARING KNOWLEDGE

1. The Veterinary Record; 2006
2. Avian Diseases, 2007
3. Avian Pathology , 2007
4. Emerging Infectious Diseases, 2007*
5. Emerging Infectious Diseases; 2007*
6. Emerging Infectious Diseases; 2008*
7. PlosPathogens, 2008*
8. Journal of General Virology, 2008*
9. Zoonoses and Public Health, 2008
10. Emerging Infectious Diseases, 2009*
11. PlosOne; 2009*
12. Avian Pathology, 2009
13. The Veterinary Record, 2009
14. Veterinary Microbiology, 2009**
15. Journal of Virology 2010



* Open Access Journal

** free download for eligible countries



SHARING GENETIC INFORMATION

- Sequences obtained from samples submitted by external veterinary, public health or research laboratories
- Sequences obtained from samples submitted by private companies





permission for gene sequence submission to public database - Messaggio (HTML)

File Modifica Visualizza Inserisci Formato Strumenti Azioni ?

Invia

Garamond 12

A...

Cc...

Oggetto: permission for gene sequence submission to public database

As you know, IZSve is an accredited FAO and OIE Reference Laboratory for Avian influenza and Newcastle disease. In keeping with the status of the institute and our wish to promote the sharing of genetic sequence information throughout the entire scientific community, our declared policy is to deposit any such sequences obtained following the analysis of submitted field samples in a public database (e.g. XXX). We therefore would like to ask you permission to deposit the sequence data from representative isolates, and make them available to the scientific community.

If, for any reason, you wish to withhold permission to release genetic sequence data obtained from your samples, we need a written notification via both email and fax to the following persons:

Dr. Giovanni Cattoli, tel. 39 049 808 4360

You are requested to provide any such notification by May, 08/2008.

IZSve very much appreciates the opportunity to collaborate with you and assist with your on-going diagnostic challenges.

Yours sincerely,

XXXXXXXXXX

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SHARING SEQUENCES OBTAINED FROM SAMPLES SUBMITTED BY PRIVATE COMPANIES to RLs

- These samples may represent a valuable source of unofficial information (e.g. for field epidemiological data, vaccines and vaccinations)
- Service commonly regulated by contracts aiming at protecting IP and confidentiality of the information shared/obtained
- Contracts now made at IZSVe aiming at regulating the process of sequences submissions and publication of data with transparent and reasonable deadlines (e.g. 60 to 90 days after data shared confidentially)





EXAMPLE OF SHARING PROCESS FOR SEQUENCES OBTAINED FROM SAMPLES SUBMITTED BY PRIVATE COMPANIES

- Samples submitted between April-July 2010
- Sequences obtained between April-August 2010
- Sequences deposited in GISAID (EpiFlu database) in October 2010
- December 2010-January 2011 Contract revised



Avian H5N1 sequences deposited by IZSVe

- 1,577 out of 13,487 (11.7%) sequences deposited in GenBank in the period 2006-2010 (January 2011)
- 50 H5N1 isolates present in EpiFlu out of 311 (16%)



LIMITATIONS & CHALLENGES

- Communication problems (technical, “behavioural”...)
- Cost & logistics (e.g. submission of isolates or RNA)
- Unawareness of regulatory/public health implications (e.g. OIE reporting & notification)
- Property/patent rights issues (e.g. private companies)
- Intellectual/scientific property (e.g. publications)





Resulting benefits

- Internal sequencing process was reviewed and optimized,
- AI scientific activity has been accelerated and motivated,
- Collaborations with human health has been greatly strengthened
- An opportunity for laboratories operating in “neglected areas” of the world,
- but, what we have learned more is that....



...sharing data is ultimately based on common experiences and personal contacts