

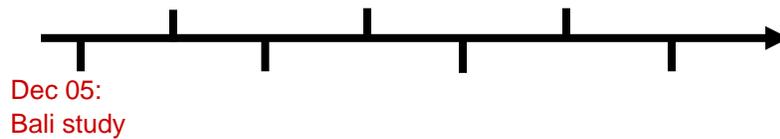
Live Bird Markets: keeping them alive!

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Background

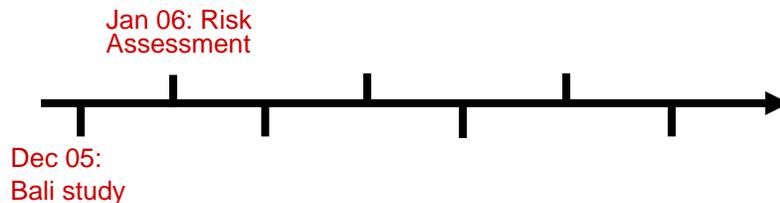
- Indonesia was initially affected by H5N1 in 2003:
 - By mid-05, 17 provinces reported outbreaks & first human cases detected.
- Live bird markets (LBMs) common throughout Indonesia: important part of the poultry marketing chain.
 - “90% of industrial poultry stocks goes into traditional marketing system” (Poultry Industry Representative, 11 June 2007):
- Early lessons learnt from Hong Kong & Thailand: need to tackle the disease in marketing chain, including LBMs.
- WHO CO: support MoH in AI control & food safety.

LBM Activities: A Timeline (1)



- Epidemiological study: chicken, duck and pig specimens, as well as human blood samples collected from households in all 9 districts & 3 LBMs.
- Results: H5N1 virus isolated from birds in LBMs but not from households.
- Conclusions: early local evidence that LBMs play a role in harboring the H5N1 virus & potential for dissemination back into community

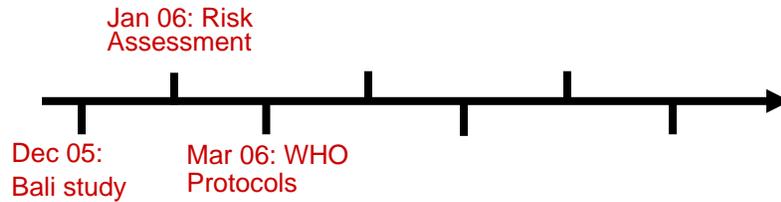
LBM Activities: A Timeline (2)



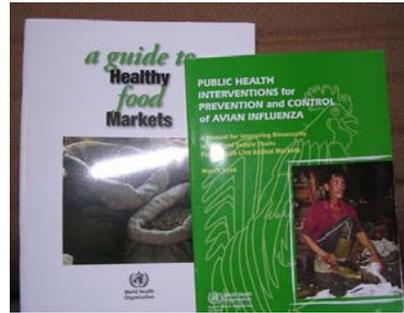
- WHO team to assess H5N1 LBM risk.
- Observations: infrastructure & cleaning practices were high risk for both B2B infection (spread) and B2H infection.
- Recommendations: incorporate AI into food safety program, develop strategy to achieve healthy LBMs



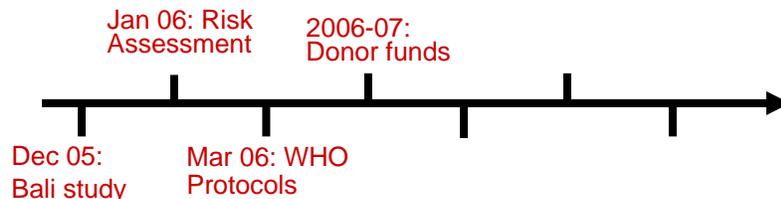
LBM Activities: A Timeline (3)



- WHO developed guidance for AI-affected countries.
- Simple: Includes market assessment tool & strategies for improving the health of LBMs.

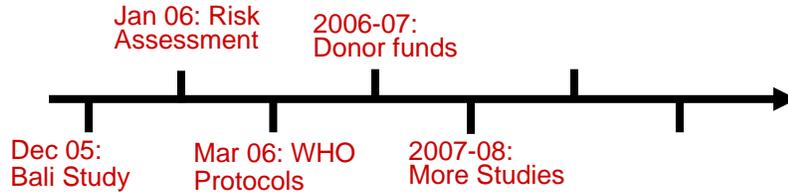


LBM Activities: A Timeline (4)



- The MoH developed a strategy for improving the health of LBMs. WHO supported the process and sought donor funding for the implementation.
- Two million dollars were obtained for the strategy from the European Commission.

LBM Activities: A Timeline (5)



- Evidence was mounting that LBMs were leading to human infection and spread of the virus back into the community.

The screenshot shows a WHO webpage with the following text circled in red:

From the outbreak in 2006, no mass die-offs of poultry are known to have occurred in the area. Live chickens were purchased from an outside market in preparation for a religious feast. These were integrated into local flocks. Shortly thereafter, chickens began dying in large numbers in an outbreak that continued throughout July and the first week of August, gradually spreading from one hamlet to another.

Garut District Cases, 2006

“At that time, live chickens were purchased from an outside market in preparation for a religious feast and were integrated into local flocks. Shortly thereafter, chickens began dying in large numbers in an outbreak that continued throughout July and the first week of August, gradually spreading from one hamlet to another. These exposures are, at present, thought to be the source of infection for most confirmed or suspected cases.”

China Cases

Suggested citation for this article: Yu H, Feng Z, Zhang N, Xiang N, Huan Y, Zhou L, et al. Human influenza A (H5N1) cases, urban areas of People's Republic of China, 2005–2006. *Emerg Infect Dis.* 2007 Jul; [Epub ahead of print].

Human Influenza A (H5N1) Cases, Urban Areas of People's Republic of China, 2005–2006

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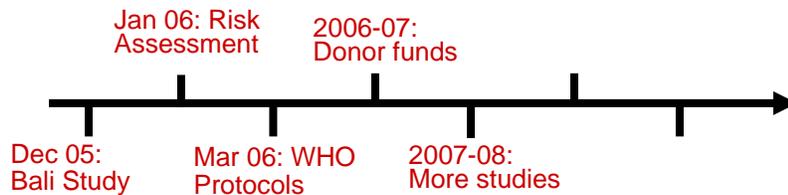
[†]These authors contributed equally to this work.
[‡]Members of the Chinese Center for Disease Control and Prevention Avian Influenza H5N1 Study Group are Shupin Gu, Zhen Lu, Xianfeng Tang, and Jun Li. Members of the Provincial Center for Disease Control and Prevention Avian Influenza H5N1 Study Group are Gaoqiang Liu, Jianping Gu, Shaoyan Cai, Ting Huang, Ya Song, Da Wu, and Xiaosong Sun.

We investigated potential sources of infection for 6 confirmed influenza A (H5N1) patients who resided in urban areas of People's Republic of China. None had known exposure to sick poultry or poultry that died from illness, but all had visited wet poultry markets before illness.

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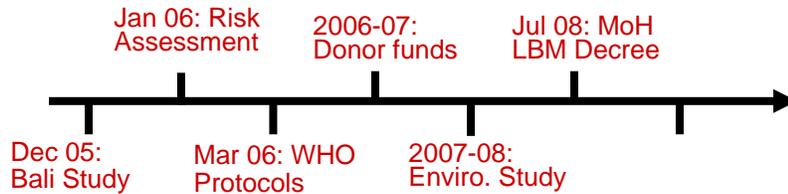
We investigated potential sources of infection for six confirmed H5N1 human cases who resided in urban areas of Republic of China. None had known exposure to sick or dead poultry, but all had visited wet poultry markets before illness.

LBM Activities: A Timeline (5)



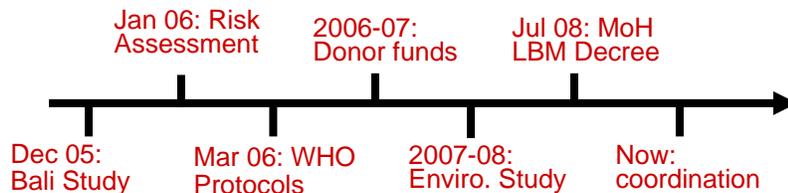
- Study: To assess AI H5N1 presence in LBM environment (contamination of surfaces).
- Methods:
 - 27 environmental sites selected for sampling.
 - Sites selected from delivery, holding, slaughter, sale & waste disposal zones in markets.
 - 83 markets sampled in western Java: Questionnaire administered.
 - Correlations between +ve sites within markets & risk factors for contamination are being analyzed.

LBM Activities: A Timeline (6)



- MoH released Decree about LBMs: provides the regulatory framework and guidance on improving the health of LBMs.
- Excellent description of LBM stakeholders, interactions & strategies that should be considered.
- In decentralized country, such decree will be useful for local government uptake.
- English translation available.

LBM Activities: A Timeline (6)



- Activities over last few years have increased knowledge & funding for AI control in LBMs.
- Impact: more LBM activities, honing of control measures for clearer guidance & improving coordination between stakeholders (eg NGOs, donors, local partners)

Acknowledgements

- Bali study: BBPV Bali, Provincial Health & Agricultural Offices, Hong Kong University
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- Case data: Zoonosis Subdirectorate, DG DC/EH Ministry of Health