

EPIDEMIC INTELLIGENCE

PERSPECTIVES ON THE SURVEILLANCE AND EPIDEMIOLOGY OF H5N1

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INTRODUCTION

Epidemic Intelligence (EI) is the science of using all available data and information sources for the early identification and assessment of potential human, animal, or environmental health hazards.

The globalization of travel and trade has outpaced the capacity of traditional disease reporting systems to allow governments and industry to respond quickly to emerging potential pandemic and epizootic disease threats. Experience has taught us that traditional health monitoring and notification systems cannot adequately track emerging new disease threats such as SARS and avian influenza, or potential bioterrorism-initiated disease outbreaks.

National institutions in charge of health security — and agencies and businesses that want real-time information on the disease status of foreign countries — cannot afford to rely on international human and animal health data reporting systems as their only source of information on public health or agricultural health issues.

Modern communications tools and technologies are rapidly changing the ways that we access and analyze health information.

CUMULATIVE NUMBER OF CONFIRMED HUMAN CASES OF H5N1 AVIAN INFLUENZA REPORTED BY WORLD HEALTH ORGANIZATION (22 January 2007)

Country	2003		2004		2005		2006		2007		Country Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	0	0	6	6
China	1	1	0	0	8	5	13	8	0	0	22	14
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	1	1	19	11
Indonesia	0	0	0	0	19	12	56	46	5	4	80	62
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Vietnam	3	3	29	20	61	19	0	0	0	0	93	42
Yearly Total	4	4	46	32	97	42	116	80	6	5	269	163

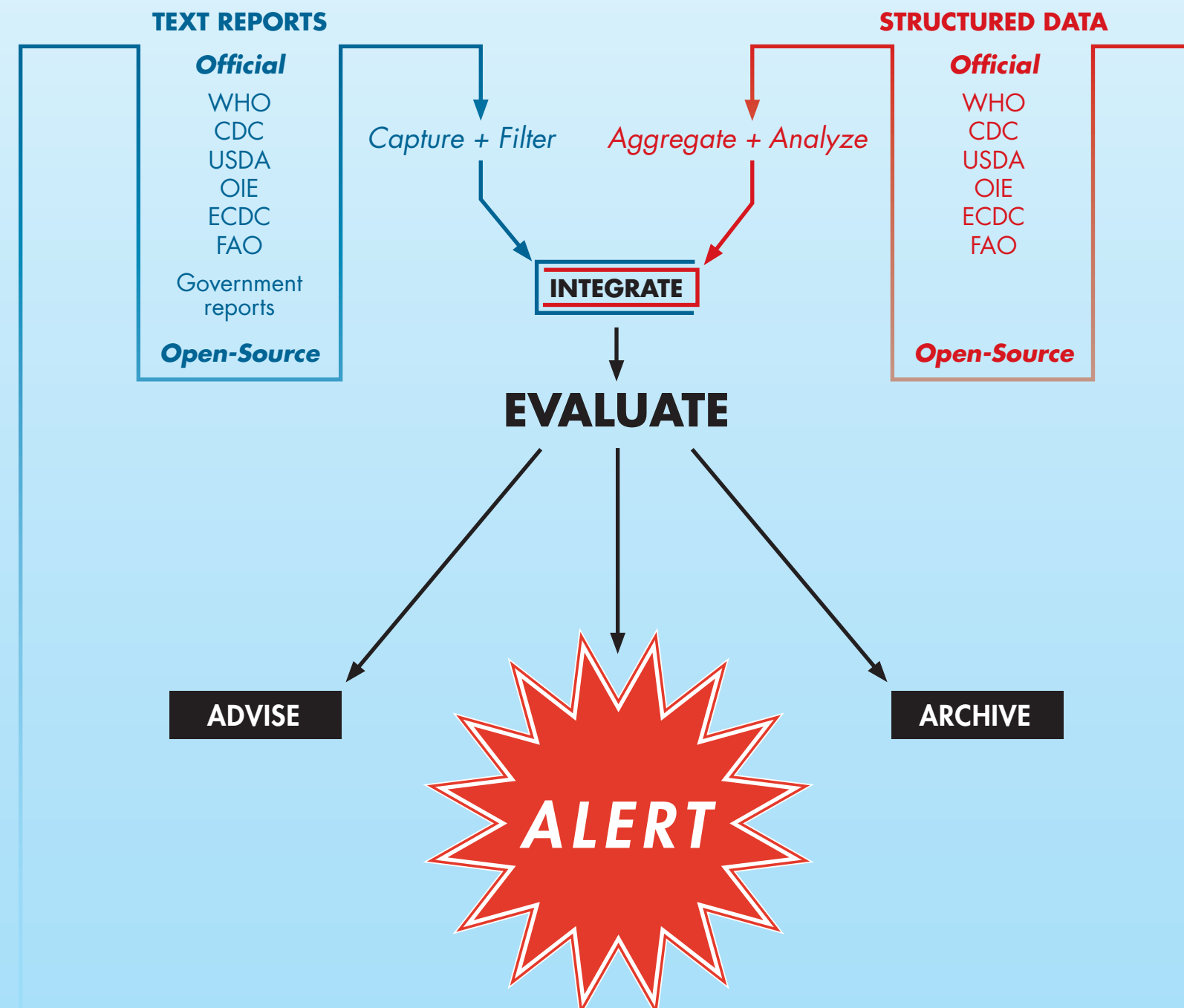
Total number of cases includes number of deaths. WHO reports only laboratory-confirmed cases. All dates refer to onset of illness.

COUNTRIES WITH REPORTED LABORATORY-CONFIRMED HUMAN H5N1 CASES NOT INCLUDED IN OFFICIAL WHO LISTING

Country	2003		2004		2005		2006		2007		Country Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
China (Hong Kong ex Fujian)	2	1									2	1
Japan*			5								5	
Jordan* (reported as Egypt by WHO)							1				1	
Korea*	4		5						1		10	
Turkey								9			9	1
Yearly Total	6	1	10				10		1		27	2

* Countries not reported as having any laboratory-confirmed human cases by WHO.

EPIDEMIC INTELLIGENCE PROCESS

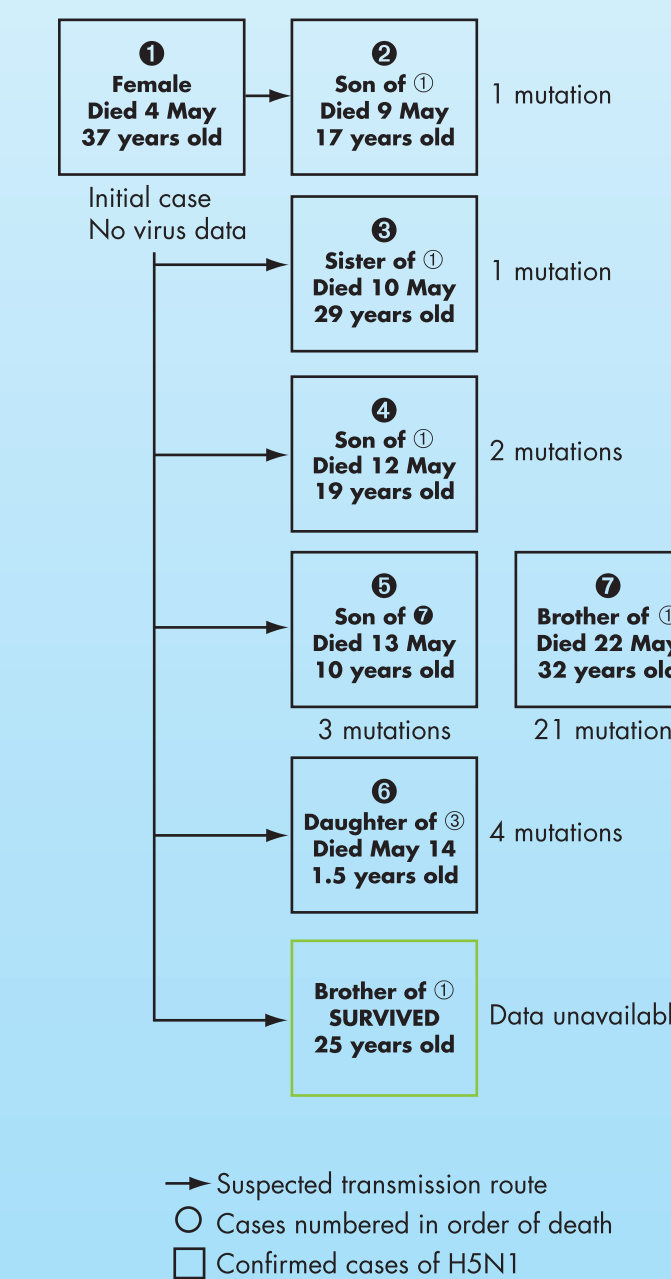


	Ei Sources	Rationale	Method
INDICATOR-BASED EI SOURCES	Mandatory notification	Some rare but serious diseases need prompt and targeted action	Legal framework
	Surveillance on a sample of sources (sentinel)	Trends of some common diseases can be obtained from a representative network of health care professionals	Sentinel network
	Syndromic surveillance	Emerging diseases may not fit into disease-specific definitions. Early detection of cluster of syndroms may trigger an alert before cases appear in traditional surveillance systems.	Lists of syndromes
	Mortality	Serious emerging threats may initially be recognized by an increase of deaths	Real time death reporting
EVENT-BASED EI SOURCES	Health services activities	Serious emerging situation may initially present with increased admissions to health services such as emergency rooms	Real time activity reporting
	Drug consumption	Increase in specific drug consumption may indicate emerging diseases	Pharmacy networks
	Scientific watch	Scientific findings related to new organisms, drug resistance, etc. may trigger public health action	Literature review
	Direct modifications	Clinicians or public health personnel may come across abnormal health events	On-call numbers
	Syndromic surveillance	Outbreaks and other unusual health events are often picked up early by local media	Media review Web scanning
	International watch	A country may be affected secondarily by a health event emerging abroad	WHO reports ProMED, GPHIN
	Intersectoral events	Agriculture, environment, industry and other sectors collect information on health related risks and exposure	Communication channels

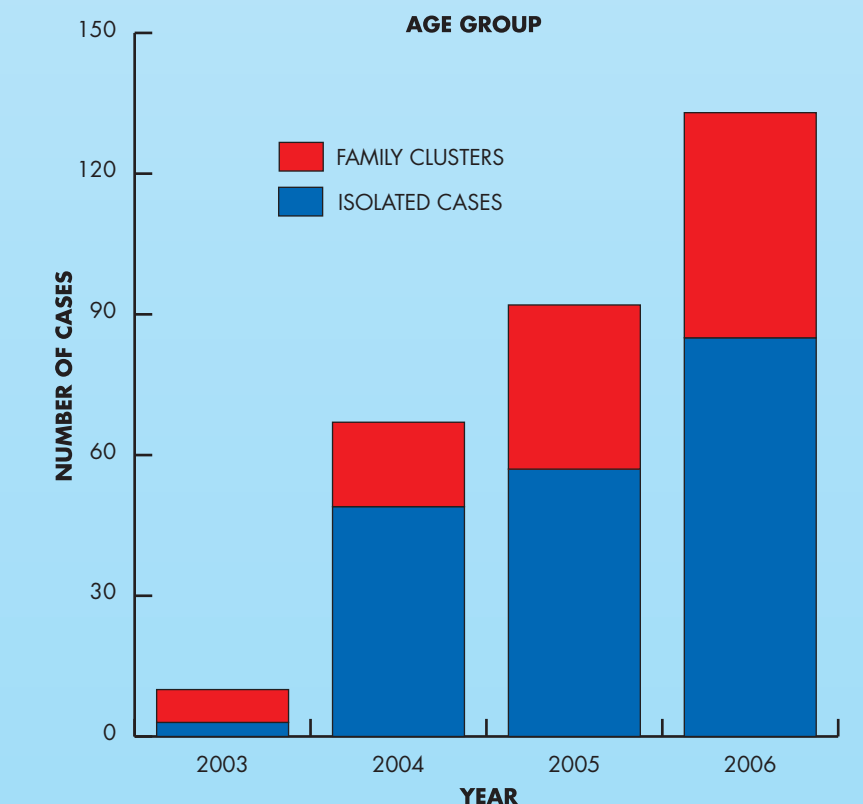
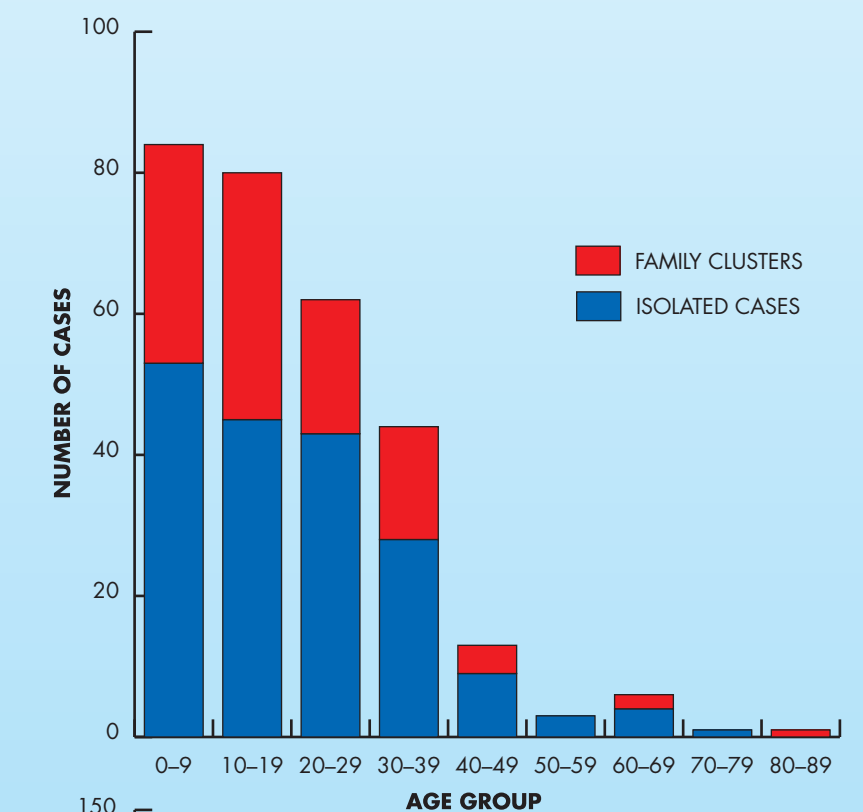
Modified From: ECDC [http://www.eurosurveillance.orgew/2006/061221.asp]

HUMAN H5N1 CASES ASSOCIATED WITH FAMILY DISEASE CLUSTERS

Flu Cluster In Indonesia*



*FAMILY BIRD FLU CLUSTER DOCUMENTED IN SUMATRA, INDONESIA DURING MAY 2006.
From: Butler, D. NATURE JULY 2006



AGE DISTRIBUTION OF HUMAN H5N1 CASES (2003 - 2006)

