

AFRICA INFLUENZA SCIENTIFIC SYMPOSIUM

7th– 9th December, 2009

Recent Pandemic Influenza A H1N1 2009 infections in Ghana

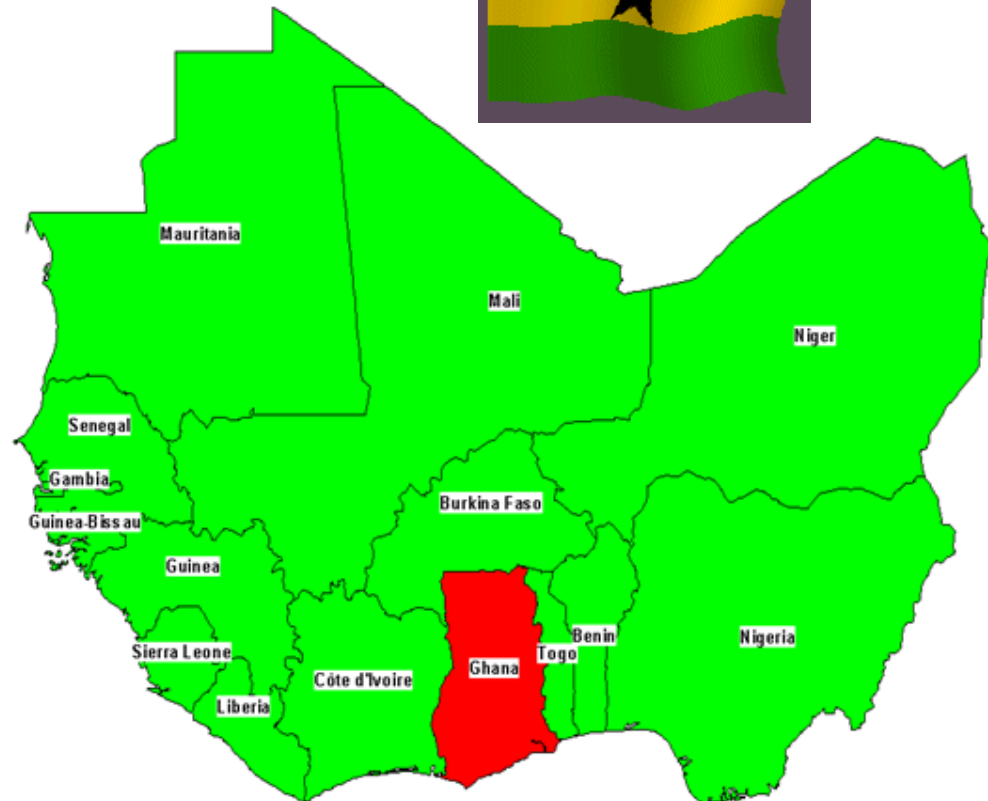
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Introduction

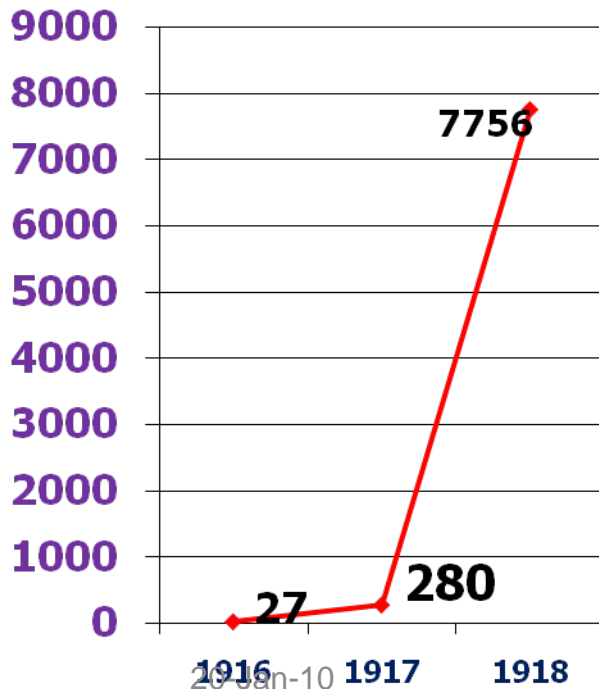
- Area: 238,537 sq. km
- Population: 24.2 M (2009)
- Political and Administrative Divisions:
 - 10 regions
 - 170 districts (9–27 per region)
 - 800 sub-districts
 - 25,672 Communities
- Decentralized System



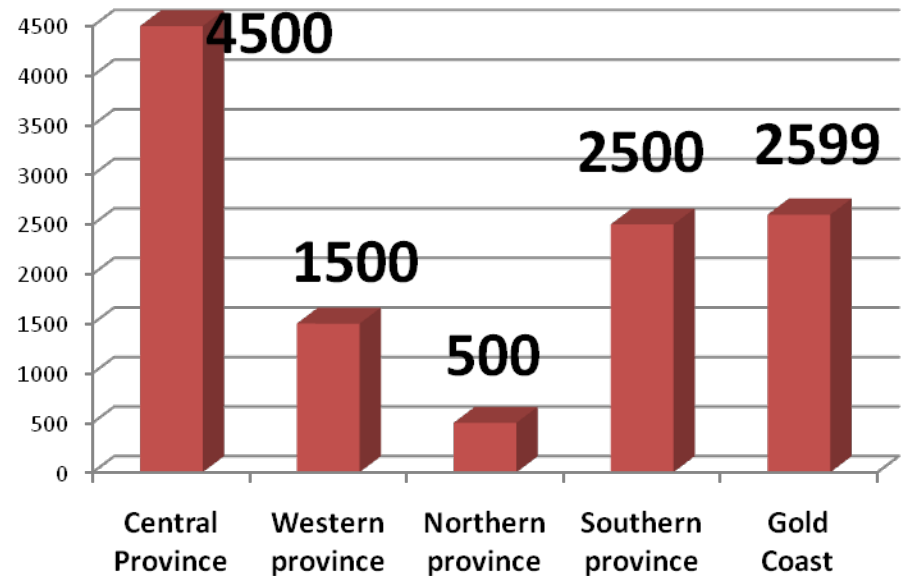
Introduction

History of Influenza in Ghana

"Spanish flu" morbidity:
1916-1918



Spanish Flu Mortality
Old Ghana 1918



Introduction

- **Avian Influenza (AI) virus infections in humans and now Pandemic Influenza H1N1 2009 are major global public health concern**
- **In 2005, Ghana recognised the risk and by a multi-sectoral approach, formed an Avian Influenza Working Group and a MoH-HIHC to prepare for Pandemic flu**
- **GHS / MoH strengthened capacity for human flu surveillance by building upon the existing Integrated Disease Surveillance & Response (IDSR) with the inclusion of avian flu/ suspected pandemic flu as an immediately notifiable condition**
- **In 2006, Ghana produced a Pandemic Influenza Preparedness and Response plan.**

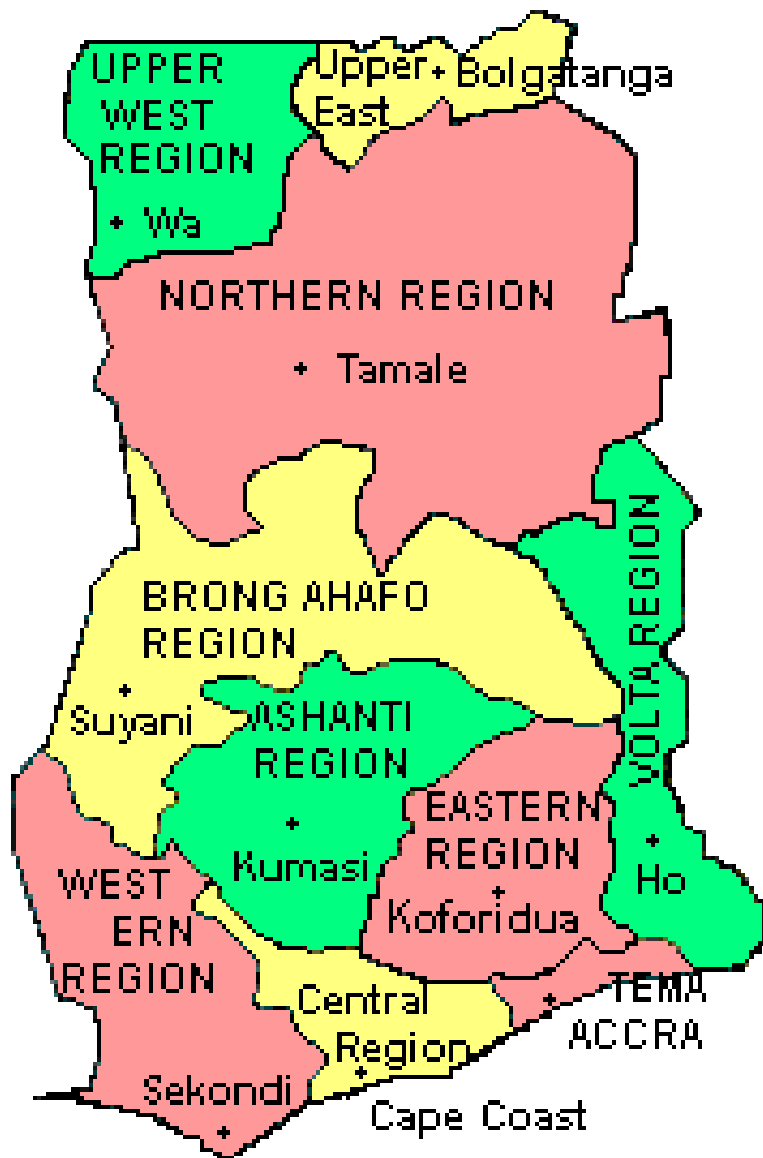
Introduction

- **April 2005, outbreak of Influenza A H5N1**
- **August 2009, confirmed first case of Pandemic Influenza AH1N1 2009**
- **53 cases confirmed (1/12/2009) out of 562 suspected/contacts investigated**

Summary of H1N1 Samples investigated at NIC 2009

Reporting as at	Total No. of Samples Received	No. of Samples investigated		No. of samples confirmed as H1N1		Total H1N1 Confirmed in Ghana
		Suspected cases	Contacts	suspected Cases	Contacts	
01/12/2009	562	510	52	53	0	53

PERCENTAGE DISTRIBUTION BY REGIONS OF LABORATORY SAMPLES RECEIVED AT NIC - 2009



REGIONS	SAMPLES(%)	
	SUSPECTED	CONTACTS
GREATER ACCRA	93.9	75
ASHANTI	1.9	17.3
WESTERN	1.8	7.7
EASTERN	0.6	0.0
NORTHERN	0.6	0.0
UPPER WEST REGION	1.2	0.0
CENTRAL, VOLTA, UPPER EAST & BRONG AHAFO REGIONS	0.0	0.0

Pandemic Flu A H1N1

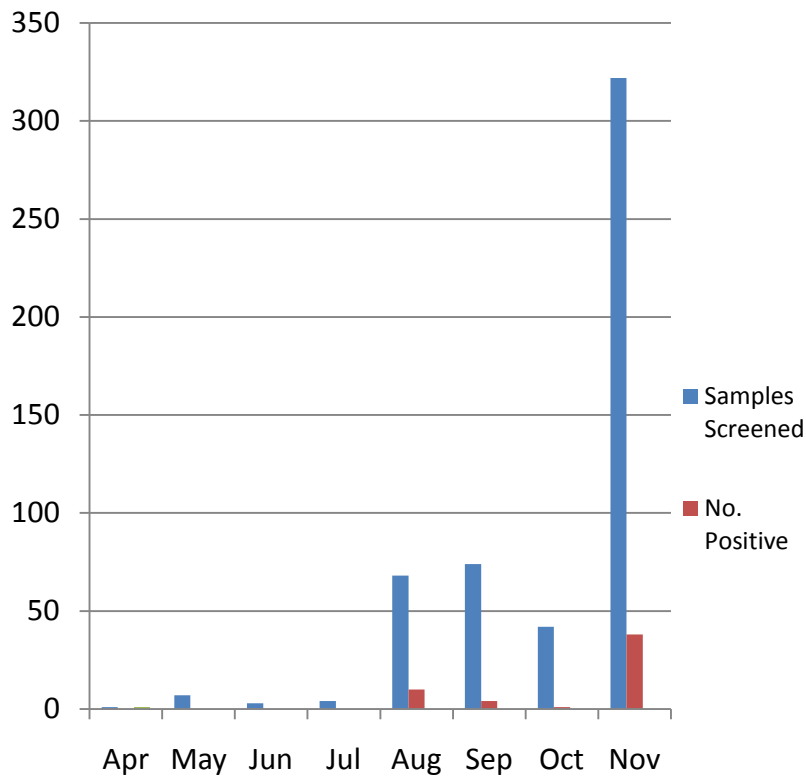
Suspected Case Definition

Fever (temp. $\geq 38^{\circ}\text{C}$)
and
*Cough/Sore Throat/
Headache/ Myalgia/ Coryza*

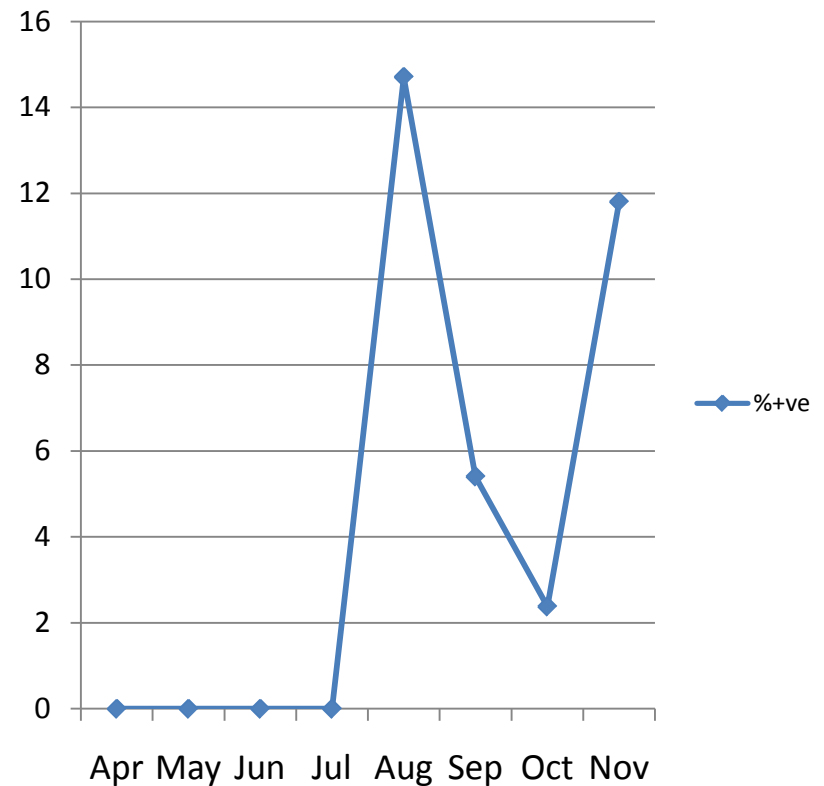
- Specimens taken within 3 days of onset of illness
- Kept cool (4°C), freezing/ thawing avoided
- Samples reach the NMIMR within 48 hours of collection

Number of Samples Screened and % +ve by month, Apr to Nov 2009

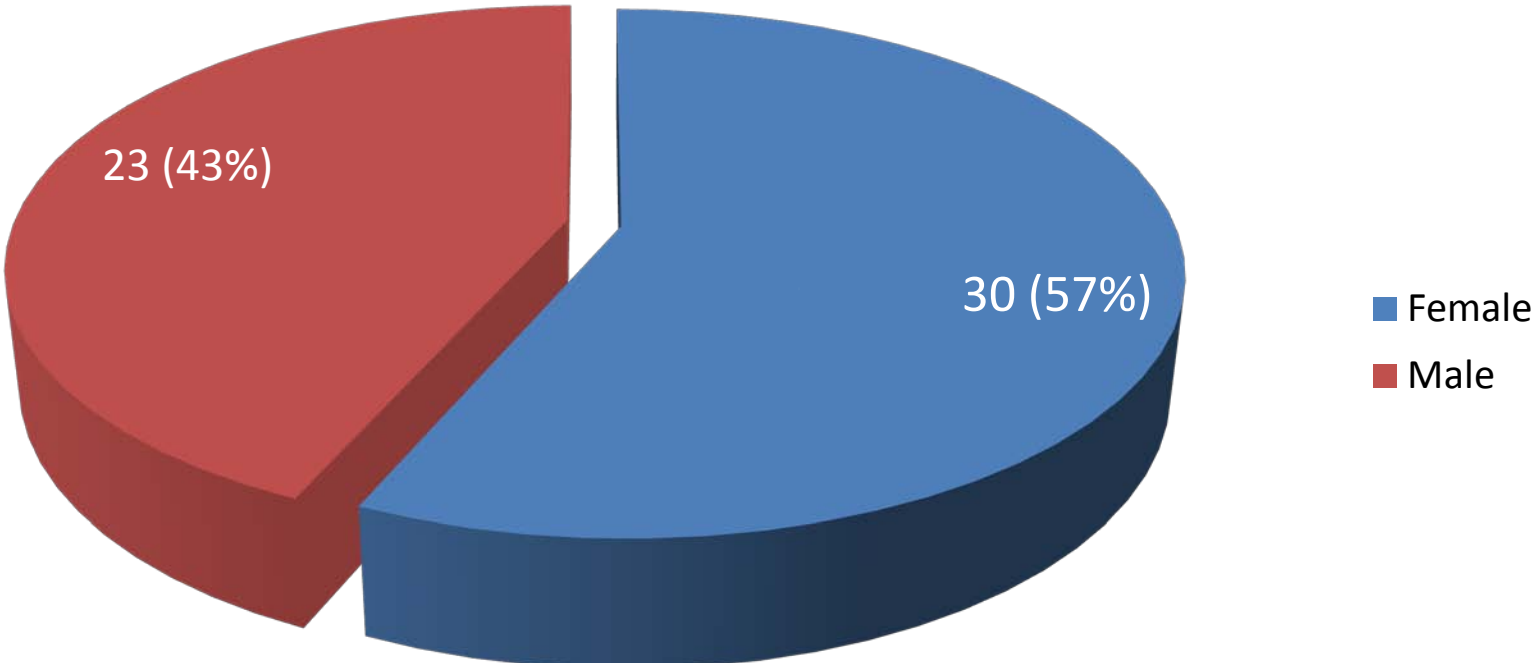
No of Samples Screened



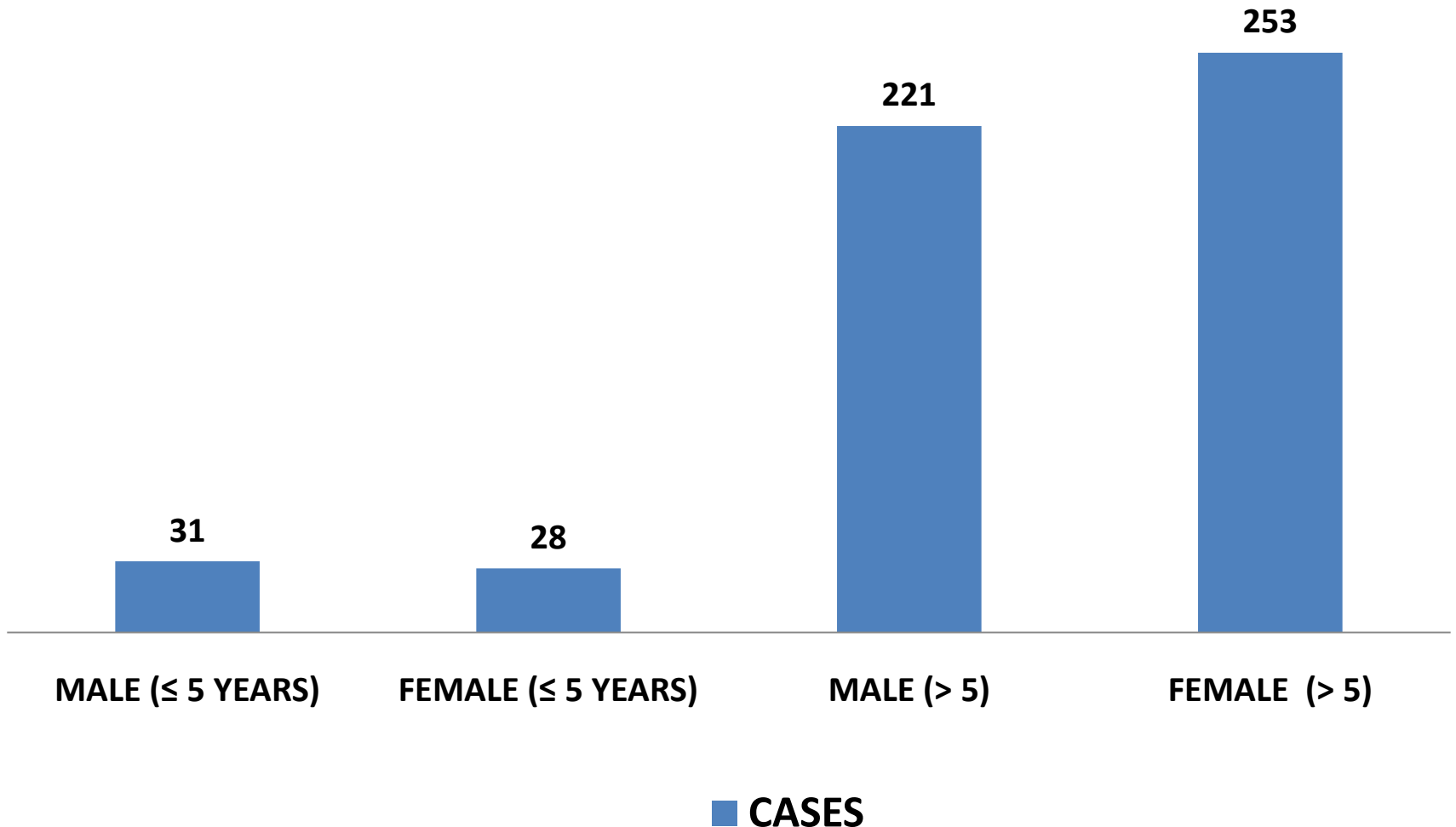
% positive



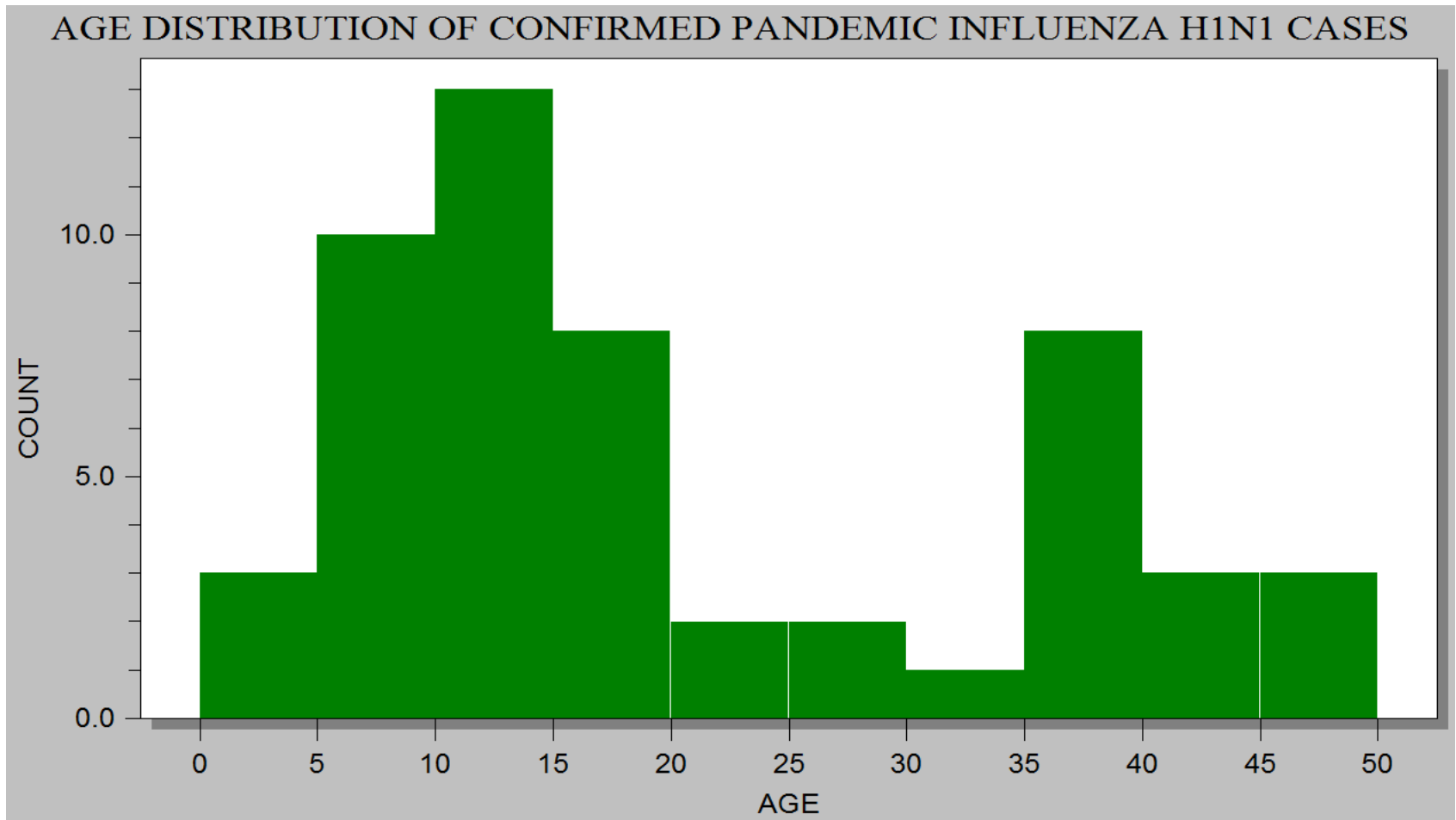
Gender Distribution of Pandemic Influenza H1N1 Confirmed Cases in Ghana



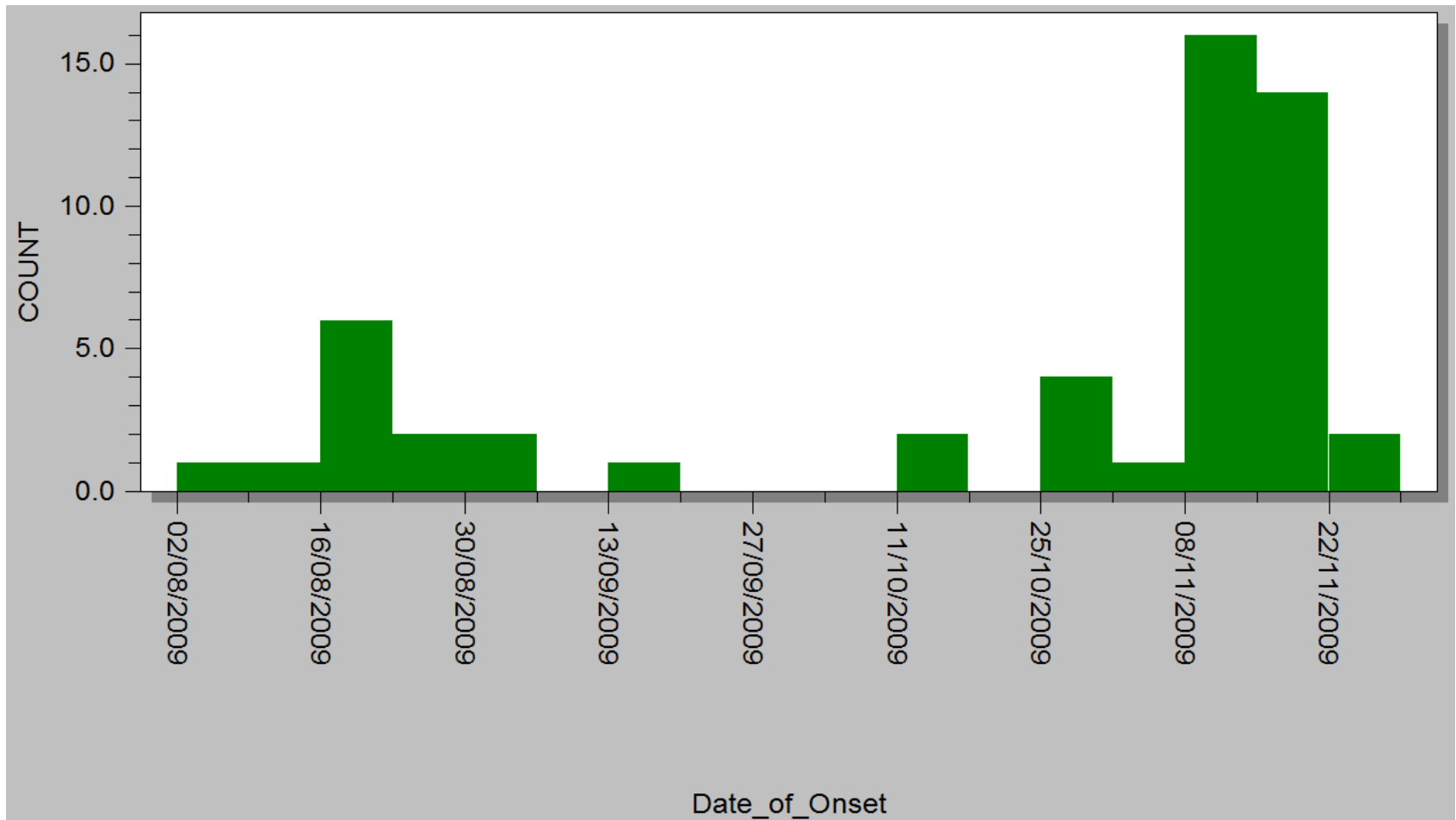
DISTRIBUTION OF CASES BY GENDER AND AGE GROUP as at 01 Dec 2009



Age Distribution of Pandemic Inf. H1N1 2009 Confirmed Cases in Ghana



Date of Onset of Confirmed Pandemic Influenza H1N1 Cases from Epid Week 31 to 47, 2009



Summary of H1N1 Samples investigated at NIC as at 31/10/2009

Cummulative Reporting as at (state the date of reporting)	Total No. of Samples Received	No. of Samples investigated		No. of samples confirmed as H1N1		Total H1N1 Confirmed in Ghana
		Suspected cases	Contacts	suspected Cases	Contacts	
31/10/2009	239	196	43	15	0	15

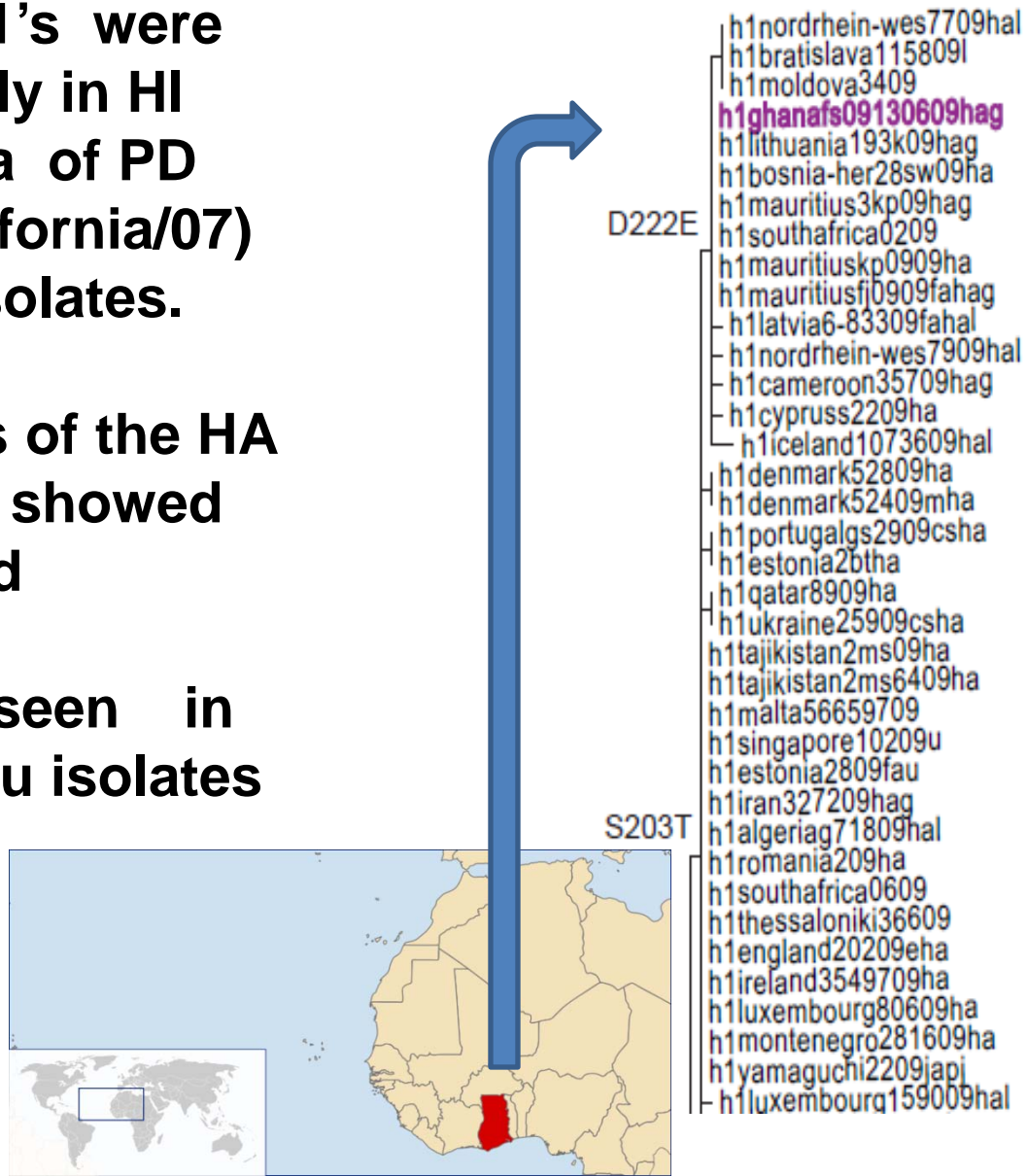
Summary of H1N1 Samples investigated at NIC as at 30/11/2009

Cummulative Reporting as at (state the date of reporting)	Total No. of Samples Received	No. of Samples investigated		No. of samples confirmed as H1N1		Total H1N1 Confirmed in Ghana
		Suspected cases	Contacts	suspected Cases	Contacts	
30/11/2009	548	496	52	52	0	52

Phylogenetic comparison of Ghanaian pandemic influenza A H1N1 HA genes

Ghanaian PD H1N1's were similar antigenically in HI tests with anti-sera of PD H1N1 vac. str.(California/07) and other PD flu isolates.

Sequence analysis of the HA gene and NA gene showed HA with amino acid substitutions S203T and D222E seen in several other PD flu isolates with little effect on antigenicity.



Summary

- **Currently local transmission of PF H1N1 in Ghana**
- **The National Influenza Center at the NMIMR has provided data to guide relevant vaccine and public health policies locally and internationally**
- **Described the molecular epidemiology of influenza virus in Ghana**
- **There is demonstration that Ghana has the capacity to detect influenza outbreaks**

Way Forward

- Improve involvement of private sector in flu surveillance
- Plans underway to establish well equipped isolation wards
- Take full advantage of the collaborative effort between the human and animal health sectors in AI and improve surveillance of other zoonotic diseases

Acknowledgements

- NIC: W.K Ampofo, K. Bonney, Ivy Asante, F. Addo-Yobo, P. Parbie, H. Kofi Bannie
- GHS: L. Ahadzie, M. Adjabeng, E. Antwi, Gifty Ofori-Ansah, D. Opare, P. Agbenohevi, J. Amankwa
- VSD: Enoch Koney, Eben Barnor, Poku- Parry, Joseph Awuni
- WHO: Harry Opata, Ali Yahaya, Magdi Saad
- USAID: Richard Killian, Fulgence Sangber-Dery
- MRC UK: A. Hay, R. Daniels, L. Whittaker, V. Gregory
- US NAMRU-3, Karl Kronnman, Jeffrey Tjaden,, Billy Pimentel, Michaela Clemens, Buhari Oyoyo
- CDC : Talla Nzousou, Richard Davies