

PUBLIC HEALTH LABORATORY

FLUVIEW

Monthly Influenza surveillance report: “June 2009”

(All data are preliminary and may change as more reports are received)

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Synopsis

The proportion of influenza-like illness (ILI) visited hospital (sentinel sites) for the month of June was below 1%; ranging from (0.003% - 0.075%). The positive detection rate by rapid test was 22.69% and RT-PCR 45.4% respectively. The most common influenza virus circulating in the Bhutanese population is influenza type B (22%) followed by influenza A/H3 (20.9%) and A/H1 (2.8%) (Data from samples collected w.e.f 4th May till 8th June).

There was only one flu outbreak reported (Umling, Sarpang) compare to three outbreaks (Reserboo, Ura (Bumthang) & Panpang) in the month of May which was caused by A(H3) in Ura, and flu B in Reserboo and Panbang.

PHL has also collected four samples from suspected H1N1 cases and sent to reference lab (AFRIMS) for confirmation. All samples tested negative for novel H1N1.

1. Background

PHL has now instituted ILI surveillance as routine event to establish national ILI base line after collecting data over the period of time and also characterized the influenza virus subtype circulating in the population. ILI surveillance is also aimed to help in averting human influenza outbreaks and reduce morbidity and mortality.

Recently, PHL has conducting onsite training on ILI surveillance for relevant hospital staff in all selected sentinel sites except Samtse, Samdrupjongkhar and JDWNRH. Some sentinel sites are already reporting but those sites who have not reported so far will start reporting from July as agreed during the training.

2. Surveillance components

Table No. 1: Selected surveillance components

Region	Sites	Outpatient ILI (%)	% positive for Flu (rapid test)	Influenza subtype (PCR)			
				A(H1)	A(H3)	A un-subtyped	B
West	Paro hospital	0.003	9.09	+	+		+
	Punakha hospital	0.027	0.00	+	+		+
	Phuentsholing hospital	0.055	50.00	-	+		+
	Samtse hospital	0.006	7.69	ND	ND		ND
	JDWNRH	-	4.17	+	+	+	+
Central	Gelephu R R hospital	0.005	32.43	+	+	+	+
	Tserang hospital	Will be reporting from July					
	Trongsa hospital						
East	Mongar R R hospital						
	Trashigang hospital						
	S/Jongkhar hospital	0.075	55.5	ND	ND		ND

(+ : Positive, - : Negative, ND: Not done)

3.1 Outpatient ILI surveillance

The rate ILI patient visited hospitals (sites) for the month of June was 0.02%; less by half in comparison to month of May (0.04%). Samdrupjongkar hospital has reported high ILI rate compare to other sites for the month of June (Figure 1). The most affected age group by seasonal influenza virus is between 6-24 years unlike other countries where most common affected age group by the seasonal flu is reported < 5 years and > 65 years (Figure 2).

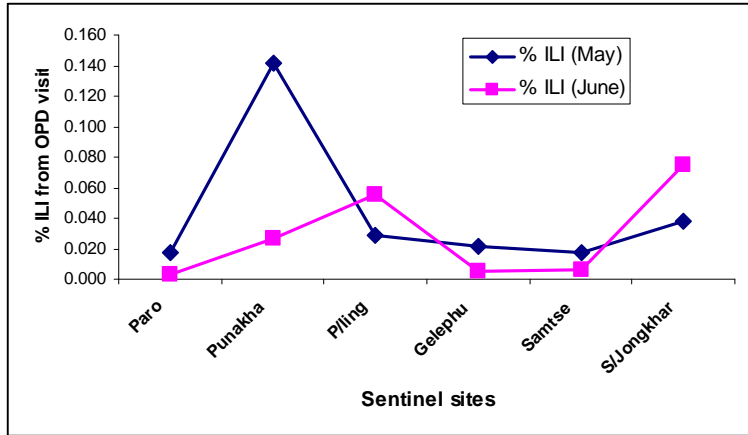


Figure 1: Percentage of OPD visits by patient suffering from Influenza-like Illness (ILI) in each site.

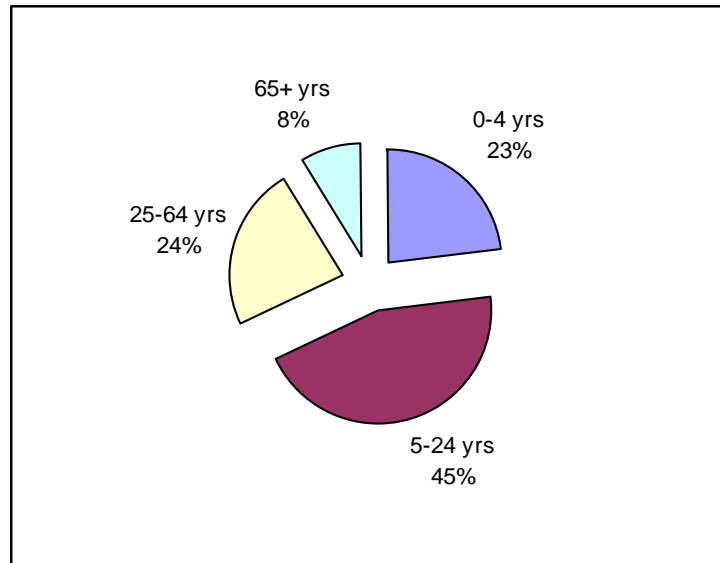


Figure 2: Age distribution among ILI cases

3.2 Virology surveillance

Rapid test kit result showed presence of both influenza A & B virus type circulating in the population. The overall positive rate detected by rapid test for the month of June was 22.69% from which 73.5% was influenza A and 26.4% influenza B respectively (the positive rate of each site is given in Table # 2). The RT-PCR showed influenza B as most common circulating influenza virus followed by influenza A subtype H3 and H1 (the

positive rate of each site is given in Table # 3) but the RT-PCR data shown in the table is the cumulative data for the month of May till 8th June).

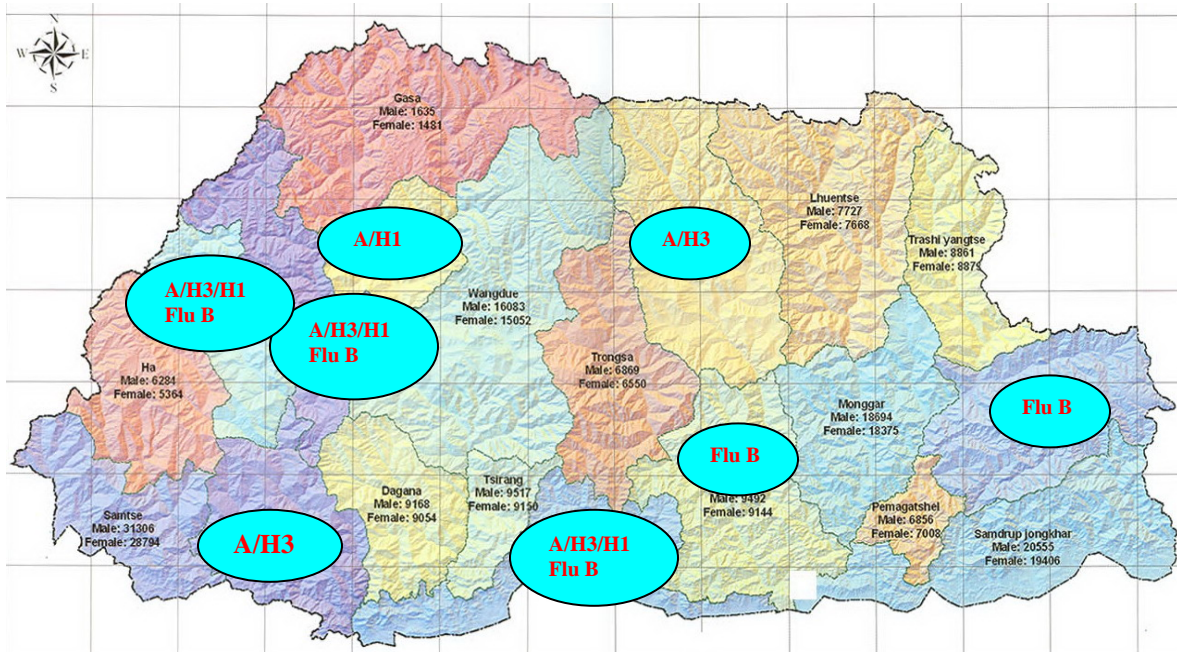


Figure 3: Geographical distribution of influenza virus and subtypes by RT-PCR till date

Table No. 2: Influenza virus type

Hospital	Total sample collected and tested	Rapid Result			% POSITIVE
		Flu A	Flu B	Flu A B	
Paro	11	01	00	00	9.09
Punakha	0	0	0	0	00
Phuntsholing	04	02	00	00	50.00
Samtse	26	02	00	00	7.69
JDWNRH	121	03	04	00	4.17
Gelephu	37	07	05	00	32.43
Tserang	-	-	-	-	-
Trongsa	-	-	-	-	-
Mongar R R	-	-	-	-	-
Trashigang	-	-	-	-	-
Samdrupjongkhar	18	10	0	0	55.5%

Table No. 3: Influenza virus subtyping by RT-PCR

Hospital	Total sample collected and tested	Influenza Subtype (%)			
		A(H1)	A(H3)	A(unsubtyped)	B
Paro	12	0	16.6	0	16.6
Punakha	0	0	0	0	0
P/ling	03	0	75	0	0
Samtse	Not possible to ship samples to PHL due to transportation problem at the moment				
JDWNRH	104	0	9.6	1.9	2.8
Gelephu R R	110	6.3	38.1	1.8	38.1
Tserang	Will be included from July				
Trongsa					
Mongar R R					
Trashigang					
Samdrup Jongkhar	Not possible to ship samples to PHL due to transportation problem at the moment				

(Note: samples sent to AFRIMS from 13th May till 4th June 2009)

3.3 Influenza Outbreaks

No proper investigation was done for outbreaks occurred in three different places. However, PHL could collect some samples and sent to reference lab for subtyping. The result showed flu A/H3 in Ura (Bumthang) and flu B in Reserboo and Panbang respectively.

Table No. 4: RT-PCR results from outbreak samples

Study site	RT-PCR result					
	Flu A/H3	Flu B	Neg	Pending	Grand Total	Percent
Reserbo	0	22	3	0	25	29.8%
Bumthang	9	0	29	1	39	46.4%
Panbang	0	11	2	0	13	15.5%
Umling	0	0	0	7	7	8.3%
Grand Total	9	33	34	8	84	100.0%
Percent	10.7%	39.3%	40.5%	9.5%	100.0%	

References

1. CDC flu surveillance report