

Trends of H1N1 Cases, Tabuk Region, Kingdom of Saudi Arabia, 2009 – 2015

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Background

- In 2009 a new strain of influenza A (H1N1) emerged, leading to first influenza pandemic of 21st century.
- Kingdom of Saudi Arabia (KSA) had special responsibility because it stewards annual mass gathering of Hajj.
- Tabuk province is port used by pilgrims coming for Hajj; studying trends of H1N1 cases there could yield new and important information.

Objectives

- To estimate total number of H1N1 cases in Tabuk region from 2009 – 2015.
- To estimate mortality rate of H1N1 cases in Tabuk from 2009 – 2015.
- To describe most frequent symptoms for H1N1 cases in Tabuk from 2009 – 2015.

Methods

- Cross-sectional retrospective analysis of all reported H1N1 cases in Tabuk region between 2009 and 2015.
- Secondary dataset was part of case-based regional surveillance system.
- Estimated trends by incidence rates (IRs) and 95% confidence intervals (CIs) using Byars approximation.

Results

- Total of 471 cases of H1N1 reported from 2009 – 2015.
- Greatest number of cases was in 2009: 317 cases and an IR of 39.9 cases/100,000 (95% CI = 35.7 – 44.5).
- IR decreased over time.
- 242 males and 220 females were affected
- Mortality rates of 2.5% for men and 2.7% for women.
- Saudis composed the majority of cases: 403 cases with a total of 12 deaths (3% mortality rate).
- Mean age of cases was 28.6 years with a standard deviation (SD) of 18 years
- Fever was most prominent symptom (94%-100%), followed by cough (60%-86%)
- Epidemic curve showed November 2009 and December 2015 as months with greatest number of cases

Figure 1. Tabuk region of Saudi Arabia

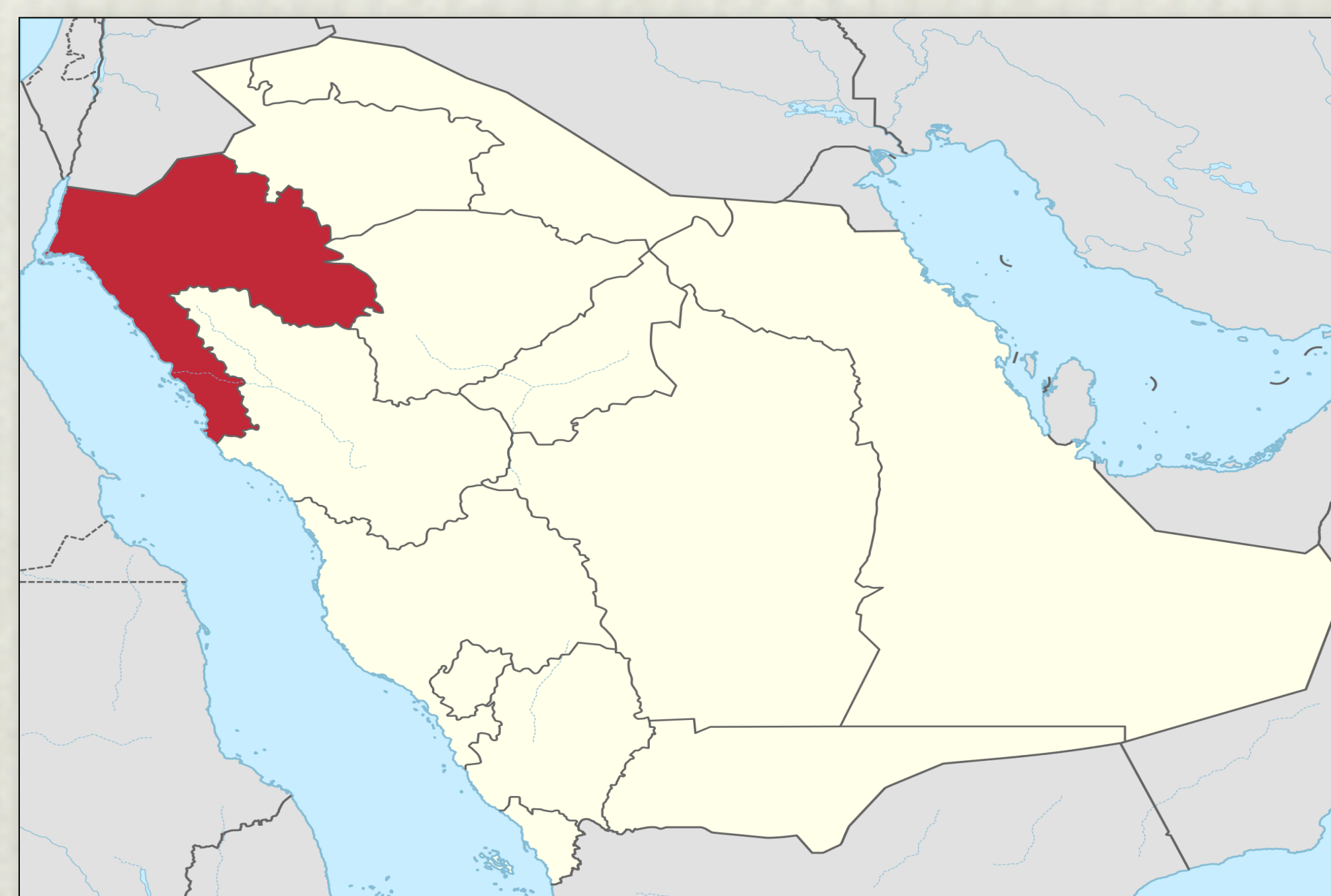
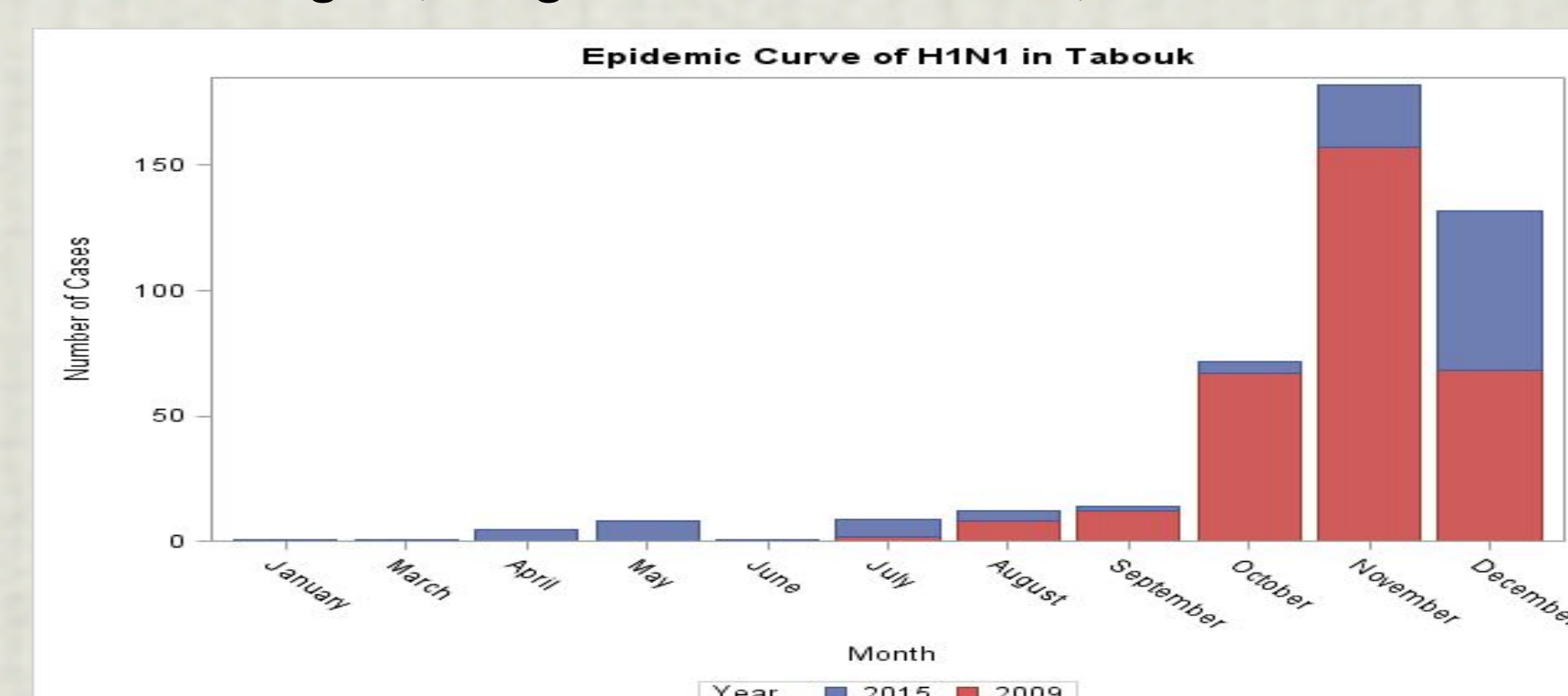


Figure 2: Epidemic Curve of H1N1 Cases, Tabuk region, Kingdom of Saudi Arabia, 2009 – 2015



Conclusion

- H1N1 trends in Tabuk showed that virus was still circulating and had similar distribution from 2011 to 2015
- Distribution and nature of the disease reflected in our analysis was consistent with reported worldwide disease characteristics

Recommendations

- Formal and comprehensive surveillance system evaluation
- Emphasize role of electronic surveillance (HESN)
- Enforce compliance to MoH protocols and strategies

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Table 1. Confirmed Cases of H1N1 and Incidence Rates, by Year, Tabuk region, Kingdom of Saudi Arabia, 2009 – 2015

Year	#	IR ^o	95% CI*
2009	317	39.9	35.7 - 44.5
2010	21	2.6	1.7 - 3.9
2011	3	0.4	0.1 - 1.0
2013	7	0.8	0.7 - 1.6
2015	123	13.6	11.3 - 16.1
Total	471		

Table 2. Confirmed Cases of H1N1 and Incidence Rates, by Year and Sex, Tabuk region, Kingdom of Saudi Arabia, 2009 – 2015

Year	Male			Female			P-value
	#	IR ^o	95% CI*	#	IR ^o	95% CI*	
2009	163	37.7	32.3 - 43.9	154	31.1	26.5 - 36.3	0.08442
2010	11	2.5	1.3 - 4.3	10	2.8	1.4 - 4.9	0.8258
2011	3	0.7	0.2 - 1.8	0	0	0 - 0.7	0.1688
2013	3	0.6	0.2 - 1.7	4	1.1	0.4 - 2.5	0.5367
2015	66	13.3	10.4 - 16.8	57	14.2	10.8 - 18.2	0.7333
Total	244			224			

Table 3. Confirmed Cases of H1N1 and Incidence Rates, by Year and Nationality, Tabuk region, Kingdom of Saudi Arabia, 2009 – 2015

Year	Saudi			Non-Saudi			P-value
	#	IR ^o	95% CI*	#	IR ^o	95% CI*	
2009	286	43.5	38.7 - 48.8	31	22.5	15.6 - 31.6	0.0004
2010	19	2.8	1.8 - 4.3	2	1.5	0.3 - 4.8	0.4169
2011	3	0.4	0.1 - 1.2	0	0	0 - 0.4	0.5754
2013	6	0.8	0.4 - 1.7	1	0.7	0.1 - 3.1	0.9140
2015	97	12.9	10.6 - 15.8	26	16.2	10.8 - 23.3	0.3221
Total	409			59			

Table 4. Top Five Signs/ Symptoms of Confirmed Cases of H1N1, Tabuk Province, Kingdom of Saudi Arabia, 2009 – 2015

2009	2010	2011	2013	2015
Fever (94%)	Fever (96%)	Fever (100%)	Fever (100%)	Fever (97%)
Cough (78%)	Cough (85%)	Cough (67%)	Cough (86%)	Cough (60%)
Sore Throat (75%)	SOB* (57%)	Sore Throat (34%)	SOB* (72%)	SOB* (15%)
Runny Nose (70%)	Headache (34%)	Muscle Pain (34%)	Sore Throat (43%)	Muscle Pain (10%)
SOB* (42%)	Sore Throat (30%)	Runny Nose (34%)	Muscle Pain (30%)	Sore Throat (7%)