

Clinical Characteristics of Ambulatory H1N1 Patients

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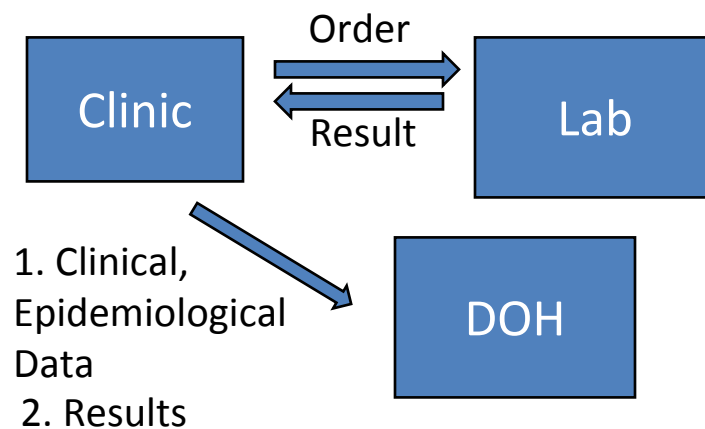
Objectives

- Describe clinical characteristics of H1N1 patients in an ambulatory setting
- Identify distinguishing features of patient encounters to inform clinical decision making

Background

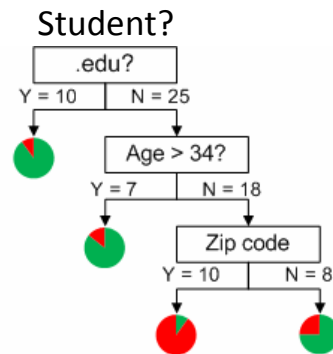
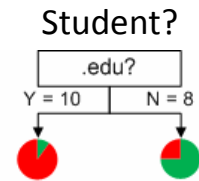
- Since 2005, PCIP monitors trends in influenza like illness in ambulatory settings at hospitals, community health centers, and small medical practices.
- Build on work to evaluate the use of electronic medical records for surveillance
- Daily transmission (PHINMS) of deidentified clinical data from 200+ facilities

Methods – Data Collection



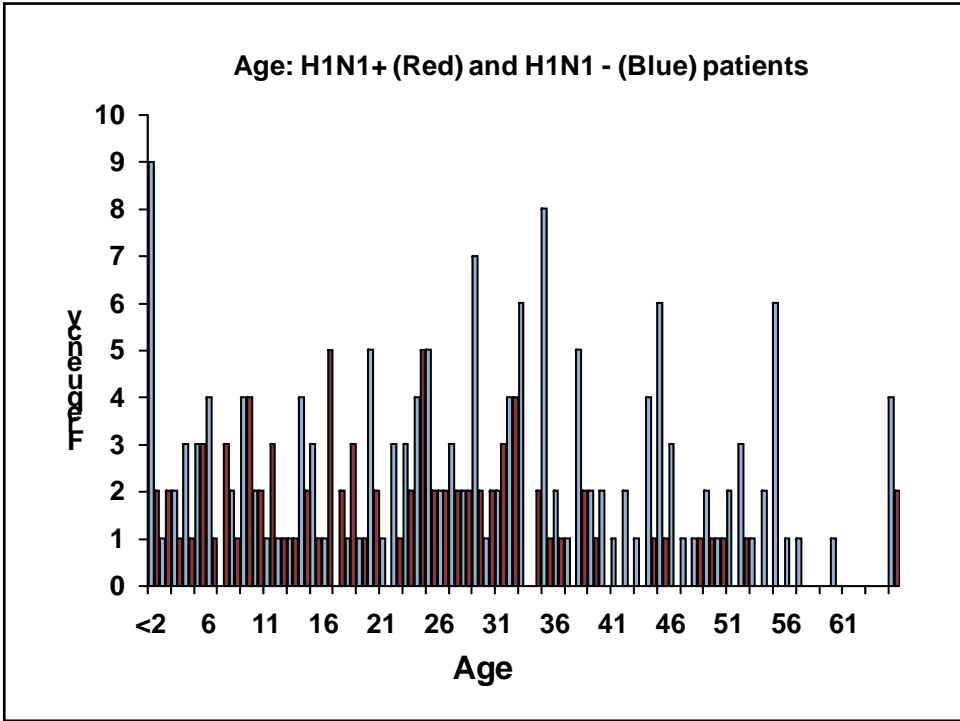
Methods - Analysis

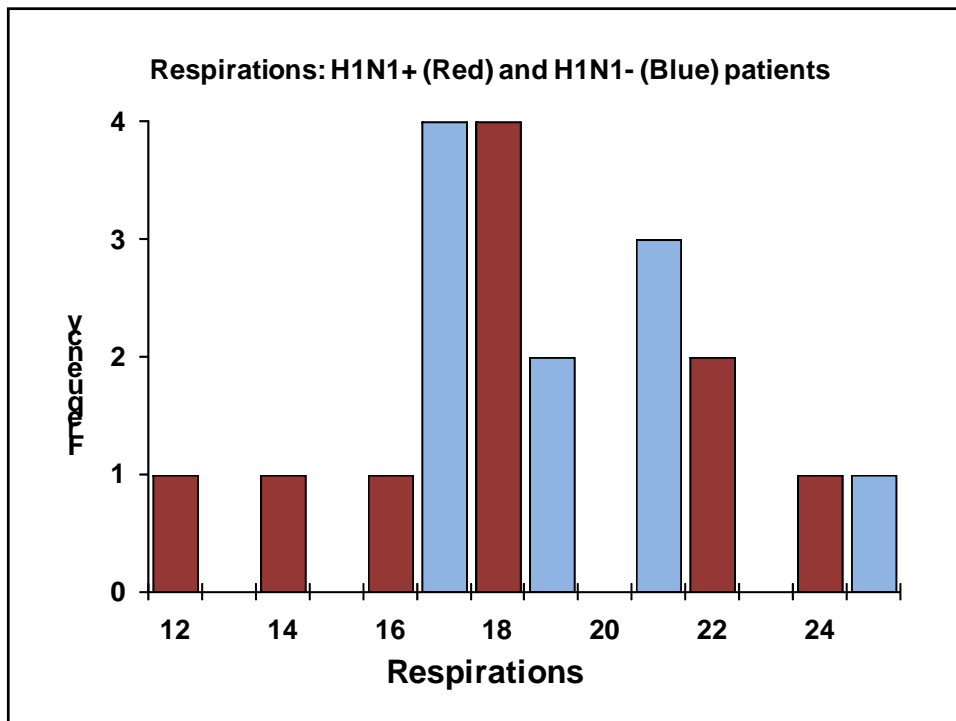
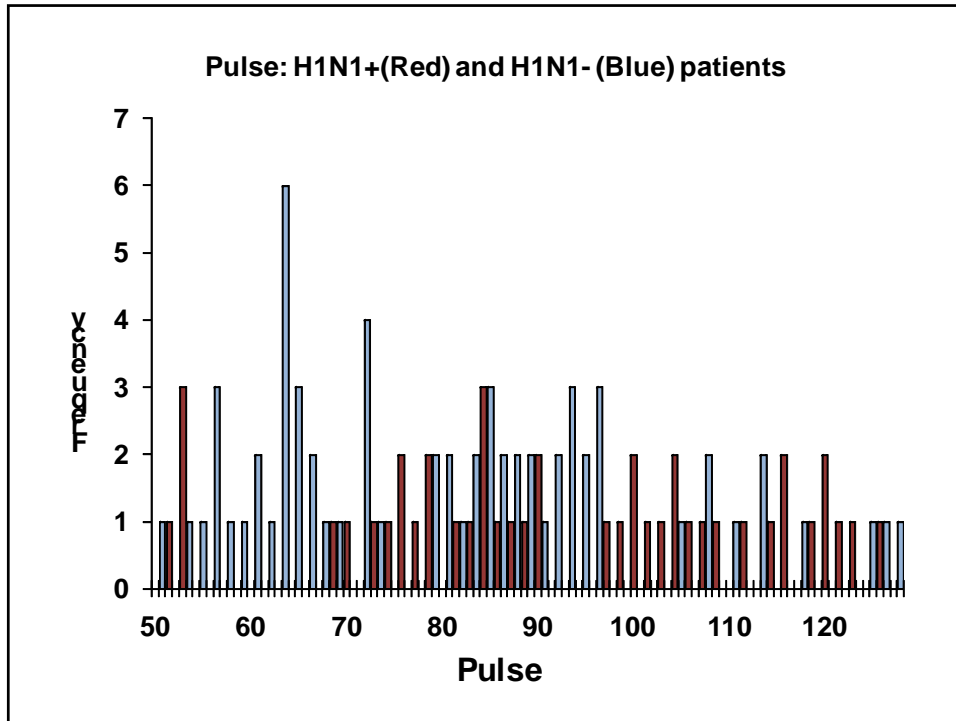
- Classification trees
- Decision nodes and terminal nodes
- Simplest tree = 1 node.
- Recursive partitioning
- Binary, continuous, categorical variables
- Determine variable importance, surrogates
- Optimal tree - highest accuracy, lowest complexity.



Results - Age and Vitals

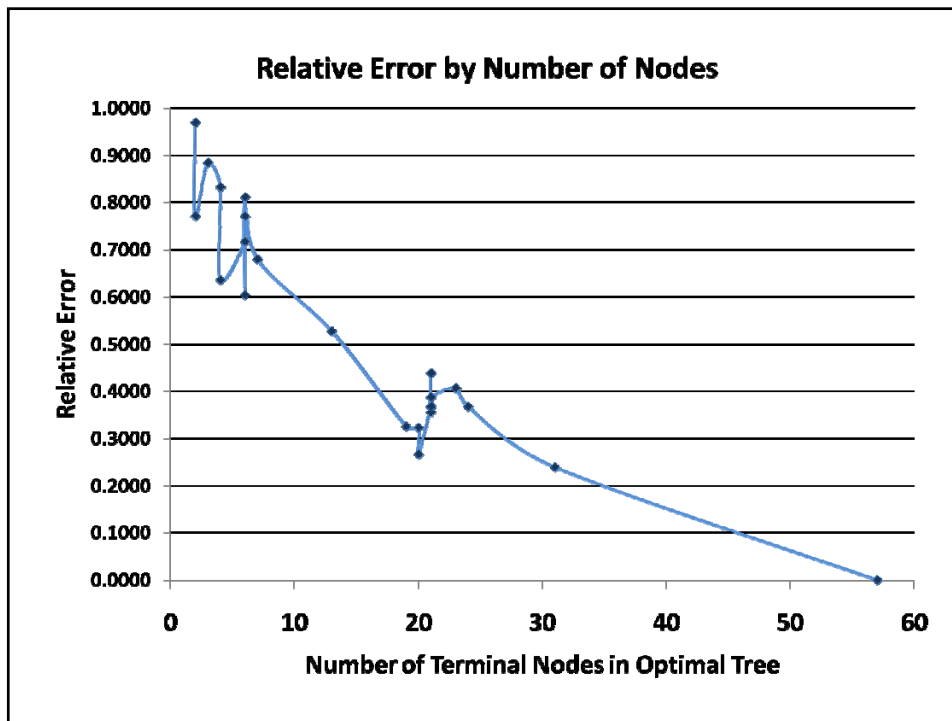
	H1N1- (N=58)					H1N1+ (N=81)					
	N	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max	Pr > t
Age	58	30.40	18.96	0.4	74	81	22.31	14.74	0.14	68	<.0001
Temp.	58	99.27	1.57	97.1	104.6	80	99.74	1.50	97.3	104.1	<.0001
Pulse	23	88.22	22.25	52	141	42	98.93	20.64	58	141	<.0001
Resp.	8	17.75	1.98	16	20	10	18.20	3.71	12	24	<.0001

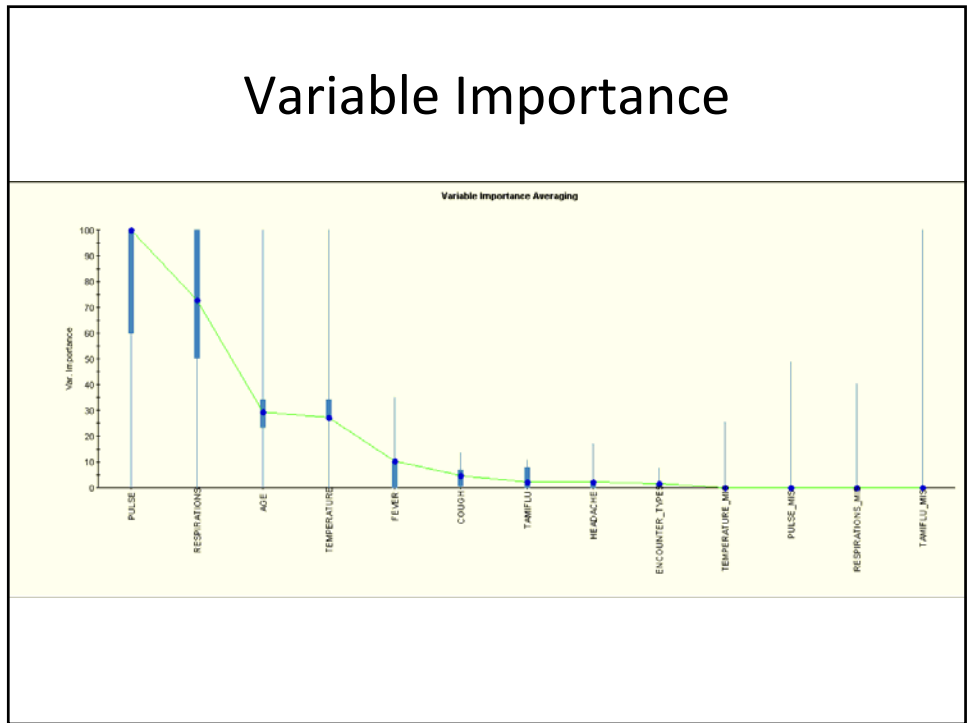
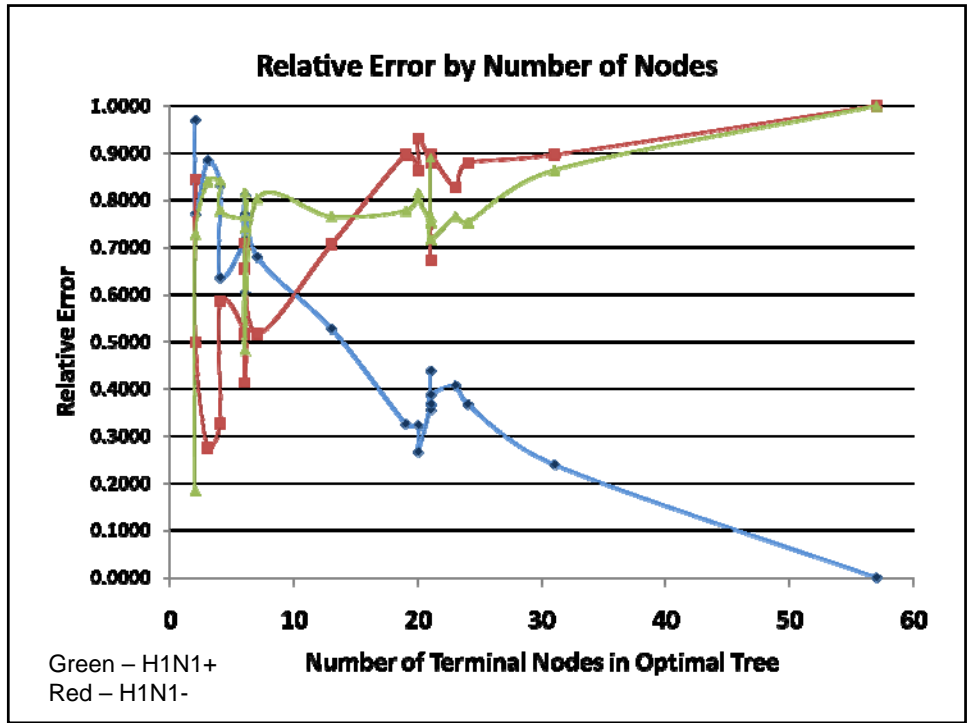




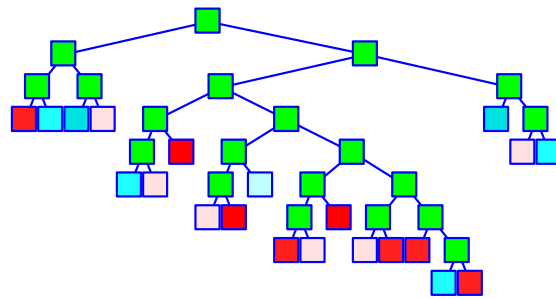
Results

Feature	H1N1 (+) N(%)	H1N1 (-) N(%)	p-value	OR	LCI	UCI
Headache	25(31)	10(17)	0.05	2.19	0.96	5.00
Tamiflu	27(66)	16(44)	0.05	2.41	0.96	6.06
Fever	49(60)	29(49)	0.12	1.58	0.80	3.12
Cough	54(67)	33(56)	0.13	1.58	0.79	3.14
Influenza (487)	50(62)	33(57)	0.35	1.22	0.62	2.43





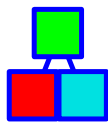
Results – Best Tree



Correctly classifies
72 of 81 H1N1+;
39 of 58 H1N1-
(0.266 Cost)

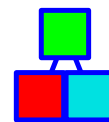
Most important:
Pulse,
Respirations,
Temperature,
Age, Headache

Results – Single Node Trees



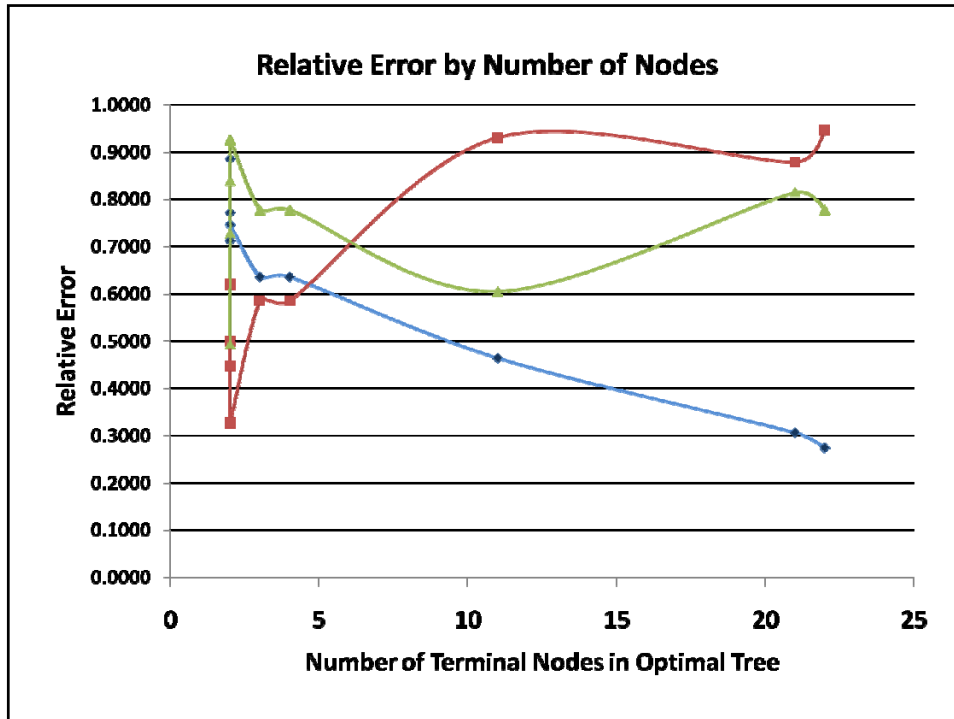
Age <= 34.50?

Correctly classifies
68 of 81 H1N1+patients;
26 of 58 H1N1- patients
(0.712 Cost)



Temp <= 98.25?

Correctly classifies
75 of 81 H1N1+pts;
19 of 58 H1N1- patients
(0.746 Cost)



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