

Influenza Surveillance In Alberta Using Physician Claims Data

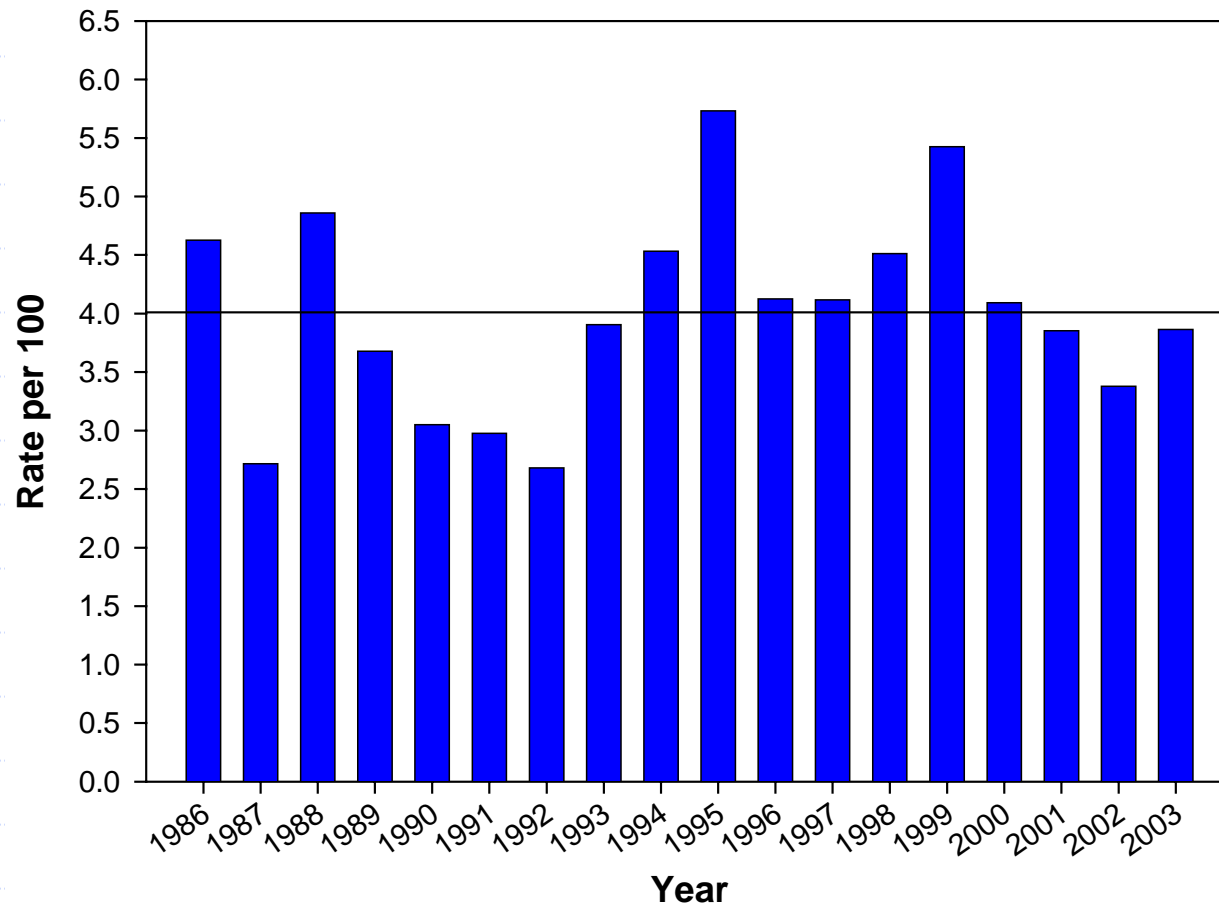
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February 24, 2005

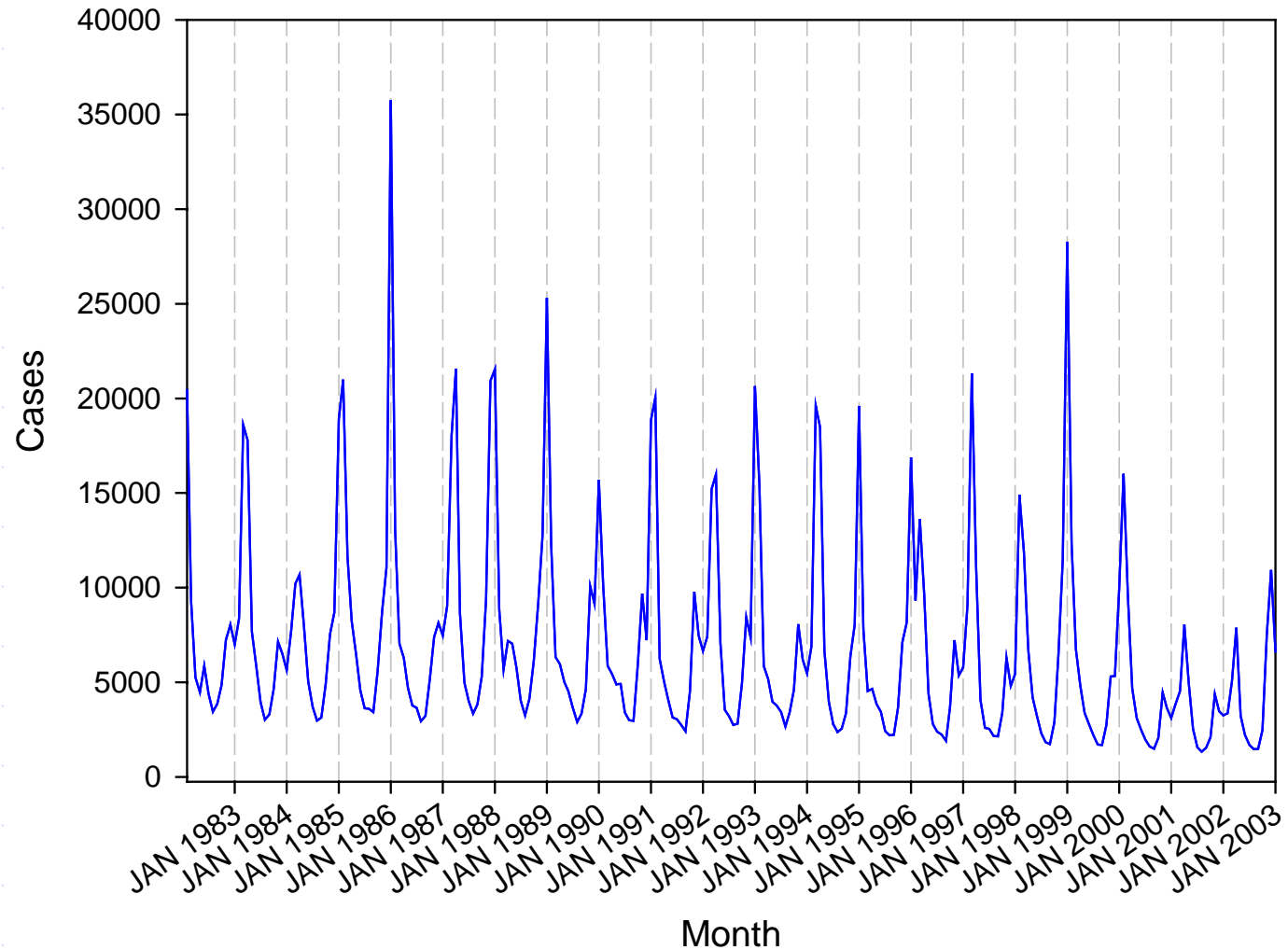
Outline

- ◆ Background Information
- ◆ Data Source/Timelines/Dissemination
- ◆ Disease Groups
- ◆ Measures
- ◆ Current Charts and Tables
- ◆ To Be Developed . . .

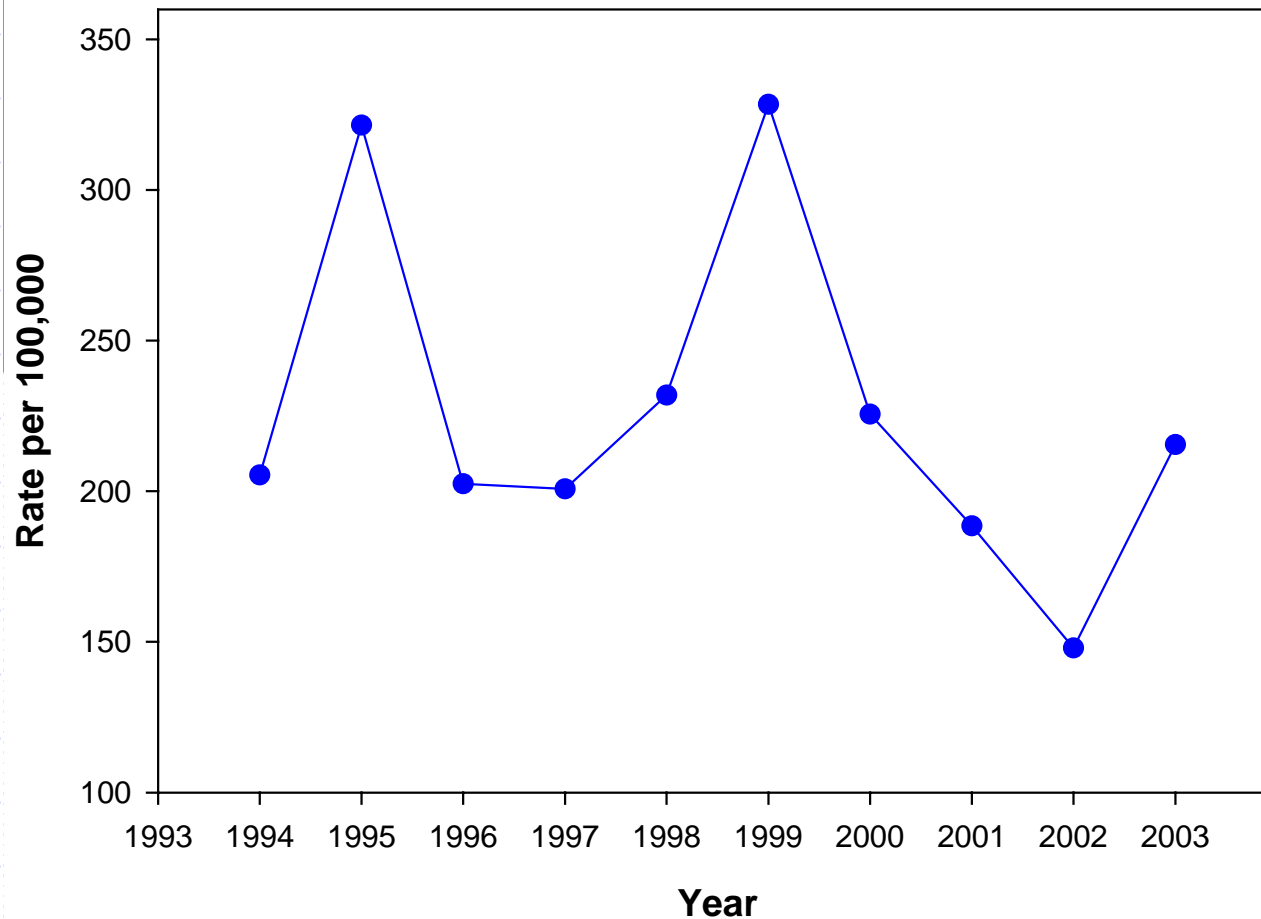
Annual Incidence of Influenza in Alberta 1986 - 2003



Clinically Diagnosed Influenza in Alberta 1983 - 2003

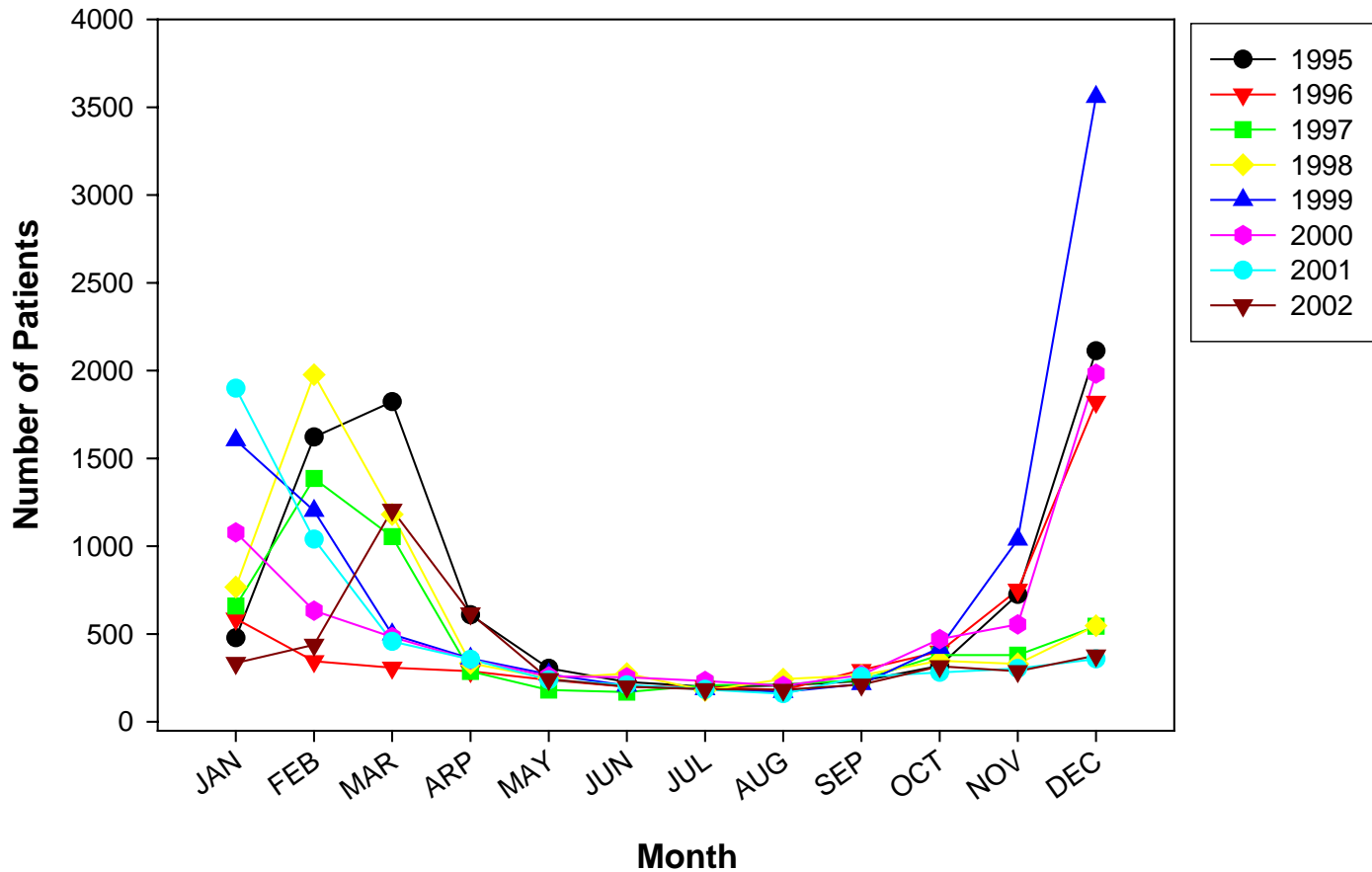


Rate of Emergency Department Visits for Influenza, Alberta 1994-2003



Year	Cases
1994	5,534
1995	8,725
1996	5,551
1997	5,604
1998	6,616
1999	9,604
2000	6,696
2001	5,699
2002	4,566
2003	6,754

Number of Patients Seen in Emergency Departments for ILI by Month, 1995-2002



Data Source: Physician Claims

- ◆ One component in an overall influenza surveillance system
- ◆ Fee-for-service data used to generate case counts by week and RHA
- ◆ Obtained at no added inconvenience to physicians
- ◆ Data on approx. 85% of services provided are available within two weeks
- ◆ Developed in SAS

Timelines

- ◆ Source database is updated every weekend
- ◆ Data extracted each Monday
- ◆ Report prepared each Tuesday
- ◆ Sent to Disease Control and Prevention (DC&P) and Provincial Health Officer (PHO) for dissemination

Dissemination

- ◆ Medical Officers of Health and Communicable Disease nurses in RHA's
- ◆ AHW: DC&P, PHO, Assistant Deputy Minister (ADM), Communications
- ◆ Public Health Agency of Canada (PHAC)

Disease Groups Included

- ◆ Acute Respiratory Tract Infections
 - (ICD-9 460–464)
- ◆ Other Upper Respiratory Tract Infections
 - (ICD-9 462, 465, 470-478)
- ◆ Bronchitis
 - (ICD-9 466, 490)
- ◆ Viral Pneumonia
 - (ICD-9 480, 485, 486)
- ◆ Other Pneumonia
 - (ICD-9 481-484)

Disease Groups Included – cont.

- ◆ Influenza
 - (ICD-9 487)
- ◆ Acute Otitis Media
 - (ICD-9 382.0, 382.4, 382.9)
- ◆ Streptococcal sore throat
 - (ICD-9 034)

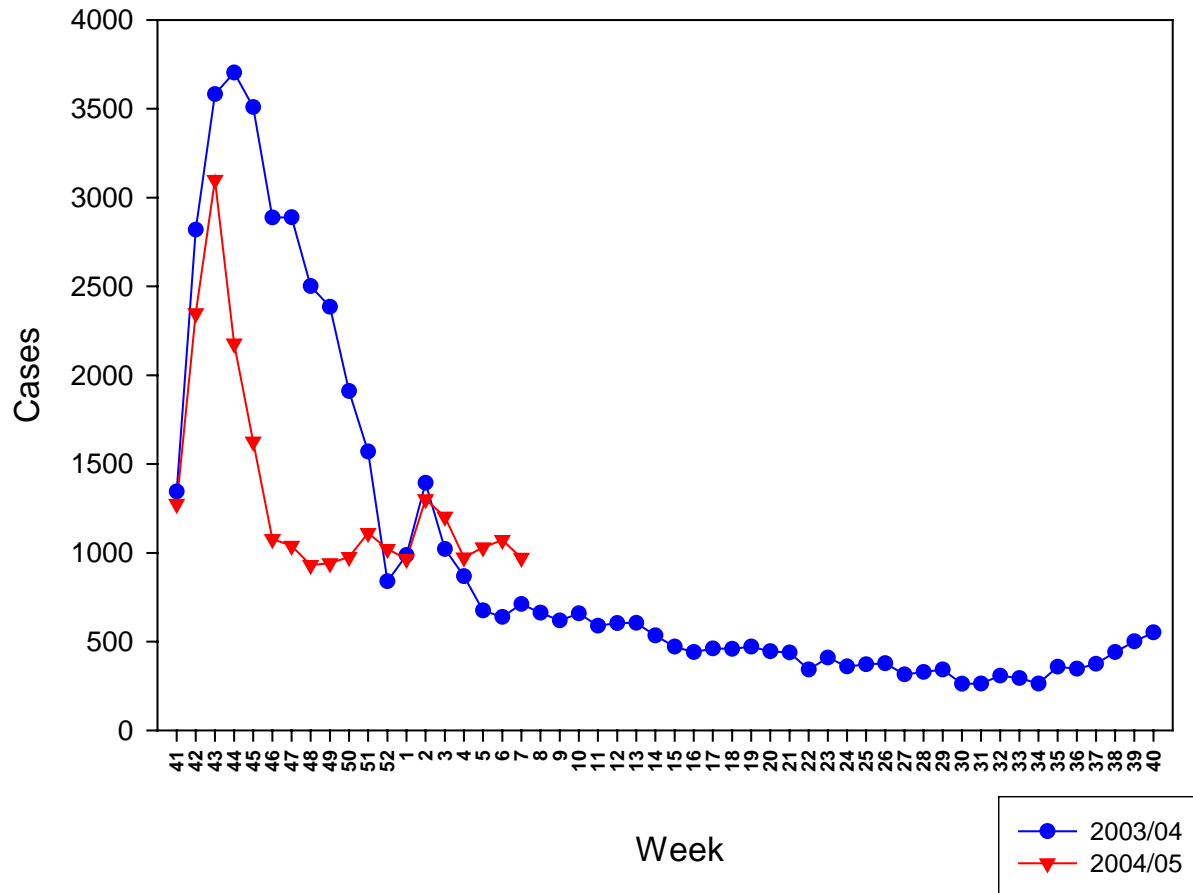
Measures

- ◆ Case counts by flu week for:
 - Physician offices
 - Emergency Departments
- ◆ Number of influenza cases per 100 patients seen in:
 - Physician offices
 - Emergency Departments
- ◆ Total patients seen
- ◆ Age specific rate

Influenza Cases by Week: Chart

Number of Influenza Cases Diagnosed by Physicians

In Alberta by Flu Week, 2003/04 and 2004/05



Influenza Cases by Week: Tabular Data

Number of Influenza Cases Diagnosed by Physicians

In Alberta by RHA and Flu Week, 2003/04 and 2004/05

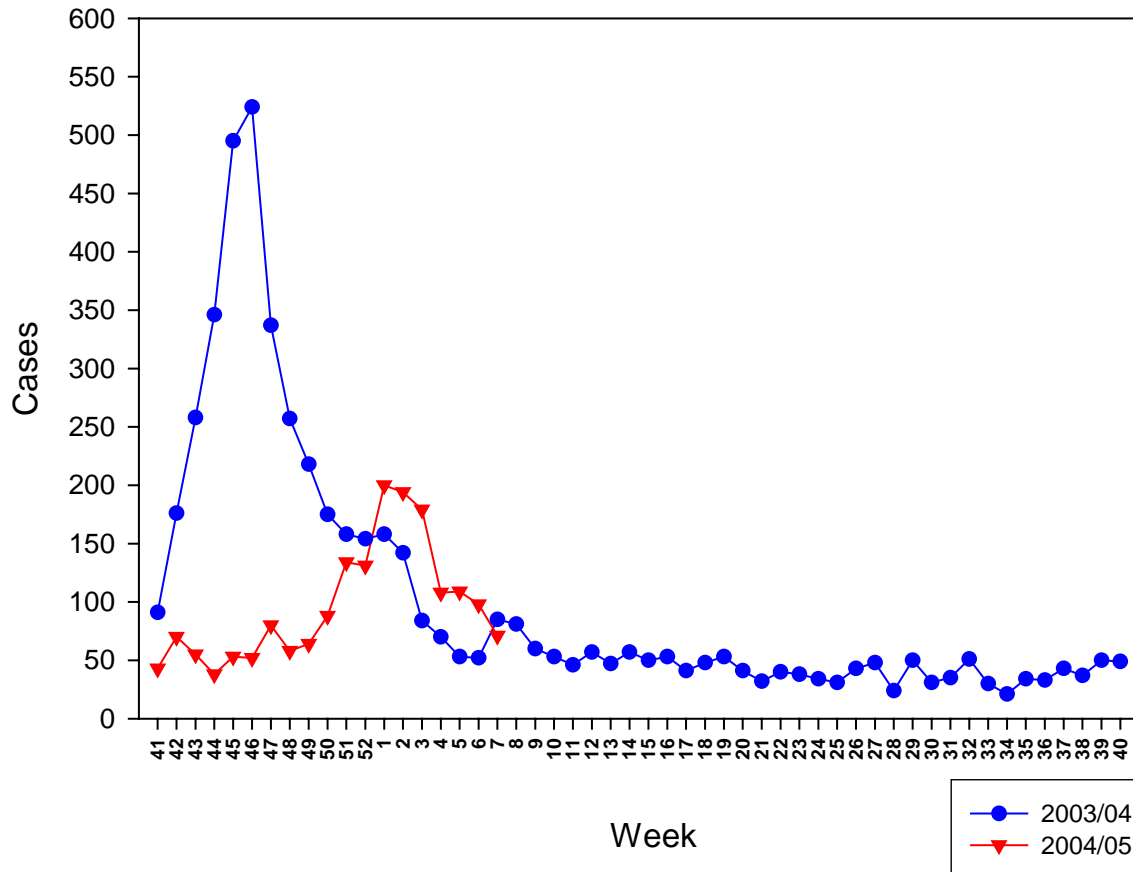
	2003-04 Week																			
	2003 _41	2003 _42	2003 _43	2003 _44	2003 _45	2003 _46	2003 _47	2003 _48	2003 _49	2003 _50	2003 _51	2003 _52	2004 _01	2004 _02	2004 _03	2004 _04	2004 _05	2004 _06	2004 _07	2004 _08
	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
RHA																				
Chinook	69	44	56	86	166	193	165	137	132	91	87	33	65	108	55	46	28	43	36	39
Palliser	27	55	64	55	50	58	124	160	121	156	106	50	51	53	40	33	26	26	24	25
Calgary	376	1,112	1,386	1,097	1,131	972	1,262	1,059	1,151	817	634	326	322	476	332	297	232	195	219	218
David Thompson	107	227	285	282	300	245	252	199	172	148	144	60	72	103	54	56	52	34	45	36
East Central	54	94	132	149	129	142	83	74	71	72	34	28	19	30	30	24	13	17	12	9
Capital	554	1,090	1,392	1,584	1,191	749	643	608	471	431	400	241	326	440	362	275	233	206	239	205
Aspen	74	105	150	252	238	195	159	107	135	94	92	60	80	89	69	73	46	60	62	52
Peace Country	27	24	39	79	79	107	72	61	55	55	28	21	25	38	36	21	17	23	17	13
Northern Lights	50	55	66	107	207	199	108	83	61	37	34	14	20	46	36	37	22	30	52	63
Unknown	7	13	12	12	19	29	22	14	16	11	11	6	8	12	8	7	6	4	6	2
Total	1,345	2,819	3,582	3,703	3,510	2,889	2,890	2,502	2,385	1,912	1,570	839	988	1,395	1,022	869	675	638	712	662

	2004-05 Week																			
	2004 _41	2004 _42	2004 _43	2004 _44	2004 _45	2004 _46	2004 _47	2004 _48	2004 _49	2004 _50	2004 _51	2004 _52	2005 _01	2005 _02	2005 _03	2005 _04	2005 _05	2005 _06	2005 _07	
	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
RHA																				
Chinook	84	107	114	82	77	56	65	53	62	63	36	36	26	36	40	40	41	65	38	
Palliser	21	87	122	77	55	33	33	16	21	24	19	18	15	27	16	24	35	51	39	
Calgary	528	1,012	1,497	1,082	676	422	369	317	279	261	299	275	208	334	337	301	367	459	430	
David Thompson	42	147	195	186	137	62	83	45	56	64	105	70	67	79	64	59	62	56	54	
East Central	8	9	24	16	14	10	10	12	13	7	15	12	21	25	31	18	32	27	21	
Capital	500	891	999	618	575	406	373	384	376	416	508	476	463	548	428	329	307	241	221	
Aspen	42	39	59	52	35	33	50	48	48	66	59	59	75	103	188	115	87	68	47	
Peace Country	13	16	21	24	24	19	21	22	26	31	31	51	81	85	51	54	51	38	34	
Northern Lights	31	39	32	39	28	35	29	31	53	33	33	21	4	54	44	30	45	60	83	
Unknown	6	1	36	2	5	1	7	3	7	12	6	3	5	10	4	3	3	6	5	
Total	1,275	2,348	3,099	2,178	1,626	1,077	1,040	931	941	977	1,111	1,021	965	1,301	1,203	973	1,030	1,071	972	

Influenza Cases by Week: Emergency Dept.

Number of Influenza Cases Diagnosed in Emergency Departments

In Alberta by Flu Week, 2003/04 and 2004/05



Influenza Cases by Week: Emergency Dept.

Number of Influenza Cases Diagnosed in Emergency Departments

In Alberta by RHA and Flu Week, 2003/04 and 2004/05

	2003-04 Week																			
	2003 _41	2003 _42	2003 _43	2003 _44	2003 _45	2003 _46	2003 _47	2003 _48	2003 _49	2003 _50	2003 _51	2003 _52	2004 _01	2004 _02	2004 _03	2004 _04	2004 _05	2004 _06	2004 _07	2004 _08
	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
RHA																				
Chinook	4	10	13	19	57	78	39	31	19	16	21	23	12	15	6	7	3	5	11	13
Palliser	2	1	5	3	3	14	20	24	28	18	19	13	14	8	8	2	3	4	4	5
Calgary	3	6	9	22	54	53	78	49	42	27	42	26	32	23	15	9	5	5	14	10
David Thompson	24	24	36	58	59	64	44	33	22	26	23	21	17	22	15	5	8	6	6	12
East Central	17	27	24	34	42	51	28	27	24	20	8	7	6	4	5	5	3	1	6	1
Capital	15	52	78	74	77	58	30	25	24	21	11	20	30	18	10	12	11	14	22	17
Aspen	9	40	57	82	75	55	45	33	35	23	18	24	26	23	10	6	8	12	15	16
Peace Country	8	11	16	29	30	56	22	18	15	15	8	13	8	5	7	7	6	2	4	2
Northern Lights	6	5	14	24	91	89	30	14	4	4	3	4	11	22	8	14	5	1	2	5
Unknown	3	.	6	1	7	6	1	3	5	5	5	3	2	2	1	3	1	2	1	.
Total	91	176	258	346	495	524	337	257	218	175	158	154	158	142	85	70	53	52	85	81

	2004-05 Week																			
	2004 _41	2004 _42	2004 _43	2004 _44	2004 _45	2004 _46	2004 _47	2004 _48	2004 _49	2004 _50	2004 _51	2004 _52	2005 _01	2005 _02	2005 _03	2005 _04	2005 _05	2005 _06	2005 _07	
	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
RHA																				
Chinook	2	1	2	.	5	2	4	2	6	7	7	4	7	5	7	9	6	13	3	3
Palliser	2	4	1	1	3	2	4	1	5	.	7	4	4	3	1	3	5	12	4	4
Calgary	2	10	7	6	7	7	12	4	4	14	14	9	13	11	14	11	17	9	13	13
David Thompson	8	11	15	7	5	5	13	11	12	11	30	29	29	26	19	13	14	16	19	19
East Central	4	4	5	2	2	1	5	4	4	2	9	6	10	10	9	3	6	8	5	5
Capital	13	18	10	10	18	14	16	17	14	22	40	53	58	41	38	17	19	10	4	4
Aspen	4	7	8	5	4	8	5	4	10	15	12	13	33	31	74	28	22	16	9	9
Peace Country	7	6	3	7	4	9	12	8	6	8	10	10	39	38	12	17	9	5	6	6
Northern Lights	1	9	3	.	3	3	7	5	2	6	5	1	4	26	5	7	11	9	7	7
Unknown	.	.	1	.	2	1	2	2	1	3	.	2	3	3	1	1
Total	43	70	55	38	53	52	80	58	64	88	134	131	200	194	179	108	109	98	71	71

Percent of All Services Attributed to Influenza

Percent of all Services Attributed to Influenza

In Alberta by RHA and Flu Week, 2004/05

General Practitioner

	2004-05 Week																		
	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2005	2005	2005	2005	2005	2005	2005
	_41	_42	_43	_44	_45	_46	_47	_48	_49	_50	_51	_52	_01	_02	_03	_04	_05	_06	_07
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
RHA																			
Chinook	0.49	0.79	0.72	0.53	0.51	0.44	0.43	0.35	0.40	0.41	0.24	0.30	0.32	0.28	0.29	0.28	0.26	0.45	0.34
Palliser	0.18	0.84	1.10	0.71	0.49	0.35	0.29	0.15	0.18	0.23	0.16	0.17	0.23	0.25	0.16	0.21	0.27	0.20	0.31
Calgary	0.49	0.95	1.20	0.90	0.59	0.42	0.32	0.28	0.25	0.24	0.26	0.32	0.33	0.31	0.26	0.32	0.32	0.40	0.44
David Thompson	0.14	0.50	0.60	0.61	0.46	0.24	0.28	0.15	0.19	0.22	0.35	0.28	0.37	0.29	0.23	0.22	0.20	0.19	0.21
East Central	0.09	0.10	0.25	0.15	0.14	0.11	0.10	0.14	0.13	0.07	0.16	0.15	0.37	0.33	0.35	0.19	0.35	0.31	0.27
Capital	0.46	0.87	0.86	0.55	0.53	0.44	0.35	0.36	0.36	0.41	0.48	0.56	0.70	0.56	0.42	0.34	0.31	0.24	0.27
Aspen	0.23	0.24	0.35	0.29	0.20	0.23	0.27	0.28	0.28	0.42	0.35	0.42	0.69	0.63	1.09	0.66	0.52	0.44	0.39
Peace Country	0.10	0.14	0.18	0.18	0.18	0.17	0.16	0.17	0.21	0.25	0.24	0.52	1.09	0.73	0.43	0.44	0.40	0.32	0.32
Northern Lights	0.55	0.67	0.65	0.68	0.46	0.75	0.45	0.54	0.92	0.63	0.73	0.61	0.04	0.65	0.76	0.48	0.71	1.09	1.45
Unknown	0.37	0.07	2.26	0.13	0.32	0.08	0.41	0.19	0.44	0.82	0.36	0.25	0.54	0.76	0.29	0.25	0.24	0.55	0.58

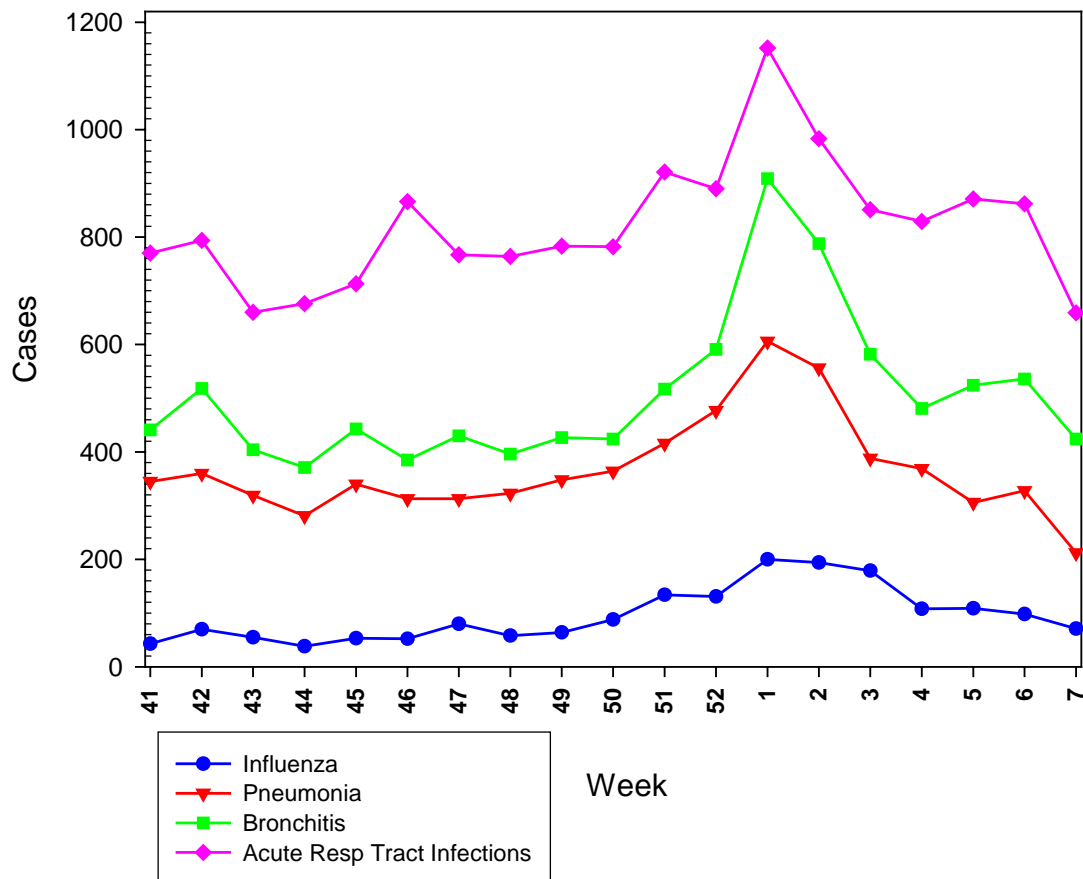
Emergency Department

	2004-05 Week																		
	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2004	2005	2005	2005	2005	2005	2005	2005
	_41	_42	_43	_44	_45	_46	_47	_48	_49	_50	_51	_52	_01	_02	_03	_04	_05	_06	_07
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
RHA																			
Chinook	0.11	0.05	0.12		0.29	0.11	0.24	0.13	0.35	0.42	0.42	0.25	0.38	0.32	0.46	0.53	0.35	0.93	0.36
Palliser	0.18	0.35	0.10	0.09	0.28	0.19	0.37	0.09	0.48		0.82	0.42	0.39	0.29	0.11	0.28	0.49	1.20	0.53
Calgary	0.03	0.14	0.11	0.09	0.10	0.11	0.18	0.06	0.06	0.23	0.21	0.15	0.18	0.16	0.26	0.24	0.38	0.25	0.58
David Thompson	0.18	0.24	0.37	0.17	0.12	0.11	0.29	0.26	0.27	0.26	0.66	0.68	0.63	0.58	0.50	0.31	0.33	0.39	0.53
East Central	0.28	0.27	0.38	0.15	0.13	0.07	0.34	0.35	0.28	0.16	0.72	0.46	0.82	0.79	0.81	0.24	0.54	0.88	0.48
Capital	0.16	0.23	0.13	0.13	0.23	0.19	0.20	0.22	0.18	0.29	0.53	0.73	0.70	0.56	0.59	0.25	0.28	0.15	0.12
Aspen	0.14	0.25	0.31	0.21	0.15	0.29	0.18	0.15	0.38	0.60	0.49	0.63	1.08	1.01	2.90	1.12	0.81	0.66	0.52
Peace Country	0.28	0.26	0.14	0.31	0.17	0.36	0.52	0.35	0.27	0.40	0.44	0.48	1.57	1.54	0.56	0.82	0.40	0.22	0.34
Northern Lights	0.08	0.70	0.24		0.22	0.23	0.55	0.42	0.17	0.51	0.45	0.09	0.32	2.05	0.41	0.62	1.00	0.86	0.93
Unknown			0.32		0.70	0.30	0.67	0.66	0.33	1.15		0.67	1.00	1.15					0.94

Respiratory Disorders in Emergency

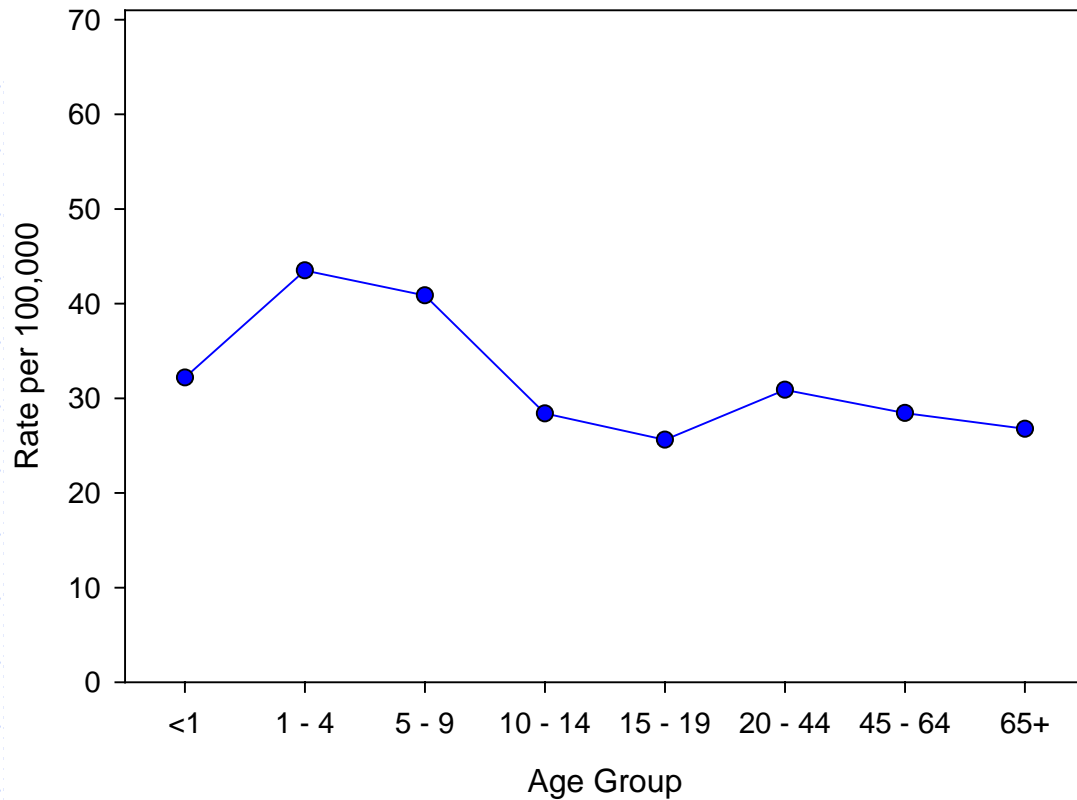
Number of Cases Diagnosed with Respiratory Disorders

In Emergency Departments by Week, 2004/05



Age Specific Rate

Age-Specific Rate per 100,000 Population of Physician Diagnosed Influenza
Flu Week 07, 2005 (January 30-February 12/05)



To be Developed

- ◆ Need to incorporate geographies other than RHA (postal code is captured through the current process)
- ◆ Need to explore statistical techniques to deal with undercounting in the most recent weeks due to reporting lag
- ◆ More graphics, less numbers
- ◆ Written summary

Contact Information

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