



Survey of Alberta family physicians' reactions to the spring and summer phase of pH1N1 (pandemic swine flu) outbreak, 2009

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INTRODUCTION

The 2009 H1N1 (swine flu) outbreak is caused by a novel strain of influenza A virus. In March and early April 2009, this novel H1N1 virus first appeared in humans in Mexico and California, then rapidly spread throughout the world¹. There was considerable public anxiety following the emergence of pH1N1, assisted by media reports. Thus, while there was only a small outbreak in Alberta, this did disturb practice and the outbreak continued through May and June, settling down in July and August.

Family physicians play a major role in managing influenza. It is important for them to prepare their practices for a pandemic outbreak both in terms of infection control and service continuity. The goal of this study was to explore difficulties that physicians experienced due to the public concern over the pH1N1 pandemic in the spring/summer of 2009, and how this affected their opinions and plans about what to do in the fall flu season.

Alberta Health and Wellness (AHW) is the lead agency for pandemic influenza planning² and provides regular communications to Alberta Health Services (AHS). Alberta Health Services is responsible for communicating information to physicians and other health-care professionals and health-service personnel within the province. Alberta Health Services:

- provides frontline service delivery of essential health and public health programs;
- re-allocates/ re-deploys resources when necessary to ensure access to essential services and critical scarce resources to ensure an effective health response where possible; and
- communicates to the public, staff, and stakeholders in their regions.

Alberta Health Services responded to the outbreak by sending out messages to all Alberta family physicians by email and fax to update them on new pH1N1 (pandemic swine) flu policies and information. Alberta Health Services also provided phone numbers for family physicians to call with questions during the day, on weekends, and after-hours. We wished to ascertain how these actions by AHS were perceived by Alberta family physicians and their staff, and how well they fulfilled the needs of these “clients.”

Objective: To explore Alberta family physicians' experiences during the first wave of the H1N1 (swine flu) outbreak and their plans for the future.

We asked physicians about:

1. their attitude towards the spring/summer outbreak and the possibility of a more severe epidemic this fall/winter;
2. changes in service demand and delivery in their clinic due to the outbreak, especially their willingness to work in front line care under epidemic conditions;
3. measures taken in their clinics to reduce disease transmission;
4. the quality and timeliness of the information they received from Alberta Health Services or elsewhere; and
5. the relationship between Alberta Health Services (AHS) support and general practitioners' attitudes.

Since family physicians' work is substantially different in rural compared to urban areas, we tested the hypothesis that responses and attitudes vary according to rurality. Analyses were also done to test the hypothesis that female physicians were likely to differ from male physicians in their responses.

METHODS

Study sample

A list of all Alberta family physicians was obtained from the College of Physician and Surgeons of Alberta (N= 3558). Subjects were excluded from the list if they were not in primary care practice, or if they worked in academic fields. Initially this was done by scanning the list, and those known by the researchers to be ineligible were excluded.

To ensure adequate coverage and reasonable generalizability, 1000 family physicians were identified by stratified random sampling from this registration list (250 from Edmonton, 250 from Calgary, 250 from other urban centres and 250 from rural areas).

The Calgary region was defined as the city of Calgary including the surrounding areas of Airdrie, Bragg Creek, Chestermere, Cochrane, De Winton, Okotoks, Redwood Meadows, and Siksika reserve. The Edmonton region was defined as the city of Edmonton including surrounding areas of Ardrossan, Bashaw, Beaumont, Calmar, Devon, Fort Saskatchewan,

Gibbons, Sherwood Park, Spruce Grove, and St. Albert. The cities classified under “other urban centers” were Banff, Canmore, Fort MacMurray, Grand Prairie, Leduc, Lethbridge, Medicine Hat and Red Deer. All other areas of Alberta not classified above were defined as rural Alberta.

Survey development

A questionnaire was designed to cover all study questions. After the random sample was selected, the questionnaire was pilot tested on a convenient sample of colleagues who were not a part of the sample. The survey was a compromise of the conflict between comprehensiveness and brevity. Questions on physician attitude regarding working during an H1N1 pandemic were included from a recent Ontario study². The final questionnaire, which included both closed- and open-ended questions, was sent to the 1000 selected physicians. The survey time was chosen as after the August summer vacation, when most practice had resumed normal service after the summer, and hopefully before the fall influenza season started.

Survey process

Eligible family physicians were provided with up to 3 packages, sent 2 weeks apart. The first package was sent on September 1, 2009, as the initial contact with the physicians. This was followed by the second and the third packages sent on September 14 and September 30, 2009, respectively. The first and the third packages included an information sheet, consent form, copy of the questionnaire and a negative response sheet. The second package included an information sheet with a notice to access the survey on the Department of Family Medicine website and a negative response sheet.

Written consent was obtained from family physicians who agreed to participate in the study. Participants completed the survey and either faxed or mailed them back to the provided fax number and mailing address. Negative response sheets (with anonymous study ID) were returned by family physicians who chose not to participate in the study.

Ethics approval for this project was given by the Conjoint Health Research Ethic Board of the Faculties of Medicine, University of Calgary on August 14, 2009. The study was endorsed by the Alberta Medical Association (AMA) and the College of Family Physicians of Alberta.

Statistical analysis

Data analysis included frequencies, cross tabulations, and chi-square tests with a significance level of alpha of 0.05. STATA version 11.0 was used for all statistical testing.

RESULTS

Survey response rates

Between September 1 and November 5, 2009, 192 questionnaires were completed by Alberta family physicians and returned to the research office.

Out of 250 family physicians in the Calgary region that were randomly selected to participate, 39 were excluded as they did not meet the eligibility criteria. Fifty-seven family physicians out of 211 eligible participants in Calgary completed the survey, which gave us a regional response rate of 26%.

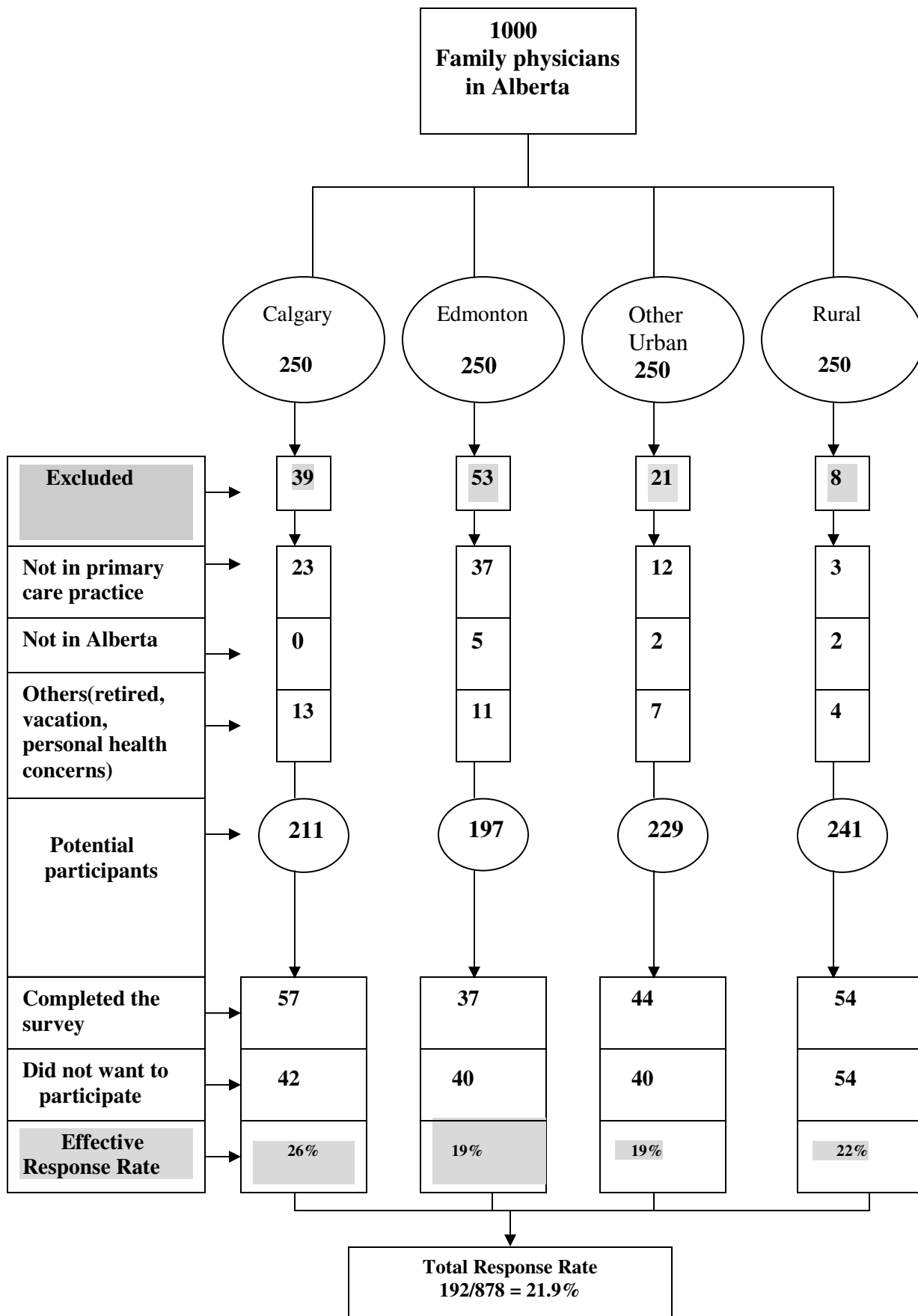
There were 197 potential respondents in Edmonton after excluding 53 who did not meet the criteria. Thirty-seven physicians from the Edmonton area completed the survey, which equates to a regional response rate of 18.7%.

From other urban centers in Alberta, 21 physicians were excluded who did not meet the criteria, 229 were left as potential participants. The response rate was 19%.

From the other rural regions, 241 family physicians were eligible after removing 9 physicians who did not meet the criteria. Fifty-four physicians completed the survey and 51 chose not to participate. The response rate was 22%.

The overall response rate, for all regions was 22%. Figure 1 summarises these responses.

Figure 1. Inclusion and exclusion of study participant



Due to the low response rate, with uncertainty about representativeness, and dangers of over-interpretation due to multiple comparisons, we present selected data and have restricted comment to major differences only. In particular, though we made comparisons between regions for most questions we have only reported those where there appeared to be sufficiently important differences.

Participant Demographics

As shown in Table 1, the majority of responding physicians were female in Edmonton, but in the other groups they were the minority, especially in “other urban” areas.

The age groups of participants ranged from 25 to 34 years to over 65 years old, with the largest group being (30%) 45 to 54 years of age. However, for rural areas the largest group of respondents were younger, 35 to 44 years of age (32%) and the 45 to 54 years age group was underrepresented (19%) (Table 1).

Table 1 Socio-demographic profile: gender and age group, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Gender	N=58	N=37	N=44	N=53	N=192
Male	31 (53.4)	17 (46.0)	34 (77.3)	35 (66.0)	117 (61.0)
Female	27 (46.6)	20 (54.1)	10 (22.8)	18 (34.0)	75 (39.1)
Age Group	N=58	N=37	N=44	N=53	N=192
25-34 years	5 (8.6)	5 (13.5)	6 (13.6)	7 (13.2)	23 (12.0)
35-44 years	18 (31.0)	4 (10.8)	10 (22.7)	17 (32.1)	49 (25.5)
45-54 years	19 (32.8)	13 (35.1)	15 (34.1)	10 (18.9)	57 (29.7)
55-64 years	12 (20.7)	11 (29.7)	9 (20.5)	14 (26.4)	46 (24.0)
65+ years	3 (5.1)	4 (10.8)	4 (9.1)	3 (5.7)	14 (7.3)
Unknown	1 (1.7)	0 (0.0)	0 (0.0)	2 (3.8)	3 (1.6)

Years in Practice

The mean number of years in clinical practice reported by physicians was 20 years, (range 0.3 to 57 years). The number of years in their current clinical practice ranged from 4 months to 45 years, with an average of 11 years. Years of practice and clinical experience were similar for respondents across regions (Table 2).

Table 2 Socio-demographic profile: years in practice, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Years worked in clinical practice (anywhere)	N=57	N=37	N=44	N=50	N=188
Mean (SD)	18.4 (12.3)	22.0 (11.1)	21.6 (12.9)	19.7 (10.3)	20.2 (11.7)
Range	0.3 to 50	2 to 40	1 to 57	1 to 39	0.3 to 57
Years worked in current clinic	N=55	N=35	N=42	N=49	N=181
Mean (SD)	9.5 (10.1)	13.3 (10.6)	9.4 (10.6)	13.5 (10.4)	11.3 (10.5)
Range	0.3 to 40	0.5 to 35	0.3 to 45	0.5 to 36	0.3 to 45

SD: Standard Deviation

Medical training

As shown in Table 3A, the majority of physicians received their education and completed their residency in Canada or the USA. However, in “other urban” and rural areas there were considerably more physicians educated in South Africa (19%; 28%) compared to Calgary (3%) and Edmonton (3%) (Table 3B). Two-thirds or more of physicians in the 3 urban regions completed their residency in Canada (81% Calgary; 84% Edmonton; 66% other urban), but just over half (53%) of rural physicians did so (Table 3C).

Table 3A Socio-demographic profile: medical education and residency

		N_{Total} = 192	
		N	(%)
Country of primary medical education		N = 188	
	USA, Canada	123	(65.4)
	South Africa	26	(13.8)
	Other	38	(20.2)
Residency training in Canada		N = 191	
	Yes	134	(70.2)
	No	57	(29.8)

Table 3B Socio-demographic profile: medical education, by region

		Calgary N (%)	Edmonton n N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
		N=56	N=36	N=43	N=53	N=188
Country of primary medical education	USA, Canada	40 (71.4)	25 (69.4)	28 (65.1)	30 (56.6)	123 (65.4)
	South Africa	2 (3.6)	1 (2.8)	8 (18.6)	15 (28.3)	26 (14.2)
	Other	14 (25.0)	10 (27.7)	7 (16.2)	8 (15.0)	39 (20.4)

Table 3C Socio-demographic profile: residency, by region

		Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Residency training in Canada		N=57	N=37	N=44	N=53	N=191
	Yes	46 (80.7)	31 (83.8)	29 (65.9)	28 (52.8)	134 (70.2)
	No	11 (19.3)	6 (16.2)	15 (34.1)	25 (47.2)	57 (29.8)

Current clinical practice characteristics

Physician respondents worked an average of 41 hours per week, ranging from 4 to 90 hours.

They reported seeing an average of 31 patients per usual full clinic day, with a maximum of 75 patients per day. Seventeen percent of respondents work in a solo practice, while 57% work in small groups (2 to 6 physicians) and 26% in groups of more than 6 physicians. Ninety-five percent of participant clinics usually see urgent patients on the same day they call. Looking at regional differences in practices, physicians from rural areas report longer work hours compared to physicians from other areas (Table 4).

Table 4 Hours/week in clinical practice, by region

		Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Hours per week in clinical practice		N=57	N=37	N=44	N=51	N=189
	Mean (SD)	36.6 (13.1)	40.0 (14.1)	42.3 (12.7)	47.3 (15.3)	41.4(14.3)
	Range	8 to 60	15 to 90	10 to 80	4 to 80	4 to 90

SD: Standard Deviation

PART A: Attitude toward the H1N1 (swine flu) outbreak

1. Level of worry about being infected by H1N1 (swine flu) due to the nature of the job

More than half of participants indicated that they are worried or very worried (64%) about being infected by H1N1 due to the nature of their job, while about one third of physicians are not worried at all. Rural physicians are somewhat more likely than urban physicians to be very worried about being infected (15% vs 10% overall).

2. Level of worry about bringing infection home from work to family

Most respondents were concerned about bringing an infection home from work to their family, with only 23% not concerned at all. Physicians in Calgary were least likely to be worried about bringing infection home while rural physicians had the highest proportion of concerned respondents.

3. Effect of H1N1 on participants' lives

Twenty two percent of male participants and 16% of female participants responded that the H1N1 outbreak has had an effect on their lives. As seen in Table 5, physicians in Calgary were significantly more likely to indicate they have been affected by H1N1 compared to physicians in other regions (p=0.012).

Table 5 Effect of H1N1 on participants' lives, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Has the H1N1 (swine flu) outbreak affected your life	N=58	N=36	N=42	N=53	N=189
Yes *	20 (34.5)	6 (16.7)	6 (14.3)	6 (11.3)	38 (20.1)
No	38 (65.5)	30 (83.3)	35 (83.3)	47 (86.7)	150 (79.4)
Did not answer	0 (0.0)	0 (0.0)	1 (2.3)	0 (0.0)	1 (0.5)

* Chi-square p=0.012

Thirty-two participants commented on how their lives are affected by the H1N1 outbreak. Most comments indicated that they increased the frequency of hand-washing due to concerns of falling ill themselves, or are spending more time at work due to higher workload and increased service demand.

4. Physician options

Female and male respondents had different perspectives regarding giving physicians the option of treating cases of influenza if they have children at home. As shown in Table 6, the majority of female participants (43%) agreed or strongly agreed that physicians living with children less than 16 years old at home should have the option of refusing to see influenza cases during an outbreak. Only 20.1% of male physicians agreed with this statement ($p=0.002$).

Physicians in Calgary, rural, and other urban centres were more likely to disagree or strongly disagree (40%, 47%, and 45%, respectively) when asked whether they thought physicians should have the option of not dealing with influenza cases if they have a child under the age of 16 at home. In Edmonton, 35% of physicians agreed or strongly agreed, while 35% disagreed or strongly disagreed.

Table 6 Option of dealing with influenza cases in flu outbreaks, by sex

	N_{Total} = 192			
	Male	Female		
	N	(%)	N	(%)
Doctors living with children <16 years old at home should have an option of not dealing with influenza cases in flu outbreaks	(N=114)		(N=74)	
Strongly agree	7	(6.1)	7	(9.5)
Agree	16	(14.0)	25	(33.8)
Neutral	32	(28.1)	22	(29.7)
Disagree	48	(42.1)	18	(24.3)*
Strongly disagree	11	(9.7)	11	(2.7)

* $p=0.002$, $\text{Chi}^2(4)=15.90$

5. Likelihood of working during an outbreak

We asked physicians whether they would be likely to continue working if certain situations arose during an outbreak. Physicians had the option of responding with “likely”, “unlikely”, “don’t know”, or “not applicable” for each question.

The highest proportion of physicians indicated that they would be likely to continue working:

- despite a greater risk of becoming infected themselves. (Males (78%) are significantly more likely to continue work than females (60%) ($p=0.034$));
- if asked to work more hours (69% males, 62% females);
- if childcare services were disrupted (79% males, 68% of females);
- if asked to work in a different practice than usual (48% males, 38% females);
- if there was a disruption to transport due to fuel shortages. (Males (63%) are significantly more likely to work than females (39%) ($p=0.006$));
- if forced to make decisions about not treating certain patients due to resource constraints. (Males (72%) are significantly more likely to work than females (44%) ($p<0.001$));
- if forced to work with untrained volunteers or workers brought out of retirement (76% males, 71% females).

In the following situations, the majority of both male and female participants reported that they would be unlikely to work:

- if a spouse/partner fell ill. (Females (59%) are significantly less likely to work than males (35%) ($p=0.003$)).
- if they or their partner were pregnant. (Females (2%) are significantly less likely to work than males (29%) ($p=0.008$)).

In some instances male and female physicians responded differently. In the following situations a higher proportion of male physicians indicated they were likely to work, while female physicians were unsure or unlikely to work:

- if there was a risk of infecting their families at home. (Males (51%) are significantly more likely to work than females (25%) ($p=0.001$)).
- if asked to take on different or additional work for which they are not trained. (Males (44%) are significantly more likely to work than females (24%) ($p=0.009$)).

- if their children fell ill. (Males (43%) are significantly more likely to work than females (26%) (p=0.001)).
- if colleagues were dying. (Males (54%) are significantly more likely to work than females (28%) (p=0.003)).

In many circumstances, physicians from rural areas responded differently than physicians from Calgary, Edmonton, or other urban areas. Rural physicians had the highest proportion of respondents who indicated that they were likely to work if asked to take on different or additional work for which they are not trained (43%), and if a child fell ill (43%). In contrast, respondents from Calgary, Edmonton, and other urban areas were unlikely to work in these situations.

Interestingly, the lowest proportion (38%) of physicians indicating that they were likely to work if asked to work in a different practice than usual was found in the rural areas. In contrast, a higher proportion of physicians from Calgary (44%), Edmonton (49%), and other urban areas (54%) indicated they were likely to work in this scenario.

Physicians from rural (69%) and other urban areas (64%) were significantly more likely to continue working if there was a disruption to transport (p=0.005), or if asked to make decisions about not treating certain patients because of resource constraints (p=0.002) compared to physicians from Calgary (36%) and Edmonton (47%). Also, physicians from Edmonton and other urban areas (51%) were significantly more likely than physicians from Calgary (26%) to indicate they would be willing to work despite a greater risk than usual of infecting the family at home (p=0.02).

PART B: Clinical services

6. Changes in service demand

During the peak of H1N1 anxiety in the spring and early summer of 2009, some physicians saw an increase in service demand in their clinics (35% males, 43% females). However, the majority of both male (61%) and female (57%) respondents indicated there was no change in

service demand. Calgary physicians reported an increased demand (47%) compared to physicians from other parts of the province (Edmonton 35%; other urban 33%; rural 36%) who were more likely to report no change.

Among the physicians that indicated they saw an increased demand for services, comments from the majority (n=44) indicated that they were able to manage the workload and it did not greatly affect their ability to provide care for patients. Comments from other respondents (n=24), however, indicated that this increase in demand resulted in shorter patient visits and made physicians more tired at the end of their shifts.

7. Encounters with patients with suspected/confirmed H1N1

At the time of the survey, the majority of physicians (84% males, 73% females) had encountered a patient with suspected H1N1. The mean number of suspected cases was 12, ranging from 1 to 100 cases, while the mean number of confirmed cases was 1 (range 0-10). Among the different regions, the smallest percentage of rural physicians reported H1N1 encounters (70%), but among those encounters rural physicians reported the highest average of suspected cases (20%) (Table 7).

Table 7 Encounters with patients with suspected H1N1, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Have you encountered any patient with suspected H1N1	N=57	N=37	N=43	N=53	N=190
Yes	49 (86.0)	29 (78.4)	36 (83.7)	37 (69.8)	151 (79.5)
No	8 (14.0)	8 (21.6)	7 (16.3)	16 (30.2)	39 (20.5)
If yes, how many suspected cases	N=42	N=25	N=32	N=34	N=133
Mean (SD)	7.6 (7.8)	6.6 (5.8)	8.2 (8.0)	10.9 (19.5)	8.4 (11.7)
Range	1 to 40	2 to 30	1 to 30	1 to 100	1 to 100
If yes, how many confirmed cases	N=35	N=26	N=28	N=27	N=116
Mean (SD)	1.5 (2.0)	1.8 (2.1)	0.7 (0.9)	1.2 (1.3)	1.3 (1.7)
Range	0 to 10	0 to 9	0 to 3	0 to 5	0 to 10

SD: Standard Deviation

8. Clinic plan in the event of a severe influenza outbreak in the fall/winter

Alberta Health Services recommends that all health clinics follow AHS Pandemic Influenza Outbreak Protocol. At the time of completing the questionnaire, the majority of respondents (55% males, 67% females) indicated that their clinic did not have a plan in the event of a severe outbreak in the fall or winter. Calgary physicians reported the highest percentage (49%) of clinics with a plan to follow, while Edmonton physicians reported the lowest percentage of clinics with a plan (33%).

When asked to elaborate, comments from the majority (n=33) of participants indicated they would close their practice or discourage patients to visit the clinic. Others (n=23) reported they would see respiratory patients, but provide them with a mask and put them in a separate room, or would simply wait for and follow the professional guidelines (n=26). A minority reported they would triage patients from home (n=11) or send patients to emergency (n=4).

9. Protocol when a patient with suspected H1N1 contacts your clinic

Individual practices may have different guidelines for dealing with a suspected H1N1 case. The majority of respondents (63%) said they would advise the patient to stay at home. Some precautions do not follow the standard recommended protocols. The majority of both male and female respondents said they would not do the following:

- refer the patient to Health Link (73% males, 65% females);
- prescribe anti-virals (65% males, 57% females);
- report cases to the local Medical Officer of Health (73% males, 71% females); and
- send the patient elsewhere (75% males, 71% females).

However, there were mixed responses for certain protocols:

- seeing the patient in the clinic (45% yes-males, 59% yes-females); and
- collecting a specimen for laboratory diagnosis (45% yes-males, 51% yes-females).

Responses regarding protocols showed some geographical differences (Table 8). When asked about referring the patient to Health Link, 47% of Calgary respondents indicated yes, compared to 28% of rural physicians, and 19% each for Edmonton and other urban areas (p=0.006). A higher proportion of Edmonton physicians (62%) would see patients in the clinic,

compared to 55% of Calgary respondents, 51% of other urban, and 36% of rural physician respondents. Edmonton physicians were more likely to collect a specimen for laboratory diagnosis (68%) compared to Calgary (40%), other urban (51%), and rural (38%) ($p=0.024$). Also, Edmonton physicians were more likely to prescribe antiviral medication (54%), compared to Calgary respondents (36%), other urban (37%), and rural (30%). Rural physicians indicated that they were more likely to send the patient elsewhere (42%) compared to Calgary (29%), Edmonton (16%), and other urban centers (14%) ($p=0.008$).

Thirty physicians commented on their clinic's protocol. The majority ($n=13$) indicated they would allow clinic visits, but would isolate respiratory patients and ask them to wear a mask while waiting. A smaller number would send their patients to emergency ($n=5$), while others reported that they would decide what to do only after assessing the severity of the symptoms.

Table 8 Protocol when a patient with suspected H1N1 contacts your clinic, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Advise the patient to stay at home	N=58	N=37	N=43	N=50	N=188
Yes	39 (67.2)	22 (59.4)	28 (65.1)	29 (58.0)	118 (62.7)
No	19 (32.7)	15 (40.5)	15 (34.8)	21 (42.0)	70 (37.2)
Refer the patient to Health Link *	N=58	N=37	N=43	N=50	N=188
Yes	27 (46.5)	7 (18.9)	8 (18.6)	14 (28)	56 (29.7)
No	31 (53.4)	30 (81)	35 (81.4)	36 (72)	132 (70.2)
See the patient in the clinic	N=58	N=37	N=43	N=50	N=188
Yes	32 (55.1)	23 (62.1)	22 (51.1)	18 (36)	95 (50.5)
No	26 (44.8)	14 (37.8)	21 (48.8)	32 (64)	93 (49.4)
Collect specimen for laboratory diagnosis **	N=58	N=37	N=43	N=50	N=188
Yes	23 (39.6)	25 (67.5)	22 (51.1)	19 (38)	89 (47.3)
No	35 (60.3)	12 (32.4)	21 (48.8)	31 (62)	99 (52.6)
Prescribe antiviral medications	N=58	N=37	N=43	N=50	N=188
Yes	21 (36.2)	20 (54)	16 (37.2)	15 (30)	72 (38.3)
No	37 (63.7)	17 (45.9)	27 (62.7)	35 (70)	116 (61.7)
Report cases to your local Medical Officer of Health	N=58	N=37	N=43	N=50	N=188
Yes	14 (24.1)	10 (27)	13 (30.2)	16 (32)	53 (28.1)
No	44 (75.8)	27 (72.9)	30 (69.7)	34 (68)	135 (71.8)
Send the patient elsewhere (e.g., emergency) ***	N=58	N=37	N=43	N=50	N=188
Yes	17 (29.3)	6 (16.2)	6 (13.9)	21 (42)	50 (26.6)
No	41 (70.6)	31 (83.7)	37 (86)	29 (58)	138 (73.4)

* chi squared significant difference, p=0.006

** , chi squared p=0.024

*** chi squared p=0.008

10. Adherence to the classical definition of influenza-like illness

Classical influenza-like illness (ILI) is defined as acute onset of fever *and* cough, and one or more of: sore throat, myalgia, arthralgia, prostration. The majority of respondents indicated that they only collect viral culture from patients presenting with these symptoms (77% males, 72% females). The proportion of Edmonton respondents who would only collect viral cultures

from patients with ILI symptoms was lower (65%) than physicians in Calgary (84%), rural (75%), and other urban areas (70%).

Among those physicians who swabbed patients outside of this exact definition, comments indicated that 20 did so because of the severity of symptoms and 18 did so because the patient requested it. Other factors included if the patient was in a high risk group (n=5), made contact with anyone who had H1N1 (n=4), or traveled to Mexico (n=4).

PART C: Internal environment of family physicians

11. Precautions taken in clinic

Individual practices may have different guidelines for reducing patient-to-patient transmission. The large majority of clinics reported that they recently put new precautions in place for the H1N1 outbreak (91% males, 93% females). As well, most clinics reported that they had taken the following measures:

- post a sign at the door (66% males, 75% females);
- provide masks at the door (68% males, 71% females); and
- provide hand sanitizer for patients (83% males, 91% females)
- isolating ILI patients to a separate room, (63% females, 49% males).

Other precautions were less often used by physician, such as:

- maintaining a 2 meter(m) spatial separation between waiting patients (16% males, 25% females);
- separating receptionists from patients by 2 metres (24% males, 31% females); and
- directing patients with fever and cough to go elsewhere (15% males, 20% females).

Finally, 8% of physicians said that no new precautions were taken after the H1N1 pandemic.

Regional differences were also found for precautions taken in clinics. For example, a higher proportion of Calgary respondents (81%) reported having a sign at the door compared with the other three regions (all approximately 65%). Calgary physicians were also most likely to

report separating receptionists from patients by 2 meters (38%) compared with Edmonton (22%), other urban (16%) and rural (26%). The most common precaution taken by all clinics was providing hand sanitizer for patients to use, ranging from 77% in other urban areas to 92% in rural areas. Calgary physicians reported maintaining a two metre spacial separation between patients in waiting room more often than other regions (33% Calgary compared to 16% Edmonton, 12% other urban, 13% rural) ($p=0.015$).

Comments indicated that since April 2009, other precautions implemented by some physicians included removing toys and magazines from the waiting room, putting up websites for their patients, and reducing the length of visits with patients in order to reduce patient-to-patient transmission ($n=9$).

12. Patient-initiated precautions

There is a degree of responsibility on the part of the patient to reduce risk of patient-to-patient transmission in a clinic. Nearly all potential influenza patients informed the physician of their fever and cough, according to 49% of male physicians and 37% of female physicians. However, many physicians indicated that most potential influenza patients did not wear masks properly. Only 38% of males and 40% of females perceived that most or nearly all patients wore the masks properly in the office.

There was little regional variation seen in the proportion of potential influenza patients who informed the physician of their fever and cough, with 65% replying “most” or “nearly all” in Calgary, 66% in Edmonton, 68% in rural, and 78% in other urban areas. The proportion of patients who wore the masks properly in the office nearly all or most of the time varied between 29% in Edmonton to 49% in other urban areas.

Participants were also asked to comment on patient behaviour in their clinics. Eight physicians indicated that patients were cooperative while 5 indicated patients were uncooperative. Some patients were not aware of their symptoms ($n=4$) and other physicians didn’t see any difference in patient behaviour since the H1N1 outbreak began ($n=3$).

13. Precautions between patient encounters

To help reduce transmission of disease, physicians are advised to wash or sanitize their hands between each patient encounter. The frequency of hand washing/sanitizing generally increased since the H1N1 outbreak. For example, the proportion of males mostly or always sanitizing their hands between patient encounters doubled from 35% prior to the outbreak to 70% after the outbreak, while for females the proportion increased from 58% to 76%.

When broken down by geographical area, the most hand washing behaviour change was reported in Calgary, with 59% reporting that they mostly or always washed their hands prior to the outbreak and 81% after the outbreak. In rural areas, hand-washing before the outbreak compared to after the outbreak increased from 52% to 72%. Physicians in Edmonton reported the least amount of hand-washing behaviour change after the H1N1 outbreak began, increasing from 53% to 58%. In Edmonton 25% of respondents reported that they never wash their hands between patient encounters either pre- or post-outbreak.

14. Use of masks when seeing patients with respiratory symptoms

Only a few physicians indicated they “always” or “mostly” wore a mask before the H1N1 outbreak; however, this proportion increased after the outbreak to 24% of males and 19% of females. Since the outbreak, the majority of physicians at least “sometimes” wear a mask (69% males, 71% females) when seeing patients with respiratory symptoms, which is an improvement from before the H1N1 outbreak when 74% of male physicians and 76% of female physicians “never” wore a mask. The proportion of staff who “always” or “mostly” wear a mask when seeing patients with respiratory symptoms also increased after the outbreak, from 1.7% before the outbreak, to 17.5% after the outbreak began.

Some regional variation was reported in the proportion of physicians and staff wearing masks when seeing patients with respiratory symptoms. Similar increases were seen after the outbreak for physicians across all regions, ranging from 19% for rural areas to 24% for Edmonton. Staff in rural areas were somewhat less likely to “always” or “mostly” wear a mask after the outbreak (12%), compared with staff in other areas. Calgary physicians reported the highest proportion of staff who “always” or “mostly” wear masks at 24%.

Among 62 participants who reported that they “never” wear a mask, 44 commented that they thought it was not necessary and others didn’t wear a mask because masks were not available in the office. As well, of the 52 participants who reported that their staff “never” wear a mask, 29 commented that it was not necessary since their staff are not in close contact with patients, 6 indicated it was not convenient, and only 2 participants indicated that it was because masks were not available in the office.

15. Use of Personal Protective Equipment (PPE) when taking a swab from a patient with influenza-like illness

When dealing with a patient with influenza-like illness, not all different types of PPE were consistently used. For example, the physicians reported that they:

- mostly or always wear gloves (76% males and females);
- mostly or always wear a procedural mask (65% males, 62% females);
- never wear a gown (31% males, 35% females);
- never wear an eye/face shield (40% males, 45% females); and
- never wear a N95 mask (41% males, 45% females).

Some regional differences were found in use of PPE while swabbing a patient with ILI. The rural areas indicated the highest proportion of physicians who mostly or always wear gloves, procedural masks, N95 masks, and eye/ face shields. Gown use is comparable among all four regions, although slightly higher for physicians in rural areas. The proportion of Calgary physicians who always wear a N95 mask is somewhat lower than the other regions.

16. Source of up-to-date information during the H1N1 outbreak

The majority of physicians received up-to-date information via fax or email from AHS (57% males, 63% females). In rural areas, 100% of physicians reported that they received information from AHS (Table 9). For all of the regions, 90% or more of the physicians reported AHS as a source of information they are using during the H1N1 outbreak.

Comments from a few participants indicated that they get information from their nursing staff and other websites such as www.uptodate.com.

Table 9 Source of information during the H1N1 outbreak, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
Correspondence (fax, email) from AHS	N=58	N=37	N=44	N=53	N=192
Yes	52 (89.6)	34 (91.9)	40 (90.9)	53 (100.0)	179 (93.2)
No	6 (10.3)	3 (8.1)	4 (9.1)	0 (0.0)	13 (6.8)
Professional websites	N=58	N=37	N=44	N=53	N=192
Yes	34 (58.6)	24 (64.8)	21 (47.7)	35 (66.0)	114 (59.3)
No	24 (41.3)	13 (35.1)	23 (52.2)	18 (33.9)	78 (40.6)
Seminars organized by professional bodies	N=58	N=37	N=44	N=53	N=192
Yes	7 (12.0)	4 (10.8)	3 (6.8)	6 (11.3)	20 (10.4)
No	51 (87.9)	33 (89.1)	41 (91.3)	47 (88.6)	172 (89.5)
Media (TV, newspaper)	N=58	N=37	N=44	N=53	N=192
Yes	27 (46.5)	18 (48.6)	13 (29.5)	21 (39.6)	79 (41.1)
No	31 (53.4)	19 (51.3)	31 (70.4)	32 (60.3)	113 (58.8)
Clinic manager	N=58	N=37	N=44	N=53	N=192
Yes	6 (10.3)	4 (10.8)	5 (11.3)	3 (5.6)	18 (9.4)
No	52 (89.6)	33 (89.1)	39 (88.6)	50 (94.3)	174 (90.6)
Colleagues	N=58	N=37	N=44	N=53	N=192
Yes	18 (31.0)	10 (27.0)	9 (20.4)	18 (33.9)	55 (28.6)
No	40 (68.9)	27 (72.9)	35 (79.5)	35 (66.0)	137 (71.3)
Other	N=58	N=37	N=44	N=53	N=192
Yes	6 (10.3)	3 (8.1)	6 (13.6)	5 (9.4)	20 (10.4)
No	52 (89.6)	34 (91.8)	38 (86.3)	48 (90.5)	172 (89.5)

17. Quality of information on H1N1 provided by AHS

Most respondents agreed or strongly agreed that the information on H1N1 provided by AHS was adequate (80% males, 74% females), practical (67% males, 73% females), up-to-date (81% males, 73 % females) and timely (79% males, 65% females). The majority of physicians also indicated they agreed or strongly agreed with all provided information (68% males, 60% females).

Responses regarding information sharing did not greatly vary by region. The majority of physicians from all regions agreed that the information provided by AHS was adequate,

practical, up-to-date and timely (Table 10). A larger proportion of rural physicians (75%) indicated they agreed or strongly agreed with the information provided by AHS. In the other regions there were varied responses regarding whether physicians agreed with all of the information provided by AHS, though the majority agreed or strongly agreed.

Fifty-six participants indicated that they would like to receive additional information during an outbreak. Their comments included the following:

- short and direct information which gives a clear idea on how to manage cases;
- guidelines and protocols for influenza case management and antiviral therapy; and
- information on case surveillance including prevalence of influenza in the region.

Sixty-four family physicians commented on ways to improve information provided by AHS.

Their suggestions included the following:

- providing physicians with more direct and practical information, including information on vaccines;
- providing more up-to-date information and informing physicians of new policies in a timely manner; and
- providing a daily short fax with current information on the outbreak.

Table 10 Quality of AHS information, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
The information was adequate	N=56	N=37	N=44	N=51	N=188
Strongly agree	13 (23.2)	10 (27.0)	14 (31.8)	12 (23.5)	49 (26.0)
Agree	25 (44.6)	19 (51.3)	23 (52.2)	30 (58.8)	97 (51.6)
Neutral	12 (21.4)	3 (8.11)	6 (13.6)	5 (9.8)	26 (13.8)
Disagree	3 (5.3)	5 (13.5)	0 (0.0)	3 (5.9)	11 (5.9)
Strongly disagree	3 (5.4)	0 (0.0)	1 (2.3)	1 (12.0)	5 (2.7)
The information was practical	N=56	N=37	N=44	N=51	N=188
Strongly agree	13 (23.2)	9 (24.3)	12 (27.2)	11 (21.5)	45 (23.9)
Agree	22 (39.2)	19 (51.3)	19 (43.1)	25 (49.0)	85 (45.2)
Neutral	14 (25.0)	4 (10.8)	8 (18.1)	10 (19.6)	36 (19.1)
Disagree	4 (7.1)	4 (10.8)	4 (9.1)	4 (7.8)	16 (8.5)
Strongly disagree	3 (5.4)	1 (2.7)	1 (2.3)	1 (2.0)	6 (3.2)
The information was up-to-date	N=55	N=37	N=43	N=51	N=186
Strongly agree	14 (25.4)	9 (24.3)	14 (32.5)	11 (21.5)	48 (25.8)
Agree	22 (40.0)	21 (56.7)	23 (53.4)	31 (60.0)	97 (52.1)
Neutral	12 (21.8)	6 (16.2)	4 (9.3)	8 (15.6)	30 (16.1)
Disagree	6 (10.9)	1 (2.7)	2 (4.7)	1 (1.96)	10 (5.4)
Strongly disagree	1 (1.82)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)
The information was timely	N=56	N=37	N=43	N=50	N=186
Strongly agree	15 (26.7)	19 (24.3)	14 (32.5)	12 (24.0)	50 (26.8)
Agree	20 (35.5)	16 (43.2)	22 (51.1)	28 (56.0)	86 (46.2)
Neutral	13 (23.2)	7 (18.9)	7 (16.2)	8 (16.0)	35 (18.8)
Disagree	6 (10.7)	5 (13.5)	0 (0.0)	2 (4.0)	13 (6.9)
Strongly disagree	2 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.1)
I agree with all provided information	N=51	N=34	N=42	N=49	N=176
Strongly agree	12 (23.5)	8 (23.5)	12 (28.5)	12 (24.4)	44 (25.0)
Agree	17 (33.3)	13 (38.2)	16 (38.1)	25 (51.0)	71 (40.0)
Neutral	10 (19.6)	9 (26.4)	10 (23.8)	10 (20.0)	39 (22.1)
Disagree	8 (15.6)	3 (8.9)	3 (7.1)	2 (4.1)	16 (9.1)
Strongly disagree	4 (7.8)	1 (2.9)	1 (2.4)	0 (0.0)	6 (3.4)

18. Staff education during an outbreak

Most participants (95% males, 90% females) indicated that the person responsible for educating staff in clinic during an outbreak is the family physician, with 4% responding College & Association of Registered Nurses in Alberta (CARNA) would be the educator. A larger proportion of Edmonton physicians (11%) compared to other regions (0% Calgary, 2% other urban, 2% rural) indicated that other professional associations are responsible for educating staff at clinics during an outbreak

Three participants commented that they believe that it is the clinic manager's responsibility to educate staff, and two family physicians commented that professional websites from organizations like the Alberta Medical Association or Primary Care Networks should educate staff.

19. Suspected staff reaction to a major outbreak

Most physician respondents believe that their staff would not continue working their regular hours (75% males, 85% females) and would be fearful to deal with potential influenza patients (57% males, 59% females) in a major outbreak. The majority of respondents believe their staff would not stay home to look after their families (72% males, 63% females). However, 22% of respondents did not know how their staff would react.

Responses did not vary much by region, however, a larger proportion of rural physicians (46%) compared to other areas (22% Calgary, 19% Edmonton, 32% other urban) indicated that their staff may stay at home to look after their families during a major outbreak ($p=0.042$) (Table 11).

Table 11 Suspected staff reaction to a major outbreak, by region

	Calgary N (%)	Edmonton N (%)	Other Urban N (%)	Rural N (%)	Total N (%)
They would all continue working on their regular work hours	N=58	N=37	N=44	N=52	N=191
Yes	14 (24.1)	4 (10.8)	8 (18.1)	14 (26.9)	40 (20.9)
No	44 (75.8)	33 (89.1)	36 (81.8)	38 (73.0)	151 (79.0)
Some would be fearful to deal with patients with ILI symptoms	N=58	N=37	N=44	N=52	N=191
Yes	33 (56.9)	19 (51.3)	30 (68.1)	28 (53.8)	110 (57.5)
No	25 (43.1)	18 (48.6)	14 (31.8)	24 (46.1)	81 (42.4)
Some would stay at home to look after their families *	N=58	N=37	N=44	N=52	N=191
Yes	16 (27.5)	7 (18.9)	14 (31.8)	24 (46.1)	61 (31.9)
No	42 (72.4)	30 (81.1)	30 (68.1)	28 (53.8)	130 (68.0)
Don't know	N=58	N=37	N=44	N=52	N=191
Yes	13 (22.4)	11 (29.7)	8 (18.1)	10 (19.2)	42 (21.9)
No	45 (77.5)	26 (70.2)	36 (81.8)	42 (80.7)	149 (78.0)

* Chi-square p=0.042

20. Replacement staff required to maintain practice during a major outbreak

About three quarters of family physicians (72% males, 77% females) thought that there would **not** be enough replacement staff to maintain their practice if some workers were away in a major outbreak. Regionally, similar results were found, where between 68- 79% of physicians thought there would not be enough replacement staff to maintain their practice in the event of a major outbreak.

When asked to elaborate on this, 20 physicians commented they were not sure how their staff would react if they were concerned about the outbreak and that it is difficult to find staff. Some participants indicated they could use cross-trained nurses in clinics to help manage the shortage.

21. Obtaining Personal Protective Equipment

Most Alberta family physicians (59% of male physicians and 52% of female physicians) did not find it difficult to obtain personal protective equipment (PPE). However, 12% of men and 8% of women had difficulties obtaining procedural masks. Thirty-three percent of men and

37% of women encountered problems in obtaining N95 masks in their clinics, and 12% of men and 17% of women had trouble obtaining swabs for viral culture.

Looking at regional differences, less than 17% of physicians reported having trouble securing procedural masks regardless of the region they practice in. Similarly, less than 13% had trouble securing other personal protective equipment, and less than 30% had trouble securing swabs for viral cultures. Fifty-seven percent of Calgary physicians reported trouble obtaining N95 masks, statistically more than the other regions, where only approximately 25% of physicians reported trouble getting N95 masks ($p=0.001$). Calgary physicians also reported problems obtaining swabs for viral culture more often than the other regions ($p<0.001$). Edmonton, other urban areas and rural areas reported relatively fewer problems getting equipment, while only 27% of Calgary physicians reported no problems in obtaining equipment ($p<0.001$).

When asked to elaborate on the challenges in obtaining PPE, 18 physicians commented that supplies are unavailable, 9 had problems with N95 mask fitting, and 2 said the supplies were expensive.

Additional participant comments

Fifty-two participants provided general comments at the end of the survey. Most believed that AHS is “not frank” about the situation and must do more to provide service and support for physicians. They also think AHS has not done enough to help them cope so far with the outbreak. Some indicated that there is a gap between AHS policy and actions, and that the media is responsible for increasing public anxiety, which increases physician workloads. Finally, if AHS requires Alberta physicians to wear masks and other PPE, they must make this equipment easily accessible and make only practical policies if they expect physicians to adopt them.

Summary

Despite our best effort, the overall response rate was only 22%. The survey was completed and returned by 192 physicians. The large majority of family physicians had encountered H1N1 in their clinics, but their practices had not been greatly affected by the recent H1N1 outbreak. Over half of Alberta family physicians said they have experienced anxiety and worry about the H1N1 influenza

outbreak, which affected both their personal lives and practices. Some family physicians reported that they might choose not to work during an outbreak, however, the majority of physicians indicated that they would likely continue to work despite a severe outbreak.

There are some circumstances in which Alberta could face more physician shortages, as some would not work in certain situations. This affects more female physician practices as they would refuse working under certain circumstances, such as if they may jeopardize their children's health, or if their colleagues were dying. Rural areas would face some difficulties if rural practicing doctors were asked to work in a different practice than usual.

The majority of respondents indicated that their clinics did not have a plan in the event of a severe outbreak. Edmonton physicians reported the lowest percentage of clinics with a plan for an outbreak. About three quarters of family physicians think that there would not be enough replacement staff to maintain their practice if some workers were away in a major outbreak.

Regional differences were also found for precautions taken in clinics. The most common precaution taken by all clinics was providing hand sanitizer for patients to use.

Despite of increasing the hand washing behaviour from pre- to post-outbreak, 25% of respondents in Edmonton reported that they never wash their hands between patient encounters either pre- or post-outbreak.

Compared to before the H1N1 outbreak, there was an improvement in proportion of respondents wearing masks across all 4 different regions. Most Alberta family physicians did not find it difficult to obtain personal protective equipment. Calgary physicians reported difficulties in obtaining N95 masks and swabs for viral culture more often than the other regions.

AHS is the main source of providing information during a pandemic. Responses regarding information sharing did not greatly vary by region. The majority of physicians from all regions agreed that the information provided by AHS was adequate, practical, up-to-date and timely. However, some physicians would like to see AHS provide higher quality information. Sixty-

four family physicians commented that AHS can improve the communication line between them and AHS by providing physicians with more direct and practical information, including information on vaccines, more up-to-date information and informing physicians of new policies in a timely manner; and providing a daily short fax with current information on the outbreak.

CONCLUSIONS

The initial wave of pandemic H1N1 affected Alberta family physicians' practices mildly. The survey was conducted in September and early October just before the fall epidemic had begun. The results therefore reflect doctors' learning from the first wave, and expectations of a severe epidemic. Their opinions are likely to have developed further due to experience of the second wave. The results nonetheless may be useful for planning future epidemics.

Physicians in rural communities often responded differently to questions compared to physicians from other regions. The outbreak revealed some weaknesses and deficiencies in their practices, which need to be improved in order to better deal with pandemics. Many physicians indicated they did not have a pandemic plan in place for the fall/winter. The study shows overall the communication from AHS was well received; however, there are opportunities to improve communication to family physicians. Greater effort needs to be exhibited by all levels of the health care system to ensure that proper policies and practices are enacted in physician offices and clinics.

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APPENDIX
Survey Questionnaire



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Part A: Attitude toward the H1N1 (swine flu) outbreak

1. How much are you worried about being infected by H1N1 (swine flu) due to the nature of your job?

Very worried Worried Not worried at all

2. Are you worried about bringing infection home to your family from your work?

Very worried Worried Not worried at all

3. Has H1N1 (swine flu) outbreak affected your life? Yes No

If Yes, how?...

4. Do you agree that doctors living with children under 16 years old at home should have an option of not dealing with influenza cases in flu outbreaks?

Strongly agree Agree Neutral Disagree Strongly disagree

5. If there was an outbreak of influenza how likely is it that you would work in the following circumstances?

	Likely	Don't know	Unlikely	N/A
A. If there was a greater than usual risk of becoming infected at work and falling ill yourself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. If there was a greater than usual risk of infecting your family at home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C. If you were asked to take on different or additional work/duties for which you have not been trained	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. If you were asked to work more hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E. If schools/nurseries were closed or other childcare services were disrupted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F. If your children fell ill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G. If your spouse/partner fell ill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H. If you or your spouse/partner were pregnant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I. If your colleagues were dying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
J. If you were asked to work at a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

different hospital/healthcare practice from normal

K. If there was a shortage of fuel, leading to disruption of transport (private or public)

L. If you had to make decisions about not treating certain patients because of resource constraints

M. If you had to work with untrained volunteers or workers brought out of retirement

Part B: Clinical Services

6. During the peak anxiety of the recent H1N1 (swine flu) outbreak, what changes in service demand did you notice in your practice?

- Higher demand for services (seeing more patients)
- No change in service demand
- Lower demand for services (seeing fewer patients)
- Others ...

How much difference did this demand make to your ability to provide patient care?

7. Have you encountered any patient with suspected H1N1 (swine flu)?

No Yes Approximate numbers of, Suspected cases

Confirmed cases

8. Does your practice have a plan that you would follow if there is a severe influenza outbreak in the fall/winter? Yes No

Please tell us about this or attach a copy.

9. What is your protocol when a patient with suspected H1N1 flu contacts your clinic? (Check all that apply)

- Advise the patient to stay at home
- Refer the patient to Health Link
- See the patient in the clinic
- Collect specimen for laboratory diagnosis
- Prescribe antiviral medications
- Report cases to your local Medical Officer of Health
- Send the patient elsewhere (e.g. emergency)
- Others, Please tell us about this.....

10. Influenza-like illness has classically been defined as acute onset of FEVER AND COUGH and one

of: sore throat/myalgia/arthralgia/prostration.

During the last 3 months, did you collect viral culture specimens from patients presenting *Outside*

this exact definition? Yes No

What factors influenced your decision to collect a specimen?

Part C: Internal Environment of FP

11. Since April, 2009, what precautions has your clinic taken to reduce patient-to-patient

transmission? (Please check all that apply)

- Sign at the door
- Provide masks for the patient at the door
- Provide hand sanitizer for patients to use
- Maintain a 6 feet/2 m spatial separation between patients while waiting
- Isolate ILI patient in a separate room
- Separate receptionists from patients by 6 feet /2 m
- Direct patients with fever & cough to go elsewhere
- No new precautions taken
- Others, Please tell us about this.....

12. What proportion of your potential influenza patients:

	Nearly all	Most	more than half	less than half	few	very few
Informed you of their fever and cough						
Wore the masks properly in the office						

Comments on patient behaviour as you saw it:

13. In your practice do you wash hands with alcohol-based hand sanitizer between patient encounters?

	Always	Mostly	Sometimes	Never
BEFORE H1N1 (swine flu) outbreak				
SINCE H1N1 (swine flu) outbreak				

14. In some countries, doctors customarily wear masks when seeing patients with respiratory infection. Did/ Do you and your staff wear a mask when seeing patients with respiratory symptoms?

		Always	Mostly	Sometimes	Never
Before H1N1 (Swine flu) outbreak	You				
	Your staff				
Since H1N1 (Swine flu) outbreak	You				
	Your staff				

If **Never**, why?

You:.....

Your staff:.....

15. Alberta Health and Wellness recommends the use of Personal Protective Equipment (Gown, Gloves, Mask, and Eye/Face shield) when taking a nasopharyngeal (NP) swab from a patient with Influenza

Like Illness. Are you able to use these precautions?

	Always	Mostly	Sometimes	Never
Wear gloves				
Wear a gown				
Wear an eye/face shield				
Wear a procedural mask				
Wear a N95 mask				

16. Where did you get the up to date information on H1N1 (swine flu) influenza during the recent H1N1 (swine flu) outbreak?(check all that apply)

- Correspondence (fax, email) from AHS
- Professional websites such as AMA, CPSA, CMA, PHAC, WHO (**Circle which one**)
- Seminars organized by professional bodies
- Media (TV, Newspaper)
- Clinic manager
- Colleagues
- Others, Please tell us about this.....

17. If you have received information about H1N1 influenza from Alberta Health Wellness or Alberta Health Services(AHS), what do you think about the information which you have received?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	N/A
The information was adequate						
The information was practical						
The information was up to date						
The information was timely						
I agree with all provided information						

A. What other information, if any, would you have liked to receive during an outbreak?

B. What can AHS do to better provide you with the information you need during an outbreak?

18. Who is responsible for educating staff in your clinic during an outbreak?

- Family physician
- CARNA** (College and Association of Registered Nurses of Alberta)
- Other professional associations.....

19. How do you think your staff would react if there is a major outbreak?

- They would all continue working on their regular work hours
- Some would be fearful to deal with patients with ILI symptoms
- Some would stay at home to look after their families
- Don't know

20. Do you think you would have enough replacement staff to maintain your practice if some were away from work in a major outbreak? Yes No

Comments:....

21. Has your clinic encountered problems in obtaining any of the following protective equipment?

- Procedural masks
- N95 Masks
- Other protective equipment
- Swabs for viral culture
- No problems

Please tell us about this.....

Part D: Basic Demographic Information

- A. Gender Male Female
- B. Age group: 25-34 35-44 45-54 55-64
 65+
- C. Years in clinical practice (Anywhere in the world).....
- D. How long have you worked in *your current* clinic?.....
- E. Country of primary medical education
- F. Have you done residency training in Canada? Yes
 No
- G. How many hours a week are you in clinical practice?
- H. How many patients on average do *you* see in your clinic per usual clinical full day?
- I. Number of different family physicians working regularly in your clinic
- J. Does your clinic usually see urgent patients on the same day they call?
 Yes No

Is there anything else you would like to tell us about your perception of the H1N1 outbreak, how it affected you and your practice, and how Alberta Health Services & Public health authorities should help front line doctors to maintain services?

Thank you very much for completing the survey. Please fax to (403) 270-4329 or mail to 1635-1632-14 Ave NW, Calgary, AB, T2N 1M7