Primary care physicians in Hong Kong and Canada—how did their practices differ during the SARS epidemic?

Samuel Yeung Shan Wong, William Wong, Liisa Jaakkimainen, Susan Bondy, Kwong Ka Tsang and Albert Lee


Background. Hong Kong and Canada have very different primary health care systems. We thus hypothesized family physicians between the two places would be different in how they protected themselves, their staff and families during the epidemic.

Objective. The purpose of this study was to explore and contrast the impact of SARS on family physicians in Hong Kong and Toronto.

Methods. A postal questionnaire was designed and sent to 183 tutors affiliated with the Chinese University of Hong Kong with 137 replies (74.8%). In Toronto, 150 questionnaires were sent to academic family physicians affiliated with the University of Toronto with 51 replies (34%).

Results. All agreed SARS had changed their clinical behaviour. For public health measures in the control of SARS, Hong Kong physicians were less likely to quarantine themselves (77.1% versus 19.4%, \( P < 0.01 \)) or gave quarantine leave to staff (95% versus 59.7%, \( P < 0.01 \)) after exposure to probable or suspected SARS. However, they were more likely to wear a mask (52.7% versus 97.7%, \( P = 0 \)) during consultation, having support staff to wear masks (68.6% versus 97.8%, \( P = 0 \)) and test patient’s temperature (47.1% versus 68.1%, \( P < 0.01 \)).

Conclusion. There were noticeable differences in how family physicians deal with SARS between the two cities. As SARS emerged as a global disease, better understanding of practice differences among physicians from different countries would facilitate globalization of public health.

Keywords. Family physicians, Hong Kong, SARS, Toronto.

Introduction

Severe acute respiratory syndrome (SARS) was diagnosed in 8422 patients in 31 countries worldwide from November, 2002 to August, 2003.\(^1\) Hong Kong was only 2nd to mainland China in having the number of infected cases. Canada has the 4th largest number of infected cases. It is also the country affected with the largest number of cases outside of Asia.\(^1,2\)

Although the outbreak occurred in hospital settings initially, clusters of cases were also identified in the community. Family physicians, who are the front-line health workers in the community, play an important role in the prevention and control of the spread of the disease.

Both differences in the severity of the epidemic and practice differences in Hong Kong and Canada would likely affect family physicians’ clinical practice behaviours during the SARS epidemic. To investigate this, the current study was conducted to explore and contrast the practice patterns of family physicians between the two places in how they deal with SARS.

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Methods

We used the impact of SARS survey (Appendix 1) to study the clinical practices of primary care physicians in dealing with SARS for both cities. The rationale and process of developing the questionnaire was described elsewhere.

The survey was sent to all family medicine tutors (195 tutors) affiliated with the Chinese University of Hong Kong at the end of May in Hong Kong. In Canada, the same survey with modifications (e.g. Department of Health in Hong Kong was changed to Ministry of Health in Canada) was sent in the middle of June to 150 academic family physicians affiliated with the University of Toronto as part of a large survey conducted on all family physicians in the Greater Metropolitan Toronto. Both surveys were sent by postal mail and a reminder with a copy of the questionnaire was posted again two weeks after the first mailing. In this study, differences in clinical practices and precaution procedures in the two cities will be compared by the use of chi-square tests. Bonferroni method was applied for the statistical analysis.

Results

A total of 183 questionnaires were sent to clinical tutors in Hong Kong with 137 replies (74.8%). In Toronto, 51 replies (34%) were received from academic family physicians (out of 150). Physicians from Canada and Hong Kong were comparable in their age and post-graduation qualification (qualification received after their medical degree). However, there were significantly more males in the Hong Kong sample (P > 0.05 by chi-square test). In the Hong Kong sample, 84 (61.3%) respondents have encountered confirmed or suspected SARS cases from the community. However, in the Toronto sample, only 13 (26%) respondents have encountered confirmed or suspected SARS cases from the community.

Changes in patients’ behaviour and doctors’ practice

Significant differences were seen between the two cities in how their family physicians deal with SARS in their practices (Table 1). Surprisingly, Hong Kong physicians reported that they were less likely to quarantine themselves after contact with probable or suspected SARS cases (19.4% versus 77.1%, P < 0.01) and reported that they were less likely to give quarantine leave to staff (59.7% versus 95%, P < 0.01) when compared to their Canadian colleagues. Moreover, they were also less likely to close their clinics due to SARS (37.5% versus 7.4%).

For public health measures in the control of SARS, more physicians in Hong Kong tested patient temperature as a routine procedure (68.1% versus 47.1%, P < 0.01), wore a mask during consultations (97.7% versus 52.9%, P < 0.01) and had their support staff wear masks (97.8% versus 68.6%, P < 0.01).

Discussion

Our study is limited by the poor response rate from the Canadian family physicians. Despite this, there were some important findings. One important finding is that although Hong Kong physicians engaged in more public health measures when compared to their Canadian counterparts, they were less likely to quarantine themselves or close their clinics due to SARS. We speculate that this

<table>
<thead>
<tr>
<th>Table 1 Change of physicians' behaviour related to infection control</th>
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<tr>
<td><strong>Canada</strong></td>
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<tr>
<td>Tested patient temperature as a routine procedure</td>
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<tr>
<td>Always wear a mask during consultations</td>
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<tr>
<td>Cleaning the work surface with antiseptics at least once a day</td>
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<td>All support staff had to wear masks</td>
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<td>Gowns were worn for patient encounter</td>
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<td>Wash the hands between every patient</td>
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<tr>
<td>Close the clinic due to SARS</td>
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<td>Quarantine yourself until confirmation</td>
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<td>Quarantine yourself for 10 days</td>
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<tr>
<td>All these questions were asked and answered specifically in reference to SARS.</td>
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<td>*Statistically significant at 0.05 level.</td>
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<td>**Statistically significant after Bonferroni method applied the question “Did SARS affect your clinical practice” If Yes, in what way followed by 14 response options, one of which was “other”.</td>
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could be related to the practice settings of Hong Kong family physicians. In Hong Kong, most family physicians are in solo practices. As a result, it is less flexible for them to take leave or quarantine themselves for worry that they may lose their patients and their income. In terms of public health measures taken by family physicians, more measures were taken by family physicians in Hong Kong when compared to that of Toronto. As the outbreaks were larger and occurred at the community level in Hong Kong, the sense of alertness and vulnerability for possible infection in family physicians could be higher in Hong Kong. Moreover, Hong Kong has also launched public health initiatives through ‘setting approach’ and ‘community development model’ such as Hygiene Charter, Healthy Cities in helping the society fight against SARS, as a result, the whole community is highly alert of the disease. On the other hand, in Toronto, both outbreaks occurred in the hospital settings, which probably had made physicians less vigilant to take precautions in their community practice to prevent infection.

SARS was and will remain a challenge to any health care system. As we see that there were differences in practices between the two cities in how their family physicians deal with SARS, better understanding of practice differences among physicians from different cities would facilitate globalization of public health. This would allow practitioners in various jurisdictions to become well informed about any new developments with rapid communications and sharing of ideas as to how to control not only SARS, but any new infectious diseases.

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Declaration

Funding: none.

Ethical approval: the study was approved by the Joint the Chinese University of Hong Kong and NTE Survey and Behavioural Research Ethics Committee.

Conflicts of interest: all authors are editors of EBMG.

References

3 Wong W, Lee A, Tsang K et al. How did community doctors protect themselves, their family and staff during the SARS epidemic in Hong Kong? J Epidemiol Community Health 2004; 58: 180–185.

Appendix 1

The Impact of the SARS epidemic on Family Physicians and General Practitioners in the Greater Toronto Area

Please answer the following questions in relation to your experience during the peak of the SARS epidemic in April 2003.

Number of rank placed here.

Where did you get your information regarding Severe Acute Respiratory Syndrome (SARS)?

Please RANK the following options from 1–6, with 1 being the most likely source and 6 being the least likely source. Enter 0 for any option(s) that do not apply.

Correspondence from government or semi-government institutions (RANK1)
Seminars or meetings organized by professional bodies (RANK2)
Professional websites such as WHO/CDC (RANK3)
Other websites (RANK4)
Newspaper/magazines (RANK5)
Television news/programs (RANK6)

Other (please specify):_____________________________________

Note the codes are the numbers after the question. For the above questions 77 = checked (no rank provided). 99 and M are both used to indicate missing (coding variation!)

How frequently would you have wanted updates on SARS? (FREQUENT)

☐ Daily 1 ☐ Twice weekly 2 ☐ Weekly 3 ☐ Every two weeks 4 ☐ Monthly 5

Yes is always = 1 and No = 0
Have you ever received any formal training in the handling of an infectious disease outbreak in primary care? (OUTBREAK)  □ Yes  □ No
Do you think you are capable of diagnosing SARS? (CAPABLE)  □ Yes  □ No
If not, do you think more training would help? (MOREED)  □ Yes  □ No

What kind of training would be MOST appropriate for helping you diagnose SARS? (check only one answer) (MOSTSARS and SARSOTHER)
□ Internet 1  □ Seminars/lectures 2  □ Reading materials sent by mail 3
□ Organized workshops 4  □ Medical school 5  □ Other (please specify)

What kind of training would be MOST appropriate for helping you handle an infectious disease outbreak? (check only one answer) (MOSTOUT and OUTOTHER)
□ Internet 1  □ Seminars/lectures 2  □ Reading materials sent by mail 3
□ Organized 4  □ Medical school 5  □ Other (please specify)

Have you encountered any confirmed, probable, or suspected SARS patients? (SARSPTS)  □ Yes  □ No
If YES, how many cases did you encounter in total? Number______(TOTAL)
How many confirmed cases? Number______(CONFIRM)
How many probable cases? Number______(PROBABLE)
How many suspected cases? Number______(SUSPECT)

The purpose of this section is to determine your attitudes toward SARS. A continuous scale accompanies each item with an extremely positive response at one end and an extremely negative response at the other end. Mark an “X” along the scale at the point which best reflects your view.

Were you frightened of dealing with SARS as a front-line doctor in the community? (FRIGHT)
Extremely frightened ______________________________ Not frightened at all

Were you worried about infecting your family due to your job? (WORRY)
Extremely worried ______________________________ Not worried at all

Was your family worried about being infected by you due to the nature of your job? (FAMILY)
Extremely worried ______________________________ Not worried at all

Did SARS affect the quality of your life? (QUALITY)
Extremely affected ______________________________ Not affected at all

Checked = 1 and not checked = 0

Did SARS affect the behaviour of your patients? (PTBEHAVE)  □ Yes  □ No
If YES, in what way (check all that apply).
□ More doctor visits. (BEHAVE1)
□ Fewer doctor visits. (BEHAVE4)
□ More visits for depression/anxiety. (BEHAVE2)
□ More appointment cancellations. (BEHAVE5)
□ More patients hesitant to go to an emergency room after being advised to go. □ Other (please specify)
(BEHAVE3)

Did SARS affect your clinical practice? Yes No (PRACTICE)
If YES, in what way (check all that apply).

- □ Insisted every patient wear a mask (PRACT1)
- □ Kept a greater distance between yourself (PRACT2)
- □ Requested more blood tests and/or chest X-rays (PRACT3)
- □ Family practice appointments postponed/celled (PRACT4)
- □ Surgical procedures postponed/celled (PRACT5)
- □ Longer wait time for labs and investigations (PRACT6)
- □ Saw some patients faster (PRACT7)
- □ Tested patient temperature as a routine p (PRACT8)
- □ Avoided physical examinations (PRACT9)
- □ Advised patients not to travel to affected a (PRACT10)
- □ Specialist appointments postponed/cancelled (PRACT11)
- □ Difficult/unable to make specialty referrals (PRACT12)
- □ Requested more blood tests and/or chest X-rays (PRACT3)
- □ Advised patients not to travel to affected a (PRACT10)
- □ Family practice appointments postponed/celled (PRACT4)
- □ Surgical procedures postponed/celled (PRACT5)
- □ Longer wait time for labs and investigations (PRACT6)
- □ Saw some patients faster (PRACT7)
- □ Tested patient temperature as a routine p (PRACT8)
- □ Avoided physical examinations (PRACT9)
- □ Advised patients not to travel to affected a (PRACT10)
- □ Specialist appointments postponed/cancelled (PRACT11)
- □ Difficult/unable to make specialty referrals (PRACT12)
- □ Over prescribed antibiotics (PRACT13)
- □ Other (please specify)_________

Did you close your clinic due to SARS? Yes No (CLOSE)
If YES, for how long? ________ days (YESCLOSE)

Did you wear a mask during consultations? (WEAR)
- □ Always 1
- □ Sometimes 2
- □ When needed (please specify) _________ 3
- □ Rarely 4
- □ Never 5

How often did you wash your hands? (check one answer) (HANDS)
- □ Between every patient 1
- □ After examining a patient 3
- □ After seeing a patient with flu-like symptoms 2
- □ After contact with a suspected case 4
- □ Other (please specify)_________________________________

What other precautions did you undertake to prevent SARS in your clinic? (check all that apply)
- □ Goggles were worn for patient encounters (CAUTION1)
- □ Gowns were worn for patient enc (CAUTION5)
- □ Cleaning the work surface with antiseptics at least (CAUTION2)
- □ All support stf had to wear disposable (CAUTION6)
- □ All support staff had to wear masks (CAUTION3)
- □ All staff had their temperature taken (CAUTION7)
- □ Opened all the windows (CAUTION4)
- □ Other (please specify)_________

If you encountered a suspected/probable SARS case, would you quarantine yourself until confirmation? (QUARANT)
- □ Yes  
- □ No

If you encountered a confirmed SARS case, would you quarantine yourself for ten days from its first encounter? (DAYS10)
- □ Yes  
- □ No

If you encountered a confirmed SARS case in your clinic, would you grant quarantine leave to your staff? (GRANT)
- □ Yes  
- □ No

If YES, would it be a paid leave? (PAID)
- □ Yes  
- □ No

Did more staff take time off due to suspected or confirmed SARS? (STAFFOFF)
- □ Yes  
- □ No

What precautions were taken to protect your family? (check all that apply).
- □ Stayed away from home (FAMILY1)
- □ Wore a mask in your home (FAMILY2)
- □ Had a shower before contact with your family mem(FAMILY3)
- □ Sent your family away (FAMILY4)
- □ Washed your hands before entering (FAMILY5) our home
- □ Used regular disinfectant to clean your h(FAMILY6)
- □ Other (please specify)__________________

What is your age group?  
- □ Under 39  
- □ 40–49  
- □ 50–59  
- □ 60 or over

Your gender?  
- □ M  
- □ F
How many years have you been in practice? (MANYYRS)

☐ 0–5 years 1  ☐ 6–10 years 2  ☐ 11–20 years 3  ☐ 20–30 years 4  ☐ More than 30 y 5

Do you have any post-graduate qualification? (POSTGRAD)  ☐ Yes 1  ☐ No 0

Is your primary practice setting located in a hospital? (HOSPITAL)  ☐ Yes 1  ☐ No 0

How many patients do you see in your office/clinic per week?  ☐ 75 or less 1  ☐ 76–150 2  ☐ More than 150 3

Thank you for taking the time to fill out this questionnaire.