SARS and biothreat preparedness – a survey of ACT general practitioners

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Abstract

In late 2003 and early 2004 the ACT Division of General Practice and ACT Health conducted two concurrent surveys designed to identify knowledge, attitudes and practices of Australian Capital Territory (ACT) general practitioners around severe acute respiratory syndrome (SARS) and biothreat preparedness. One survey asked individual general practitioners (GPs) about how they gathered information about SARS in 2003, how they preferred to receive information, current practices, and how they perceived the threat of SARS and other infectious agents. The second survey asked practice principals how they organised their practice to respond to the SARS threat in 2003, any difficulties they had with implementing this response, use of SARS infection control guidelines, and current policies. The response rate for the individual GP survey was 48 per cent (184/381) and the response rate for the practice organisation survey was 54 per cent (74/136). GPS used many sources of information on SARS during the 2003 outbreak. Facsimiles from the ACT Division of General Practice were the primary source (17%) and facsimile was the preferred method of receiving information in future outbreaks. The majority of GP respondents felt adequately informed about SARS during the 2003 outbreak, but many general practices did not follow the national guidelines on telephone screening of patients, warning signs and having infection control kits available. The majority of practices reported that they had policies or procedures in place to isolate potentially infectious patients from others in the waiting room. GPs rated an influenza pandemic as a threat to themselves and their patients much more highly than SARS or bioterrorism. Suggestions and comments on how ACT GPs could be better prepared to respond to future outbreaks included the need for timeliness of information, information delivery mechanisms, communication issues, education, the availability of guidelines and protocols, planning, role delineation, the use of response teams, provision of equipment, and vaccination. Planning for future infectious disease outbreak events in the Australian Capital Territory should incorporate general practitioners so that the plans reflect what is a feasible response in the general practice setting. *Commun Dis Intell* 2005;29:277–282.

Keywords: communicable diseases, disease control, severe acute respiratory syndrome

Background

In 2003, an outbreak of a new infectious disease, severe acute respiratory syndrome (SARS), caused a global public health emergency.[1] In Australia, an extensive response was mounted to the potential threat of SARS.[2] The SARS outbreak was also seen as a test for other potential infectious disease threats, such as the possibility of an influenza pandemic, or deliberate release of a bioterrorism agent such as smallpox or anthrax.

SARS is an example of an emerging disease with a potentially significant impact on primary health care, including general practice. There was an expectation in Australia that general practitioners (GPs) would be prepared to deal with possible cases of SARS, including screening patients and having infection control equipment available. Guidelines for general practitioners on SARS were posted on the Australian Government Website in April 2003[3] and GPs were encouraged to access this site. In the Australian Capital Territory (ACT) information was distributed from the Deputy Chief Health Officer to the ACT Division of General Practice, which subsequently sent this information via facsimile to all ACT general practitioners. In addition, many other sources of information were available, including medical journals, medical newspapers and the general media.

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Little was known about the effectiveness of various methods of rapid communication with GPs, and what communication methods are preferred by GPs in situations of rapid change. It was also not known whether general practices were adequately prepared to deal with possible SARS cases and what would help them prepare for any similar event in the future.

During the outbreak, GPs in the Australian Capital Territory raised a number of concerns around preparedness for emerging disease events. These concerns included information dissemination, guideline implementation, infection control, equipment requirements and costs, occupational health and safety, and workforce issues. GPs were also concerned about appropriate roles, relationships, and the onus of responsibility between the acute care, primary care and public health systems. Similar issues were raised in other countries.[4]

In late 2003 and early 2004 the ACT Division of General Practice and the ACT Health conducted two concurrent surveys designed to identify knowledge, attitudes and practices of ACT general practitioners around SARS and biothreat preparedness. The intention of the surveys was to provide information to help plan for a more cohesive and consistent response to any future outbreak or bioterrorism event.

Methods

The study was approved by the ACT Health and Community Care Human Research Ethics Committee.

Two concurrent surveys were mailed from the ACT Division of General Practice in November 2003, a time at which the crisis of the SARS outbreak had abated:

- an anonymous mail survey to all 381 ACT general practitioners on the ACT Division of General practice database (the Individual GP Survey). The questionnaire asked about individual knowledge, attitudes and practices around SARS and biothreat preparedness. It also asked about preferences for communication with health authorities in an outbreak situation, and for suggestions on improving preparedness.
- an anonymous mail survey to all 136 ACT general practices on the Division of General Practice database, to be completed by the practice principal and/or practice nurse and/or practice manager (the Practice Organisation Survey). Practice principals were asked about how their practice responded to the SARS outbreak of 2003, and current policies and resources for SARS response and biothreat preparedness.

Practice principals were asked to complete both surveys—one in their capacity as practice principal from the perspective of the practice, and the other from the perspective of an individual GP.

The ACT Division of General Practice database of general practitioners was considered the most comprehensive available at the time for GPs' names and contact details. The database included all ACT GPs whether they were Divisional members or not.

Both surveys included a covering letter co-signed by the President of the ACT Division of General Practice and the ACT Deputy Chief Health Officer, a self-completion survey and a reply paid envelope. Two weeks after the initial mail-out reminder letters and duplicate surveys were sent out.

In late January and early February 2004, following an initial low response rate, all 136 ACT general practices were telephoned as a follow-up and encouraged to respond to the Practice Organisation Survey in particular.

Data entry and analysis were done in Epi Info 2002.[5] Analyses were based on the number of respondents who completed each question rather than the total number of respondents.

Results

Response rates

The response rate for the Individual GP Survey was 48 per cent (184/381), while the response rate for the Practice Organisation Survey was 54 per cent (74/136). Twenty-seven surveys were posted following the telephone reminder calls. This lifted the response rate for the practice organisation survey from 40 per cent to 54 per cent. Response rates to individual questions ranged from 91 per cent to 100 per cent.

Individual GP Survey

Of the GPs who responded to demographic questions, 54 per cent were female, 69 per cent were in the 41–60 years age group and 61 per cent worked seven or more sessions per week in general practice.

GPs reported that during the 2003 SARS outbreak they used many sources of information, particularly facsimiles and newsletters from the ACT Division of General Practice, but also websites, the Australian Government hotline, medical journals, medical newspapers and the mainstream media (Figure 1). When asked how they would prefer to receive information in the future in the event of a serious outbreak GPs nominated facsimile (38%), the Division of General Practice newsletter (13%), the Australian Government Department of Health and Ageing website (8%)

Figure 1. Sources of information on severe acute respiratory syndrome used by Australian Capital Territory general practitioners during the 2003 outbreak (n=875)

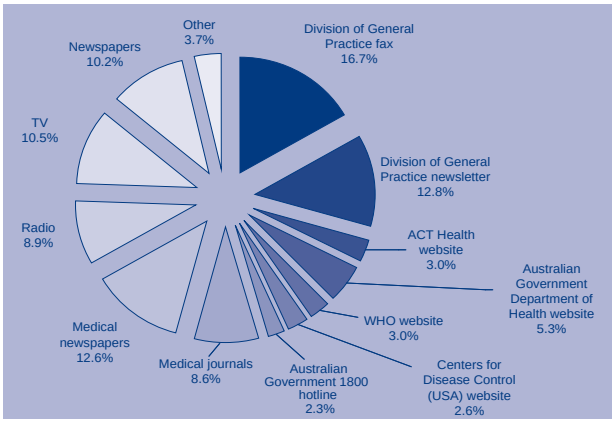
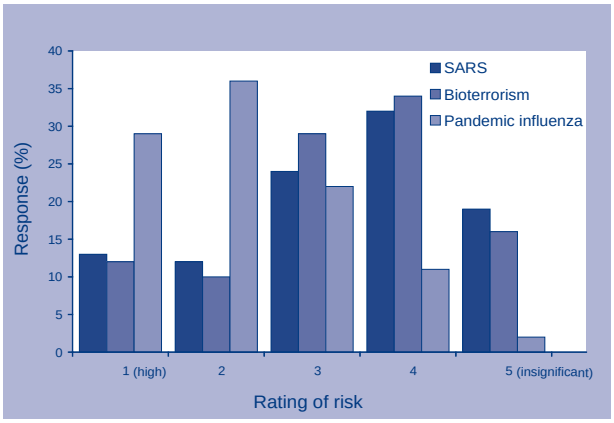


Figure 2. Australian Capital Territory general practitioners' ratings of the risk of severe acute respiratory syndrome, bioterrorism and pandemic influenza as a threat to themselves and their patients (n = 173)



and the ACT Health website (7%). Other responses included the mainstream media, the medical media, other websites, a hotline, email and mobile phone messaging.

The majority of respondents stated that they felt adequately informed about the SARS outbreak in 2003 (83%), about the threat to health care workers (76%) and about the recommended response to a suspected SARS case presenting to their practice (70%).

When asked about current practices, 32 per cent of GP respondents reported they always asked patients with a fever about travel (66% sometimes ask) and 19 per cent asked patients with respiratory symptoms about travel (74% sometimes ask).

Fifty-five per cent of GP respondents reported having an influenza vaccine every year, 23 per cent most years and 22 per cent reported that they never have an annual influenza vaccine. Seventy-two per cent of respondents had previously been vaccinated against smallpox and 59 per cent would be prepared to be vaccinated against smallpox if a realistic threat were identified. Fifteen per cent responded that they were not prepared to be vaccinated against smallpox and 25 per cent said they did not know.

GPs rated an influenza pandemic much more highly as a threat to themselves and their patients than SARS or bioterrorism. (Figure 2).

There were 67 suggestions or comments about how ACT GPs could be better prepared to respond to future outbreaks. These covered a number of topics including: the need for timely information; effective information delivery mechanisms; better communication within and between health agencies; education and training needs; the need for appropriate and useful guidelines and protocols; disaster and outbreak planning; the need for clear role delineation in outbreak responses; the use of response teams or centralised assessment centres; funding and provision of specialised equipment; and vaccination.

Practice Organisation Survey

Practice principals or their representatives reported that during the 2003 SARS outbreak there was variability in the way patients were screened and in the way the practices prepared for possible SARS cases. Patients were more likely to be screened when they presented at the surgery than by phone, and 30 per cent or more of patients were not screened (Table). Many practices did follow other preparedness recommendations, such as the placement of SARS advisory signs and having surgical masks available (Table).

The majority of respondents (67%) reported no problems with implementing a screening process to identify suspected SARS cases in the practice. Screening measures ceased within two months of the end of the outbreak in 49 per cent of practices.

The *Australian Government SARS Infection Control Guidelines for General Practice* were accessed by 46 per cent of respondents and, of these, 79 per cent found them useful. Of the four practices that did not find the guidelines useful, a number of reasons were cited, including that: there were other sources of guidelines, the guidelines were not appropriate for general practice, the guidelines were 'overkill', and the practice had no suspected cases.

Table. Reported patient screening and preparedness responses consistent with *Australian Government SARS Infection Control Guidelines for General Practice* by Australian Capital Territory general practices during the 2003 severe acute respiratory syndrome outbreak

Question: During the 2003 SARS outbreak did your practice	Number of respondents	Yes		Don't know		No	
		n	%	n	%	n	%
Ask patients about travel when they rang for an appointment?	72	30	42	3	4	39	54
Ask patients about fever when they rang for an appointment?	73	21	29	5	7	47	64
Ask patients about travel when they presented at the surgery?	71	44	62	4	6	23	32
Ask patients about fever when they presented at the surgery?	73	39	53	7	10	27	37
Have an identified person in the practice who regularly checked which countries / regions were currently SARS affected?	73	31	43	0		42	58
Have a SARS advisory sign at the entrance to the surgery?	74	43	58	0		31	42
Have surgical masks available for suspected SARS cases to put on in the waiting room?	74	52	70	0		22	30
Buy new equipment specifically to deal with SARS?	70	35	50	0		35	50

SARS Severe acute respiratory syndrome.

Fifty per cent of respondents reported buying equipment specifically to deal with SARS. Equipment purchases included surgical masks (22%), disposable gowns (17%), disposable gloves (11%), hand cleaning products (10%), thermometers or thermometer covers (9%), disinfectants (8%), protective eyewear (8%) and P2 (N95) masks (8%). Cost of the new equipment ranged from $10 to $1,000 (median $200). Many respondents had problems obtaining equipment, including reduced availability, cost and long waiting times.

The majority of respondents (65%) reported that they currently had policies or procedures in place in their practice to isolate potentially infectious patients from others in the waiting room, and 81 per cent reported they had a separate room available for isolation. Forty-nine per cent of respondents reported the practice had a practice nurse and, of these, 61 per cent of practice nurses were trained in triage.

When asked for comments on how general practices could be assisted to better prepare for future outbreaks, there were 38 responses. Many of these echoed the responses in the Individual GP Survey. Comments included the need for timely information, detailed guidelines appropriate for general practice, workshops and practical scenario style education, organised supply of equipment, greater public education, planning which includes GPs, more money and response/crisis teams.

Discussion

These surveys demonstrate general practice responses in the Australian Capital Territory to the 2003 SARS outbreak, and GP knowledge, attitudes, policies and practices regarding biothreat preparedness.

Targeted and timely information dissemination to health practitioners from a recognised authority is important during a public health emergency such as the SARS outbreak. GP respondents reported facsimile to be the most frequent method by which they obtained information about SARS during the 2003 outbreak. Facsimile was also GPs' preferred method for receiving timely information about any future outbreak or event. A facsimile stream from the ACT Division of General Practice to all general practices in the ACT requires relatively small resources to achieve fairly comprehensive coverage. However, this should not preclude exploration of other methods of rapid communication with GPs for use in public health emergencies. In particular, electronic information dissemination may become more common as its day-to-day use increases in general practice. Methods such as email and mobile phone messaging (SMS) were preferred by some respondents and these have also been suggested in New South Wales.[6]

For the purposes of this study, and for rapid public health communication with GPs, the ACT Division of General Practice database was considered the most comprehensive list of ACT GPs and general practices. Other possible sources of GP lists were pathology provider or hospital databases.[7] Since the survey, the Australian Capital Territory has moved ahead with the development of a single service provider database, which will be used across the Australian Capital Territory by public hospitals and the ACT Division of General Practice. This should increase the accuracy of mailing lists as the database will have daily use and regular updating. In South Australia, a GP registry has similarly been developed for rapid communication between public health authorities and primary care providers.[8]

While the majority of GP respondents felt adequately informed about SARS during the 2003 outbreak, fewer than 50 per cent of practices accessed the national SARS guidelines for general practice on the Australian Government website. Practices may have had access to the guidelines from other sources, but many practices did not routinely follow the recommendations in the guidelines. While this survey did not probe the reasons for compliance (or non-compliance) with the guidelines, it is possible GPs did not perceive SARS as a significant enough threat to themselves or their patients and were reluctant to change routine practices. In Hong Kong at the time of the SARS outbreak, GPs independently instituted preventive measures in the absence of specific guidelines.[9] In this case the perception of risk to GPs was realistically high. In Australia, lack of compliance with the guidelines may also reflect difficulties in their implementation in the general practice setting.

The National Health and Medical Research Council recommends that health care providers are vaccinated against influenza[10] but we found that only 55 per cent of GP respondents had an annual influenza vaccination. Such immunisation protects the GP themselves and is recommended in order to protect patients who are at high risk. GPs' reasons for and against their own immunisation is an issue which could be explored further. Similar vaccination levels have been reported in an Australian tertiary hospital, and coverage was not improved by the introduction of a hospital vaccination policy.[11,12] New strategies to improve vaccination coverage in general practice staff also need to be investigated.

Appropriate immunisation of staff and appropriate infection control procedures are linked to general practice accreditation through the Royal Australian College of General Practitioners *Standards for General Practice.*[13] However, even universal application of these standards may not be adequate in special circumstances such as the SARS outbreak, when special precautions need to be put in place. Continuing professional development for GPs about biothreats and other emerging disease events could provide opportunities to raise awareness of biothreat preparedness issues and to engage GPs in biothreat response planning.

General practitioners in the Australian Capital Territory considered pandemic influenza to be a more important threat to themselves and their patients than SARS or bioterrorism. Consequently, GP engagement in planning for infectious disease outbreaks may be higher if based around influenza rather than other agents. Planning for an influenza pandemic is also likely to be applicable to other disease scenarios, such as a SARS outbreak or a bioterrorism event.

Barriers identified by GPs in implementing the SARS guidelines should be taken into consideration when planning for possible outbreak or bioterrorism events. Issues include effective communication methods, clear role delineation for all participants in a response, the use or otherwise of response teams or centralised assessment centres, and supplies of specialised equipment. In addition, issues around remuneration for general practitioners who participate in public health activities (such as response teams) need to be considered in advance of a serious outbreak, particularly where such activities are not billable under the Medicare Benefits Scheme. Many of the barriers to an effective response raised by ACT GPs have been recognised internationally. A review of the SARS outbreak in Hong Kong and Toronto provided recommendations on: improving communication; integration of health services; surge capacity; infection control policies, plans and procedures; and occupation health measures.[14]

Limitations of this study include response rates, overlap between surveys and self-reporting. The response rates of 48 per cent for the Individual GP Survey and 54 per cent for the Practice Organisation Survey mean that the results may not be able to be generalised to the whole of the general practice population of the Australian Capital Territory. As the responses to the surveys were anonymous, it was not possible to obtain information about the non-responders. Reminder telephone calls to general practices improved the response rate to the Practice Organisation Survey and this technique could be used in future surveys. A number of practice principals would have completed both the Individual GP Survey and the Practice Organisation Survey. While the questions in the surveys were different, it is possible that possible that practice principals may have answered differently because they saw both questionnaires. Self-reported behaviour does not neces-

sarily represent actual practice, and could result in an overestimation of compliance with guidelines. As our survey was anonymous and voluntary we consider this is unlikely to have significantly affected the validity of our results.

Australia's only confirmed case of SARS in 2003 was identified retrospectively and was seen not by a hospital but by a general practitioner.[15] This highlights the importance of effectively including general practitioners in preparing for any future serious outbreak of an emerging infectious disease. The findings of our study show some strengths in general practice but also highlight areas where improvements can be made. In particular, planning for future emerging disease outbreak events in the Australian Capital Territory should incorporate general practitioners so that the plans reflect what is a feasible response in the general practice setting.

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