Severe acute respiratory syndrome — novel virus, recurring theme

SEVERE Acute Respiratory Syndrome has the hallmark of a modern plague. This infection has spread quickly across the globe, causing 506 deaths in the 7053 cases reported up to 8 May 2003 — a case fatality rate of 7%.[1] Promptly given the menacing acronym 'SARS', it has generated fear and panic, not least among health workers who are at particular risk of exposure. It threatens economies in the Pacific Rim, many of which are already in a parlous state. Despite extensive planning, efficient communication channels, rapid epidemiological analysis, and molecular diagnostic techniques, public health professionals are struggling to contain the illness.

Pathogens have evolved to take advantage of the movement of people. This has been at considerable human cost. The Black Death spread to Europe from China along trade routes converging in Mesopotamia. It marked a historical watershed between the Medieval and Renaissance periods by killing one-third of the European population. It took the great fire of London to halt a subsequent epidemic of bubonic plague. Cholera swept through the world early in the reign of King William IV of England, killing millions in its midst. Indeed, it was only after the second cholera outbreak in England in 1848 that the first Public Health Act was introduced.

A sudden genetic shift in the influenza virus led to a pandemic after the First World War. Influenza was spread by the mass movement of troops and killed more people than in the prior four years of combat. At its onset, one prescient general practitioner reflected:

> *'In Hull it began on a glorious summer's day in 1918 with the suddenness of some great catastrophe of nature. My first intimation of something amiss was the inordinate length of my visiting lists. I set off on my round and began to suspect the opening phase of a major tragedy.'*

What has been different and impressive about SARS is the speed with which the problem has been recognised and its aetiology discovered. A life-threatening acute respiratory illness was first reported in Guangdong Province, China, in late 2002. A Chinese doctor incubating the disease infected guests of a hotel in Hong Kong on 21 February 2003, before he was admitted to hospital.[2,3] Within days the illness had caused deaths, infected local health care workers, and travelled across the world to Toronto, Canada. It was already endemic in Vietnam and quickly spread to Taiwan and Singapore. By mid-March the World Health Organisation, in conjunction with the Center for Disease Control and Prevention in the United States had agreed a name, a case definition, and issued advice against non-essential travel to Hong Kong, Guangdong, and Hanoi.

The first probable case of SARS in the United Kingdom was reported on 19 March 2003. In the next six weeks (up to 29 April) five more probable cases were reported. Five cases acquired their infections in the Far East, the other from a symptomatic Hong Kong national during a business meeting in a Heathrow airport hotel. The Hong Kong man was diagnosed as a SARS case when he returned to Hong Kong. In the same period, there were over 200 other patients reported to the national Communicable Disease Surveillance Centre, of whom about half fitted the suspect case definition. Results of microbiological tests are awaited, which will lead to a re-classification of patients and more accurate counts of the cases in Britain. The case fatality rate may be lower than reported if more cases of mild infection become recognised.

Viral culture, serology, and polymerase chain reaction tests on affected persons have helped determine coronavirus as the likely principal aetiological agent causing SARS.[4] This small round RNA virus was first discovered in 1965. It takes its name from the crown of spikes around the virus seen on electron microscopy. Coronaviruses are responsible for about 10% to 15% of the annual proportion of common colds. Hardy viruses, they may be acquired through respiratory droplets or the faecal–oral route. There is some suggestion they may be transmitted by environmental contamination as well as by direct person-to-person spread. Coronaviruses are widespread in the animal community, causing hepatitis in mice, gastroenteritis in pigs, and bronchiolitis in birds. It is speculated that the more virulent SARS-associated coronavirus was produced as a result of genetic mutation in an animal host before being transferred to humans, as can occur with influenza viruses. The importance of a recently discovered respiratory virus — human metapneumovirus — as a cofactor has been mooted.[5] Although seroprevalence studies suggest that human metapneumovirus has been around for more than 50 years and all children have been infected by the age of five years, the clinical manifestations and epidemiology are yet to be fully described.[6] As the aetiology of SARS is completely unravelled it will be fascinating to discover whether human metapneumovirus has an accessory role.

To fulfil the case definition (see Box 1 for clinical symptoms), patients must have a history of contact with an infected individual or travel to an affected country. Once SARS becomes more widespread, this history will become less clear and the diagnosis more challenging, nowhere more so than in primary care. Most clinical descriptions are from hospitalised individuals and the clinical characteristics may be very different in a primary care population. In the early stages of illness SARS may be difficult to differentiate from other viral respiratory infections. Careful observation of clinical signs, like fever, dry cough, and breathlessness the in the absence of upper respiratory symptoms, such as sore throat and earache, could be important. The development of a rapid antigen test is underway, with a prospect of a near-patient diagnositic kit. The performance of this test in

- Fever >38^{0}C, cough, shortness of breath with or without new pulmonary infiltrate on chest X-ray.
- Other symptoms associated with SARS: headache, myalgia, diarrhoea, malaise, dizziness or confusion.
- Less common symptoms include loss of appetite, nausea or vomiting, coryza, sore throat, non-specific rashes.

Box 1. Clinical features used in the definition of SARS.

primary care will be crucial. To control SARS, it may not be sufficient to make a diagnosis of a 'viral infection'.

So, today, what action should general practitioners take when they suspect SARS? First, ensure the protection of their staff, other patients, and themselves by visiting high-risk individuals at home whenever possible, wearing protective masks and gloves. Then telephone a hospital chest or infectious disease physician to discuss whether hospital or home management is more appropriate. It will depend on the severity of illness. Some patients deteriorate rapidly and require assisted ventilation, but the results of intensive therapy with ribavirin, corticosteroids and broad-spectrum antibiotics have been disappointing. If the patient is admitted to hospital then the ambulance crew must be forewarned. If managed at home, then blood should be taken for acute and convalescent antibodies to secure a future diagnosis, and the patient advised to remain at home until fever free for 48 hours. Daily telephone contact asking of any increasing breathlessness would be prudent. It is important that surveillance is as complete as possible, and suspected cases should be reported to the local Consultant in Communicable Disease Control. Advice to institutions, such as schools and colleges, should be to say that there is no reason for exclusion for those with no symptoms. This guidance has significant resource implications for primary care. Additional funding through primary care organisations may be required.

There remain many unanswered questions about the first global epidemic of the 21st century. There is uncertainty whether coronavirus is the sole cause or another viral cofactor is important. The latent period, infectious period, and serial interval of the virus are unknown. Some individuals may be genetically susceptible to severe illness and some may act as super-infectors. The speed by which the scientific community develops a vaccine could be of huge importance. The true case fatality rate remains uncertain. We have become used to feeling in control of our own destinies. In his great novel *La Peste*, Albert Camus wrote: *'They fancied themselves free, and no-one will ever be so long as there are pestilences.'*

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The doctor as an educator

'The art of medicine remains an imperfect science.'[1]

PATIENTS have reservations about drugs generally and these are marked when the drugs are prescribed for long-term conditions, such as hypertension.[2] We prefer to take antihypertensive drugs if we perceive benefits of medication but also if we have positive experiences with doctors. When we decide not to take antihypertensive medication, we do so in a way that makes sense for us personally.[3] This decision to take or not to take is complex and involves the doctor–patient relationship generally. Can it be improved by decisional analysis?

This would involve the physician in identifying the patient's perspectives on certain outcomes and then sharing the probability of those outcomes in such a way as to compare the choice of taking or not taking medication. The usual method for this is for the patient to allocate a numerical score (utility) for each outcome and then multiply this score by the probability of that outcome. With medication having positive and negative outcomes a total 'score' can be achieved by adding all these together for the decision to take medication and the decision not to take medication. The process is more important than the actual overall scores. Altering the utility adds to the process so that the patient can see what effect lowering or raising their utility has on the overall score.

Decisional conflict occurs when the patient feels uninformed, lacks clarity about the values of outcomes, and has a general feeling of lack of support. Decision analysis may improve knowledge about treatment options, make patients more realistic in their expectations, reduce decisional conflict, and increase active involvement in decision making.[4]

In this month's *BJGP*, Montgomery *et al*[5] have compared 'simple' information (30-minute information video and leaflet) with decision analysis that took one hour. In newly diagnosed hypertensive patients aged from 30 to 80 years, both are effective in reducing decisional conflict, but decisional analysis more so. Forty-one per cent of all patients were unsure whether to start treatment at the beginning of the study. Decisional analysis resulted in a 10% reduction in total decisional conflict. The greatest reduction was in being 'uninformed'.

There was no difference between groups in terms of the actual decision on whether to take medication at the end of the study (67% had been prescribed blood pressure-lowering medication). More knowledge came with the video and leaflet, compared with decisional analysis.

This is the first time that this process has been studied in patients with hypertension in primary care and only one of the 52 patients allocated to decisional analysis could not complete it. A similar study examining decisional analysis in patients with atrial fibrillation faced with the choice of anticoagulation also confirms that this approach is effective within primary care.[6]

So how does this work fit into the context of other research on decision analysis? What is clear is that we only discuss uncertainties in a very small proportion of consultations.[7] There is evidence of the effectiveness of the impact of information and decision in many areas of health care, including cancer[8] and management of spontaneous miscarriage in the first trimester.[9] Shared decision making can influence many treatment outcomes for the better.[10]

The major objection (acknowledged by many authors in this field) is the time that it takes both to deliver information and to help with decisional analysis.

Is this therefore a cost-effective intervention? On average, patient education saves three to four times as much as it costs.[11] A recent Cochrane review of 15 decision support tools found 87 decision aids (http://www.ohri.ca/programs/clinical_epidemiology/OHDEC/decision_aids.asp) for 31 types of condition, all of which shared some of the complexity of health care with patients.[12] These improved knowledge in 19% of cases. There was a 48% improvement in the proportion of people with realistic perception of probability of outcome. What was especially important was the fact that participants often made different decisions when knowledge and expectation was improved.[4]

Patients may vary in their desire for involvement in decision making in consultations. Although this variation seems to depend on the presenting problem, age, social class, and smoking status, these associations are not absolute.[12] Patient preference was found to be independently predicted by the type of problem that they presented with. For example, patients presenting with physical problems more frequently preferred a directed approach, with the doctor telling them what to have done.

The issue, then, is not really 'should we do it?' but 'how we are going to change practice to enable this to happen?'. The process is not intuitive and clinicians may need education in developing competencies for involving patients in health care decisions. A useful framework for this has been developed by Elwyn *et al*:[13]

1. implicit or explicit involvement of patients in the decision-making process;
2. explore ideas, fears, and expectations of the problem and possible treatments;
3. portrayal of equipoise and options;
4. identify preferred format and provide tailor-made information;
5. checking process — understanding of information and reactions (e.g. ideas, fears, and expectations of possible options);
6. checking process — acceptance of process and decision-making role preference, involving the patient to the extent they desire to be involved;
7. make, discuss or defer decisions;
8. arrange follow-up.

The idea that a 30-minute video and the British Hypertension Society booklet is 'simple' is in itself questionable. Even establishing the presence of this sort of information within practices, and then ensuring that all patients who need the information receive it, is challenging. This is an area where the government could assist us in the provision of more detailed patient information, in contrast with the multitude of limited small leaflets.

A full-time personal physician may have 2000 patients that they are responsible for. There maybe 40 diabetics, 60 patients with heart failure, 25 with atrial fibrillation and 400 with hypertension (200 they know about). In addition, one patient may have three or more decisions to make. It is not appropriate to suggest that primary care physicians be expected to undertake personally such a long period of decision analysis for each patient with multiple decisions to make.

This paper, and research similar to this, is showing us that we need to explore novel methods of sharing knowledge with patients. This responsibility may be shared with other health professionals and be as effective with the same benefits. Before undertaking decision analysis for our patients we also need ways to identify those in whom this would give added benefit.

For now, the message must be to improve the information that we give to patients to make them more knowledgeable. Sites, such as the database of individual patients' experience (www.dipex.org), may be helpful at identifying the major concerns a patient may have before discussing with the doctor the value of treatment. I will change my practice in initially arranging for videos and more detailed information to be available for all my new hypertensive patients.

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Re-evaluating revalidation and appraisal

THE Bristol paediatric cardiac surgery case[1] centred on local failures of professional self-regulation to respond to known problems in quality of care, and therefore to save children's lives. In some people's eyes, the Shipman case[2] has also illustrated a failure in local oversight and accountability.[3] These two different and difficult examples challenged the assumption that initial registration should be for life. Other examples — Ledwood, Green, Ayling, and so on — increased the momentum for change, for the public to be protected through regular re-certification of doctors' competency — in the jargon, a periodic summative assessment.

Revalidation, as it became known, was conceived by the General Medical Council (GMC) to protect the public by reaffirming at intervals each doctor's fitness to practise.[4,5] Continuation on the full GMC register, and thus in independent practice, was to be dependent on a successful revalidation. Members of the public were to be involved in the setting of standards and the assessment of the material submitted.

Royal Colleges consulted widely with doctors and the public, and produced frameworks for assessment based on the GMC's *Good Medical Practice*,[6] the RCGP's being developed with the General Practitioners Committee of the BMA as *Good Medical Practice for General Practitioners*.[7] Methodologies for assessing against those standards were developed with the support and input of the GMC[8] and, in the consultation exercise, general practitioners were very supportive.[9]

Appraisal was conceived and delivered as a complementary activity, but one that was designed to encourage reflection, self-awareness, continuing professional development, and quality enhancement.[10] It should be a peer review, in which an open and honest discussion of strengths and weaknesses leads to a shared understanding of the educational and quality agenda for the next year.[11] This is a formative, not summative, process.

The link between the two had always been explicit. The evidence gathered for appraisal would, with extra evidence, such as that concerning probity and health, be submitted for revalidation.[12] All doctors would submit a revalidation folder with their accumulated evidence showing, overall, fitness to practise. Same evidence; two purposes; two assessments; two outcomes.

However, the situation has been changed radically by the GMC's realisation of the complexity and the cost of such a system of revalidation. It is now supporting the original line of the British Medical Association, that 'five satisfactory appraisals equals revalidation'.[13] This is less radical in hospital care than general practice, since consultant appraisal has been seen as a managerial performance review, in which poor or underperformance should be identified. General practitioner appraisal, however, is truer to the educational, supportive principles of formative appraisal.

This decision may be welcomed by those who always regarded revalidation as an over-response to two cases. Good clinical governance mechanisms should detect and deal with Bristol-type problems; revalidation was conceived to detect unacceptable clinical performance, not a medical murderer.

The two elements that have been lost are both related to the public. Unless appraisal is radically changed to include a robust assessment of competency, then five appraisals will not offer the public protection from poor or underperforming doctors. It will only create an illusion of protection that will be revealed to be such at the first subsequent scandal. And the second loss is of public involvement in revalidation. Instead

of being part of panels assessing revalidation folders, the lay input will be restricted to an undefined role in the quality assurance of the appraisal process.

There are two solutions, both far from ideal. The first is that general practitioner annual appraisal will have to migrate towards being a performance management assessment, including of minimum competency.

As the article by Lewis and colleagues in this issue of the *BJGP* demonstrates, many doctors only agree to appraisal because they see it as a positive support to quality and career development.[14] The authors show that changing the nature of appraisal towards performance management will seriously erode its support, making recruitment of appraisers, and openness by those being appraised, much more difficult to achieve.

The second parallel solution concerns quality assurance of the appraisal (and thus revalidation) process. This could be done by local audit of appraisal, requiring the currently confidential appraisal documentation to be scrutinised. The GMC sees the Commission for Health Improvement, and its successor organisation, doing this auditing of appraisal processes; there are those who see this as a distancing by the GMC of some of its responsibilities for professional regulation. Whichever local audit processes are chosen, this is, at least, a way in which the public can be involved.

The most likely outcome is the worst of all worlds. In this scenario general practitioner appraisal loses much of its formative, educational context and attempts to become a mini-examination of competency, with its whole content open to scrutiny and audit. And revalidation depends on the flawed belief that appraisal can reliably identify poor performance.

It is almost, but not quite, too late to argue that we can have the best of both worlds. We could have appraisal as an effective formative way to give the public the better care that it deserves, through supporting the education and professional development of all doctors. And we could have the summative assessment that was always intended to be revalidation — a process to identify underperformance, to protect the public and to certificate good performance to encourage doctors. If we don't achieve this, the threat to medical self-regulation may be profound.

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Special non-clinical interests — GPs in education, research, and management

Introduction

THE government has introduced a policy of development of 'general practitioners with special interests' (GPwSIs),[1] in the hope of expanding effective clinical services while reducing waiting times. This will build on the current estimated minimum 16% of the GP population of England (over 4000 GPs) already undertaking sessions to serve a particular clinical interest,[2] who are thus using their professional generalist expertise to the full and giving their practice depth as well as breadth. The collective management of primary care services through Primary Care Trusts (PCTs) now supports the possibility of using such expertise at a locality, rather than practice, level, thus making investment in service provision, equipment or training more cost effective.[3] Many GPs who have worked as clinical assistants, or as specialist practitioners in hospital or community settings, will welcome the apparent opportunity to have their role recognised and accredited. The development of GPwSI expertise may fill a gap in local service provision and give the health community more flexibility to deliver modernised services closer to where patients live.[4] In addition, developing posts with 'built-in' additional opportunities can enhance recruitment in underdoctored areas by making vacancies more attractive to newly qualified GPs.[5]

The focus of the GPwSIs policy[1] is very much on improved access to clinical care and wider clinical provision. PCTs will be expected to make judgements about what services they

will commission in the context of government priorities, such as delivery of the National Service Frameworks. However, there are already many GPs with a special interest in the non-clinical areas of education, research, and management, which are not mentioned in the policy documents for GPwSIs. We would argue that these are of equal importance to service quality and delivery, have similar workforce implications, and are already established as accredited activities.

Education, research and management – three non-clinical GP special interests

Although not regarded as a core service to the NHS, a majority of practices throughout the UK will have one or more roles in teaching and training. More than 40% of GPs are actively involved in medical undergraduate and postgraduate teaching and training.[6] The figure increases dramatically when all community-based provision for the training of health professions is considered; for example, GPs frequently take key roles in paramedic and allied professional training, and many nurses hold a teaching qualification that enables them to host students.[7] All postgraduate GP education posts (course organisers, continuing professional development (CPD) tutors, directors and associate directors) exist within a formal structure, and these need to be recognised as a key career option alongside clinical interests. As educational reforms prioritise community-based learning, structures for appraisal and quality assurance become more rigorous, training models alter,[8] and the workforce demands lead to the creation of new medical and clinical training places,[9] the opportunities and need for educational provision in primary care will expand further. The development of teaching PCTs[10] demonstrates the belief that involvement in teaching, and to an extent research, can help improve local recruitment and raise standards of care. If this is demonstrated to be the case, then all PCTs are likely to view the development of education opportunities by and to all health professions as a core strategic aim.[11] This means that many primary care professionals either do, or soon will, see themselves as having a special interest as education and training.

Research may appear a minority sport compared with education, but this again depends on the breadth of the definition. All health professionals are consumers of research, applying the available evidence in delivering their care. Many practices, for example, through the Primary Care Research Networks, the Medical Research Council GP Framework, or the RCGP Birmingham Research Unit,[12] play an essential role in research, by allowing access to their computer records or helping to recruit patients for studies. Traditionally, the proportion of GPs acting as principal investigators or leading original research has been low; however, in recent decades the numbers are rising[6] and there is increasing recognition of the key role that primary care research can offer.[13] The emergence of clinical governance leads[14] has also developed GP special interests in evidence-based practice and leadership, and some of these skills are seen as transferable into research management.[15] Again, the value of these opportunities goes beyond improvements to patient care, as they can enhance the quality of primary care as a working environment, which in turn can contribute to enhanced recruitment and retention.

Another group of general practitioners is developing a special expertise in management. Most GPs with a substantive managerial role are working as senior executive partners, on PCT professional executives, in other NHS organisations, or in the private sector, while maintaining their clinical generalism. For others, their managerial role lies in organising education and training, and in facilitating related activities, such as appraisal, mentoring, and CPD. Given the need for all research to be sponsored and effectively managed,[16] a third group will soon be asked by PCTs to lead on research management governance. We can also expect to see more GPs working as intermediate service commissioners and clinical managers, much as local cancer leads are delivering the reforms of cancer services set out in the NHS Plan.[17]

Unlike consultants, the contractual basis of general practice has never acknowledged a need for protected non-contact time within the working week. This means that any additional roles are seen as an 'add-on', and either have to be squeezed in between existing clinical commitments, or pitted against the competing demands of colleagues. The proposed 'new Contract' does not include any substantive reform in this regard. If current NHS policy and contract negotiations result in recognition of clinical special interests but ignore non-clinical ones, there is a danger that, as Gerada *et al*[3] suggest, some common career functions will continue 'without clearly defined roles, responsibilities and terms of service'. This particularly may apply to undergraduate teaching, which does not enjoy the same national conditions as postgraduate tutoring, and to PCT management, which increasingly will diversify as local autonomy increases. Yet such roles fulfil exactly the same three core functions as the RCGP has set out for GPwSIs[18] — leading local developments, delivering a specified service to a high standard, and providing expert guidance to local colleagues. Many GPs involved in education, research, and management will be able to show accredited qualifications and relevant experience, and this too suggests that they can be classified alongside clinical interests as a relevant career option, whose status and conditions should be recognised and given similar consideration in workforce planning and skill utilisation.

Conclusions

Special interests for GPs are of value in developing careers, avoiding burnout, and increasing the role of primary care in the NHS. Non-clinical special interests involve more GPs, are therefore of equivalent importance to clinical special interests, and deserve parallel discussion. Some GPs will have special interests in clinical and non-clinical areas at the same time, and most GPs have portfolio careers in which they adopt a variety of roles over time. Indeed, the numbers of GPs involved in clinical and non-clinical special interests suggests that it is already the norm for a GP to add roles to clinical generalism, and it may in time become universal. Thus, 'joining-up thinking' around career development, workforce planning, and partnership planning needs to take this into account, and acknowledge that GPs have the same

breadth of professional duties as consultants. If we are not to lose sight of the importance of non-clinical special interests, the links should be highlighted by all leading GP organisations throughout the next phase of development of the GPwSI policy. Moreover, the new Contract for GPs should facilitate and reward the adoption of *all* types of special interests, and it would be ideal if there were minimal differences in payment for sessions of different types. If a GP with suitable training and qualifications could move from using sessions to teach medical students, to organising an echocardiography service for the PCT, to being a medical director of the PCT and then becoming a vocational trainer over a decade, and being paid a similar rate for each, then we would promote both workforce flexibility and breadth of skills — the key features of the generalist.

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