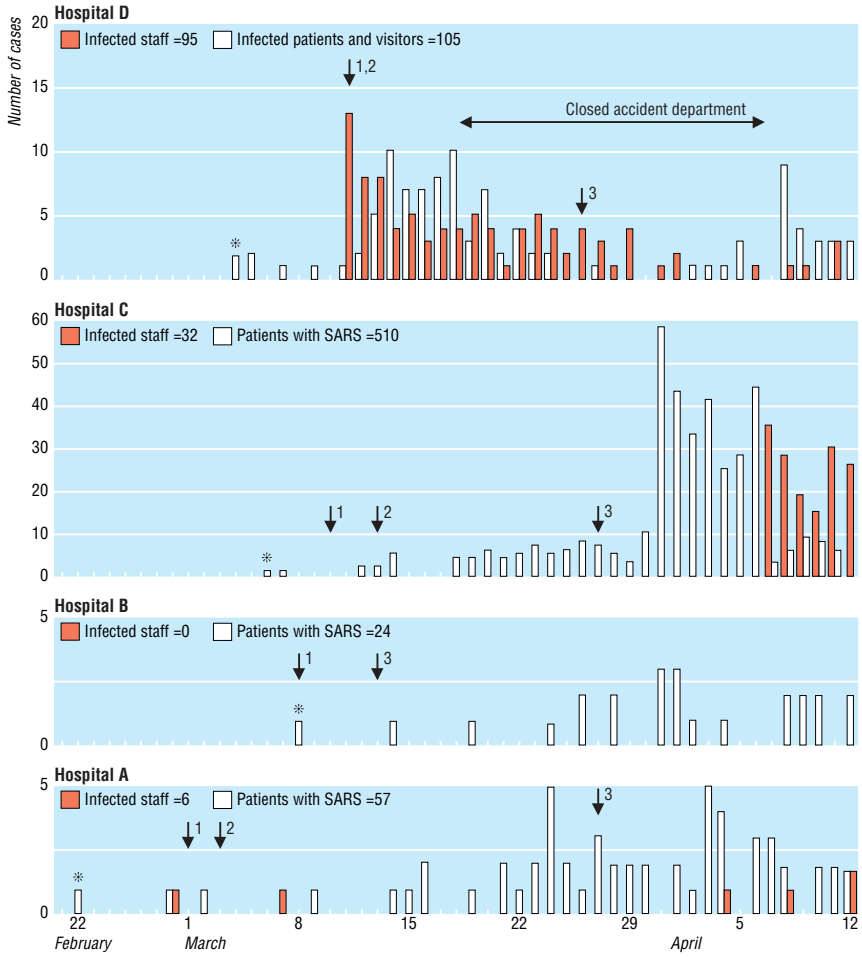
Letters

Severe acute respiratory syndrome

Patients were epidemiologically linked

EDITOR—Severe acute respiratory syndrome (SARS) is a new disease that caught the medical profession in Hong Kong unawares. The causative agent, identified as a new coronavirus, is transmitted by droplets and direct contact.[1 2] Healthcare workers are at high risk, accounting for about one quarter of all cases of SARS in Hong Kong.[3] We here describe the spread of this highly infectious disease between 22 February and 8 March 2003 among the staff in four regional hospitals (A to D) in Hong Kong after admission of the first patient with SARS. These patients were linked epidemiologically.

All hospitals implemented infection control policies for "droplets precaution" and direct admission of probable and suspected cases of SARS to isolation wards within one week. Hospital B closed the isolation wards to visitors on 12 March and other hospitals on 26 or 27 March. The figure shows the timing of implementation of various policies and the numbers of infected hospital staff and patients with SARS admitted to each hospital until 12 April.



Numbers of infected hospital staff and patients with SARS admitted daily to each hospital from 22 February to 12 April 2003. *Admission of first index case. 1=implementation of infection control policy for "droplet precautions"; 2=establishment of isolation wards and direct admission of patients with probable and suspected SARS to separate isolation wards; 3= closure of isolation wards to all visitors

We observed five things.

- Admission of the first patient with SARS to a general medical ward (hospital D) together with administration of bronchodilator using a jet nebuliser was associated with infection of a large number of staff, patients, and visitors.
- Direct admission of index patients to intensive care with isolation resulted in very few or no infected hospital staff (hospitals A and C).
- Admission of a large number of patients with SARS in a short period overwhelmed the capacity of hospital C and resulted in infection of staff.
- Early and strict policy of direct admission of patients with probable and suspected SARS to designated wards and fewer admissions for SARS were associated with no staff infection in hospital B.
- Late closure of isolation wards led to infection of visitors and spread of the disease to the community.

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Imported cases of severe acute respiratory syndrome to Singapore had impact on national epidemic

EDITOR—Travel is responsible for the rapid intercontinental spread of the severe acute respiratory syndrome (SARS).[1] Singapore has one of the busiest airports in Asia, with numerous passengers arriving each day from countries affected by SARS, and it is

therefore vulnerable to importation of the disease and potential transmission in the community.

Six people are known to have imported SARS to Singapore between 25 February and 29 April 2003, all of whom had visited Hong Kong (plus Guangdong in two cases and Beijing in one case). Two cases were imported before this new disease was known, and the patients were admitted to a hospital a mean of four days after the onset of symptoms and placed in isolation six days later. One of these two initial cases resulted in extensive secondary transmission, leading to the current large national SARS epidemic.[2]

With the rapid implementation of extensive public health education on SARS, enhanced infection control measures, and early isolation, the other four patients were admitted within a mean time of 2.5 days after the onset of symptoms and immediately isolated, and there were no secondary cases. The absence of transmission from these imported cases is probably because of their comparatively prompt identification and isolation, together with a low potential for transmission that characterises most cases of SARS (most transmission of SARS seems to be due to highly infectious individuals termed "super-spreaders" [3]).

Although importation of cases of SARS is likely to continue for the foreseeable future, our early experience in Singapore suggests that individuals importing SARS need not be a major hazard to the community if systems are in place to identify and isolate them efficiently.

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Clinical outcome after inpatient outbreak of SARS in Singapore

Editor—When an outbreak of severe acute respiratory syndrome (SARS) was first reported in Singapore, drastic measures were taken, including the closure of schools and hospitals. Such measures were deemed necessary as important epidemiological data on transmission dynamics and infectivity rates of the SARS virus were largely unknown. Early reports indicated a highly contagious infective agent,[1] and the number of exposed patients who may potentially become affected could overwhelm the capacity of existing medical facilities.

Seventy patients and 131 healthcare workers on two surgical wards were exposed to the virus after a sudden outbreak at this hospital. They were quarantined and relocated to a SARS designated hospital for 21 days. They underwent triage and were put into cohorts on three open plan wards, where facilities were shared. However, they were closely monitored and isolated immediately on manifestation of a raised temperature or symptoms suspicious of SARS. Strict infection control measures for droplet and contact transmission were undertaken between healthcare workers and patients.

All the healthcare workers remained well at the end of the quarantine period. This is a testament to the good protection afforded by current infection control measures against the virus. Seven patients were diagnosed as having SARS, and in one death was related to SARS. The patients with SARS initially presented with fever, radiological changes occurring three to six days after isolation. There was no uncontrolled clinical transmission within the cohort with early identification.

This clinical outcome is reassuring during the current SARS crisis. Health authorities faced with a similar outbreak and a shortage of isolation facilities may take comfort from the observed clinical incidence and case fatality rate.

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1 Chan-Yeung M, Yu WC. Outbreak of severe acute respiratory syndrome in Hong Kong Special Administrative Region: case report. *BMJ* 2003;324:850-2. (19 April.)

Private hospital in Singapore took effective control measures

Editor—Severe acute respiratory distress syndrome (SARS) is characterised by efficient nosocomial transmission. Several outbreaks have originated in hospitals, with an attack rate of 56%.[1] In Singapore the Tan Tock Seng Hospital was sequestered for patients with SARS, but the coronavirus spread to five hospitals and two specialty centres in eight weeks.[2 3] Many chronically ill patients presented atypically,[4] whereas others, admitted as emergencies, required resuscitation and ventilation.

Hospitals are most vulnerable to outbreaks of SARS. Every patient is a potential risk, and everywhere must be secured against this disease. Prerequisites for containment include prompt implementation of specific infection control measures as seen at the private Mount Elizabeth Hospital and Medical Centre.

All visitors underwent temperature checks before entering buildings bcause SARS is infective in the febrile phase. Triage disclosed people who were well, and they wore colour coded stickers. People at risk of developing SARS were escorted to "fever" facilities in the emergency department for further assessments. People with suspected SARS waited in a separate facility before transfer to Tan Tock Seng Hospital.

As healthcare workers have been unwitting victims and amplifiers of SARS,[1] each one was required to wear a fitted N95 mask in all patient care settings. Hand washing and other hygiene measures were reinforced. Gowns, gloves, and goggles were added in higher risk situations (such as dealing with febrile patients and emergencies and working in intensive care units, operating theatres, and maternity departments). Positive air purifying respirators were used over the masks during tracheal suction and intubation. Healthcare workers monitored their temperatures twice daily.

Since the initial symptoms of SARS may be non-specific, all febrile patients were admitted to single rooms in a fever ward, with strict barrier nursing protocols. Transfer of patients between hospitals was proscribed, and elective procedures were postponed for 10 days in those who had been in contact with SARS. Other measures included prohibition of nebulisation treatment,[5] restriction of staff movements, and logging of visitors.

We conclude that knowledge and ready availability of protective equipment are critical in successfully containing SARS.

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Guidelines were drawn up collaboratively to protect healthcare workers in British Columbia

Editor—Detailed measures to protect healthcare workers from severe acute respiratory syndrome (SARS) are paramount. The equipment of choice for respiratory protection is thought to be the disposable N95 respirator. However, without testing the fit, a poor facial seal may result in a reduction to only 33% of ambient levels.[1]

Guidelines were developed through a collaborative process involving the Workers' Compensation Board of British Columbia

Risk level and measures to protect healthcare workers from SARS

Risk level	Hazard	N95 required*	Surgical mask acceptable	Gown†	Gloves†	Goggles, safety glasses, or face shield†	Handwashing
High	Acute illness with potential aerosol formation by clinical behaviour‡, procedures§, or medication¶	Yes	No	Yes	Yes	Yes	Yes
Medium	Stable or improving illness: afebrile for 10 days**, with cough††, or requiring nasal oxygen	No	Yes	Only if direct contact	Only if direct contact	Only if direct contact	Yes
Low	Stable improved illness; afebrile, and no cough	No respirator or mask required		Standard precautions apply	Standard precautions apply	Not required	Yes

*If approved N95 respirator is required, it must be fit tested.
†Care must be taken when removing gloves, gowns, or eye protection to avoid self contamination.
‡Coughing, sneezing, shouting, forceful vomiting, severe diarrhoea.
§Includes, but not limited to, intubation, bronchoscopy, percussive therapy, cough induction.
¶Humidified oxygen, or nebulised pharmacotherapy.
**A patient may be febrile due to a secondary infection and no longer be infectious for SARS. While culture and molecular testing are becoming available, currently neither has been validated; this guideline is based on epidemiological information on transmission, consistent with that used by the World Health Organization to determine the period of communicability. When assessing risk, all available information should be taken into consideration, including viral cultures where known or results from amplification by polymerase chain reaction.
††Respiratory protection (surgical mask) is standard practice in caring for any patient, whether known to be infectious or not, in the presence of aerosolising procedure/behaviour.

(the state's regulatory agency), the Occupational Health and Safety Agency for Healthcare (jointly governed by healthcare unions and employers), and provincial experts in public health, infection control, and infectious disease.[2] An important component was a risk assessment designed to reduce the exclusive use of fit tested N95 respirators without diminishing worker safety.

At initial presentation all patients with respiratory symptoms are considered potentially to have SARS, and healthcare workers are required to wear a fit tested N95 respirator and protective eyewear until risk assessment is completed and reasons for admission are ascertained. During the initial period of greatest risk, full personal protective equipment is required (table). As the patient recovers and the risk of aerosolisation reduces, the requirement for a fitted respirator and face protection declines.

Throughout, critical emphasis is placed on hand hygiene and careful use and removal of personal protective equipment to prevent accidental autoinoculation. Staffing must be adequate to meet the increased workload that occurs with SARS patients, to allow healthcare workers to maintain vigilance.

Seto et al noted that transmission of infection was equal among workers wearing either surgical masks or N95 respirators, when high risk of aerosolisation was excluded.[3] On the other hand, a review of cases of SARS in Toronto found that some healthcare workers who acquired SARS were not fit tested and had not been trained to use personal protective equipment, which potentially results in accidental autoinoculations.[4] This supports the need for a formal programme including fit testing, education on use, and removal of personal protective equipment, as well as a risk assessment approach with full equipment for high risk activities.

Detailed documents on how to apply a risk based approach are now circulating throughout the province along with a programme to train the trainer.[5] We hope that lessons learnt from SARS will strengthen our ability to protect healthcare workers and the public from other pathogens.

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Important contributions are being made to the control of SARS in British Columbia by numerous organisations and individuals. In addition to the organisations of the authors, special acknowledgement goes to the Workers' Compensation Board of British Columbia for their enormous work in this area, and to the British Columbia Nurses Union, Health Sciences Association, the Health Employers Association, the Hospital Employees Union, British Columbia Centre for Disease Control, and the various health authorities across the province.

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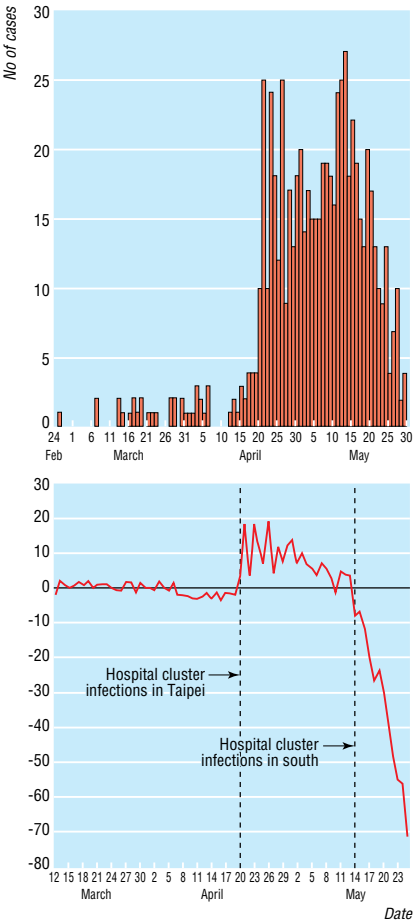
Numbers do not tell whole story

Editor—Parry mentioned the recent rapid increase in the numbers of cases of severe acute respiratory syndrome (SARS) in Taiwan, making it the third worst affected area in the world, and asks whether the disease is under control.[1 2]

The daily numbers of new cases of SARS in Taiwan up to 2 June have declined since mid-May (figure (top)). However, the delay caused by the incubation time as well as the time lag for diagnosis and reporting could result in subsequent under-reporting.

To ascertain the true direction of the epidemic, we fitted an exponential curve with series autocorrelation in the error structure to the cumulative numbers of cases of SARS in Taiwan obtained from the same dataset from 12 March to 25 May figure (bottom).



Top: Numbers of cases of SARS in Taiwan by date of onset (up to 2 June 2003; data from Centre for Disease Control of Taiwan's website (www.cdc.gov.tw/sarsen)). Bottom: Residuals of true values minus predicted values of cumulative number of cases of SARS fitted by exponential model

From 12 March to 19 April the model fits very well, showing exponential growth. From 20 April to 13 May, when a series of hospital outbreaks occurred,[3] the data show wild variations and the predicted values consistently underestimate the true values.

Between 14 and 25 May the consistently downward trend of the real values shows that the increase in the cumulative number of cases of SARS is again exponential, albeit at a much slower rate. The stochastic variations from 20 April to 13 May, caused by a series of breakdowns in the health infrastructure, cannot be explained by a simple model. But the bottom figure offers definitive evidence that the growth of the epidemic is exponential but slowing down.

While the daily numbers in the top figure peak around 11-19 May—from the last major hospital cluster infections in the south of Taiwan during mid-May—the residuals in the bottom figure show a downward trend as early as 14 May.

This indicates that even with the last outbreak in a healthcare setting in the south, control measures had started to take effect. However, recent developments in Toronto warn about the possible consequence of a single misreporting, lest we let down our guard.

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Capture-recapture method should be used to count how many cases of SARS really exist

Editor—Parry suggested that the epidemic of the severe acute respiratory syndrome (SARS) is beginning to slow.[1] This is probably true as cold and influenza viruses naturally dissipate during the summer (non-flu season[2]). This observed reduction would include the coronaviruses, which have been estimated to result in around 30% of the reported cases of the common cold. So as the summer progresses, there should be a reduced number of cases occurring, although the disease may not completely vanish, especially for those in an occupational setting and rural areas.[3]

The real question being asked is: How many cases have actually occurred? This is important since these rates will indicate whether control measures are effective and the disease is dissipating. Many of the rural areas of China and most likely other locations are not being monitored for rates of SARS, and these locations may act as reservoirs. The number of cases reported cannot include the undercounts, or missed cases.

A method that has not been applied for estimating the number of SARS cases is capture-recapture.[4] The capture-recapture method uses two or more lists for estimating the number of cases.[4] These lists can be easily obtained from hospitals, health departments, surveys, and private practitioners and they do not require complete ascertainment.[5] This method can be applied to a region, nation, or the entire world and will also provide an estimate of the undercounts.[5]

The capture-recapture method should be considered the gold standard for counting when it is impossible to identify each case and large undercounts will occur.

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Competing interests: None declared.

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Lessons may be learnt from the outbreak of legionnaires' disease in Barrow in Furness

Editor—Zambon's editorial describes the challenge that outbreaks such as that of the severe acute respiratory syndrome (SARS) might pose for healthcare systems.[1] We have analysed the local organisational response to the outbreak of legionnaires' disease in Barrow in Furness last summer. Some features may be relevant to large scale "medical" incidents such as SARS, influenza epidemics, and the effects of biological terrorism.

Firstly, recognition of the outbreak may be delayed, especially when symptoms are non-specific. Although *Legionella* was identified promptly, the lack of a single catastrophic trigger such as an explosion (as would be usual in a "typical" major incident) and the initial difficulty in predicting the scale of the outbreak led to some confusion as to quite whether, and when, a major incident should be declared.

A further difference is the duration of the crisis, which necessitated careful planning to protect staff from overwork. This would be more pronounced if staff themselves were incapacitated, as might well occur with SARS.

Secondly, the low mortality was attributed partly to the widespread use of an early warning scoring system for the timely identification and referral to intensive care of deteriorating patients.[2] We have still to explore whether this effect was due to the scoring system itself or the close involvement of intensive care staff on general wards.

Thirdly, the hospital's incident plan was simply not designed for this type of incident. Paradoxically, this seems to have been beneficial in that it gave experienced clinical and managerial staff the freedom to improvise as events demanded.

Furthermore, despite the presence of a central incident room, our data suggest a loose organisational hierarchy with employees of comparatively low status able to make decisions. These characteristics are evident in safety critical "high reliability organisations,"[3] and the challenge for major incident planning is to prevent such vital human factors being stifled by protocol and prescription.

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Threat of tuberculosis persists

Editor—Zambon says in her editorial that severe acute respiratory syndrome (SARS) has prompted the World Health Organization to issue its first global alert for over a decade.[1]

As I recall the last global alert, issued exactly 10 years and three months ago, was for tuberculosis. With 2 million deaths a year and rising, tuberculosis kills as many people every six hours as SARS has done since its first description. Yet there are still no new drugs or vaccines on the horizon. I hope the response to SARS will have better fortune.

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1 Zambon M. Severe acute respiratory syndrome revisited. *BMJ* 2003;326:831-2. (19 April.)

BMJ was out of touch with grass roots doctors on wellbeing

Editor—I resent the way Cross and Brownscombe portrayed me as a "pariah" in their article on the British and Australian view of wellbeing.[1] When I was interviewed I had just worked for the previous three

nights until past midnight, having also worked Christmas Day and New Year's Day, and without holidays for six months.

I am surprised the authors published this article, given the unrepresentative sample of doctors portrayed. A general practice tutor responded, an occupational health doctor, an ophthalmologist, and a medical "politician." What features do these careers have in common? I suggest that it is minimal 24 hour commitment. The only stressed doctor was the paediatric intensivist.

The final insult was Graeme Catto encouraging us to learn from Winston Churchill. I found this remarkable, as if it's just a simple matter of emulating one of the highest achievers of the last century. In Catto's words, we should "be totally committed when at work, but also integrate into wider society, have friends, family, relax, and socialise. And do that to the full." Oh I see, it's that simple is it?

So, may I suggest that you do a genuine survey of doctors under pressure, instead of interviewing this rather well adjusted lot? Try some junior anaesthetists, obstetricians, or paediatricians. Try some singlehanded general practitioners, preferably those who maintain a 24 hour commitment, or a medical registrar with a regular busy take. Or just speak to any trainee who is moving from post to post, with exams, interviews, and publications to contend with, before suggesting that I am somehow out of touch with doctors' wellbeing.

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1 Cross P, Brownscombe J. Career focus. The British and Australian view of wellbeing. *BMJ* 2003;326:112S (classified suppl). (29 March.)

Mortality control charts

Assessment of outcome is complex

Editor—Tekkis et al's analysis of two databases for comparing performance of surgical units seems to be an improvement on existing models of risk stratification especially with the recently published annual assessments by the Dr Foster group.[1]

Case mix influences outcome of surgery. Surgeons who specialise in colorectal surgery, undertake a disproportionate number of elective (low risk) cases, and as such their results may appear superficially better. Murray et al have shown that adjustment for case mix leads to a substantial change in the relative performance of surgeons.[2] Sagar et al have shown that by adjusting for patient differences the initial appearances of the data may be reversed.[3] These referral practices are hard to "control for" by examining only preoperative risks and mortality outcomes.

We agree with Jacobsen et al in their editorial on hospital mortality league tables in the same issue that hospitals are complex systems that are part of larger systems and also contain subsystems. Variability in outcome has been attributed to the interplay of multiple factors including surgical ability, surgical technique, case mix, case volume, institutional influences, perioperative care, and anaesthetic care.[4 5] Outcome is influenced by having a wider range of non-operative approaches, and better support of auxiliary surgical and medical services, which reflects the multidisciplinary nature of modern surgery.

Ideally surgical performance should be monitored prospectively and examined not only by operative mortality but also by post-operative morbidity and quality of life measurements, and allow for case mix with comparison. Until then this paper does appear to improve on the current methods of evaluating surgical units' performance.

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Both components of POSSUM ratio require critical analysis

Editor—Mean mortality of almost 10% and 30% (max 50%) is reported for elective and emergency gastro-oesophageal surgery in 29 units.[1] Yet none had underperformed. A benchmark is set even though institutions were not randomised.

A multifactorial model is created by using POSSUM to fit this dataset.[2] POSSUM's overpredicting tendency is compounded by duplication of identical risk factors. The control charts justify mortality for low workload when guidelines preclude small numbers. It is unclear if operative parameters comply with original definitions[2] and whether physiological scores incorporate resuscitation. In our institution, 70% of emergencies did not meet criteria but resulted in an exaggerated POSSUM score.

A new formula based on prospective validated data is crucial in subspecialty subgroup analysis.[3] Bias is inevitable if few curative, palliative, oesophageal, and gastric cases, are combined when surgeons vary in their operability rates. It is unwise to compare a transhiatal oesophagectomy with a three phase procedure and lymphadenectomy.[4] The former benefits from lower operative mortality but carries worse survival.

The POSSUM system is neither simple nor practical, and it is surgeon dependent.[5] Peritoneal soiling or intraoperative blood loss serves only to incorrectly enhance expected mortality. Obesity and diabetes are ignored while poor judgment is protected without questioning the wisdom of operating in advanced disease. Data validation is fraught with difficulties without clear guidelines.

Both components of the POSSUM ratio require critical analysis even if the overall ratio is favourable, and only then can judgment be made whether performance truly meets with standards.

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Competing interests: None declared.

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What hospital mortality league tables tell you

Editor—Jacobson et al take issue with Dr Foster's publication of mortality league tables and pose four main questions.[1]

Firstly, they ask what the data mean, citing changes in the type of care provided in hospitals. Hospital standardised mortality ratios were designed to be a robust measure of in-hospital mortality, taking into account differences in patient mix with explicit adjustment for 80 different diagnoses, admission method, age, sex, and length of stay. We found that after adjustment, death rates show no bias against hospitals with more patients staying more than 28 days, or against hospitals with more geriatric beds.[2] We agree that hospital mortality is only one outcome measure and is included as such in the "wealth of information" in the hospital guide.

Secondly, they ask whether the results are a valid measure of what they purport to be, acknowledging Dr Foster's ongoing enhancements to the quality of the analysis since publishing hospital standardised mortality ratios for the first hospital guide. They acknowledge that rankings published last year cannot be directly compared to this year's but not that comparable trends in hospital standardised mortality ratios over the past three years were included in the 2003 *Good Hospital Guide* (perhaps a consequence of submitting their critique before the guide was published).

Thirdly, they question primary diagnosis, and we emphasise that the hospital standardised mortality ratios is a summary measure incorporating 80% of in-hospital

deaths. Misclassification between different diagnoses will not greatly affect the overall figure. Hospital standardised mortality ratios based on primary diagnosis on discharge or primary diagnosis on admission are highly correlated (r=0.96).

Finally, they ask what value the data would add to hospital performance were they accurate. We acknowledge that many factors contribute to hospital mortality and we adjust for several of them. We found in our original analysis that other factors including socioeconomic deprivation did not account for the variability in hospital mortality.[3] To help trusts explain their hospital standardised mortality ratios, Dr Foster offers a more detailed analysis, allowing trusts to drill down by diagnosis, admission method, age, sex, year, and length of stay.[4]

We strongly agree that there must be openness about clinical performance.[5] Patients should be able to gain access to information about the relative performance of a hospital or a particular service or consultant unit.[5] We believe that we are taking major steps towards fulfilling this aim.

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Competing interests: The Dr Foster Unit at Imperial is funded by Dr Foster Limited.

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Making decisions about hormone replacement therapy

Preparations containing oestrogen should not be given during treatment for breast cancer

Editor—We read with interest the clinical review by Rymer et al on making decisions about hormone replacement.[1] The article provides a useful and informed guide to the indications for hormone replacement and a helpful analysis of the risks and benefits.

We take issue, however, on one important point. As a surgical oncology team specialising in the treatment of breast cancer we believe that it is important to point out that the therapeutic value of gonadotrophin releasing hormone analogues in the treatment of breast cancer is based on their suppression of ovarian function and the consequent reduction in the concentrations of circulating oestrogen in premenopausal women whose tumours are oestrogen receptor positive.[2 3] In these women preparations containing oestrogen should not be used since their use will compromise the value and efficacy of treatment for breast cancer.

The use of hormone replacement in women who have been treated at some time in the past for breast cancer may well be safe, but it should not be used concurrently with treatments aimed at ovarian suppression.

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Competing interests: None declared.

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Bisphosphonates should not be recommended for women aged 50

Editor—Many people, including Rymer et al in their clinical review,[1] say that bisphosphonates can be used instead of oestrogen to prevent osteoporotic fractures. Clinical trials of bisphosphonates in perimenopausal women have shown a stabilisation of bone density but no difference in fracture rate compared with placebo.[2] A significant reduction in fractures with bisphosphonates has been shown in women who are older and already have osteoporosis.[3] Lower fracture rates have been shown in women who used oestrogen for 10 to 20 years.[4] These data do not exist for bisphosphonates. The long term (greater than 10 years) use of bisphosphonates might be beneficial, but they possibly could make the bone more brittle due to the profound suppression of bone formation rates.[5]

We should not recommend that women aged 50 take bisphosphonates to prevent fractures that are unlikely to occur before age 70 until we have data that these drugs are effective at preventing fractures 20 years in the future.

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Competing interests: None declared

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Authors' reply

Editor—Hinton et al are concerned about the administration of oestrogen to women who have had oestrogen sensitive breast cancer. In our article we suggest giving hormone replacement as add-back treatment for premenopausal women who are given gonadotrophin releasing hormone analogues and may be devastated by the hypoestrogenic symptoms that they experience as well as having significant bone loss. For reasons of space we did not specify which hormone replacement we recommend, but we agree that oestrogen containing compounds may not be appropriate. However, tibolone (a synthetic compound that has oestrogenic, progestogenic, and androgenic properties and shows different actions in different tissues) does not seem to stimulate the breast in humans,[1] and in vivo and in vitro work has shown that tibolone has an inhibitory effect on mammary tumour load in rats[2] (similar to tamoxifen) and reduces the concentration of oestradiol, which supports the growth of breast cancer.[3] Tibolone has an oestrogenic effect on vasomotor symptoms, vaginal dryness, and bone. Therefore we would recommend tibolone as our add-back hormone replacement for women who are taking gonadotrophin releasing hormone analogues who want treatment for their hypoestrogenic symptoms and preservation of their bone mass.

Ott is correct in saying that clinical trials of bisphosphonates in perimenopausal women have not shown a decreased fracture rate, but in our review we suggest that postmenopausal women who have low bone mineral density (osteoporosis), who for whatever reason cannot or will not take hormone replacement, should be offered bisphosphonates or selective oestrogen receptive modulators. Many studies have shown that bisphosphonates can be used instead of oestrogen for the prevention of osteoporotic fractures in women with osteoporosis.[4 5] We are not advocating the use of bisphosphonates in 50 year old perimenopausal women so that 20 years later fracture rates are reduced. The use of bisphosphonates does not completely suppress bone turnover, and "frozen bone" has not been found in clinical trials of bisphosphonates used for up to 10 years.

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Competing interests: JR has received research funding from Organon, consultancy fees from Organon, Wyeth, Janssen-Cilag, and Pfizer, and been sponsored to attend conferences by several drug companies.

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Pressure index is important in peripheral arterial disease

EDITOR—The clinical review by Burns et al on managing peripheral arterial disease in primary care tackles an important area of practice.[1] Despite guidelines from the Department of Health,[2] patients with this condition receive suboptimal care. In addition, lack of awareness of the diagnosis and treatment of this disease by patients and primary care doctors was blamed for poor rates of best medical treatment among this group of patients in North America.[3]

Management starts with diagnosis, of which an accurate ankle-brachial pressure index is an important component. It is a cheap test and provides hard evidence of vascular disease—a correlation between pressure index and overall cardiovascular risk exists. We were disappointed to see no mention of this in the review.

Work by our unit on a cohort of 500 consecutive patients referred by general practitioners showed a diagnostic accuracy of 70% for peripheral arterial disease—fewer than 5% of referrals included a pressure index.

In all, 38% of patients were not taking antiplatelet drugs when indicated, and only 40% were prescribed lipid lowering drugs when indicated. Around half had a resting blood pressure greater than 140/85 mm Hg. We newly diagnosed diabetes in 1.8% of patients referred to the clinic.

Perhaps, for now at least, specialists in vascular disease could supervise primary care until best medical management is widespread. Our unit has used this system with great success for four years. In our dedicated clinic environment we tackle all the common risk factors and consider the more esoteric, such as hyperhomocysteinaemia, that were not mentioned in the review article.

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Competing interests: None declared.

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Setting global health research priorities

Investments for health research for developing countries must be increased

EDITOR—Labonte and Spiegel in their article have highlighted the need for recognising priorities in health research, the commitments by the rich G8 group, and the emerging new programmes for the control and prevention of disease.[1] Clearly, these have strong influences and impacts on global health. It is however, of paramount importance to understand to what level these efforts have been translated into action.

Over 12 years ago, the International Commission on Health Research and Development recommended to the (developing) countries and the international development agencies to invest in essential national health research and in building sustainable research capacities. Since then, several other agencies and forums have been reiterating the same. Unfortunately, few have heeded this call, and evidence shows that investments in health research are still paltry, sadly, more so where the need is acute.

The national processes of setting priorities for health research should be coupled with matching efforts to strengthen capacities for research, and the ability to translate the research into action. In the absence of such capabilities, priority setting unfortunately remains at best academic. The advent of the genomic era and emerging technologies ushers in new challenges and opportunities. It remains to be seen how the rapidly emerging knowledge and technologies will affect global equity in health care in the presence of skewed investments. In view of the scarcity of resource allocations to health in general in the developing countries, a key challenge will always be how to prioritise the (health research) priorities.

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Competing interests: None declared.

1 Labonte R, Spiegel J. Setting global health research priorities. *BMJ* 2003;326:722-3. (5 April.)

Ethics should also guide global health research

EDITOR—I applaud Labonte and Spiegel on their article on the setting of global health research priorities.[1] They point out that the setting of such priorities must be seen not only in the context of the burden of disease but also in terms of broader global issues pertaining to the environment and the prevailing social, political, and economic conditions. They suggest several important principles by which global health research might be prioritised.

I would like to suggest another key principle: "Research that is based on sound ethical principles and avoids exploitation of vulnerable populations." In the post-genomic era, the promotion and upholding of sound ethics is key to ensuring that developing countries benefit fully from the unprecedented knowledge advances of the past decade.

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1 Labonte R, Spiegel J. Setting global health research priorities. *BMJ* 2003;326:722-3. (5 April.)

Mental health is improved with teaching therapy

EDITOR—Walters et al describe teaching as therapy, an evaluation of patients' experiences of undergraduate psychiatry teaching in the community.[1] I am a user of mental health services and a visiting lecturer to four universities and my mental health has improved with this kind of work because:

- I lead the session (unlike most psychiatric interventions, such as ward rounds)
- It is the most time I spend with so many professionals hopefully attentive to what I am saying
- My class develops "insight" into my problems
- I can go into this scenario without fear that I will have my liberty taken away from me because I am being deliberately provocative
- I am paid a proper wage for doing this.

You call it therapy. I call it empowerment and an ability to pay the bills.

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Competing interests: None declared.

1 Walters K, Buszewicz M, Russell J, Humphrey C. Teaching as therapy: cross sectional and qualitative evaluation of patients' experiences of undergraduate psychiatry teaching in the community. *BMJ* 2003;326:740. (5 April.)