Letters

Response to radiation incidents and radionuclear threats

Medical treatment should be given only when safe to do so

EDITOR—Turai et al reviewed the medical response to radiation incidents and radionuclear threats.[1] Puzzlingly, they say that providing care for a patient in a life threatening condition always has priority over decontamination from radioactive materials or those actions required for the safety of others involved (medical staff, emergency rescue teams) or related to the wider public and environment.[1] I disagree.

This statement will encourage inexperienced staff to disregard the safety of themselves and others in a "heroic" attempt to treat those ill and injured. The latest edition of the *Major Incident Medical Management and Support Course* rightly emphasises self and scene safety over that of survivors.[2] Experience has shown again and again that well meaning but poorly trained or equipped rescue and medical staff are highly likely to become further victims.[3] As an example, the article points out that some of the 28 radiation deaths from the Chernobyl disaster of 1986 were among fire fighters.

Medical treatment should be given only when it is safe to do so: poorly considered and risky actions will simply lengthen the list of casualties.

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Competing interests: None declared.

1 Turai I, Veress K, Günalp B, Souchkevitch G. Medical response to radiation incidents and radionuclear threats. *BMJ* 2004;328:568-72. (6 March.)
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Other threats may be more serious

EDITOR—I agree with Turai et al that radiation injury could occur by accident in countries where disintegrating political entities such as the former Soviet Union leave the debris of their nuclear programmes lying around for an unsuspecting public to pick up.[1 2] However, I am less sure of the real, as against hysterical, threat in Western Europe and North America.

Outside closely guarded nuclear power stations, weapons establishments, and waste stores the most available stores of radioactive materials are in hospitals or industry. Solid sources used in industry and radiotherapy are well shielded and sealed. If these seals were broken by a terrorist the most likely person injured would be him or her.

The radiation would have to be dispersed, presumably by an explosive device. However, this would not ensure ingestion—the best way to get a lot of radiation into someone—and would be easily detected. Also, once the radiation was dispersed the activity per person would drop. Such sources could be used to target an individual, but a cheap radiation detector as used in airports or banks would pick up such a source, which may be quite bulky.

Unsealed sources are found mainly in hospitals, most of which do not have enough on site even to kill one person. The most likely radioisotope is iodine-131, and 32 GBq would need to be administered to give a 2 Gy dose.[3] Such an activity, much greater than used to treat patients, is unlikely to be left where it can be easily accessed.

Although radiological bombs grab the headlines, they are probably much less dangerous than explosive, chemical, or microbiological attacks, and it is on these threats that countermeasures should be concentrated.

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1 Turai I, Veress K, Günalp B, Souchkevitch G. Medical response to radiation incidents and radionuclear threats. *BMJ* 2004;328:568-72. (6 March.)
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Renunciation of nuclear weapons could lessen the threat

EDITOR—We agree with Turai et al in their review of the medical response to radiation incidents that the use of nuclear weapons is currently unlikely,[1] but we are concerned that recent developments could lower the nuclear threshold worldwide.

Some 20 000 nuclear weapons are active today, many on high alert. Each is several

PAUL LOWE/PANOS

First hydrogen bomb, Semipalatinsk, 1953

times more powerful than the Hiroshima bomb, which if used on a major city in the United Kingdom would overwhelm medical services.[2] The United States is planning "bunker busters" or "mini nukes," officially known as "low yield earth penetrating weapons," claiming that their use would cause less "collateral damage" from blast or heat than existing nuclear weapons. However, "venting" would produce major fallout over several square kilometres downwind, causing hundreds of cases of radiation sickness in urban areas.[3]

Health workers can support an initiative towards reducing the nuclear weapon threat. In May 2005 a review conference of the Nuclear Non-Proliferation Treaty will take place at the United Nations. Under article VI of this treaty, as interpreted by the International Court of Justice, the nuclear weapon states are under an obligation to achieve nuclear disarmament by negotiation at an early date. The UK government is being urged not to replace Trident (a decision is needed in the next parliament). The United Kingdom has renounced chemical and biological weapons; a similar step in the nuclear field could lead to a major reduction in the threat of nuclear war.[4]

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Authors' reply

EDITOR—Benger's remarks give us an opportunity to re-emphasise one of the key messages of our article: saving the lives of patients with life threatening conditions should always have a priority, as providing emergency medical care for a patient contaminated with radioactive materials cannot pose a serious direct health risk to medical staff.

When workers at Chernobyl, who were in the reactor area at the time of the nuclear accident, were decontaminated, the medical staff at the site received less then 10 mGy of radiation.[1] In view of a possible dose as low such as this, we refer to the handbook of the Armed Forces Radiobiology Research Institute, which says that surgical priorities for acute or life threatening injury must precede any treatment priority for associated radiation injury and that radiological decontamination should never interfere with medical care.[2]

We agree with Buscombe that radionuclear threats are of low probability and the radioactive materials used for making dirty bombs pose the highest threat to the terrorists themselves. Accepting that terrorist contamination of central water supply may lead to a serious threat in the affected population group via ingestion, however, we wish to underline that inhalation of radioactive aerosols produced by a radiological dispersion device seems to be the most probable contamination pathway. Although hospital sources and radioactive materials used in nuclear medicine are of less importance for terrorist use,[3] the radiotherapy sources, when stolen and dismantled, may cause severe overexposure to people having direct contact with them, as we said in our paper.

We agree with Holdstock and Waterston that all efforts must be made for non-proliferation of nuclear weapons. The Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO, Vienna, www.ctbto.org) is the specialised UN organisation in charge of and effectively performing the task of preventing proliferation of nuclear materials.

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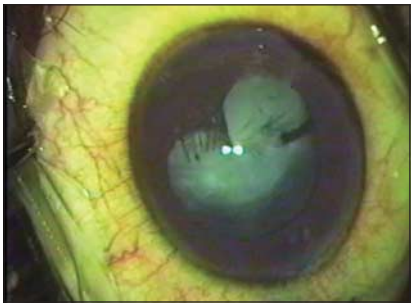
Penetrating ocular trauma from an exploding microwaved egg

EDITOR—Microwave heating results in positive pressure, especially in food confined by a membrane. Eggs with intact shells, intact egg yolks in open shells, and even pierced yolks can explode when microwaved. Exploding microwaved eggs or eggshells have caused facial, eyelid, and corneal burns of varying severity.[1] One published case of intraocular trauma from an exploding microwaved egg presented as an anterior chamber epithelial inclusion cyst two years later.[2] We report a case of serious ocular trauma from an exploding microwaved egg.

A 9 year old girl reheated a previously boiled egg (with an intact shell) using a domestic microwave oven at full power for about 40 seconds. The heated egg was removed from the microwave oven and placed in a bowl. Around 30 seconds later, as she was carrying it to the dining area, the egg exploded with part of it hitting her right eye and face.

She sustained a full thickness corneal perforation and rupture of the anterior lens capsule, reducing her vision to being able to see only hand movements. After primary corneal repair and then cataract aspiration with intraocular lens insertion three months later (figure), visual acuity recovered to 6/6 unaided and posterior segment examination was normal.



Intraoperative photograph of traumatic cataract and repaired corneal perforation after injury by exploding microwaved egg

In their instruction manuals manufacturers of microwave ovens warn against heating eggs with an intact shell and recommend multiple piercing before cooking or heating eggs, even those already boiled. In view of the potential seriousness of injury from exploding microwaved eggs, such warnings should be made more obvious, possibly being displayed on the microwave oven itself.

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Management of anorexia nervosa revisited

Emphasis needs to continue to shift to outpatient care

EDITOR—Russell argues that funding should be more readily available for the private inpatient treatment of anorexia nervosa.[1] She says that "some patients" need inpatient care, but she does not say which patients. This is the crux of the problem.

Inpatient care will continue to be used in some of the most difficult cases, but it should be viewed with caution. I am disappointed that Russell (and her reviewers) did not mention the important paper by Gowers et al, which showed that patients who had received inpatient care did rather worse than those who were treated only as outpatients.[2] Our own clinical experience reflects this.

We run a child and adolescent eating disorders service for five primary care trusts in north London. The area we cover had previously had between nine and 12 admissions a year to the private sector. With the setting up of our outpatient focused team, the number of admissions has been reduced to one a year, or a total of six admissions over the past six years. This has produced a saving to the local NHS of at least £400 000 a year, while achieving very satisfactory clinical outcomes, and with no formal complaints and no untoward events.

We still work closely with two inpatient units, one NHS and one private, whose contribution we value greatly and to which we will continue to refer patients. But even very good and dedicated inpatient care has not greatly modified the clinical course of some of the six adolescents who became inpatients.

Inpatient care costs perhaps 10 times as much as outpatient care. Clear clinical benefits of inpatient treatment over outpatient treatment have not yet been identified. Furthermore, inpatient care may have some adverse consequences. Therefore, while I will continue to fight for resources to send a minority of my patients to the very best inpatient units, the emphasis now should undoubtedly be on good outpatient care.

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1 Russell J. Management of anorexia nervosa revisited. *BMJ* 2004;328:479-80. (28 February.)
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Drug treatment suggestions are questionable

EDITOR—I am concerned that Russell in her editorial suggested that reboxetine and venlafaxine be used "early" in anorexia.[1] This seems to be on the back of some tenuous genetic work and not on the basis of clinical trials.

I express this concern because these are "new antidepressants" with many years of profit to run for the pharmaceutical companies. We must be very circumspect about these new drugs until adequate clinical research supports their use over more traditional drugs. How many of the new psychoactive wonder drugs have in fact delivered a mental health utopia? What happened to the Prozac generation? Are they still smiling?

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1 Russell J. Management of anorexia nervosa revisited. *BMJ* 2004;328:479-80. (28 February.)

Author's reply

EDITOR—I agree with Berelowitz that outpatient treatment is no less deserving of adequate funding than inpatient—particularly as most patients spend considerably more time as outpatients. Certainly Gowers is a cogent detractor of inpatient care in adolescent anorexia nervosa, and despite his generalisations about quality of inpatient settings, in principle, I have no argument with his assertion.[1]

Ideally, outpatient family therapy and medical support should be preferable. However, in our experience this is not always the case for various reasons. A specialised medical psychiatric inpatient programme with suitable milieu would be expected to manage eating disorders better than could a general paediatric or adolescent medical setting, and preliminary evaluation of our own programme supports this contention.[2] I plead for provision of an appropriate level of specialist care, both inpatient and outpatient, as many patients require both.

I emphasise that I was simply suggesting on the basis of molecular genetic data (as sound as any available) that noradrenergic agents should be considered in treating depressed patients with anorexia nervosa (restrictive subtype).[3 4] Our studies were not supported by a drug company. We found good responses with the addition of reboxetine to a selective serotonin reuptake inhibitor and to venlafaxine when there has been little or no response to selective serotonin reuptake inhibitors alone.

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1 Gowers S, Weetman J, Shore A, Hossain F, Elvins R. Impact of hospitalisation on the outcome of adolescent anorexia nervosa. *Br J Psychiatry* 2000;176:138-41.
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Aspirin induced asthma

BAYER AG

Clinical relevance of finding was not explained

EDITOR—The prevalence of aspirin induced asthma on oral provocation testing in the systematic review by Jenkins et al was determined at 21%, which is noticeably higher than verbal history (2-3%) and recent reviews (10%).[1–3] The clinical relevance of this finding is not explained. What was the degree of bronchospasm? In how many patients was it easily reversed by a dose of inhaler?

As anaesthetists we agree fully with the authors' recommendations about the dangers of giving non-steroidal anti-inflammatory drugs (NSAIDs) to patients with known sensitivity to aspirin. We also recognise that people with nasal polyps and asthma are at higher risk of aspirin sensitivity. It is the large proportion of patients who are left for whom we have an issue.

The recommendation to organise a test before administration would be difficult in the current NHS. The authors' guidelines recommend that anyone younger than 40 should have a trial of drug treatment under supervision, or should be prescribed an NSAID only if absolutely necessary. This could be accommodated postoperatively in hospital, but not when NSAIDs are given to patients to take home—for example, after day case surgery. How long do Jenkins et al recommend the patients be observed for?

We do not want this paper to cause anaesthetists, emergency doctors, and surgeons to deny these useful drugs to patients with asthma. A balanced approach taking into account risks and benefits is always necessary. This review, even with the admission of bias in the paper, shows that 80% of asthmatic patients can take these drugs.

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1 Jenkins C, Costello J, Hodge L. Systematic review of prevalence of aspirin induced asthma and its implications for clinical practice. *BMJ* 2004;328:434. (21 February.)
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Effect size needs to be clarified

EDITOR—Jenkins et al describe the pooled data for the risk of aspirin induced asthma, and by implication all asthma induced by non-steroidal anti-inflammatory drugs (NSAIDs).[1] NSAIDs are an important group of medicines in the treatment of acute pain after injury. Not all patients are, however, able to tolerate them because of respiratory or gastrointestinal side effects.

It is accepted that more patients are being diagnosed as asthmatic, so is it true that NSAIDs can be prescribed to fewer patients? The trials that were pooled for the meta-analysis had differing selection criteria. It would be fair to comment that the population used for the study is one where the asthma is more severe—asthma clinics and admissions for acute exacerbations. It would be fair to say that most patients with asthma are managed in the community without any problems. To say that anyone under 40 should have a witnessed trial of treatment under supervision or should be prescribed an NSAID only if absolutely necessary will reduce the amount that a useful class of drugs are used. Would this be a valid exclusion from the four hour target the government has set for accident and emergency departments or would doctors therefore have to admit everyone to an observation unit that may not be there merely to prescribe a safe drug?

The appropriate question is not whether it causes bronchospasm but whether it is clinically relevant. What is the incidence of admission to hospital or need for nebulisers in the asthmatic population after NSAID administration? A four fifths rate of no bronchospasm in the group studied indicates that NSAIDs are safe and doctors should continue to use them.

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1 Jenkins C, Costello J, Hodge L. Systematic review of prevalence of aspirin induced asthma and its implications for clinical practice. *BMJ* 2004;328:434. (21 February.)

Authors' reply

EDITOR—We agree with Sivanandan and Robinson that the recommendation to organise a test before administration of aspirin would be difficult in routine clinical practice. Our advice regarding formal provocation testing and medical supervision for the first dose is simply to maximise safety. When this is not possible, clear advice should be given about the risks, and the availability of bronchodilators should be ensured. The onset of aspirin induced bronchoconstriction occurs within one hour, and in our experience the worst reactions occur within two hours.

We concur that the converse of our findings is that four out of five patients with asthma are safe with respect to risk of sensitivity to aspirin or non-steroidal anti-inflammatory drugs (NSAIDs). This is reassuring, and it is important not to over-react by saying that all asthmatic patients should avoid aspirin or NSAIDs. In view of the high prevalence of asthma in the community and the likelihood of occasional purchase of over the counter simple analgesics, we believe simple, standardised warnings on packs of aspirin and NSAIDs are appropriate.

We agree with Southward that there is heterogeneity of study populations in our meta-analysis. We tried to overcome this by grouping subjects according to the clinical history. Most of the patients were selected from tertiary hospital outpatient clinics and almost certainly represent a group of patients with more severe asthma than patients who never present to hospital. More studies are required to determine the prevalence and severity of aspirin sensitive asthma in the total asthma population.

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E is for equivocal in EBM

EDITOR—Straus asks what's the E for EBM (evidence based medicine).[1] E is for equivocal because that's the best assessment of most published, controlled, double blind research studies (no matter the medical journal).

The evidence for EBM is inherently unreliable for four reasons.

Firstly, a large volume of research funded by drug companies is not allowed by them to be submitted for publication.[2 3]

Secondly, totally unsuitable patients are sometimes recruited into sensitive drug trials, and only a few such patients are needed to invalidate the conclusions of studies. There is no way when doing peer reviewing or reading the paper after publication that this can be detected. I have noticed this only from reading the paper, carefully going through a patient's notes, and talking to the patient at length. I have seen this in diabetes research, but it could be common in areas of medical research because no one usually has the time, the position, and the information to check for such practices.

Thirdly, some papers are ghost written.[3 4] We will never know how many research papers this practice applies to but it is likely to be substantial. In addition, some chosen professors or doctors who put their names on research papers have never seen the raw data, let alone know how accurately they have been written up.

Fourthly, bias has an effect. Whether bias is intentionally or unintentionally introduced by researchers, doctors, statisticians, or ghost-writers, the effect is difficult to measure. Declared and undeclared interest is one element,[5] but bias occurs in so many other ways that to publish a double blind research paper without it seems almost impossible.

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Competing interests: MRK is cochairman of a patient support charity.

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Revalidation: swallow hard

EDITOR—Sometime in 2005 (but who knows exactly when), all the 100 000 or so doctors in the United Kingdom will be subject to revalidation.[1–3]

Despite the gravity of this change in the licensing of medical practitioners, there has been and still is little debate on this matter. Read through, for example, van Zwanenberg's references and you will have read just about all that has been published about it.[2] Revalidation will affect the lives of every doctor registered with the GMC, yet few seem concerned about its process, implications, or repercussions. Compare the flood of responses to Wald and Law's paper on the Polypill with what is barely a trickle to the two papers on revalidation.[1–4] Are we all distracted by contract worries, or are we burying our heads in the sand? Our new contracts will determine how much money goes into our pocket, but failing revalidation might render us unemployed.

Bruce et al provide one of the few published trials on the process of revalidation.[1] But their trial is based on the views of only 53 doctors (who were volunteers). Soon all the doctors in Scotland will have the choice of following their model of revalidation or engaging in a bit of do-it-yourself revalidation. They are lucky: in the rest of the United Kingdom, there is even less to go on. Only unsupported statements from the GMC such as: "We believe that full participation in annual appraisal, with completed supporting documentation, during the revalidation cycle, is a powerful indicator of a doctor's current fitness to practise."[3]

If I told you I had a drug called "Revalidation," but it had no clear indication, little research had been done on its efficacy, and nothing had been done on its effectiveness, cost effectiveness, or safety profile, would you swallow it?

You won't have a choice come 2005.

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1 Bruce D, Phillips K, Reid R, Snadden D, Harden R. Revalidation for general practitioners: randomised comparison of two revalidation models. *BMJ* 2004;328:687-91. (20 March.)
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Continuing medical education: does "no evidence" trump all?

EDITOR—Patel, a cardiology fellow at Duke Clinical Research Institute, told the *BMJ* that no studies have been done to show whether continuing education is working.[1] This sentence reports his views, but it does not quote him directly, attach any conditional comments, or set in context. In the circumstances we should excuse Patel and the *BMJ* for a misleading statement.

According to a Cochrane review, "Interactive workshops can result in moderately large changes in professional practice."[2] Incidentally, the same review shows no effect from "didactic" teaching sessions—that is, lectures to large audiences.

Thus continuing professional development is capable of changing professional practice. And workshop style programmes are commonplace in the United Kingdom (and much enjoyed by participants). It would probably be correct to say that no studies have shown a global effect of all the continuing professional development happening on all the practice and healthcare outcomes that are supposed to ensue. And that most studies of its effect are confined to localities or individual programmes.

Would methodologically rigorous large scale studies be possible? Or worth the effort?

Does anyone else get a little irritated by the lazy rhetorical device of crying out: "no evidence," as if that trumps all?

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1 Hopkins Tanne J. Requiring doctors to take part in continuing medical education doesn't improve heart attack care. *BMJ* 2004;328:664. (20 March.)
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