

threat to survival, or death) was 1 in 200 000 injections.<sup>15</sup> To put this statement into perspective, a person living 80 years has a 1 in 10 000 chance of being struck by lightning.<sup>16</sup> This forces the question, why not use short-dated anthrax vaccine to protect US civilian emergency responders?

The goal is community resilience. The threat is nothing short of antibiotic-resistant anthrax. The solution is to properly equip indispensable emergency responders with voluntary, preventive vaccination before exposure.

Thomas K. Zink, MD  
Institute for Biosecurity,  
Saint Louis University

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## A COMMENT ON MANAGEMENT OF SPINAL INJURIES IN THE OCTOBER 2005 PAKISTAN EARTHQUAKE

### To the Editor

We read with interest the letter by Butt et al about the experience of a makeshift spinal cord injury (SCI) rehabilitation center established after the 2005 Pakistani earthquake.<sup>1</sup> We were with 1 of the teams that supervised the management and rehabilitation of hundreds of patients with SCI in the earthquake and have described our experiences in several articles.<sup>2-6</sup> As residents, we regularly visited the makeshift spinal centers to facilitate their management. We make the following observations:

- The team of Butt and colleagues was a mix of senior and junior consultants, registrars, residents, and house officers, all from the Department of Internal Medicine. Their dedication was commendable and their team spirit unsurpassed. To the best of our knowledge, there is no report in the biomedical literature in which physicians in internal medicine successfully supervised the management and rehabilitation of such a large number of patients with SCI in postdisaster scenarios.
- At the time of the 2005 disaster, SCI rehabilitation in Pakistan was literally nonexistent, with only a few centers. The majority of patients with SCI were received in the hospitals in Rawalpindi and Islamabad; however, apart from the Armed Forces Institute of Rehabilitation Medicine, initially, no rehabilitation specialists were available to facilitate SCI rehabilitation.<sup>2</sup> Ours was the only equipped spinal rehabilitation unit in Islamabad and Rawalpindi. We expanded our indoor bed capacity from 100 to 140 in 2 weeks and dedicated approximately 70 beds to patients with SCI. Nevertheless, reportedly 650 to 750 more patients with SCI could not be accommodated at this single center, hence the need for makeshift spinal centers.
- Three makeshift spinal centers were established and admitted more than 300 patients. Only 1 of the centers, at the National Institute of Rehabilitation Medicine, was upgraded to a permanent facility; the rest were closed. These centers helped to save hundreds of paralyzed patients who otherwise were "the most neglected of all patients injured in the earthquake."<sup>7</sup>
- Good intentions can never replace medical expertise. This was the case with the makeshift spinal centers, which were managed by medical physicians and even gynecologists.<sup>5</sup> Although they saved lives in the acute postdisaster phase, adequate SCI rehabilitation could not be provided to all of the patients. The rate of complications, notably pressure ulcers, urinary tract infections, and deep vein thrombosis, was high,<sup>2,4,6,8</sup> and there were concerns about inadequate and inaccurate assessments of these patients.<sup>5</sup>
- Patients with SCI under primary physiatrist care had a reduced incidence of complications, better functional outcomes, and community reintegration as compared with patients under nonphysiatrist care, including in the makeshift spinal centers.<sup>2,5</sup>

- Some important aspects of SCI rehabilitation were avoided or missed in the makeshift spinal centers, including sexual rehabilitation, realistic counseling about patients' prognosis regarding complete lesions, and vocational counseling and job placement. Moreover, unregulated philanthropic monetary support hampered and unnecessarily delayed the discharge of many patients who did not want to part with a ready source of income.<sup>5</sup>
- Once the makeshift spinal centers were closed, there was no adequate facility that could accommodate such a large number of patients with SCI. Most of them were sent home to the mountainous terrain of Kashmir. At 18 months' follow-up, our team could not find a single quadriplegic survivor of the earthquake.<sup>1</sup> Patients developed pressure ulcers in large numbers, and there were cases of surgical wound infections and implant failures. Four years after the disaster, we confirmed 15 deaths, mostly from large, dirty wounds (probably pressure ulcers) and malodorous urine and high-grade fevers (likely urosepsis). Results such as these clearly highlight the inadequacy of our health care system regarding long-term follow-up of patients with SCI.
- The Pakistani earthquake and other global disasters have demonstrated the effectiveness of a dedicated team of physiatrists offering early rehabilitation services in serious disabilities like SCI,<sup>9</sup> and have confirmed that medical rehabilitation is an urgent emergency service, not just a later part of the recovery process. Early physiatrist involvement in complex orthopedic and neurological trauma has shown to be of benefit in times of peace, but it is likely to be more effective in disasters.
- Experience with this earthquake has shown that SCIs in large numbers can occur. Earthquakes often happen in underdeveloped regions of the world that have little expertise to manage SCI in the best of times. Leading SCI organizations in the world such as the International Spinal Cord Society, American Spinal Injury Association, AOSpine, and the American Paraplegia Society can take the lead in improving the treatment of SCI in these regions in consultation with local governments and nongovernmental organizations.
- It is important that experiences from previous disasters be shared, valuable lessons be learned, and shortcomings that are noticed be improved,<sup>5,10,11</sup> so that we are better prepared for the next disaster.

Farooq A. Rathore, MBBS, FCPS

Zaheer A. Gill, MBBS, FCPS

Sohail Muzammil, FRCS(Edin), FCPS, Ortho

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## OVERESTIMATING CHERNOBYL'S CONSEQUENCES: MOTIVES AND TOOLS

### To the Editor

The article by Davis et al, "The Impact of Disasters on Populations With Health and Health Care Disparities,"<sup>1</sup> concludes that the present literature does not capture the health care disparities in medically underserved communities before and after a disaster. The 1986 Chernobyl nuclear accident provides an example of the considerable difference in the diagnostic quality of many diseases, especially thyroid cancer, before and after the disaster. Improvements in screening and early detection of thyroid nodules after the accident were accompanied by overestimation of the incidence of thyroid cancer, which could contribute to an overestimation of radioiodine carcinogenicity.<sup>2</sup> Some publications have contributed to the misconception. I noted recently<sup>3</sup> that in some articles<sup>4-6</sup> dedicated to the Chernobyl accident, references to nonprofessional publications (eg, newspapers, Web sites of unclear affiliations often with nonworking URLs, commercial editions) were used widely to support scientific views and conclusions, thus overestimating the medical consequences of the Chernobyl accident. Yablokov and Nesterenko acknowledged that "sometimes references in the text do not correspond with those used in the list of references."<sup>7</sup> They provided a quotation from the Ministry for Emergency Situations of the Republic of Belarus Web site ([http://www.chernobyl.gov.by/index.php?option=com\\_content&task=view&id=665&Itemid=1](http://www.chernobyl.gov.by/index.php?option=com_content&task=view&id=665&Itemid=1), accessed on April 6, 2011): "A certain fraction of mushrooms, berries, wild flesh, and fish consumed by inhabitants was highly contaminated, ie, during the last three years about 30% of mushrooms, 15% of berries, and 40% of wild flesh." This was a misquotation. The actual quotation from the Web site, translated verbatim from Russian was "A fraction of mushrooms, berries, wild and fish, taken from