

## The pharmacist's role in emergency first aid services in a terrorist attack with sarin: emergency intervention simulation

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### OBJECTIVES

After 11 September 2011, Italy prepared a Public Health Plan for national defence and regional storage facilities for antidotes. These are managed by a physician and a pharmacist. In Friuli Venezia Giulia-Italy, the pharmacist is responsible for the safety of the antidotes, the national database, collaborates with the physician in planning for emergencies and makes antidotes available for immediate transfer to the site of the incident. Sarin, a nerve gas, even at a very low concentration, causes death rapidly if the victim isn't treated immediately with atropine and subsequently within the first 4-5 hours with pralidoxime. To verify that there were sufficient stocks of atropine, and to verify the accessibility, distribution and appropriateness of the treatment, we simulated a terrorist attack with Sarin at the railway station in Udine, the seriousness being equivalent to that of the attack in Tokyo on 20 March 1995.

### MATERIALS AND METHODS

In our Organization the physician, the regional contact, receives the alert and activates the procedure within 2 minutes of receiving the alert of the Sarin terrorist attack at the railway station of Udine. The procedure consists in:

- the first emergency crew reaching the regional storage facilities for antidotes by ambulance
- picking up 175 auto-injectors of 2 mg atropine while the second emergency crew prepares to provide first aid with breathing apparatus and the third crew takes resources to set up the AMP (Advanced Medical Post).

The regional storage facilities for antidotes have been organized by the regional contact pharmacist into types and packaging in order to facilitate rapid identification and picking up of the necessary antidotes. The first crew took the antidotes to the site of attack when the first triage had allowed the second crew to identify the most critical patients. The regional contact pharmacist, after receiving the alert, had reached the site of attack giving her professional and operative advice.

### RESULTS



In Tokyo, 107 people out of approximately 6000 involved in the attack with Sarin needed treatment with atropine. 80% were treated with only 2 mg, for a total of 170 mg, while 21 needed more than 2 mg. Nobody was given more than 9 mg. In total, 350 mg of atropine was immediately necessary on the site of the attack, equivalent to 350 phials of 1 mg. In our simulation, the time for access and preparation of the antidote was about 10 minutes from the moment of the alert. The transfer time to the site, including on-site distribution was less than 15 minutes due to favourable road access, geographical factors and the short distance from the station to the storage facility. The first patients were treated within the first 20 minutes of coming into contact with Sarin. In total, in our simulation 175 auto-injectors were required, about 10% of total storage.



railway station of Udine



auto-injector



### CONCLUSIONS

The outcome of this emergency intervention simulation is positive considering that atropine, as IPCS classification (The International Programme on Chemical Safety), must be administered within 30 minutes.

The role of the pharmacist in managing the antidotes storage facilities resulted most useful both in ensuring the constant safety of the antidotes and in organizing easy and rapid access to allow the picking up of the antidotes in safety. The pharmacist is responsible for immediate availability, accessibility and distribution of antidotes to the emergency site, and the awareness of appropriate treatment.