

# Full-scale simulations to improve disaster preparedness in hospital pharmacies

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## Abstract

**Purpose:** Assess whether full-scale simulation exercises improved hospital pharmacies' disaster preparedness.

**Methods:** Swiss hospital pharmacies performed successive full-scale simulation exercises at least four months apart. An interprofessional team created two scenarios, each representing credible regional-scale disasters involving approximately fifty casualties (a major road accident and a terrorist attack). Four exercise assessors used appraisal forms to evaluate participants' actions and responses during the simulation (rating them using five-point Likert scales).

**Results:** Four hospital pharmacies performed two full-scale simulation exercises each. Differences between exercises one and two were observed. On average, the four hospitals accomplished  $69\% \pm 6\%$  of the actions expected of them during exercise one. The mean rate of expected actions accomplished increased to  $84\% \pm 7\%$  ( $p < 0.005$ ) during exercise two. Moreover, the average quality of actions improved from 3.0/5 to 3.6/5 ( $p = 0.01$ ), and the time required to gather a crisis management team drastically decreased between simulations (from 23 to 5 minutes). The main challenges were communication (repeat to confirm) and crisis management. Simulation exercise number one resulted in three hospital pharmacies creating disaster action plans and the fourth improving its already existing plan.

**Conclusion:** This study highlighted the value of carrying out full-scale disaster simulations for hospital pharmacies as they improved overall institutional preparedness and increased staff awareness. The number of expected actions accomplished increased significantly. In the future, large-scale studies and concept dissemination are warranted.

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