Background and importance Drug shortages are a critical challenge for the public health system, as highlighted by EAHP’s position paper. They have a negative impact on quality and efficiency of patient care.

Aim and objectives The aim of our study was the application of a revised hazard vulnerability analysis (HVA) to assess which therapeutic classes of drugs are at greatest risk of shortages.

Material and methods In September 2019, we analysed the drugs present in our hospital therapeutic formulary and checked which ones were included in the Italian Medicines Agency shortages list: 43 drugs were found.

For each drug, we assigned a score using a revised HVA which consists of three macro areas: probability that the shortages will occur, magnitude factors which increase the risk of shortage and mitigation factors which reduce it. For probability, a score from 0 to 2 was assigned based on previous shortages. Magnitude factors were relevance of active substance, budget impact and percentage of patients treated. Mitigation factors were therapeutic alternative, stock availability and import of the drug. For each of these items a score from 0 to 3 was assigned. For magnitude factors, an increasing score was assigned as severity grew. In contrast, for mitigation factors, an increasing score was assigned in relation to mitigation reduction. The value of the risk was calculated by multiplying the percentage of probability (p) and the percentage of severity (S). According to the score obtained, three classes of risk of shortages were assigned: low (<30%), medium (30–60%) and high (>60%).

Results Of the 43 deficient drugs, 32/43 (74.4%) were at low risk of shortages while 11/43 (25.6%) were at medium risk. No drug was found to be at high risk of shortages (>60%): 2/11 were cardiovascular myocardiopathies (fructose sodium diphosphate); 3/11 were antiviral drugs (foscarnet, didanosine); 1/11 was an opioid analgesic (morphine); 2/11 were antimicrobial drugs (oxacillin sodium salt and piperacillin/tazobactam); 1/11 was a pneumococcal vaccine; 1/11 was a benzodiazepine anxiolytic (lorazepam); and 1/11 was an anthelmintic (albendazole).

Conclusion and relevance Analysis of shortages is essential to prevent the discontinuation of important therapies, such as those involving antiviral and antimicrobial use, and implement appropriate mitigation actions.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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