Background and importance In recent years, the incidence of medicine shortages (MS) has rapidly increased at the international level. These supply problems can affect the quality of patient care, due to potential interruption of treatment and, therefore, constitute an important issue for hospital pharmacists.

Aim and objectives This study aimed to analyse MS and quantify their economic impact.

Material and methods A retrospective observational study was conducted in a 1015 bed teaching hospital, from April 2018 to September 2020. It was based on a spreadsheet that was updated manually on a weekly basis for MS. Quantitative indicators were: (a) number of MS and the drugs involved; (b) duration of MS; (c) classification of the pharmaceutical interventions to manage MS; (d) economic impact of MS; and (e) time devoted to MS weekly analysis.

Results Analysis of the collected data showed that:

a. 706 MS were reported and concerned 459 drugs.
b. Average time to restore availability was 60 days. Median duration was 33 days.
c. The pharmaceutical strategies to solve MS were displayed as:
   ○ No action was needed due to sufficient stock available at the pharmacy for 55.2% of MS.
   ○ Replacement by the same drug (same active ingredient, same dosage, same pharmaceutical form, different packaging and/or different pharmaceutical company) for 16.8% of MS.
   ○ Replacement by a similar drug (same active ingredient, different dosage and/or pharmaceutical form) for 14.0% of MS.
   ○ Replacement by an alternative drug (different active ingredient) for 6.6% of MS.
   ○ Foreign medicine importation for 6.9% of MS.
   ○ Restricted use in a limited number of wards for 0.3% of MS.
d. The hypothetical cost was 984 533€ (based on the prices with the regular suppliers), if no MS had occurred. The estimated cost due to MS was 1 633 340€ (based on the prices of the pharmaceutical strategies used).
e. Management of MS required two full time equivalents: one pharmacist and one pharmaceutical technical assistant (cumulative annual remuneration of 128 000€).

Conclusion and relevance These results suggested that MS generated an annual cost of 395 761€ for our hospital. Strategies to minimise the effects of MS should be implemented.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Acknowledgements to Manuela Azzolini and Sarah Fadhil, pharmaceutical technical assistants, for their participation in the data collection, and to Guillaume de Marchin, IT specialist, for the extraction of the drug prices presented in this work.

Conflict of interest No conflict of interest