

Reducing Antibiotics Consumption Through a Three-stage Training Programme: an - experiment in 198 general hospitals in Zhejiang Province in China

Jie Chen, MingMing Xu, Prof Therese Hesketh, Prof XuanDing Wang

Zhejiang University School of Medicine, Hangzhou, China (J Chen, M M Xu, T Hesketh PhD); **The second Affiliated hospital of Zhejiang University, School of Medicine, Hangzhou, China** (X D Wang PhD); and **Institute for Global Health, University College London, London, UK** (T Hesketh)

Correspondence to:

XuanDing Wang, **The second Affiliated hospital of Zhejiang University, School of Medicine, Hangzhou, China** (X D Wang PhD) xudwang127@163.com

Abstract

Background

The misuse of antibiotics is recognised as a major contributor to anti-microbial resistance (AMR) globally. China has among the highest rates of AMR in the world. The aim of the study was to develop a replicable model to reduce the misuse of antibiotics in general hospitals through using a Three-stage Training programme in China.

Methods

The Training Programme was conducted in all 200 general hospitals in Zhejiang Province from January 2012 to January 2018. The three stage process comprised: 1) , raising awareness of AMR aldirectors of the hospitals and of infection control departments through workshops to discuss appropriate policies and management strategies in AMR. 2) the second stage, workshops are held for enhancing the cooperation between different departments in each hospital. All the doctors and clinical pharmacists are trained in the third stage. We used χ^2 tests to compare the use of antibiotics in hospitals before and after the intervention. Data were collected by health bureau (Centre for Antibacterial Surveillance) in 2012 and 2018.

Findings

Data were obtained from 198 general hospitals.. Antibiotic prescribing decreased significantly, both in outpatients (20·6%, 95% CI 19·5–21·8), ER patients (19·6%, 95% CI 18·6–20·8) and inpatients (21·6%, 95% CI 20·1–22·8). The percentage of intravenous transfusion decreased by 30·5% in outpatients and 25·5% in ER patients. The situation of antibiotics use improved a lot, especially in inpatients. The percentage of combined use of antibiotics decreased by 20·5% while the Defined Daily Doses (DDDs) decreased by 20·5%. The cost of antibiotics as a proportion of al drug costs was 8·48% in 2017, compared with 14·03% in 2012.

Interpretation

This programme's success at reducing antibiotic prescribing could be easily replicated in other provinces. More work needs to be done to evaluate the effectiveness of the training courses.

Funding

None

Contributors

The study was designed by JC and WDW. JC, MMX and TH supervised the implementation of the research and analysed the data. All authors contributed to the drafting of the paper. All authors have read and approved the final manuscript.

Declaration of interests

We declare no competing interests.