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### Background

The rates of antibiotic use for upper respiratory infections are high in hospitals in China. Although most guidelines advise against the use of antibiotics for acute diarrhea, little is known about antibiotic use practices for acute diarrhea in China.

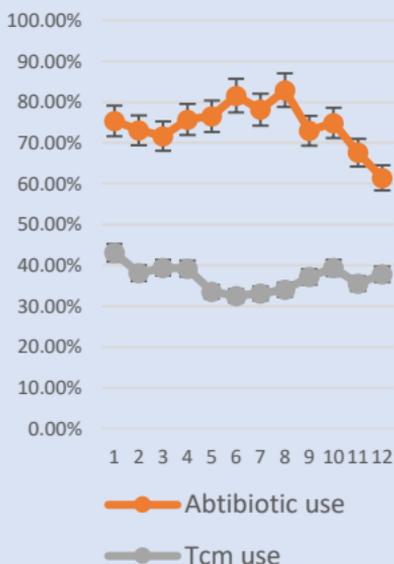
### Methods

A retrospective prescription review from a Shanghai hospital outpatient electronic health records system was conducted from 1 January 2016 to 30 December 2016. Records were included for adult patients. The microbial resistance seasonal data in 2016 were extracted. Chi-squared and multivariable logistic regression and adjusted odd ratio (aOR) were used to assess the relationships between demographic characteristics and antibiotic prescribing.

### Results

In total, there were 16,565 prescriptions, 16,060 prescriptions were included in the final analysis after excluding the follow up visits. There were 12,131 (76%) prescriptions with antibiotics prescribed. 5505 (45%) of the antibiotics prescribed were injectable. Of the antibiotics prescribed, levofloxacin was the most frequent (85%), followed by various cephalosporins (14%). Of the cephalosporin prescriptions, 3rd generation products were the most common (97%). Treatment with oral rehydration salts (ORS) was prescribed 34 (0.2%) times, probiotics were prescribed 3414 (21%) times and smectite was prescribed 2209 (14%) times. Multivariable regression analysis showed that those more likely to receive antibiotics were age 31-50 aOR 1.3 (1.1-1.4),  $p < 0.001$ , evaluated in the late evening (11pm to 7am) aOR 2.6 (2.2-2.9)  $p < 0.001$ , in the early evening (6pm-11pm) aOR 2.0 (1.8-2.2)  $p < 0.001$ , in the summer (June-August) aOR 1.7 (1.5-1.9)  $p < 0.001$ . At the same time, the Gram positive and Gram negative resistance rates to levofloxacin exceeded 40%, including 50% of E. coli isolates.

Monthly prescription rates of antibiotics and TCM in 2016



Different treatment proportion for acute diarrhea in 2016



### Conclusion:

High rates of antibiotic use were observed for acute diarrhea in this hospital. Given the inappropriateness of antibiotics for acute diarrhea and the nonsensical high rates of intravenous levofloxacin use and the concurrent high rates of the levofloxacin resistance, a more effective antibiotic stewardship program is needed to improve patient outcomes, reduce costs, reinforce policy and address the underlying causes of antibiotic abuse

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